

1 Copy to KDOT (To Accompany KDOT 1302 Form) Lawrence City
1 Copy for City
1 Copy for Consultant

Project No. 23 U-2117-01

PROPOSAL FOR ENGINEERING SERVICES
(Normal Minimum Fee for such Participation, \$30,000)
Cost Plus a Net Fee

The Consulting Engineering Firm of Wilson & Company, Inc. Engineers & Architects
With principal offices located at 903 East 104th Street, Suite 200; Kansas City, Missouri; 64131
Hereinafter referred to as the CONSULTANT has reviewed the information transmitted by Lawrence, hereinafter referred to as the "LPA" (Local Public Authority). Based on this information, the Consultant submits the following Proposal:

1. The LPA has requested a Proposal for preliminary engineering and plan preparation (engineering services) from the Consultant for the following proposed construction improvements:

Grading: 1.37 Miles

Bridges: N/A Miles

Surfacing: 1.37 Miles

on 31st Street located between Haskell Avenue and O'Connell Road in the City of Lawrence, Douglas County, Kansas and designated by the above noted project number. The subject construction improvements, however, are hereinafter referred to as the Project.

2. The LPA has stated that it desires federal participation in the cost of the engineering services, as well as the construction cost of the Project.
3. The LPA desires the engineering services provided by the Consultant to be in accordance with regulations prescribed by the Federal Highway Administration (FHWA) and the Secretary of Transportation of the State of Kansas, hereinafter referred to as the Secretary. The Scope of Engineering Services can be defined as follows:

Phase I: Identification of preferred alignment design and plan preparation for Grading, Bridges and Surfacing for the above described project through Concept Plan only. (Completed under previous contract).

Phase II: Design and plan preparation for Grading, Bridges and Surfacing for the above described project including Special Specifications for Final Plans. This Phase will be initiated under a separate Notice to Proceed by the City of Lawrence, Kansas. The City of Lawrence reserves the right to terminate the project at completion of Field Check stage.

Phase III: The review and recommendations for approval of all shop drawings and drawings for falsework as may be required, except for items designed by others.

Phase IV: The construction engineering necessary to insure proper construction of the project that will include the contract administration, surveys and materials testing.

4. The engineering services performed by the Consultant for Phase II and III* will include, but not necessarily be limited to, the following as indicated thusly (+):

<u>Survey</u>			
(+)	Topographical Survey	(+)	Geological Survey
()	Relocation Survey	()	Bridge Soundings
(+)	Normal Field Survey	(+)	R/W Survey
<u>Plans, Specifications & Estimates</u>			
	1) Road		2) Bridges
(+)	Balanced Grading Plan	()	Grading Maps
(+)	Pavement Design	()	Bridge Layout Cost
(+)	Culvert Design	()	Cost Completion
(+)	R/W Descriptions	()	Bridge (Superstructure)
(+)	R/W Strip Map	()	Bridge (Substructure)
(+)	Surfacing Plans	()	Detailed Bridge Plans
(+)	Storm Sewers	()	Special Provisions
(+)	Special Provisions	()	*Review Shop Drawings
(+)	Construction Cost Estimate	()	*Review Falsework Drawings
()	R/W Staking	()	Construction Cost Estimate
(+)	Traffic Control Plan		
()	Other _____		
()	Other phases if involved: \ _____		

5. The proposed Project will be constructed on said route to equal or exceed the Secretary's approved design guidelines for the following:

- (a) AADT 23,000 (2028)
(b) Minimum Design Speed of 45 MPH
(c) Other _____

6. The Consultant will perform the following engineering services:

- (a) Prepare detailed plans and construction drawings in accordance with design criteria which conform to KDOT's Secondary Road Plan and utilize applicable drafting details, design guidelines, etc. from KDOT's Design Manual for highways and structures equivalent to the class of highway covered by the Project and/or to such design criteria as may be approved by the Secretary.

- (b) Prepare revised detailed plans, as requested by representatives of the LPA or the Secretary, made necessary by field check and/or office check review recommendations, errors, omissions, or negligence of the Consultant, at any time prior to the completion and final acceptance of the construction contracts covering the Project. Such revised plans may be made by the Secretary or LPA at the Consultant's expense.
- (c) Prepare the plans for the Project for such parts or sections, and in such order of completion, as designated by the LPA.
- (d) Make the necessary field surveys to determine horizontal and vertical alignment for the proposed project.
- (e) Prepare and furnish one set of prints (white background) of preliminary construction plans for field check and review to the LPA and two (2) sets to the Secretary. These plans shall, at a minimum, show the horizontal and vertical alignment, typical sections, contour information, construction layouts and size of bridges, size and location of drainage structures, intersection details, construction limits, existing and new right-of-way limits, property owners, utility locations and ownership, and be included on the appropriate following sheets: Title, Typical Section, Surfacing, Plan-Profile, Cross Sections, Contour Map and Bridge Layout, Traffic Control Plan, and such other special sheets as the Consultant deems necessary.
- (f) Field check the project with representatives of the LPA and Secretary.
- (g) Complete the plans in pencil, incorporating any changes which may have been agreed to during the field check, and include such plans estimates of quantities, special provisions, supplemental specifications and an updated estimate of cost.
- (h) Submit one complete set of prints (white background) of the plans to the Secretary for office check review along with copies of special provisions, supplemental specifications and the updated cost estimate. A similar set of prints and copies will be furnished to the LPA.
- (i) Prepare final plan tracings (one set of final plans on mylar or linen in ink, with the exception of cross sections which will be on paper in pencil), and updated cost estimate based on final plan quantities, and necessary special provisions and necessary supplemental specifications.
- (j) Submit one set of prints of the final plan tracings and copies of the updated construction cost estimate, special provisions, and supplemental specifications to the LPA and one set of prints and copies to the Secretary.
- (k) Furnish the reproducible final tracings that do not contain so-called "stick up" notes or other additives to the Secretary. Upon request furnish one copy of all design calculations to the Secretary.

