

This is **EXHIBIT A**, consisting of 21 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated 9-19-2017.

Engineer's Services

Article 1 of the Agreement is amended and supplemented to include the following agreement of the parties: Engineer shall provide Basic and Additional Services as set forth below.

PART 1 – BASIC SERVICES

A.1.01 Study and Report Phase

A. Engineer shall:

1. ~~Consult with Owner to define and clarify Owner's requirements for the Project and available data.~~
2. ~~Advise Owner of any need for Owner to provide data or services of the types described in Exhibit B which are not part of Engineer's Basic Services.~~
3. ~~Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve the portions of the Project designed or specified by Engineer, including but not limited to mitigating measures identified in the environmental assessment.~~
4. ~~Identify and evaluate _____ alternate solutions available to Owner and, after consultation with Owner, recommend to Owner those solutions which in Engineer's judgment meet Owner's requirements for the Project.~~
5. ~~Prepare a report (the "Report") which will, as appropriate, contain schematic layouts, sketches, and conceptual design criteria with appropriate exhibits to indicate the agreed to requirements, considerations involved, and those alternate solutions available to Owner which Engineer recommends. For each recommended solution Engineer will provide the following, which will be separately itemized: opinion of probable Construction Cost; proposed allowances for contingencies; the estimated total costs of design, professional, and related services to be provided by Engineer and its ENGINEERS; and, on the basis of information furnished by Owner, a summary of allowances for other items and services included within the definition of Total Project Costs.~~
6. ~~Perform or provide the following additional Study and Report Phase tasks or deliverables:~~
7. ~~Furnish _____ review copies of the Report and any other deliverables to Owner within _____ calendar days of authorization to begin services and review it with~~

~~Owner. Within _____ calendar days of receipt, Owner shall submit to Engineer any comments regarding the Report and any other deliverables.~~

- ~~8. Revise the Report and any other deliverables in response to Owner's comments, as appropriate, and furnish _____ copies of the revised Report and any other deliverables to the Owner within _____ calendar days of receipt of Owner's comments.~~

- ~~B. Engineer's services under the Study and Report Phase will be considered complete on the date when the revised Report and any other deliverables have been delivered to Owner.~~

A.1.02 Preliminary Design Phase

- ~~A. After acceptance by Owner of the Report and any other deliverables, selection by Owner of a recommended solution and indication of any specific modifications or changes in the scope, extent, character, or design requirements of the Project desired by Owner, and Upon written authorization from Owner, Engineer shall:~~

- ~~1. Prepare Preliminary Design Phase documents consisting of final design criteria, (50% - effort) preliminary drawings, outline specifications, 50% Opinion of Probable Cost, Quantity Estimates, Reports and written descriptions of the Project.~~
- ~~2. Provide necessary field surveys and topographic and utility mapping for design purposes. Utility mapping will be based upon information obtained from utility owners.~~
- ~~3. Advise Owner if additional reports, data, information, or services of the types described in Exhibit B are necessary and assist Owner in obtaining such reports, data, information, or services.~~
- ~~4. Based on the information contained in the Preliminary Design Phase documents, prepare a revised opinion of probable Construction Cost, and assist Owner in collating the various cost categories which comprise Total Project Costs.~~
- ~~5. Perform or provide the following additional Preliminary Design Phase tasks or deliverables:
 - ~~a. None~~~~
- ~~6. Furnish 7 of review copies of the Preliminary Design Phase documents within 50 calendar days of authorization to proceed with this phase, and review them with Owner. Within 15 calendar days of receipt, Owner shall submit to Engineer any comments regarding the Preliminary Design Phase documents and any other deliverables.~~

7. Revise the Preliminary Design Phase documents and any other deliverables in response to Owner's comments, as appropriate, and furnish to Owner the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other deliverables within 21 calendar days after receipt of Owner's comments.
- B. Engineer's services under the Preliminary Design Phase will be considered complete on the date when the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other deliverables have been delivered to Owner.

