

ENGINEERING SERVICES AGREEMENT  
FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS

THIS AGREEMENT is made in Douglas County, Kansas, by and between the City of Lawrence, Kansas, hereinafter called the City, and Bartlett & West, Inc. , hereinafter called the Consultant. The City intends to construct an improvement project (hereinafter called the Project) in Lawrence, Kansas, described in Exhibit A.

The City hereby contracts with the Consultant for professional engineering services in connection with the project, for such engineering services more particularly described herein in consideration of the mutual covenants herein set forth. By executing this Agreement, the Consultant represents to the City that the Consultant is professionally qualified to do this project and is licensed to practice engineering by all public entities having jurisdiction over the Consultant and the project.

**SECTION I - DEFINITIONS**

As used in this Agreement, the following terms shall have the meanings ascribed herein unless otherwise stated or reasonably required by the contract, and other forms of any defined words shall have a meaning parallel thereto.

“Additional Services” means any services requested by the City which are not covered by this Agreement.

“Agreement” means this contract and includes change orders issued in writing.

“City” means the City of Lawrence, Kansas.

January 1, 1998

“City Engineer” means the person employed by the City with the title of City Engineer who is licensed to practice engineering in the State of Kansas.

“Consultant” means the company or individual identified on page 1. Consultant shall employ for the services rendered, engineers, architects, landscape architects, and surveyors licensed by the Kansas State Board of Technical Professions.

“Contract Documents” means those documents so identified in the Contract for Construction for this project including engineering documents. All terms defined in said General Conditions shall have the same meaning when used in this contract unless otherwise specifically stated or in the case of a conflict in which case the definition used in this Agreement shall prevail in the interpretation of this contract.

“Engineering Documents” means all documents required or reasonably implied by the nature of the project, including, but not limited to, plans, specifications, drawings, tracings, designs, calculations, sketches, computer models and reports.

“Engineering Services” means the professional services, labor, materials, supplies, testing and other acts or duties required of Consultant under this Agreement together with such other services as City may require pursuant to the terms of this Agreement.

“Project” is as described in Exhibit A.

“Subsurface Borings and Testing” means borings, probings, and subsurface explorations, laboratory tests and inspections of samples, materials and equipment; and appropriate professional interpretations of all the foregoing.

## SECTION II - PAYMENT

### A. COMPENSATION.

1. Maximum Total Fee and Expense: The City agrees to pay the Consultant a fee based on the actual hours expended on the project at the rates indicated in the attached Fee Schedule, Exhibit B and the actual reimbursable expenses permitted under this contract and incurred on this project, but not to exceed a maximum fee of \$299,860.00. This fee is based on the scope of services outlined in this Agreement and is projected and shall be completed on or before 12/31/2012. Payment to Consultant shall not exceed the following amounts in each phase as detailed in Exhibit B. Other methods of compensation are allowed only after written approval by the City Engineer.
2. Hourly Rate: Any Additional Services which are not set forth in this Agreement will be charged on the basis of the hourly rate schedule attached hereto as Exhibit B and reimbursable expenses not contemplated in this Agreement will be charged on actual cost. No Additional Services or costs shall be incurred without proper written authorization of the City.
3. Reimbursable Expenses: Reimbursable expenses shall be included in the total maximum fee. Reimbursable expenses include expenses of transportation in connection with the project; expenses in connection with authorized out-of-town travel; long-distance communications; expenses of printing and

reproductions, postage and facsimile transmissions; expenses of renderings and models requested by the City and other costs as authorized by the City. Reimbursable expenses will not include overhead costs or additional insurance premiums. These costs should be included in your hourly rate structure.

4. Sales Tax: Compensation as provided for herein is exclusive of any sales, use or similar tax imposed by taxing jurisdictions on the amount of compensation, fees or services. Should such taxes be imposed, the City shall reimburse the Consultant in addition to the contractual amounts provided. The City shall provide tax exempt number if required, and if requested by the Consultant.
5. Billing: Consultant shall bill the City monthly for all services and reimbursable expenses. It is understood by the Consultant that monthly pay requests must be received by the 5<sup>th</sup> day of the month. The bill submitted by Consultant shall itemize the services and reimbursable expenses for which payment is requested, notwithstanding any claim for interest or penalty claimed in a Consultant's invoice. The City agrees to pay the Consultant within ten (10) days of approval by the governing body. Payment of invoice will be made within 30 days of invoice date.

6. City's Right to Withhold Payment: In the event the City becomes credibly informed that any representations of the Consultant provided in its monthly billing are wholly or partially inaccurate, the City may withhold payment of sums then, or in the future, otherwise due to the Consultant until the inaccuracy and the cause thereof is corrected to the City's reasonable satisfaction. In the event the City questions some element of an invoice, that fact shall be made known to the Consultant immediately. The Consultant will help effect resolution and transmit a revised invoice if necessary.
7. Progress Reports: A written progress report, as set out in Exhibit C, must be submitted with each monthly pay request indicating which specific design tasks and their percentage have been completed to date, and tasks that will be performed the following month. This report will serve as support for payment to the Consultant.
8. Time is of the Essence: Consultant will perform the services in a timely manner; however, if during their performance, for reasons beyond the control of the Consultant, protracted delays occur, the parties agree that they will negotiate in writing an equitable adjustment of time and compensation, taking into consideration the impact of such delays.
9. Change of Scope: For substantial modifications in authorized project scope, and/or substantial modifications of drawings and/or specifications previously accepted by the City, when requested by the City and through no fault of the

Consultant, the Consultant shall be compensated for time and expense required to incorporate such modifications at Consultant's standard hourly rates per Exhibit B. Provided, however, that any increase in contract price or contract time must be requested by the Consultant and must be approved through a written supplemental agreement. Consultant shall correct or revise any errors or deficiencies in its designs, drawings or specifications without additional compensation when due to Consultant's negligence, error, or omission.

10. Additional Services: The Consultant shall provide, with the City's concurrence, services in addition to those listed in Section III, when such services are requested, in writing, by the City. Prior to entering into any additional services, the Consultant must submit a proposal outlining the additional services to be provided, estimation of total hours and a maximum fee based upon the hourly fee schedule attached hereto as Exhibit B. Payment to the Consultant, as compensation for these services, shall be in accordance with the attached hourly rate schedule attached as Exhibit B. Reimbursable expenses incurred in conjunction with additional services shall be paid separately and those reimbursable expenses shall be paid at actual cost. Records of reimbursable expenses and expenses pertaining to additional services and services performed on an hourly basis shall be made available to the City if so requested in writing. Production of these documents shall be made at the Consultant's office during normal business

hours within a reasonable time at a date and time mutually convenient to both parties.

11. Supplemental Agreement: This Agreement may be amended to provide for additions, deletions and revisions in the work or to modify the terms and conditions thereof by written amendment. The contract price and contract time may only be changed by a written supplemental agreement approved by the City, unless it is the result of an emergency situation in which case the City Engineer may give verbal approval to be followed by a written and approved supplemental agreement. If notice of any change affecting the general scope of the work or provisions of this Agreement, including but not limited to, contract price or time, is a requirement of any insurance policy held by the Consultant as a requirement of this Agreement, the giving of such notice shall be the Consultant's responsibility.

### **SECTION III - RESPONSIBILITIES OF CONSULTANT**

The Consultant shall furnish and perform the various professional duties and services in all phases of the project to which this Agreement as herein provided and which are required for the completion of the project which services shall include:

**FOR THESE FOUR PHASES, DUE TO THE NATURE OF THIS PROJECT, THE PHASES LISTED BELOW (Preliminary Design Phase, Final Design Phase, Bidding Phase & Construction Phase) DO NOT APPLY TO THIS PROJECT. SEE EXHIBIT "B" FOR DETAILED SCOPE DEFINITION.**

**A. PRELIMINARY DESIGN PHASE**

1. Services: The services to be provided during this phase are set out in Exhibit A attached hereto and incorporated by reference.
2. Preliminary Design Documents: The Consultant shall furnish the City three (3) copies of the above preliminary design documents for review as set out in Exhibit A.
3. Probable Cost: The Consultant shall furnish the City an opinion of probable cost. The Consultant's opinions of probable project costs, if provided for herein, are to be made on the basis of Consultant's experience and qualifications. The Consultant cannot and does not guarantee that proposals, bids, or actual total project or construction costs will not vary from opinions of probable cost prepared by the Consultant. If the probable cost exceeds the amount budgeted for the project, the City may terminate this contract at the completion of this phase. The Consultant will be paid for all services provided to complete this phase. If directed by the City, the Consultant shall modify the drawings and specifications as necessary to achieve compliance with the budgeted construction cost and be compensated according to Exhibit B.

**B. FINAL DESIGN PHASE**

1. Services: The services to be provided during this phase are set out in Exhibit A attached hereto and incorporated by reference.



2. Final Design Documents: The Consultant shall furnish the City the mylars and two (2) copies of the above final design plans as stated in Exhibit A. The Consultant shall also provide a digital copy of the plans as detailed in Exhibit D.
3. Contract Documents: The City standard contract documents shall be used and the Consultant will furnish all details or specifications that are unique for this particular project.

#### **C. BIDDING PHASE**

1. Services: The services to be provided during this phase are set out in Exhibit A attached hereto and incorporated by reference.
2. Bids Exceeding Cost Estimate: If bids exceed the estimated cost, the City may discuss, with the Consultant and the lowest bidder, ways to reduce the cost. This discussion will be accomplished at no additional cost to the City.

#### **D. CONSTRUCTION PHASE**

1. Administration: It is understood that the City will provide in-house administration of the construction agreement; however, the Consultant shall consult with and advise the City and act as the City's representative when requested. The City does have the option to contract for construction administration and observation services by separate agreement.
2. Contract Interpretation: When requested by the City, the Consultant shall visit the site and issue necessary interpretations and clarifications of the

contract documents. The Consultant shall provide such services at no cost to the city.

3. Additional Drawings: If during construction, situations arise which require additional drawings or details, or revision of the plan drawings or details, the Consultant agrees to provide such additional drawings or revisions at no cost to the City when such changes are required to correct Consultant's errors or omissions in the original design and preparation of construction drawings. If such situations occur through no fault of the Consultant, or are beyond his control, both parties agree to negotiate an equitable payment to the Consultant for his services rendered, which shall be accomplished through a change order.
4. Shop Drawings: The Consultant shall review and take appropriate action on contractor's shop drawings and samples, and the results of tests and inspections and other data which each contractor is required to submit for the purposes of checking for compliance with the design concept and conformance with the requirements of the contract documents. Such review shall not extend to means, methods, sequences, techniques or procedures of construction, or to safety precautions and programs incident thereto, unless an obvious deficiency exists wherein the Consultant should advise the City of such defect or deficiency so the same can be prevented.

