CITY	ENGINEER	
CITY OF JOPLIN 602 S. MAIN STREET JOPLIN, MO 64801	Name: Olsson Associates DBA: Joplin Joint Engineering Team Address 702 S. Main Street Joplin, MO 64801	
Attention: David Hertzberg, PE Troy Bolander	Attention: Jack Schaller, PE jschaller@olssonassociates.com	
Department: Public Works Planning & Development	Phone: (417)781-0643	Fax: (417)781-4714
Phone (417)624-0820, Ext. 500 Fax: (417)625-4738		

WORK AUTHORIZATION NUMBER JET DR-2 PAP 8-1 Project 1 Projects
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 JET DR-2 PAP 8-1 Project 1 Projects exceed the sum of Three Million Six Hundred Sixty-Nine Thousand Seven Hundred Eighty-Nine Dollars ($3,669,789.00).

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

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.

EXHIBIT A

The City of Joplin Travel Policy shall be included by reference and adopted in the scope of the Project 1 Projects (Storm Projects 11, 12, Surface Projects 4003, 4004, 4006, 4008 and 4010).

This Exhibit includes the following for the Project 1 Projects (Storm Projects 11, 12, Surface Projects 4003, 4004, 4006, 4008 and 4010):

Storm 11
Total Project Fee Summary.....6
General Scope (Strikethrough version).....7-21
Clarification of Services.....22-25
Reimbursable Expense Schedule.....26-27

Storm 12
Total Project Fee Summary.....28
General Scope (Strikethrough version).....29-43
Clarification of Services.....44-47
Reimbursable Expense Schedule.....48-49

Surface 4003
Total Project Fee Summary.....50
General Scope (Strikethrough version).....51-65
Clarification of Services.....66-71
Reimbursable Expense Schedule.....72-73

Surface 4004
Total Project Fee Summary.....74
General Scope (Strikethrough version).....75-89
Clarification of Services.....90-95
Reimbursable Expense Schedule.....96-97

Surface 4006
Total Project Fee Summary.....98
General Scope (Strikethrough version).....99-113
Clarification of Services.....114-119
Reimbursable Expense Schedule.....120-121

Surface 4008
Total Project Fee Summary.....122
General Scope (Strikethrough version).....123-137
Clarification of Services.....138-142
Reimbursable Expense Schedule.....143-144

Surface 4010
Total Project Fee Summary.....145
General Scope (Strikethrough version).....146-160
Clarification of Services.....161-167
Reimbursable Expense Schedule.....168-169

Project 1 Total
Billing Rate Table.....170-177

Project Name/Description PAP 8-1 Project 1 Storm Project #11
Consultant Olsson Associates DBA: Joplin Joint Engineering Team

Engineering Services Agreement

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

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~~

~~pg. 1~~

~~*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~~

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

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

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. The RPR shall comply with the state and federal (if applicable) prevailing wage laws including, but not limited to performing interviews as necessary to comply with state and federal (if applicable) prevailing wage laws.

~~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.

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.

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:

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

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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 statements and 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.

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

d. Stake Storm Water Improvements: Set offset stakes for the junction boxes, curb inlets and storm water pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

4. **Construction Testing Services:** Construction materials testing will be performed on this project in general compliance with the Standard Specifications for The City of Joplin, Missouri last updated February 1, 2017. The JET Team will provide quality assurance testing which shall include:

   a. Materials Testing
      i. 75 cylinder breaks (15 concrete tests-5 cylinders per test)-CONCRETE
      ii. 1 Base Proctor
      iii. 1 Atterberg
      iv. 2 Lab Tests -ASPHALT

   b. Earthwork
      i. Observe stripping and grubbing of construction areas prior to placement of fill.
      ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
      iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

   c. Asphaltic Concrete
      i. Perform verification testing in accordance with the Missouri Standard Specifications for Highway Construction. Tests and frequencies of testing are referenced in Table 403.19.3.
      ii. Perform tests to determine mixture properties, gradation, deleterious content, and asphalt content on the retained portion of the QC samples at least once per week.

   d. Portland Cement Concrete
      i. Observe the condition of the subgrade and reinforcing steel prior to placement of concrete.
      ii. Determine that the concrete is delivered, conveyed, and consolidated into curbs, gutters, and formwork in accordance with the project specifications.
      iii. Perform field tests on concrete delivered to the project site including concrete temperature, slump and air content.
      iv. Cast cylinders from concrete placed for compressive strength testing.
      v. Cure initially in the field, transport to and cure in our laboratory concrete cylinders until broken.

10. Construction Testing Services:
    a. Our fees are based on providing 1 full time inspector for the project. Should additional inspectors be required, a supplemental agreement will be prepared.
    b. We have estimated that these projects will require the utilization of construction observation and materials testing personnel over a 4 month time period. Should the projects be timed in a manner requiring the Jet Team to provide observation and testing personnel for more than 4 months, a supplemental agreement will be required.

D. EXCLUSIONS

1. Right of Way monumentation.
2. Record drawings will be provided based on contractor provided markups. No post-construction survey will be completed.
3. Utility design, including waterline, sanitary sewer, gas, fiber optic, and electric design.
4. Contractor certifications.
5. Subcontractor certifications, if applicable.
6. All services not specifically listed are assumed to be excluded.

