

AGREEMENT
FOR
ENGINEERING SERVICES

This AGREEMENT, between the Norman Utilities Authority (OWNER) and Cardinal Engineering, LLC., (ENGINEER);

WITNESSETH

WHEREAS, OWNER intends to construct approximately 12,600 feet of new 12" PVC waterline to connect five new water wells in northeast Norman to the existing system. The water lines will be installed within 5 feet of the statutory Right-of-Way edge along the section line roads. The first segment will be 5,200 LF from Falls Lakeview Park north along 108th Ave NE to a reconnection point with existing water line south of Franklin Road. The second segment is from the intersection of 108th Ave NE and Tecumseh Road east 1,600 LF to the site of a new well. The third segment is 3,200 LF from the intersection of 84th Ave NE and Tecumseh Road north to a reconnection point with existing water line south of Franklin Road. The final fourth segment is from the intersection of 48th Ave NE and Tecumseh Road south 2,600 LF to the site of a new well. The proposed work is illustrated in Exhibit A - Project Location Map .

WHEREAS, OWNER requires survey, design and engineering services in connection with the PROJECT (the SERVICES); and,

WHEREAS, ENGINEER is prepared to provide said SERVICES; and,

NOW THEREFORE, in consideration of the promises contained in this AGREEMENT, OWNER and ENGINEER agree as follows:

ARTICLE 1 - EFFECTIVE DATE

The effective date of this AGREEMENT shall be _____.

ARTICLE 2 - COMPLETION DATE

ENGINEER shall complete the SERVICES in accordance with Attachment A, Project Schedule.

ARTICLE 3 - GOVERNING LAW

The laws of the state of Oklahoma shall govern this AGREEMENT.

ARTICLE 4 - SERVICES TO BE PERFORMED BY ENGINEER

ENGINEER shall perform the SERVICES described in Attachment B, Scope of Services.

ARTICLE 5 - COMPENSATION

OWNER shall pay ENGINEER in accordance with Attachment C, Compensation.

ARTICLE 6 - OWNER'S RESPONSIBILITIES

- 6.1. OWNER-Furnished Data: Upon request, OWNER will provide to ENGINEER all data in OWNER's possession relating to ENGINEER's SERVICES on the PROJECT. Such data may include electronic data available from the OWNER's Geographic Information System (GIS) and data generated by OWNER's water distribution system model. ENGINEER will reasonably rely upon the accuracy, timeliness, and completeness of the information provided by OWNER. OWNER's data is provided for temporary use or copying by ENGINEER.
- 6.2. Access to Facilities and Property: OWNER will make its facilities accessible to ENGINEER as required for ENGINEER's performance of its SERVICES

- 6.3. Timely Review: OWNER will examine ENGINEER's studies, reports, sketches, drawings, specifications, proposals, and other documents; and transmit OWNER comments or other decisions to ENGINEER in a timely manner.
- 6.4. Meetings: OWNER will participate in monthly progress meetings or other meetings with ENGINEER or contractor(s) defined in Scope of Services.
- 6.5. Advertisements, Permits, and Access: Unless otherwise agreed to in the Scope of Services, OWNER will obtain, arrange, and pay for all advertisements for bids; permits and licenses required by local, state, or federal authorities; and land, easements, rights-of-way, and access necessary for ENGINEER's SERVICES or PROJECT construction.
- 6.6. Hazardous Substances: If hazardous substances in any form are encountered or suspected, ENGINEER will stop its own work in the affected portions of the PROJECT to permit testing and evaluation. ENGINEER will, if requested by OWNER, conduct tests to determine the extent of the problem and will perform the necessary studies and recommend necessary remedial measures at an additional fee with contract terms to be negotiated.

ARTICLE 7 - STANDARD OF CARE

ENGINEER shall exercise the same degree of care skill and diligence in the performance of the SERVICES as is ordinarily possessed and exercised by a professional engineer under similar circumstances. ENGINEER shall correct the SERVICES that fail to satisfy this standard of care. No warranty, express or implied is included in this AGREEMENT or in any drawing, specifications, report or opinion produced pursuant to this AGREEMENT.