## **E. GENERAL DUTIES AND RESPONSIBILITIES**

1. Personnel: The Consultant shall assign only qualified personnel to perform any service concerning the project. At the time of execution of the agreement, the parties anticipate that the following individual will perform as the principal(s) on this project, Darron R. Ammann, Vice President. As principal on this project, this person shall be the primary contact with the City Engineer, or another person so designated, and shall have authority to bind the Consultant. So long as the individual named above remains actively employed or retained by the Consultant, he/she shall perform the function of principal on this project.
2. Independent Contractor: The Consultant is an independent contractor and as such is not an employee of the City.
3. Special Services: The Consultant may be called on to serve as a Consultant or witness in any litigation, arbitration, legal or administrative proceeding arising out of this project. The Consultant shall not be paid extra by the City if the appearance is to defend their professional engineering services. If the Consultant is requested in writing by the City to appear as a witness, the Consultant will be paid its hourly fee as reflected on the hourly rate schedule attached hereto as Exhibit B.

4. Subsurface Borings and Material Testing: If tests additional to those provided in Exhibit A are requested by the City for design, the Consultant shall prepare specifications for the taking of the additional borings. Such subsurface borings and testing, as defined herein, shall be provided by the Consultant through other contractors. Payment to the Consultant will be negotiated in writing.
5. Service by and Payment to Others: Any work authorized in writing by the City and performed by a third party other than the Consultant, or their subconsultants in connection with the proposed project, shall be contracted for and paid for by the City directly to the third party or parties. Fees for extra work shall be subject to negotiation between the City and the third party. Fees shall be approved by the City prior to the execution of any extra work. Although the Consultant may assist the City in procuring such services of third parties, the Consultant shall in no way be liable to either the City or such third parties in any manner whatsoever for such services or for payment thereof.
6. Subcontracting of Service: The Consultant shall not subcontract or assign any of the architectural, engineering or consulting services to be performed under this Agreement without first obtaining the written approval of the City regarding the work to be subcontracted or assigned and the firm or person proposed to accomplish the work. Neither the City nor the Consultant shall

assign any rights or duties under this Agreement without the prior written consent of the other party. Unless otherwise stated in the written consent to an assignment, no assignment will release or discharge the assignor from any obligation under this Agreement.

7. Endorsement: The Consultant shall sign and seal all final plans, specifications, estimates and engineering data furnished by the Consultant. The Consultant warrants to the best of their knowledge, information and belief that their performance will be done in a professional manner. Any review or approval by the City of any documents prepared by the Consultant, including but not limited to the plans and specifications, shall be solely for the purpose of determining whether such documents are consistent with the City's construction program and intent. No review of such documents shall relieve the Consultant of their responsibility for the accuracy. It is the Consultants responsibility to verify the existence of any and all rights-of-way and easements, including temporary construction easements that are necessary for the project. Rights-of-way and easements shown on the plans shall have proper legal verification to prove their existence.
8. Professional Responsibility: The Consultant will exercise reasonable skill, care and diligence in the performance of its services as is ordinarily possessed and exercised by a professional engineer.

9. Inspection of Documents: The Consultant shall maintain all project records for inspection by the City during the contract period and for three (3) years from the date of final payment.

#### **SECTION IV - CITY OF LAWRENCE RESPONSIBILITIES**

##### **A. GENERAL DUTIES AND RESPONSIBILITIES**

1. Communication: The City shall provide to the Consultant information and criteria regarding the City's requirement for the project; examine and timely respond to the Consultant's submissions; and give notice to the Consultant, who shall respond promptly, whenever the City observes or otherwise becomes aware of any defect in the work.
2. Access: The City will provide access agreements for the Consultant to enter public and private property when necessary.
3. Duties: The City shall furnish and perform the various duties and services in all phases of the project which are outlined and designated in Exhibit A as the City's responsibility.
4. Program and Budget: The City shall provide full information stating the City's objectives, schedule, budget with reasonable contingencies, and necessary design criteria.
5. Consultants: The City may contract with "specialty" Consultants when such services are requested by the Consultant.

6. Testing: Any tests required to supplement the scope of services or tests required by law shall be furnished by the City.
7. Legal, Insurance, Audit: The City shall furnish all legal, accounting and insurance counseling services as may be necessary at any time for the project. The City shall furnish all bond forms required for the project.
8. Project Representative: The City Engineer, or the City Engineer's designee, shall represent the City in coordinating this project with the Consultant, with authority to transmit instructions and define policies and decisions of the City.

## **SECTION V - GENERAL PROVISIONS**

### **A. TERMINATION**

1. Notice: The City reserves the right to terminate this Agreement for either cause or for its convenience and without cause or default on the part of the Consultant, by providing written notice of such termination to the Consultant. Upon receipt of such notice from City, the Consultant shall, at City's option as contained in the notice: Immediately cease all work and meet with City to determine what work shall be required of the Consultant in order to bring the project to a reasonable termination in accordance with the request of the City. The Consultant shall also provide to the City digital and mylar copies of all drawings and documents completed or partially completed at the date of termination.

The Consultant is entitled to terminate this contract by providing thirty (30) days written notice.

2. Compensation for Convenience Termination: If City shall terminate for its convenience as herein provided, City shall compensate Consultant for all work completed to date prior to receipt of the termination notice. Compensation shall not include anticipatory profit or consequential damages, neither of which will be allowed.
3. Compensation for Default Termination: If the City shall terminate for cause or default on the part of the Consultant, the City shall compensate the Consultant for the reasonable cost of work completed to date of its receipt of the termination notice. Compensation shall not include anticipatory profit or consequential damages, neither of which will be allowed. The City also retains all its rights and remedies against the Consultant including but not limited to its rights to sue for damages, interest and attorney fees.
4. Incomplete Documents: Neither the Consultant, nor its subconsultant, shall be responsible for errors or omissions in documents which are incomplete as a result of an early termination under this section, the Consultant having been deprived of the opportunity to complete such documents and certify them as ready for construction.



**B. DISPUTE RESOLUTION**

City and the Consultant agree that disputes relative to the project should first be addressed by negotiations between the parties. If direct negotiations fail to resolve the dispute, the party initiating the claim that is the basis for the dispute shall be free to take such steps as it deems necessary to protect its interests provided, however, that notwithstanding any such dispute the Consultant shall proceed with the work as per this agreement as if no dispute existed.

**C. OWNERSHIP OF ENGINEERING DOCUMENTS**

All engineering documents prepared in connection with this project shall be the property of the Consultant, whether the project for which they are made is executed or not; however, the Consultant will provide the City a copy of all final documents, including but not limited to prints and reproductions. Reports, plans, specifications and related documents are the Consultant's copyrighted instruments, and the Consultant, at their option, may so identify them by appropriate markings. Provided that the Consultant is paid in full for their services, then the City may reuse these final documents without any additional compensation. However, such reuse shall be for City use and the Consultant shall have no liability for City alteration to the documents.

**D. INSURANCE**

Unless otherwise specified, the City shall be shown as an additional insured on all applicable insurance policies except professional liability and worker's compensation. All general and automobile liability insurance shall be written on an occurrence basis unless otherwise agreed to in writing by the City. The City shall be given written thirty (30) days notice of any insurance policy cancellation.

1. Professional Liability: The Consultant shall maintain throughout the duration of this contract Professional Liability Insurance in an amount not less than one million dollars (\$1,000,000), per claim and annual aggregate, and shall provide the City with certification attached to this Agreement.

2. Commercial General Liability:

Each Occurrence                 \$500,000

General Aggregate             \$500,000

The policy must also include personal injury; products/completed operations; contractual liability and independent contractors.

3. Worker's Compensation: The Consultant shall retain Worker's Compensation Insurance in the statutory amounts.

4. Employer's Liability:

Bodily Injury by Accident         \$100,000                 (each accident)

Bodily Injury by Disease         \$500,000                 (policy limit)

Bodily Injury by Disease         \$100,000                 (each employee)

5. Automobile Insurance: The Consultant shall maintain a policy in the minimum amounts as required for general liability to protect against claims for bodily injury and/or property damage arising out of the ownership or use of any owned, hired and/or non-owned vehicle.
6. Industry Ratings: City will only accept coverage from an insurance carrier which offers proof that it:
  - a) Is licensed to do business in the State of Kansas;
  - b) Carries a Best's Policyholder rating of A or better; and
  - c) Carries at least a Class X financial rating; or is a company mutually agreed upon by the City and Consultant.
7. Subconsultant's Insurance: If a part of this agreement is to be sublet, the Consultant shall either:
  - a) Cover all subconsultants in its insurance policies; or
  - b) Require each subconsultant not so covered to secure insurance which will protect against all applicable hazards or risks of loss in the amount so designated.

Whichever option is chosen, the Consultant shall indemnify and hold harmless the City as to any and all damages, claims, or losses, including attorney's fees, arising out of the negligent acts or omissions of its subconsultants.

**E. INDEMNITY**

1. Indemnify and Hold Harmless: For purposes of this agreement, the Consultant hereby agrees to indemnify and hold harmless the City, its employees and agents from any and all loss where loss is caused or incurred in whole or in part as a result of the negligence or other actionable fault of the Consultant, its affiliates, subsidiaries, employees, agents and subconsultants/assignees and their respective servants, agents and employees, in the performance of services pursuant to this Agreement.

It is agreed as a specific element of consideration of this contract that this indemnity shall apply notwithstanding the joint, concurring or contributory or comparative fault or negligence of the City or any third party and, further notwithstanding any theory of law including, but not limited to, a characterization of the City's or any third party's joint, concurring or contributory or comparative fault or negligence as either passive or active in nature; provided, however that the Consultant's obligation hereunder shall not include amounts attributable to the fault or negligence of the City or any third party for whom the Consultant is not responsible.

In the case of any claims against the City, its employees or agents indemnified under this Agreement, by an employee of the Consultant, its affiliates, subsidiaries, or subconsultant/assignees, the indemnification obligation contained in this Agreement shall be limited to those losses caused by the negligence of the Consultant but shall not be limited by any limitation on amount or type of damages, compensation or benefits payable by or for the Consultant, its affiliates, subsidiaries, or subconsultant/assignees, under workers' compensation acts, disability benefit acts, or other employee benefit acts, as allowed by law. The Consultant's obligation hereunder shall not include amounts attributable to the fault or negligence of the City or any third party for whom the Consultant is not responsible.