Construction Materials Testing

Testing Assumptions:

Concrete
15 tests/5 cylinders per test= 75 cylinders
75 cylinders $19/break = **$1,425**
Making of cylinders included as part of inspection time since Olsson will be on site full time.

Soil
1 Soil Proctors @ $165/test = $165
1 Atterberg Soil @ $90/test = $90
Soil Testing= **$255**
Density tests of soil included as part of inspection time since we are on site full time.

Asphalt
1 test per day and/or per 1000 tons
Density test of asphalt included as part of inspection time since Olsson will be on site full time.

Asphalt Lab Tests
2 Lab Tests @ $1000 = $2,000
2 Times shipping to lab for full testing 20 X $87/ship = $174
Asphalt Lab Testing= **$2,174**

Total Construction Materials Testing Fees	$3,854
TOTAL EXPENSE FEES	**$6,500**

Project Name/Description PAP 8-1 Project 1 Storm Project #12
Consultant Olsson Associates DBA: Joplin Joint Engineering Team

Engineering Services Agreement

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

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~~

~~*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~~

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

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

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. The RPR shall comply with the state and federal (if applicable) prevailing wage laws including, but not limited to performing interviews as necessary to comply with state and federal (if applicable) prevailing wage laws.

~~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.

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.

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:

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

~~pg. 13~~

~~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 statements and 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.~~

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

d. Stake Storm Water Improvements: Set offset stakes for the junction boxes, curb inlets, storm water pipes, storm channel and bore location under the KCS railroad. Stakes shall indicate cut/fill to flow lines and inlet tops.

4. **Construction Testing Services:** Construction materials testing will be performed on this project in general compliance with the Standard Specifications for The City of Joplin, Missouri last updated February 1, 2017. The JET Team will provide quality assurance testing which shall include:

   a. Materials Testing
      i. 75 cylinder breaks (15 concrete tests-5 cylinders per test)-CONCRETE
      ii. 1 Base Proctor
      iii. 1 Atterberg
      iv. 2 Lab Tests -ASPHALT

   b. Earthwork
      i. Observe stripping and grubbing of construction areas prior to placement of fill.
      ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
      iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

   c. Asphaltic Concrete
      i. Perform verification testing in accordance with the Missouri Standard Specifications for Highway Construction. Tests and frequencies of testing are referenced in Table 403.19.3.
      ii. Perform tests to determine mixture properties, gradation, deleterious content, and asphalt content on the retained portion of the QC samples at least once per week.

   d. Portland Cement Concrete
      i. Observe the condition of the subgrade and reinforcing steel prior to placement of concrete.
      ii. Determine that the concrete is delivered, conveyed, and consolidated into curbs, gutters, and formwork in accordance with the project specifications.
      iii. Perform field tests on concrete delivered to the project site including concrete temperature, slump and air content.
      iv. Cast cylinders from concrete placed for compressive strength testing.
      v. Cure initially in the field, transport to and cure in our laboratory concrete cylinders until broken.

10. Construction Testing Services:
    a. Our fees are based on providing 1 part time inspector for the project. Should additional inspectors be required, a supplemental agreement will be prepared.
    b. We have estimated that these projects will require the utilization of construction observation and materials testing personnel over a 3 month time period. Should the projects be timed in a manner requiring the Jet Team to provide observation and testing personnel for more than 3 months, a lemental agreement will be required.

D. EXCLUSIONS

1. Right of Way monumentation.
2. Record drawings will be provided based on contractor provided markups. No post-construction survey will be completed.
3. Utility design, including waterline, sanitary sewer, gas, fiber optic, and electric design.
4. Contractor certifications.
5. Subcontractor certifications, if applicable.
6. All services not specifically listed are assumed to be excluded.

Construction Materials Testing

Testing Assumptions:

Concrete
15 tests/5 cylinders per test= 75 cylinders
75 cylinders $19/break = **$1,425**
Making of cylinders included as part of inspection time since Olsson will be on site full time.

Soil
1 Soil Proctors @ $165/test = $165
1 Atterberg Soil @ $90/test = $90
Soil Testing= **$255**
Density tests of soil included as part of inspection time since we are on site full time.

Asphalt
1 test per day and/or per 1000 tons
Density test of asphalt included as part of inspection time since Olsson will be on site full time.

Asphalt Lab Tests
2 Lab Tests @ $1000 = $2,000
2 Times shipping to lab for full testing 20 X $87/ship = $174
Asphalt Lab Testing= **$2,174**

Total Construction Materials Testing Fees	$3,854
TOTAL EXPENSE FEES	**$6,500**

Project Name/Description PAP 8-1 Project 1 Surface Project 4003
Consultant Olsson Associates DBA: Joplin Joint Engineering Team

Engineering Services Agreement

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

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~~

~~pg. 1~~

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

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.

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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.

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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.

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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

execution by Owner and Contractor, and in issuing notices of award of such contracts.

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A1.08 Construction Phase

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

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.

