CITY		ENGINEER	
CITY OF JOPLIN **602 S. MAIN STREET** **JOPLIN, MO 64801**		Name: Anderson Engineering, Inc. Address: 811 E 3rd Street Joplin, MO 64801	
Attention: Nicholas Heatherly, P.E., C.F.M. nheather@joplinmo.org		Attention: Neil Brady, P.E., nbrady@aeincmo.com Jason Eckhart, P.E., jeckhart@aeincmo.com	
Department: Public Works		Phone: 417.782.7399	Fax: 417.782.7398
Phone: 417.624.0820 x 500	Fax: 417.625.4738	CDBG Project 2, Non-LMI Additional Services	

WORK AUTHORIZATION NUMBER AND-DR2-PAP7-2 – Additional Services
TO AGREEMENT FOR PROFESSIONAL ENGINEERING CONSULTING SERVICES

City and Engineer agree to amend their Agreement for Professional Engineering Consulting Services to include a scope of work and fees for engineering services, by adding the following terms to their Agreement.

1. **Services**. The City agrees to engage the services of the Engineer and the Engineer agrees to perform the services hereinafter set forth in connection with projects described in ***Exhibit A***.

2. **Addition to Services**. The City may add to the Engineer services or delete therefrom activities of a similar nature to those set forth in ***Exhibit A***, provided that the total cost of such work does not exceed the total cost allowance as specified in Paragraph 5 hereof. The Engineer shall undertake such changed activities only upon the direction of the City. All such directives and changes shall be in written form and prepared and approved by the City and shall be accepted and countersigned by the Engineer.

3. **Term**. The services of the Engineer shall commence as soon as practicable after the execution of this contract, unless otherwise directed in writing, and shall be undertaken and completed in such sequence as to assure their expeditious completion in the light of the purposes of the contract, but in any event, all of the services required hereunder shall be completed as set forth in the schedule for the project which is attached hereto as ***Exhibit A***.

4. **Costs not to Exceed**. The City of Joplin is limited by law with respect to the amount of money it can pay. Therefore, the City has established a fixed sum for this contract, which cannot be exceeded unless this contract is amended. The Engineer providing services hereunder shall be required to keep track of the amount of hours billable under this contract at all times; and any work in excess of the fixed sum shall not be eligible for payment. The Engineer shall notify the City if Engineer anticipates that the contract amount may be exceeded, in order to determine whether or not the City is prepared to increase the total compensation. The Engineer shall establish a billing system showing the amount of money remaining on the contract, which shall be shown in each monthly billing.

5. **Payment**.

a. **Conditioned upon acceptable performance**. The City agrees to pay the Engineer in accordance with the terms set forth in ***Exhibit A***, which shall constitute complete compensation for all services to be rendered under this contract; provided, that where payments are to be made periodically to Engineer for services rendered under this contract, the City expressly reserves the right to disapprove in whole or in part a request for payment where the services rendered during the period for which payment is claimed are not performed in a timely and satisfactory manner in accordance with the schedule and description of services set forth in ***Exhibit A***.

b. **Total compensation not to exceed**. It is expressly understood that in no event will the total compensation and reimbursement to be paid to the Engineer under the terms of this Work Authorization Number AND-DR2-PAP7-2 – Additional Services exceed the sum of **Two Hundred Thousand Two Hundred Fifty and 00/100 Dollars ($200,250.00).**

6. **Insurance**. Without limiting any of the other obligations or liabilities of the Engineer, the Engineer shall secure and maintain at its own cost and expense, throughout the duration of this Contract and until the work is completed and accepted by the City of Joplin, insurance of such types and in such amounts as may be necessary to protect it and the interests of the City of Joplin against all hazards or risks of loss as hereunder specified or which may arise out of the performance of the Contract Documents. The form and limits of such insurance, together with the underwriter thereof in each case, are subject to approval by the City of Joplin. Regardless

of such approval, it shall be the responsibility of the Engineer to maintain adequate insurance coverage at all times during the term of the Contract. Failure of the Engineer to maintain coverage shall not relieve it of any contractual responsibility or obligation or liability under the Contract Documents.

The certificates of insurance, including evidence of the required endorsements hereunder or the policies, shall be filed with the City at the time that this contract is signed by the Engineer. All insurance policies shall provide thirty (30) days written notice to be given by the insurance company in question prior to cancellation or non-renewal of such insurance. Such notices shall be mailed, certified mail, return receipt requested, to:

City of Joplin - Public Works, 602 S. Main, Joplin, MO 64801; and

All policies except for the professional liability policy shall name the City as an additional insured with limits of liability not less than the sovereign immunity limits for Missouri public entities calculated by the Missouri Department of Insurance as of January 1 each calendar year and published annually in the Missouri Register pursuant to Section 537.610, RSMo.
(See, http://insurance.mo.gov/industry/sovimmunity.php).

As of January 1, 2016, the minimum coverage for the insurance referred to herein shall be as set out below:

a. Workers' Compensation....Statutory coverage per RSMo 287.010 et seq.
Employer's Liability..... $1,000,000.00

b. Commercial General Liability Insurance, including coverage for Contractual Liability and Independent Contractors Liability. Such coverage shall apply to bodily injury and property damage on an "Occurrence Form Basis" with limits of at least Two Million Seven Hundred Thirty Four Thousand Five Hundred Sixty Seven and no/100 Dollars ($2,734,567.00) for all claims arising out of a single accident or occurrence and at least Four Hundred Ten Thousand One Hundred Eighty Five and no/100 Dollars ($410,185.00) with respect to injuries and/or death of any one person in a single occurrence and an amount not less than at least $1,000,000 for all claims to property arising out of a single occurrence and at least $100,000 to any one owner with respect to damages to property. Engineer agrees that the proceeds of such insurance policy shall first be used to pay any award, damages, costs, and/or attorneys' fees incurred by or assessed against City, its employees, officers and agents, before payment of any award, damages, costs or attorneys fees of Engineer, its employees, officers or agents. Engineer agrees to cause its insurer to name City as an additional insured on such insurance policy, including the City as an additional insured for coverage under its products-completed operations hazard, and said policy shall be primary and noncontributory.

c. Automobile Liability Insurance covering bodily injury and property damage for owned, non-owned and hired vehicles, with limits of at least Two Million Seven Hundred Thirty Four Thousand Five Hundred Sixty Seven and no/100 Dollars ($2,734,567.00) for all claims arising out of a single accident or occurrence and at least Four Hundred Ten Thousand One Hundred Eighty Five and no/100 Dollars ($410,185.00) with respect to injuries and/or death of any one person in a single accident or occurrence.

d. Errors and Omissions Insurance. The Engineer shall maintain a professional liability insurance policy in the amount of $1,000,000.00 on both a per-claim and an aggregate basis. This policy shall remain in full force and effect for a period of one year after completion and acceptance by the City of the construction of the project.

e. Subcontracts. In case any or all of this work is sublet, the Engineer shall require the subcontractor to procure and maintain all insurance required in subparagraphs (A), (B) and (C) hereof and in like amounts. Engineer shall require any and all subcontractors with whom it enters into a contract to perform work on this project to protect the City of Joplin through insurance against applicable hazards or risks and shall, upon request of the City, provide evidence of such insurance.

f. Notice. The Engineer and/or subcontractor shall furnish the City prior to beginning the work satisfactory proof of carriage of all the insurance required by this contract, with the provision that policies shall not be canceled, modified or non-renewed without thirty (30) days written notice to the City of Joplin.

g. Legislative or Judicial Changes. In the event the scope or extent of the City's tort liability as a governmental entity as described in Section 537.600 through 537.650 RSMo is broadened or increased during the term of this agreement by legislative or judicial action, the City may require Engineer, upon 10 days written notice, to execute a contract addendum whereby the Engineer agrees to provide, at a price not exceeding Engineer's actual increased premium cost, additional liability insurance coverage as the City may require to protect the City from increased tort liability exposure as the result of such legislative or judicial action. Any such

additional insurance coverage shall be evidenced by an appropriate certificate of insurance and shall take effect within the time set forth in the addendum.

7. All other terms and conditions of the original Agreement shall remain in effect.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals on the day and year herein stated.

REVIEWED FOR APPROVAL

Dan Johnson, P.E., Civil Engineer

Troy Bolander, Director of Planning,
Development and Neighborhood Services

CERTIFICATE OF DIRECTOR OF FINANCE

I certify that the expenditure contemplated by this document is within the purpose of the appropriation to which it is to be charged and that there is an unencumbered balance of appropriated and available funds to pay therefore.

Leslie Haase, Director of Finance

APPROVED AS TO FORM

Peter Edwards, City Attorney

Engineer: Anderson Engineering, Inc.

By: 

Printed Name: Jason Eckhart, P.E.