**F. ENTIRE AGREEMENT**

This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements, whether oral or written, covering the same subject matter. This Agreement may not be modified or amended except in writing mutually agreed to and accepted by both parties to this Agreement.

**G. APPLICABLE LAW**

This Agreement is entered into under and pursuant to, and is to be construed and enforceable in accordance with, the laws of the State of Kansas.

**H. ASSIGNMENT OF AGREEMENT**

This Agreement shall not be assigned or transferred by either the Consultant or the City without the written consent of the other.

**I. NO THIRD PARTY BENEFICIARIES**

Nothing contained herein shall create a contractual relationship with, or any rights in favor of, any third party.

**J. FEDERAL LOBBYING ACTIVITIES (Only applies to projects receiving federal funds via the City)**

31 USCA Section 1352 requires all subgrantees, contractors, subconsultants and Consultants who receive federal funds via the City to certify that they will not use federal funds to pay any person for influencing or attempting to influence a federal agency or Congress in connection with the award of any federal contract, grant, loan or cooperative agreements. In addition, contract applicants, recipients and subrecipients must file a form disclosing any expenditures they make for lobbying out of non-federal funds during the contract period.

Necessary forms are available from the City Engineer and should be returned to the City with other final contract documents. It is the responsibility of the Consultant to obtain executed forms from any of its subconsultants who fall within the provision of the code and to provide the City with the same.

**K. COVENANT AGAINST CONTINGENT FEES**

The Consultant warrants that they have not employed or retained any company or person, other than a bona fide employee working for the Consultant, to solicit or secure this Agreement, and that they have not paid or agreed to pay any company or person, other than a bona fide employee, any fee, commission, percentage, brokerage fee, gifts, or any other consideration contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the City may terminate this Agreement without liability or may, in its discretion, deduct from the contract price or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

**L. COMPLIANCE WITH LAWS**

Consultant shall abide by all applicable federal, state and local laws, ordinances and regulations applicable to this project until the Engineering Services required by this Agreement are complete. Consultant shall secure all occupational and professional licenses, permits, etc., from public and private sources necessary for the fulfillment of their obligations under this agreement.

**M. TITLES, SUBHEADS AND CAPITALIATION**

Title and subheadings as used herein are provided only as a matter of convenience and shall have no legal bearing on the interpretation of any provision of the Agreement. Some terms are capitalized throughout the Agreement but the use of or failure to use capitals shall have no legal bearing on the interpretation of such terms.

**N. SEVERABILITY CLAUSE**

Should any provision of this Agreement be determined to be void, invalid, unenforceable or illegal for whatever reason, such provisions shall be null and void; provided, however, that the remaining provisions of this Agreement shall be unaffected thereby and shall continue to be valid and enforceable.

**O. HAZARDOUS MATERIALS**

The Consultant and the Consultant's subconsultants shall have no responsibility for the discovery, presence, handling, removal, or disposal or exposure of persons to hazardous materials in any form at the project site.

**P. EXECUTION OF CONTRACT**

The parties hereto have caused this agreement to be executed in triplicate this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

The Consultant agrees to comply with the provisions of K.S.A. 44-1030, in the Kansas Acts Against Discrimination, and Section 10-113 et seq. of the Code of the City of Lawrence, Kansas, Affirmative Action in Public Contracts.




CITY OF LAWRENCE, KANSAS

By: \_\_\_\_\_  
City Manager

\_\_\_\_\_  
Bartlett & West, Inc.  
(Name of Consultant Firm)

APPROVED AS TO FORM:

By:   
Darron R. Ammann

\_\_\_\_\_  
Vice President – Project Director  
Title

\_\_\_\_\_  
David L. Corliss  
City Manager

EXHIBIT A  
SCOPE OF SERVICES

I. PROJECT LOCATION AND DESCRIPTION

1. Design and prepare construction drawings and specifications for  
Farmland Business Park Master Plan & O'Connell Road-Highway K-10 Intersection Design.

**FOR THESE FOUR PHASES, DUE TO THE NATURE OF THIS PROJECT, THE PHASES LISTED BELOW (Preliminary Design Phase, Final Design Phase, Bidding Phase & Construction Phase) DO NOT APPLY TO THIS PROJECT. SEE EXHIBIT "B" FOR DETAILED SCOPE DEFINITION.**

II. PRELIMINARY DESIGN PHASE (Field Check)

1. Meet with city staff to determine specific project needs and general project desires. Also, review and receive available information and plans. Project budget will be provided by city staff.
2. Conduct one public meeting to discuss the proposed improvements and to receive input and hear concerns from the neighborhood.
3. Perform design survey as required to prepare plan and profile sheets. All surveys of the project must tie to two different section corners. The survey must have a linear closure of 1:15,000 as determined by the American Congress on Surveying and Mapping. All survey data must be provided to the city in digital format.
4. Obtain information from utility companies who have facilities within the project limits. Utility companies shall be required to locate their facilities within the project limits. Include utility locations in survey data. Provide preliminary utility coordination. Line and depth are required for all underground utilities.
5. Obtain ownership and easement (O & E) certificates on the properties that

about the project site. Copies of all ownership maps and recorded plats will be obtained from the Douglas County courthouse.

6. Provide traffic engineering analysis, if needed, to determine design traffic volumes, vehicle classifications, accident experience, speed data, and recommended signal timing and phasing. Determine and lay out the lane configurations and geometrics that would be required to serve the design traffic volumes along the route.
7. Provide services of a soil Consultant to determine the adequacy of subgrade and pavement condition. Complete a pavement evaluation and a determination of pavement improvement needs. Make recommendations, in writing, on pavement cross-section for the project.
8. Review alternative design concepts with the city prior to progressing to the detail aspects of the project. Alternative concepts shall be discussed to determine the best horizontal and vertical alignments for the project. City's concurrence in the selection of an alternate or preliminary concept will be contingent on the accuracy and completeness of the background information provided by the Consultant.
9. Storm drainage will be designed in accordance with the current city storm water management criteria. Prepare a hydrologic and hydraulic analysis to establish recommendations concerning storm drainage design criteria. Include pipe/box sizes, alignments, grades, drainage easements, and associated project design items. Perform watershed analysis and computer flow modeling using either HEC-1, TR-20, SWMM, HEC-2, or HY-7. Provide a written report of the results of this analysis and copies of the computer digital data.
10. Prepare a map showing the limits of the drainage basin for all sanitary sewer design. All sanitary sewer extensions shall conform to the wastewater collection system master plan. Include a complete analysis of all pump stations, including a map showing the property sewered by this pump station. Provide a written report detailing conformance with the master plan, assumptions that were made, and the flows from each property to the pump station.
11. Prepare preliminary estimate of probable construction cost for the project.
12. Prepare three sets of preliminary plan and profile sheets in sufficient detail for the city to review. Allow two weeks for city to receive preliminary plans. These documents shall include preliminary right-of-way, necessary easement acquisitions, drainage area map, and drainage design data. If project is over

budget, a determination of alternates is required. Contract may be terminated if additional funds are not available or project modifications cannot be made.

13. The following will be needed to develop the preliminary design:
  - a) Prepare the base drawing with a plan portion showing existing topography and contours and the profile to show grades. The base drawings shall be later used as full scale base drawings for right-of-way and/or final design plans.
  - b) The preliminary design plans shall be prepared in accordance with the latest editions of the City of Lawrence Design Criteria for infrastructure improvements, A Policy on Geometric Design of Highways and Streets prepared by the American Association of State Highway and Transportation Officials (AASHTO), and the Manual on Uniform Traffic Control Devices prepared by the Federal Highway Administration (FHWA).
  - c) The plan view scale shall be 1 inch = 30 feet and extend at least 300 feet beyond the project limits.
  - d) The profile view scale shall be 1 inch = 30 feet horizontal, and 1 inch = 5 feet vertical.
  - e) The preliminary design plans shall include the tentative additional easement and right-of-way limits, property lines and ownerships, section lines, township and ranges, any U.S. Surveys, city limits, and a general outline of the construction staging, and other critical design items.
  - f) Traffic assignments shall be shown on the respective roadways or on a line sketch of the roadways.
14. Upon approval of the preliminary design plans, the Consultant shall arrange a field check with the City to discuss design features in the project area.
15. The Consultant shall be responsible for verification, furnishing, and recording of any legal land corners necessary for legal descriptions used in deed writing. The Consultant's personnel shall tie the approved corner into the center line.

### III. FINAL DESIGN PHASE (Office Check)

1. Meet with city staff to review comments on preliminary design phase.

2. Conduct one public meeting to discuss the proposed improvements and their impacts on the adjacent properties with neighborhood.
3. Prepare a right-of-way strip map and furnish the city with the original and one print of the strip map. Also, furnish the city with 8 1/2" x 11" plats and legal descriptions of each property required for right-of-way or easement acquisition. The Consultant agrees to complete these right-of-way or easement descriptions and drawings by \_\_\_\_\_. The Consultant shall be responsible for making revisions to the right-of-way and construction plans resulting from negotiations with the property owners.
4. Prepare all applications, exhibits, drawings, and specifications necessary to obtain all required permits. Applications should be prepared for the City's execution and submittal. Assist the City in obtaining permit approvals by furnishing additional information about the project design. Provide, in the specifications, a list of the permits which must be obtained by the construction contractor.
5. The Consultant shall be responsible for preparing the applications for the National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities, U.S. Army Corps of Engineers 404 Permit, and the Kansas Department of Water Resources permits.
6. Prepare final construction documents for improvements, incorporating all comments from the city staff. Submit final plans to the City for final review. Allow two weeks for City Review.
7. The design plans shall include a detailed traffic control plan with an outline for construction staging conforming to the requirements of the Manual on Uniform Traffic Control Devices and the Policy, Procedure and Design Manual. The traffic control plan requires submittal to the City for review and approval prior to inclusion in the final design plans.
8. Prepare detailed temporary erosion control plans for review and approval before inclusion in the final design plans.
9. The Consultant shall prepare computations for all design plan quantities.
10. As a minimum, the final design plans shall include the following:
  - a) Title Sheet
  - b) Typical Sections
  - c) Plan Sheets
  - d) Profile Sheets
  - e) Intersection Detail Sheets, including curb return profiles

- f) Traffic Control Plan Sheets
- g) Temporary Erosion Control Plan Sheets
- h) Permanent Signing Quantity Sheets
- i) Culvert Sections
- j) Earthwork Quantities, Cross Sections, including entrance sections with existing and proposed grades
- k) Miscellaneous Detail Sheets
- l) Summary of Quantities Sheets

Additional plans and information may be required to complete the Final Plans.