A.1.03 Final Design Phase

- A. After acceptance by Owner of the Preliminary Design Phase documents, revised opinion of probable Construction Cost as determined in the Preliminary Design Phase, and any other deliverables subject to any Owner-directed modifications or changes in the scope, extent, character, or design requirements of or for the Project, and Upon written authorization from Owner, Engineer shall provide the professional services indicated herein.
- B. Engineer's services under the Final Design Phase will be considered complete on the date when the City authorizes approval of a construction contract, following the completion of the bidding tasks, and once the Notice of Award has been executed by the City of Gillette, or upon cessation of negotiations with prospective contractors.
- C. In the event that the Work designed or specified by Engineer is to be performed or furnished under more than one prime contract, or if Engineer's services are to be separately sequenced with the work of one or more prime Contractors (such as in the case of fast-tracking), Owner and Engineer shall, prior to commencement of the Final Design Phase, develop a schedule for performance of Engineer's services during the Final Design, Bidding or Negotiating, Construction, and Post-Construction Phases in order to sequence and coordinate properly such services as are applicable to the work under such separate prime contracts. This schedule is to be prepared and included in or become an amendment to Exhibit A whether or not the work under such contracts is to proceed concurrently. At this time, only one (1) prime construction contract is anticipated.
- D. The number of prime contracts for Work designed or specified by Engineer upon which the Engineer's compensation has been established under this Agreement is one (1). If more prime contracts are awarded, Engineer shall be entitled to an equitable increase in its compensation under this Agreement.

A.1.04 Bidding or Negotiating Phase

- A. After acceptance by Owner of the Bidding Documents and the most recent opinion of probable Construction Cost as determined in the Final Design Phase, and upon written authorization by Owner to proceed, Engineer shall perform the following services described herein:

1. Assist Owner in advertising for and obtaining bids or proposals for the Work and, where applicable, maintain a record of prospective bidders to whom Bidding Documents have been issued, attend pre-Bid conferences.
 2. Issue Addenda as appropriate to clarify, correct, or change the Bidding Documents.
 3. Provide information or assistance needed by Owner in the course of any negotiations with prospective contractors.
 4. Consult with Owner as to the acceptability of subcontractors, suppliers, and other individuals and entities proposed by prospective contractors for those portions of the Work as to which such acceptability is required by the Bidding Documents.
 5. Perform or provide the following additional Bidding or Negotiating Phase tasks or deliverables:
 - a) Prepare and conduct a pre-bid conference, record minutes of the meeting, and issue addenda if necessary.
 - b) Attend bid opening and assist Owner with bid opening process.
 - c) Review bid proposals received and provide a recommendation of award letter to the City of Gillette.
 6. Prepare Bid tabulation sheets, and assist Owner in evaluating Bids or proposals and in assembling and awarding contracts for the Work.
- B. The Bidding or Negotiating Phase will be considered complete on the date when the City authorizes approval of a construction contract, following completion of the bidding tasks, and once the Notice of Award has been executed by the City of Gillette, or upon cessation of negotiations with prospective contractors.

A.1.05 Construction Phase

- A. Upon successful completion of the Final Design and Bidding and Negotiating Phase(s), and upon written authorization from Owner, Engineer shall perform the following services described herein:
1. ~~General Administration of Construction Contract.~~ Consult with Owner and act as Owner's representative as provided in the General Conditions. The extent and limitations of the duties, responsibilities, and authority of Engineer as assigned in the General Conditions shall not be modified, except as Engineer may otherwise agree in writing. All of Owner's instructions to Contractor will be issued through Engineer, which shall have authority to act on behalf of Owner in dealings with Contractor to the extent provided in this Agreement and the General Conditions except as otherwise provided in writing. Engineer will perform all inspections, test

and approvals of samples, materials, and equipment specifically required in this Contract.

