

AMENDMENT NO. 1
TO
CONTRACT FOR PROFESSIONAL ENGINEERING SERVICES
PROJECT WORK ORDER 18-30,
CITY COUNTY DRAIN MITIGATION

THIS AGREEMENT, made and entered into on _____, 2018, by and between the following:

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

and

DOWL
222 N. 32nd St
Billings, Montana 59101
Hereinafter designated the Contractor

WITNESSETH:

WHEREAS, the City and Contractor have entered into a contract dated July 13, 2018, for Contractor to provide professional services to the City for Work Order 18-30, and;

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

WHEREAS, the City has authority to contract for professional 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, Scope of Work, is amended as follows:

The attached scope of work (2 pages) for Amendment No. 1 services is hereby made a part of this contract and is supplemental to prior contract scope of work.

Exhibit A

SCOPE OF WORK

City-County Drain Outfall – Final Design and Construction Administration

DOWL completed feasibility evaluations of potential solutions to mitigate water control problems associated with hydraulic changes brought about by the recent migration of the Yellowstone River at the outfall of the City-County Drain. The project will now be advanced through final design and construction administration. It is understood that the project will be managed and executed in close coordination with City staff. Those tasks to be completed by DOWL are described as follows:

Task 100 - Project Management

- 1) Periodic project coordination meetings with the project team, City personnel and the Selected Contractor. A 12-month contract period is assumed.
- 2) DOWL will participate in individual meetings with impacted property owners and City staff, as directed by the City.
- 3) No informational meeting(s) for the public at large are assumed.
- 4) Prepare monthly progress reports for the City detailing the work completed each month. The monthly progress reports will be completed and submitted with each monthly invoice.

Deliverables:

Meeting Minutes
Monthly Progress Reports

Task 200 – Design Surveys

- 1) Surveys along the Yellowstone River and the project area in general were completed to support the feasibility-level assessment of mitigation options. Design-level surveys will now be completed to support final design of the preferred alternative. Ground survey will be completed for a 200-350' wide corridor along the length of proposed project area. Extents are bounded on north and west by northwesterly edge pavement of S. Frontage Rd. At east end, extents are bounded by residential fencing. Total mapping area is approximately 24 acres.
- 2) Establish additional control points along corridor to provide construction survey control and determine vertical values by differential levels.
- 3) Process corridor survey along with previously acquired mapping and develop comprehensive basemap of project corridor.

- 4) Survey property boundaries, perform boundary analysis, and develop four easement exhibits (Driscoll, KSKC Properties, Martin Trust, and Western Sugar) in support of the project. DOWL anticipates the easement exhibits will comprise a graphical depiction and legal description of the proposed easement. The purpose of the exhibits is to be referenced by an easement document drafted by the City of Billings. This scope of work does not include the production of the actual easement document that defines the easement scope, parties, etc.
- 5) Unless directed otherwise by the City, DOWL will use the following coordinate system parameters:
 - a. Montana State Plane (NAD83-2011) with horizontal units expressed in international feet.
 - b. Vertical datum will be NAVD88 with GPS elevations derived from GEOID12A and vertical units expressed in U.S. survey feet.

DOWL will provide coordinate listings of benchmarks and control stations for survey control in the construction plans.

- 6) Further assumptions:
 - a. No staking of proposed easements or preliminary design elements is included in this scope of work.

Deliverables:

Topographic Base Map
Control Data
Easement Exhibits

Task 300 – Geotechnical Investigations

- 1) A preliminary assessment of subsurface soils will be conducted through visual classification and sampling of soils along the City-County Drain outfall and spoils from the recent hydrovac-ing operation along the oil pipelines. The water level of the previous gravel pit will be used as an initial estimate of the groundwater table. DOWL will also review regional geology and soil survey information.
- 2) Laboratory testing including classification (gradation & Atterberg Limits), proctor analysis, and soil corrosion potential will be completed.
- 3) Preliminary design of foundations for the storm drain and water control structure will be based on the findings from the preliminary assessment.
- 4) DOWL will coordinate with the selected Contractor prior to construction to verify the findings from the preliminary geotechnical assessment through excavation of test pits. The foundation and bedding design for the structure and pipeline will be adjusted as necessary.

- 5) DOWL will coordinate with City personnel in selecting an appropriate surfacing section for restoration of pavement impacted during construction.
- 6) A brief Geotechnical Memorandum summarizing the assessment of observed soils, results of laboratory testing and data collected from test pits along with foundation recommendations and recommended surfacing section will be prepared.