ARTICLE 8 - LIABILITY AND INDEMNIFICATION

- 8.1 General. Having considered the potential liabilities that may exist during the performance of the SERVICES, the benefits of the PROJECT, the ENGINEER's fee for the SERVICES and in consideration of the promises contained in this AGREEMENT, OWNER and ENGINEER agree to allocate and limit such liabilities in accordance with this Article.
- 8.2 Indemnification and Liability. The CONSULTANT agrees to defend, indemnify, and hold harmless the OWNER, its officers, servants, and employees, from and against legal liability for all claims, losses, damage, cost, and expense (including reasonable attorneys' fees and accountants' fees) caused by a negligent act, error, or omission of the CONSULTANT in the performance of services under this Agreement. OWNER agrees to defend, indemnify, and hold harmless the CONSULTANT, its officers, servants, and employees, from and against legal liability for all claims, losses, damage, cost, and expense (including reasonable attorneys' fees and accountants' fees) caused by a negligent act, error, or omission of the OWNER in the performance of services under this Agreement, provided such indemnification shall be applicable only to the extent sovereign immunity has been waived pursuant to Oklahoma law. The CONSULTANT and the OWNER each agree to promptly service notice on the other party of any claims arising hereunder, and shall cooperate in the defense of such claims. The acceptance by OWNER or its representatives of any certification of insurance providing for coverage other than as required in this Agreement to be furnished by the CONSULTANT shall in no event be deemed a waiver of any of the provisions of this indemnity provision. None of the foregoing provisions shall deprive the OWNER of any action, right, or remedy otherwise available to OWNER at common law.
- 8.3 Employee Claims. ENGINEER shall indemnify OWNER against legal liability for damages arising out of claims by ENGINEER's employees. OWNER shall indemnify ENGINEER against legal liability for damages arising out of claims by OWNER's employees.
- 8.4 Consequential Damages. To the fullest extent permitted by law, ENGINEER shall not be liable to OWNER for any special, indirect or consequential damages resulting in any way from the performance of the SERVICES.

- 8.5 Survival. Upon completion of all SERVICES obligations and duties provided for in this AGREEMENT or if this AGREEMENT is terminated for any reason the terms and conditions of this Article shall survive.

ARTICLE 9 - INSURANCE

During the performance of the SERVICES under this AGREEMENT ENGINEER shall maintain the following insurance:

- 9.1 Worker's compensation insurance for ENGINEER's employees as required by Oklahoma Workers Compensation Statutes.
- 9.2 Comprehensive general liability insurance with a minimum of \$125,000 per accident for bodily injury or death and \$25,000 per occurrence for property damage.
- 9.3 Comprehensive automobile liability insurance with a minimum of \$125,000 per accident for bodily injury or death and \$25,000 for property damage.
- 9.4 Professional Liability (errors and omissions) insurance with a minimum policy value of \$1,000,000.

ENGINEER shall furnish OWNER certificates of insurance that shall include a provision that such insurance shall not be canceled without at least thirty days written notice to OWNER. All PROJECT contractors shall be required to include OWNER and ENGINEER as additional insured on their General Liability Insurance policies.

ENGINEER and OWNER each shall require its insurance carriers to waive all rights of subrogation against the other and its directors, officers, partners, commissioners, officials, agents and employees for damages covered by property insurance during and after the SERVICES. A similar provision shall be incorporated into all contractual arrangements entered into by OWNER and shall protect OWNER and ENGINEER to the same extent.

ARTICLE 10 - LIMITATIONS OF RESPONSIBILITY

ENGINEER shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures or safety precautions and programs in connection with the PROJECT; (2) the failure of any contractor, subcontractor, vendor or other PROJECT participant, not under contract to ENGINEER, to fulfill contractual responsibilities to the OWNER or to comply with federal, state or local laws, regulations, and codes; or (3) procuring permits, certificates and licenses required for any construction unless such responsibilities are specifically assigned to ENGINEER in Attachment B, Scope of Services.

ARTICLE 11 - OPINIONS OF COST AND SCHEDULE

Since ENGINEER has no control over the cost of labor, materials or equipment furnished by others or over the resources provided by others to meet PROJECT schedules, ENGINEER's opinion of probable costs and of PROJECT schedules shall be made on the basis of experience and qualifications as a professional engineer. ENGINEER does not guarantee that proposals, bids, or actual PROJECT costs will not vary from ENGINEER's cost estimates.

ARTICLE 12 - REUSE OF DOCUMENTS

Upon OWNER's request ENGINEER shall furnish OWNER with deliverables and/or other data on electronic media. All documents, including but not limited to, drawings, specifications and computer software prepared by ENGINEER pursuant to this AGREEMENT are instruments of Service in respect to the PROJECT. Said documents are not intended or represented to be suitable for reuse by OWNER or others on extensions of the PROJECT or on any other PROJECT.

ARTICLE 13 - TERMINATION

This AGREEMENT may be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms of this AGREEMENT. The non-performing party shall have fifteen (15) calendar days from the date of the termination notice to cure or to submit a plan for cure acceptable to the other party.