2. *Resident Project Representative (RPR).* Provide the services of an RPR at the Site to assist the Engineer and to provide more extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth in Exhibit D. The furnishing of such RPR's services will not limit, extend, or modify Engineer's responsibilities or authority except as expressly set forth in Exhibit D.
3. *Selecting Independent Testing Laboratory.* Assist Owner in the selection of an independent testing laboratory to perform the services identified in Exhibit B, Paragraph B2.01.0.
4. *Pre-Construction Conference.* Participate in a Pre-Construction Conference prior to commencement of Work at the Site, generate and distribute meeting minutes.
5. *Schedules.* Receive, review, and determine the acceptability of any and all schedules that Contractor is required to submit to Engineer, including the Progress Schedule, Schedule of Submittals, and Schedule of Values.
6. *Baselines and Benchmarks.* As appropriate, establish baselines and benchmarks for locating the Work which in Engineer's judgment are necessary to enable Contractor to proceed.
7. *Visits to Site and Observation of Construction.* In connection with observations of Contractor's Work while it is in progress:
 - a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary, to observe as an experienced and qualified design professional the progress and quality of Contractor's executed Work. Such visits and observations by Engineer, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of Contractor's Work in progress or to involve detailed inspections of Contractor's Work in progress beyond the responsibilities specifically assigned to Engineer in this Agreement and the Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Contract Documents, and Engineer shall keep Owner informed of the progress of the Work.
 - b. The purpose of Engineer's visits to, and representation by the Resident Project Representative, if any, at the Site, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and, in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner a

greater degree of confidence that the completed Work will conform in general to the Contract Documents and that Contractor has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. Engineer shall not, during such visits or as a result of such observations of Contractor's Work in progress, supervise, direct, or have control over Contractor's Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by Contractor, for security or safety on the Site, for safety precautions and programs incident to Contractor's Work, nor for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work. Accordingly, Engineer neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.

8. *Defective Work.* Recommend to Owner that Contractor's Work be rejected while it is in progress if, on the basis of Engineer's observations, Engineer believes that such Work will not produce a completed Project that conforms generally to the Contract Documents or that it will threaten the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.
9. *Clarifications and Interpretations; Field Orders.* Issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of Contractor's work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. Engineer may issue Field Orders authorizing minor variations in the Work from the requirements of the Contract Documents.
10. *Change Orders and Work Change Directives.* Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives for Owner execution. The Engineer shall not approve work outside a construction contract without an executed Change Order. The Engineer shall promptly provide copies of all executed Change Orders, Field Orders, and Work Directives to the Owner.
11. *Shop Drawings and Samples.* Review and approve or take other appropriate action in respect to Shop Drawings and Samples and other data which Contractor is required to submit, but only for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet any Contractor's submittal schedule that Engineer has accepted.

12. ~~Substitutes and "or equal."~~ Evaluate and determine the acceptability of substitute or "or equal" materials and equipment proposed by Contractor, but subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A.
13. ~~Inspections and Tests.~~ Require such special inspections or tests of Contractor's work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Contract Documents. Engineer shall be entitled to rely on the results of such tests.
14. ~~Disagreements between Owner and Contractor.~~ Render formal written decisions on all duly submitted issues relating to the acceptability of Contractor's work or the interpretation of the requirements of the Contract Documents pertaining to the execution, performance, or progress of Contractor's Work; review each duly submitted Claim by Owner or Contractor, and in writing either deny such Claim in whole or in part, approve such Claim, or decline to resolve such Claim if Engineer in its discretion concludes that to do so would be inappropriate. In rendering such decisions, Engineer shall be fair and not show partiality to Owner or Contractor and shall not be liable in connection with any decision rendered in good faith in such capacity.
15. ~~Applications for Payment.~~ Based on Engineer's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation:
 - a. ~~Determine the amounts that Engineer recommends Contractor be paid. Such recommendations of payment will be in writing and will constitute Engineer's representation to Owner, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, Contractor's Work has progressed to the point indicated, the quality of such Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe Contractor's Work. In the case of unit price work, Engineer's recommendations of payment will include final determinations of quantities and classifications of Contractor's Work (subject to any subsequent adjustments allowed by the Contract Documents).~~
 - b. ~~By recommending any payment, Engineer shall not thereby be deemed to have represented that observations made by Engineer to check the quality or quantity~~