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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 statements and 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.~~

c. Provide information or assistance needed by Owner in the course of any review of proposals with prospective contractors.
d. Consult with Owner regarding 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.
e. 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.
f. Attend the bid opening, prepare bid tabulation sheets, and assist Owner in evaluating bids, assembling final contracts for execution by Owner and Contractor, and in issuing notices of award of such contracts.
g. Construction Phase: Upon successful completion of the Bidding Phase, Engineer complete construction phase services in accordance with outlined scope and clarification consistent with Engineering Agreement and Exhibit A.

3. **FEMA Incorporation:** Location of the damage by site number is described as follows (Site numbers related to the FEMA application which details the location and type of work to be performed by the contractor that is awarded the project):

Type	Site Number
Curb & Gutter	18
Curb & Gutter	19
Curb & Gutter	50
Curb & Gutter	51
Curb & Gutter	52
Curb & Gutter	53
Curb & Gutter	54
Curb & Gutter	55
Curb & Gutter	56
Curb & Gutter	57

Type	Site Number
Catch Basin	3
Catch Basin	4
Catch Basin	5
Catch Basin	22
Catch Basin	23
Catch Basin	24
Catch Basin	25

Type	Site Number
STREET	169
STREET	170
STREET	184

Type	Site Number
Sidewalk	95
Sidewalk	96
Sidewalk	97
Sidewalk	98
Sidewalk	99
Sidewalk	100
Sidewalk	101
Sidewalk	102
Sidewalk	103
Sidewalk	104
Sidewalk	105
Sidewalk	106
Sidewalk	107
Sidewalk	108
Sidewalk	111

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

b. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 50 foot intervals.

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

d. Stake Storm Water Improvements: Set offset stakes for storm structure and storm water pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

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

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

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

h. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk per plan. Stakes shall be set at 50 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

7. **Construction Testing Services:** Construction materials testing will be performed on this project in general compliance with the Standard Specifications for The City of Joplin, Missouri last updated February 1, 2017. The JET Team will provide quality assurance testing which shall include:

a. Materials Testing
   i. 375 cylinder breaks (75 concrete tests-5 cylinders per test)-CONCRETE
   ii. 2 Base Proctor
   iii. 2 Atterberg
   iv. 7 Lab Tests ASPHALT

b. Earthwork
   i. Observe stripping and grubbing of construction areas prior to placement of fill.
   ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
   iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

c. Asphaltic Concrete

projects be timed in a manner requiring the Jet Team to provide observation and testing personnel for more than 8 months, a supplemental agreement will be required.

D. EXCLUSIONS

1. Right of Way monumentation.
2. Condemnation services / Representation
3. Record drawings will be provided based on contractor provided markups. No post-construction survey will be completed.
4. Appraisal services.
5. Utility design, including waterline, sanitary sewer, gas, fiber optic, and electric design.
6. Contractor certifications.
7. Subcontractor certifications, if applicable.
8. All services not specifically listed are assumed to be excluded.
9. Right of Way Services (completed with previous partial action plan).

Construction Materials Testing

Testing Assumptions:

Concrete
75 tests/5 cylinders per test= 375 cylinders
375 cylinders $19/break = **$7,125**
Making of cylinders included as part of inspection time since Olsson will be on site full time.

Soil
2 Soil Proctors @ $165/test = $330
2 Atterberg Soil @ $90/test = $180
Soil Testing= **$510**
Density tests of soil included as part of inspection time since we are on site full time.

Asphalt
1 test per day and/or per 1000 tons
Density test of asphalt included as part of inspection time since Olsson will be on site full time.

Asphalt Lab Tests
7 Lab Tests @ $1000 = $7,000
7 Times shipping to lab for full testing 20 X $87/ship = $609
Asphalt Lab Testing= **$7,609**

Total Construction Materials Testing Fees	$15,244
TOTAL EXPENSE FEES	**$22,277**

Project Name/Description PAP 8-1 Project 1 Surface Project 4004
Consultant Olsson Associates DBA: Joplin Joint Engineering Team

Engineering Services Agreement

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

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~~

~~*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~~

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

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

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. The RPR shall comply with the state and federal (if applicable) prevailing wage laws including, but not limited to performing interviews as necessary to comply with state and federal (if applicable) prevailing wage laws.

~~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.

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.

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:

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

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 statements and 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.

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

iv. Consult with Owner regarding 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.

v. 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.

vi. Attend the bid opening, prepare bid tabulation sheets, and assist Owner in evaluating bids, assembling final contracts for execution by Owner and Contractor, and in issuing notices of award of such contracts.

vii. Construction Phase: Upon successful completion of the Bidding Phase, Engineer complete construction phase services in accordance with outlined scope and clarification consistent with Engineering Agreement and Exhibit A.

3. **FEMA Incorporation:** Location of the damage by site number is described as follows (Site numbers related to the FEMA application which details the location and type of work to be performed by the contractor that is awarded the project):

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SW	50
SW	51
SW	52
SW	53
SW	58
SW	59
SW	78
SW	79
SW	90
SW	81
SW	82
SW	11

Type	Site
STREET	54
STREET	140
STREET	141
STREET	142
STREET	161
STREET	162
STREET	163
STREET	165
STREET	171
STREET	172
STREET	173
STREET	174
STREET	175
STREET	187

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

b. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 50 foot intervals.