- (l) Prepare a right-of-way strip map and furnish the LPA with the original and one print of the strip map. (This item is optional but is included if so noted on Page 2 of the Proposal.)
 - (m) Prepare plats and descriptions of right-of-way required and furnish to the LPA. (This item is optional but is included if so noted on Page 2 of this Proposal.)
 - (n) Furnish preliminary plans to the LPA sufficiently complete for the LPA's use in preparing descriptions for rights-of-way required in connection with the Project within 150 calendar days after issuance by the Secretary of the Notice to Proceed with the work, exclusive of time required for reviews by the approving parties and delays beyond the Consultant's control.
 - (o) Furnish final and complete construction plans to the LPA and the Secretary for approval within 130 calendar days after issuance by the Secretary of the Notice to Proceed with the work, exclusive of time required for reviews by the approving parties and delays beyond the Consultant's control.
 - (p) Prepare and furnish the Secretary with supplemental specifications covering all special fabrication or construction features not covered by the standard specifications of KDOT, except for items designed by others.
 - (q) Review and recommend for approval all shop drawings and falsework drawings, as may be required for the Project, if indicated in the scope of engineering services on Page 2 of this Proposal.
 - (r) Have available at the Consultant's office located at 903 East 104th Street, Suite 200 Kansas City, Missouri 64131 for review by the LPA, the Secretary and the FHWA's personnel, all plans being prepared and supporting information.
 - (s) Provide all plans, drawings and documents pertaining to the Project to the LPA, prepared in accordance with the Secretary's standard practice. All such plans, drawings and documents shall become the property of the LPA upon the completion thereof in accordance with the terms of this Proposal, without restrictions as to their future use.
 - (t) Provide traffic control signing on or along any street or highway where the Consultant has crews working. The size, shape, color and placement of all signs shall comply with the Manual on Uniform Traffic Control Devices for Streets and Highways as approved by the American Association of State Highway and Transportation Officials and the Department of Transportation, FHWA.
7. In addition to the engineering services the Consultant will assume the following obligations:
- (a) Furnish two (2) copies of each proper billing to the LPA.

- (b) Accept compensation for the performance of services herein described in such amounts and at such intervals as indicated in Paragraphs 20, 21, 22, and 23.
- (c) Provide engineering services for Phase III and extra work in addition to those set forth above, or for changes in plans due to changes in criteria, for a mutually agreed actual cost plus a net fee. Any payments authorized under this section must be approved by the Secretary. In the event the scope of the Project changes to a point where, with the Secretary's concurrence, the Consultant and the LPA mutually agree that a supplemental agreement to the executed Agreement is necessary to provide for authorized extras, all payments for work performed to that date shall be due and payable within ninety (90) days after the date of the supplemental agreement, provided, however, that a proper billing has been received from the Consultant.
- (d) Prepare an estimated schedule for performance of engineering services identified in Paragraph 20 of this Proposal (may be bar chart or other acceptable method) and report to the LPA (Secretary upon request) actual progress at monthly intervals or at a mutually agreeable interval approved by the LPA and Secretary.
- (e) Make all documents and accounting records pertaining to the work covered by the executed Agreement available at the Consultant's office to representatives of the LPA, the Secretary and the FHWA or any authorized representative of the Federal Government for audit for a period of three (3) years after the date of final payment.
- (f) Accept full responsibility for payment of Unemployment Insurance, Worker's Compensation and Social Security as well as income tax deductions and any other taxes or payroll deductions required by State and Federal Law for the Consultant's employees engaged in work authorized by the executed Agreement.
- (g) Become familiar with, and shall at all times observe and comply with, all applicable federal, state, and local laws, ordinances and regulations.
- (h) Be responsible for any and all damages to property to persons arising out of an error, omission and/or negligent act in the Consultant's performance of services under the executed Agreement.
- (i) To save the LPA, the Secretary and their authorized representatives harmless from any and all costs, liabilities, expenses, suits, judgments and damages to persons or property caused by the Consultant, its agents, employees or subcontractors which may result from negligent acts, errors, mistakes or omissions from the Consultant's operation in connection with the services to be performed hereunder.
- (j) To warrant the Consultant has not employed or retained any company or person, other than a bona fide employee working solely for the Consultant, to solicit or secure selection by the LPA, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the Consultant, any fee, commission, percentage, brokerage fee, gift, or any other

consideration contingent upon or resulting from the award or making of the executed Agreement. For breach or violation of this warranty, the Secretary shall have the right to annul the Agreement without liability, or in his or her discretion, to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

8. The services to be performed by the Consultant under the terms of this Proposal are personal and cannot be assigned, sublet, or transferred without written consent of the LPA and the Secretary.
9. The right is reserved by the LPA with the approval of the Secretary to terminate all or part of the executed Agreement at any time upon written notice to the Consultant. Such notice shall be sent not less than ten (10) days in advance of the termination date stated in the notice.
10. The Consultant may terminate the executed Agreement, in the event of substantial failure of other parties to perform in accordance with the terms hereof, upon ten (10) days written notice in advance of the effective date of such termination received by all parties of this Agreement.
11. In the event the executed Agreement is terminated by the LPA and the Secretary without fault on the part of the Consultant, the Consultant shall be paid for the work performed or services rendered under the Basis of Payment. Determined for the Agreement.
12. In the event the services of the Consultant are terminated by the LPA and the Secretary for fault including, but not limited to: unreasonable delays in performance; failure to respond to LPA or the Secretary's requests; and/or unsatisfactory performance on the part of the Consultant, the Consultant shall be paid the reasonable value of the services performed or rendered and delivered to the Secretary up to the time of termination. The value of the services performed, rendered and delivered will be determined by the LPA and the Secretary. In the case of any dispute as to payment arising under the executed Agreement pertinent information will be submitted to a Review Committee for resolution. The Review Committee will be comprised of a maximum of two (2) representatives from each of the Agreement parties.
13. In the event of the death of any member or partner of the Consultant's firm, the surviving member shall complete the services, unless otherwise mutually agreed upon by the LPA and the Secretary and the survivors, in which case the Consultant shall be paid as set forth in Paragraph 12.
14. The Consultant shall not sublet or assign all or any part of the services noted in this Proposal without the prior written approval of the LPA and the Secretary. Consent by the LPA and the Secretary to assign, sublet or otherwise dispose of any portion of the executed Agreement shall not be construed to relieve the Consultant of any responsibility for the fulfillment of the Agreement.

