

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

Date: 04/04/2014

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:** 05/05/2014 **Original Completion Date:**

Addendum No:

Amendment Description:

Current Contract Amount: _____ **Current Completion Date:** _____
Change Requested: _____
New Contract Amount: _____ **New Completion Date:** _____
\$0.00

Funding Source This Request:

Amount	Dept.	Line Item	Fund	Comments
\$124,956.00	933-602	4381	602-933	Water Replacement / Improvements
		4003		
\$124,956.00	Total			

Agreement Review & Approvals

<p> _____ Project Manager Date: 4/14/14</p> <p> _____ Compliance Specialist Date: 4/4/14</p> <p> _____ City Attorney Date: 04/11/14</p>	<p> _____ Division Manager Date: 4-7-14</p> <p> _____ Department Director Date: 4-7-14</p>
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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

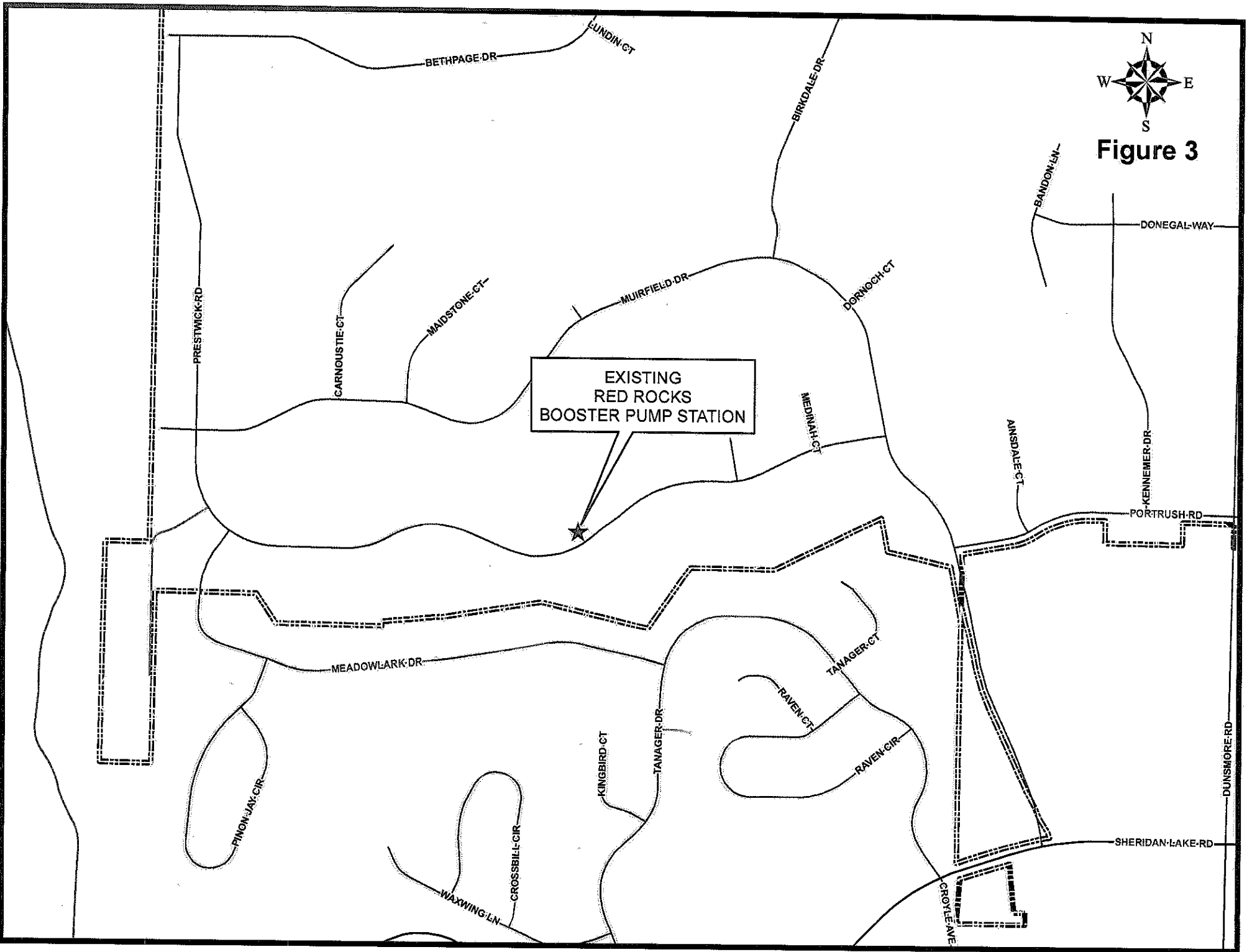
FINANCE OFFICE USE ONLY

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

	Date	Initials	Approved	
Appropriation	4/10/14	JD	(Y)	N
Cash Flow			Y	N



Figure 3



Agreement Between City of Rapid City and Bartlett & West, Inc. for Professional Services for Red Rocks Booster Pump Station Upgrades,

Project Number 14-2177, CIP # 50812.B

AGREEMENT made _____, 20____, between the City of Rapid City, SD (City) and Bartlett & West, Inc. (Engineer), located at 5900 S. Western Ave Suite 101, Sioux Falls South Dakota 57108. City intends to obtain services for design, bidding and construction professional services for the **Red Rocks Booster Pump Station Upgrades, Project Number 14-2177, CIP # 50812.B**. The scope of services is as described within this document and as further described in Exhibits A, B and C (attached).

The City and the Engineer agree as follows:

The Engineer shall provide professional engineering services for the City in all phases of the Project and as further defined in Exhibits A, B and C (attached), serve as the City's professional engineering representative for the Project, and give professional engineering consultation and advice to the City while performing its services.

Section 1—Basic Services of Engineer

1.1 General

- 1.1.1 The Engineer shall perform professional services described in this agreement, which include customary engineering services. Engineer intends to serve as the City's professional representative for those services as defined in this agreement and to provide advice and consultation to the City as a professional. Any opinions of probable project cost, approvals, and other decisions provided by Engineer for the City are rendered on the basis of experience and qualifications and represent Engineer's professional judgment.
- 1.1.2 All work shall be performed by or under the direct supervision of a professional Engineer licensed to practice in South Dakota.
- 1.1.3 All documents including Drawings and Specifications provided or furnished by Engineer pursuant to this Agreement are instruments of service in respect of the Project and Engineer shall retain an ownership therein. Reuse of any documents pertaining to this project by the City on extensions of this project or on any other project shall be at the City's risk. The City agrees to defend, indemnify, and hold harmless Engineer from all claims, damages, and expenses including attorney's fees arising out of such reuse of the documents by the City or by others acting through the City.



- 1.1.4 The contract will be based on an hourly rate and reimbursable fee schedule with a maximum not-to-exceed amount.

1.2 Scope of Work

The Engineer shall:

- 1.2.1 Consult with the City, other agencies, groups, consultants, and/or individuals to clarify and define requirements for the Project and review available data.
- 1.2.2 Perform the tasks described in the Scope of Services. (See Exhibit A.)
- 1.2.3 Conduct a location survey of the Project to the extent deemed necessary to provide adequate site information.
- 1.2.4 Prepare a report presenting the results of the study as outlined in the scope of services.

Section 2—Information Provided by City

The City will provide any information in its possession for the project at no cost to the Engineer.

Section 3—Notice to Proceed

The City will issue a written notification to the Engineer to proceed with the work. The Engineer shall not start work prior to receipt of the written notice. The Engineer shall not be paid for any work performed prior to receiving the Notice to Proceed.

Section 4—Mutual Covenants

4.1 General

- 4.1.1 The Engineer shall not sublet or assign any part of the work under this Agreement without written authority from the City.
- 4.1.2 The City and the Engineer each binds itself and partners, successors, executors, administrators, assigns, and legal representatives to the other party to this agreement and to the partners, successors, executors, administrators, assigns, and legal representatives of such other party, regarding all covenants, agreements, and obligations of this agreement.
- 4.1.3 Nothing in this agreement shall give any rights or benefits to anyone other than the City and the Engineer.



- 4.1.4 This agreement constitutes the entire agreement between the City and the Engineer and supersedes all prior written or oral understandings. This agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.
- 4.1.5 The Engineer shall make such revisions in plans which may already have been completed, approved, and accepted by the City, as are necessary to correct Engineer's errors or omissions in the plans, when requested to do so by the City, without extra compensation therefore.
- 4.1.6 If the City requests that previously satisfactorily completed and accepted plans or parts thereof be revised, the Engineer shall make the revisions requested by the City. This work shall be paid for as extra work.
- 4.1.7 If the City changes the location from the one furnished to the Engineer, or changes the basic design requiring a new survey for the portions so changed, the redesign will be paid for as extra work.
- 4.1.8 The City may at any time by written order make changes within the general scope of this Agreement in the work and services to be performed by the Engineer. Any changes which materially increase or reduce the cost of or the time required for the performance of the Agreement shall be deemed a change in the scope of work for which an adjustment shall be made in the Agreement price or of the time for performance, or both, and the Agreement shall be modified in writing accordingly. Additional work necessary due to the extension of project limits shall be paid for as extra work.
- 4.1.9 Extra work, as authorized by the City, will be paid for separately and be in addition to the consideration of this Section.
- 4.1.10 For those projects involving conceptual or process development services, activities often cannot be fully defined during the initial planning. As the project does progress, facts and conditions uncovered may reveal a change in direction that may alter the scope of services. Engineer will promptly inform the City in writing of such situations so that changes in this agreement can be renegotiated.
- 4.1.11 This Agreement may be terminated (a) by the City with or without cause upon seven days' written notice to the Engineer and (b) by the Engineer for cause upon seven days' written notice to the City. If the City terminates the agreement without cause, the Engineer will be



paid for all services rendered and all reimbursable expenses incurred prior to the date of termination.

If termination is due to the failure of the Engineer to fulfill its agreement obligations, the City may take over the work and complete it. In such case, the Engineer shall be liable to the City for any additional cost to the extent directly resulting from Engineer's action.

- 4.1.12 The City or its duly authorized representatives may examine any books, documents, papers, and records of the Engineer involving transactions related to this agreement for three years after final payment. All examinations will be performed at reasonable times, with proper notice. Engineer's documentation will be in a format consistent with general accounting procedures.
- 4.1.13 The City shall designate a representative authorized to act on the City's behalf with respect to the Project. The City or such authorized representative shall render decisions in a timely manner pertaining to documents submitted by the Engineer in order to avoid unreasonable delay in the orderly and sequential progress of the Engineer's services.
- 4.1.14 Costs and schedule commitments shall be subject to renegotiation for delays caused by the City's failure to provide specified facilities or information or for delays caused by other parties, excluding sub-contractors and sub-consultants, unpredictable occurrences including without limitation, fires, floods, riots, strikes, unavailability of labor or materials, delays or defaults by suppliers of materials or services, process shutdowns, acts of God, or the public enemy, or acts of regulations of any governmental agency or any other conditions or circumstances beyond the control of the City or Engineer. Temporary delays of services caused by any of the above which results in additional costs beyond those outlined may require renegotiation of this agreement.
- 4.1.15 The City will give prompt written notice to the Engineer if the City becomes aware of any fault or defect in the Project or nonconformance with the Project Documents.
- 4.1.16 Unless otherwise provided in this Agreement, the Engineer and the Engineer's consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to hazardous materials in any form at the project site, including but not limited to asbestos products, polychlorinated biphenyl (PCB), or other toxic substances.