- 11. Provide all utility companies a set of final plans for their use. Meet with each utility company to discuss the relocation of their facilities and the time schedule.
- 12. Provide estimate of probable construction cost based upon the final plans.
- 13. Provide mylars and two sets of the final, approved plans to the city. Also, provide a digital copy of the plans as detailed in Exhibit D.

#### IV. BIDDING PHASE

- 1. Answer all questions from contractors regarding the final plans.
- 2. Conduct a prebid conference, if required by city staff.

#### V. CONSTRUCTION PHASE (Inspection)

- 1. Attend a preconstruction conference with the city and the contractor, once the project has been awarded.
- 2. Answer all questions from the contractor regarding the design and interpretation of the plans.
- 3. Review and comment, or approve, contractor's shop drawings and samples and the results of tests and inspections and other data which each contractor is required to submit for the purposes of checking for compliance with the design concept and conformance with the requirements of the contract documents.
- 4. Provide the city a complete set of as-built drawings for the project. The as-built drawings shall be provided as a digital copy, as detailed in Exhibit D, and one set of mylars.
- 5. On a sanitary sewer project, all manholes shall be located by GPS methods,

and this coordinate location shall be provided to the city with the as-built plans.

#### GENERAL

1. Provide schedule for completion of preliminary plans, right-of-way plans, final plans, and bid date.
2. Provide written monthly progress reports as detailed in Exhibit C.
3. If no bid is received less than the engineer's estimate plus 20%, the plans will be modified in an attempt to reduce the cost of the project at no additional cost to the city. The project may be abandoned at the city's option; in no case will the Consultant be required to modify plans more than once without additional compensation.
4. Consultant must notify the city of additional costs for service requested prior to performing the service. For example, if Consultant is asked to attend a meeting not included in the scope of service, the cost must be determined before attending.
5. Written notes from any meetings with state, federal, or other agencies will be provided to the city by the Consultant. These need not be "formal minutes" but notes on discussion topics and requirements imposed.
6. All documents must be provided in the current version of WordPerfect, or Microsoft Word, as designated by the city at the time of execution of this contract.
7. All drawings must be prepared on standard 22" x 36" mylar sheets. Also final plans, field notes, and other pertinent project mapping records are to be provided to the city on digital format, as detailed in Exhibit D.

**EXHIBIT 'B'**  
**PROFESSIONAL ENGINEERING SERVICES FEE ESTIMATE**  
**FARMLAND BUSINESS PARK MASTER PLAN**  
**BARTLETT & WEST PROJECT NO. 17586.F00**  
**DATE: JANUARY 13, 2012**

Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landsc. Architecture	GIS Developer	Lead Designer	QA/QC Public W.	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin.	Total Dollars
\$47.00	\$11.07	\$19.50	\$33.50	\$35.00	\$27.00	\$29.00	\$28.50	\$63.00	\$26.50	\$56.00	\$32.00	\$20.00	\$24.00	\$2,850.03
<b>10 DIRECT LABOR BUSINESS PARK MASTER PLAN TASKS</b>														
<b>SITE INVESTIGATION &amp; CONCEPTUAL DESIGN PLANNING</b>														
1. Meet with city staff to determine project specific needs and general project desires.														
1.1 Attend kickoff meeting with City Staff to discuss project goals and schedule														
1.2 Interview various team members meeting to be provided by City Staff.														
1.3 City provide data & reports, i.e. planning documents, surveying information, environmental reports, etc.														
2. Site Investigation & Analysis														
2.1 Based on City Staff direction, gather additional base maps, available topographic information, utility or GIS data, etc.														
2.2 Investigate nature and alignment of connectivity to community shown via trails, sidewalks or occasional paths associated with the development of this master plan														
2.3 Investigation into cost-effective and/or eco-friendly design materials and their associated life cycle costs that will enhance the value of this property														
2.4 Coordination & information gathering with Non-City of Lawrence Utilities (Waste Energy, Southern Star Gas, AT&T /Cable, Wireless & Network)														
2.5 Coordination & information gathering with Non-City of Lawrence Utilities (Water, Sewer, Gas, AT&T /Cable, Wireless & Network)														
2.6 Coordination & information gathering from City of Lawrence Utilities (Stormwater, Sanitary & Wastewater)														
2.7 Coordination with Transportation Agencies (City of Lawrence Traffic Department, KDOT, BNSF, City of Lawrence Bus Service)														
2.8 Coordination with Transportation Agencies (City of Lawrence Traffic Department, KDOT, BNSF, City of Lawrence Bus Service)														
3. Design Development (Stage I-Clearing Stages)														
3.1 Provide to 10-14 initial conceptual land use, layout & alternatives														
3.2 Attend kickoff meeting for key stakeholders which is organized and prepared for by City Staff														
3.3 Meeting minutes from key stakeholder meeting to be prepared by City Staff														
3.4 City to contact and coordinate key stakeholder meeting with City of Lawrence, Douglas County, KDOT, Lawrence Chamber of Commerce, Kansas Department of Commerce, KCADC, LDGRA, University of Kansas, Lawrence Commercial Real Estate, Brook Creek Neighborhood Residents, other adjacent property owners, City & County Commissioners														
3.5 Gather input and feedback on initial concepts, additional costs or needs for the project and complete meeting minutes of obtained information														
3.6 A meeting with the Master Planning Steering Committee to review initial concepts and any feedback gathered from initial key stakeholder meeting.														
3.7 Attend meeting with City Commissioners to update them on the progress and receive any additional feedback and direction. City staff to prepare notes & drawings and provide presentation to City Commissioners.														
3.8 Design Development (Stage 2 - 30-35% Stage)														
4.1 Refine 4 initial conceptual land use layouts & alternatives into 2 preferred alternatives														
4.2 Attend meeting for key stakeholders which is organized and prepared for by City Staff														
4.3 Meeting minutes from key stakeholder meeting to be prepared by City Staff														
4.4 City to contact and coordinate key stakeholder meeting with City of Lawrence, Douglas County, KDOT, Lawrence Chamber of Commerce, Kansas Department of Commerce, KCADC, LDGRA, University of Kansas, Lawrence Commercial Real Estate, Brook Creek Neighborhood Residents, other adjacent property owners, City & County Commissioners														
4.5 Gather input and feedback on initial concepts, additional goals or needs for the project and complete meeting minutes of obtained information														
4.6 A meeting with the Master Planning Steering Committee to review concepts and any feedback gathered from key stakeholder meeting														
4.7 Provide a ballpark estimate of conceptual design costs and alternative phases for proposed improvements to the overall master plan														
4.8 Provide graphic boards and/or poster board presentation preparation for Open House/Informational Meeting														
4.9 Attend Open House/Informational Meeting. City to present possible master planning options to the general public, for review and comment														
4.10 Gather input and feedback on concepts from Open House meeting and complete meeting minutes of obtained information														
4.11 Provide suggestions for potential constraints and restrictions for the property. City staff to provide comments and limitations final document														
4.12 A meeting with the Master Planning Steering Committee to review concepts and any feedback gathered from Open House/Informational Meeting														
4.13 Attend meeting with City Commissioners to update them on the progress and receive any additional feedback and direction. City staff to prepare notes & drawings and provide presentation to City Commissioners.														
5. Design Development (Stage 3-90% Stage)														
5.1 Refine 2 conceptual land use layouts & alternatives into 1 final preferred product														
5.2 Attend meeting for key stakeholders which is organized and prepared for by City Staff														
5.3 Meeting minutes from key stakeholder meeting to be prepared by City Staff														
5.4 City to contact and coordinate key stakeholder meeting with City of Lawrence, Douglas County, KDOT, Lawrence Chamber of Commerce, Kansas Department of Commerce, KCADC, LDGRA, University of Kansas, Lawrence Commercial Real Estate, Brook Creek Neighborhood Residents, other adjacent property owners, City & County Commissioners														
5.5 Gather input and feedback on concepts, additional goals or needs for the project and complete meeting minutes of obtained information														
6. Final Master Plan Design														
6.1 Refine 1 Preferred Master Plan layout with final alternatives														
6.2 Attend meeting with the Master Planning Steering Committee to review final preferred solution prior to public release & presentation														
6.3 Prepare a final estimate of conceptual design costs and finalized phases for proposed improvements to the overall master plan														
6.4 Prepare a final album board outline of the illustrated improvements to the overall master plan, for public presentation and future marketing use														
6.5 Prepare graphic boards and/or poster board presentation preparation for Open House/Informational Meeting														
6.6 Attend Open House/Informational Meeting. City to present possible master planning options to the general public for review and comment														



**EXHIBIT 'B'**  
**PROFESSIONAL ENGINEERING SERVICES FEE ESTIMATE**  
**FARMLAND BUSINESS PARK MASTER PLAN**  
**BARTLETT & WEST PROJECT NO. 17586.P00**  
**DATE: JANUARY 13, 2012**

67. Attend meetings with City Commissioners to update them on the progress of the final preferred Master Plan. City staff to prepare notes & drawings and provide presentation to City Commissioners.

7. Final Master Plan Reference Document

Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscapes Architect	GIS Developer	Lead Designer	QA/QC Public W. Designer	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin	Total Dollars
\$47,000	\$51,667	\$39,500	\$33,500	\$35,000	\$27,000	\$29,000	\$28,500	\$45,000	\$26,500	\$26,000	\$32,000	\$20,000	\$24,000	\$293,154

7.1. Provide 3 hard copies of final document and 1 electronic PDF

3	2				40		12	2						\$293,154
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**Subtotal Preliminary Site Investigation & Conceptual Design Planning**

BE2	47	0	0	0	196	0	264	19	0	0	0	0	0	\$29,628,499
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**INTERSECTION ANALYSIS & K-10 & O'CONNELL ROAD INTERSECTION CONSTRUCTION DOCUMENTS**

	12	24							38					\$2,575,040
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1. Prepare intersection plan for selected access point. (Effort based on O'Connell Road intersection since it is expected to be the most complicated location)

1.1. Prepare up to three preliminary drawing alternatives for the proposed intersection that avoid existing site constraints

1.2. Meet with City PW Staff and KDOT to review geometries

1.3. Meet with Water & Sewer & Southern Gas Central to discuss potential conflicts and identify requirements of the utilities

1.4. Determine how proposed intersection geometry will fit to proposed internal road network within the business park

2. Prepare Field Check Plans for K-10 & O'Connell Road Intersection & Traffic Signal Improvements

3. Prepare Final Plans for K-10 & O'Connell Road Intersection & Traffic Signal Improvements

	24	34					36		14	6	36	36		\$9,667,088
	40	96							14					\$9,667,088

Note: See attached scope of services for complete list of tasks for the Field Check & Final Plans for the O'Connell Road Intersection Improvements.