15. The Consultant will not, without written permission from the Secretary, engage the services of any person or persons in the employment of the LPA or the Secretary for any work required by the terms of this Proposal.
16. The Consultant and subcontractors will be available for audit at the Secretary's discretion. Accounting methods, cost documentation, and books of said parties will be maintained in accordance with generally accepted accounting principles and will conform to the appropriate provisions of 48 Code of Federal Regulations (CFR) Chapter 1, Part 31 et seq.
17. Overhead rates will be submitted to the Secretary by the Consultant for audit within seventy-five (75) days after completion of the Consultant's fiscal year. The Consultant will assemble work papers for audit at their normal place of business. Overhead rates will be audited on a yearly basis following the first audit as may be required.
18. The Consultant, the LPA and the Secretary may arrange for such conferences as may be deemed necessary or desirable and the work in progress may be viewed at the Consultant's offices.
19. That an extension of time shall be granted the Consultant for delays recognized by the LPA and Secretary as unavoidable; PROVIDED, such extension of time shall be requested by the Consultant in writing, stating the reasons therefore.
20. The fee proposed by the Consultant for engineering services for Phases I and II shall be tabulated as follows:

(a) SURVEYS

For all surveys, and for bridge soundings, as noted by the tabulation of survey services on Page 2 of this Proposal, compensation shall be made on the basis of the Consultant's actual cost plus a net fee amount of \$ 11,169.56 . The actual costs shall be incurred in conformity with the cost principles established in the Federal-Aid Policy Guide and Title 48 Code of Federal Regulations (CFR) Chapter 1, Part 31 et seq. The upper limit of compensation for work detailed in the section shall be \$ 73,715.00 .

(b) BRIDGE PLANS, SPECIFICATIONS AND ESTIMATE

Bridges: An amount for bridge construction plans as follows:

	New Design		Adapted Super & New Substructure		Adapted Super & Substructure	
	Net Fee	Upper Limit	Net Fee	Upper Limit	Net Fee	Upper Limit
Bridge #1:	<u>N/A</u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

For all bridge engineering work, including bridge fees noted above, tabulated on Page 2 of this Proposal, compensation shall be made on the basis of the Consultant's actual cost plus a net fee amount of \$ N/A . The actual costs shall be incurred in conformity with the cost principles established in the Federal-Aid Policy Guide and Title 48 Code of Federal Regulations (CFR) Chapter 1, Part 31 et seq. The upper limit of compensation for work detailed in the section shall be \$ N/A .

(c) ROAD PLANS, SPECIFICATIONS AND ESTIMATES

Road: For preliminary plans for right-of-way and for construction road plans, and right-of-way descriptions and staking as noted in the tabulation of road engineering services on Page 2 of this Proposal, including culverts and surfacing, but not including bridges, compensation shall be made on the basis of the Consultant's actual cost plus a net fee amount of \$ 253,448.52 . The actual costs shall be incurred in conformity with the cost principles established in the Federal-Aid Policy Guide and Title 48 Code of Federal Regulations (CFR) Chapter 1, Part 31 et seq. The upper limit of compensation for work detailed in the section shall be \$ 301,600.00 .

(d) REVIEW OF SHOP AND FALSEWORK DRAWINGS

For compensation of Phase III as noted in the tabulation of engineering services on Page 2 of this Proposal, compensation shall be made on the basis of the Consultant's actual cost plus a net fee amount of \$ N/A conformance with the cost principles established in the Federal-Aid Policy Guide and Title 48 Code of Federal Regulations (CFR) Chapter 1, Part 31 et seq. The upper limit of compensation for work shall be \$ N/A .

(e) Total compensation for Phase II and III A shall not exceed \$ 375,315.00 .

21. (a) During the progress of work covered by the executed Agreement, partial payments for Phase I and II may be made to the Consultant from the LPA within thirty (30) days of receipt of proper billing, but at intervals of not less than one calendar month. Progress billing shall be supported by a progress schedule acceptable (for Phase I normally payments may be made at the completion of surveys, field check plans, plans for office check review and final work as per the terms of the Agreement) to the LPA and Secretary, which includes a statement of the percentage of work completed and the actual costs incurred during the billing period. Accumulated partial payments shall not exceed Ninety-five Percent (95%) of the total fees earned, prior to approval and acceptance of completed work on the appropriate phase by the LPA, Secretary and the FHWA. Partial payments due shall be defined as the accumulated total fees less the total of pervious payments times Ninety-five Percent (95%).
- (b) The voucher for final payment for Phase I due under provisions of the executed Agreement may be submitted after the acceptance and approval of the work by the LPA for the Project's Construction contracts.

- (c) The voucher for final payment from the LPA for Phase II due under provisions of the executed Agreement may be submitted after the acceptance and approval of the work by the LPA and the Secretary.
- 22. In the event that a construction contract has not been awarded for any project segment within six (6) months from the date of approval of construction plans, the voucher for final payment of Phase I may be submitted without further delay.
- 23. The final payments for Phase I and II due under provisions of the executed Agreement shall be made within ninety (90) days after completion of a final audit of the Consultant by representatives of the Secretary.
- 24. The Consultant may request payment for Phase III by the terms of a supplemental Agreement (if necessary and executed) and for authorized extra work as provided in Paragraph 7(c), and such payments shall be in addition to and exclusive of fees stipulated in Paragraph 20.