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      i. 375 cylinder breaks (75 concrete tests-5 cylinders per test)-CONCRETE
      ii. 2 Base Proctor
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      iv. 12 Lab Tests ASPHALT

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      i. Observe stripping and grubbing of construction areas prior to placement of fill.
      ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
      iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

projects be timed in a manner requiring the Jet Team to provide observation and testing personnel for more than 8 months, a supplemental agreement will be required.

D. EXCLUSIONS

1. Right of Way monumentation.
2. Condemnation services / Representation
3. Record drawings will be provided based on contractor provided markups. No post-construction survey will be completed.
4. Appraisal services.
5. Utility design, including waterline, sanitary sewer, gas, fiber optic, and electric design.
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8. All services not specifically listed are assumed to be excluded.
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Soil Testing= **$510**
Density tests of soil included as part of inspection time since we are on site full time.

Asphalt
1 test per day and/or per 1000 tons
Density test of asphalt included as part of inspection time since Olsson will be on site full time.

Asphalt Lab Tests
12 Lab Tests @ $1000 = $12,000
12 Times shipping to lab for full testing 20 X $87/ship = $1,044
Asphalt Lab Testing= **$13,044**

Total Construction Materials Testing Fees	$20,679
TOTAL EXPENSE FEES	**$30,904**

Project Name/Description PAP 8-1 Project 1 Surface Project 4006
Consultant Olsson Associates DBA: Joplin Joint Engineering Team

Engineering Services Agreement

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~~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~~

~~*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~~

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.

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F. Existing United States Public Land Survey System Corners

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

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. The RPR shall comply with the state and federal (if applicable) prevailing wage laws including, but not limited to performing interviews as necessary to comply with state and federal (if applicable) prevailing wage laws.

~~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.

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.

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:

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

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 statements and 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.

d. Consult with Owner regarding 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.
e. 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.
f. Attend the bid opening, prepare bid tabulation sheets, and assist Owner in evaluating bids, assembling final contracts for execution by Owner and Contractor, and in issuing notices of award of such contracts.
g. Construction Phase: Upon successful completion of the Bidding Phase, Engineer complete construction phase services in accordance with outlined scope and clarification consistent with Engineering Agreement and Exhibit A.

3. **FEMA Incorporation:** Location of the damage by site number is described as follows (Site numbers related to the FEMA application which details the location and type of work to be performed by the contractor that is awarded the project):

Type	Site Number
Curb & Gutter	101

Type	Site Number
Catch Basin	2
Catch Basin	8
Catch Basin	12
Catch Basin	15
Catch Basin	16
Catch Basin	17
Catch Basin	20
Catch Basin	21
Catch Basin	26
Catch Basin	37

Type	Site Number
Sidewalk	109

Type	Site Number
STREET	46
STREET	56
STREET	57
STREET	58
STREET	59
STREET	62
STREET	63
STREET	76
STREET	78
STREET	79
STREET	80
STREET	81
STREET	82
STREET	84
STREET	85
STREET	86
STREET	87
STREET	88
STREET	89
STREET	90
STREET	91
STREET	92
STREET	93
STREET	95
STREET	96
STREET	129
STREET	154
STREET	176
STREET	191

Type	Site Number
STREET	64
STREET	65
STREET	66
STREET	67
STREET	68
STREET	70
STREET	72

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

b. Stake Demolition: Set points to be used for the location of saw cuts for demolition. Points shall be set on 50 foot intervals.

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

d. Stake Storm Water Improvements: Set offset stakes for storm structure and storm water pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

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

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

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

h. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk per plan. Stakes shall be set at 50 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

7. **Construction Testing Services:** Construction materials testing will be performed on this project in general compliance with the Standard Specifications for The City of Joplin, Missouri last updated February 1, 2017. The JET Team will provide quality assurance testing which shall include:

   a. Materials Testing
      i. 350 cylinder breaks (70 concrete tests-5 cylinders per test)-CONCRETE
      ii. 2 Base Proctor
      iii. 2 Atterberg
      iv. 15 Lab Tests ASPHALT

   b. Earthwork
      i. Observe stripping and grubbing of construction areas prior to placement of fill.
      ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
      iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

   c. Asphaltic Concrete

projects be timed in a manner requiring the Jet Team to provide observation and testing personnel for more than 8 months, a supplemental agreement will be required.

D. EXCLUSIONS

1. Right of Way monumentation.
2. Condemnation services / Representation
3. Record drawings will be provided based on contractor provided markups. No post-construction survey will be completed.
4. Appraisal services.
5. Utility design, including waterline, sanitary sewer, gas, fiber optic, and electric design.
6. Contractor certifications.
7. Subcontractor certifications, if applicable.
8. All services not specifically listed are assumed to be excluded.
9. Right of Way Services (completed with previous partial action plan).

Construction Materials Testing

Testing Assumptions:

Concrete
70 tests/5 cylinders per test= 350 cylinders
350 cylinders $19/break = **$6,650**
Making of cylinders included as part of inspection time since Olsson will be on site full time.