- 4.1.17 In the event asbestos or toxic materials are encountered at the jobsite, or should it become known in any way that such materials may be present at the jobsite or any adjacent areas that may affect the performance of Engineer's services, Engineer may, at their option and without liability for consequential or any other damages, suspend performance of services on the project until the City retains appropriate specialist CONSULTANT(S) or contractor(s) to identify, abate, and/or remove the asbestos or hazardous or toxic materials.
- 4.1.18 This agreement, unless explicitly indicated in writing, shall not be construed as giving Engineer the responsibility or authority to direct or supervise construction means, methods, techniques, sequences, or procedures of construction selected by any contractors or subcontractors or the safety precautions and programs incident to the work of any contractors or subcontractors.
- 4.1.19 Neither the City nor the Engineer, nor its Consultants, shall hold the other liable for any claim based upon, arising out of, or in any way involving the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids, or gases, waste materials, or other irritants, contaminants, or pollutants.
- 4.1.20 Neither the City nor the Engineer, nor its Consultants, shall hold the other liable for any claim based upon, arising out of, or any way involving the specification or recommendation of asbestos, in any form, or any claims based upon use of a product containing asbestos.
- 4.1.21 Engineer hereby represents and warrants that it does not fail or refuse to collect or remit South Dakota or City sales or use tax for transactions which are taxable under the laws of the State of South Dakota.

4.2 City of Rapid City NonDiscrimination Policy Statement

In compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination act of 1975, the Americans with Disabilities Act of 1990, and other nondiscrimination authorities it is the policy of the City of Rapid City, 300 Sixth Street, Rapid City, SD 57701-5035, to provide benefits, services, and employment to all persons without regard to race, color, national origin, sex, disabilities/handicaps, age, or income status. No distinction is made among any persons in eligibility for the reception of benefits and services provided by or through the auspices of the City of Rapid City.

Engineer will permit access to any and all records pertaining to hiring and employment and to other pertinent data and records for the purpose of enabling the Commission, its agencies or representatives, to ascertain compliance with the above provisions.



This section shall be binding on all subcontractors or suppliers.

Section 5—Payments to the Engineer

5.1 Schedule of Pay Rates

The City will pay the Engineer for services rendered or authorized extra work according to the Engineer's hourly and reimbursable rate schedule described in Exhibit C.

5.2 Fee

Task 1, Task 2, and Task 3

The maximum amount of the fee for the services as detailed in Section 1.2 shall not exceed **\$74,668.00** for Task 1, Task 2 and Task 3 unless the scope of the project is changed as outlined in Section 4. If expenses exceed the maximum amount, the Engineer shall complete the design as agreed upon here without any additional compensation. Sub task dollar amounts may be reallocated to other tasks within Task 1, Task 2, and Task 3 as long as the total fee is not exceeded. Prime consultant may not mark up sub-consultant or sub-contractor services.

Task 4 and Task 5

The maximum amount of the fee for the services as detailed in Section 1.2 shall not exceed **\$50,288.00** for Task 4 and Task 5 unless the scope of the project is changed as outlined in Section 4. If expenses exceed the maximum amount, the Engineer shall complete the design as agreed upon here without any additional compensation. Sub task dollar amounts may be reallocated to other tasks with Task 4 and Task 5 as long as the total fee is not exceeded. Prime consultant may not mark up sub-consultant or sub-contractor services.

5.3 Progress Payments

Monthly progress payments shall be processed by the City upon receipt of the claim as computed by the Engineer based on work completed during the month per the hourly rates and allowable reimbursable as established in Section 5.1 and approved by the City.

Net payment to the Engineer shall be due within forty-five (45) days of receipt by the City.



Section 6—Completion of Services

Task 1, Task 2, and Task 3

The Engineer shall complete services for Task 1, Task 2, and Task 3 on or before **August 31, 2015** based on an award date on or before **May 5, 2014**.

Task 4 and Task 5

The Engineer shall complete services for Task 4 and Task 5 on or before **June 30, 2018**.

Section 7—Insurance Requirements

7.1 Insurance Required

The Engineer shall secure the insurance specified below. The insurance shall be issued by insurance company(s) acceptable to the City and may be in a policy or policies of insurance, primary or excess. Certificates of all required insurance including any policy endorsements shall be provided to the City prior to or upon the execution of this Agreement.

7.2 Cancellation

The Engineer will provide the City with at least 30 days' written notice of an insurer's intent to cancel or not renew any of the insurance coverage. The Contractor agrees to hold the City harmless from any liability, including additional premium due because of the Contractor's failure to maintain the coverage limits required.

7.3 City Acceptance of Proof

The City's approval or acceptance of certificates of insurance does not constitute City assumption of responsibility for the validity of any insurance policies nor does the City represent that the coverages and limits described in this agreement are adequate to protect the Engineer, its consultants or subcontractors interests, and assumes no liability therefore. The Engineer will hold the City harmless from any liability, including additional premium due, because of the Engineer's failure to maintain the coverage limits required.



7.4 Specific Requirements

- 7.4.1 Workers' compensation insurance with statutory limits required by South Dakota law. Coverage B-Employer's Liability coverage of not less than \$500,000 each accident, \$500,000 disease-policy limit, and \$500,000 disease-each employee.
- 7.4.2 Commercial general liability insurance providing occurrence form contractual, personal injury, bodily injury and property damage liability coverage with limits of not less than \$1,000,000 per occurrence, \$2,000,000 general aggregate, and \$2,000,000 aggregate products and completed operations. If the occurrence form is not available, claims-made coverage shall be maintained for three years after completion of the terms of this agreement. The policy shall name the City and its representatives as an additional insured.
- 7.4.3 Automobile liability insurance covering all owned, nonowned, and hired automobiles, trucks, and trailers. The coverage shall be at least as broad as that found in the standard comprehensive automobile liability policy with limits of not less than \$1,000,000 combined single limit each occurrence. The required limit may include excess liability (umbrella) coverage.
- 7.4.4 Professional liability insurance providing claims-made coverage for claims arising from the negligent acts, errors or omissions of the Engineer or its consultants, of not less than \$1,000,000 each occurrence and not less than \$1,000,000 annual aggregate. Coverage shall be maintained for at least three years after final completion of the services.

Section 8—Hold Harmless

The Engineer hereby agrees to hold the City harmless from any and all claims or liability including attorneys' fees arising out of the professional services furnished under this Agreement, and for bodily injury or property damage arising out of services furnished under this Agreement, providing that such claims or liability are the result of a negligent act, error or omission of the Engineer and/or its employees/agents arising out of the professional services described in the Agreement.

Section 9—Independent Business

The parties agree that the Engineer operates an independent business and is contracting to do work according to his own methods, without being subject to the control of the City, except as to the product or the result of the work. The relationship between the City and the Engineer shall be that as between an independent contractor and the City and not as an employer-employee relationship. The payment to the



Engineer is inclusive of any use, excise, income or any other tax arising out of this agreement.

Section 10-Indemnification

If this project involves construction and Engineer does not provide consulting services during construction including, but not limited to, onsite monitoring, site visits, site observation, shop drawing review and/or design clarifications, City agrees to indemnify and hold harmless Engineer from any liability arising from the construction activities undertaken for this project, except to the extent such liability is caused by Engineer's negligence.

Section 11-Controlling Law and Venue

This Agreement shall be subject to, interpreted and enforced according to the laws of the State of South Dakota, without regard to any conflicts of law provisions. Parties agree to submit to the exclusive venue and jurisdiction of the State of South Dakota, 7th Judicial Circuit, Pennington County.

Section 12-Severability

Any unenforceable provision herein shall be amended to the extent necessary to make it enforceable; if not possible, it shall be deleted and all other provisions shall remain in full force and effect.

Section 13—Funds Appropriation

If funds are not budgeted or appropriated for any fiscal year for services provided by the terms of this agreement, this agreement shall impose no obligation on the City for payment. This agreement is null and void except as to annual payments herein agreed upon for which funds have been budgeted or appropriated, and no right of action or damage shall accrue to the benefit of the Engineer, its successors or assignees, for any further payments. For future phases of this or any project, project components not identified within this contract shall not constitute an obligation by the City until funding for that component has been appropriated.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.



City of Rapid City:

MAYOR

Engineer:

Brian L. Hoellein
BARTLETT & WEST, INC.

DATE: _____

DATE: 4/8/14

ATTEST:

FINANCE OFFICER

Reviewed By:

[Signature]
Morgan Gagliano, PROJECT MANAGER

DATE: 4/4/14

CITY'S DESIGNATED PROJECT
REPRESENTATIVE

ENGINEERING FIRM'S DESIGNATED
PROJECT REPRESENTATIVE

NAME Morgan R. Gagliano
PHONE (605) 394-4154
EMAIL morgan.gagliano@gmail.com

NAME Brian L. Hoellein
PHONE (605) 373-5909
EMAIL brian.hoellein@bartwest.com



EXHIBIT A

Red Rocks Booster Pump Station Upgrades Project Number 14-2177/ CIP 50812.B

BACKGROUND

1. ***Existing Pump Station Background Summary:*** The Red Rocks Booster Pump Station was constructed in 2002 and provides service to the Selador Zone from the Carriage Hills Pressure Zone. The static hydraulic grade between the two zones varies from approximately 4220 ft to 3995 ft. The existing pump station is an above grade pump station with one 25 gpm jockey pump for periods of low demand, two 150 gpm centrifugal pumps for normal service and two 500 gpm centrifugal pumps for fire flow conditions. Red Rocks BPS is a constant pressure system that uses a hydro accumulator tank. The system currently does not have VFD's. It does have the ability to be remotely controlled. This BPS is critical to feed the Selador zone because it is the only infrastructure providing pressure to the zone. There is no reservoir feeding the Selador zone currently.
2. ***Proposed Pump Station:*** The Red Rocks BPS is in need of a capacity increase due to expansion of the service area including North Countryside Subdivision as well as future developable property to the west. Additionally, the structures constructed within the station's service area require considerably more fire flows than what the original station was designed for. The selected consultant shall design new pumps and controls for Red Rock BPS to provide additional capacity to serve the City's expanded service area to the west. The design is expected to take into account fire flow as well as new growth. The design is also expected to account for the long term conversion to a conventional station that will pump to storage reservoir. If the proposed design affects building footprint, the consultant shall provide for the required structural changes as well. The project is proposed to be designed in 2015 and constructed in 2016. Project objectives include but are not limited to:
 - Pump and control upgrades in the existing facility. Design and specification of the pumps including pumps capable of providing a firm pumping that will accommodate peak hour or peak day plus fire flow, whichever is determined to be greatest by the consultant. Alternative pump number and capacity arrangements will be considered. It is important to note that the Red Rocks BPS serves an area that is not served by a reservoir.
 - The station and pump design will have a design life and mechanical component life in accordance with the City Infrastructure Design Criteria Manual (IDCM) Section 3.10.3 (1) and supplementary design criteria, whichever is longer.
 - Detailed surge analyses for various emergency, pump stop and valve closure conditions.
 - The City is moving to variable speed drives (VFD) on many pumps. It is the intent of this project to evaluate the efficacy of VFD controls on the proposed pumping equipment where appropriate.
 - Pressure tank sizing shall be evaluated along with analysis of existing pump station concerns.