Title: Vice President

Date: 11.10.16

CITY OF JOPLIN, MISSOURI

By: _____
Nicholas Heatherly, P.E.
Public Works Director

Date: _____

Exhibit A

for

Work Authorization Number

AND-DR2-PAP7-2 – Additional Services

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PART 1 – BASIC SERVICES *All deliverables referred to in the agreement shall also be provided in an electronic format to be specified by the City.*

A1.01 ~~*Conceptual Phase*~~

~~A. Engineer shall:~~

~~1. Consult with Owner to define and clarify Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations, and identify available data, information, reports, facilities plans, and site evaluations.~~

~~If Owner has already identified one or more potential solutions to meet its Project requirements, then proceed with the study and evaluation of such potential solutions. Options will be discussed and agreed to by Engineer at scoping meeting.~~

~~2. Identify potential solution(s) to meet Owner's Project requirements, as needed.~~

~~3. Study and evaluate the potential solution(s) to meet Owner's Project requirements.~~

~~4. Visit the Site, or potential Project sites, to review existing conditions and facilities, unless such visits are not necessary or applicable to meeting the objectives of the Study and Report Phase.~~

~~5. Advise Owner of any need for Owner to obtain, furnish, or otherwise make available to Engineer additional Project-related data and information, for Engineer's use in the study and evaluation of potential solution(s) to Owner's Project requirements, and preparation of a related report.~~

~~6. After consultation with Owner, recommend to Owner the solution(s) which in Engineer's judgment meet Owner's requirements for the Project.~~

~~7. Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve the portions of the Project to be designed or specified by Engineer, including but not limited to mitigating measures identified in an environmental assessment for the Project.~~

~~8. Prepare a conceptual 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 Engineer's recommended solution(s). 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 Consultants; and, on the basis of information furnished by Owner, a tabulation of other items and services included within the definition of Total Project Costs.~~

~~9. Advise Owner of any need for Owner to provide data or services of the types~~

~~described in Exhibit B, for use in Project design, or in preparation for Contractor selection and construction.~~

10. ~~When mutually agreed, assist Owner in evaluating the possible use of building information modeling; civil integrated management; geotechnical baselining of subsurface site conditions; innovative design, contracting, or procurement strategies; or other strategies, technologies, or techniques for assisting in the design, construction, and operation of Owner's facilities. The subject matter of this paragraph shall be referred to in Exhibit A and B as "Project Strategies, Technologies, and Techniques."~~

11. ~~If requested to do so by Owner, assist Owner in identifying opportunities for enhancing the sustainability of the Project, and pursuant to Owner's instructions plan for the inclusion of sustainable features in the design.~~

12. ~~Develop a scope of work and survey limits for any topographic and other surveys necessary for design.~~

13. ~~Perform or provide the following other Study and Report Phase tasks or deliverables:~~

14. ~~Furnish 6 review copies of the Report and any other Study and Report Phase deliverables to Owner by the due date and review by phone or in person with Owner.~~

15. ~~Revise the Report and any other Study and Report Phase deliverables in response to Owner's comments, as appropriate, and furnish 6 copies of the revised Report and any other Study and Report Phase deliverables to the Owner by the agreed upon due date.~~

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

C. Billing/Payment Processing Options

1. Request for payment may be submitted at appropriate intervals during the contract. Application for payment must include a detailed breakdown of deliverables completed as well as specific tasks or percentages of specific tasks completed. Payment schedule will be at the approval of the city.
2. Deliverables option as determined by engineering staff on a project by project basis. Example: 30 percent – Preliminary plans, 60 percent Right of Way plans, 90 percent Final plans and bid documents, 100 percent project completion.

A1.02 ~~*Preliminary Design Phase (30 percent plans)*~~

~~A. Proceed with Preliminary Design Phase after the completion of the Conceptual phase which includes: Acceptance by Owner of the Conceptual Report and any other Study and Report Phase deliverables; selection by Owner of a recommended solution; issuance by Owner of any instructions for use of Project Strategies, Technologies, and Techniques, or for inclusion of sustainable features in the design, and Indication by Owner of any specific~~

~~modifications or changes in the scope, extent, character, or design requirements of the Project desired by Owner.~~

1. ~~Prepare Preliminary Design Phase documents consisting of final design criteria, preliminary drawings, outline specifications, and written descriptions of the Project.~~

2. ~~Include on plans, property lines, structure locations, ownership names and contact information.~~

3. ~~In preparing the Preliminary Design Phase documents, use any specific applicable Project Strategies, Technologies, and Techniques authorized by Owner during or following the Study and Conceptual Phase, and include sustainable features, as appropriate, pursuant to Owner's instructions.~~

4. ~~Provide necessary field surveys, topographic and utility mapping for Engineer's design purposes. Comply with the scope of work and procedure for the identification and mapping of existing utilities as defined by Section A1.03 "Utility Requirements" and Section A1.04 "Survey Services"~~

5. ~~Visit the Site as needed to prepare the Preliminary Design Phase documents.~~

6. ~~Advise Owner if additional reports, data, information, or services of the types described are necessary and assist Owner in obtaining such reports, data, information, or services.~~

7. ~~Continue to assist Owner with Project Strategies, Technologies, and Techniques that Owner has chosen to implement.~~

8. ~~Based on the information contained in the Preliminary Design Phase documents, prepare a revised opinion of probable Construction Cost, and assist Owner in tabulating the various cost categories which comprise Total Project Costs.~~

9. ~~Obtain and review Owner's instructions regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Also obtain and review copies of Owner's design and construction standards, Owner's standard forms, general conditions, supplementary conditions, text, and related documents or content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and in the draft Construction Contract Documents, when applicable.~~

10. ~~Development communication plan for project: considering the use of door hangers, letters, public meetings, changeable message boards.~~

11. Furnish 6 review copies of the Preliminary Design Phase documents, opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables to Owner by established due date, and review them with Owner. Owner shall submit to Engineer any comments regarding the furnished items.

12. Revise the Preliminary Design Phase documents, opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables in response to Owner's comments, as appropriate, and furnish to Owner 6 copies of the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other deliverables by the specified due date.

13. Engineer's services under the Preliminary Design Phase will be considered complete on the date when Engineer has delivered to Owner the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables.

A1.03 *Utility Requirements*

A. Make notification to utilities during conceptual phase of preliminary design process. Communication to be made in a specific, documented format. (As detailed in item D).

B. Based on specific utility feedback, and field observation, identify potential high expense utility relocation issues.

C. Prepare and present plan for city review, detailing significant utility conflicts, proposed pothole locations, and associated costs for verifying existing utilities. Potholing process to include horizontal and vertical alignment and depth details. Details will be included in 30 percent plan completion, final right of way plans, and final construction plans. Necessary corrective action to address incomplete or inaccurate details may be subject to errors and omissions insurance claim.

D. Submit utility report at 30 percent submittal and close out of project. Utility report to include representatives contacted, meeting dates, and a summary of discussions, requests, observations and/or concerns. (See City of Joplin utility notification form)

A1.04 *Surveying Services – General*

A. Control Survey

All horizontal control for the project will be based on the Missouri State Plane Coordinate System of 1983, West Zone.

All vertical control for the project will be based on the North American Vertical Datum of 1988 (NAVD 88) provided by NOAA's National Geodetic Survey (NGS).

Control points and temporary bench marks will be set inter visible and in strategic locations along the project route so as to be conveniently used during all phases of the project, including construction.

B. Engineering Survey

Provide topographic engineering survey for the length of the project to facilitate design. Provide a survey of all existing surface and sub-surface utilities in the project corridor.

C. Property Boundary Survey/Right-of-way Survey/Easements

Provide a boundary survey or surveys to locate the existing Right-of-Way/Easements for the length of the project, the adjacent property lines of the parcels along the project, and all existing easements of record encumbering each property that will affect the project. Consultant will be responsible for ordering title work for each parcel along the project route and procuring existing right-of-way documents and/or right-of-way plans.

D. Right-of-way and Easement Description Preparation

Upon final approval of the Right-of-Way/Project Plans consultant will provide descriptions and exhibit drawings for all property right acquisitions including, but not limited to: right-of-way takings, permanent easements and temporary easements.

E. Right-of-way and Easement Staking

During the property negotiation phase of the project it may be necessary to stake the proposed right-of-way and/or easement locations to assist the right-of-way agent. Upon request, the consultant will temporarily stake the proposed right-of-way/easement locations with wooden lathe to allow the property owner to visually inspect the location of such.

Pre-Construction Phase – On projects that will require the relocation of existing utilities prior to the award of the construction contract the consultant shall temporarily stake the location of the Right-of-Way and/or easements at points predetermined by Owner. This service will be provided one (1) time as a part of the contract. Any additional staking, if required by utility contractors due to the destruction of the temporary stakes, will be done at the advertised hourly rate and billed back to the utility contractor who is found to be responsible for removing the original stakes.

F. Existing United States Public Land Survey System Corners

All existing USPLSS corners that may/will be removed or altered as a result of this project must be referenced and re-established according to 20 CSR 2030-17.020 and 20 CSR 2030-17.030.

G. Survey Records

Consultant shall provide to Owner originals or copies of all survey records relevant to the project. These records shall include, but are not limited to: survey notes, research records, computations, calculations and drawings.

H. Other Services

Services not covered by A through F that are determined in the scoping meeting to be necessary for completion of the project.

A1.05

Right of Way Plan Phase – 60 percent plans

A. Determine parcels and parcel ownership information to be included on right of way plans.

B. Determine parcel size.

C. Prepare R.O.W. plan tabulation sheet.

D. Prepare R.O.W. plan sheets showing easement and right of way takings.

E. Furnish 6 review copies of the Right of Way Plan Phase documents, opinion of probable Right of Way Cost, and any other Right of Way Plan Phase deliverables to Owner by established due date, and review them with Owner. Owner shall submit to Engineer any comments regarding the furnished items.