Soil
2 Soil Proctors @ $165/test = $330
2 Atterberg Soil @ $90/test = $180
Soil Testing= **$510**
Density tests of soil included as part of inspection time since we are on site full time.

Asphalt
1 test per day and/or per 1000 tons
Density test of asphalt included as part of inspection time since Olsson will be on site full time.

Asphalt Lab Tests
15 Lab Tests @ $1000 = $15,000
15 Times shipping to lab for full testing 20 X $87/ship = $1,305
Asphalt Lab Testing= **$16,305**

Total Construction Materials Testing Fees	$23,465
TOTAL EXPENSE FEES	**$39,913**

Project Name/Description PAP 8-1 Project 1 Surface Project 4008
Consultant Olsson Associates DBA: Joplin Joint Engineering Team

Engineering Services Agreement

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

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~~

~~*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.~~

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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. The RPR shall comply with the state and federal (if applicable) prevailing wage laws including, but not limited to performing interviews as necessary to comply with state and federal (if applicable) prevailing wage laws.

~~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.

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.

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:

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

~~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 statements and 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.~~

d. Consult with Owner regarding 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.
e. 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.
f. Attend the bid opening, prepare bid tabulation sheets, and assist Owner in evaluating bids, assembling final contracts for execution by Owner and Contractor, and in issuing notices of award of such contracts.
g. Construction Phase: Upon successful completion of the Bidding Phase, Engineer complete construction phase services in accordance with outlined scope and clarification consistent with Engineering Agreement and Exhibit A.

3. **FEMA Incorporation:** Location of the damage by site number is described as follows (Site numbers related to the FEMA application which details the location and type of work to be performed by the contractor that is awarded the project):

Type	Site
Catch Basin	34

a. **Project Management:** The project shall include project management and coordination for the FEMA funded construction items within the JET Surface Project 4008 Bid documents.
b. **Bid Document Preparation:** Consultant shall work to identify FEMA funded construction locations to be included in the Surface Project 4008 bid documents and related work needed at each location.
   i. Consultant shall provide bid document preparation and coordination of the FEMA funded aspects of the project. Responsibilities include identifying each site and providing details on the necessary infrastructure replacement needed at each site.
   ii. The following items will be provided to the City:
      a. Engineering's estimate of probable cost
      b. Quantities Tabulation
      c. Special Provisions (as needed)
c. **Bidding:** Incorporation of information into the bid documents.

4. **Pre-Bid and Pre-Construction Conferences:** Conduct both Pre-Bid and Pre-Construction Conferences and distribute minutes accordingly. Issue any addendums that arise out of Pre-Bid conference, and any clarification that may arise out of the Pre-Construction conference.

5. **Grant Probable Compliance Verification**

Olsson shall provide the following services or items to be certified by the Grant Administrator:

a. Prepare the pre-construction report and minutes of the bid opening;

be set at 50 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

7. **Construction Testing Services:** Construction materials testing will be performed on this project in general compliance with the Standard Specifications for The City of Joplin, Missouri last updated February 1, 2017. The JET Team will provide quality assurance testing which shall include:

   a. Materials Testing
      i. 375 cylinder breaks (75 concrete tests-5 cylinders per test)-CONCRETE
      ii. 2 Base Proctor
      iii. 2 Atterberg
      iv. 16 Lab Tests ASPHALT

   b. Earthwork
      i. Observe stripping and grubbing of construction areas prior to placement of fill.
      ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
      iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

   c. Asphaltic Concrete
      i. Perform verification testing in accordance with the Missouri Standard Specifications for Highway Construction. Tests and frequencies of testing are referenced in Table 403.19.3.
      ii. Perform tests to determine mixture properties, gradation, deleterious content, and asphalt content on the retained portion of the QC samples at least once per week.

   d. Portland Cement Concrete
      i. Observe condition of the subgrade and reinforcing steel prior to placement of concrete.
      ii. Determine that the concrete is delivered, conveyed, and consolidated into curbs, gutters, and formwork in accordance with the project specifications.
      iii. Perform field tests on concrete delivered to the project site including concrete temperature, slump and air content.
      iv. Cast cylinders from concrete placed for compressive strength testing.
      v. Cure in the field, transport to and cure in our laboratory concrete cylinders until broken.

C. PROJECT ASSUMPTIONS

1. Fees can be shifted between phases and tasks.
2. The City will issue notice to proceed after City Council Approval.
3. Final plan reviews to be completed after City Council Approval.
4. The estimated construction period for the portion of work detailed in the Project 1 Surface Project 4008 design will be completed in 8 construction months. If the project is put on hold, then addition fees may be incurred due to project delays or extensions.
5. Utility relocation shall be completed by the respective utility company.

REIMBURSABLE EXPENSE SCHEDULE
PAP 8-1 PROJECT 1 SURFACE PROJECT 4008

The expenses incurred by Olsson or Olsson's independent professional associates or consultants directly or indirectly in connection with the Project shall be included in periodic billing as follows:

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.

Other Project Related Expenses: Other project related expenses not related to travel will be invoiced in accordance with the Reimbursable Expense Schedule and will not be subject to mark-up.