EXHIBIT A
Red Rocks Booster Pump Station Upgrades
Project Number 14-2177/ CIP 50812.B

- Evaluation of the existing emergency generator capabilities to handle new pumps and upgrades and design upgrades, if necessary.
- Infrastructure sizing into and out of the BPS shall be verified with modeling of the newly acquired service areas, and, if sizing is insufficient, alternatives shall be proposed for increasing suction and discharge capacity.
- ~~If structural changes are needed, requirements described in "A. North Rapid BPS" shall apply herein.~~
- ~~Any additions or modifications to the structure shall meet or exceed all applicable regulations including building code and City requirements.~~
- Develop a set of clear contract documents that will allow the necessary improvements to be efficiently and economically bid and constructed.
- The pump station currently has a system of controls in place for local and remote operation and monitoring. Any system controls shall be designed to be integrated into the City's existing SCADA system by a control system design specialist (integrator/instrumentation and control engineer). It is anticipated that the contract provisions will require an Integrator as part of the general contractor's subcontractors.
- This project will be bid on unit pricing. The consultant shall develop lump sum unit pricing for individual components. It is anticipated that the contractor will be required to provide a schedule of values attached to applicable lump sum items. The consultant will develop a specification to accommodate this.
- The Consultant will prepare an Operations and Maintenance (O&M) Manual for the pump station. The Contractor provided O&M Manual will be considered as supplementary to the O&M manual provided herein. Detailed operation information shall be included in the O&M Manual including Startup sequence (normal, emergency), Shutdown sequence (normal, emergency), Normal Operation, Troubleshooting. Operations description shall include a general narrative in addition to specific control discussion (e.g. local, on, off, auto, and remote). The selected consultant shall involve the integrator/instrumentation and control engineer in the development/review of the O&M Manual for development of the control language and to verify continuity between disciplines.
- The Consultant shall provide Construction Administration services. The consultant should demonstrate their personnel/staff expertise with respect to managing the construction. The City is designing for a top notch facility and the construction component carries the same importance as the design.
- Specific requirements as outlined in Tasks 1 through 5 and the Supplemental Design Criteria.
- It is the intent of this project that a complete and fully operational facility is delivered, and it is expected that all other items that are needed for successful completion of the project, whether explicitly expressed or not, within normal reason, are incorporated for the successful completion of the project.

Following further discussions with the City, for the purposes of this scope of work, the following assumptions are made:

- **Project changes should stay within the confines of the existing building.**

- **The generator will not be upsized but controls will be modified as necessary for generator to run the way the City and Consultant intends.**
- **The general plan for the pumps will be to remove the triplex pump skid, add VFDs to the existing fire pumps, and provide new pumps that will serve now and in the future.**
- **The design report will outline the transition from Constant pressure pumping to a system pumping to a reservoir.**

TASK 1 - PRELIMINARY DESIGN SERVICES:

This task consists of all services necessary to take the project from beginning through the Preliminary Design submittal stage, and may include the following itemized services.

- 1.1 Kick-off Conference: The consultant shall meet with City staff to detail project concept and scope. The consultant shall prepare an agenda, take minutes, and distribute minutes within 48 hours of the meeting.
- 1.2 Review background information listed below and any other resources as necessary. Summarization of understanding of this review is anticipated in the design report. This includes but is not limited to:
 - City of Rapid City GIS maps,
 - City of Rapid City *Utility System Master Plan* (Burns & McDonnell, 2008),
 - City of Rapid City *Municipal Water System* (FMG Inc. 1985)
 - City of Rapid City benchmark data,
 - City of Rapid City water, sanitary sewer and storm sewer maps,
 - City of Rapid City historical bid tabulation/cost data, and plans of existing facilities.
 - Anamosa Street Reconstruction Phase 2 Haines Ave. to Midway St. Water and Sanitary Reconstruction. City of Rapid City Project No. SSW07-1472 CIP 50519 PCN XOOY (F.M.G., 2010).
 - Holiday Inn, North Street, and Farlow Avenue Water Main Reconstruction. City of Rapid City Project No. W07-1631 CIP #50465.
 - “Red Rocks Estates Booster Station”, by Dream Design International (D.D.I) (2002).
 - “Red Rocks Estates Phase 1”, by Dream Design International (D.D.I) (2000).
 - “Alma Street, Gladys Streets, and Lennon Lane Area Water Main Extension City of Rapid City Project No. 12-2039 CIP No 50912”, by Dream Design International (D.D.I) (2013).
 - “Northridge Water Booster Station City of Rapid City Project No. W10-1898 CIP No 50834”, by Dream Design International (D.D.I) (2013).
 - “Northridge Water Storage Reservoir City of Rapid City Project No. W09.1792 CIP No 50754”, by Banner Associates (2013).
 - “North Deadwood Avenue Water System Expansion Study”, by Ferber Engineering Company, Inc. (2003).
 - “Planning Report for Skyline, Terracita, Southwest, Carriage Hills, and Future Southwest Rapid City Water Service Zones” Project No.

EXHIBIT A
Red Rocks Booster Pump Station Upgrades
Project Number 14-2177/ CIP 50812.B

W03-953.M1, by CETEC Engineering Services, Inc. dated April 25, 2006.

- “Well 12 and Stoney Creek Booster Station”, by CETEC Engineering Services, Inc. dated June 6, 2009.
- City of Rapid City Supplemental Design Criteria – Regional Water Facilities.

- ~~1.3 Perform site surveys sufficient for design plan preparation. The route and topography survey shall be tied to at least two City of Rapid City Monument Control system monuments utilizing State Plane coordinates.~~
- 1.4 Identify the existing right of way (ROW) location and permanent and temporary construction acquisition needs necessary for the Project. Include size and extent of such ROW and easements and contact information of property owners. Identify additional land required for the project. It is anticipated additional land will not be required.
- ~~1.5 Prepare preliminary opinion of probable construction costs for the project. The design projects will be bid on unit pricing. The consultant shall develop lump sum unit pricing for individual components. It is anticipated that the contractor will be required to provide a schedule of values attached to applicable lump sum items. The consultant will develop a specification to accommodate this. Covered in section 1.15.ff.~~
- ~~1.6 Recommend location and extent of geotechnical services investigation necessary to complete design. Geotechnical services typically will be a subconsultant to the Consultant, and payment for geotechnical services is the responsibility of the Consultant. This section will be completed in conjunction with section 1.15.ii.~~
- 1.7 Any system controls proposed for the designs shall be designed to be integrated into the City’s existing SCADA system by a control system design specialist (integrator/instrumentation and control engineer). It is anticipated that the contract provisions will require an Integrator as part of the general contractor’s subcontractors. Payment for ~~integrator/~~ instrumentation and control professional services is the responsibility of the Consultant. Recommend extent of services necessary to complete design. Services are required to be completed by an instrumentation and control/controls/~~integration~~ engineer or experienced professional with a minimum of 10 years of experience in municipal water projects. Services under this task will focus on the City’s overall SCADA system for the water distribution system. Work will include meetings and field investigation to clearly gain an understanding of the existing master control PLC (Siemens LC 3000), and how new or modified remote stations and vaults will be able to interact with the existing master control PLC, or if a second parallel system will be required. The Consultant will communicate with the local representative for the existing system.
- ~~1.8 The site design shall protect the surrounding environment and comply with all existing environmental regulations and laws.~~
- ~~1.9 Public Involvement/Presentations: Public participation and information will be an important part of the project(s). The Consultant will develop and distribute a survey questionnaire to property owners adjacent to proposed new construction areas approximately 3 months or more ahead of soliciting bids for construction. The questionnaire should be developed to obtain information on site specific concerns such as building aesthetics, concerns, and special needs such as access considerations during construction, or history of utility or infrastructure problems in this area. Questionnaires would be returned to and evaluated by the consultant, who would follow up with appropriate individual contact with property~~

~~owners prior to completion of 100% plans and contract documents to review project considerations that may be addressed or mitigated by the project work. Arrange and conduct public and /or affected property owners meetings. The Consultant shall provide the City with any and all necessary drawings, renderings, and exhibits to convey the intent of the design to City Departments, committees, neighborhood groups, and other interested parties.~~

- ~~1.10 Meet with individual property owners regarding ROW and permanent and temporary easement needs and regarding specific project issues and components, if necessary.~~
- ~~1.11 The facility shall take special care to accommodate the accessibility needs for the disabled as required by the City, paying particular attention to the Americans with Disabilities Act (ADA).~~
- 1.12 Attend submittal review meeting with City staff, as necessary.
- 1.13 Attend Public Works and Council meetings as necessary. Following discussion with City, no meetings are included.
- 1.14 Quality Assurance/Quality Control Plan (QA/QC) is critical to project success and is expected throughout the project. QA/QC shall include but shall not necessarily be limited to: Schedule monitoring and compliance, Milestone monitoring, Project reviews - both internal and external, Project communications, Project meetings, Standards used, Cost review and control, and Technical design review. The Consultant is responsible for providing a quality control plan at the kickoff meeting.
- 1.15 Preliminary Design Submittal: The Consultant shall prepare the Preliminary Design Submittal. The Preliminary Design Submittal shall generally consist of the following documents:

A. Red Rocks Booster Pump Station Improvements

- 1. Design Report Design Report: Note***The Design Report shall be named the “name of project–Design Report” through all (Preliminary, Intermediate, and Final) until at which time that the Design Report is Finalized. At this point, the consultant may add “Final” to the Report Name.**
 - a) The Consultant shall, prior to submission of the Design Report, develop a proposed table of contents for City PM review. It is the intent that all Preliminary Design analysis and findings be clearly explained in the Design Report. This includes, but is not limited to, options presented to the City for review, an outline of compliance with regulatory criteria, and results of all analyses including design calculations.
 - b) Hydraulic Modeling: Meet and get existing model from City. Load model on Consultant computer, run analysis and compare to City results for same analysis. Using current water Master Plan, City design criteria, and City growth information, discussions with the City to develop future pumping rates. Determine pumping head and various flow rates (develop system curve). Evaluate capacity and flow velocities in transmission mains. If areas of concern are noted, evaluate mitigation alternatives. Evaluate Fire flows. When appropriate, run extended period simulations to model tank fluctuation and pump run times. NO FIELD CALIBRATION OR FIELD DATA COLLECTION IS INCLUDED. City shall provide available data on existing pumps when requested by the Consultant.