~~of Contractor's Work as it is performed and furnished have been exhaustive, extended to every aspect of Contractor's Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Contract Documents. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment including final payment will impose on Engineer responsibility to supervise, direct, or control Contractor's Work in progress or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or Contractor's compliance with Laws and Regulations applicable to Contractor's furnishing and performing the Work. It will also not impose responsibility on Engineer to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any portion of the Work in progress, materials, or equipment has passed to Owner free and clear of any liens, claims, security interests, or encumbrances, or that there may not be other matters at issue between Owner and Contractor that might affect the amount that should be paid.~~

- ~~16. *Contractor's Completion Documents.* Receive, review, and transmit to Owner maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Contract Documents, certificates of inspection, tests and approvals, Shop Drawings, Samples and other data approved as provided under Paragraph A1.05.A.11, and the annotated record documents which are to be assembled by Contractor in accordance with the Contract Documents to obtain final payment. The extent of such review by Engineer will be limited as provided in Paragraph A1.05.A.11. Engineer will review completion documents and incorporate them into Operation and Maintenance manuals for the Owner. Engineer will provide any operational recommendations into the Operation and Maintenance manuals. This scope does not include comprehensive technical manuals detailing the operation of the Owner's systems beyond the items specifically listed above.~~
- ~~17. *Substantial Completion.* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor, conduct an inspection to determine if the Work is substantially complete. If after considering any objections of Owner, Engineer considers the Work substantially complete, Engineer shall deliver a certificate of Substantial Completion to Owner and Contractor.~~
- ~~18. *Additional Tasks.* Perform or provide the following additional Construction Phase tasks or deliverables: None~~
- ~~19. *Final Notice of Acceptability of the Work.* Conduct a final inspection to determine if the completed Work of Contractor is acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the~~

~~recommendation for final payment, Engineer shall also provide a notice in the form attached hereto as Exhibit E (the "Notice of Acceptability of Work") that the Work is acceptable (subject to the provisions of Paragraph A1.05.A.15.b) to the best of Engineer's knowledge, information, and belief and based on the extent of the services provided by Engineer under this Agreement.~~

~~20. *Final Payment Notices and Advertisements.* Engineer will include the requirement for notices and advertisements for final payment in construction contract documents.~~

~~B. *Duration of Construction Phase.* The Construction Phase will commence with the execution of the first construction Contract for the Project or any part thereof and will terminate upon written recommendation by Engineer for final payment to Contractors. If the Project involves more than one prime contract as indicated in Paragraph A1.03.C, Construction Phase services may be rendered at different times in respect to the separate contracts. Subject to the provisions of Article 3, Engineer shall be entitled to an equitable increase in compensation if Construction Phase services are required after the original date for final completion of the Work as set forth in the construction Contract.~~

~~C. *Limitation of Responsibilities.* Engineer shall not be responsible for the acts or omissions of any Contractor, or of any subcontractors, suppliers, or other individuals or entities performing or furnishing any of the Work. Engineer shall not be responsible for the failure of any Contractor to perform or furnish the Work in accordance with the Contract Documents.~~

~~A.1.06 *Post Construction Phase*~~

~~A. Upon written authorization from Owner to complete work in accordance with A2.01, Engineer, during the Post Construction Phase, shall:~~

- ~~1. Provide assistance in connection with the adjusting of Project equipment and systems.~~
- ~~2. Assist Owner in training Owner's staff to operate and maintain Project equipment and systems.~~
- ~~3. Assist Owner in developing procedures for control of the operation and maintenance of, and record keeping for Project equipment and systems.~~

~~B. During the Post Construction Phase, and included in the total fee in Appendix C, the Engineer shall:~~

- ~~1. Together with Owner, visit the Project to observe any apparent defects in the Work, assist Owner in consultations and discussions with Contractor concerning correction of any such defects, and make recommendations as to replacement or correction of Defective Work, if present.~~

2. ~~Perform or provide the following additional Post-Construction Phase tasks or deliverables: None~~
 3. ~~In company with Owner or Owner's representative, provide an inspection of the Project within one month before the end of the Correction Period to ascertain whether any portion of the Work is subject to correction.~~
- C. ~~The Post-Construction Phase services may commence during the Construction Phase and, if not otherwise modified in this Exhibit A, will terminate at the end of the Construction Contract's correction period.~~