OWNER may terminate or suspend performance of this AGREEMENT for OWNER's convenience upon written notice to ENGINEER. ENGINEER shall terminate or suspend performance of the SERVICES on a schedule acceptable to OWNER. If termination or suspension is for OWNER's convenience, OWNER shall pay ENGINEER for all the SERVICES performed to date, amount not to exceed the normal fee amount due for the SERVICES rendered and termination or suspension expenses. Upon restart, an equitable adjustment shall be made to ENGINEER's compensation.

ARTICLE 14 - DELAY IN PERFORMANCE

Neither OWNER nor ENGINEER shall be considered in default of this AGREEMENT for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of this AGREEMENT, such circumstances include, but are not limited to abnormal weather conditions; floods; earthquakes; fire; epidemics; war; riot and other civil disturbances; strikes, work slowdowns and other labor disturbances; sabotage; judicial restraint; and inability to procure permits, licenses, or authorizations from any local, state, or federal agency for any of the supplies, materials, accesses, or SERVICES required to be provided by either OWNER or ENGINEER under this AGREEMENT.

Should such circumstances occur the non-performing party shall, within a reasonable period after being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this AGREEMENT.

ARTICLE 15 - COMMUNICATIONS

Any communication required by this AGREEMENT shall be made in writing to the address specified below:

ENGINEER: William R. Swain, P.E., P.L.S.
Senior V.P. Engineering/Manager
3700 W. Robinson, Suite 200
Norman, OK 73072
405-579-0655
Bill.swain@eccgrp.com

OWNER: Chris Mattingly, P.E.
Norman Utilities Authority
201-C West Gray, 73069
P.O. Box 370
Norman OK 73070
405-366-5426
Chris.Mattingly@NormanOK.gov

Nothing contained in this Article shall be construed to restrict the transmission of routine communications between representatives of ENGINEER and OWNER.

ARTICLE 16 - WAIVER

A waiver by either OWNER or ENGINEER of any breach of this AGREEMENT shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

ARTICLE 17 - SEVERABILITY

The invalidity, illegality, or unenforceability of any provision of this AGREEMENT or the occurrence of any event rendering any portion or provision of this AGREEMENT void shall in no way affect the validity or enforceability of any other portion or provision of this AGREEMENT. Any void provision shall be deemed severed from this AGREEMENT, and the balance of this AGREEMENT shall be construed and enforced as if this AGREEMENT did not contain the particular portion or provision held to be void. The parties further agree to amend this AGREEMENT to replace any stricken provision with a valid Provision that comes as close as possible to the intent of the stricken provision. The

provisions of this Article shall not prevent this entire AGREEMENT from being void should a provision, which is of the essence of this AGREEMENT, be determined void.

ARTICLE 18 - INTEGRATION

This AGREEMENT represents the entire and integrated AGREEMENT between OWNER and ENGINEER. It supersedes all prior and contemporaneous communications, representations, and agreements, whether oral or written, relating to the subject matter of this AGREEMENT. This AGREEMENT, including its attachments and schedules, may only be changed by a written amendment executed by both parties. The following attachments and schedules are hereby made a part of this AGREEMENT:

Attachment A - Schedule
Attachment B - Scope of Services
Attachment C - Compensation

ARTICLE 19 - SUCCESSORS AND ASSIGNS

OWNER and ENGINEER each binds itself and its directors, officers, partners, successors, executors, administrators, assigns, and legal representatives to the other party to this AGREEMENT and to the directors, officers, partners, successors, executors, administrators, assigns, and legal representatives of such other party in respect to all provisions of this AGREEMENT.

IN WITNESS WHEREOF, OWNER and ENGINEER have executed this AGREEMENT.

DATED this _____ day of _____, 20_____.

Cardinal Engineering, LLC. - ENGINEER

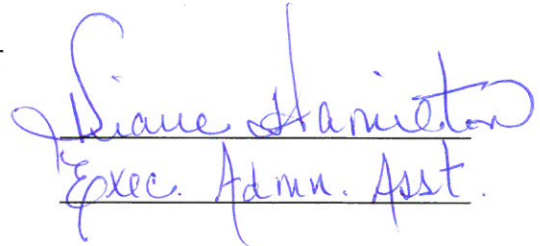
ATTEST

By:



Title:

S.V.P. Manager


Exec. Admn. Asst.

Norman Utilities Authority- OWNER

APPROVED as to form and legality this 5 day of November, 2019.



City Attorney

APPROVED by the Trustees of the Norman Utilities Authority this _____ day of _____, 20____.