EXHIBIT A
Red Rocks Booster Pump Station Upgrades
Project Number 14-2177/ CIP 50812.B

- c) The Design Report shall provide discussion for how the pumping facility will provide additional capacity (Capacity is needed due to the expansion of the distribution system in the pump station service area including North Countryside Subdivision as well as future developable property to the west that may be served by the City.) The overall objective of this work is to provide professional services for the upgrade of the pumps in the existing facility.
- d) The Design Report shall provide discussion for how the upgraded pumping facility will provide for required design life as required in the City Infrastructure Design Criteria Manual and Supplement Design Criteria.
- e) Complete site visits, and the Design Report shall provide a listing of the existing pump station concerns.
- ~~f) The Design Report shall discuss options and alternatives for structural design and materials, including foundation, floor, walls, and roof.~~
- ~~g) The Design Report shall discuss options for architectural aspects for expansion of the existing building.~~
- ~~h) The Design Report will evaluate options related to the pump station site and grading changes, and drainage.~~
- i) The Consultant shall provide a minimum of 3 1 or 2 booster pump type options for the booster pump facility. The Consultant shall provide an alternatives analysis of the pumps including pump cost, footprint, and horsepower. The Consultant shall provide system head curve versus pump curve(s) graphs that include variable speed curves, if proposed, efficiency curves, and pump acceptable operating range. The Consultant shall provide analysis for one pump to all firm capacity pumps in operation to show the system head curve operating conditions are met. The Consultant shall provide recommendation for the type of pump recommended from the aforementioned pump option analysis. The Consultant shall confirm that a minimum of three manufacturers exist that can supply the recommended pump design.
- j) The Consultant shall provide a 30 year life cycle cost analysis for the recommended pumping system. The Consultant shall include detailed calculations including equations supporting the life cycle cost analysis. The detailed calculations shall be provided in a way that the PM can review these calculations.
- ~~k) The City is moving to variable speed drives (VFD) on many pumps. It is the intent of this project to evaluate the efficacy of installing VFD controls on the proposed pumping equipment where appropriate. The Consultant shall provide a discussion of constant speed versus variable speed pumping for the proposed pump station, shall provide a listing of pros and cons, and shall provide a recommendation for the proposed pump station. The comparison of constant versus variable speed pumping may be included in the life cycle cost analysis. The City has agreed that VFDs will be utilized and evaluation is not required. It is planned that VFDs will be incorporated, and evaluation and preliminary design is covered under 1.15.y.~~
- l) Pressure tank sizing shall be evaluated.
- m) Detailed surge analysis for various emergency, pump stop and valve closure conditions. The Consultant shall provide recommendations based on their analysis, and the consultant will incorporate surge mitigation into the proposed pump station. The Consultant shall provide recommendations based on their analysis, and the consultant will incorporate into Design Report detailing their

findings and recommendations. The report will include analysis, findings, and recommendations for operation changes and improvements, as necessary. Field data collection will be obtained by the Consultant as required to complete analysis. The City will assist in data collection as needed, within reason. The City will not perform extensive field assistance.

- ~~n) Infrastructure sizing into and out of the BPS shall be verified with modeling of the newly acquired service areas, and, if sizing is insufficient, alternatives shall be proposed for increasing suction and discharge capacity.~~
- o) The Consultant will provide in the Design Report, a discussion on anticipated operation including a narrative on Normal Operation and anticipated emergency failure circumstances. Operations description shall include the general narrative that will lead to control description development.
- ~~p) The Design report shall address security of the pump station. Security features shall not detract from the architecture of the building.~~
- ~~q) The Design report shall address Site lighting. Site lighting shall be adequate for security and operations yet it shall not create a nuisance condition to area residents~~
- ~~r) The Design report shall consider anticipated noise and provide options for mitigation of operational noise production at the facility including but not limited to pump operation, generator noise, electrical gear, and HVAC systems. Selected consultant will provide recommendations for maximum noise db, and noise shall be limited by design to no more than the recommended and agreed upon noise at the property line. The selected consultant shall include this in the design report.~~
- s) Any system controls required for the pump station shall be designed by a control specialist and provisions shall be made that they are incorporated into the City's existing SCADA system. Complete instrumentation and control diagrams including local equipment control, control at the motor control center, and remote SCADA control are expected for all systems required for the operation of the pumps are expected in design. Work under this task will focus on the Red Rock Pump station facility. Work under this task will be completed in conjunction with Task 1.7.
- t) The Design Report shall address how all of the improvements shall meet the operational and maintenance requirements of the City.
- u) The Design Report shall address how all improvements and modifications shall meet SD DENR requirements.
- ~~v) The Design Report shall address how any additions shall meet or exceed all building codes and City requirements.~~
- w) The Design Report shall address what design measures are put in place to aid the facility can operate un-staffed with only occasional daily checks by City personnel.
- ~~x) The Design report shall address how landscaping will be placed around the site to provide screening of the facility and an attractive and pleasant looking facility.~~
- y) The Design Report shall include a discussion of the major electrical components, proposed equipment list, anticipated electrical draw for the station, and electrical code requirements and intended compliance. This task shall also evaluate if the existing generator is still functional for this facility, or will size a new larger generator.

EXHIBIT A
Red Rocks Booster Pump Station Upgrades
Project Number 14-2177/ CIP 50812.B

- ~~z) The Design Report shall include a discussion of the major mechanical components, anticipated HVAC requirements, and proposed equipment. It is expected that the report will provide a discussion on compliance with regulatory requirements.~~
- ~~aa) The Design Report shall include discussion on plumbing within the pump station, and anticipated equipment.~~
- bb) The Consultant shall include design life, design criteria, and reference of design resources. The Consultant shall use the City Infrastructure Design Criteria Manual to establish design criteria and standards.
- ~~cc) Provide justification for the facility.~~
- ~~dd) The Design Report shall provide review of compliance with City's Standard Specifications for construction of the project(s).~~
- ~~ee) The project's geotechnical report shall be included within the Preliminary Project Design Report and include soil classifications, N values, water levels, proctors, CBR's, resistivity tests, pavement design, and testing recommendations.~~
- ff) A probable opinion of construction costs for the project(s) shall be included. The costs shall be itemized based on the City's standard bid items and appropriate contingency item allowance. This project will be bid on unit pricing. The consultant shall develop lump sum unit pricing for individual components. It is anticipated that the contractor will be required to provide a schedule of values attached to applicable lump sum items. The consultant will develop a specification to accommodate this.
- gg) The Consultant shall provide an intended table of contents of what they intend to include in the required O&M Manual for the project. It is expected that the O&M manual will include detailed O&M information including startup sequence(normal, emergency), Shutdown sequence (normal, emergency), Normal Operation, Troubleshooting, etc. The Consultant shall meet with utility maintenance staff to discuss what their needs and concerns are. These meeting minutes will be included in an appendix of the Design Report.
- hh) The consultant shall submit, in an appendix for review and approval, the template for the construction daily reports to be submitted in Task 5 (5.1 Prepare daily reports.)
- ii) Additional requirements including but not limited to surge analysis, flow metering provisions, and power costs, are provided for in the Supplemental Design Criteria in Attachment 7 of the RFP. Work covered under other task items. No specific fee is associated with this item.
- jj) The Design Report shall evaluate and investigate options to maintain water service to the downstream distribution systems, while the Red Rock pump station is under upgrade construction.
- kk) Design Report Submittal:
 - i. The Consultant will prepare a report which summarizes, documents, and discusses the findings, and recommendations of the previous sub-tasks.
 - ii. The Consultant shall deliver the following:
 - Submit four (4) paper copies and an electronic PDF version of the Design Report along with or before the submission of Preliminary plans and specifications to City's PM for review

and comment. Preliminary plans and specifications are described in further detail in the following section.

- The Consultant will attend a review meeting with the City of the Design Report submittal.

2. Preliminary Design Plans

- a) The Engineer shall develop sufficient types and numbers of drawings to convey the design concepts being proposed. Drawings to be produced shall include but shall not be limited to: Floor, equipment, and piping plans, sections, elevations, and details.
- b) The Preliminary drawings shall contain, at minimum, the following sheets:
 - i. General
 - Cover Sheet – Note the index of Sheets indicating the anticipated drawing sheets shall be provided.
 - Plan Sheet Index
 - ii. Abbreviations, General Notes/Civil/Site/Underground/Landscape
 - ~~Survey Control Sheet~~
 - Phasing Plan-Identify how the proposed booster station will come on line while the existing water mains remain active.
 - Site Plan-Show existing and proposed site information and booster station features.
 - Anticipated traffic control phasing and ~~erosion control~~ measures
 - Property Layout and Land Ownership
 - Utility Plan and Profile Sheets - Show existing and proposed utility mains and existing services, storm sewers, driveway locations, fittings, and proposed surfacing and drainage items. The utilities should be shown in profile as well. ~~Design Criteria elements like profile grades, “K” values, vertical and horizontal curve data should be included, if necessary.~~
 - ~~Landscaping.~~
 - Special Details – If Needed
 - iii. ~~Architectural~~
 - ~~Design Criteria, and Codes~~
 - ~~Floor Plan~~
 - ~~Building Exterior Elevations – General~~
 - ~~Building Wall Sections – General~~
 - ~~Roof Plan~~
 - ~~Special Details – If Needed~~
 - iv. ~~Structural~~
 - ~~Design Criteria, and Codes~~
 - ~~Floor Plan~~
 - ~~Foundation Section~~
 - ~~Floor and Wall Sections – General~~
 - ~~Special Details – If Needed~~
 - v. Process/Pumps/Above Floor Pipe and Valves
 - Process Design Criteria, Hydraulics
 - Design Criteria, and Codes
 - Floor Plan

- Sections - General
 - 3D Views
 - Special Details – If Needed
 - vi. ~~Mechanical/HVAC~~
 - ~~Design Criteria, and Codes~~
 - ~~Floor Plan~~
 - ~~Sections - General~~
 - ~~Special Details – If Needed~~
 - vii. ~~Plumbing~~
 - ~~Design Criteria, and Codes~~
 - ~~Floor Plan~~
 - ~~Sections - General~~
 - ~~Special Details – If Needed~~
 - viii. Electrical
 - Design Criteria, and Codes
 - Floor Plan
 - Sections - General
 - Special Details – If Needed
 - ix. Instrumentation and Control
 - Design Criteria, and Codes
 - Schematic Diagrams
 - Piping and Instrumentation Diagram
 - Floor Plan
 - ~~x. Anticipated Rapid City Standard Details.~~
 - xi. Special Details – If needed, anticipated Rapid City Standard Details. Plan sheets shall be prepared utilizing the latest City Drafting Standards. Work covered under other task items. No specific fee associated with this item.
- c) Preliminary Plans Submittal:
- i. The Consultant shall deliver the following:
 - Preliminary Drawings
 - ii. Submit four (4) paper copies and an electronic PDF version of the Preliminary plans and specifications to City’s PM for review and comment.
 - iii. The Consultant will attend a review meeting with the City of the Preliminary Plans submittal.

3. Preliminary Design Specifications

- a) The preliminary design specifications shall contain, at minimum, the following sheets:
 - i. Detailed Table of Contents including all anticipated specifications. Specifications will utilize the most current CSI numbering system, consisting of 48 divisions.
 - ii. The City is responsible for preparing “Front End Documents”
 - iii. Consultant will prepare Schedule of Bid Items. Will be a combination of unit priced, and lump sum items. Including a specification defining schedule of values and how they relate to the lump sum portions of the unit pricing.

- iv. Preliminary Design phase level major equipment specifications including but not limited to pumps, valves, variable frequency drive, surge equipment, etc.
 - v. A control and instrumentation specification with modes of operation shall be a requirement in this submittal. This specification should include a general operation and control narrative along with control descriptions.
- b) Preliminary Specifications Submittal:
- i. The Consultant shall deliver the following:
 - Preliminary Specifications
 - ii. Submit four (4) paper copies and an electronic PDF version of the Preliminary Specifications to City's PM for review and comment.
 - iii. The Consultant will attend a review meeting with the City of the Preliminary Specification submittal.