**Subtotal Intersection Analysis & K-10 & O'Connell Road Intersection Construction Documents**

0	76	204	0	0	0	0	0	0	296	6	36	36	0	\$29,916,922
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**DESIGN ALTERNATIVES FOR UTILITIES**

1. Determine Water and Sewer Service Locations

1.1. Meet with Utilities Dept staff to review existing services & discuss preliminary options for water and sanitary sewer service

1.2. Develop capacity requirements for water and sanitary sewer based on proposed business park layout

1.3. Provide preliminary layout showing proposed waterline and sanitary sewer locations

1.4. Review proposed alignments with Utilities Department staff

1.5. Develop preliminary cost estimate for proposed improvements

1.6. Prepare memorandum to be included in the Master Plan document

	11	36							34					\$2,891,137
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**Subtotal Design Alternatives for Utilities**

0	11	36	0	0	0	0	0	0	34	0	0	0	0	\$2,891,137
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**GEOTECHNICAL BORINGS (for preliminary planning & investigation, not engineering design)**

1. Provide 6 soil borings at strategic locations throughout the property to obtain preliminary data for evaluation

1.1. Recommendations for the preparation and cathodic lateral earth pressure, drainage concerns among other items

1.2. Generalized preliminary subsurface drawings requirements for fill, geotechnical or possible structures

1.3. Provide preliminary recommendations for light duty parking lots and drives

1.4. Concerns with construction of any bedrock encountered in the borings

1.5. Coordination by B&W staff with representative on meetings and findings

2														\$151,000
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**Subtotal Geotechnical Borings**

2	0	0	0	0	0	0	2	0	0	0	0	0	0	\$151,000
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**PRELIMINARY PLATTING TASKS**

1. Provide surveying services for Preliminary Platting

1.1. Sublease boring hole locations for geotechnical engineers in the field

1.2. Boundary Survey of Farmland Property for Preliminary Platting

1.2.1. Includes field time for monument location, coordination with W&W, Ward for existing data & coordination with survey drafting staff

1.3. Field location data of Southern Gas One line limits and easement

1.4. Field location data of existing Water, Sanitation lines, limits and easement

1.5. Survey manager coordination of correct time and additional error

1.6. Survey crew chief coordination and documentation research (Assumes site report for property will provide existing easements, encroachments, R/W, verification, ownership information, etc.)

1.7. Survey Technician drafting of acquired field data, scope sheet, boundary and work on preliminary plat boundary

1.8. Various non-survey staff coordination time with account for borings, field work, boundary, platting, etc.

1.9. Task does not include BNSF permit and Diagrams fees for working along the rail corridor. (Estimated to be about \$2800)

3	2						8			30	36	160		\$7,792,254
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**EXHIBIT 'B'**  
**PROFESSIONAL ENGINEERING SERVICES FEE ESTIMATE**  
**FARMLAND BUSINESS PARK MASTER PLAN**  
**BARTLETT & WEST PROJECT NO. 17586.P00**  
**DATE: JANUARY 13, 2012**

Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscapes Architect	GIS Developer	Lead Designer	QA/QC Public W. Designer	CADD Designer	Survey Manager	Survey Crew Chief	Survey Technician	Admin	Total Dollars
\$47,000	\$51,670	\$39,500	\$33,500	\$35,000	\$27,000	\$29,000	\$28,500	\$65,000	\$26,500	\$36,000	\$32,000	\$20,000	\$24,000	
<b>Subtotal Field Surveying</b>														
8	2	0	0	0	0	0	8	0	0	30	86	160	0	\$7739.54
<b>PRELIMINARY PLANNING</b>														
1. Provide Preliminary Planning Services														
30	26	40					96			2	4			\$7,209.42
1.1. Assess a pre-construction conference with the city planning staff prior to submittal														
1.2. Complete application paperwork and other required documents for submittal														
1.3. Complete a downtown sewer report analysis for Farmland property as required for application submittal														
1.4. Complete a Drainage Study Analysis for Farmland property as required for application submittal														
1.5. Preliminary lot layouts and potential easement layouts in conjunction and coordination with the overall master plan intention														
1.6. CADD Drafting and design of the preliminary plan														
1.7. Complete a set of revisions addressing city review comments associated with the preliminary plan drawings														
1.8. Complete additional information and resubmit the preliminary plan for approval														
1.9. Attending Planning Commission Meeting with City Commission Meeting regarding the preliminary plan for approval														
1.10. Coordination and review submittal with County Surveyor														
1.11. Attend 1 meeting with Master Planning Steering Committee to review preliminary plan goals and intention to keep consistent with overall master plan														
<b>TRAFFIC STUDY</b>														
1. Prepare Traffic Study to Comply with Preliminary Planning Requirements														
50	26	40	0	0	0	0	56	0	0	2	4	0	0	\$7,209.42
1.1. Collect 24-hour counts along K-10 & O'Connell Road														
1.2. Collect Peak Hour Turning Movement Counts at K-10 and O'Connell Road														
1.3. Collect Peak Hour Turning Movement Counts at K-10 and East Hills Business Park Drive (N1390 Rd)														
1.4. Collect Peak Hour Turning Movement Counts at 19th & Harper														
1.5. Collect Peak Hour Turning Movement Counts at 24th and Huxley (if > 500 peak generated trip)														
1.6. Identify specific development plan under study and any existing developments and/or approved plans for the site. Identify land uses on property abutting the proposed development site, including adjacent zoning districts.														
1.7. Identify land uses shown in Horizon 2030 for the proposed development site, as well as the ultimate arterial and collector street network in the vicinity of the site.														
1.8. Identify the functional classification of the public streets bounding the site and those streets on which access for the development is proposed. Review Major Thoroughfare Plan adopted as part of Transportation 2025 and Figure 14 in Horizon 2030.														
1.9. Identify allowable access to the development site as defined by criteria included in the adopted Access Management Plans for arterial and collector streets in Lawrence, Ohio State Center Study.														
1.10. Confirm proposed access on K-10 meets KDOT's Coordinator Access Management Guidelines.														
1.11. Document current public street boulevard setbacks adjacent to the site, including the nearest arterial and collector street frontage and type of lanes, speed limits, and sight triangles along the public streets from the proposed access.														
1.12. Compare proposed access with AASHTO established design criteria (clearway spacing, alignment with other streets and driveways, city driveway standards, and minimum sight distances)														
1.13. Assess the feasibility of access connections to existing properties, including shared access with the public street system.														
1.14. Estimate the number of trips generated by existing and proposed development on the site for a typical weekday and weekday peak hours using the latest edition of Trip Generation published by the Institute of Transportation Engineers.														
1.14.1. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for existing traffic.														
1.14.2. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for post-development traffic.														
1.14.3. Perform signal warrant analysis.														
1.15. K-10 and East Hills Business Park Drive														
1.15.1. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for existing traffic.														
1.15.2. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for post-development traffic.														
1.15.3. Perform signal warrant analysis.														
1.16. 19th & Harper														
1.16.1. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for existing traffic.														
1.16.2. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for post-development traffic.														
1.16.3. Perform signal warrant analysis.														
1.17. 24th & Harper														
1.17.1. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for existing traffic.														
1.17.2. Model and prepare exhibit (Volumes, Delays/Queues, LOS) for post-development traffic.														
1.17.3. Perform signal warrant analysis.														

**EXHIBIT 'B'**  
**PROFESSIONAL ENGINEERING SERVICES FEE ESTIMATE**  
**FARMLAND BUSINESS PARK MASTER PLAN**  
**BARTLETT & WEST PROJECT NO. 17586.P00**  
**DATE: JANUARY 13, 2012**

Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscap Architecture	GIS Developer	Lead Designer	QA/QC Public W. Designer	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin.	Total Dollars
\$47,000	\$51,147	\$59,550	\$39,550	\$35,000	\$27,000	\$39,000	\$28,500	\$65,000	\$54,500	\$16,000	\$35,000	\$20,000	\$24,000	
0	4	52	0	0	0	0	60	0	0	0	0	32	0	\$4,600.68

**SUSTAINABILITY VALUES TASKS**

Task Description	Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscap Architecture	GIS Developer	Lead Designer	QA/QC Public W. Designer	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin.	Total Dollars
1. Sustainability Framework	4	12													\$42,000
1.1 City Stakeholder Sustainability Framework - Internal															
1.2 Coordination Meeting (2 - 2 hr. face-to-face meetings and 6 - 1 hour conf. call)															
2. Green Energy Evaluation	4	48													\$2,084.00
2.1 Evaluate Energy Potential from Energy															
2.1a EWPF Strategy															
2.1b Data Collection															
2.1c Food Waste Evaluation															
2.1d Biogas Production															
2.1e Biogas and Heat Production															
2.1f Potential Research Programs															
2.2 Solar Energy Potential															
2.3 Green Energy Findings and Technical Memo															
2.3a Presentation of Findings															
2.3b Draft Technical Memo															
2.3c Final Technical Memo															
3. Green Stormwater Infrastructure	4														\$18,000
3.1 Watershed Evaluation - Primary Conveyance															
3.2 Stormwater Quality Management Strategies															
3.3 Stormwater Technical Memo (Draft and Final)															
Subtotal Green Alternatives, Initiatives & Sustainability Values	12	0	60	0	0	0	0	0	0	0	0	0	0	0	\$62,844.00

**OTHER TASKS**

Task Description	Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscap Architecture	GIS Developer	Lead Designer	QA/QC Public W. Designer	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin.	Total Dollars
1. Rail Alternatives & Coordination	4		6					1							\$45,500
1.1 Research existing rail alignment coordinates, schedules, and projects for meeting.															
1.2 Attend meeting with BNSF.															
1.3 Prepare and distribute meeting minutes and action items from meeting.															
2. Make assessment of impact to all existing rail lines at and around project development.	1		4					3							\$43,000
3. Develop one (1) conceptual rail layout that comply with BNSF industry Track standards.	1		3					12							\$76,000
3.1 Draft conceptual proposal alignment.															
3.2 Create profile of horizontal alignment options and develop vertical alignments.															
3.3 Review cross sections to determine earthwork and drainage impacts.															
4. Meet with BNSF economic development and engineering and City staff to review options.	2		5					1							\$32,000
4.1 Prepare for meeting.															
4.2 Attend meeting.															
4.3 Prepare and distribute meeting minutes and action items from meeting.															
5. Address comments that resulted from City and BNSF review.	1		2					4							\$746,000
6. This does not include cost estimates, including quantities, retaining, track design, etc.															\$6,000
Subtotal Rail Alternatives & Coordination	9	0	25	0	0	0	0	26	0	0	0	0	0	0	\$2,143,500