ATTEST

By:

Title:

ATTACHMENT A

SCHEDULE

ENGINEER shall complete and submit 60% plans and specifications to the OWNER within Forty-Five (45) calendar days following receipt of Notice to Proceed from the OWNER.

ENGINEER shall complete and submit 90% plans and specifications to the OWNER within Thirty (30) calendar days following receipt of 60% comments from the OWNER.

ENGINEER shall complete Design Services and submit final plans and specifications to the OWNER within Fifteen (15) calendar days following receipt of 90% comments from the OWNER.

ENGINEER shall provide Construction Services to the OWNER following the successful bidding and award of the PROJECT(s).

ENGINEER shall submit as-built drawings to the OWNER within 30 calendar days after acceptance of construction PROJECT(s) by OWNER.

ATTACHMENT B

SCOPE OF SERVICES

Project consists of approximately 12,600 feet of new 12" water line and five new water well connections.

1.0 BACKGROUND

This contract will include the following components:

- a. Project consists of construction of approximately 12,600 feet of new 12" PVC waterline to connect five new water wells in northeast Norman to the existing system. The water lines will be installed within 5 feet of the statutory Right-of-Way edge along the section line roads. The first segment will be 5,200 LF from Falls Lakeview Park north along 108th Ave NE to a reconnection point with existing water line south of Franklin Road. The second segment is from the intersection of 108th Ave NE and Tecumseh Road east 1,600 LF to the site of a new well. The third segment is 3,200 LF from the intersection of 84th Ave NE and Tecumseh Road north to a reconnection point with existing water line south of Franklin Road. The final fourth segment is from the intersection of 48th Ave NE and Tecumseh Road south 2,600 LF to the site of a new well. The proposed work is illustrated in Exhibit A - Project Location Map .

Project will be constructed in one construction phase.

2.0 BASIC SERVICES

Basic Services provided by the ENGINEER will generally be covered under the following activities: Activity A – Project Coordination, Activity B –water line Design, Activity C – Bid Phase Services, Activity D – Construction Phase Services and Activity E - Engineering Allowances. Specific tasks for each activity are identified in the following sections.

ACTIVITY A - PROJECT COORDINATION

Project Management

Provide project management for Activities A, B, C, D and E. Project management will include, but not be limited to developing and implementing a project management plan; tracking and managing internal schedules of work; monitoring and addressing issues related to the scope of work, budget and deliverables; preparing and processing monthly billings; providing labor resources necessary to fulfill scoped work; scheduling and participating in quality control reviews; and providing updates to the OWNER on a regular basis.

- a. ENGINEER will coordinate design efforts on project tasks identified below.
- b. ENGINEER shall prepare a brief project update and common monthly invoice for all detailed design phase services.

Deliverables

- a. Monthly Invoices with Project Update
- b. Baseline Design Schedule

ACTIVITY B – WATER LINE DESIGN

Task 1 – 60% Water line Design

- a. Right of Entry
 1. ENGINEER will identify land owners of parcels impacted by the selected water line alignment to the OWNER's Land Department. OWNER's Land Department will utilize the information and will be responsible for securing Right-of-Entry (ROE) so that ENGINEER can access the properties as needed to perform various engineering support tasks.
 2. OWNER will notify ENGINEER of those parcels that are non-responsive or have refused granting ROE within 15 days of sending notification letters.
- b. Participate in 60% design quality control review meetings with OWNER's personnel. ENGINEER will furnish four sets of the draft plans, specifications and bidding documents to the OWNER for each meeting.
- c. Plans

The ENGINEER will develop the plans as follows:

 1. The ENGINEER will develop and submit core drawings to the OWNER for review in advancing the design. The OWNER will review and comment. ENGINEER will provide a written response to OWNER comments and will modify drawings incorporating required changes.
 2. Perform design calculations; develop design drawings to 60%.
 3. The ENGINEER will consult with the OWNER's Transportation and Public Works Department, Water Department, and other departments, public utilities, private utilities, and other facilities that have an impact or influence on the project.
 4. Prepare 60% design plans for the new 12" water lines and five new well connections. The construction plans at a minimum shall include:
 - Plan and Profile sheets which show the following: proposed water plan/profile and recommended pipe size, fire hydrants, water service lines and meter boxes, valves, isolation valves, manholes, existing meter numbers and sizes that are to be replaced, existing sample locations, existing fire line locations, existing utilities and utility easements, and all pertinent information needed to construct the project. Property lines, legal description (Lot Nos., Block Nos., and Addition Names) along with property ownership shall be provided on plan view. Plans will reflect actual conditions to a distance of at least 25 feet on either side of the proposed water lines.
 - The ENGINEER shall make provisions for reconnecting all identifiable water service lines which connect directly to any main being replaced under this project, including replacement of existing service lines within OWNER right-of-way or utility easement. When the existing alignment of a water line or lateral is changed, provisions will be made in the final plans and/or specifications by the ENGINEER to relocate all service lines which are connected to the existing main and connect said service lines to the relocated main.
 - The ENGINEER will prepare standard and special detail sheets for water line installation or replacement that are not already included in the OWNER's standard details. Applicable OWNER's standard details will be included or modified as necessary and included in the detail sheets.