4. Project Management

- a) The Consultants' PM and the City's PM will hold bi-weekly check-in and progress meetings. These meetings will primarily be held remotely by phone or video conference. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
- b) Update project schedule, in MS Project, on a monthly basis.
- c) General Project Management: Prepare detailed monthly invoice and supporting documents, track monthly fee/budget, coordination with sub-consultants, and other general project coordination

5. Project Meetings

In addition to the special meetings identified in the previous tasks, the following meetings are also anticipated:

- a) Monthly progress meetings. The Consultant's PM will attend in person, or a designated representative. Other consultant project team members will attend either in person, or remotely, as dictated by the meeting agenda. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
- b) Consultant internal project meetings. Anticipated to be one per month, in-between the monthly meetings with the City.

TASK 2 - FINAL DESIGN SERVICES:

The Consultant shall not proceed with Final Design until receipt of written approval of the final Preliminary design from the City. This task consists of all services necessary to take project from Task 1 Preliminary Design Services through the Final Design Services, and may include the following itemized services:

- 2.1 Address City comments from the Task 1 City review(s) and finalize Design Report. The Design Report should be now titled "Project Design Report".
- 2.2 Provide project layout to include lot lines (front and side) and addresses of all properties (adjacent to construction, or alternatively, in service area). Identify if property is owner occupied or a rental.
- ~~2.3 Determine removal limits with approval of City representative.~~
- ~~2.4 Coordinate with the geotechnical engineer to complete these services, and provide a geotechnical report to be included in the Project Design Report and project plans or specifications;~~
- 2.5 Coordinate with the control system design specialist (integration professional/instrumentation and control engineer) to complete these services, and provide detailed control descriptions in specification format to be included Project Design Report as an appendix and project plans or specifications. It is the expectation of the City that the detailed control descriptions in specification format will follow the general control narrative provided by the discipline pump station designer/~~manager~~. Services are required to be completed by an instrumentation and control/~~controls/integration~~ engineer or experienced professional ~~with a minimum of 10 years of experience~~ in municipal water projects.
- 2.6 Incorporate design features as necessary to meet the requirements outlined in the Project Design Report. Work covered under other task items. No specific fee is associated with this item.
- ~~2.7 Incorporate ADA compliance items for example fillet, driveway and sidewalk improvements. All applicable ADA requirements shall be outlined in the Project Design Report.~~
- ~~2.8 Provide a complete stormwater pollution prevention narrative which will include detailed erosion and sediment control measures and specifications. Provide a complete erosion and sediment control site plan which includes station and offset locations for each implemented measure. Include both temporary and permanent erosion and sediment control measures. Include an erosion and sediment control sequence of implementation and phasing schedule. Each erosion control item shall be bid separately.~~
- 2.9 Provide detailed traffic control plans showing all devices required for a MUTCD compliant plan. Show all streets and alleys that may be impacted by this project. Show all existing signage, pavement markings, etc. All work zones, road closures, lane closures, and pavement marking removals shall be indicated on the plan. A detailed layout will be included for each phase of multi-phased projects. The traffic control sequence of implementation and phasing schedule shall coincide with erosion and sediment control sequence of implementation and phasing schedule. ~~Each traffic control device shall be bid separately.~~ Anticipate the traffic control will be bid as a lump sum bid item. The City will provide an electronic version of an aerial photo for the selected consultant's use. Required due to limited project site. Some construction will need to occur from the street.

- 2.10 Provide a Project Sequence of implementation and phasing schedule which shall include such items as water supply during tie-ins, traffic control, ~~erosion and sediment control~~, utility installations, paving, restoration, and construction milestones.
- 2.11 Coordinate directly with utility companies' engineering divisions to ensure that all existing utilities are completely and accurately identified and located in the field; that pertinent information regarding depth, material, size, etc. are noted on the plans; and that conflicts requiring relocation of utilities or special construction techniques are fully specified in the contract documents. Preliminary plans shall be provided to the pertinent utilities for comment at the time they are complete followed by a specific private utility coordination meeting in two to three weeks. The Consultant will coordinate and attend meetings with utility companies as needed.
- ~~2.12 Notify the City PM if private utilities will need to be relocated so the PM can formally notify the utilities to relocate. The Consultant will hold meetings with utility companies if needed.~~
- ~~2.13 If desiring exceptions from City requirements or specifications, it is the Consultant's responsibility to request and secure exceptions. Failure by the City to comment on a nonconforming item during a review does not constitute the granting of an exception.~~
- 2.14 Provide detailed specifications supplementing the City Standard Specifications, as necessary. Typically project drawing specific issues should be indicated as a General Note on the drawings. Material types and material specific items would be included as a detailed specification. In general it is anticipated that City's standard specifications will apply to site design, and underground facilities. It is anticipated the Consultant will need to provide detailed specifications for above ground facilities.
- 2.15 Engineer shall obtain a design exception for Infrastructure Design Criteria manual requirements as needed.
- 2.16 The Engineer shall provide design, and a specification section to address maintaining water service to downstream distribution systems, while the Red Rock pump station is under upgrade construction.
- 2.17 Provide complete plans and specifications for a unit price and lump sum construction contract. Plan sheets shall be prepared utilizing the latest City Drafting Standards. Plan sheet sections will include plan views, sections and elevations, and details as needed to complete the project plans. City standard details will be used when appropriate. The Consultant will provide additional details. Sections will include:
 - a) General: Estimated to be 2 to 3 sheets.
 - ~~b) Civil/Site/Underground/Landscape: Estimated to be 1 to 3 sheets.~~
 - ~~c) Architectural: Estimated to be 2 to 4 sheets.~~
 - ~~d) Structural: Estimated to be 2 to 4 sheets.~~
 - ~~i. Include bridge crane.~~
 - e) Process/Pumps/Above Floor Pipe and Valves: Estimated to be 6 to 8 sheets.
 - ~~f) Mechanical/HVAC: Estimated to be 2 to 3 sheets.~~
 - ~~g) Plumbing: Estimated to be 1 to 2 sheets.~~
 - h) Electrical: Estimated to be 3 to 5 sheets.
 - ~~i. Include generator design for the re-use of the existing generator if it is determined to be adequate for the new loads, or a new generator.~~
 - ii. Will detail and/or specify location of conduit (i.e. buried or exposed).
 - iii. Will include conduit and wiring schedules to clearly indicate runs from device to panel.
 - iv. Will detail and/or specify conduit supports.
 - i) Instrumentation and Control: Estimated to be 3 to 5 sheets

- i. Include control wiring schedule to clearly indicate runs from device to PLC.
- 2.18 Plans documents shall adhere to current City guidelines. Elaborate on guidelines as necessary. Work covered under other task items. No specific fee associated with this item.
- 2.19 ~~Staking information shall include either of the following formats:~~
 - a) ~~On the plans~~
 - ~~Station offsets for all items of work requiring field staking.~~
 - b) ~~In tabular form on a plan sheet (schedule)~~
 - ~~Coordinates and description of inter-visible control points.~~
 - ~~Coordinates of all items of work requiring field staking.~~
 - ~~Benchmark information shall be provided on each sheet.~~
- 2.20 ~~Assist the City with easement(s) acquisition, and obtain property owner contact information, prepare easement and ROW exhibits as necessary, provide copies of current deeds of properties where easements are needed, conduct property owner meetings for easement and ROW acquisition, and document acquisition meetings.~~
- 2.21 ~~If federally funded, incorporate NEPA requirements, wetland mitigation, monetary, ROW certification, environmental certification, SHPO, Architectural, CatX noise analysis, FONSI, etc.~~
- 2.22 Address 100% submittal staff comments as necessary.
- 2.23 Prepare any and all permits with exhibits the City will need to be executed for the project. Any permit fees required to be paid will be paid directly by the City.
- 2.24 Identify permits that will be required for the Contractor. Identify permit costs and indicate if any permit costs are paid for directly by the City or if it is a Contractor cost. Typically all permit costs are the Contractor's obligation.
- 2.25 Prepare final "Engineer's Estimate" of probable construction cost for the project. Provide updates at the time of the Intermediate and Final submittals.
- 2.26 ~~Prior to the advertisement for bids, arrange and conduct a public open house with affected residents. The open house shall be held sufficiently ahead of the project advertisement for bids such that public comments and concerns may still be addressed within the final project documents. Notice of the open house shall be mailed to all property owners adjacent to the proposed work area(s), as well as those in the immediate area who may be directly impacted by the construction, as determined by the City. The Consultant shall tabulate the public comments and concerns and provide written recommendations for staff review regarding possible inclusion or exclusion of such requests.~~
- 2.27 The City will submit plans and specifications to the Department of Environment and Natural Resources for approval, and the Consultant shall address any comments or corrections required.
- 2.28 Attend Public Works and Council meetings as necessary. Following discussion with City, no meetings are included.
- 2.29 The Consultant will prepare an Operations and Maintenance (O&M) Manual. The Contractor provided O&M Manual will be considered as supplementary to the O&M manual provided herein. Detailed operation information shall be included in the O&M Manual including Startup sequence (normal, emergency), Shutdown sequence (normal, emergency), Normal Operation, Troubleshooting. Operations description shall include a general narrative in addition to specific control discussion (e.g. local, on, off, auto, and remote). The selected consultant shall involve the integrator/instrumentation and control engineer in

the development/review of the O&M Manual for development of the control language and to verify continuity between disciplines.

2.30 Major Design Submittals.

a) **Intermediate Submittal**

Deliver the following:

- i. Provide four (4) hard copies and a PDF version of the Intermediate Design Services submittal. The submittal shall consist of the Intermediate Project Design Report complete plans, specifications, contract documents, and opinion of probable construction cost to the City's PM for review. The Intermediate Design Services submittal will be made to the City when the consultant believes the plans, specifications, contract documents, and opinion of probable construction cost are 65% complete. This shall include but not be limited to process and mechanical layouts at 90% complete or more, electrical, mechanical, and instrumentation and control diagram sheets.
- ii. Provide the City the opinion of probable construction cost as a unit price cost estimate on CD in Microsoft Excel 2008 or newer version on the City "Engineer Estimate" form.
- iii. Print and distribute five (5) copies of plans/drawings to the City at 11" x 17" scale for distribution to City departments for review.
- iv. Draft Operation and Maintenance Manual

Deliver the following:

- The Draft O&M Manual should be now titled "Enter Name of Facility Operation and Maintenance Manual".
- It is expected that the O&M Manual will be finalized at the end of Construction Services; however, TOC originally submitted in the Preliminary Design Submittal shall be expanded upon to include introductions of the chapters and basic chapter outlines.
- Draft O&M Manual shall be submitted as an appendix of the Design Report.

b) **Final Submittal**

Deliver the following:

- i. Provide four (4) hard copies and a PDF version of the Final Design Services submittal. The submittal shall consist of the Final Project Design Report or Facility Plan, complete plans, specifications, contract documents, and opinion of probable construction cost to the City's PM for review. The Final Design Services submittal will be made to the City when the consultant believes the plans, specifications, contract documents, and opinion of probable construction cost are 100% complete.
- ii. All submittals (drawings and specifications) believed by the Engineer of Record to be a final, shall contain a Certification Statement of Conformance with City Standards which shall read, **"I (insert Engineer of Record's name) Certify that I have read and understand the provisions contained in the City of Rapid City Standard Specifications for Public Works Construction, current edition and the City of Rapid City's adopted Design Criteria Manuals. The drawings and specifications contained here within, to the best of my knowledge, were prepared in accordance**

with these documents or a properly executed exception to the Standard Specifications and/or Infrastructure Design Criteria Manual has been secured". This statement shall appear on the title sheet of the drawings and on the first page of specifications after the cover sheet. The "Certification Statement of Conformance with City Specifications" shall be signed and dated by the Engineer of Record.

