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December 14, 2010

Via E-Mail: gregory.johnson@state.co.us

Mr. Greg Johnson Intrastate Water Management & Development Colorado Water Conservation Board Department of Natural Resources 1313 Sherman Street, Room 721 Denver, Colorado 80203

Re: Florida Mesa Canal Companies – Canal Seepage Reduction Program Construction Phase Scope of Services

Dear Mr. Johnson:

The scope of services for the Florida Mesa Canal Companies – Canal Seepage Reduction Program Construction Phase is provided below. The design of the project is being handled under a separate grant authorization and for purposes of this scope will be defined as the Design Phase.

Florida Mesa Canal Companies Seepage Reduction Project – Construction Phase *Purpose*

The purpose of the ditch lining task is to:

- 1) Improve the efficiency of the canal conveyance system and reduce ditch loss.
- 2) Provide irrigation water at reduced operational expense to promote continued commercial agricultural uses.
- 3) Firming the agricultural water supplies through increased efficiency as opposed to developing additional water supplies (i.e. enlarging Lemon Reservoir).
- 4) Develop additional sources of water for other beneficial uses in the basin.

Need: Overall conveyance losses for the canals and ditches on the Florida Mesa have averaged 24 percent over the last seven years (the period of record for the FWCD water monitoring program). The losses have ranged as low as 18 percent per year and as high as 31 percent per year.

Previous studies: The Water Conservation and Management Plan and the USBR Rehabilitation and Betterment (R&B) Study. The Water Conservation and Management Plan and the USBR R&B Study identified roughly \$20 million of improvements including ditch lining and piping projects. The R&B Study calculated a reduction of over 4,100 AF in canal conveyance losses.

Mr. Greg Johnson December 14, 2010 Page 2

The scope of work and budget is summarized in Table 1 and includes the following tasks:

Task 1: Engineering services during bidding

Approach

Based on the final design package prepared under the Design Phase of the project, WWE will provide services during bidding including but not limited to assisting in the preparation of the bid package, answering questions during the bid process and review of bids.

The following specific tasks will be performed by WWE:

- Attendance at one pre-bid meeting at the project site.
- Preparation and issuance of addenda to the contract documents.
- Responding to contractor questions during bidding.
- Attendance at the bid opening.
- Prepare bid tabulation form.
- Review bids and bid documents.
- Recommendation to Florida Farmers for award of bid to a contractor. If needed, WWE will advertise and reproduce copies of the contract documents for distribution to bidders and suppliers at an additional cost.

Deliverable

Preparation of bid package, review of bid documents, preparation of bid tab and recommendation for award.

Task 2: Final Environmental Permitting

Approach

Work with selected contractor to finalize areas selected for disturbance including staging areas, access and construction. Preparation of final environmental permitting including storm water permits.

Deliverable

Final environmental permits for construction

Mr. Greg Johnson December 14, 2010 Page 3

Task 3: Construction and Engineering Services During Construction

Approach

Construction of the Seepage Reduction Project. Includes construction observation and engineering services during construction including processing requests for information, change orders, Construction QA/QC, including geotechnical compaction and concrete density testing.

Services During Construction:

- WWE's resident project engineer will provide regular field visits to the construction site to monitor and document the contractor's progress.
- Attend construction progress meetings, weekly meeting are anticipated. The WWE
 representative will coordinate with the owner's field representative and participate in
 construction meetings including preparing agenda and minutes.
- Review, tracking, and distribution of any equipment, materials and shop drawing submittals.
- Prepare change orders, response to requests for information, and review of pay requests.

Other services are available from WWE for the project. These may include construction contract administration, start-up services, operation and maintenance manual updating, etc. The need for these services will be assessed as the project is implemented.

Deliverables

Progress Meeting minutes will be prepared and distributed to attendees. Project manual including daily project observation reports, construction photograph log, and owner's record set of change orders, RFIs, payment applications and approval letters, submittals and submittal log, etc.

Task 4: Preparation of Final Report and Record Drawings

Approach

- Based on design package developed in the Design Phase and contractor's red-line drawings from actual field conditions
- Preparation of record drawings will be done for the project. As-built drawing information submitted by the contractor will be incorporated into the design drawings.

Deliverables

The revised set of drawings indicated as "Record Drawings" will be copied in a digital format into AutoCAD and provided in that digital format and in a printed version to owner.

A Final report will be provided.

Mr. Greg Johnson December 14, 2010 Page 4

CWCB Scope of Services Requirements

Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed. All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

Sincerely,

WRIGHT WATER ENGINEERS, INC.

Peter R. Foster, P.E. Project Manager

By David W. Foss, P.E.

Project Engineer

Attachments

Table 1: Task Cost Breakdown Table 2: Project Schedule

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Table 1Florida Mesa Canal Companies - Canal Seepage Reduction Program Construction Phase Scope of Work

Task Number	Tasks	Cost
Task 1	Engineering Services During Bidding	7,500
	WWE will provide services during bidding including but not limited to	
	assisting in the preparationof the bid package, answering questions	
	during the bid process and review of bids.	
Task 2	Final Enviromental Permitting	7,500
	Work with the selected contractor to finalize areas selected for	
	disturbance including staging areas, access and construction.	
	Preparation of final environmental permitting including storm water	
	permits.	
Task 3	Construction and Engineering Services During Construction (1)	750,000
	Construction of the Seepage Reduction Project. Includes construction	
	observation and engineering services during construction including	
	processing requests for information, change orders, Construction	
	QA/QC, including geotechnical compaction and concrete density	
	testing.	
Task 4	Preparation of Final Report and Record Drawings	10,000
	The revised set of drawings indicated as "Record Drawings" will be	
	copied in a digital format into AutoCAD and provided in that digistal	
	format and in a printed version to the owner. A final report will also be	
	provided.	
Total		775,000

Notes:

1.) The scope of work for this task will be given in further detail when a contractor is selected. The following is what WWE is providing for this task.

Table 2Project Schedule -- Amended December, 2010

Schedule of Work and Task Completion

	2010			2011				2012				
	Jan-	Apr-	July-	Oct-	Jan-	Apr-	July-	Oct-				
	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Jan-Mar	Apr-Jun	July-Sep	Oct-Dec
Engineering Design and Services During Contracting												
Define project sections from ditch loss study		Χ										
Preliminary Environmental Permiting - Wetlands												
Delineations, Archeological Surveys		Χ	Х	Х								
Preliminary Engineering Design			Х	Х								
Final Engineering Design			Х	Х	Χ							
Preparation of project plans and specifications					Х	Χ						
Services during bidding						Χ						
Construction of Canal and Ditch Lining Project (1)							Х	Х	Х	Х		Х