ENGINEER will ensure that the design complies with the most recent amendment of all applicable portions of Oklahoma Administrative Code including but not limited to OAC 252:626, Public Water Supply Construction Standards.

- d. In addition, furnish additional sets to all utility companies affected by the PROJECT. Schedule and attend conference(s) with all affected utility companies to verify horizontal and vertical locations of their existing facilities as required. Revise documents as necessary to reflect utility company and OWNER comments. Obtain written approval from all affected utility companies as to correctness of existing facilities and proposed relocations shown on the revised plans.

Task 2 – 90% Water line Design

- a. Participate in 90% design quality control review meetings with OWNER's personnel. ENGINEER will furnish four sets of the draft plans, specifications and bidding documents to the OWNER for each meeting.
- b. Plans
The ENGINEER will develop the plans as follows:
 1. The ENGINEER will develop and submit core drawings to the OWNER for review in advancing the design. The OWNER will review and comment. ENGINEER will provide a written response to OWNER comments and will modify drawings incorporating required changes.
 2. Perform design calculations; develop design drawings to 90%.
 3. The ENGINEER will consult with the OWNER's Transportation and Public Works Department, Water Department, and other departments, public utilities, private utilities, and other facilities that have an impact or influence on the project.
 4. Prepare 90% design plans. ENGINEER will ensure that the design complies with the most recent amendment of all applicable portions of Oklahoma Administrative Code including but not limited to OAC 252:626, Public Water Supply Construction Standards.
 5. ENGINEER will prepare an Opinion of Probable Cost (OPCC) for review by the OWNER. This OPCC will be prepared and submitted with the 90% quality control review of the plans and specifications. The ENGINEER will update the OPCC for submittal with the final sealed plans and specifications.

Task 3 –Final Water line Design

- a. Plans
The ENGINEER will develop the plans as follows:
 1. Develop design drawings to 100%.
 2. ENGINEER will require the Contractor to prepare the Storm Water Pollution Prevention Plan (SWPPP) required for the project for use by the CONTRACTOR during construction. ENGINEER will prepare standard details for proposed SWPPP improvements that the CONTRACTOR must use during construction. CONTRACTOR will be responsible for filing the SWPPP with appropriate regulatory agencies.
 3. ENGINEER will prepare 100% construction documents and bid documents. ENGINEER will ensure that the design complies with the most recent amendment of all applicable portions of Oklahoma Administrative Code including but not limited to OAC 252:626, Public Water Supply Construction Standards.
 4. ENGINEER will provide contract documents and prepare an engineering design report to comply with ODEQ requirements. OWNER will provide an necessary water modeling. ENGINEER will submit three (3) sets of half size plans and specifications to ODEQ for review. If necessary, incorporate modifications requested by permitting entities and obtain all required design approvals and permits. The OWNER will be responsible for fees associated with the permitting process.

OWNER will ensure that all necessary ROW is obtained prior to award of any construction contract(s). Submit plans as required to all parties associated with PROJECT including OWNER, ODEQ and private utility companies. ENGINEER will provide a written response to OWNER comments and will modify documents incorporating required changes. ENGINEER will provide sealed construction contract documents to OWNER.

5. Prepare specifications to fully describe the intended work and convey the intent of the design. ENGINEER will utilize City of Norman Standard Specifications and Construction Drawings (City Specifications) to the maximum extent possible.
6. Prepare specifications for the proposed work on a unit price basis. Specifications shall include a measurement and payment description. Each unit price bid item will be fully described in this section. Bid documents shall be prepared to allow differing construction techniques such open trench, boring and jacking, or directional boring. The use of additive alternates shall be evaluated by the ENGINEER and incorporated if feasible to provide flexibility in awarding portions of the work that are within the OWNER's budget.
7. ENGINEER will prepare an Opinion of Probable Cost (OPCC) for review by the OWNER. This OPCC will be prepared and submitted with the 100% set of plans and specifications. The ENGINEER will update the OPCC for submittal with the final sealed plans and specifications.
8. Preparation of additional construction packages, separate procurement packages or additional OPCC's if requested by the OWNER shall be provided as an ADDITIONAL SERVICE.
9. The following documents will be provided by the ENGINEER after sealing the contract document sets:
 - i. Four sets of half size (11-in x 17-in) plans and four specification books.
 - ii. Electronic (PDF OCR) files of plans and specifications via optical disc.

