

January 22, 2018

Dan Jonasson
Public Works Director
City of Minot
1025 31st St SE
Minot, ND 58701

**Subject: Amendment No. 4
Engineering Services Agreement
City of Minot SWIF Deficiency Remediation Actions
Capital Improvement Project (CIP) No. 2 – Pipe Rehabilitations and Incidentals
HEI Proj. No. R16_6027_050**

Mr. Jonasson,

This letter constitutes our proposed contract amendment for additional engineering services related to the design, permitting, bidding, construction, material testing, and project close-out of Capital Improvement Project (CIP) No. 2 – Pipe Rehabilitations and Incidentals. This project includes development of necessary rehabilitations at 25 locations where pipe deficiencies have been identified through video inspections. These locations were divided in to either Category No. 1 or Category No. 2 locations based on the severity of the problem and scope of necessary rehabilitation.

22 Category No. 1 Rehabilitation locations were identified. These locations exhibit a variety of different deficiencies ranging from missing flap gates to structural pipe damages and joint separations.

3 Category No. 2 Rehabilitation locations were identified. The rehabilitations required at these locations will required more extensive planning and design. Additional details on the assumed scopes of work at these locations are provided in additional details below.

The following Tasks outline our proposed scope and budget to complete the additional items listed above.

Task 6 Capital Improvement Project (CIP) No. 2 – Pipe Rehabilitations and Incidentals

Task 6.1 Project Design (Category No. 1) – This task consists of developing construction plans, specifications, and bid documents for the 22 Category No. 1 locations included in CIP No. 2. These 22 are identified as Category No. 1 locations on the attached maps.

Each location will be field reviewed by staff from HEI. This review will identify site constraints (i.e. adjacent building locations, etc.) that will limit the rehabilitation options. Based on information gathered from this site visit along with review of record drawings and video evaluations, up to two conceptual rehabilitation options will be developed for each location. These conceptual options will consist of hand sketches on aerial photography backgrounds. These conceptual options will then be presented and reviewed with City of Minot Public Works staff to evaluate and select the desired option.

Preliminary plans will then be developed and submitted to the City of Minot and USACE for review. This includes 4-8 hours of field survey per site to document the location/elevations and to assist in plan development. No geotechnical evaluation or investigation was assumed to be required.

Following this review, comments received during City and USACE review will be incorporated to produce final plans and specifications for the CIP. We assume that the City of Minot Standard Specifications will be used as the governing specification for the project. This task also includes developing a Technical Memorandum that will summarize the design process and assumptions.

Task 6.1 Budget \$85,000

Task 6.2 Project Design (Category No. 2) – This task consists of developing construction plans, specifications, and bid documents for the 3 Category No. 2 locations included in CIP No. 2. These include areas 4, 10, and 25 on the attached maps.

Area 4 is located just north of 3rd Ave NW at the Oak Park dead loop outlet. The deficiency at this location consists of a deteriorated 96" CMP located between the dead loop and the gatewell. For purposes of this scope and budget it was assumed that the rehabilitation would generally involve removing and replacing the existing 96" CMP between the gatewell and the dead loop. This assumed that the gatewell itself and the outfall pipe between the gatewell and the river is in acceptable conditional and is not in need of rehabilitation.

Area 10 is located just upstream of 4th Ave NW near 3rd St NW. There is an existing gatewell and 66" outfall pipe at this location, however, the gatewell is not located in the line of protection. For purposes of this scope and budget it was assumed that the rehabilitation would involve the construction of a new gatewell located in the line of protections and a new outfall pipe. The existing upstream storm sewer system would then be routed through the new gatewell. This assumed that the gatewell will be a two-cell cast in place box structure with sluice gate and access hatches.

Area 25 is located on the dead loop between 27th St SE and US HWY 2 near the manufactured housing community. There is a 36" CMP outfall pipe located on an existing drainage swale at this location. The outlet of the pipe is severely eroded and is cutting into the levee section. For purposes of this scope and budget it was assumed that the rehabilitation would generally involve replacing the existing 36" pipe, reconstructing the levee and a portion of the outlet channel, and armoring the outlet channel between the outfall and dead loop with rock riprap. This assumed that the site stability will support repairing the levee.

Similar to the Category No. 1 locations, all three locations will be field reviewed by staff from HEI. This review will identify site constraints (i.e. adjacent building locations, etc.) that will limit the rehabilitation options. Based on information gathered from this site visit along with review of record drawings and video evaluations, a conceptual rehabilitation plan will be developed for each location. This conceptual plan will then be presented and reviewed with City of Minot Public Works staff to solicit feedback prior to Preliminary Design.

Preliminary plans will then be developed and submitted to the City of Minot and USACE for review. Budget for necessary field survey at each site was included within the budget. An assumed geotechnical investigation and exploration budget of \$5,000 per site was also included.

Following this review, comments received during City and USACE review will be incorporated to produce final plans and specifications for the CIP. We assume that the City of Minot Standard Specifications will be used as the governing specification for the project. This task also includes developing a Technical Memorandum that will summarize the design process and assumptions.

Task 6.2 Budget \$75,000

Task 6.3 Project Permitting and Bid Service (CIP No. 2) – This task consists of preparing the necessary federal, state, and local permit applications and supporting documentation. This includes a USACE submittal package and coordination for Section 408 review as well as USACE Section 404 review, ND State Water Commission Sovereign Lands and Construction Permitting, and City of Minot Floodplain Development Permitting. It was assumed that no hydrologic or hydraulic modeling would be required for completion of this permitting. Also included in this task are bid services consisting of project advertising, answering contractor questions, bid opening, and review of project bids.

Task 6.3 Budget \$15,000

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Task 6.4 Construction Administration and Observation (CIP No. 2) – This task consists of providing construction administration, observation, and survey services during the construction of the project. The estimated budget is based on an anticipated construction duration of 6 months beginning in 2018 and carrying into 2019.

Task 6.4 Budget \$120,000

Task 6.5 Construction Materials Testing (CIP No. 2) – This task consists of providing material testing as well as construction engineering services to evaluate the levee reconstruction and suitability of excavated on-site materials for use as fill material. This work will be completed under a subcontract with Braun Intertec. The scope of this will vary depending on the ultimate repair options chosen, however a budget of \$25,000 was included in this proposal.

Task 6.5 Budget \$25,000

Task 6.6 Project Close-out (CIP No. 2) – This task consists of project close-out services which include the creation of record drawings, pre-warranty termination inspection, and permit closeouts.

Task 6.6 Budget \$10,000

Total Task 6 Budget \$330,000

The total estimated “not to exceed” budget for this amendment is \$330,000. This work will be completed in accordance to original contract general terms and conditions and billed on an hourly basis. If this amendment meets with the City’s approval, we will develop the necessary EJCDC documents to amend our current Task Order with the City.

Sincerely,

HOUSTON ENGINEERING, INC.

Michael P. Love, PE

MPL:ml
Enclosures

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