F. Revise the Right of Way Plan Phase documents, opinion of probable Right of Way Cost, and any other Right of Way Plan Phase deliverables in response to Owner's comments, as appropriate, and furnish to Owner 6 copies of the revised Right of Way Plan Phase documents, revised opinion of probable Right of Way Cost, and any other deliverables by the specified due date.

G. Engineer's services under the Right of Way Plan Phase will be considered complete on the date when Engineer has delivered to Owner the revised Right of Way Plan Phase documents, revised opinion of probable Right of Way Cost, and any other Right of Way Plan Phase deliverables.

A1.06 *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/or any other Right of Way plan documents, 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:

1. Prepare final Drawings and Specifications indicating the scope, extent, and character of the Work to be performed and furnished by Contractor.

2. Visit the Site as needed to assist in preparing the final Drawings and Specifications.

3. Provide technical criteria, written descriptions, and design data for Owner's use in filing applications for permits from or approvals of governmental authorities having jurisdiction to review or approve the final design; assist Owner in consultations with such authorities; and revise the Drawings and Specifications in response to directives from such authorities, as appropriate.

4. Advise Owner of any recommended adjustments to the opinion of probable Construction Cost.

5. After consultation with Owner, include in the Construction Contract Documents any specific protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website. Any such protocols shall be applicable to transmittals between and among

Owner, Engineer, and Contractor during the Construction Phase and Post-Construction Phase, and unless agreed otherwise shall supersede any conflicting protocols previously established for transmittals between Owner and Engineer.

6. Assist Owner in assembling known reports and drawings of Site conditions, and in identifying the technical data contained in such reports and drawings upon which bidders or other prospective contractors may rely.

7. In addition to preparing the final Drawings and Specifications, assemble drafts of other Construction Contract Documents based on specific instructions and contract forms, text, or content received from Owner.

8. Prepare or assemble draft bidding-related documents (or requests for proposals or other construction procurement documents), based on the specific bidding or procurement-related instructions and forms, text, or content received from Owner.

9. Contract shall include contractor provided changeable message signs to communication construction information.

10. Furnish for review by Owner, its legal counsel, and other advisors, 6 copies of the final drawings and Specifications, assembled drafts of other construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other final design Phase deliverables, by the established due date, with the Final Design Phase, and review them with Owner. Owner shall submit to Engineer any comments regarding the furnished items, and any instructions for revisions.

B. Engineer's services under the Final Design Phase will be considered complete on the date when Engineer has delivered to Owner the final Drawings and Specifications, other assembled Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables.

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.

A1.07 *Bidding Phase*

A. After acceptance by Owner of the final Drawings and Specifications, other Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement 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:

1. Advertise for and obtain bids or proposals for the Work, assist Owner in issuing assembled design, contract, and bidding-related documents (or requests for proposals or other construction procurement documents) to prospective contractors, and where applicable, maintain a record of prospective contractors to which documents have been issued, schedule and conduct mandatory pre-bid conferences, and receive and process contractor deposits or charges for the issued documents.

2. Prepare and issue Addenda as appropriate to clarify, correct, or change the issued documents.

3. Provide information or assistance needed by Owner in the course of any review of proposals with prospective contractors.

4. If Federal funding is involved, set up prequalification's for contractor. This includes researching all applicable debarment & qualified contractor's lists & providing this documentation in the project file

5. Consult with Owner as to the qualifications of subcontractors, suppliers, and other individuals and entities proposed by prospective contractors, for those portions of the Work as to which review of qualifications is required by the issued documents.

6. If the issued documents require, the Engineer shall evaluate and determine the acceptability of "or equals" and substitute materials and equipment proposed by prospective contractors, provided that such proposals are allowed by the bidding-related documents

7. Attend the bid opening, prepare bid tabulation sheets to meet Owner's schedule, and assist Owner in evaluating bids, assembling final contracts for the Work for execution by Owner and Contractor, and in issuing notices of award of such contracts.

B. The Bidding Phase will be considered complete upon commencement of the Construction Phase.

A1.08 *Construction Phase*

A. Upon successful completion of the Bidding and Negotiating Phase, and upon written authorization from Owner, Engineer shall:

1. *General Administration of Construction Contract:* Consult with Owner and act as Owner's representative as provided in the Construction Contract. The extent and limitations of the duties, responsibilities, and authority of Engineer shall be as assigned below. 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 Construction Contract except as otherwise provided in writing.

2. *Resident Project Representative (RPR):* Provide the services of an RPR at the Site to assist the Engineer (unless provided by the city), and to provide more

extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth. The furnishing of such RPR's services will not limit, extend, or modify Engineer's responsibilities or authority except as expressly set forth

3. *Selection of Independent Testing Laboratory:* Assist Owner in the selection of an independent testing laboratory to perform the services identified.

4. *Pre-Construction Conference:* Participate in a pre-construction conference prior to commencement of Work at the Site.

5. *Electronic Transmittal Protocols:* Consultant shall follow City of Joplin protocols shown below.

6. *Original Documents:* If requested by Owner to do so, maintain and safeguard during the Construction Phase at least one original printed record version of the Construction Contract Documents, including Drawings and Specifications signed and sealed by Engineer and other design professionals in accordance with applicable Laws and Regulations. Throughout the Construction Phase, make such original printed record version of the Construction Contract Documents available to Contractor and Owner for review.

7. *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.

8. *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.

9. *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 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 the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Construction 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 Construction Contract Documents, and Engineer shall keep Owner informed of the progress of the Work.

   b) The purpose of Engineer's visits to the Site, 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 Construction 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 Construction Contract Documents. Engineer shall not, during such visits or as a result of such observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents.

10. *Defective Work:* Reject Work if, on the basis of Engineer's observations, Engineer believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents. Provide recommendations to Owner regarding whether Contractor should correct such Work or remove and replace such Work, or whether Owner should consider accepting such Work as provided in the Construction Contract Documents.

11. *Compatibility with Design Concept:* If Engineer has express knowledge that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then inform Owner of such incompatibility, and provide recommendations for addressing such Work.

12. *Clarifications and Interpretations:* Accept from Contractor and Owner submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. With reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Construction Contract Documents.

13. *Field Orders:* Subject to any limitations in the Construction Contract Documents, Engineer may prepare and issue Field Orders requiring minor changes in the Work.

14. *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 as required.

a) Identify discrepancy
b) Contractor submits pricing
c) Cost analysis by Project Manager
d) Submit Conceptual Plan to MoDOT and FHWA, if applicable
e) Receive conceptual approval from both agencies and give contract Notice to Proceed
f) Change in work complete, submit official change Order with Justification and copy of conceptual to MoDOT and FHWA if applicable (justification provided by City Project Manager)
g) After signatures on Change order are complete, notify the contractor.

15. *Differing Site Conditions:* Respond to any notice from Contractor of differing site conditions, including conditions relating to underground facilities such as utilities, and hazardous environmental conditions. Promptly conduct reviews and prepare findings, conclusions, and recommendations for Owner's use.

16. *Shop Drawings, Samples, and Other Submittals:* Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction 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.

17. *Substitutes and "Or equal":* Evaluate and determine the acceptability of substitute or "or equal" materials and equipment proposed by Contractor.

18. *Inspections and Tests:*

a) Receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Construction Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Construction 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 Construction Contract Documents. Engineer shall be entitled to rely on the results of such inspections and tests.

b) As deemed reasonably necessary, request that Contractor uncover Work that is to be inspected, tested, or approved.

c) Pursuant to the terms of the Construction Contract, require special inspections or testing of the Work, whether or not the Work is fabricated, installed, or completed.

19. *Change Proposals and Claims:*

a) Review and respond to Change Proposals. Review each duly submitted Change Proposal from Contractor and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer will not resolve the Change Proposal.

b) Provide information or data to Owner regarding engineering or technical matters pertaining to Claims.

20. *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. Recommend reductions in payment (set offs) based on the provisions for set offs stated in the Construction Contract. 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 Work is generally in accordance with the Construction 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 Construction 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 the Work. In the case of unit price Work, Engineer's recommendations of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Construction Contract Documents).

b) By recommending 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.

21. *Contractor's Completion Documents:* Receive from Contractor, review, and transmit to Owner maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Construction Contract Documents, certificates of inspection, tests and approvals, and Shop Drawings, Samples, and other data. Receive from Contractor, review, and transmit to Owner the annotated record documents which are to be assembled by Contractor in accordance with the Construction

~~Contract Documents to obtain final payment. The extent of Engineer's review of record documents shall be to check that Contractor has submitted all pages.~~

22. ~~*Substantial Completion:* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor, visit the Site to review the Work and determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.~~

23. *Other Tasks:* Perform or provide the following other Construction Phase tasks or deliverables:

    a) Travel Related Expenses: The Contractor shall comply with the City of Joplin travel policy with the exception of meal reimbursement. Per diem and incidentals are not applicable. Actual itemized receipts containing proof of payment should be provided for the meal purchased and not exceed the meal category General Services Administration (GSA) rate maximum for the City of Joplin in the City of Joplin travel policy.

    b) Other Project Related Expenses: Other project related expenses not related to travel will be invoiced in accordance with the Exhibit B and will not be subject to mark-up.

    c) Invoice Reimbursement: The mark-up of charges is not allowed including but not limited to expenses and subcontractor charges.

    d) Project Construction Costs: The Engineer will track construction costs by funding source.