Deliverables

- a. 60% quality control review plans and specifications
- b. 60% OPCC
- c. 90% quality control review plans and specifications
- d. 90% OPCC
- e. Engineering Design Report
- f. Final sealed plans and specifications
- g. Final OPCC

ACTIVITY C – BID PHASE SERVICES

Task 1 – Pre-Bid Activities

Assist the OWNER in the advertisement of the project for competitive bids.

- a. Assist the OWNER in securing bids, preparing addenda, issuing notice to bidders and notifying construction news publications. The notice to bidders will be furnished to the OWNER for publication in the local news media. The cost for publications shall be paid by the OWNER. The ENGINEER will reproduce copies and distribute bidding documents. The ENGINEER will retain money received from the sale of bidding documents. The price of bid documents shall be agreed to by the OWNER and ENGINEER prior to advertisement.
- b. Coordinate and conduct a pre-bid conference for the project bid package included in Basic Services.
- c. In conjunction with the OWNER, ENGINEER will issue addenda in response to questions raised during the bidding process. ENGINEER will transmit addenda to all plan holders.

Task 2 – Post-Bid Activities

- a. Assist the OWNER in the opening and tabulation of bids for construction of project and recommend to the OWNER as to the proper action on all proposals received.
- b. Following the opening of bids the ENGINEER shall conform the contract documents including all addendum changes. The following contract document sets shall be provided:
 1. Four sets of half size (11-in x 17-in) conformed plans.
 2. One set of full size (24-in x 36-in) conformed plans.
 3. Two conformed specification books for execution by the respective parties.
 4. Electronic (PDF OCR) files of the plans and specifications via ftp site or optical disc.
- c. Assist the OWNER in coordinating the execution of the conformed contract documents.
- d. Preparation of additional copies of the documents for the OWNER or other parties will be performed by the ENGINEER as an ADDITIONAL SERVICE.

ACTIVITY D – CONSTRUCTION PHASE SERVICES

Pre-Construction Conference

- a. Conduct pre-construction conference and, in conjunction with the OWNER, issue clarifications in response to questions raised at the conferences. Attend monthly progress meetings at City Hall with the OWNER and the PROJECT contractor. Meet with OWNER staff and/or the City Council for PROJECT discussions, coordination and presentations as required by the OWNER.

Construction Documentation

- a. Review samples, catalog data, schedules, shop drawings, laboratory, shop and mill tests of material and equipment and other data which the CONTRACTOR is required to submit, only for conformance with the design concept of the project and compliance with the information given by the Contract Documents.
- b. OWNER will review and comment on the certificate of completion and the recommendation for monthly progress payments to the CONTRACTOR. Verification of quantities and completion of work shall be the responsibility of the OWNER. OWNER will provide a copy of the approved pay application to the ENGINEER.
- c. Review and comment on the certificate of completion and the recommendation for final payment to the CONTRACTOR following final inspection of the completed Project.
- d. Review, evaluate and prepare routine change orders as required.

Record Drawing Preparation

- a. Revise contract drawings with reference to the Contract Document required "red line" notations and the assistance of assigned OWNER or 3rd Party Resident Representative Staff. Revised drawings shall reflect available information as to how the work was constructed. Furnish a set of reproducible mylars of these revised drawings to the OWNER as well as the drawings on an electronic thumb drive after completion of the project. Final as-built data shall be submitted in digital format as CAD files, as well as ESRI Arc GIS 10.5 compatible data layers to allow incorporating this data into the City's GIS system. As an alternate to GIS datalayers, the Contractor may provide all waterline X,Y coordinates in a spreadsheet for the City to use in mapping the data. All spatial data will be free of slivers or overlapping polygons, and must maintain topological integrity.