- iii. Provide the City the opinion of probable construction cost as a unit price cost estimate on CD in Microsoft Excel 2008 or newer version on the City "Engineer Estimate" form.
- iv. Print and distribute five (5) copies of plans/drawings to the City at 11" x 17" scale for distribution to City departments for review.
- v. **Draft Operation and Maintenance Manual**
Deliver the following:
 - The Draft O&M Manual should be now titled "*Enter Name of Facility Operation and Maintenance Manual*" and be a standalone document. It is envisioned that the original Design Report shall contain a reference to the separate standalone document.
 - It is expected that the O&M Manual will be finalized at the end of Construction Services; however, the Draft O&M Manual shall be submitted with the Final Design Report. ~~It is not expected that the portions of the O&M that need to be completed once the facilities are constructed need to be complete in the Draft.~~ It is anticipated that the O&M manual will be at the 75% completion level.
 - Provide Five (5) hard copies and a PDF version of the Draft Operations and Maintenance Manual. PDF version shall provide the capability of selecting and going to different sections of the manual.

c) **Bid Documents/Approved Submittal**

Deliver the following:

- i. Provide one (1) copy and a PDF version of bid documents including complete plans, specifications, and Engineer's Estimate of probable construction cost to the City's PM for City distribution. Items shall be stamped and signed by a Professional Engineer.
- ii. Provide complete plans on CD compatible with AutoCAD Release 2008 or newer format.
 - a) Provide all topographic, control, and design points in the .dwg file and in tabular format, both on CD and on hard copy printout.
- iii. Provide the City complete specifications and contract documents on CD in Microsoft Word 2008 or newer versions.
- iv. Provide complete plans on CD compatible with AutoCAD Release 2008 to 2013 format.
- v. Provide complete specifications and contract documents on CD in Microsoft Word 2008 or newer versions.
- vi. Provide a unit price and lump sum cost estimate on CD in Microsoft Excel 2008 or newer version on the City of Rapid City "Engineer's Estimate" form.

- a) Provide Engineer's Estimate of probable construction costs as a component of this submittal.
- vii. Print and distribute six (6) copies of the approved and stamped Final Design Services Deliverable. The submittal shall consist of the Final Project Design Report or Facility Plan, complete plans, specifications, contract documents, and opinion of probable construction cost to the City's PM.
- viii. Print and distribute five (5) copies of plans/drawings to the City at 11" x 17" scale for construction services personnel.

2.31 Project Management

- a) The Consultant's PM and the City's PM will hold bi-weekly check-in and progress meetings. These meetings will primarily be held remotely by phone or video conference. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
- b) Update project schedule, in MS Project, on a monthly basis.
- c) General Project Management: Prepare detailed monthly invoice and supporting documents, track monthly fee/budget, coordination with sub-consultants, and other general project coordination

2.32 Project Meetings

In addition to the special meetings identified in the previous tasks, the following meetings are also anticipated.

- ~~a) Monthly progress meetings. The Consultant's PM will attend in person, or a designated representative. Other consultant project team members will attend either in person, or remotely, as dictated by the meeting agenda. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs. None due to short time frame.~~
- b) Consultant internal project meetings, anticipated to be one per month, in-between the monthly meetings with the City.
- c) Intermediate Design Submittal Review Meeting. The Consultant's PM will attend in person. Other consultant project team members will attend either in person, or remotely, as dictated by the meeting agenda. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
- d) Final Design Submittal Review Meeting. The Consultant's PM will attend in person. Other consultant project team members will attend either in person, or remotely, as dictated by the meeting agenda. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
- e) Bid Documents Review Meeting. The Consultant's PM will attend in person. Other consultant project team members will attend either in person, or remotely, as dictated by the meeting agenda. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.

TASK 3 – BIDDING SERVICES:

This task consists of all services necessary for the administration of the Bidding Services of the project, and may include the following itemized services.

- 3.1 Submit sufficient information to the City of Rapid City PM for completion of City Advertising Authority form.
- 3.2 Consultant shall proof print quality at printers before full production of copies are made.
- 3.3 Arrange and conduct a Pre-bid Conference. Record attendance and minutes. Distribute copies to all attendees. An example of an agenda is enclosed as Attachment Five for your information.
- 3.4 Respond to Bidder's questions during the bid process.
- 3.5 Prepare and issue addenda to the bid documents as required.
- 3.6 Attend Public Works Committee and Council Meetings as required. No time included.
- 3.7 Consultant shall attend bid opening, review Bidder's Proposals, review and sign the City Engineering Services prepared Bid Tab, prepare an award recommendation letter to the City of Rapid City PM, and sign a City Engineering Services prepared Award Summary.
- 3.8 Review construction contract documents and other submittals from the contractor and submit to City of Rapid city PM for distribution to the City Attorney's for approval and signatures of the Mayor and Finance Officer.
- 3.9 Project Management
 - a) The Consultant's PM and the City's PM will hold bi-weekly check in and progress meetings. These meetings will primarily be held remotely by phone or video conference. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
 - b) Update project schedule, in MS Project, on a monthly basis.
 - c) General Project Management: Prepare detailed monthly invoice and supporting documents, track monthly fee/budget, coordination with sub-consultants, and other general project coordination
- 3.10 Project Meetings

In addition to the special meetings identified in the previous tasks, the following meetings are also anticipated.

 - a) None Planned.

City's Responsibilities during the Bid Phase:

- a) Advertise and distribute bid documents.
- b) Issue addenda prepared by the Consultant.
- c) Handle and oversee the bid opening.
- d) Prepare bid tabulation for review by Consultant.
- e) Prepare contract documents for execution by the successful bidder.

TASK 4 – BASIC CONSTRUCTION SERVICES:

This task consists of all services necessary for the administration of the Basic Construction Services of the project construction stage, and may include the following itemized services.

- 4.1 Review construction contract documents and other submittals from the contractor and submit to the City of Rapid City PM for distribution to City Attorneys for approval and signatures of the Mayor and Finance Officer.
- 4.2 Prepare Notice to Proceed for City of Rapid City PM signature and distribution to contractor for execution.
- 4.3 Arrange and conduct a Pre-Construction Conference including agenda. Record minutes and distribute to all attendees. An example of an agenda is to be provided by the City.
- 4.4 Provide written clarification regarding drawing and specification questions.
- 4.5 Provide recommendations to address changed or unknown conditions that may appear during construction.
- 4.6 Review and take action on shop drawings, product submittals, test results, and other submittals.
- 4.7 Prepare “Record” plans and specifications.
- 4.8 Finalize Operations and Maintenance Manual.
- 4.9 Schedule and oversee equipment training with manufacturers and Utility Maintenance personnel.
- 4.10 Construction Administration Major Submittals.
 - a) **Record Plans and Specifications**

Deliver the following:

 - i. Prepare “Record” plans and specifications. “Record” plans and specifications shall be submitted as a hard copy and on CD compatible with AutoCAD Release 2008 or newer format. Submit to Engineering Services within 30 days of project completion. In the event that the City did not issue a “Notice to Proceed” for Task 5 services, then the City shall forward construction record documents for preparing the “Record” plans and specifications.
 - b) **Final Operation and Maintenance Manual**

Deliver the following:

 - i. Address City comments from the Task 1 City review(s) and finalize the Draft O&M Manual. The Draft O&M Manual should be now titled “*Enter Name of Facility* Operation and Maintenance Manual”.
 - ii. It is expected that the O&M Manual will be finalized at the end of Construction Services.
 - iii. Provide Five (5) hard copies and a PDF version of the Final Operations and Maintenance Manual. PDF version shall provide the capability of selecting and going to different sections of the manual.
- 4.11 Project Management
 - a) ~~The Consultants’ PM and the City’s PM will hold bi-weekly check in and progress meetings. These meetings will primarily be held remotely by phone or video conference. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs. Covered by Weekly meetings under Task 5.4.a~~
 - b) Update project schedule, in MS Project, on a monthly basis.

- c) General Project Management: Prepare detailed monthly invoice and supporting documents, track monthly fee/budget, coordination with sub-consultants, and other general project coordination

4.12 Project Meetings

In addition to the special meetings identified in the previous tasks, the following meetings are also anticipated.

- a) Monthly progress meetings with the City. NONE INCLUDED.
- b) Consultant internal project meetings, Anticipated to be one per month.

TASK 5 – EXPANDED CONSTRUCTION SERVICES:

This task consists of all services necessary for the administration of the Expanded Construction Services of the project construction stage, and may include the following itemized services.

- ~~5.1 — Mark removal limits of appropriate items.~~
- 5.2 Prepare Public Service Announcements (P.S.A.'s) for Engineering Services. Engineering Services will be responsible for distribution to all local media. Copies of P.S.A.'s shall be distributed one week prior to start of work or change in operations that may significantly affect the public.
- ~~5.3 — Appropriately notify affected Property Owners.~~
- 5.4 Arrange and conduct appropriate progress meetings. Record minutes and distribute to all attendees.
 - a) Weekly on-site progress meetings involving the contractor and Consultants field personal.
 - b) Monthly progress meetings involving the Consultant's PM or his designated representative and Consultants field personal.
- 5.5 Provide **PART-TIME** daily on-site observation to assure that the methods and materials used by the contractor meet the intent of the plans and specifications. For buried installations such as for sewer and water mains the Consultant shall be on site all of the time the Contractor is installing these buried installations.
- 5.6 Prepare daily reports. A daily record of activity will be maintained by the inspector including weather conditions, construction progress, deviations from the plans and specifications, work performed, quantities installed, progress photos and any other pertinent information. Such information shall be neatly and concisely entered into the City of Rapid City Project Inspector's Diary and Inspection quantity book. Submit detachable copies to Engineering Services on a weekly basis. Consultant will work with the City to establish desired format for handwritten daily diaries, and typed daily, weekly, and monthly reports.
- ~~5.7 — Perform stormwater inspections, prepare reports, and keep the erosion and sediment control plans current as required by the ordinance regulating construction site runoff control, Chapter 8.46, and the Stormwater Quality Manual.~~
- ~~5.8 — Consultant will oversee and help coordinate Provide soil compaction testing according to the Standard Specifications. All test results shall be submitted to the City of Rapid City within 30 days of project completion. Cost for this testing will be incorporated into the general contractor's scope of work.~~
- 5.9 Provide assurance testing (or witness Contractor testing) according to the Standard Specifications. All test results shall be submitted to the City of Rapid City within 30 days of project completion.
- 5.10 Assist and help prepare and submit monthly pay request information.
- 5.11 Assist and help prepare change orders, and extra work orders for contractor on City of Rapid City forms and make recommendations for their approval or denial.
- 5.12 Consultant shall be on-site for critical start up and commissioning activities. Consultant will coordinate with the contractor to assure all needed parties are on-site at the required times.
- 5.13 Consultant will provide over sight and verification during instrumentation and control start up and commissioning.
- 5.14 Prepare and submit project completion punch list items to the Contractor and Engineering Services and oversee its completion.