24. ~~*Final Notice of Acceptability of the Work:* Conduct a final visit to the Project to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice to Owner and Contractor in the form of the acceptance identified in MoDOT's LPA Manual, that the Work is acceptable (subject to the provisions of the Notice and Paragraph A1.05.A.21.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.~~

~~25. *Standards for Certain Construction-Phase Decisions:* Engineer will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.~~

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, then Construction Phase services may be rendered at different times in respect to the separate contracts. Engineer shall be entitled to an equitable increase in compensation if Construction Phase services (including Resident Project Representative services, if any) are required after the original date for completion and readiness for final payment of Contractor as set forth in the Construction Contract.

A1.09 *Post Construction Phase*

A. Upon written authorization from Owner during the Post Construction Phase, Engineer shall:

1. Together with Owner, visit the Project to observe any apparent defects in the Work, make recommendations as to replacement or correction of defective Work, if any, or the need to repair of any damage to the Site or adjacent areas, and assist Owner in consultations and discussions with Contractor concerning correction of any such defective Work and any needed repairs.

2. Together with Owner, visit the Project within one month before the end of the Construction Contract's correction period to ascertain whether any portion of the Work or the repair of any damage to the Site or adjacent areas is defective and therefore subject to correction by Contractor.

3. Full payment of the final invoice will not be considered until the consultant has electronically furnished the following documents:

a) The city's semi-final inspection letter stating the date of semi-final inspection and listing those who were present.
b) The city's final acceptance letter showing the number of working days or calendar days charged, completion date and the amount of liquidated damages, if any.
c) A final list of acceptance testers used on the project and a certification stating:

"The results of the tests or acceptance samples indicate that material incorporated in the construction work and the construction operations controlled by sampling and testing were in reasonably close conformity with the approved plans and specifications, and such results compare favorably with the results of independent assurance sampling and testing." Any deviations from the specifications must be explained along with the reason for acceptance.

"All field tests were performed in conformity with the governing specifications and the results were in reasonably close conformity with the specifications." Explain any deviations and why the work was accepted.

"The project was constructed substantially in conformity with the plans

~~and specifications for the project."~~

~~d) Contractor certification and city recommendation:~~

~~Showing the final DBE participation on the project including the DBEs used, the type of work performed, and the dollar amount paid to each DBE.~~

~~The city's recommendation regarding the contractor's fulfillment of the DBE requirements. The consultant shall also provide written documentation from each DBE that they were paid in full for the work identified in the Contractor DBE Certification. Examples of documentation from DBEs may include a letter, e-mail, lien waiver or copies of reimbursement checks. If DBE goals were not met, include documentation as to why.~~

~~e) Final Invoice~~

~~f) Final Detailed Estimate of Quantities~~

~~g) Contractor's Affidavit Regarding Settlement of Claims~~

~~h) Final Change Order (if needed)~~

~~i) Affidavit (Compliance with Prevailing Wage Law)~~

~~j) These documents are to be received within 60 days of the Final Inspection date. Final Reimbursement will be processed once all close out documentation has been reviewed and accepted.~~

~~B. The Post-Construction Phase services may commence during the Construction Phase and, if not otherwise modified, will terminate twelve months after the commencement 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 provide Additional Services of the types listed below. These services are not included as part of Basic Services and will be paid for by Owner as indicated.

~~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 statementsand documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.~~

2. Undertaking investigations and studies including, but not limited to:

a. Detailed consideration of operations, maintenance, and overhead expenses.

B2.01 *Right of Way Negotiation/Acquisition Services*

A. The Consultant shall be responsible for the following acquisition activities under this Scope of Services. All Right of Way acquisition activities will comply with HUD Uniform Relocation Act, City of Joplin, MoDot and LPA Guidelines

Pre-Qualification of Consultant Employees/Subcontractors

Project Timeline: Coordinate timeline with city staff.

Titlework/Titlework Updates: Acquire/update title search for each parcel.

Preparation/Review of Legal Instruments: Prepare legal documents using standard right of way and easement forms.

Preparation of Individual Parcel Files: Set up and maintain right of way acquisition file for each parcel. Send appropriate notices to property owners as required by funding source and city policy. Prepare detailed Negotiator's Report for each property to include owner information, all contacts, attempted contacts, or other related activity.

Appraisals, Updates: Arrange for appraisals and appraisal updates as required. Appraisal formats to be used (value analysis, value finding, short form, detailed appraisal) will be coordinated with city staff.

Appraisal Review: Arrange for appraisal review when appraisals are conducted.

Acquisition: Contact owners and arrange on site or office meetings to review project or compensation details. Obtain signatures and provide notary services for each required document after agreement has been reached.

Preparation of compensation packet – for appropriate city review and payment: Review counter offers, special requests or conditions with city staff.

Closings: Obtain signatures and provide notary services for each required document after agreement has been reached. Forward signed documents to city staff. Deliver payment to property owner. Forward file to city staff if agreement cannot be reached with property owner.

Relocation Assistance when applicable

Relocation Review

Project Status Reports: Provide status updates during scheduled project coordination meetings and as requested by city staff.

~~*Final File Disposition:* Submit electronic copy of Individual Parcel Files to city.~~

~~C2.01 *Construction Inspection and Administration Services*~~

~~A. The Consultant shall be responsible for the following construction inspection and construction administration activities under this Scope of Services.~~

~~1. *On-site Inspection and Verification:* Provide inspection services and oversee construction to verify compliance with construction plans. Coordinate and schedule construction verifications and inspections as needed.~~

~~2. *Testing:* Provide testing services for soils, concrete, steel, masonry, materials, and other items as needed.~~

~~3. *Coordination:* Coordinate project activities with project staff, city staff, and contractors to ensure timely delivery of construction materials and services; review construction pay applications; conduct wage rate interviews; review payroll reports; verify materials and quantities.~~

~~4. *Project Diary:* Keep a daily project diary and provide a weekly activity report to city project staff.~~

~~5. *Reporting:* Attend weekly project coordination meetings; assist the city in developing and meeting quarterly federal reporting requirements; ensure adherence to federally required construction provisions and all city policies.~~

~~6. *Verification*: Verify Contractor and Sub-contractor are in good standing at SAM.gov.~~

7. *Field Surveying:* Perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein.

8. *Materials Testing:* Perform the following materials testing services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein.

Engineering Services Agreement

Article 1 of the Agreement dated September 17, 2015, is supplemented to include the following agreement of the parties.

Engineer shall provide Additional Services for Field Surveying for the following projects at the costs shown:

	Sub-Project	Estimated Cost
1.	22nd Street, Rangeline Road to Florida Avenue	$13,000
2.	Highview Avenue Culvert/20th Street Ditch Improvements	$7,000
3.	20th Street CMAP Replacement	$6,000
4.	Delaware Avenue, 15th Street to 20th Street	$13,000
5.	Highview Avenue, 15th Street to 22nd Street	$12,000
6.	Texas Street and Arizona Avenue, 20th Street to 22nd Street	$8,000
	Subtotal Field Surveying	**$59,000**

Detailed descriptions of services to be provided for each project are included Part 2 - ADDITIONAL SERVICES below.

Engineer shall provide Additional Services for Materials Testing for the following projects at the costs shown:

	Sub-Project	Estimated Cost
1.	22nd Street, Rangeline Road to Florida Avenue	$28,500
2.	Highview Avenue Culvert/20th Street Ditch Improvements	$12,750
3.	20th Street CMAP Replacement	$6,000
4.	Delaware Avenue, 15th Street to 20th Street	$20,500
5.	Highview Avenue, 15th Street to 20th Street	$26,500
6.	Highview Avenue, 20th Street to 22nd Street	$18,500
7.	Texas Street and Arizona Avenue, 20th Street to 22nd Street	$28,500
	Total	**$141,250**

Detailed descriptions of services to be provided for each project are included Part 2 - ADDITIONAL SERVICES below.

1. 22nd Street, Rangeline Road to Florida Avenue – Field Staking

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

1. Verify/Establish Project Control: Verify horizontal & vertical control points and any other information necessary for the accurate layout of site improvements. Establish Temporary Bench Marks at no greater than 500 foot intervals, as necessary.

2. Center Line Grade: Check existing pavement elevations against the plan finished grade elevations on 50 foot stations for the length of the project prior to the Contractor starting construction.

3. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 100 foot intervals.

4. Stake Temporary Easements and Right-of-Way: Set points to be used for the location of temporary construction easements and permanent right-of-way. Stakes shall be set at 50 foot horizontal intervals and at bends, radius points and other curve elements as required.

5. Stake Curb & Gutter: Set offset stakes for construction of approximately 4875± LF of concrete curb & gutter. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to top/back of curb.

6. Stake ADA Ramps and Truncated Domes: Set offset stakes for construction of 13 ADA Ramps. Stake 13 truncated domes. Stakes shall indicate cut/fill to finish grade.

7. Stake Paved Concrete Drive Approaches: Set offset stakes for construction of 15 driveway approaches. Stakes shall indicate cut/fill to finish grade.