Deliverables:

Brief Geotechnical Memorandum

Task 400 – Final Design

- 1) Information from the design survey together with input from the City, Contractor, and the gate supplier will be used to finalize the hydraulic analysis of the storm drain pipeline and water control structure alternative selected from the feasibility analysis. It is anticipated that additional iterations of the optimum gate and weir structure will be required in arriving at the final design of this structure. The HEC-RAS and ASSA models developed through the feasibility evaluations will be used for this purpose. It is assumed that the selected design option will include a storm drain pipeline along the South Frontage Road right-of-way with an outfall into the Yellowstone River side channel further east; coupled with an 18-foot wide by 6.5-foot tall “Tilting Weir Gate” (Crest Gate) to provide City-County Drain flood outflow capacity as well as the ability to provide a level of protection from backwater when the Yellowstone River is at flood stage. It is assumed that the gate, hydraulic cylinder gate actuators, motors, stilling well, water level monitoring equipment, programmable logic controllers, and other appurtenant equipment will be supplied as a package from the gate manufacturer.
- 2) Coordinate with the selected gate manufacturer and the selected Contractor for early procurement of the water control gate.
- 3) The gate-actuator motors will require 3-phase power. It is assumed that the City will coordinate with the utility company and the selected Contractor to supply the required power to the site, including a quick-disconnect from the motors such that auxiliary power can be supplied in the event of a power outage.
- 4) Develop utility layout plan to accommodate future utility buildout through the project corridor, using guidance from the new Stormwater Management Manual. Provide utility layout plan exhibit to City for review and approval.
- 5) Coordinate with Phillips 66, Williston Basin Energy, and other utility companies to establish final drain pipeline alignment.
- 6) Coordinate with the selected Contractor to evaluate the cost and performance of alternative pipe materials.
- 7) Coordinate with the Grey Eagle Ditch company for requirements on potential crossings or realignments.

- 8) Complete structural design of the Water-control Weir Structure and operable gate, including a pedestrian bridge across the structure for gate maintenance and operation and safety fencing around its perimeter.
- 9) Complete structural design of the new Pipeline Outfall Structure.
- 10) Develop Design Report documenting all elements of the design.

Deliverables:

Gate Package Submittal
Utility Layout Exhibit
Design Report

Task 500 – Environmental Permitting

- 1) DOWL will conduct a wetland delineation of the project alignment utilizing the 1987 Army Corps of Engineers (USACE) Manual and the 2010 Regional Supplement – Great Plains Region. Wetland boundaries and waterways will be mapped using a map-grade GPS unit.
- 2) Upon completion of the field delineation, DOWL will prepare figures, using current available aerials of the project site, and prepare a Wetland Delineation Report for submittal to the USACE.
- 3) As this is an emergency project, DOWL will coordinate with the USACE to determine how to expedite the permitting process.
- 4) DOWL will complete a Montana Joint Application for proposed work in Montana’s Streams, Wetlands, Floodplain, and other Water Bodies and submit to the USACE for approval and authorization of a Section 404 permit and Section 10 permit. DOWL assumes the authorization will take place under a Nationwide Permit (likely an emergency permit), and an individual 404 permit would not be required.
- 5) DOWL will coordinate with the Yellowstone County Floodplain Administrator. Given that there are no anticipated impacts of the project on the Yellowstone River flood flows, it is assumed that a floodplain encroachment permit will not be required. DOWL will work with the selected Contractor and supply the joint permit application for their submission. It is assumed that the Contractor will ultimately be responsible for obtaining the required permits prior to construction.

Deliverables:

Wetland Delineation Report
Montana Joint Application

Task 600 – Construction Documents

- 1) DOWL will develop preliminary Project Manual (plans and specifications) that will include the following:
 - a. Cover Sheet

- b. Sheet Index, Legend and Notes Sheet
 - c. Plan-and-Profile Sheets (1-inch = 50 feet scale; 11"x17" format), including:
 - i. Topographic basemap
 - ii. Existing right-of-way
 - iii. Existing utilities
 - iv. Plan and Profile of new drain outfall pipeline
 - d. Detail Sheets:
 - i. Typical Trench Detail
 - ii. Water Control Structure
 - iii. Pipeline Outfall Structure
 - iv. Grey Eagle Ditch Crossing
 - e. Construction Specifications:
 - i. The most current edition of the Montana Public Works Standard Specifications (MPWSS) and City of Billings Standard Modifications to the MPWSS will be used.
 - f. Material quantities and construction costs will be coordinated through the selected Contractor.
- 2) DOWL will complete a Quality Assurance and Quality Control review during the preliminary design and prior to submitting the preliminary construction documents to the City and the selected Contractor for review.
- 3) DOWL will address review comments and prepare final construction documents.