PART 2 – ADDITIONAL SERVICES

A2.01 Additional Services Requiring Owner's Written Authorization

- A. If authorized in writing by Owner, Engineer shall furnish or obtain from others Additional Services of the types listed below.
1. Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for private or governmental grants, loans, or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.
 2. Services to make measured drawings of or to investigate existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by Owner or others.
 3. Normal changes due to Owner comments are included in the Basic Services scope and fee. Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by Engineer or its design requirements including, but not limited to, significant or major scope changes due to Owner comments, changes in size, complexity, Owner's schedule, character of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date of this Agreement or are due to any other causes beyond Engineer's control.
 4. ~~Services resulting from Owner's request to evaluate additional Study and Report Phase alternative solutions beyond those identified in Paragraph A1.01.A.4.~~
 5. Services required as a result of Owner's providing incomplete or incorrect Project information to Engineer.

6. Providing renderings or models for Owner's use.
7. Undertaking investigations and studies including, but not limited to, detailed consideration of operations, maintenance, and overhead expenses; the preparation of feasibility studies, cash flow and economic evaluations, rate schedules, and appraisals; assistance in obtaining financing for the Project; evaluating processes available for licensing, and assisting Owner in obtaining process licensing; detailed quantity surveys of materials, equipment, and labor; and audits or inventories required in connection with construction performed by Owner.
8. Furnishing services of Engineer's Consultant's for other than Basic Services.
9. Services attributable to more prime construction contracts than specified in Paragraph A1.03.D.
10. Services during out-of-town travel required of Engineer other than for visits to the Site, and Owner's office.
11. Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructability review requested by Owner; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other Bidding Documents as a result of such review processes.
12. Preparing additional Bidding Documents or Contract Documents for alternate bids or prices requested by Owner for the Work or a portion thereof.
13. Determining the acceptability of substitute materials and equipment proposed during the Bidding or Negotiating Phase when substitution prior to the award of contracts is allowed by the Bidding Documents.
14. Assistance in connection with Bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services, except when such assistance is required by Exhibit F.
15. Providing construction surveys and staking to enable Contractor to perform its work other than as required under Paragraph A1.05.A.6, and any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.—Any restaking of previously staked construction survey work.
16. Providing Construction Phase services beyond the original date for final completion of the Work. Engineer will cause liquidated damages clauses to be placed in the construction contract to cover additional Engineer's services due to Contractor's activities beyond the Substantial and Final Completion date(s). Any of Engineer's additional services due to Contractor's activities beyond the Substantial and Final

Completion date(s) that would not be covered by liquidated damages would require written acceptance by the Owner.

17. Providing assistance in responding to the presence of any Constituent of Concern at the Site, in compliance with current Laws and Regulations.
18. Preparing and furnishing to Owner Record Drawings showing appropriate record information based on Project annotated record documents received from Contractor.
19. Preparation of operation and maintenance manuals.
20. Preparing to serve or serving as an Engineer or witness for Owner in any litigation, arbitration, or other dispute resolution process related to the Project.
21. Providing more extensive services required to enable Engineer to issue notices or certifications requested by Owner.
22. Other services performed or furnished by Engineer not otherwise provided for in this Agreement.

A2.02 Additional Services Not Requiring Owner's Written Authorization

- A. ~~Engineer shall advise Owner that Engineer is commencing to perform or furnish the Additional Services of the types listed below. For such Additional Services, Engineer need not request or obtain specific advance written authorization from Owner. Engineer shall cease performing or furnishing such Additional Services upon receipt of written notice from Owner.~~
1. ~~Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner.~~
 2. ~~Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or equal" items; and services after the award of the Construction Contract in evaluating and determining the acceptability of a substitution which is found to be inappropriate for the Project or an excessive number of substitutions.~~
 3. ~~Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.~~
 4. ~~Additional or extended services during construction made necessary by (1) emergencies or acts of God endangering the Work, (2) the presence at the Site of any Constituent of Concern, (3) Work damaged by fire or other cause during construction, (4) a significant amount of defective, neglected, or delayed work by Contractor, (5) acceleration of the progress schedule involving services beyond normal working hours, or (6) default by Contractor.~~

- ~~5. Services (other than Basic Services during the Post Construction Phase) in connection with any partial utilization of any part of the Work by Owner prior to Substantial Completion.~~
- ~~6. Evaluating an unreasonable claim or an excessive number of claims submitted by Contractor or others in connection with the Work.~~
- ~~7. Services during the Construction Phase rendered after the date stated in A1.05.B, or in excess of the times specified in A1.05.A.18.~~

E-500 Exhibit A, Sept 2004

This is **Appendix 1 to EXHIBIT A**, consisting of 7 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated 9-19-2017.