8. Stake Sidewalk: Set offset stakes for construction of approximately 2520± LF of concrete sidewalk along the south side of 22nd Street as per plans. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

9. Stake Stormwater Improvements: Set two offset stakes for of each of four 4' x 3' curb inlets and one 48" junction box as per plans. Set offset stakes at 25 foot stations and end points on approximately 190± LF of stormwater pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

10. Miscellaneous Staking: Provide 6 crew hours of construction staking on additional items as requested.

11. Other Staking: All items will be staked ONE TIME, including mileage and supervision. This Scope of Services does not include any re-staking. Re-staking or any other items not covered in this Scope of Services that are requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

2. Highview Avenue Culvert/20th Street Ditch Improvements – Field Staking

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

1. Verify/Establish Project Control: Verify horizontal & vertical control points and any other information necessary for the accurate layout of site improvements. Establish Temporary Bench Marks at no greater than 500 foot intervals, as necessary.

2. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 100 foot intervals.

3. Stake Curb & Gutter: Set offset stakes for construction of approximately 63± LF of concrete curb & gutter. Stakes shall indicate cut/fill to top/back of curb.

4. Stake ADA Ramp and Truncated Dome: Set offset stakes for construction of 1 ADA ramp and 1 truncated dome. Stakes shall indicate cut/fill to finish grade.

5. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk approximately 36± LF. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

6. Stake Stormwater Improvements: Set two offset stakes for each corner of one 15' x 4' precast box culvert and headwalls. Set offset stakes at 25 foot stations on approximately 1299± LF of U-Channel wall and 1072± LF of U-Channel floor. Stakes shall indicate cut/fill to flow lines and inlet tops.

7. Miscellaneous Staking: Provide 6 crew hours of construction staking on additional items as requested.

8. Other Staking: All items will be staked ONE TIME, including mileage and supervision. This Scope of Services does not include any re-staking. Re-staking or any other items not covered in this Scope of Services that are requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

3. 20th Street CMAP Replacement- Field Staking

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

1. Verify/Establish Project Control: Verify horizontal & vertical control points and any other information necessary for the accurate layout of site improvements. Establish Temporary Bench Marks at no greater than 500 foot intervals, as necessary.

2. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 100 foot intervals.

3. Stake Curb & Gutter: Set offset stakes for construction of approximately 61± LF of concrete curb & gutter. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to top/back of curb.

4. Stake ADA Ramp: Set offset stakes for construction of 1 ADA Ramp. Stakes shall indicate cut/fill to finish grade.

5. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk approximately 70± LF. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. shall indicate cut/fill to finish grade.

6. Stake Stormwater Improvements: Set two offset stakes for 4' x 8' curb inlet, headwall, and ends of pipes. Set offset stakes at 25 foot stations on approximately 1530± LF of stormwater pipes.

7. Miscellaneous Staking: Provide 4 crew hours of construction staking on additional items as requested.

8. Other Staking: All items will be staked ONE TIME, including mileage and supervision. This Scope of Services does not include any re-staking. Re-staking or any other items not covered in this Scope of Services that are requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

4. Delaware Avenue, 15th Street to 20th Street – Field Staking

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

1. Verify/Establish Project Control: Verify horizontal & vertical control points and any other information necessary for the accurate layout of site improvements. Establish Temporary Bench Marks at no greater than 500 foot intervals, as necessary.

2. Center Line Grade: Stake center line and offsets for relocation of Murphy Boulevard and existing pavement. Grade elevations are to be marked on 50 foot stations for the length of the project.

3. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 100 foot intervals.

4. Stake Temporary Easements and Right-of-Way: Set points to be used for the location of temporary easements and permanent right-of-way. Stakes shall be set at 50 foot horizontal intervals and at bends, radius points and other curve elements as required.

5. Stake Curb & Gutter: Set offset stakes for construction of approximately 3650± LF of concrete curb & gutter. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to top/back of curb.

6. Stake Paved Drive Approaches: Set offset stakes for construction of 14 driveway approaches. Stakes shall indicate cut/fill to finish grade.

7. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk along east side of Delaware Avenue for approximately 1850± LF and along the north side of 15th Street approximately 800± LF as per plans. Stakes shall be set at 25 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

8. Stake ADA Ramps: Set offset stakes for construction of 2 ADA Ramps. Stakes shall indicate cut/fill to finish grade.

9. Stake Stormwater Improvements: Set two offset stakes for of each of six 4' x 4' curb inlets, one 4' x 6' curb inlet, two 4' x 8' curb inlets, and one 8' x 8' curb inlet. Set two offset stakes for one 4' x 4' junction box and one 5' x 6' junction box as per plans. Set offset stakes at 25 foot stations and end points on approximately 1500± LF of stormwater pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

10. Miscellaneous Staking: Provide 8 crew hours of construction staking on additional items as requested.

11. Other Staking: All items will be staked ONE TIME, including mileage and supervision. This Scope of Services does not include any re-staking. Re-staking or any other items not covered in this Scope of Services that are requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

5. Highview Avenue, 15th Street to 22nd Street – Field Staking

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

1. Verify/Establish Project Control: Verify horizontal & vertical control points and any other information necessary for the accurate layout of site improvements. Establish Temporary Bench Marks at no greater than 500 foot intervals, as necessary.

2. Center Line Grade: Stake center line and offsets for relocation of Murphy Boulevard and existing pavement. Grade elevations are to be marked on 50 foot stations for the length of the project.

3. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 100 foot intervals.

4. Stake Temporary Easement and Right-of-Way: Set points to be used for the location of temporary construction easements and permanent right-of-way. Stakes shall be set at 50 foot horizontal intervals and at bends, radius points and other curve elements as required.

5. Stake Curb & Gutter: Set offset stakes for construction of approximately 4800± LF of concrete curb & gutter. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to top/back of curb.

6. Stake Paved Drive Approaches: Set offset stakes for construction of 17 driveway approaches. Stakes shall indicate cut/fill to finish grade.

7. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk along west side of Highview Avenue for approximately 2400± LF as per plans. Stakes shall be set at 25 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

8. Stake ADA Ramps and Truncated Domes: Set offset stakes for construction of 10 ADA ramps and 10 truncated domes. Stakes shall indicate cut/fill to finish grade.

9. Miscellaneous Staking: Provide 4 crew hours of construction staking on additional items as requested.

10. Other Staking: All items will be staked ONE TIME, including mileage and supervision. This Scope of Services does not include any re-staking. Re-staking or any other items not covered in this Scope of Services that are requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

6. Texas Avenue and Arizona Avenue from 20th Street to 22nd Street – Field Staking

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

1. Verify/Establish Project Control: Verify horizontal & vertical control points and any other information necessary for the accurate layout of site improvements. Establish Temporary Bench Marks at no greater than 500 foot intervals, as necessary.

2. Center Line Grade: Check existing pavement elevations against the plan finished grade elevations on 50 foot stations for the length of the project prior to the Contractor starting construction.

3. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 100 foot intervals.

4. Stake Temporary Easements and Right-of-Way: Set points to be used for the location of temporary construction easements and permanent right-of-way. Stakes shall be set at 50 foot horizontal intervals and at bends, radius points and other curve elements as required.

5. Stake Curb & Gutter: Set offset stakes for construction of approximately 600± LF of concrete curb & gutter. Stakes shall be set at 25 foot horizontal intervals and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to top/back of curb.

6. Stake Paved Concrete Drive Approaches: Set offset stakes for construction of 30 driveway approaches. Stakes shall indicate cut/fill to finish grade.

7. Stake Sidewalk: Set offset stakes for construction of 1200± LF concrete sidewalk along east side of Texas Avenue and west side of Arizona Avenue as per plans. Stakes shall be set at 25 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

8. Stake ADA Ramps and Truncated Domes: Set offset stakes for construction of 3 ADA ramps and 3 truncated domes. Stakes shall indicate cut/fill to finish grade.

9. Stake Stormwater Improvements: Set two offset stakes for of each of eight 4' x 4' curb inlets, one 5' x 8' curb inlet, four 4' x 5' curb inlets, and one 6' x 8' curb inlet as per plans. Set offset stakes at 25 foot stations and end points on approximately 1911± LF of stormwater pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

10. Miscellaneous Staking: Provide 6 crew hours of construction staking on additional items as requested.

11. Other Staking: All items will be staked ONE TIME, including mileage and supervision. This Scope of Services does not include any re-staking. Re-staking or any other items not covered in this Scope of Services that are requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

1. 22nd Street, Rangeline Road to Florida Avenue – Materials Testing

Anderson Engineering, Inc. shall perform the following materials testing services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 6 Tests

Compaction testing of Subgrade Soil - 6 Tests

Compaction for Trenches - 32 Tests

Sample Pickup - 4 Tests

Nuclear Density Test for Subgrade - 9 Tests One test every 5000 square feet

Nuclear Density Test for Trenches - 60 Tests One Test every 100 feet per lift

Atterberg Limits - 2 Tests

Standard Proctor - 2 Tests

Particle Size Analysis - 2 Tests

Moisture Content - 2 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 10 Tests One test every 5000 square feet

Thickness Verification of Base Rock - 10 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 15 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

ASPHALT

Asphalt Sample Collection during Placement - 30 Tests 1500 tons per day of asphalt placed per day.