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

Clerical	Cost
Automobiles (Personal Vehicle)	$0.540/mile*
Automobiles (OA Vehicle) (in lieu of rental car when available)	$85.00/day
Other Travel or Lodging Cost	Actual Cost
Meals	Actual Cost
Printing and Duplication including Mylars and Linens	
In-House	Actual Cost
Outside	Actual Cost
Postage & Shipping Charges for Project Related Materials	
including Express Mail and Special Delivery	Actual Cost
Film and Photo Developing	Actual Cost
Telephone and Fax Transmissions	Actual Cost
Miscellaneous Materials & Supplies Applicable to this Project	Actual Cost
Copies of Deeds, Easements or other Project Related Documents	Actual Cost
Fees for Applications or Permits	Actual Cost
Sub-Consultants	Actual Cost

*Rates consistent with the IRS Mileage Rate Reimbursement Guidelines (Subject to Change).

Total Estimated Travel and Clerical Expense Fees	$8,025

Total Project Fee

PROJECT 1 (4010) 20th STREET - 26th STREET & MAIN STREET - INDIANA AVENUE

Task No.	Task Description	Fee Estimate
1	Project Management	$ 70,005
2	Bidding Phase	$ 57,589
3	Construction Surveying	$ 139,950
4	Construction Administration	$ 158,445
5	Construction Inspection	$ 172,506
	Expenses (per attached Expense Schedule)	$ 22,000
	Total Project Cost (for tasks listed above)	**$ 620,496**

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.

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 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:

~~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, attend pre-bid conferences, if any, 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

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.

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

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:~~

EXHIBIT A

CLARIFICATION OF SERVICES

SURFACE PROJECT #4010

The following Clarification of Services, Assumptions, and Exclusions further define the ENGINEERING SERVICES AGREEMENT (Revision Date 8-25-2015) for the above reference project.

A. PROJECT DEFINITION: PROJECT 1 SURFACE PROJECT 4010

The project involves the construction services related to rebuilding infrastructure for Surface Project 4010 including the replacement of sidewalk, curb and gutter, streets, and storm inlets in the 4010 Project Area. The 4010 project area is bounded by 26th Street to the south, 20th Street to the north, Main Street to the west, and Indiana Avenue to the east.

The scope of work for this project as included in this partial action plan can generally be described as follows (for more detail reference Engineering Services Agreement and this Exhibit):

- Incorporate final City comments and finalize plans, specifications, and estimates;
- Incorporation of FEMA work;
- Bidding including project manual;
- Construction Observation;
- Construction Administration;
- Construction Inspection;
- Surveying Services;
- Materials Testing.

B. CLARIFICATION OF SERVICES

1. **Plan Finalization for Bidding:** Review, finalize, and incorporate final revisions to Plans and Specifications, other Construction Contract Documents, Right of Way Documents, utility coordination documents, bidding-related documents, and the most recent opinion of probable construction cost after review by the City.

2. **Bidding Phase:** After acceptance by Owner of the updated Construction Contract Documents, and upon written authorization by Owner to proceed, Engineer shall:
   a. 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, attend pre-bid conferences, if any, and receive and process contractor deposits or charges for the issued documents.
   b. Prepare and issue Addenda as appropriate to clarify, correct, or change the issued documents.

Type	Site Number	Type	Site Number	Type	Site Number
Curb & Gutter	72	SW	1	SW	114
Curb & Gutter	73	SW	2	SW	115
Curb & Gutter	74	SW	3	SW	116
Curb & Gutter	75	SW	4	SW	117
Curb & Gutter	76	SW	5	SW	118
Curb & Gutter	77	SW	6	SW	119
Curb & Gutter	78	SW	7	SW	120
Curb & Gutter	79	SW	8	Type	Site
Curb & Gutter	80	SW	9	STREET	1
Curb & Gutter	81	SW	10	STREET	2
Curb & Gutter	82	SW	12	STREET	94
Curb & Gutter	83	SW	13	STREET	100
Curb & Gutter	84	SW	14	STREET	101
Curb & Gutter	85	SW	15	STREET	102
Curb & Gutter	86	SW	16	STREET	130
Curb & Gutter	87	SW	17	STREET	131
Curb & Gutter	93	SW	18	STREET	132
Curb & Gutter	94	SW	19	STREET	133
Curb & Gutter	95	SW	20	STREET	134
Curb & Gutter	96	SW	21	STREET	135
Curb & Gutter	97	SW	22	STREET	136
Curb & Gutter	98	SW	23	STREET	137
Curb & Gutter	99	SW	24	STREET	138
Curb & Gutter	100	SW	25	STREET	139
Curb & Gutter	107	SW	26	STREET	144
Curb & Gutter	108	SW	27	STREET	145
Curb & Gutter	109	SW	28	STREET	146
Curb & Gutter	110	SW	29	STREET	148
Curb & Gutter	111	SW	30	STREET	150
Type	Site Number	SW	31	STREET	151
Catch Basin	10	SW	32	STREET	179
Catch Basin	29	SW	33	STREET	190
Catch Basin	30	SW	112		
Catch Basin	35	SW	113		

a. **Project Management:** The project shall include project management and coordination for the FEMA funded construction items within the JET Surface Project 4010 Bid documents.
b. **Bid Document Preparation:** Consultant shall work to identify FEMA funded construction locations to be included in the Surface Project 4010 bid documents and related work needed at each location.

shall be set on 50 foot intervals.