ACTIVITY E – ENGINEERING ALLOWANCES

Task 1 – Topographic Survey

- a. The amount shown in Attachment C is for detailed survey and will not be exceeded without written OWNER approval.
- b. Topographic Survey

Based on successful ROE, survey scope of work will include the following tasks:

1. Utility coordination: Prior to commencing any topographic fieldwork, surveyor will coordinate with, collect and review available public and private utility records within the project limits. The surveyor will submit a utility locate request for the project limits to OKIE811.
2. Right-of-Way and Property: Survey will locate and tie existing ROW, property lines and easements including type, size, volume and page, where applicable.
3. Survey will horizontally and vertically pick up surface features; drainage features; building locations; fences/retaining walls; tree lines; roadways; railways; and city, county and franchise utilities (as provided by OKIE811 utility locate request) within the project area to the following limits:
 - Approximately 12,600 LF of alignment mapping for the water line and sufficient area at each of the five new well connections to facilitate the connection details.
 - Alignment swaths will be one-half of the roadway to include one shot beyond the existing Right-of-Way. The side to be surveyed will be pre-determined and confirmed with the OWNER, ENGINEER, and SURVEYOR prior to initiating the survey. No additional Right-of-Way or Easement Acquisition is anticipated or included in the survey extents of the survey.
4. Methods and precision: All development must be tied to two of the OWNER's control points. The control point locations shall be supplied by the OWNER. Survey coordinates will be reported on the NGS Oklahoma State Plane Coordinate System, NAD83 (+/- 0.01 feet) with vertical coordinates reported in the NAVD 88 Vertical System (+/- 0.01 feet). A permanent benchmark shall be established on the project. This permanent benchmark will be a brass cap set in concrete in a location accepted by the City Engineer. The cap shall read "City of Norman Bench Mark" together with a letter and/or numerical designation assigned it by the City's Engineer office from the master file of bench marks maintained by the City's Engineer's office.
5. All survey data collected will also be submitted to the Engineer in GIS format per project spatial data management and procedures with appropriate ground to grid conversion.
6. The budget for survey established in this contract assumes full ground survey of the project limits. Monthly progress billings will be based on actual work performed by the surveyor (whether ground survey, aerial survey or both).
7. Survey Records Research: Surveyor will research boundaries, subdivision plats, rights-of-way (ROW) and easements of which the surveyor has knowledge, which may affect the physical boundaries of the project. Easements with volume and page numbers will be identified and labeled in the survey submittal. Research will include public record resources, including but limited to: county records; ODOT records; franchise utility records (gas, telephone, electric, cable and others); ownership or easement records as available; and title/abstracting reports from owner on proposed easement parent tracts.

ACTIVITY F – REIMBURSABLES

This covers all reimbursable expenses as outlined in activities A thru E. Any addition expenses accrued will be billed accordingly.

ATTACHMENT C

COMPENSATION

The OWNER will compensate ENGINEER on a lump sum basis for the SERVICES rendered. The lump sum fee is broken down below by task as defined in the Scope of Services:

Activity	Task Description	Total
	DETAILED DESIGN & CONSTRUCTION	
A	Project Coordination	\$4,235
B1	60% Water line Design	\$27,225
B2	80% Water line Design	\$9,075
B3	Final Water line Design	\$9,075
C	Bid Phase Services	\$3,025
D	Construction Phase Services	\$6,050
E1	Engineering Allowances (Survey)	\$21,000
F	Reimbursables	\$1,815
	Subtotal	\$81,500
	Total Fee	\$81,500