Dry Material Sample Collection at Plant - 12 Tests 3 days, twice per day

Compaction Testing of Surface Course - 6 Tests

Rolling Straightedge - 4 Tests

Nuclear Density Test for Surface Course - 9 Tests Three per day (3 days)

Sieve Analysis of Coarse Aggregate - 6 Tests Twice a day (3 days)

Sieve Analysis of Fine Aggregate - 6 Tests Twice a day (3 days)

Sieve Analysis Combined Aggregate - 6 Tests Twice a day (3 days)

Extraction Gradation (MODOT Compliance) - 4 Tests Every 300 Tons (975 tons of surface)

Deleterious Materials (MODOT Compliance) - 4 Tests Every 300 Tons

Theoretical Max Density (MODOT Compliance) - 4 Tests Every 300 Tons

Flat and Elongated Pieces (MODOT Compliance) - 4 Tests Every 300 Tons

LA Abrasion (MODOT Compliance) - 4 Tests Every 300 Tons

Specific Gravity - Fine (MODOT Compliance) - 4 Tests Every 300 Tons

Specific Gravity - Coarse (MODOT Compliance) - 4 Tests Every 300 Tons

CONCRETE
Testing of Curb & Gutter - 20 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of ADA Ramps - 8 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Testing of Concrete Paving - 9 Tests 1 Slump, Air, Temp, & Cyl set per 100 yards

Testing of Concrete Approaches - 8 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards
Testing of Sidewalks - 20 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous - 6 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 16.5 Tests

Cylinder Compression Test - 180 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 45 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

2. Highview Avenue Culvert/20th Street Ditch Improvements - Materials Testing

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 4 Tests

Compaction testing of Subgrade Soil - 2 Tests

Compaction Testing of Embankment - 6 Tests

Compaction for Trenches - 2 Tests

Sample Pickup - 4 Tests

Nuclear Density Test for Subgrade - 3 Tests One test every 5000 square feet

Nuclear Density Test for Embankment - 9 Tests One test every 5000 square feet per lift

Nuclear Density Test for Trenches - 3 Tests One Test every 100 feet per lift

Atterberg Limits - 2 Tests

Standard Proctor - 2 Tests

Particle Size Analysis - 2 Tests

Moisture Content - 2 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 8 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 12 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

ASPHALT

Asphalt Sample Collection during Placement - 5 Tests 1500 tons per day of asphalt placed per day.

Dry Material Sample Collection at Plant - 2 Tests 1 days, twice per day

Compaction Testing of Base Course - 2 Tests

Compaction Testing of Surface Course - 2 Tests

Nuclear Density Test for Base Course - 3 Tests Three per day (.5 days)

Nuclear Density Test for Surface Course - 3 Tests Three per day (.5 days)

Sieve Analysis of Coarse Aggregate - 2 Tests Twice a day (1 days)

Sieve Analysis of Fine Aggregate - 2 Tests Twice a day (1 days)

Sieve Analysis Combined Aggregate - 2 Tests Twice a day (1 days)

Extraction Gradation (MODOT Compliance) - 2 Tests Every 300 Tons (22 tons surface & 44 tons)

Deleterious Materials (MODOT Compliance) - 2 Tests Every 300 Tons

Theoretical Max Density (MODOT Compliance) - 2 Tests Every 300 Tons

Flat and Elongated Pieces (MODOT Compliance) - 2 Tests Every 300 Tons

LA Abrasion (MODOT Compliance) - 2 Tests Every 300 Tons

Specific Gravity - Fine (MODOT Compliance) - 2 Tests Every 300 Tons

Specific Gravity - Coarse (MODOT Compliance) - 2 Tests Every 300 Tons

CONCRETE

Testing of Curb & Gutter - 2 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of Sidewalks - 2 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous (box and lined ditch) - 24 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 6 Tests

Cylinder Compression Test - 72 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 18 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

3. 20th Street CMAP Replacement - Materials Testing

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 2 Tests

Compaction for Trenches - 16 Tests

Sample Pickup - 4 Tests

Nuclear Density Test for Trenches - 24 Tests One Test every 100 feet per lift

Atterberg Limits - 1 Tests

Standard Proctor - 1 Tests

Particle Size Analysis - 1 Tests

Moisture Content - 1 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 2 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 6 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

CONCRETE

Testing of Curb & Gutter - 2 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of Concrete Paving - 3 Tests 1 Slump, Air, Temp, & Cyl set per 100 yards

Testing of Sidewalks - 2 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous (box and lined ditch) - 2 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 1.5 Tests

Cylinder Compression Test - 20 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 5 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

4. Delaware Avenue, 15th Street to 20th Street - Materials Testing

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 6 Tests

Compaction testing of Subgrade Soil - 6 Tests

Compaction Testing of Embankment - 4 Tests

Compaction for Trenches - 16 Tests

Sample Pickup - 6 Tests

Nuclear Density Test for Subgrade - 9 Tests One test every 5000 square feet

Nuclear Density Test for Embankment - 6 Tests One test every 5000 square feet per lift

Nuclear Density Test for Trenches - 30 Tests One Test every 100 feet per lift

Atterberg Limits - 3 Tests

Standard Proctor - 3 Tests

Particle Size Analysis - 3 Tests

Moisture Content - 3 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 6 Tests One test every 5000 square feet

Thickness Verification of Base Rock - 6 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 12 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

ASPHALT

Asphalt Sample Collection during Placement - 10 Tests 1500 tons per day of asphalt placed per day.

Dry Material Sample Collection at Plant - 2 Tests 1 day, twice per day

Compaction Testing of Surface Course - 2 Tests

Rolling Straightedge - 4 Tests

Rolling Straightedge Assistance - 4 Tests

Nuclear Density Test for Surface Course - 3 Tests Three per day (1 days)

Sieve Analysis of Coarse Aggregate - 2 Tests Twice a day (1 days)

Sieve Analysis of Fine Aggregate - 2 Tests Twice a day (1 days)

Sieve Analysis Combined Aggregate - 2 Tests Twice a day (1 days)

Extraction Gradation (MODOT Compliance) - 3 Tests Every 300 Tons (617 tons of surface)

Deleterious Materials (MODOT Compliance) - 3 Tests Every 300 Tons

Theoretical Max Density (MODOT Compliance) - 3 Tests Every 300 Tons

Flat and Elongated Pieces (MODOT Compliance) - 3 Tests Every 300 Tons

LA Abrasion (MODOT Compliance) - 3 Tests Every 300 Tons

Specific Gravity - Fine (MODOT Compliance) - 3 Tests Every 300 Tons

Specific Gravity - Coarse (MODOT Compliance) - 3 Tests Every 300 Tons

CONCRETE

Testing of Curb & Gutter - 4 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of ADA Ramps - 4 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Testing of Concrete Approaches - 8 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Testing of Sidewalks - 24 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous - 6 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 10.5 Tests

Cylinder Compression Test - 120 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 30 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

5. Highview Avenue, 15th Street to 20th Street - Materials Testing

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 8 Tests

Compaction testing of Subgrade Soil - 8 Tests

Compaction for Trenches - 32 Tests

Sample Pickup - 4 Tests

Nuclear Density Test for Subgrade - 12 Tests One test every 5000 square feet

Nuclear Density Test for Trenches - 60 Tests One Test every 100 feet per lift

Atterberg Limits - 2 Tests

Standard Proctor - 2 Tests

Particle Size Analysis - 2 Tests

Moisture Content - 2 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 12 Tests One test every 5000 square feet

Thickness Verification of Base Rock - 12 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 15 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

ASPHALT

Asphalt Sample Collection during Placement - 20 Tests 1500 tons per day of asphalt placed per day.

Dry Material Sample Collection at Plant - 8 Tests 2 days, twice per day

Compaction Testing of Surface Course - 6 Tests

Rolling Straightedge - 4 Tests

Rolling Straightedge Assistance - 4 Tests

Nuclear Density Test for Surface Course - 6 Tests Three per day (2 days)

Sieve Analysis of Coarse Aggregate - 4 Tests Twice a day (2 days)

Sieve Analysis of Fine Aggregate - 4 Tests Twice a day (2 days)

Sieve Analysis Combined Aggregate - 4 Tests Twice a day (2 days)

Extraction Gradation (MODOT Compliance) - 3 Tests Every 300 Tons (840 tons of surface)

Deleterious Materials (MODOT Compliance) - 3 Tests Every 300 Tons

Theoretical Max Density (MODOT Compliance) - 3 Tests Every 300 Tons

Flat and Elongated Pieces (MODOT Compliance) - 3 Tests Every 300 Tons

LA Abrasion (MODOT Compliance) - 3 Tests Every 300 Tons

Specific Gravity - Fine (MODOT Compliance) - 3 Tests Every 300 Tons

Specific Gravity - Coarse (MODOT Compliance) - 3 Tests Every 300 Tons

CONCRETE
Testing of Curb & Gutter - 20 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of ADA Ramps - 6 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Testing of Concrete Paving - 9 Tests 1 Slump, Air, Temp, & Cyl set per 100 yards

Testing of Concrete Approaches - 6 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards
Testing of Sidewalks - 18 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous - 6 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 15 Tests

Cylinder Compression Test - 164 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 41 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

6. Highview Avenue, 10th Street to 22nd Street - Materials Testing

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 4 Tests

Compaction testing of Subgrade Soil - 4 Tests

Compaction for Trenches - 20 Tests

Sample Pickup - 4 Tests

Nuclear Density Test for Subgrade - 6 Tests One test every 5000 square feet

Nuclear Density Test for Trenches - 60 Tests One Test every 100 feet per lift

Atterberg Limits - 2 Tests

Standard Proctor - 2 Tests

Particle Size Analysis - 2 Tests

Moisture Content - 2 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 8 Tests One test every 5000 square feet

Thickness Verification of Base Rock - 8 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 20 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

ASPHALT

Asphalt Sample Collection during Placement - 20 Tests 1500 tons per day of asphalt placed per day.

