

# REQUEST AUTHORIZATION FOR MAYOR AND FINANCE OFFICER TO SIGN PROFESSIONAL SERVICES AGREEMENT OR AMENDMENT

Date:

**Project Name & Number:** Red Rocks Booster Pump Station Upgrades  
Project Number 14-2177

**CIP #:** 50812.B

**Project Description:** The design of new pumps to provide increased capacity for the existing Red Rocks Booster Station located at 7150 Prestwick Rd. in Red Rocks Estates.

**Consultant:** Bartlett & West

**Original Contract Amount:** \$124,956

**Original Contract Date:** 4/1/2014

**Original Completion Date:** 08/31/2015 for  
Tasks 1,2, and 3  
06/30/2018 for  
Tasks 4,5

**Addendum No:1**


**Amendment Description:** The amendment to the design of the Red Rocks Booster Pump Station at 7150 Prestwick Road covers additional effort and tasks that were needed to remedy high pressure issues that the current pump station is experiencing. Staff believes that this work needs to be completed prior to providing water to Countryside


<b>Current Contract Amount:</b>	\$124,956.00	<b>Current Completion Date:</b>	8/31/2015, 06/30/2018
<b>Change Requested:</b>	\$13,000.00		
<b>New Contract Amount:</b>	\$137,956.00	<b>New Completion Date:</b>	03/31/2016,10/31/2016

**Funding Source This Request:**


Amount	Dept.	Line Item	Fund	Comments
\$13,000.00	933	4223	602	Water Replacement / Improvements
\$13,000.00	<b>Total</b>			

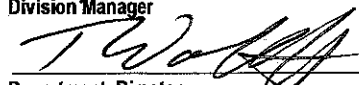
**Agreement Review & Approvals**

  
 Project Manager 6-3-15  
 Date

  
 Compliance Specialist 6/2/15  
 Date

\_\_\_\_\_  
 City Attorney Date

  
 Division Manager 6-2-15  
 Date

  
 Department Director 6-3-15  
 Date

**ROUTING INSTRUCTIONS**

Route two originals of the Agreement for review and signatures.  
 Finance Office - Retain one original  
 Project Manager - Retain second original for delivery to Consultant  
 cc: Public Works  
 Engineering  
 Project Manager

**FINANCE OFFICE USE ONLY**

(Note to Finance: Please write date of Agreement in appropriate space in the Agreement document)

Date	Initials	Approved	
6/1/15	[Signature]	(Y)	N
<b>Appropriation</b>		Y	N
<b>Cash Flow</b>			

**AMENDMENT NO. 1 TO AGREEMENT**

**Project:** Red Rocks Booster Pump Station Upgrades  
Project Number 13-2177/ CIP 50812.B

**Background Data:** Effective Date of Agreement: May 5, 2014  
Owner: City of Rapid City  
Engineer: Bartlett & West, Inc.

**Nature of Amendment:** This amendment covers services requested by the Owner in relation to immediate operational improvements/changes needed at the Red Rocks Booster Pump Station (BPS) prior to connection of the Countryside subdivision to the Owner's water system. This connection is planned for the fall of 2015, and the improvements/changes need to be in place prior to then.

**Current Contract Amount:** \$124,956.00

**Change Requested:** \$13,000.00

**New Contract Amount:** \$137,956.00

**Completion Date for Tasks 1 through 3 changed to:** March 31, 2016

**Completion Date for Tasks 4 and 5 changed to:** October 31, 2018

Owner and Engineer hereby agree to modify the above referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect. The effective date of this Amendment is:

\_\_\_\_\_

CITY OF RAPID CITY:

ENGINEER:

By: \_\_\_\_\_  
Mayor

By: Brian J. Hollen  
Bartlett & West, Inc.

Date Signed: \_\_\_\_\_

Date Signed: 5/29/15

ATTEST:

By: \_\_\_\_\_  
Finance Officer

Date Signed: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_  
Morgan Gagliano, Project Manager



## **AMENDMENT NO. 1 to EXHIBIT A**

### **Red Rocks Booster Pump Station Upgrades Project Number 13-2177/ CIP 50812.B**

The scope/work items outlined in the following paragraphs and pages are modified as noted. All other changes to the original scope/work still apply. The general nature of the changes include:

The existing Red Rocks booster station pumps into a closed (no tank) system that relies on pumps on for pressure in the Salador pressure zone. As originally designed there was a small jockey pump, and a small bladder tank that would run during low demand periods. When higher demands were present, the various larger pumps would stage on as needed. However, the small jockey pump is physically removed from the station, and the bladder tank is valved off due to issues with the equipment. There are several pressure relief valves within the station to allow excess pressure to bleed from the discharge header to the suction header, however, all of those valves are also valved off. The flowmeter that is installed on the discharge line, appears to be oversized and does not record low pumping rates, as is typical of current operation.