25. Other

Respectfully submitted,



CONSULTANT

Associate Vice President

TITLE

March 13, 2009

DATE

Exhibits:

1. Supporting Data Sheet for Estimate of Preliminary Engineering Fee
2. Exhibit A – Detailed Scope of Services and Fee Development Worksheets

**Supporting Data Sheet
for
ESTIMATE OF ENGINEERING FEE**

PROJECT NUMBER:		23 U-2117-01	CITY:	Lawrence	
LOCATION:		31st Street	COUNTY:	Douglas	
WORK ITEM:		Preliminary Engineering	DATE:	March 13, 2009 (rev.)	
1. DIRECT PAYROLL					
EMPLOYEE CLASSIFICATION / TITLE		RATE	EST. HOURS	AMOUNT	TOTAL
P7	Senior Project Manager	\$ 62.67	250.0	\$ 15,666.67	
P5	Project Engineer	\$ 46.00	815.0	\$ 37,490.00	
PD2	CADD Designer	\$ 25.67	987.0	\$ 25,333.00	
P6	Senior Bridge Engineer	\$ 54.00	0.0	\$ -	
P4	Bridge Engineer	\$ 37.00	0.0	\$ -	
P6	Senior Traffic Engineer	\$ 54.00	48.0	\$ 2,592.00	
P3	Traffic Designer	\$ 34.00	98.0	\$ 3,332.00	
OP7	Chief Photogrammetrist	\$ 74.00	12.0	\$ 888.00	
OP5	Photogrammetrist, Supervisor	\$ 30.00	8.0	\$ 240.00	
OP3	Stereo Operator	\$ 14.00	60.0	\$ 840.00	
PD1	CADD Designer	\$ 22.00	10.0	\$ 220.00	
OD3	Drafter, Detailer	\$ 18.67	30.0	\$ 560.10	
			0.0	\$ -	
			0.0	\$ -	
			0.0	\$ -	
			0.0	\$ -	
			0.0	\$ -	
			0.0	\$ -	
			0.0	\$ -	
4.50%	Salary Adjustment for project duration of	12	months	\$ 1,758.42	
SUBTOTAL LINE 1			2,318.0		\$ 88,920.19
2. SALARY RELATED AND GENERAL OVERHEAD (168.14%)					\$ 149,510.40
3. SUBTOTAL (LINES 1 & 2)					\$ 238,430.59
4. ENGINEERING FEE					\$ 26,227.36
5. DIRECT EXPENSES (TRAVEL, MATERIAL, SUB-CONSULTANT, ETC.)					
ITEM		QUAN.	UNIT	UNIT PRICE	AMOUNT
Letter Copy		796	Each	\$ 0.10	\$ 79.60
11" x 17" Copy		13,640	Each	\$ 0.20	\$ 2,728.00
B&W Wide Format		29,800	Sq Ft	\$ 0.25	\$ 7,450.00
B&W Mylar Wide Format		1,440	Sq Ft	\$ 2.00	\$ 2,880.00
Color Wide Format		1,800	Sq Ft	\$ 0.75	\$ 1,350.00
Project Miles		2,020	Mile	\$ 0.73	\$ 1,474.60
Postage/Shipping		1,004	Lump Sum	\$ 1.00	\$ 1,003.85
B&W Wide Format		144	Sq Ft	\$ 0.25	\$ 36.00
Mapping Workstations		60	Hr	\$ 8.00	\$ 480.00
Postage/Shipping		20	Lump Sum	\$ 1.00	\$ 20.00
Terracon Consultants		24,015	Unit	\$ 1.00	\$ 24,015.00
Peridian Group, Inc.		69,140	Unit	\$ 1.00	\$ 69,140.00
Patti Banks Associates		0	Unit	\$ 1.00	\$ -
SUBTOTAL LINE 5					\$ 110,657.05
ENGINEERING FEE TOTAL (LINES 3, 4 & 5)					\$ 375,315.00

Exhibit A
Scope of Services
March 13, 2008

Project Background

During the Concept Alignment Phase, several alignment scenarios were developed through close coordination with the Community Steering Committee, public input, and support from the City staff. The goal of this phase was to develop a roadway design that maintains the unique characteristics of the existing area, minimizes impacts to the terrain, provides for connectivity (present and future) with adjacent multi-use facilities including the park and lake, and provides a typical section that would allow for flexibility to expand the roadway to a 4-lane section should the traffic volumes warrant the additional lanes. The team received City Commission approval of the conceptual alignment and design speed of 31st Street from Haskell Avenue to O'Connell Road on December 9, 2009.

A project specific set of design criteria for design speed, roadway width, access control, typical section features were developed for this project as part of the context sensitive solutions process used by the City. In addition, the approved concept alignment and typical section provided for the ability to implement the best management practices (BMPs) for treating the storm water runoff.

General Scope of Services

The purpose of this contract is to provide professional design services to develop Final Plans, Special Provisions, and Estimates for 31st Street from Haskell Avenue to O'Connell Road. The proposed improvements are approximately 1.37 miles (7,250-feet) of 2-lane divided roadway except for a 3-lane, curb and gutter section adjacent to the industrial park. The roadway will be constructed within a 120-foot wide right-of-way in the section adjacent to the industrial park. The remainder of the corridor will be constructed within a proposed 150-foot right-of-way. The proposed improvements include:

- a multi-use path on the north side of the roadway,
- a standard sidewalk on the south side of the roadway,
- roadside ditches for storm drainage and water quality,
- underground storm drainage for the 3-lane section,
- multiple crossroad culverts,
- and the extension of the City's water main.