- 5.15 Prepare and submit City of Rapid City project “Construction Project Close-out Checklist” indicating compliance with Standard Specifications and acceptance of the various infrastructure components. The Consultant is responsible for coordinating completion of the checklist items with the Contractor. The City will provide required checklist.
- 5.16 Prepare a letter to SDDENR notifying them of project completion.
- 5.17 Ensure Contractor’s two-year warranty surety is provided to the City of Rapid City either within the performance bond or as a separate bond.
- 5.18 Assist the City in addressing and communicating warranty items with the Contractor that may arise during the City’s two year warranty period.
- ~~5.19 It is anticipated that the contract provisions will require an Integrator as part of the general contractor’s subcontractors.~~
- 5.20 Following successful completion of construction, it is expected that the Engineer of Record will certify via a written and stamped statement that the project has been constructed in accordance with the drawings and specifications. This will signal start of the 2 year warranty period.
- 5.21 Attend Public Works and Council meetings as necessary.
- 5.22 Project Management
 - a) The Consultants’ PM and the City’s PM will hold bi-weekly check in and progress meetings. These meetings will primarily be held remotely by phone or video conference. The Consultant will prepare minutes following the meetings, and distribute within 48 hrs.
 - b) Update project schedule, in MS Project, on a monthly basis.
 - c) General Project Management: Prepare detailed monthly invoice and supporting documents, track monthly fee/budget, coordination with sub-consultants, and other general project coordination
- 5.23 Project Meetings

In addition to the special meetings identified in the previous tasks, the following meetings are also anticipated.

 - a) Monthly progress meetings with the City: Covered in Task 5.4.b

PROJECT TEAM, MEETINGS, AND SUBMITTALS SUMMARY

- 6.1 Project team members will include:
- The Consultant
 - City Engineering Services staff
 - Operations Division staff
 - Utility Maintenance Division (Service area and O&M related issues)
 - ~~Street Division~~
 - Water Division
 - ~~Water Reclamation Division~~
 - ~~Parks Division~~
- 6.2 Meetings requiring the Consultant's participation will likely include, but may not be limited to the following:
- Kick-off meeting, Task 1.
 - Design Report/Facility Plan, Plans, Specifications, and Cost Estimate Submittal review meeting, Task 1.
 - Intermediate Design Report/Facility Plan, Plans, Specifications, and Cost Estimate Submittal review meeting, Task 2.
 - Final (100%) Project Design Report/Facility Plan, Plans, Specifications, and Cost Estimate Submittal (Note***this submittal is made when the consultant believes the plans, specifications, contract documents, and opinion of probable construction cost documents are complete), Task 2.
 - Public meetings.
 - Property owner's meeting.
 - Private Utility coordination meeting, Task 2.
 - 100% Plans, Specifications, and Contract Documents review, Task 2.
 - Prebid Conference, Task 3.
 - Bid Opening, Task 3.
 - Pre-construction Conference, Task 4.
 - Construction Progress Meetings, Task 5.
 - Committee and Council Meetings as required, All Tasks.
- 6.3 Refer to specific Tasks for detailed information pertaining to Submittals. Submittals generally include (refer to detailed information in RFP and Attachment One for more detailed information):
- Kick-off meeting, Task 1 meeting minutes.
 - Design Report/Facility Plan, Plans, Specifications, and Cost Estimate Submittal, Task 1 including meeting minutes.
 - Intermediate Design Report/Facility Plan, Plans, Specifications, and Cost Estimate Submittal, Task 2 including meeting minutes.
 - Final (100%) Project Design Report /Facility Plan, Plans, Specifications, and Cost Estimate Submittal (Note*** this submittal is made when the consultant believes the plans, specifications, contract documents, and opinion of probable construction cost documents are complete), Task 2 including meeting minutes.
 - Bid Documents/Approved Submittal (Report/Facility Plan, Plans, Specifications, and Engineer's Estimate of probable construction cost). Final design reports shall be

EXHIBIT A
Red Rocks Booster Pump Station Upgrades
Project Number 14-2177/ CIP 50812.B

bound utilizing a comb binder or equal. 3-ring binders are not permitted without PM's prior approval. Task 2 including meeting minutes.

- Public meeting minutes.
- Property owner's meeting minutes.
- Private Utility coordination meeting minutes, Task 2.
- Open house comments/concerns and consultant's recommendations for inclusion or exclusion, Task 2.
- Prebid conference meeting minutes, Task 3.
- Bid Tab and award recommendation, Task 3.
- Pre-Construction conference meeting minutes, Task 4.
- Shop Drawing submittal reviews, Task 4.
- "As-Built" plans and specifications, Task 4.
- Progress meeting minutes, Task 5.
- Daily observation reports, Task 5.
- Quantity Books (in City format).
- Erosion and Sediment Control plan inspection reports, Task 5.
- Inspector diaries (in City format).
- Project completion "Punch List", Task 5.
- "Construction Project Close-out Checklist", Task 5.
- Project testing report documentation.
- Letter of certification of project completion, Task 5.
- Draft Operation and Maintenance Manual, Task 2.
- Final Operation and Maintenance Manual, Task 4.

Deliverables shall be identified on the schedule to be developed by the Consultant. The consultant shall deliver all meeting minutes with **48** hours of the meeting. The Consultant shall allow a minimum of **15** working days for City review of the Project Design report and Preliminary Design submittal, the Intermediate Design Submittal and the Final (100%) Design Submittal.

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
	TASK	
1	Preliminary Design	
1.1	Kick-Off Conference	\$1,315
1.2	Review Background Info	\$963
1.3	Site Surveys	\$0
1.4	R-O-W, Easements, Land	\$0
1.5	Opinion of Construction Cost	\$0
1.6	Geotech	\$0
1.7	Inst., Controls, SCADA	
	Field Meetings and Data Gathering	\$951
	Communication w/ Healy Ruff	\$117
	Overall System Evaluation	\$117
1.8	Review Environmental Regs., Determine Mitigation	\$0
1.9	Public Meetings, Presentations	\$0
1.10	Meet w/ Property Owners	\$0
1.11	ADA Compliance Review	\$0
1.12	Submittal Review w/ City	\$0
1.13	PW and Council Meetings	\$0
1.14	QA and QC	
	Develop QC Plan	\$165
	Schedule, Milestones	\$0
	Design/Technical QC	\$935
	Communication, Meetings	\$0
	Confirm Compliance with City Requirements	\$0
	Cost Control	\$0
1.15	Preliminary Design Report	
a	Develop Table of Contents	\$107
b	Hydraulic Modeling	\$2,084
c	Pumping Design For Additional Capacity	\$414
d	Design Life	\$214
e	Site Visit and List of Existing Station Concerns	\$1,902
f	Structural Alternatives	\$0
g	Architectural Alternatives	\$0
h	Site, Grading, Drainage	\$0
i	Develop 1 or 2 Pump Type Options	
	Pump Types and Curves	\$896
	Layouts	\$1,930
	Hp, VFDs, Electrical	
	Costs	\$522
j	O&M and 30 Yr. Life Cycle Cost Analysis	\$314
k	Evaluate use of VFDs	\$0
l	Pressure Tank Sizing	\$581
m	Surge Analysis	\$3,611

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
n	Review Existing Inlet and Outlet Piping	\$0
o	Operations Description	\$548
p	Security	\$0
q	Site Lighting	\$0
r	Noise Mitigation	\$0
s	Inst., Controls, SCADA (Red Rocks Station)	\$782
t	Address O&M Requirements	\$214
u	SDDENR Requirements	\$107
v	City Codes and Regulations	\$0
w	Unattended Operation	\$341
x	Landscaping	\$0
y	Electrical, VFDs	\$1,077
z	Mechanical, HVAC	\$0
aa	Plumbing	\$0
bb	Design Criteria Standards, including ADA	\$761
cc	Facility Justification	\$0
dd	Compliance w/ City Standard Specs	\$0
ee	GeoTech Report	\$0
ff	Opinion of Construction Cost	\$1,293
gg	O&M Table of Contents	\$107
hh	Template for Const Daily Report	\$0
ii	Covered Under Other Work Tasks	\$0
jj	Options to Maintain Water Service	\$768
kk	Design Report Submittal	\$857
	Report Writing and Prep	\$2,204
	Review Meeting	\$1,325
	2 Preliminary Design Plans	
a and b	Prelim Plan Sheets	
	General Sheets	\$204
	Civil/Site/Underground/Landscape	\$0
	Architectural	\$0
	Structural	\$0
	Process/Pumps/Above Floor Pipe & Valv	\$2,302
	Mechanical/HVAC	\$0
	Plumbing	\$0
	Electrical	\$1,655
	Instrumentation/Controls	\$1,309
	City Standard Details	\$0
c	Prelim Plan Submittal	\$704
	Review Meeting	\$998
	3 Preliminary Design Specs	

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
	a Table of Contents & Preliminary Specs	\$54
	Schedule of Bid Items	\$261
	b Preliminary Specs Submittal	\$704
	Spec Prelim Writing	\$1,170
	Review Meeting	
	4 Project Management	
	a Bi-Weekly PM Level Meeting and Minutes (3 Calls)	\$753
	b Schedule Update, Monthly	\$248
	c General Project Management	\$400
	5 Project Meetings	
	a Monthly Progress and Minutes with City (2 Meetings)	\$1,597
	b Consultant Internal Meetings	\$779
	Total Hours	
	Fee	\$40,657

Total Fee, Including Sub-Consultants 2014 \$	\$40,657
2015 Yearly Fee Adjustment, Max Increase of 3%	\$41,877
Sub-Consultants Amounts (2015 \$)	
ZZ Technology (Surge Analysis)	\$4,350

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
	TASK	
2	Final Design	
2.1	Address comments to Design Report	\$579
2.2	Site Layout and Adjacent Properties	\$0
2.3	Removal Limits	\$0
2.4	Complete Geotech Investigation	\$0
2.5	Inst., Controls, SCADA	\$775
2.6	Covered Under Other Work Tasks	
2.7	ADA Design	\$0
2.8	Provide SWPP	\$0
2.9	Traffic Control Plans	\$374
2.10	Project Sequencing and Schedule	\$314
2.11	Utility Coordination	\$125
2.12	Notify City if utilities need to be relocated	\$0
2.13	Request Exceptions to City Standards	\$0
2.14	Detailed Specs	
	General/Division 1	\$214
	Civil/Site/Underground/Landscape	\$0
	Architectural	\$0
	Structural	\$0
	Process/Pumps/Above Floor Pipe & Valv	\$1,082
	Mechanical/HVAC	\$0
	Plumbing	\$0
	Electrical	\$705
	Instrumentation/Controls	\$909
2.15	Design Criteria Exceptions Requests	\$390
2.16	Design to Maintain Water Service	\$1,168
2.17	Design Plan Sheets	
	General Sheets	\$374
	Civil/Site/Underground/Landscape	\$0
	Architectural	\$0
	Structural	\$0
	Process/Pumps/Above Floor Pipe & Valv	\$3,066
	Mechanical/HVAC	\$0
	Plumbing	\$0
	Electrical	\$1,862
	Instrumentation/Controls	\$1,327
	City Standard Details	\$0
2.18	Covered Under Other Work Tasks	
2.19	Staking Information	\$0
2.20	Assist with Easements and Property	\$0
2.21	NEPA, Wetlands, SHPO, others	\$0
2.22	Address City Comments	\$1,061