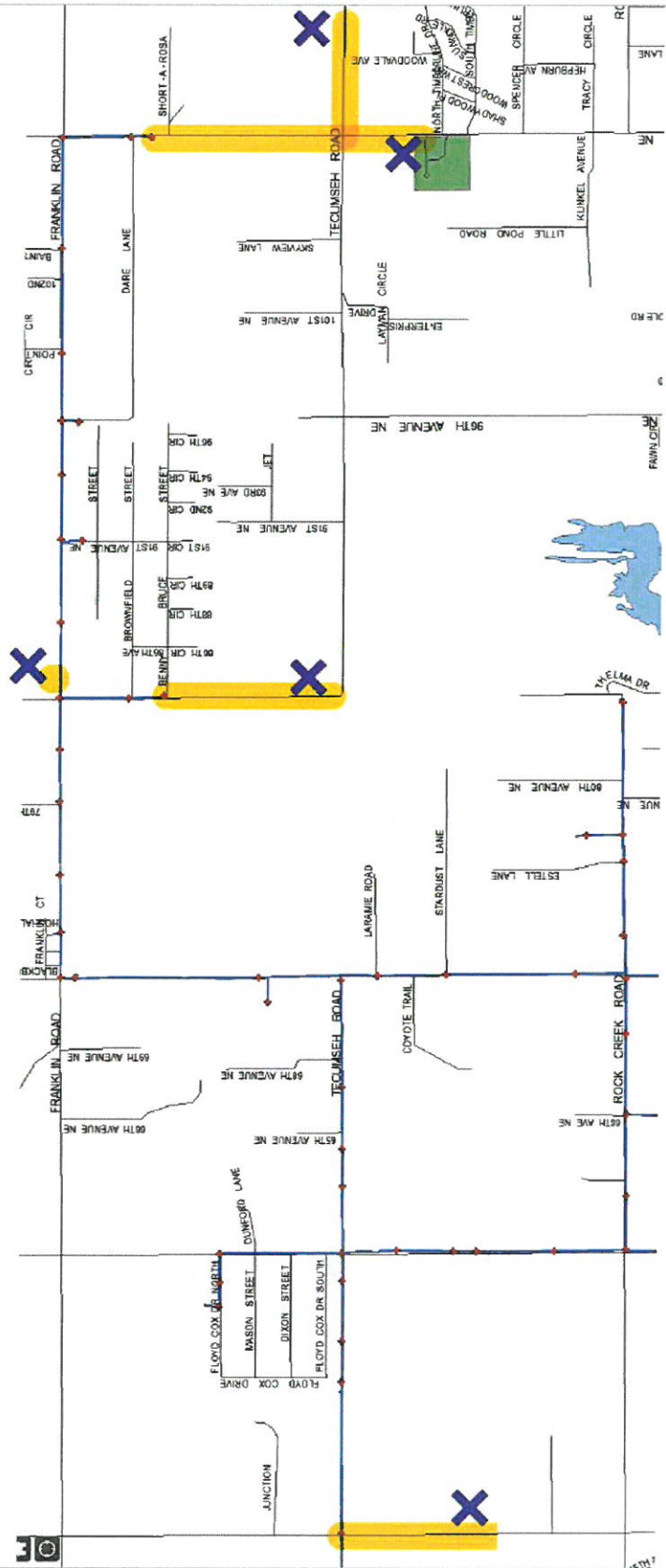
The ENGINEER may submit interim statements, not to exceed one per month, for partial payment for SERVICES rendered. The statements to OWNER will be by task for the percentage of work actually completed. The OWNER shall make interim payments within 30 calendar days in response to ENGINEER's interim statements.

No budgetary allowance has been established for Additional Services. Additional services must be authorized by amendment of the agreement. Time and materials billing for ENGINEER'S labor will be at the hourly rates provided below. ENGINEER's direct expenses, including subcontractor expenses, will include a multiplier of 1.10.

**Cardinal Engineering, LLC.
2019 Hourly Rate Schedule**

DESCRIPTION		Hourly Rate
Principal		\$180.00
Professional Engineer VII		\$160.00
Professional Engineer VI		\$155.00
Professional Engineer V		\$148.00
Professional Engineer IV		\$144.00
Professional Engineer III		\$135.00
Professional Engineer II		\$125.00
Professional Engineer I		\$117.00
Staff Professional VI		\$110.00
Staff Professional V		\$106.00
Staff Professional IV -Survey and Civil		\$100.00
Staff Professional III		\$96.00
Staff Professional II		\$90.00
Staff Professional I		\$85.00
Computer Aided Drafting		\$85.00
Civil Designer IV		\$110.00
Civil Designer III		\$106.00
Civil Designer II		\$85.00
Civil Designer I		\$75.00
Construction Manager/Inspector		\$95.00
Engineering Assistant		\$64.00
Office Tech/Administrative Assistant		\$58.00
Intern I		\$44.00
Survey Principal		\$175.00
Professional Land Surveyor		\$135.00
Senior Survey Technician / One-Man Survey Party		\$100.00
Senior Office Technician		\$100.00
Field Technician		\$80.00
Advanced Technology Survey Field Technician		\$100.00
Aerial Data Processing Fee		\$40.00
Certified Abstractor		\$100.00
GIS Specialist		\$100.00
GIS Developer		\$135.00
GIS Analyst		\$85.00
Environmental Professional IV		\$120.00
Hydrology/PE III		\$144.00
Commercial Licensed UAV Pilot	UAV Mission Minimum Cost \$500.00	\$200.00
Remote Sensing Field Technician		\$200.00
Remote Sensing Technician		\$95.00
Aerial Data Processing Fee		\$40.00
Reimbursables/Subcontractors		Cost+15%
ATV (4-Wheeler)		\$10/hr
Per Diem / Mileage (Current GSA Rate for location when Government funded project)		\$55.00 / \$0.65

EXHIBIT A - PROJECT LOCATION MAP



NEW WELL - APPROXIMATE LOCATION

APPROXIMATE LOCATIONS OF NEW 12" WATER LINES