Items to be considered during the development of the final plans for future improvements include:

- street lights in the median,
- a roundabout at O'Connell Road,
- future BMP's for water quality (linear bio-swales),
- and future landscaping within the median, roundabout, and specific areas of interest,

As a guide to determine the expected level of completeness in the plan development phases, the Consultant will use the same percentages in the development of KDOT formatted plans. The

overall plan development at Field Check Plans will be 55% complete. The Office Check Plans will be 85%. Final Check Plans will be 95% complete and Final Plans, Special Provisions, and Estimate (PS&E) will be 100% complete.

Detailed Scope of Services

Section 1 – Data Collection, Field Survey and Aerial Mapping

- 1.1 Section Corners and Property Corners. The Consultant will conduct section tie surveys as per KDOT standards. The section corners necessary to reestablish the existing right-of-way, platted lots, and unplatted properties. It is assumed these corners are monumented and referenced based on current projects being conducted in the area. State reference forms will be completed and sent to the State and County for each recovered monument. A search for existing property corner monuments will be conducted. Any found monuments will be shown in the topography as an unconfirmed corner. A legal boundary survey will NOT be conducted at this time.
- 1.2 Survey Control. The Consultant will establish the survey control network of the project. The horizontal and vertical control will be tied to the Douglas County Control Network. Horizontal and vertical control points will be set along the proposed road corridor to be used for design surveys. Control monuments will be 5/8" iron bars with aluminum caps. References will be tied to each monument. Benchmarks will be set along road right-of-way and spaced at 1,000-feet or at every three (3) turns. Benchmarks will be set on permanent structures that have less likelihood of being disturbed. Elevations will also be determined for all horizontal control points. Any pre-existing Douglas County benchmarks will be utilized, if available, otherwise NGS benchmarks will be used. Datum: NAVD 88.
- 1.3 Utility Locates. The Consultant will contact utility companies through the Kansas One-Call system and as supplemented by the City for those utility companies not associated with the One-Call system. Utilities will be horizontally field located according to field marks by the utility companies or by a One-Call locator. If there is no response to the initial request, Kansas One-Call will be contacted a second time to re-issue the locate notices. The man-hours for this item are based on all utilities being marked within two (2) weeks of the time of the locate request. If a utility owner does not respond to the locate request, the Consultant will contact the City to discuss a plan of action and estimated cost to complete the survey.
- 1.4 Aerial Photography Control. The low level aerial photography was completed as part of a future Kansas Department of Transportation (KDOT) project. KDOT has allowed the City to use the aerial photography for their project. The Consultant will identify specific aerial control points that will be surveyed to establish the project coordinates and elevations to be used in the development of the base mapping.
- 1.5 Photogrammetric Mapping. Elevation points will be established on a grid sufficiently dense to allow creation of a Triangular Irregular Network (TIN). A contour map will be created from the TIN. The minimum density of the grid shall be 50'. The lateral and longitudinal extent of the survey will include at least the area to be disturbed by the

- project and 150-feet in all directions outside the environmental clearance area map provided to KDOT. All grade breaks will be included in the TIN, including, but not limited to, stream profiles, edges of pavement and top of curbs.
- 1.6 Locate Obscure Areas. Field data from the obscure areas will be collected by conventional field survey methods. These areas include areas of dense trees, along bluffs, and other areas determined by the photogrammetrist.
 - 1.7 Locate Culverts and Streambeds. Drainage culverts and streambeds will be located by conventional field survey methods. The top of drainage channel banks will be located both horizontally and vertically. Ordinary high water elevations will be located where applicable. Streambeds of any stream crossing the project centerline will be located both horizontally and vertically, 300' upstream and downstream of the proposed centerline.
 - 1.8 Pavement Hardshots. Hard shots were obtained for the Haskell Avenue intersection as part of the Concept Study project. Similar hard shots will need to be taken through the O'Connell Road intersection and east through the match line for the proposed improvements. Hard shots will be taken at the edge of pavement and centerline for areas without curb and gutter. In areas with curb and gutter, top of curb, gutter flow line, lip of gutter, and centerline will be shot. Hard shots will be taken in cross section fashion at 25-foot intervals.
 - 1.9 Locate Storm and Sanitary Sewer Structures. The inflow/outflow elevations for storm and sanitary sewer structures will be located along with the size and type of structure and the size and type of the conduit entering and leaving the structure.
 - 1.10 Locate Manmade Objects. Fixed location manmade objects visible on the surface will be located horizontally and vertically (at the ground).
 - 1.11 Creek Profile and Valley Sections. Streambed profiles will be run 900-feet upstream and 450-feet downstream along the four (4) existing creeks. Streambed cross sections of the creek will be run at the proposed culvert crossing location (per the approved Concept Alignment), 150-, 300-, 450-, 600-, 750-, and 900-feet upstream and 150-, 300-, and 450-feet downstream.
 - 1.12 Lateral Fields and Septic Tanks. The Consultant will contact property owners to obtain pertinent information regarding the location of septic tank and lateral fields. Above ground evidence of septic tanks and lateral fields will be located within project limits.
 - 1.13 Locate Geotechnical Borings. The Consultant will set lath and flags at locations identified by the geotechnical engineer. Each boring location will be surveyed for project coordinates and elevations. Changes in the field to these locations will be noted by the geotechnical engineer and adjusted in the base mapping.
 - 1.14 Field Notes. Field notes will be indexed and bound as per KDOT standards. One (1) hard copy will be submitted to the City for their records.
 - 1.15 Property Lines and Ownerships. The City will order O&E reports from a title company. The deliverables from the title company will need to include the ownership name,

identification of any encumbrances on the property, a description of the property, and copies of deeds and any easements associated with the property. If the property is platted, a copy of the subdivision plat will be required. The Consultant will use this information to develop the right-of-way and property information used in the base mapping.

- 1.16 Mark Project Baseline. The project baseline will be marked on 250-foot intervals (or at a minimum within line of sight) including the PI's, PC's and PT's. Marks will be semi-permanent—either wood stakes when placed in earth, or p-k nails when placed in pavement. The project baseline will be staked prior to the Field Check meeting.