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

d. Stake Storm Water Improvements: Set offset stakes for storm structure and storm water pipes. Stakes shall indicate cut/fill to flow lines and inlet tops.

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

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

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

h. Stake Sidewalk: Set offset stakes for construction of concrete sidewalk per plan. Stakes shall be set at 50 foot horizontal interval and at bends, radius points and other curve elements as required. Stakes shall indicate cut/fill to finish grade.

7. **Construction Testing Services:** Construction materials testing will be performed on this project in general compliance with the Standard Specifications for The City of Joplin, Missouri last updated February 1, 2017. The JET Team will provide quality assurance testing which shall include:

a. Materials Testing
   i. 300 cylinder breaks (60 concrete tests-5 cylinders per test)-CONCRETE
   ii. 2 Base Proctor
   iii. 2 Atterberg
   iv. 8 Lab Tests ASPHALT

b. Earthwork
   i. Observe stripping and grubbing of construction areas prior to placement of fill.
   ii. Sample fill materials for standard Proctor, Atterberg limits, and other requisite lab testing
   iii. Perform field moisture-density testing of structural fill, backfill, and subgrade preparation

c. Asphaltic Concrete
   i. Perform verification testing in accordance with the Missouri Standard Specifications for Highway Construction. Tests and frequencies of testing are referenced in Table 403.19.3.
   ii. Perform tests to determine mixture properties, gradation, deleterious content, and asphalt content on the retained portion of the QC samples at least once per week.

D. EXCLUSIONS

1. Right of Way monumentation.
2. Condemnation services / Representation
3. Record drawings will be provided based on contractor provided markups. No post-construction survey will be completed.
4. Appraisal services.
5. Utility design, including waterline, sanitary sewer, gas, fiber optic, and electric design.
6. Contractor certifications.
7. Subcontractor certifications, if applicable.
8. All services not specifically listed are assumed to be excluded.
9. Right of Way Services (completed with previous partial action plan).

Construction Materials Testing

Testing Assumptions:

Concrete
60 tests/5 cylinders per test= 300 cylinders
300 cylinders $19/break = **$5,700**
Making of cylinders included as part of inspection time since Olsson will be on site full time.

Soil
2 Soil Proctors @ $165/test = $330
2 Atterberg Soil @ $90/test = $180
Soil Testing= **$510**
Density tests of soil included as part of inspection time since we are on site full time.

Asphalt
1 test per day and/or per 1000 tons
Density test of asphalt included as part of inspection time since Olsson will be on site full time.

Asphalt Lab Tests
8 Lab Tests @ $1000 = $8,000
8 Times shipping to lab for full testing 20 X $87/ship = $696
Asphalt Lab Testing= **$8,696**

Total Construction Materials Testing Fees	$14,906
TOTAL EXPENSE FEES	**$22,000**

Classifications (cont.)	2016	2017	2018
NDT Level III Technician	$285.00	$293.55	$302.36
NDT Technician Overtime	$165.00	$169.95	$175.05
NDT 2 Man Crew	$170.00	$175.10	$180.35
NDT 2 Man Crew Re-Observation	$170.00	$175.10	$180.35
NDT 2-Man Crew Overtime	$255.00	$262.65	$270.53
NDT 2-Man Crew Double Time	$340.00	$350.20	$360.71
NDT 3 Man Crew - A (1 Level II)	$235.00	$242.05	$249.31
NDT 3-Man Crew - A (1 Level II) Overtime	$352.50	$363.08	$373.97
NDT 3 Man Crew - B (2 Level II)	$290.00	$298.70	$307.66
NDT 3-Man Crew - B (2 Level II) Overtime	$435.00	$448.05	$461.49
NDT Support Crew	$60.00	$61.80	$63.65
Technician	$60.00	$61.80	$63.65
Technician Re-Observation	$60.00	$61.80	$63.65
Technician Standby	$60.00	$61.80	$63.65
Technician – Overtime	$90.00	$92.70	$95.48
Senior Technician	$70.00	$72.10	$74.26
Senior Technician Re-Observation	$70.00	$72.10	$74.26
Senior Technician Standby	$70.00	$72.10	$74.26
Senior Technician – Overtime	$105.00	$108.15	$111.39
NACE Inspection	$100.00	$103.00	$106.09
NACE Inspection Overtime	$150.00	$154.50	$159.14
SWPPP Inspections	$85.00	$87.55	$90.18
Administrative Services			
Administrative Coordinator	$80.00	$82.40	$84.87
Administrative Assistant	$66.00	$67.98	$70.02
Network Systems Administrator	$97.00	$99.91	$102.91
Secretarial	$52.00	$53.56	$55.17