The pump station is currently operating as follows:

- When the discharge pressure falls to 154 psi, one of the service pumps starts (3 total).
- Once the pressure reaches 164 psi, which is almost immediately, the pump runs for another 100 seconds and then shuts down.
- One February 19, 2015 the pumps were cycling at: Run for about 2:00 minutes, Off for about 3:40 minutes, then the cycle would start again. Thus there was a cycle time of about 5:40 that day.
- During the run cycle the discharge pressures reached approximately 215 psi.

The short cycle times and excessive discharge pressures are a concern to the Owner, and particularly with the planned connection of the Countryside subdivision to the Owner's water system which is planned for the fall of 2015. The full reconstruction of the Red Rocks BPS will not be completed by that time, thus short term improvements/changes are needed prior to then.

The objective is to identify improvements/changes that reduces the system operating pressures to reduced stress on the distribution system, especially the Countryside subdivision. Another objective is to lengthen the pump cycle times. The final objective is to complete these changes in an economical way because the pump station will be reconfigured in 2016.

The following are the detail changes to the scope/work items:

#### **TASK 1 - PRELIMINARY DESIGN SERVICES**

Add a new task 1.16.

1.16 Prepare a Technical Memo outlining short term improvements to booster station. Work required to allow preparation of the Tech Memo may include but is not limited to:

- A. Additional hydraulic modeling and preparation of system curve(s)
- B. Manual review of system hydraulics, and review/overlay of pump curves
- C. Review of O&M manuals for the current station, and in particular the pressure relief valves.
- D. Review and gain understanding of pump control, and parameters that can be changed.

- E. Look at pressures in the Red Rocks service zone, and connection point to Countryside subdivision under current operation, and reduced pressure operations.
- F. Talk with PRV manufactures if needed, to determine field changes that can be made to PRVs for identified changes.
- G. Evaluate if a small pressure tank would be beneficial to reducing pump start/stops.
- H. Develop sketches, schematics, overlays of the old plan sheets to identify needed locations of needed changes.
- I. Develop written changes for the control system, if needed.
- J. Provide catalog cutsheets, or abbreviated specifications for any new equipment required.

TASK 2 - FINAL DESIGN SERVICES

It is currently anticipated the needed upgrades/changes will be competed directly by the Owner. Therefore, formal plans and specifications are not included. Information needed will be provided under Task 1.

TASK 4 – BASIC CONSTRUCTION SERVICES

Add a new Task 4.13

4.13 The Engineer will respond to questions from the Owner during their field installation work, and will be available to be present in the field, during implementation of the changes, upon request.

TASK 5 – EXPANDED CONSTRUCTION SERVICES

None

COMPLETION TIME FRAME:

First submittal of the Technical Memo by June 30, 2015

Final submittal of the Technical Memo by July 31, 2015

DELIVERABLES:

Four (4) paper copies, and an electronic copy of both the First and Final submittals.

END

**AMENDMENT NO. 1 to EXHIBIT B**

**Red Rocks Booster Pump Station Upgrades  
Project Number 13-2177/ CIP 50812.B**

TASK 1 - PRELIMINARY DESIGN SERVICES

For Task 1.16: A not to exceed fee of \$10,000, without further authorization.

TASK 4 – BASIC CONSTRUCTION SERVICES

For Task 4.13: A not to exceed fee of \$3,000, without further authorization.

END

# ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades

## AMENDMENT NO. 1

TASK NUMBER	TASK SUBTOTAL	E-XI	E-V	ET-X	E-VI	ET-I
		\$ 206.00	\$ 130.81	\$ 144.20	\$ 141.11	\$ 56.65
Task 1.16		12	20	12	12	24
	\$ 9,871.52	\$ 2,472.00	\$ 2,616.20	\$ 1,730.40	\$ 1,693.32	\$ 1,359.60
Task 4.13		5	6	8		
	\$ 2,968.46	\$ 1,030.00	\$ 784.86	\$ 1,153.60	\$ -	\$ -