Section 2 – Geotechnical Investigation and Recommendations

The Consultant will retain a geotechnical engineer (Terracon Consultants) to provide subsurface exploration and analysis for design development of roadway alignment, cross road culverts, natural rock cuts, and retaining walls.

- 2.1 Project Initiation for Exploratory Borings. The geotechnical engineer will obtain borings at locations described by the Consultant along the 31st Street road alignment. The Consultant will determine boring locations and elevations by survey and provide the data to the geotechnical engineer.
- 2.2 Roadway Borings. In areas where the new alignment will require cuts below existing grade, roadway borings will be performed at approximately 100-foot intervals. These borings will extend at least 8 feet below the planned road subgrade level. Elsewhere along the alignment where minor cuts and fills will be needed to establish planned road subgrade level, borings will be performed further apart but at locations determined by the Consultant. These borings will generally 8- to 10-feet deep.
- 2.3 Rock Bluff Borings. There is a natural rock bluff northeast of the proposed arch span culvert. At least one boring is required through the cut area north of the proposed roadway to determine the character of the rock in this bluff to create a natural-looking vertical rock face.
- 2.4 Retaining Wall Borings. A retaining wall could be an option along the north and/ or south right-of-way line on the property located west of O'Connell Road. To determine subsurface conditions and develop design parameters, borings will be performed along the proposed retaining wall alignments at locations determined by the Consultant.
- 2.5 Hand Probes. Borings and/or hand probes will be performed at locations selected by Consultant to identify and characterize soil types.
- 2.6 Laboratory Testing. Samples of soil and bedrock will be obtained from borings and tested to determine engineering properties in accordance with accepted geotechnical engineering practices. Samples recovered at locations selected by the Consultant will be tested as directed.

- 2.7 Geotechnical / Geological Work Products. The deliverable items for this project will consist of geotechnical reports with boring logs and diagrams. Reports will describe subsurface conditions and present geotechnical recommendations concerning design of arch span culvert foundation, retaining walls, and other features as identified by the Consultant, placement and compaction of engineered fills, preparation of roadway subgrades and other geotechnical aspects of the project.

Section 3 – Roadway Design

3.1 Field Check Plan Development (55% Complete)

- 3.1.1 The Consultant will prepare a Project Work Plan that covers the methodology, design criteria, and other pertinent information that will affect the project design and schedule. The Preliminary Design Criteria developed in the Concept Study phase will be implemented into this document. Other documents that will be used in the development of the Plans are:
- City of Lawrence current “Technical Specifications and Detail Sheets” used for street, storm water, and street lighting improvements
 - KDOT Design Manual
 - AASHTO’s “Manual on Uniform Traffic Control Devices” (MUTCD)
 - AASHTO’s “A Policy on Geometric Design of Highways and Streets”
 - AASHTO’s “Standard Specifications for Highway Bridges”
 - AASHTO’s “Roadside Design Guide”
 - FHWA’s “Roundabouts: An Information Guide”
 - KDOT Standard Specifications for State Road and Bridge Construction
 - KDOT Standard Plans
 - KDOT Bridge Manual
 - KDOT Survey Manual
 - Other publications as directed by the City
- 3.1.2 Develop a digital terrain model with Geopak using the survey and mapping information for use in the development of the base mapping.
- 3.1.3 Develop the typical sections based on the geotechnical report.
- Pavement type
 - Pavement thickness
 - Subgrade treatment
 - Backslopes and foreslopes
- 3.1.4 Input the horizontal alignment developed in the Concept Alignment Study phase approved by the City. Minor adjustments may be required due to the use of County’s mapping in the study phase of the project.
- 3.1.5 Input the vertical alignment developed in the Concept Alignment Study phase approved by the City. Minor adjustments may be required due to the use of the County’s mapping in the study phase of the project.
- 3.1.6 Develop the underground storm drainage system through the 3-lane section adjacent to the industrial park.
- 3.1.6.I Prepare a drainage area map for the project. Each subbasin for each inlet structure will be clearly identified on the drawing.

- 3.1.6.II Design the location of curb inlets and drainage structures based on the City's minimum design requirements.
- 3.1.7 Develop the storm drainage system of the roadside ditches and crossroad culverts.
 - 3.1.7.I Prepare a drainage area map for the project. Review the capacity of the ditches in relation to the drainage area. Each subbasin for each inlet structure will be clearly identified on the drawing.
 - 3.1.7.II Design the location of roadside ditch connections to the proposed crossroad culverts via structures and/ or pipes.
- 3.1.8 Develop crossroad culvert size and locations for the major drainage crossings. Review backwater conditions created by the proposed design storm flow rates.
- 3.1.9 Develop water main extension plan and profiles under the direction of the City Utilities Department to provide a connection of the existing water distribution system from Haskell Avenue to O'Connell Road.
- 3.1.10 Coordinate with the City for the placement of sanitary sewer encasement pipes for future extension of the sanitary sewer system.
- 3.1.11 Develop erosion control layout for the proposed improvements. The extent of the drawings will identify the general design for placement of silt fencing, hay bales, sedimentation basins, and other erosion control measures during construction activities. The plan will be in a reduced scale and double-plan sheet format with existing and proposed contours.
- 3.1.12 Prepare cross sections at 25-foot intervals. Additional cross sections will be provided at entrances, side streets, the roundabout, crossroad culverts, and locations of critical interest to depict cuts, fills, or special drainage features.
- 3.1.13 Prepare a preliminary drawing for the traffic control plan, construction sequencing, and construction phasing. Although the plan sheets will not be included in the Field Check plan set, the analysis will be completed to develop a cost for temporary signage, barricades, etc.
- 3.1.14 The following plan sheets will be prepared for the Field Check plan submittal.
 - Title Sheet
 - General Layout Sheet
 - Typical Section Sheets
 - Control and Reference Ties Sheet
 - Plan and Profile Sheets
 - Storm Sewer Plan and Profile Sheets
 - Water Main Extension Plan and Profile Sheets
 - Erosion Control Layout
 - Drainage Area Map
 - Cross Sections
- 3.1.15 The Consultant will prepare an Opinion of Probable Construction Cost using standard KDOT bid items and recent bid tabs for the Lawrence area from KDOT quarterly reports in conjunction with local cost information provided by the City.
- 3.1.16 The Consultant will attend a Field Check meeting with the City and KDOT.