Scope of Services

The following is the scope of services anticipated for this project. Items A through H represent general requirements and Item I is the detailed scope for this project.

A. Monthly Progress Reports and Billing Statements

The Consultant shall submit a brief monthly progress report outlining the study status, progress, and results to date, regardless of whether or not a billing statement is submitted, on or before the last working day of the month.

Each billing statement must include a task-by-task report justifying the cost items contained in the billing statement. The monthly progress report may be used as the justification for the billing statement as long as all cost items covered in the billing statement are addressed in the progress report.

Consultant and subconsultant(s) billing statements should indicate the number of hours worked by job classification at the consultant's hourly rate(s) as identified on the hourly rate sheet(s) that will be made part of the Owner-Engineer professional services agreement. Unless previously approved by the City of Gillette (COG), all labor, equipment and materials used in the course of the project that is not included on the consultant's direct costs and rate sheet shall be considered subsidiary to the consultant's hourly rates.

B. Computer Models, Statement of Assumptions, Project Work File

1. If the Consultant writes or uses a computer model or spread sheet as a part of this project, the Consultant shall submit to the COG for approval all proposed model names and data formats prior to beginning work on that task. All data shall be submitted to COG in written and digital formats with the final design report. Digital media shall be labeled by the Consultant to provide sufficient detail to access the information on that media. User manuals shall be submitted by the Consultant to the COG providing complete documentation of computer models developed under this project. The user manuals shall also contain the source code language and the type of computer equipment necessary to operate the model(s). All computer models, databases, and spreadsheets developed herein (written and digital formats) are due on the same date as the final design report.
2. To facilitate the COG's accurate evaluation of the Consultant's work product, computations, conclusions and recommendations, the Consultant shall:

- a. Include in the final design report a section describing the assumptions and methodology used by the Consultant in generating the data and conclusions contained in that report.
- b. Maintain a project work file containing the materials used in project analysis. This file will be available for review by the COG and should be organized in such a way as to allow replication of the steps and procedures used by the Consultant to reach the conclusions described in the final design report.

C. Engineer Certification

The Consultant shall use the Contract Scope of Services as the outline for the draft and final design reports so that Consultant compliance with Contract provisions can be verified. The cover of final design reports, contract documents, as-built drawings, and related material must be stamped and signed by a professional engineer licensed in the State of Wyoming.

D. Digital Submittals

In addition to paper submittals, the Consultant shall also provide all reports, contract documents, as-built drawings, and related materials in a digital format. This digital format shall, to the extent feasible, be delivered in consolidated files rather than separate files for text, tables, graphics, etc. This digital report shall be contained on a CD(s) or DVD(s), and shall be in both Word and Adobe Acrobat format. Any plates, figures, etc. not suitable for Word shall be in AutoCAD, Adobe Acrobat, or compatible format.

E. Anticipated Project Funding Assistance

The Consultant anticipates no funding assistance will be required for this project.

F. Project Access

The Consultant shall be responsible for obtaining access as required for project tasks.

G. Stand-By Time

The COG will not reimburse the Consultant for stand-by time charges for the Consultant's supervisory personnel.

H. Permitting

All permit applications prepared under this project shall list the COG as the applicant. The consultant shall be responsible for obtaining the permit and any associated permit fees.

I. Scope of Services

The following **Scope of Service** details project requirements agreed upon as part of the contract negotiation process:

1.0 - Project Management

Task 1.1 – Project Management

- a. Maintain a project work plan.
- b. Maintain project staff and oversee the work of subconsultants.
- c. Monitor schedule and budget.
- d. Conduct periodic design team meetings and coordinate work elements.
- e. Provide a monthly progress report and invoice.
- f. Provide quality control review of work products.