Unit Code and Description (cont.)		2016 Rates	2017 Rates	2018 Rates
HLWPRSM OLA	Compressive Strength - Block Prism	$145.00	$149.35	$153.83
COMPS M OLA	Compressive Strength - Mortar	$38.00	$39.14	$40.31
C BEAM (3 PT)	Flexural Strength - Concrete Beam 3 Point	$62.00	$63.86	$65.78
FLXST OLA	Flexural Strength - Concrete Beam Center PT	$62.00	$63.86	$65.78
CORDNST OLA	Core Density	$28.00	$28.84	$29.71
CORTHIK OLA	Core Thickness	$22.00	$22.66	$23.34
MVE OLA	Vapor Emission Test Kit	$45.00	$46.35	$47.74
A MX VRF OLA	Asphalt Mix Verification Test	$1,250.00	$1,287.50	$1,326.13
A IGNOV OLA	Oil Content - Ignition Method	$170.00	$175.10	$180.35
ARVD	Percent Air Voids in Compacted Paving Mix	$30.00	$30.90	$31.83
CORDNST OLA	Bulk Specific Gravity	$29.00	$29.87	$30.77
A EX	Quantitative Extraction of Bituman Paving Mix	$175.00	$180.25	$185.66
	Gyratory Compaction Bulk Specific (1-point)	$140.00	$144.20	$148.53
MAR D OLA	Marshall Density	$155.00	$159.65	$164.44
STA/FLO	Marshall Stability and Flow	$270.00	$278.10	$286.44
SIEVE	Sieve Analysis of Extracted Gravity	$100.00	$103.00	$106.09
SPCFGZVT OLA	Theoretical Maximum Specific Gravity	$175.00	$180.25	$185.66
TRQWNCH OLA	Torque Wrench	$60.00	$61.80	$63.65
CORMCH OLA	Concrete Coring Equipment - Per Day	$145.00	$149.35	$153.83
MBLAB OLASI	Mobile Lab - Per Month	$400.00	$412.00	$424.36
	Construction Vehicle - Per Mile	$0.75	$0.77	$0.80

TranSystems

TranSystems Corporation
Schedule of Hourly Rates for 2016
Kansas City Office

Classification	Rate	Classification	Rate
Principal/Civil Engineer V	$288	Industry Specialist V	$288
Civil Engineer IV	$212	Industry Specialist IV	$285
Civil Engineer III	$144	Industry Specialist III	$132
Civil Engineer II	$108	Industry Specialist II	$66
Civil Engineer I	$90	Inspector V	$225
Architect IV	$212	Inspector IV	$128
Architect III	$184	Inspector III	$92
Architect II	$94	Inspector II	$74
Planner III	$134	Marketing Administrator III	$140
Planner II	$90	Marketing Administrator II	$92
Planner I	$80	Administrator II	$90
Scientist III	$114	Administrator I	$62
Scientist II	$88	Surveyor V	$144
Technician V	$162	Surveyor IV	$110
Technician IV	$120	Surveyor III	$90
Technician III	$98	Surveyor II	$72
Technician II	$82	Surveyor I	$56
Technician I	$68	Electrical Engineer III	$160
Principal/ Structural Engineer V	$288	Electrical Engineer I	$124
Structural Engineer IV	$212	Construction Services I	$67
Structural Engineer III	$166	Construction Services II	$81
Structural Engineer II	$128	Construction Services III	$95
Structural Engineer I	$100	Construction Services IV	$115

Sub-contracted labor, material testing equipment, printing and technical photography, and all other direct job costs to be paid at cost.

Vehicle mileage to be paid at the current IRS rate per mile.

The rates set forth on this initial Schedule of Rates shall be the rates provisions in effect from the date of this Agreement until December 31, 2016. TranSystems will revise the Schedule of Rates annually and will submit the revised Schedule of Rates which shall automatically become effective with regard to this Agreement and the Services performed under this Agreement on January 1st of the next calendar year.

TranSystems

TranSystems Corporation
Schedule of Hourly Rates for 2018
Kansas City Office

Classification	Rate	Classification	Rate
Principal/Civil Engineer V	$306	Industry Specialist V	$306
Civil Engineer IV	$226	Industry Specialist IV	$303
Civil Engineer III	$154	Industry Specialist III	$141
Civil Engineer II	$116	Industry Specialist II	$71
Civil Engineer I	$96	Inspector V	$239
Architect IV	$226	Inspector IV	$136
Architect III	$196	Inspector III	$98
Architect II	$100	Inspector II	$80
Planner III	$144	Marketing Administrator III	$150
Planner II	$96	Marketing Administrator II	$98
Planner I	$86	Administrator II	$96
Scientist III	$122	Administrator I	$66
Scientist II	$94	Surveyor V	$154
Technician V	$173	Surveyor IV	$118
Technician IV	$128	Surveyor III	$96
Technician III	$105	Surveyor II	$78
Technician II	$88	Surveyor I	$60
Technician I	$74	Electrical Engineer III	$170
Principal/ Structural Engineer V	$306	Electrical Engineer I	$132
Structural Engineer IV	$226	Construction Services I	$73
Structural Engineer III	$177	Construction Services II	$87
Structural Engineer II	$136	Construction Services III	$101
Structural Engineer I	$107	Construction Services IV	$123

Sub-contracted labor, material testing equipment, printing and technical photography, and all other direct job costs to be paid at cost.
Vehicle mileage to be paid at the current IRS rate per mile.
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