Deliverables:

- Preliminary Construction Documents (Plans and Specifications)
- Final Construction Documents (Plans and Specifications)

Task 700 – Construction Administration

- 1) This scope of work and the associated fee estimate assumes:
- a. A construction duration not to exceed 90 calendar days.
 - b. Engineer shall consult with the City and act as representative for the City as defined in the construction contract documents, which will incorporate the MPWSS, and specifically the General Conditions contained therein as modified by the City of Billings Standard Modifications, latest edition.

- c. The extent and limitation of the duties, responsibilities, and authority of the Engineer will be as assigned in the construction contract documents and shall not be modified, except as Engineer may otherwise agree in writing.
- 2) DOWL will schedule and conduct a pre-construction conference and publish meeting minutes. DOWL will address selected Contractor questions and will conduct a pre-construction field review with Contractor as necessary.
- 3) It is assumed that DOWL will provide full-time construction observation for 40 hours per week, 5 days a week for the full duration of construction (13 weeks). DOWL's Resident Project Representative (RPR) will assist the Engineer in observing progress, quality of work, and conformance to the contract documents and other applicable codes and standards, as well as monitor quantities. Inspection activities will include review of all major work items in the construction documents, including traffic control set-ups and sediment and erosion control plans. The RPR will prepare daily inspection reports, daily quantity summaries, weekly progress reports, weekly workforce and equipment reports, and other reports as required. RPR responsibilities are further defined in the General Conditions contained in the City of Billings Standard Modifications, latest edition.
- 4) Develop and implement a quality assurance testing plan for materials testing in accordance with the City of Billings Standard Modifications, latest edition. DOWL will conduct a pre-construction testing meeting with RPRs, field testing personnel, and lab manager to coordinate testing requirements. DOWL will provide qualified personnel, equipment, and supplies for field testing of materials throughout construction. Monitor and collect results from contractor's separate quality control materials testing program.
- 5) Attend and conduct a weekly construction meeting with the City and Contractor. Allow up to 3 hours per week for the weekly construction meeting and any related follow-up activities.
- 6) Review contractor's submittals, such as shop drawings, samples, equipment, mix designs, aggregates, and other data, for conformance to the contract documents. This review does not include or extend to Contractor's means, methods, techniques, sequences, procedures, or safety programs.
- 7) Respond to Contractor requests for information. Issue necessary clarifications and interpretations of the contract documents. Notify the City immediately of any contract problems or deviations from the approved contract documents. Issue notices as required by the construction contract. Recommend and prepare Work Change Directives and Change Orders for the City as necessary. Change orders that require additional design or construction services by Engineer will be considered Additional Services and compensated in accordance with the provisions of this Contract.
- 8) Receive, review, and transmit to City all Contractor requests for City staff involvement and approvals, such as traffic control reviews, etc. Assure required advance notice requirements are being met by Contractor for all requests to the City for reviews and inspections.
- 9) Make visits to the site at intervals appropriate to various stages of construction to observe, as an experienced and qualified design professional, the progress of the Contractor's work. Visits by the Engineer shall be limited to spot checking and similar methods of general observation of the work as assisted by the RPR.
- 10) Review and recommend monthly Contractor payment requests.

- 11) Conduct substantial completion and final inspections with City and Contractor. Prepare and monitor punchlist items required for completion of the work by Contractor.
- 12) Provide project management and internal quality assurance throughout this task.
- 13) It is assumed that construction staking will be the responsibility of the Contractor.

Deliverables:

- Preconstruction Meeting Minutes
- Daily and Weekly Inspection Reports and Quantity Summaries
- Meeting Minutes from Weekly Construction Progress Meetings
- Recommendations for monthly Construction Progress Payments
- Work Directives, Change Orders and other documents to manage construction contract
- Punchlist

Task 800 – Record Drawings and Project Completion

- 1) DOWL will prepare record drawings based on construction notes and drawings upon project completion.
- 2) DOWL will attend and assist the City on a one-year warranty walk-through of the project.

Deliverables:

- Record Drawings
- Substantial Completion Recommendation
- Letter report of one-year warranty inspection if required