**GENERAL**

Task Description	Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscap Architecture	GIS Developer	Lead Designer	QA/QC Public W. Designer	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin.	Total Dollars
1. Provide schedule of completion updates for various steps throughout the entire process	0	0	0	0	0	0	0	0	0	0	0	0	0	2	\$46,000
Subtotal General	0	0	0	0	0	0	0	0	0	0	0	0	0	2	\$46,000

**EXHIBIT 'B'**  
**PROFESSIONAL ENGINEERING SERVICES FEE ESTIMATE**  
**FARMLAND BUSINESS PARK MASTER PLAN**  
**BARTLETT & WEST PROJECT NO. 17586.P00**  
**DATE: JANUARY 13, 2012**

Project Director	Infrastructure Engineer	Design Engineer	Systems Analyst	GIS Coord. I	Landscapes Architect	GIS Developer	Lead Designer	QA/QC Public Wr.	CADD Designer	Survey Manager	Survey Chief	Survey Technician	Admin	Total Dollars
\$47,000	\$31,670	\$39,850	\$33,850	\$38,000	\$27,000	\$28,000	\$28,500	\$65,000	\$26,500	\$36,000	\$32,000	\$20,000	\$24,000	\$773,335.72
213	166	417	0	0	196	0	456	19	330	38	126	228	2	
<b>TOTAL DIRECT LABOR</b>														

**2.0 GENERAL OVERHEAD (TOTAL DIRECT LABOR X 2.00)** **\$496,671.44**

**3.0 DIRECT EXPENSES**

Item	Unit Rate	Per Unit	Quantity	Cost
Subcontract Fees - CDM	\$63,313.20	I.S.	1	\$63,313.20
GIS Equipment	\$5,000.00	I.S.	1	\$5,000.00
Mileage (Truck)	\$25.00	Per Hour	104	\$2,600.00
CAD Expense	\$92.14	I.S.	1	\$92.14
Printer Paper (Black & White) (22" X 34")	\$0.39	Per Page	1350	\$531.30
Printer Paper (Color) (22" X 34")	\$8.55	Per Page	250	\$2,137.50
Reproduction Services (22" X 34")	\$7.00	Per Hour	766	\$5,362.00
Postage	\$3.00	Per Sheet	180	\$540.00
Supplies	\$5.00	Per Sheet	80	\$400.00
Other	\$1.00	Per Sheet	400	\$400.00
	\$0.15	I.S.	1	\$0.15
	\$0.15	Per Sheet	740	\$111.00
<b>TOTAL DIRECT EXPENSES</b>				
				<b>\$79,852.84</b>

**GRAND TOTAL (DIRECT LABOR + GENERAL OVERHEAD + DIRECT EXPENSES)** **\$299,860.00**

EXHIBIT 'B'

## **Task 1 - Sustainability Framework**

The ENGINEER will support the development of a Sustainability Framework with the Owner through an *internal* stakeholder (i.e., key City staff and public officials) work session. The result of the process is to prepare the framework of sustainable practices to be incorporated into the Master Plan.

### **Task 1.1 – City Stakeholder Sustainability Priorities - Internal**

The ENGINEER will participate in a work session/discussion facilitated by the City in conjunction with the kickoff meeting that will:

- Identify sustainability goals for the project
- Identify opportunities and synergies
- Identify sustainability charter/covenant criteria for future tenants
- Identify stakeholders that support priority sustainability areas (e.g., green energy)

The ENGINEER will summarize the outcomes of the meeting as a launching point for future stakeholder conversations, and the foundation of the sustainability framework for the design team.

### **Task 1.2 – Coordination Meetings**

The ENGINEER will meet on regular basis with the Owner throughout the Master Plan process to provide updates and guidance to address immediate and future tenant needs.

- A monthly meeting with Owner staff at City Hall equal to 3 meetings at 2 hours each.
- A monthly call between Owner staff and the ENGINEER equal to 6 calls an hour each.

## **Task 2 – Green Energy Evaluation**

ENGINEER will work with the Owner to identify potential sources of green energy that could be used by the tenants. Two sources of green energy will be considered which are the use of biogas and solar panels.

### **Task 2.1 – Evaluate Energy Potential from Biogas**

The City currently has one source of biogas readily available and potentially not being fully utilized. This is the biogas generated by the anaerobic digestion process at the City's WWTP. ENGINEER will conduct a desktop evaluation of the energy potential from biogas produced at the WWTP and the potential for increasing biogas production at the WWTP by processing trucked wastes, such as food waste, fats, oils, and grease (FOG), and other unique high strength wastes. Following are the tasks ENGINEER will perform to determine the potential energy from biogas.

Task 2.1a – WWTP Synergy - ENGINEER will meet with City staff at the WWTP to develop a better understanding of the City's digestion complex, the potential for using biogas, and for increasing gas production. This is anticipated to be a half day meeting.

Task 2.1b – Data Collection - ENGINEER will develop a data request for City staff to help determine the potential for increasing biogas production at the WWTP. The request could include, but is not limited to, the following:

- Projected biogas production and the quantity of gas used and flared at the WWTP.
- Digestion capacity, current loads, and projected loads. It is assumed this information should be readily available from design documents associated with the ongoing upgrade of the digestion facilities.
- Engineer will provide characteristics for preferred high-strength wastes to the City's industrial pretreatment coordinator. City's coordinator will be asked to review available records and identify current waste streams that could meet the preferred characteristics and provide ENGINEER with information related to the quantity and characteristics of these wastes.
- FOG collection information including volume of FOG and any relevant analyses.

Task 2.1c – Food Waste Evaluation – ENGINEER will use readily available information from Kansas University and Haskell University to identify the potential quantity of food waste that could be digested. If information is not readily available, general rules of thumb for food waste production for similar institutions will be used to identify the potential quantity of food wastes. Results from CDM's previous work will be used to establish general characteristics of the waste and the potential energy that can be recovered from these wastes. A discussion of the noneconomic factors associated with implementing a food waste handling system will be developed for inclusion in the technical memorandum (Task 2.3).

Task 2.1d – Biogas Production – ENGINEER will use the information from previous tasks to develop an estimate of the quantity and characteristics of the biogas that could be used for energy production.

Task 2.1e – Energy and Heat Production – ENGINEER will identify the electrical power and thermal energy that could be produced from biogas, as well as the quantity of biomethane that could be generated if the biogas were treated appropriately. For each of these methods of energy production, the following issues will be developed and captured in the final technical memorandum described in Task 2.3c.

- General descriptions of the equipment and facilities required to support these types of energy production, including options for transportation of the biogas, heat, and power between the WWTP and the site.
- A qualitative review, including a process schematic, of the potential modifications that would be needed at the existing WWTP to support an enhanced biogas production system. The review will also address the needs for managing potential sidestream associated with an enhanced biogas production program at the WWTP.

- State-of-the-practice for these methods of energy generation.
- The range of costs for these methods of energy production on a unit basis and based on generally accepted industry standards.

Task 2.1f – Potential Research Programs – ENGINEER will provide a qualitative discussion of potential research programs that could be developed to explore other means of increasing biogas production. These could include research related algae growth or crop growth at the site.

## **Task 2.2 – Evaluate Solar Energy Potential**

ENGINEER will use industry standards, published data and literature and corporate experience to evaluate the potential energy production from photovoltaic panels. Noneconomic considerations, such as the availability and reliability of the energy source will be developed and compared to the use of biogas.

## **Task 2.3 – Green Energy Findings and Technical Memorandum**

Task 2.3a – Presentation of Findings – ENGINEER will meet with City staff and stakeholders to review and discuss the findings from the previous tasks.

Task 2.3b – Draft Memorandum - ENGINEER will develop a Draft Green Energy Technical Memorandum (TM) that can serve as a chapter or appendix to the overall site Master Plan. The TM will compile the results from the previous tasks and will be submitted in electronic form to the City for review and comment.

Task 2.3c – Final Memorandum – ENGINEER will address City’s comments on the Draft TM and will prepare a Final TM for inclusion in the Master Plan.

## **Task 3 – Green Stormwater Infrastructure**

The ENGINEER will evaluate the existing primary stormwater conveyance system to integrate green infrastructure methods as part of the future development. In addition, ENGINEER will evaluate potential onsite stormwater management strategies to be implemented by potential future tenants.

### **Task 3.1 – Stormwater Primary Conveyance System**

The ENGINEER will evaluate the primary stormwater conveyance system, including the drainage conduits under K-10 and the BNSF railroad tracks, existing lagoons, and the main open channel that bisects the site, to develop a green infrastructure conveyance strategy that is integrating into the overall development strategy.

- Hydrologic Analysis: Estimate stormwater for the 2 and 10 year design events.
- Hydraulic Analysis: Estimate capacity of primary stormwater conveyance system including the detention ponds and drainage conduits under K-10 and the railroad tracks.

- Primary Conveyance Solutions: Develop a conceptual planview alignment of the primary conveyance system using green infrastructure principles, such as natural channel design, and stormwater detention/retention (quantity and quality benefits).

### **Task 3.2 - Stormwater Quality Management Strategies**

ENGINEER will evaluate onsite water quality best management practices (BMPs) to be implemented by potential future tenants, or integrated as part of the future roadway network. ENGINEER will apply the *Post Construction Stormwater Best Management Practices* (BMP) manual as prepared for the Kansas Stormwater Consortium in April 2009 and other relevant design guidance. The BMPs to be evaluated include: bioretention, grass swales, and pervious pavement. ENGINEER will provide general guidance on the number and location of each type of BMP.

### **Task 3.3 – Stormwater Management Technical Memorandum**

The ENGINEER will provide a draft and final Technical Memorandum summarizing the evaluation of both stormwater quantity and quality in the built out scenario. Criteria will be presented for all future site tenants to be incorporated at the time of development. Ancillary benefits will be discussed qualitatively with respect to recreation opportunities and irrigation considerations for reuse of stormwater runoff.



