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11 march 2014

Colorado Water Conservation Board
Chris Sturm
Stream Restoration Coordinator
1580 Logan Street, Suite 200
Denver, CO 80203

Subject: Progress Report, Contract C150521, Fountain Creek bank Restoration at the Frost Ranch

Dear Chris,

I am writing to provide you with a progress report for the Fountain Creek Bank Restoration at the Frost Ranch along with our invoice, dated March 11, 2014, which includes services performed through February 28, 2014. The amount of the attached invoice is \$6,949. Significant elements of progress are described below.

Task 1 - Survey & Data Collection

Completed a detailed topographic survey at the location of the Project on September 3, 2013. The survey encompassed the longitudinal and lateral extents of the eroded bank. Significant flooding and erosion occurred at the Project site from September 12 through 15, 2013. As a result we completed a resurvey of the project site on February 26, 2014. In addition to the topographic survey, additional data was obtained from:

- Available geo-referenced aerial photography
- Hydrologic, hydraulic, geomorphic, and environmental reports completed as part of SDS Fountain Creek Realignment project upstream and used as in-kind services for this grant.
- An initial site visit was completed to evaluate existing conditions and observe the site postflood. Additional site visits were completed under the following tasks.

Task 2 - Engineering Analysis

Completed engineering analyses needed to support the design of the bank stabilization. These analyses have primarily involved extracting pertinent information and data from the SDS Fountain Creek Realignment reports noted in Task 1 as well as further evaluation of geomorphic and scour data collected specifically at the Project site. Engineering analyses included:

- Design flow selection: Bankfull flow of 3,600 cfs through a 10-year flow of 15,000 cfs.
- Hydraulic analysis: Design velocity of 8 ft/sec; Design shear stress of 1 lb/sf.
- Scour analysis: Observed scour depths of >2 ft; predicted scour depth of up to 5 ft.
- Geomorphic evaluation: Bankfull width of 160 ft; Width/depth ratio of 5:1; Slope of 0.35%.

MAILING ADDRESS: P.O. Box 26373, Colorado Springs, CO 80936-6373

- Vegetation assessment: Existing plant communities including woody vegetation (Sandbar willow and Plains cottonwood) and wetland plants (Nebraska sedge, Baltic rush, Pale bulrush).
- Alternatives evaluation and presentations: Considered riprap, toe wood, and brush-layering revetment concepts and presented those alternatives to the Citizens Advisory Group on February 14 and to the landowner on February 19, 2014.

Task 3 - Preliminary (60%) Design

Prepared concept drawings of bank revetment alternatives, as well as preliminary design for the selected bank stabilization method. The selected approach included a combination of toe wood and brush-layering (see progress plan set attached). This task included:

- Base mapping
- Preliminary grading and cut/fill evaluation
- Preliminary design plans, which consisted of:
 - Cover sheet
 - Plan overview
 - Grading
 - Details

Task 6 – Construction Bidding

Held a meeting with prospective contractors to discuss the proposed work, establish quantities, and request pricing.

Task 7 - Construction Management, Project Management, Direct Expenses

Completed project management tasks including tracking, coordination, review of analyses and conducted construction bidding meetings. Verified Contractor invoicing and prepared report to CWCB with invoice and backup.

Based on our evaluation, it seems prudent to pursue construction of the Project using a design/build delivery method in order to expedite the bidding process, ensure adequate construction oversight, and allow for adaptation to field conditions. As such, we intend to prepare a preliminary plan set sufficient to identify quantities and establish pricing. Further, we intend to conserve budget in the design phase to allow for sufficient budget to provide field engineering during construction. Correspondingly, our invoicing to date is less than would be expected at this point in the project if we were preparing full, final design plans, specifications, and cost estimates. Final plans will be prepared during the construction phase as as-built drawings.

The following is the revised schedule for upcoming tasks:

Task Completion Date

Preliminary Plans Revisions March 7

Contractor Bidding March 19

Construction Contracting and NTP April 4

Construction May 16

Final Reporting and Invoicing June 15

The proposed schedule is contingent upon obtaining a contractor bid within the Project proposed construction budget. The initial bid obtained from a prospective contractor exceeded the Project construction budget. Recent post-fire and post-flooding construction demand in Waldo Canyon and Black Forest has placed a constraint on the availability of contractors and correspondingly

on their pricing. We will continue to meet with qualified, prospective contractors over the next week in an effort to obtain a suitable construction bid.

Please contact me at (719) 447-5012 if there are any questions concerning this progress report or the attached invoice.

Thank you for the opportunity to work with you on this project.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Larry Small', is positioned above the printed name.

Larry Small
Executive Director

Attachments: Invoice No. 40 dated March 11, 2014
Preliminary Plans