Dry Material Sample Collection at Plant - 4 Tests 1 day, twice per day

Compaction Testing of Surface Course - 2 Tests

Rolling Straightedge - 4 Tests

Rolling Straightedge Assistance - 4 Tests

Nuclear Density Test for Surface Course - 3 Tests Three per day (1 days)

Sieve Analysis of Coarse Aggregate - 2 Tests Twice a day (1 days)

Sieve Analysis of Fine Aggregate - 2 Tests Twice a day (1 days)

Sieve Analysis Combined Aggregate - 2 Tests Twice a day (1 days)

Extraction Gradation (MODOT Compliance) - 2 Tests Every 300 Tons (490 tons of surface)

Deleterious Materials (MODOT Compliance) - 2 Tests Every 300 Tons

Theoretical Max Density (MODOT Compliance) - 2 Tests Every 300 Tons

Flat and Elongated Pieces (MODOT Compliance) - 2 Tests Every 300 Tons

LA Abrasion (MODOT Compliance) - 2 Tests Every 300 Tons

Specific Gravity - Fine (MODOT Compliance) - 2 Tests Every 300 Tons

Specific Gravity - Coarse (MODOT Compliance) - 2 Tests Every 300 Tons

CONCRETE
Testing of Curb & Gutter - 10 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of ADA Ramps - 4 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Testing of Concrete Approaches - 10 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards
Testing of Sidewalks - 10 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous - 4 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 7.5 Tests

Cylinder Compression Test - 96 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 24 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

7. Texas Street and Arizona Avenue, 20th Street to 22nd Street - Materials Testing

Anderson Engineering, Inc. shall perform the following field surveying services as requested by the Contractor or the Contractor's designated representative pursuant to the conditions herein:

Testing Operation

SOIL

Subgrade Evaluation - 10 Tests

Compaction testing of Subgrade Soil - 8 Tests

Compaction for Trenches - 40 Tests

Sample Pickup - 6 Tests

Nuclear Density Test for Subgrade - 12 Tests One test every 5000 square feet

Nuclear Density Test for Trenches - 135 Tests One Test every 100 feet per lift

Atterberg Limits - 3 Tests

Standard Proctor - 3 Tests

Particle Size Analysis - 3 Tests

Moisture Content - 3 Tests

BASE ROCK

Sample Pickup - 1 Tests One per 1000 tons

Compaction Testing of Base Rock - 12 Tests One test every 5000 square feet

Thickness Verification of Base Rock - 12 Tests One test every 5000 square feet

Nuclear Density Test for Base Rock - 30 Tests One test every 5000 square feet

Standard Proctor - 1 Tests

Sieve Analysis - 1 Tests One per 1000 tons

Deleterious Materials - 1 Tests One per 1000 tons

LA Abrasion - 1 Tests One per 1000 tons

Sulfate Soundess - 5 Cycle - 1 Tests One per 1000 tons

Specific Gravity - 1 Tests One per 1000 tons

Flat and Elongated Pieces - 1 Tests One per 1000 tons

Atterberg Limits - 1 Tests One per 1000 tons

ASPHALT

Asphalt Sample Collection during Placement - 20 Tests 1500 tons per day of asphalt placed per day.

Dry Material Sample Collection at Plant - 8 Tests 2 days, twice per day

Compaction Testing of Surface Course - 2 Tests

Rolling Straightedge - 4 Tests

Rolling Straightedge Assistance - 4 Tests

Nuclear Density Test for Surface Course - 6 Tests Three per day (2 days)

Sieve Analysis of Coarse Aggregate - 4 Tests Twice a day (2 days)

Sieve Analysis of Fine Aggregate - 4 Tests Twice a day (2 days)

Sieve Analysis Combined Aggregate - 4 Tests Twice a day (2 days)

Extraction Gradation (MODOT Compliance) - 3 Tests Every 300 Tons (650 tons of surface)

Deleterious Materials (MODOT Compliance) - 3 Tests Every 300 Tons

Theoretical Max Density (MODOT Compliance) - 3 Tests Every 300 Tons

Flat and Elongated Pieces (MODOT Compliance) - 3 Tests Every 300 Tons

LA Abrasion (MODOT Compliance) - 3 Tests Every 300 Tons

Specific Gravity - Fine (MODOT Compliance) - 3 Tests Every 300 Tons

Specific Gravity - Coarse (MODOT Compliance) - 3 Tests Every 300 Tons

CONCRETE
Testing of Curb & Gutter - 20 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards (slip form 500 ft/day and hand form 200ft/day

Testing of ADA Ramps - 8 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Testing of Concrete Approaches - 14 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards
Testing of Sidewalks - 20 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards, 200 ft of 5 ft SW per day or 100 ft of 10 ft SW per day

Testing of Miscellaneous - 6 Tests 1 Slump, Air, Temp, & Cyl set per 50 yards

Concrete Cylinder Pickup - 15 Tests

Cylinder Compression Test - 176 Tests 4"x8"4 per set

Cylinder Compression - Not Tested - 44 Tests 4"x8" 1 extra per set

Other Materials Testing: All items will be performed as indicated above, including mileage and supervision. This Scope of Services does not include any materials testing or any other items not covered in this Scope of Services. All other materials testing that is requested by the Contractor or the Contractor's designated representative will be considered extra and will be billed to the Contractor at the hourly rate shown in the Fee Schedule included in this Exhibit A.

Summary of Fees

FEE SCHEDULE – SURVEYING
CITY OF JOPLIN – CDBG DR PROJECTS

THIS SCHEDULE IS PREPARED AS A METHOD OF CHARGING FOR SERVICES ON A UNIT AND HOURLY BASIS. THE RATES ARE BASED UPON THE SKILL AND KNOWLEDGE OF OUR PERSONNEL. INVOICES WILL BE SUBMITTED MONTHLY AND/OR UPON COMPLETION OF SERVICES. PAYMENT IS DUE ON RECEIPT OF THE INVOICE. ACCOUNTS OVER FORTY-FIVE DAYS ARE SUBJECT TO 1 1/2% PER MONTH SERVICE CHARGE. SERVICES WILL BE PERFORMED IN ACCORDANCE WITH ACCEPTED STANDARD METHODS UTILIZING PROPERLY TRAINED, REGISTERED, LICENSED, OR CERTIFIED PERSONNEL AS REQUIRED. HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR CONSTRUCTION METHODS, MATERIALS, PROCEDURES, PRODUCTS, OR ACTIONS OF OTHERS.

ANDERSON ENGINEERING, INC., BY: _____ EFFECTIVE: 10/01/2015 thru 12/31/2016

NEIL S. BRADY, P.E., PRESIDENT

BASIC CHARGES

PERSONNEL (HOURLY RATES):

PRINCIPAL	$162.00
SURVEY MANAGER	$141.00
PROJECT SURVEYOR	$104.00
ASSOCIATE SURVEYOR	$93.00
TECHNICIAN III – CADD TECHNICIAN/PARTY CHIEF	$73.00
TECHNICIAN II - CADD TECHNICIAN/FIELD TECHNICIAN	$61.00
TECHNICIAN I - CADD TECHNICIAN/FIELD TECHNICIAN	$44.00
ONE MAN SURVEY CREW	$105.00
TWO MAN SURVEY CREW	$134.00
THREE MAN SURVEY CREW	$178.00
FOUR MAN SURVEY CREW	$222.00
GIS SPECIALIST	$103.00
DESIGNER III	$92.00
DESIGNER II	$84.00
DESIGNER	$76.00
CLERICAL	$45.00

EXPENSES & EQUIPMENT CHARGES:

VEHICLE (3/4 TON OR LESS)	CURRENT IRS STANDARD MILEAGE RATE
VEHICLE (SUBURBAN & 1 TON+)	CURRENT IRS STANDARD MILEAGE RATE
LASER SCANNING EQUIPMENT	$800.00/DAY
GPS EQUIPMENT	$270.00/DAY
ROBOTIC TOTAL STATION	$250.00/DAY
DRONE	$250.00/DAY
PRINTING PLANS	$0.50/SQ. FT

REIMBURSABLES: (AT COST) TRAVEL EXPENSES (INCLUDING MEALS AND LODGING), OUTSIDE PRINTING, CONSUMABLE MATERIALS AND SUBCONTRACTOR EXPENSES.

OVERTIME (OVER 8 HOURS PER DAY, 40 HOURS PER WEEK, SATURDAYS, SUNDAYS, AND HOLIDAYS): 1.5 TIMES THE HOURLY RATE.

HOURLY RATES: APPLY TO MEETING AND TRAVEL TIME FOR ALL PERSONNEL CATEGORIES.

DEPOSITION OR COURT TESTIMONY: 1.5 TIMES THE HOURLY RATE.