EXHIBIT 'B'

PROFESSIONAL ENGINEERING SCOPE OF SERVICES  
K-10 & O'CONNELL ROAD INTERSECTION IMPROVEMENTS & TRAFFIC SIGNAL

BARTLETT & WEST PROJECT NO. 17586.P00

DATE: JANUARY 13, 2012

PRELIMINARY DESIGN PHASE (FIELD CHECK)

- 1 Meet with city staff to determine project specific needs and general project desires. Also review and receive available information and plans. Project budget will be provided by City staff.
  - 1.1 Attend kickoff meeting. City to prepare agenda and provide minutes.
  - 1.2 City to provide existing plans & project budget.
  - 1.3 The City shall provide a letter stating design criteria, including but not limited to lane widths (through movements, auxiliary lanes, and receiving lanes), length of auxiliary lanes, receiving lane widths and lengths, taper lengths, curb & gutter sections, pavement thickness, base treatments, longitudinal edge drain/transverse underdrain needs, earthwork compaction requirements, and sidewalk widths.
- 2 Conduct one public meeting to discuss the proposed improvements and to receive input and hear concerns from the neighborhood.
  - 2.1 There will not be a Public Information Meeting.
  - 2.2 This scope of services does not include any individual (one-on-one) meetings with landowners.
- 3 Perform design survey as required to prepare plan and profile sheets. All surveys of the project must tie to two different section corners. The survey must have a linear closure of 1:15,000 as determined by the American Congress on Surveying and Mapping. All survey data must be provided to the city in digital format.
  - 3.1 Provide topographical survey around the O'Connell Road & K-10 Intersection. The limits of the survey will be 1,000 feet west of the intersection, 300 feet north, east, and south of the intersection.
  - 3.2 Provide top of manhole and flowline information for all sanitary sewer and storm sewers located within the survey boundaries described in Task 3.1.
  - 3.3 Locate property pins as needed to define the right-of-way along K-10 and O'Connell Road.
  - 3.4 Tie the survey to two different section corners.
  - 3.5 Draft base map, including contours, existing infrastructure, property lines, right-of-way, easements, and utilities.
  - 3.6 Provide all survey data to the city in digital format in an AutoCAD dwg file.
  - 3.7 This task does not include potholing any utilities. In addition, any surveying outside the limits described above will be considered an additional service.
- 4 Obtain information from utility companies who have facilities within the project limits. Utility companies shall be required to locate their facilities within the project limits. Include utility locations in survey data. Provide preliminary utility coordination. Line & depth are required for all underground utilities.
  - 4.1 Via email, send & collect information by using the Utility Location Report form to utility companies located within the project limits described in Task 3.1.
  - 4.2 Locate all utilities within the boundaries described in Task 3.1 - depth will be based on assumptions provided by the utility company.
  - 4.3 City to request utility maps from utility companies and provide to Bartlett & West.
  - 4.4 Send field check plans (50% complete) to utility companies for review and comment (6 companies maximum).
  - 4.5 Send final plans to utility companies for their use in relocating their existing facilities (6 companies maximum).
  - 4.6 City Staff will conduct meetings with utility companies to discuss project issues and relocation plans if necessary.
- 5 Obtain O&E certificates on the properties that abut the project site. Copies of all ownership maps and recorded plans will be obtained from the Douglas County courthouse.
  - 5.1 The city will provide the O&E reports and supporting documentation required to complete this task.
- 6 Provide traffic engineering analysis, if needed to determine design traffic volumes, vehicle classifications, accident experience, speed data, and recommended signal timing and phasing. Determine and lay out the lane configurations and geometrics that would be required to serve the design traffic volumes along the route.
  - 6.1 The traffic study completed under a different task of this project will be used to develop lane requirements.
  - 6.2 Since there is already a right turn only lane in all directions on K-10 as well as a westbound left turn lane from K-10 to O'Connell Road (South), then the only additional auxiliary turn lane for this intersection design will be a new eastbound left turn only lane from eastbound K-10 onto O'Connell Road (north).
    - 6.2a All widening for this eastbound left turn lane will occur within the existing median of K-10.
  - 6.3 Provide typical roadway sections for the left turn only lane described in Task 6.2. There will be no raised medians as part of this project.
    - 6.3a The proposed pavement cross slope on all typical sections will be 2.0 percent.
  - 6.4 Prepare a geometric plan layout of the intersection of O'Connell Road and K-10.

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PROFESSIONAL ENGINEERING SCOPE OF SERVICES  
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- 6.4a The existing K-10 right-of-way will be the northern limits of the north leg of the O'Connell Road improvements.
- 6.4b The frontage road along the north side of K-10 will need to be realigned when O'Connell Road is constructed north. For this project, the frontage road will remain as is.
- 6.5 Provide preliminary traffic signal layout for the K-10 & O'Connell Road intersection so conduit and traffic signal pole locations can be determined.
  - 6.5a Signal design needs to meet City of Lawrence and KDOT Design requirements.
  - 6.5b City Staff will coordinate with KDOT, including any corridor management issues.
  - 6.5c This design does not include any interconnections and/or ITS traffic component connections.
- 6.6 This task does not include any improvements to other existing intersections.
- 6.7 This task does not include providing traffic counts or traffic counting equipment.
- 7 Provide services of a soil consultant to determine the adequacy of subgrade and pavement conditions. Complete a pavement evaluation and a determination of pavement improvement needs. Make recommendations, in writing, on pavement cross-section for the project.
  - 7.1 Services of a soil consultant will not be a part of this scope.
  - 7.2 If borings are required by the City and/or KDOT, Bartlett & West will review the proposed boring locations provided by City Staff. The City will handle all coordination with the geotechnical subconsultant and KDOT.
  - 7.3 The City or their geotechnical subconsultant should locate the borings, including horizontal and vertical datum, based on control information provided by Bartlett & West.
  - 7.4 City will provide direction on pavement type, thickness, as well as subgrade treatment to be used. This direction should include other base materials, i.e. AB-3 rock base. This information needs to be provided by March 16, 2012. Any changes to the typical section following this date will be considered additional services.
- 8 Review alternative design concepts with the city prior to progressing to the detail aspects of the project. Alternative concepts shall be discussed to determine the best horizontal and vertical alignments for the project. City's concurrence in the selection of an alternate or preliminary concept will be contingent on the accuracy and completeness of the background information provided by the Consultant.
  - 8.1 This is being completed as a part of Task 6.
  - 8.2 The vertical alignment of the eastbound left turn only lane from K-10 to northbound O'Connell will be dictated by the existing adjacent pavement.
- 9 Storm drainage will be designed in accordance with the current city storm water management criteria. Prepare a hydrologic and hydraulic analysis to establish recommendations concerning storm drainage design criteria. Include pipe/box sizes, alignments, grades, drainage easements, and associated project design items. Perform watershed analysis and computer flow modeling using either HEC-1, TR-20, SWMM, HEC-2, or HY-7. Provide a written report of the results of this analysis and copies of the computer digital data.
  - 9.1 Develop a drainage area map. The only area to be analyzed will be the K-10 median west of the intersection with O'Connell Road.
  - 9.2 Calculate time of concentrations, identify runoff coefficients, and calculate peak storm water flows for the 2-year, 10-year, 50-year, and 100-year storm event for each drainage area. The rational method will be used to calculate these peak flows.
  - 9.3 Verify the existing pipe sizes in the median of K-10 are sufficient to handle additional runoff from new left turn only lane.
  - 9.4 Determine pipe sizes for new storm sewer system based on use of the Manning's equation and full flow capacity.
  - 9.5 Prepare storm sewer pipe profile sheets providing top of structure elevations, flowlines for proposed & existing pipes, and utility crossing locations.
  - 9.8 This task does not include any modeling or HGL calculations.
- 10 Prepare a map showing the limits of the drainage basin for all sanitary sewer design. All sanitary sewer extensions shall conform to the wastewater collection system master plan. Include a complete analysis of all pump stations, including a map showing the property sewered by this pump station. Provide a written report detailing conformance with the master plan, assumptions that were made, and the flows from each property to the pump station.
  - 10.1 This task does not apply to the project, and no sanitary sewer modifications are expected other than the adjustment of the top of manhole elevations within the road R/W.
- 11 Prepare preliminary estimate of probable construction cost for the project.
  - 11.1 Determine the unit quantities for the project.
  - 11.2 Prepare a cost estimate based on the unit quantities in Task 11.1 and recent bid tabs provided by the city. A 15% contingency will be included in the preliminary cost estimate.

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12. Prepare three sets of preliminary plan and profile sheets in sufficient detail for the city to review. Allow two weeks for city to review preliminary plans. These documents shall include preliminary right-of-way, necessary easement acquisitions, drainage area map, and drainage design data. If project is over budget, a determination of alternatives is required. Contract may be terminated if additional funds are not available or project modifications cannot be made.

12.1 Prepare cover sheet.

12.2 Prepare general notes sheet.

12.3 Prepare survey control/alignment data sheet.

12.4 Prepare separate plan and profile sheets at 1"=20' scale - 2 sheets for new left turn only lane from eastbound K-10 onto northbound O'Connell Road

12.4a Other than the left turn only improvements, no other roadway, sidewalk, shared us path, driveway, etc. improvements will be included.

12.4b Show utility conflicts.

12.4c Provide pertinent plan and profile notes.

12.4d No additional right-of-way and easements will be needed.

12.5 Provide intersection plan layout sheet for proposed improvement at K-10 & O'Connell Road.

12.5a Show traffic signal layouts.

12.7 Include Lawrence standard detail sheets & KDOT standard detail sheets. Standards will be modified to fill in blanks but not verified for correctness of drawings.

12.8 Provide drainage map.

12.9 Cross sections at 25 foot intervals.

12.10 Provide preliminary construction sequencing and phasing plans to carry traffic through the construction area.

12.11 Submit electronic plans to the City's ftp site. The electronic submittal will follow the requirements of Task 12.14.

12.12 Preliminary plans do not include r/w strip map, retaining wall design, intersection details, erosion control plans, miscellaneous details, pavement marking & signing plans, or structural details.

12.13 Preliminary plans do not include waterline and/or sanitary sewer design.

12.14 Submit electronic plans to KDOT in accordance with their E-Plan requirements for their review. Allow two weeks for KDOT review of the preliminary plans.

13. The following will be needed to develop the preliminary design - See city standard agreement for 6 items listed for this task.

13.1 The information provided in this task in the base scope of services is included in other tasks.

14. Upon approval of the preliminary plans, the Consultant shall arrange a field check with the City to discuss design features in the project area.

14.1 Arrange and attend field check meeting & prepare meeting minutes. This will include KDOT staff.

15. The Consultant shall be responsible for verification, furnishing, and recording of any legal land corners necessary for legal descriptions used in deed writing. The Consultant's personnel shall tie the approved corner into the center line.