Task 1.2 – Client Coordination

- a. Hold two design review meetings with the City. These will occur at approximately the 50% and 90% completion points.
- b. Coordinate regularly with the City staff to update progress on the project and present issues needing to be discussed or addressed. Meetings can be established on a regular basis if required.

Task 1.3 – Land Owner Access Permission

- a. Contact up to fourteen landowners located between Mills Ave. and Potter Ave. from Collins Road South to University Road to obtain permission for access related to surveying, drilling and design requirements. The fully executed permission agreements will be provided to the City of Gillette on City approved forms. This scope assumes an initial mailing, two follow-up phone calls and one site visit with each landowner for a maximum of 2 hours per landowner.

2.0 Preliminary Design

Task 2.1 – Surveying and Mapping

- a. Create a digital file of the project area from the City GIS.
- b. Verify and establish 3 to 5 control points throughout the area for use during design and construction. These control points will be set in offsite areas as required and away from the slide area.
- c. Perform record research for recorded property and easement information.
- d. Surveyor will attempt to locate block and lot corners in the project area.
- e. Request utility companies to locate buried utilities throughout the area. Survey these utility locations using the control points. During this survey, look for features that are not shown in the City GIS that should be added to the mapping. Survey these also.
- f. Perform a topography survey of the slide area and existing sanitary sewer including cross sections and profiles as required for design purposes.
- g. Revise the base mapping by bringing the elevations and additional features surveyed as outlined above into the City GIS and prepare preliminary plan and profile sheets at a scale of 1"=50'.
- h. Incorporate the street addresses to the base mapping.

Task 2.2 – Geotechnical Investigation and Report

- a. Develop a drilling program and testing regimen based on information gathered from available soils maps and geotechnical information.
- b. Complete a site reconnaissance to evaluate drill rig accessibility.
- c. This scope anticipates seven boreholes will be completed to a depth of 20 to 80 feet or to hollow stem auger refusal, whichever comes first.
- d. Two of the borings will be completed as piezometers to allow for groundwater monitoring during the remainder of the design period and are anticipated to be monitored on a weekly basis for a period of eight months.
- e. Standard penetrating tests (SPT's) will be utilized to collect samples and provide a measure of the density of the granular soils and consistency of the clayey soils.
- f. Bulk samples and undisturbed Shelby Tubes/Dames and Moore samples will be collected.
- g. Prepare logs of all holes for this geotechnical investigation that will illustrate information such as soil types, consistency/density, sample depths, SPT blow counts, and water table elevation.
- h. Soil samples collected during the subsurface exploration will be tested for classification and strength properties and utilized in the slope stability model. Testing is anticipated to include index testing, strength testing for unconfined compression, direct shear and consolidation tests. Moisture/density relations will also be prepared in preparation for density tests during construction.
- i. Assemble all work under this task in a preliminary project Geotechnical Report that will summarize soil conditions and provide preliminary recommendations regarding slope mitigation. The report will also include a preliminary stability analysis for the worst-case cross section and will be revised for the final report after all laboratory testing is completed.
- j. Following the completion of all laboratory testing and review comments the final slope stability analysis will be completed and will include one slope stability model. The model will be calibrated by considering existing slope failures. Slope stability models will be completed with SLOPE/W software, which will allow consideration of such items as seismic events, groundwater, and varying slip surface geometries.
- k. In addition to model results, the report will provide construction mitigation recommendations and drawings as applicable. DOWL will analyze the subsurface conditions based on the field studies and laboratory tests and summarize the results in a report signed by a professional engineer registered in the State of Wyoming. Our report will describe the work performed, subsoil conditions encountered and recommendations.
- l. Once the final geotechnical report is completed, a final slope design will be completed based on the recommendations contained within the final geotechnical report.