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
2.23	Prepare permit applications for City	\$107
2.24	Identify Contractor Permits and Costs for Contractor	\$107
2.25	Final Cost Estimates	
	Intermediate Submittal	\$1,260
	Final Submittal	\$697
2.26	Public Open House	\$0
2.27	SDDENR Submittal and Address Comments	\$107
2.28	Attend PW and Council Meetings	\$0
2.29	Prepare O&M Manual	\$0
	Intermediate Submittal	\$2,098
	Final Submittal	\$1,993
2.30	Major Design Submittals	
a	Intermediate Submittal (65%)	\$955
b	Final Submittal (100%)	\$955
c	Bid Docs/Approved Submittal	\$955
2.31	Project Management	
a	Bi-Weekly PM Level Meeting and Minutes (1 Calls)	\$402
b	Schedule Update, Monthly	\$83
c	General Project Management	\$400
2.32	Project Meetings	
a	Monthly Progress and Minutes with City (0 Meetings)	\$0
b	Consultant Internal Meetings	\$789
c	Intermediate Design Review Meeting	\$1,180
d	Final Design Review Meeting	\$1,060
e	Bid Documents Review Meeting	\$400
	Total Hours	
	Fee	\$27,871

Total Fee, Including Sub-Consultants 2014 \$	\$27,871
2015 Yearly Fee Adjustment, Max Increase of 3%	\$28,707
Sub-Consultants Amounts (2015 \$)	
ZZ Technology (Surge Analysis)	\$1,320

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
	TASK	
3	Bidding	
3.1	Submit Information for Bid Advertisement	\$107
3.2	Provide Proof of Quality Printing	\$200
3.3	Pre-Bid Conference	\$874
3.4	Respond to Bidder Questions	\$1,058
3.5	Prepare Addenda	\$716
3.6	Attend PW and Council Meetings	\$0
3.7	Bid Opening, Review Bids, Review Bid Tab, Recommendation	\$614
3.8	Review Construction Contract Docs from Bidder	\$314
3.9	Project Management	
a	Bi-Weekly PM Level Meeting and Minutes (0 Calls)	\$0
b	Schedule Update, Monthly	\$83
c	General Project Management	\$0
	Project Meetings	\$0
	None	\$0
	Total Hours	
	Fee	\$3,966

Total Fee, Including Sub-Consultants 2014 \$	\$3,966
2015 Yearly Fee Adjustment, Max Increase of 3%	\$4,084
Sub-Consultants Amounts (2015 \$)	
ZZ Technology (Surge Analysis)	\$240

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
	TASK	
	4 Basic Construction Services	
4.1	Review Construction Contract Docs from Contractor	\$314
4.2	Prepare Notice to Proceed	\$107
4.3	Pre-Construction Conference	\$1,071
4.4	Respond to RFIs, and Issue Field Orders	\$3,599
4.5	Prepare Change Orders	\$628
4.6	Submittals and Shop Drawings	\$2,803
4.7	Prepare Record Drawings	\$915
4.8	Finalize O&M Manual	\$1,277
4.9	Schedule & Coordinate Equipment Training	\$464
4.10	Major Const. Admin Submittals	
a	Record Drawings	\$909
b	Final O&M Manual	\$1,311
4.11	Project Management	
a	Bi-Weekly PM Level Meeting and Minutes (0 Calls)	\$0
b	Schedule Update, Monthly	\$413
c	General Project Management	\$1,000
4.12	Project Meetings	
a	Monthly Progress and Minutes with City	\$0
b	Consultant Internal Meetings	\$1,203
	Total Hours	
	Fee	\$16,013

Total Fee, Including Sub-Consultants 2014 \$	\$16,013
2015 Yearly Fee Adjustment, Max Increase of 3%	\$16,493
Sub-Consultants Amounts (2015 \$)	
ZZ Technology (Surge Analysis)	\$480

ENGINEERING FEE ESTIMATE - EXHIBIT B

City of Rapid City

50812.B Red Rocks Pump Station Upgrades (Project Number 14-2177)

4/3/2014

TASK NUMBER	Classification Rate	TASK SUBTOTAL
	TASK	
5	Expanded Construction Services	
5.1	Mark Removal Limits	\$0
5.2	Prepare Public Service Announcements	\$720
5.3	Notify Property Owners	\$0
5.4	Progress Meetings and Minutes	
a	Weekly On-site (4 Meetings)	\$990
b	Monthly (4 Meetings)	\$2,056
5.5	Daily On-Site Observation	\$14,624
5.6	Daily, Weekly, Monthly Reports	\$0
5.7	Stormwater Inspections, Reports, Erosion Control Plan	\$0
5.8	Coordinate Compaction Testing, and Concrete	\$0
5.9	Provide Assurance or Witness Contractor Testing	\$375
5.10	Assist & Prepare Monthly Pay requests	\$535
5.11	Assist & Prepare Change Orders	\$521
5.12	Start-Up and Commissioning	\$4,920
5.13	Instrumentation Oversight	\$2,136
5.14	Prepare Punch List	\$674
5.15	Prepare Close-Out Checklist	\$414
5.16	Letter to SDDENR of completion	\$107
5.17	Ensure 2 YR Warranty Surety is provided to City	\$414
5.18	Assist with Warranty follow ups (Over 2 yr. Period)	\$4,018
5.19	Not Used	\$0
5.20	Engineer Certification Letter	\$307
5.21	Attend PW and Council Meetings	\$0
5.22	Project Management	
a	Weekly PM Level Meeting and Minutes	\$0
b	Schedule Update, Monthly	\$0
c	General Project Management	\$0
5.23	Project Meetings	
a	Monthly Progress and Minutes with City	\$0
	Total Hours	
	Fee	\$32,811

Total Fee, Including Sub-Consultants 2014 \$	\$32,811
2015 Yearly Fee Adjustment, Max Increase of 3%	\$33,795
Sub-Consultants Amounts (2015 \$)	
ZZ Technology (Surge Analysis)	\$3,660

EXHIBIT C

**Red Rocks Booster Pump Station Upgrades
Project Number 14-2177/ CIP 50812.B**

**BARTLETT & WEST, INC.
2014 SCHEDULE OF HOURLY CHARGES
Effective January 1, 2014**

Engineer XI/Landscape Arch XI	\$200.00	Right-of-Way Technician IV	86.00
Engineer X/Landscape Arch X	190.00	Right-of-Way Technician III	78.00
Engineer IX/Landscape Arch IX	179.00	Right-of-Way Technician II	69.00
Engineer VIII/Landscape Arch VIII	165.00	Right-of-Way Technician I	59.00
Engineer VII/Landscape Arch VII	152.00		
Engineer VI/Landscape Arch VI	137.00	GIS Coordinator VIII	\$200.00
Engineer V/Landscape Arch V	127.00	GIS Coordinator VII	190.00
Engineer IV/ Landscape Arch IV	117.00	GIS Coordinator VI	180.00
Engineer III/Landscape Arch III	107.00	GIS Coordinator V	170.00
Engineer II/Landscape Arch II	97.00	GIS Coordinator IV	155.00
Engineer I/Landscape Arch I	87.00	GIS Coordinator III	140.00
		GIS Coordinator II	125.00
		GIS Coordinator I	115.00
Engineering Technician XI	\$160.00		
Engineering Technician X	140.00	GIS Developer/DBA V	\$150.00
Engineering Technician IX	125.00	GIS Developer/DBA IV	140.00
Engineering Technician VIII	108.00	GIS Developer/DBA III	130.00
Engineering Technician VII	97.00	GIS Developer/DBA II	120.00
Engineering Technician VI	89.00	GIS Developer/DBA I	110.00
Engineering Technician V	81.00		
Engineering Technician IV	74.00		
Engineering Technician III	66.00	GIS Analyst V	\$125.00
Engineering Technician II	60.00	GIS Analyst IV	115.00
Engineering Technician I	55.00	GIS Analyst III	105.00
		GIS Analyst II	95.00
		GIS Analyst I	85.00
Surveyor VIII	\$133.00		
Surveyor VII	125.00		
Surveyor VI	115.00		
Surveyor V	103.00	GIS Technician IV	\$85.00
Surveyor IV	94.00	GIS Technician III	75.00
Surveyor III	83.00	GIS Technician II	65.00
Surveyor II	73.00	GIS Technician I	55.00
Surveyor I	63.00		
		Computer Systems Manager	\$123.00
		Systems Analyst	120.00
		Network Administrator	99.00
		IS Support Specialist	69.00
		Computer Systems Technician III	79.00
		Computer Systems Technician II	69.00
		Computer Systems Technician I	55.00
		Administrator V	\$110.00
		Administrator IV	95.00
		Administrator III	80.00
		Administrator II	72.00
		Administrator I	64.00
		Administrative Technician V	\$65.00
		Administrative Technician IV	58.00
		Administrative Technician III	51.00
		Administrative Technician II	46.00
		Administrative Technician I	40.00
		Client Services Representative	\$75.00
Right-of-Way Specialist IV	\$180.00		
Right-of-Way Specialist III	150.00		
Right-of-Way Specialist II	130.00		
Right-of-Way Specialist I	115.00		
Right-of-Way Technician V	\$95.00		

Note: For projects that extend beyond December 31, 2014 the Hourly Charges are subject to an increase on January 1 of each succeeding year, maximum of 3% annually.

**EXHIBIT C
CITY OF RAPID CITY BOOSTER STATION PROJECTS**

**BARTLETT & WEST, INC.
SCHEDULE OF REIMBURSABLE COSTS/CHARGES
COSTING RATES ONLY
EFFECTIVE JANUARY 1, 2014**

<u>DESCRIPTION</u>	<u>CHARGE AMOUNT</u>	<u>UNIT</u>
REPRODUCTION		
Blackline Prints (In-House)		
Bond, Full Size - 24x36	\$ 1.00	Each
Bond, Half Size Reduction - 11x17	\$ 0.70	Each
Photocopies (In-House)		
Black & White - up to 11x17	\$ 0.15	Each
Small Size Color Copies , 8.5x 11	\$ 0.90	Each
Large Size Color Copies, > 8.5x 11	\$ 1.50	Each
Scan (In-House)		
Small Scan - 8.5 x 11 (Black/Color)	\$ 0.12	Each
Full Size Scan - 24x36 -(Black)	\$ 2.00	Each
Full Size Scan - 24x36 - (Color)*	\$ 5.00	Each
Inkjet Plotters - 24x36 (In-House)		
Bond (Black)	\$ 1.50	Lin. Ft.
Bond (Color)	\$ 2.50	Lin. Ft.
LAMINATING/MOUNTING		
Laminating - 8.5x11 (In-House)	\$ 1.00	Each
VEHICLES		
Trucks, Cars, SUV's - all vehicles	\$ 0.60	Mile
PER DIEM		
Meals	\$30.00	Day
Lodging	\$110.00	Day
OTHER REIMBURSABLE EXPENSES		
Sub-Consultants	Actual Cost x 1.0	
Lodging (Non Per Diem)	Actual Cost x 1.0	
Meals (Non Per Diem)	Actual Cost x 1.0	
Air Travel	Actual Cost x 1.0	
Outside Printing	Actual Cost x 1.0	
All Other Outside Expenses	Actual Cost x 1.0	

Note: For projects that extend beyond December 31, 2014 the Reimbursable Charges are subject to an increase on January 1 of each succeeding year, maximum of 3% annually.