15.1 Tie approved corners into the center line

16. Attend two progress meetings during the Preliminary Design Phase (Field Check).

16.1 Attend 2 meetings to discuss design issues.

16.2 City will provide agenda and prepare meeting minutes and distribute action item list to attendees.

**FINAL DESIGN PHASE (OFFICE CHECK)**

1. Meet with city staff to review comments on preliminary design phase.

1.1 Meet with the City staff to review field check plan review comments.

1.2 City will provide agenda and prepare meeting minutes.

2. Conduct one public meeting to discuss the proposed improvements and their impacts on the adjacent properties with the neighborhood.

2.1 There will not be a Public Information Meeting.

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- 2.2 This scope of services does not include any individual (one-on-one) meetings with landowners.
- 2A Attend a presentation for the City Commissioners to discuss final direction of the project. This meeting will likely occur mid-way through final design.
  - 2A.1 Prepare exhibits for meeting.
  - 2A.2 City Staff to prepare minutes from the direction provided by the City Commission.
  - 2A.3 City staff will prepare and make presentation. One Bartlett & West staff member will attend the meeting to assist in answering questions.
- 3 Prepare a right-of-way strip map and furnish the city with the original and one print of the strip map. Also, furnish the city with 8 1/2" x 11" plans and legal descriptions of each property required for right-of-way or easement acquisition. The Consultant agrees to complete these right-of-way or easement descriptions and drawings by December 2, 2011. The Consultant shall be responsible for making revisions to the right-of-way and construction plans resulting from negotiations with the property owners.
- 3.1 All improvements are expected to be completed within the existing right-of-way and easements so no legal descriptions and exhibits are necessary.
- 4 Prepare all applications, exhibits, drawings, and specifications necessary to obtain all required permits. Applications should be prepared for the City's execution and submittal. Assist the City in obtaining permit approvals by furnishing additional information about the project design. Provide, in the specifications, a list of the permits which must be obtained by the construction contractor.
- 4.1 The only permits anticipated for this project are listed under the Final Design Phase, Task 5. Therefore, there is no work to be completed under this task. If KDOT permits are required, City Staff will prepare all applications and supporting documentation, as well as filing and pursuing approval of said permit applications.
- 5 The Consultant shall be responsible for preparing the applications for the National Pollution Discharge Elimination System (NPDES) permit for Construction Activities, U.S. Army Corps of Engineers 404 Permit, and the Kansas Department of Water Resources permits.
  - 5.1 Drawings and specifications for permit applications will be completed under different tasks.
  - 5.2 Complete Notice of Intent, aka NPDES, permit application, and plot the necessary drawings.
  - 5.3 This scope of services does not include State of Kansas Division of Water Structures and/or U.S. Army Corps of Engineers permit.
  - 5.4 Application fees and signatures for permits will be supplied by the City of Lawrence.
- 6 Prepare final construction documents for improvements, incorporating all comments from the city staff. Submit final plans to the City for final review. Allow two weeks for City Review.
  - 6.1 Address field check comments for the plans developed under the Preliminary Design Phase.
  - 6.2 Prepare special technical specifications. City Staff will prepare the Project Manual, including front end documents and technical specifications.
- 7 The design plans shall include a detailed traffic control plan with an outline for construction staging conforming to the requirements of the Manual on Uniform Traffic Control Devices and the Policy, Procedure and Design Manual. The traffic control plan requires submittal to the City for review and approval prior to inclusion in the final design plans.
  - 7.1 Prepare a traffic control plan to provide traffic through construction for the entire length of the project. The traffic control plans shall include:
    - 7.1a Show general lane configurations with appropriate delineators for each main construction phase.
    - 7.1b Show temporary pavement markings and temporary signing on separate sheets.
    - 7.1c Show typical sections in various locations to show construction sequencing options.
  - 7.2 Use Kansas Department of Transportation standard details for traffic control.
  - 7.3 Prepare quantities for the Kansas Department of Transportation Recapitulation of Quantities standard drawing for traffic control.
- 8 Prepare detailed temporary erosion control plans for review and approval before inclusion in the final design plans.
  - 8.1 Prepare erosion control plan sheets showing location of Erosion Control Blankets, Inlet Sediment Barriers, Slope Barriers, Ditch Checks, Temporary Seeding, etc.
  - 8.2 Use Kansas Department of Transportation standard details for temporary erosion control and final seeding.
  - 8.3 Prepare quantities and complete the tables on the Kansas Department of Transportation standard details for temporary erosion control and seeding.
- 9 The Consultant shall prepare computations for all design plan quantities.
  - 9.1 Determine the unit quantities for the project.
  - 9.2 Prepare summary of quantity bid item tables for each bid item not covered by a Kansas Department of Transportation standard detail.
  - 9.3 Kansas Department of Transportation standard drawings for quantity summaries will be used for pavement markings, signing, surfacing, seeding, temporary erosion control, traffic control,

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storm sewers, and inlets.

9.4 Prepare a master "Recapitulation of Quantities" table to summarize the quantities.

10 As a minimum, the final plans shall include the following:

10.1 Title Sheet

10.2 Typical Sections

10.3 Plan Sheets

10.4 Profile Sheets

10.4a Profiles for any storm sewer will be shown on the profile sheets.

10.5 Intersection Detail Sheets, including curb return quarter points and slopes.

10.5a Intersection Details will be provided for K-10 & O'Connell Road intersection (north side only).

10.5b Intersection details will include a plan view at 1"=10' with horizontal curve data for the radius returns, quarter point elevations, proposed contours, and intersection angles.

10.5c Curb return profiles will be developed for design purposes but will not be included in the construction document sets.

10.5A Traffic Signal Sheets

10.5A.1 Prepare plans for traffic signal improvements at K-10 & O'Connell Road intersection.

10.5A.2 KDOT Standard sheets will be used for general notes, standard details, and quantities.

10.5A.3 City will provide signal timing plan.

10.6 Traffic Control Plan Sheets

10.6a As defined under Final Design Phase, Task 7.

10.7 Temporary Erosion Control Plan Sheets

10.7a As defined under Final Design Phase, Task 8.

10.8 Permanent Pavement Marking and Signing Plans and Quantity Sheets

10.8a Prepare plan sheets that show both permanent signing and pavement markings on separate sheets.

10.8b Use Kansas Department of Transportation standard details for pavement markings and permanent signing.

10.8c Prepare quantities and complete the tables on the Kansas Department of Transportation standard details for pavement markings and permanent signing.

10.9 Culvert Sections

10.9a No special sections are anticipated.

10.10 Earthwork Quantities, Cross Sections, including entrance sections with existing and proposed grades

10.10a Cross sections at 25' intervals will be included in the final plans.

10.11 Miscellaneous Detail Sheets

10.11a Miscellaneous detail sheets will include standard detail sheets from the City of Lawrence and the Kansas Department of Transportation.

10.11b Bartlett & West will provide details for any items not covered by City of Lawrence or Kansas Department of Transportation standard details.

10.12 Summary of Quantities Sheets

10.12a This task is covered under other tasks shown in the Final Design Phase.

10.13 Additional plans and information may be required to complete the Final Plans.

10.13a Prepare a plan sheet detailing horizontal and vertical control for the project.

10.13b Prepare a jointing plan for the extents of the project.

10.13f This scope of services does not include improvements to O'Connell Road north of the north K-10 right-of-way line.

10.13g This scope of services does not include waterline reconstruction.

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10.13h This scope of services does not include retaining wall design.

10.14 Submit electronic plans to the City's ftp site. The electronic submittal will follow the requirements of Task 10.15.

10.15 Submit electronic plans to KDOT in accordance with their E-Plan requirements for their review. Allow two weeks for KDOT review of the office check plans.

11 Provide all utility companies a set of final plans for their use. Meet with each utility company to discuss the relocation of their facilities and the time schedule.

11.1 Plot and mail plan sets for up to 6 utility companies. (Covered under Preliminary Design Phase Task 4.6)

11.2 This task does not include Bartlett & West attending a utility relocation meeting conducted by City Staff for all utility companies to attend.

11.3 Provide 1 follow up phone call to each utility company (6 max.).

12 Provide estimate of probable construction cost based upon the final plans.

12.1 Prepare a cost estimate based on the unit quantities in Task 9 and recent bid tabs provided by the city

13 Provide mylars and two sets of the final approved plans to the city. Also, provide a digital copy of the plans as detailed in Exhibit D.

13.1 Address office check plan comments.

13.2 Submit electronic plans to the City's ftp site. The electronic submittal will follow the requirements of Task 13.4.

13.3 Provide a CD with DWF images of the final drawings.

13.4 Submit electronic plans to KDOT in accordance with their E-Plan requirements.

14 Attend two progress meetings during the Final Design Phase.

16.1 Attend 2 meetings to discuss design issues.

16.2 City will provide agenda and prepare meeting minutes and distribute action item list to attendees.

Note: No hard copy drawings will be submitted to the City or KDOT for their use. All drawing submittals to the City and KDOT will be in electronic format.

Note: City Staff will provide all bidding and construction phase services.

## EXHIBIT C

### PROGRESS REPORTS

1. Status of Design

List each principal task and the percent complete.

2. Status of Right-of-way or Easement Descriptions

Describe the status of the legal descriptions needed for property on this project.

3. Tasks to be Performed in the Next Month

List each principal task which is anticipated to be started or completed next month.

4. Issues Which Need Direction from the City

List all items where further direction from the City is needed by the Consultant in order to complete the project within the time schedule detailed in this Agreement.

5. Issues Which May Present a Problem for Meeting the Time Schedule

List all issues or problems, regardless of who they involve, which may prevent a timely completion of the plans, or may create a problem during construction.

## EXHIBIT D

### CAD REQUIREMENTS

1. Project drawings shall be developed by the Consultant through the use of a Computer-Aided Drafting (CAD) System and made available to the City on a digital media, (see #3). However, due to the potential that the information set forth on the digital media can be modified by the City, or the City Consultant's, unintentionally or otherwise, the Consultant shall remove all indices of its ownership, professional corporation name, seal, and/or involvement from each digital display. For documentation purposes, two sets of an original digital media and two (11" x 17" size or larger) duplicate mylar sets will be prepared. One set will be given to the City and one set will be retained by the Consultant.
2. Software: AutoCAD (Version 14, preferred) .DWG or .DXF file format  
\*Note: Layer list for each project shall accompany the digital media.
3. Acceptable Digital Media: 3.5" diskette, cd, DAT, Zip disk, Jaz cartridge, DVD  
\*\*Note: Media will not be returned to Consultant.
4. Compression Utilities: If a compression utility is used, save file(s) as "self-extracting" file(s).
5. Ensure that all objects are on their proper layers.