FEE SCHEDULE - MATERIALS TESTING
CITY OF JOPLIN – CDBG DR PROJECTS

THIS SCHEDULE IS PREPARED AS A METHOD OF CHARGING FOR SERVICES ON A UNIT AND HOURLY BASIS. THE RATES ARE BASED UPON THE SKILL AND KNOWLEDGE OF OUR PERSONNEL. INVOICES WILL BE SUBMITTED MONTHLY AND/OR UPON COMPLETION OF SERVICES. PAYMENT IS DUE ON RECEIPT OF THE INVOICE. ACCOUNTS OVER FORTY FIVE DAYS ARE SUBJECT TO 1 1/2% PER MONTH SERVICE CHARGE. SERVICES WILL BE PERFORMED IN ACCORDANCE WITH ACCEPTED STANDARD METHODS UTILIZING PROPERLY TRAINED, REGISTERED, LICENSED, OR CERTIFIED PERSONNEL AS REQUIRED. HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR CONSTRUCTION METHODS, MATERIALS, PROCEDURES, PRODUCTS, SAMPLING OR ACTIONS OF OTHERS.

ANDERSON ENGINEERING, INC., BY: _____ EFFECTIVE: 10/01/2015 thru 12/31/2016

NEIL S. BRADY, P.E., PRESIDENT

BASIC CHARGES

PERSONNEL (HOURLY RATES):

PRINCIPAL	$162.00
PROJECT MANAGER	$149.00
PROJECT ENGINEER	$133.00
ASSOCIATE ENGINEER	$112.00
DESIGN ENGINEER	$90.00
GEOLOGIST	$90.00
TECHNICIAN IV - SPECIALIST/LAB MANAGER	$89.00
TECHNICIAN III - SENIOR LAB/FIELD TECHNICIAN	$73.00
TECHNICIAN II - LAB/FIELD TECHNICIAN	$52.50
TECHNICIAN I - TECHNICIAN AIDE	$44.00
STRUCTURAL STEEL/AWS CERTIFIED WELD INSPECTOR	$68.00
ASNT TC-1A ULTRASONIC, MAG PARTICLE & DYE TESTING - LEVEL II	$84.00
DESIGNER III	$92.00
DESIGNER II	$84.00
DESIGNER	$76.00
CLERICAL	$45.00

EXPENSES & EQUIPMENT CHARGES:

VEHICLE (3/4 TON OR LESS)	CURRENT IRS STANDARD MILEAGE RATE
VEHICLE (SUBURBAN & 1 TON+)	CURRENT IRS STANDARD MILEAGE RATE
WATER TRUCK	$75.00/DAY + $0.68/MILE
COPIES	$0.10/EACH
PRINTING PLANS	$0.50/SQ. FT + TECHNICIAN TIME

REIMBURSABLES: (AT COST) TRAVEL EXPENSES (INCLUDING MEALS AND LODGING), OUTSIDE PRINTING. CONSUMABLE MATERIALS AND SUBCONTRACTOR EXPENSES.

MINIMUM CHARGE: THERE IS A MINIMUM CHARGE OF 2 HOURS OF TECHNICIAN TIME PER JOB SITE VISIT, EXCEPT FOR CONCRETE CYLINDER AND SAMPLE PICKUP.

OVERTIME (OVER 8 HOURS PER DAY OR SATURDAYS, SUNDAYS, AND HOLIDAY WORK): 1.5 TIMES THE HOURLY RATE.

HOURLY RATES: APPLY TO MEETING AND TRAVEL TIME, INCLUDING CONCRETE CYLINDER PICKUP AND FIELD TESTING, FOR ALL PERSONNEL CATEGORIES.

DEPOSITION OR COURT TESTIMONY: 1.5 TIMES THE HOURLY RATE.

FIELD TESTING AND INPSECTION CHARGES

FIELD DENSITY (COMPACTION TEST)	$ 8.00/EA.
CONE PENETROMETER	$ 15.00/EA.
FLOOR FLATNESS EQUIPMENT	$250.00/EA.
DYNAMIC CONE PENETROMETER	$25.00/EA.
CORING EQUIPMENT CHARGES	$100.00/DAY

LABORATORY TEST CHARGES

AGGREGATES (ASTM)	UNIT CHARGE
L.A. ABRASION, SMALL AGG. (C131)	$ 127.00
L.A. ABRASION, LARGE AGG. (C535)	$ 155.00
SULFATE SOUNDNESS TEST (C88):	
5-CYCLE	$ 223.00
10-CYCLE	$ 297.00
20-CYCLE	$ 419.00
SIEVE ANALYSIS, DRY AGG (C136)	$ 53.00
SIEVE ANALYSIS (C117)	$ 64.00
SIEVE ANALYSIS (C117, C136)	$ 79.00
SPECIFIC GRAVITY, FINE AGG (C128)	$ 58.00
SPECIFIC GRAVITY, COARSE AGG (C127)	$ 58.00
LIGHTWEIGHT PIECES IN AGG (C123)	$ 90.00
ORGANIC IMPURITIES (C40)	$ 53.00
FLAT & ELONGATED PIECES (D4791)	$ 79.00
DELETERIOUS MATLS (MODOT TM71)	$ 69.00
CLAY LUMPS & FRIABLE PARTICLES (C142)	$ 85.00
DRY RODDED UNIT WEIGHT (C29)	$ 38.00

MASONRY TESTS (ASTM)	
COMPRESSIVE STRENGTH, 4" BLOCK	$ 26.50
COMPRESSIVE STRENGTH, 6" BLOCK	$ 32.00
COMPRESSIVE STRENGTH, 8" BLOCK	$ 44.50
COMPRESSIVE STRENGTH, 12" BLOCK	$ 74.00
COMPRESSIVE STRENGTH, MORTAR	
MORTAR/GROUT CUBE	$ 13.00
GROUT PRISM	$ 13.00
MORTAR CYLINDER (2" X 4")	$ 13.00
ABSORPTION, MASONRY BLOCK	$ 42.50
LINEAR SHRINKAGE (SET OF 3)	$ 318.00

BITUMINOUS TESTING	
ASPHALT CONTENT	$ 95.50
ASPHALT CONTENT & AGG. GRADATION	$ 159.00
SEIVE ANALYSIS EXTRACTION	$ 79.00
MARSHALL TEST, FIELD – 3 PUCKS	$ 79.00
MARSHALL TEST, LAB – 3 PUCKS	$ 117.00
RETAINED STABILITY	$ 180.00
ASPHALT CORE DENSITY, EACH	$ 26.50
THEORETICAL MAX. DENSITY	$ 127.00

CONCRETE/ROCK CORE	
CORE TRIM & TEST	$ 44.00
THICKNESS (AASHTO T148 /ASTM C174)	$ 25.00

SOIL TESTS (ASTM)	UNIT CHARGE
ATTERBERG LIMITS (D4318)	$ 58.00
SWELL TEST, 1/16 TSF (D4546)	$ 155.00
SWELL PRESSURE (D4546)	$ 292.00
SHRINKAGE LIMIT (D4943)	$ 58.00
MOISTURE CONTENT (C2216)	$ 6.00
SIEVE + HYDROMETER	$ 143.00
HYDROMETER ONLY (D422)	$ 79.00
USCS CLASSIFICATION	$ 27.50
PERCENT PASSING #200	$ 42.50
SPECIFIC GRAVITY (D854)	$ 74.00
UNCONFINED COMPRESSION	$ 51.00
UNCONFINED/TRIAXIAL, REMOLDED	$ 79.00
TRIAXIAL TEST, PP, CU w/PP	$ 309.00
ORGANIC MATTER (D2974-C)	$ 53.00
PENETROMETER	$ 4.50
SAMPLE PREP, PER HOUR	$ 51.00
SHELBY TUBE DENSITY	$ 32.00
RESISTIVITY	$ 159.00
PERMEABILITY, FALLING HEAD	$ 381.00
PERMEABILITY, FLEXIBLE WALL	$ 360.00
PERMEABILITY, CONSOLIDATION TEST	$ 159.00
CONSOLIDATION TEST, TO 8 TSF	$ 403.00
CONSOLIDATION TEST, LOAD INC. > 8 TSF, EA.	$ 53.00
CALIFORNIA BEARING RATIO, LAB, PER POINT	$ 106.00
pH	$ 53.00

LABORATORY COMPACTION TESTS	
MOISTURE DENSITY RELATIONSHIP	
STD. PROCTOR (D698), MTH A & B	$ 153.00
STD. PROCTOR (D698), MTH C	$ 180.00
STD. PROCTOR (D698), 1 POINT	$ 54.50
MOD. PROCTOR (D1557), MTH A & B	$ 186.00
MOD. PROCTOR (D1557), MTH C	$ 251.00
MOD. PROCTOR (D1557), 1 POINT	$ 60.00
RELATIVE DENSITY	$ 382.00

CONCRETE TESTING	
4" X 8" OR 6" X 12" TEST MOLD	$ 2.00
6" X 12" CYLINDER, TESTED & MOLD	$ 15.00
6" X 12" CYLINDER, EXTRA & MOLD	$ 11.00
4" X 8" CYLINDER, TESTED & MOLD	$ 11.00
4" X 8" CYLINDER, EXTRA & MOLD	$ 7.00

SAW CONCRETE CYLINDER	$	26.00
BEAM FLEXURAL STRENGTH	$	37.00
CONCRETE BEAM, NOT TESTED	$	21.00