3.2 Right-of-Way Plan Development

- 3.2.1 Based on the comments received from the City and KDOT during the Field Check review, the Consultant will revise the construction plans. The proposed right-of-

way and easements will be noted on the plans using station/off-set call outs as per KDOT requirements. No additional construction plan sheets or detail sheets will be created for this submittal. The only revisions that will be made are those that will affect the proposed right-of-way and easements. Any other comments will be noted and addressed in the final plan development phases of the project.

- 3.2.2 The Consultant will order updates of the title reports for the 41 tracts prior to preparing the Right-of-Way Plans. Changes of ownerships will be modified in the base mapping.
- 3.2.3 Prepare exhibits that will include right-of-way descriptions, temporary easement descriptions, and utility easement descriptions. The Consultant's fee is based on writing descriptions one (1) time. Any changes to the exhibit or the legal descriptions resulting from negotiations as part of the property acquisition process will be provided as Additional Service.

3.3 Office Check Plan Development (85% Complete)

- 3.3.1 Based on the comments received from the City and KDOT during their Field Check review, the Consultant will revise the construction plans. A written list of the comments will be assembled into a single document and distributed to the team members for their use during this plan development phase.
- 3.3.2 The Consultant will develop the intersection detail plan sheets for the Haskell Avenue intersection based on the comments received from the City and KDOT.
- 3.3.3 The Consultant will utilize the City's standard detail sheets for water main extensions for use in the construction plan set. The details will be placed on the KDOT plan border, including modifications of line weight and font style and size to allow for correct printing of the sheets.
- 3.3.4 The Consultant will develop fencing plans utilizing the standard forms of fencing commonly used by the City and KDOT. Those fencing materials include woven wire, chain link, and barbed wire. The construction of any other fencing materials (i.e. split rail, vinyl coated, wrought iron, etc.) will be negotiated with the property owners as part of the settlement for property acquisition by the City.
- 3.3.5 The Consultant will coordinate with KDOT to obtain the details for the cross road culverts. The Consultant will backcheck the design and develop quantities for cross road. The wing walls will not have aesthetic treatments (i.e. form liners or fascia treatments).
- 3.3.6 The Consultant will prepare the plans for installation of permanent signing and pavement markings. Coordination with the City will be required for any special signing.
- 3.3.7 The Consultant will prepare Special Provisions for the construction work items that are not covered under the KDOT Standard Specifications.
- 3.3.8 The following plan sheets will be prepared for the Office Check plan submittal.
 - Title Sheet
 - General Location
 - Section Corner, Monumentation Control Sheet
 - Typical Sections
 - Control and Reference Ties Sheet
 - Plan and Profile Sheets
 - Intersection Detail Sheets

- Storm Sewer Plan and Profile Sheets
 - Culvert Details
 - Water Main Extension Plan and Profile Sheets
 - Water Main Detail Sheets
 - Erosion Control Layout
 - Fencing Plans
 - Traffic Control and Construction Phasing
 - Pavement Markings and Permanent Signing Plans
 - Miscellaneous Detail Sheets
 - Summary of Quantities
 - Drainage Area Map
 - Cross Sections
- 3.3.9 The Consultant will prepare an Opinion of Probable Construction Cost using standard KDOT bid items and recent bid tabs for the Lawrence area from KDOT quarterly reports in conjunction with local cost information provided by the City.
- 3.4 Final Check Plans (95% Complete)
- 3.4.1 Based on the comments received from the City and KDOT during their Office Check review, the Consultant will revise the construction plans and specifications. A written list of the comments will be assembled into a single document and distributed to the team members for their use during this plan development phase.
- 3.4.2 The Consultant will utilize the KDOT technical specifications where appropriate. Modify Special Provisions for non-traditional construction items based on comments received from the City and KDOT review.
- 3.4.3 The Consultant will prepare an Opinion of Probable Construction Cost using standard KDOT bid items and recent bid tabs for the Lawrence area from KDOT quarterly reports in conjunction with local cost information provided by the City.
- 3.5 Final Plans, Special Provisions, and Estimate (100% Complete)
- 3.5.1 Based on the comments received from the City and KDOT during the Final Check review, the Consultant will revise the construction plans and specifications. A written list of the comments will be assembled into a single document and distributed to the team members for their use.
- 3.5.2 The Consultant will modify the Special Provisions based on comments received by the City and KDOT.
- 3.5.3 The Consultant will prepare an Opinion of Probable Construction Cost using standard KDOT bid items and recent bid tabs for the Lawrence area from KDOT quarterly reports in conjunction with local cost information provided by the City.
- 3.5.4 The Consultant will prepare a set of mylar drawings to submit to KDOT for use during the bidding of the project.

Section 4 – Permitting

- 4.1 Environmental Permitting. The Consultant will assist the City in preparing, submitting and communicating information for the following environmental permits which are anticipated for the project:
- a. Notice of Intent (NOI) for Stormwater Runoff from Construction Activities.
 - b. Wetland Section 404 permit including Nation Wide Permit (NWP) for Road and Stream Crossings (COE).
 - c. Water Quality Section 401 permit (KDHE).
 - d. Obstructions in Streams permit (KDA,DWR).
 - e. All environmental clearance letters necessary for the Categorical Exclusion are not included and are anticipated to be cleared by KDOT.