Task 2.3 – Prepare and Submit 50% Plans and Project Manual

- a. Prepare preliminary plan sheets and drawings in accordance with City of Gillette CAD design standards.
- b. Prepare preliminary plan and profile sheets for the 12 inch replacement sewer from 80 feet northeast of manhole 0912026 to manhole 0912027.
- c. Prepare preliminary design sheets for the proposed slope stability repair.
- d. Where necessary for clarity, prepare details showing slope stability and sewer connection requirements.
- e. Recommend up to five temporary construction and five permanent easement locations for consideration.
- f. Assemble all of the plan and profile sheets prepared under the above tasks into a Plan Set.
- g. Prepare a cover sheet, key sheets, general sheets and also prepare any additional details that are not contained in the *City of Gillette, 2017 Standard Construction Specifications*.
- h. Prepare a Project Manual with the appropriate Division sections and other sections not included in the *City of Gillette, 2017 Standard Construction Specifications*. Also include a section on project special provisions and work sequencing requirements if required.
- i. Prepare a preliminary quantity takeoff and develop the bid schedule for the Project Manual. Prepare preliminary cost estimate.
- j. Perform in-house reviews.
- k. Submit the plans to the City of Gillette for review and comment. Meet with the City of Gillette to review plans, project manual, preliminary geotechnical report and address comments received.
- l. Revise the plans, project manual and the geotechnical report to include all comments received and internal reviews.

Task 2.4 – Landowner Title Work

- a. DOWL will arrange for and initiate title work for up to five affected landowners for permanent easements. This information will be used by the City of Gillette to establish title ownership for easement development.

3.0 Final Design

Task 3.1 - Design Report

- a. Prepare a design report describing rehabilitation improvements, engineering design process and assumptions. Design report will include:
 - Sewer Main Replacement / Slope Stability. Report will cover the design process for sanitary sewer replacement and the integration with the slope stability design.
 - Geotechnical Report as an attachment.

Task 3.2 - Prepare and Submit 90% Plans and Project Manual

- a. Finalize 90% Plans and Project Manual. Prepare DEQ Application to Construct to the City of Gillette.
 - 90% Plans will include revisions to the 50% review comments and standard details and general requirements for Stormwater Pollution Prevention and Traffic Control.
- b. Revise the quantity takeoff and the bid schedule for the Project Manual and update the cost estimate.
- c. Submit 90% Plans and Project Manual, and Design Report to the City of Gillette.
- d. Meet with the City of Gillette to review comments. Address comments as required.
- e. Finalize the temporary construction and permanent easements and prepare, certify and submit Legal Descriptions and Easement Exhibits.
- f. Perform in-house reviews
- g. Submit 95% Plans and Project Manual, and Design Report to the City of Gillette Engineering Department with a permit to construct application.

Task 3.3 - Prepare Contract Documents for Bidding

- a. Incorporate any final comments received from the City of Gillette permit to construct application.
- b. Update and finalize project plans and manual.
- c. Assemble the final Project Manual and plans for copying for bidding.
- d. Finalize summary sheets of the improvements to be constructed.
- e. Revise the project cost estimate using the quantities in the final bid schedule.

4.0 – Project Bidding and Award

Task 4.1 – Project Bidding

- a. Prepare an Advertisement for Bid. The City will publish the advertisement.
- b. Prepare 5 sets of plans, specifications/contract documents for bidding the project.
- c. Conduct a pre-bid conference and prepare minutes of this conference.
- d. Address questions raised by contractors and suppliers during the bidding process.
- f. Issue addenda during the bidding process as necessary.
- g. Attend the project bid opening.
- h. Tabulate and verify all bids.
- i. Make a recommendation on the award of the project.

Task 4.1 – Project Award

- a. Prepare a Notice of Award, Agreement, and bonding forms for the contractor and City for processing.
- b. Prepare a Notice to Proceed when appropriate.

The following assumptions were used in preparing the scope and budget for this project:

- No new rights of way are needed for this project.
- Owner will conduct all easement negotiations and record final documents
- The City will notify all planholders, sell and distribute all plans and maintain the planholder's list during bidding.
- Construction services, not covered in this scope, will be added by separate contract prior to start of construction.

This is **Appendix 2 to EXHIBIT A**, consisting of 1 pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated 9-19-2017.

Proposed Schedule

City of Gillette 2018 Sanitary Sewer Replacement Project