Section 5 – Utility Coordination

- 5.1 The Consultant will resubmit a copy of the Utility Location Report obtained from each of the utility companies identified during the Concept Alignment Study phase. The report will also have the approved alignment exhibit used in the City Commission meeting on December 9, 2008.
- 5.2 The Consultant will attend a regularly scheduled meeting of the City's Utility Group to discuss the project. The purpose of this meeting is to review the received Utility Location Report forms obtained during the Concept Alignment Study phase, inform the affected utility companies of the project schedule, confirm the location of their facilities along the project corridor based on field locates, and collect any additional information regarding company contacts, and proposed plans for upgrading their facility. The alignment strip map of the proposed improvements will be made available via the Consultant's FTP site and the City's website.
- 5.3 The Consultant will provide one (1) half size (11" x 17") set of Field Check Plans to each utility company that has facilities located within the project corridor two weeks prior to a regularly scheduled City Utility Group meeting. The purpose for attending this meeting is to discuss the project improvements and begin the process of developing relocation plans as needed based on the design layout and limits of construction and identify any needs for additional utility easements.
- 5.4 The Consultant will attend a regularly scheduled meeting with the City's Utility Group to during the development of the Right-of-Way Plans to review each of the utility company's decisions that will need to have been made with regard to the relocation of their facilities that are in conflict with the proposed improvements. Coordination between the various utilities will be discussed. The location of any utility easements will be required for the Right-of-Way Plan preparation.
- 5.5 The Consultant will provide one (1) half size (11" x 17") set of Office Check Plans to each utility company that has facilities located within the project corridor two weeks prior to a regularly scheduled City Utility Group meeting. The purpose for attending this meeting is to review any modifications to the plans that may have been made since the Right-of-Way Plan meeting. Copies of the electronic files will be made available to the

affected utility companies with approval of the City. It is anticipated that the City will provide the utility companies with the notice to proceed for the relocation of their facilities, assuming the right-of-way and easements have been acquired.

- 5.6 The Consultant will provide one (1) half size (11" x 17") set of Final Check Plans to each utility company that has facilities located within the project corridor two weeks prior to a regularly scheduled City Utility Group meeting. The purpose of this meeting is to review the progress of each of the utility companies for the relocation of their facilities.

Section 6 – Project Meetings

- 6.1 The Consultant will attend a kick-off meeting at City Hall to discuss the project schedule, specific design issues that will need to be resolved and establish the dates of the bi-weekly team meetings. It is anticipated that this meeting will be approximately two (2) hours.
- 6.2 The Consultant will attend bi-weekly meetings with the City to discuss project progress, design issues that may arise throughout the project, changes within other City projects that may affect the 31st Street project, project schedule, and other items as needed. These meetings will occur during the Field Check design phase only. Based on a four (4) month Field Check Plan development schedule, a total of eight (8) meetings will need to be scheduled. The meetings could be located at either City Hall, the Consultant's office, or conducted via conference call.
- 6.3 The Consultant will attend one (1) public meeting to present the Field Check Plans. The meeting will be held at location to be determined by the City. The Consultant will prepare three (3) large display boards mounted on foam core to allow people to view the proposed improvements. Additional sets of plans will be available to discuss one-on-one items if necessary.
- 6.4 The Consultant will attend one (1) joint City Commission/ County Commission meeting to present the Field Check Plans. The meeting will be held at a location determined by the Client. The Consultant will prepare an electronic presentation for the meeting along with a memorandum report covering the project and any specific items of interest as determined by the City Staff. One (1) large display board will be developed and mounted on foam board to allow people to view the proposed improvements prior to the meeting. Additional sets of plans will be available to discuss one-on-one items if necessary.

Section 7 – Project Management and Quality Control

- 7.1 This task will include coordination of the Consultant's project team, preparation of the bi-weekly progress reports to the City, and providing timely response to the City from the Project Manager.
- 7.2 The Consultant shall provide QA/QC check on plans and quantities. A quality control manual, specific to this project, will be developed and maintained in the Project Manager's office. This manual can be made available for review by the City at any time.

City Responsibilities

1. Order O&E reports from a title company. The deliverables from the title company will need to include the ownership name, identification of any encumbrances on the property, a description of the property, and copies of deeds and any easements associated with the property. If the property is platted, a copy of the subdivision plat will be required.
2. Provide list of property owner names and addresses of affected tracts. The Consultant will use the information for sending letters to each of the property owners along the project corridor to inform them that surveyors will need to have access to their property for the purpose of obtaining property line and topographic information.
3. Provide the City standard design criteria for the design of roadways and storm drainage systems to the Consultant.
4. Provide the City standard details to the Consultant for use in the project.
5. Provide the Consultant with copies of all plats adjacent to the project in *.tif format or hard copy as available.
6. Provide the Consultant with copies of all drainage and infrastructure plans, reports, studies, etc. along the project area.
7. Notify all property owners along the project and other interested parties of any public meetings.
8. Arrange and provide the facilities for all public and utility meetings.
9. Provide any recent bid tabs to assist in the development of the opinion of probable costs.
10. Acquire all proposed right-of-way and easements, if required.
11. Obtain all necessary permits from the State or Federal agencies. The Consultant will assist the City as noted in Section 4.
12. Arrange utility meetings. The Consultant will collect and prepare meeting minutes.

Items Not Included in the Scope of Services

1. Any work requested by the City that is not included in the basic services will be classified as supplemental services. Supplementary services shall include, but are not limited to the following:
 - a. Changes in the scope, extent, or character of the project.
 - b. Revisions to the plans when inconsistent with previous approvals or instructions by the City.
 - c. Updating plans to reflect development that has occurred after the Final Plans are complete.
2. No environmental investigations, permits or services are included except as specifically identified.
3. The Consultant will not be completing a property survey, nor will he be responsible for setting new property corners if they are missing.
4. The location of specific underground utilities that may be in conflict with the proposed improvements (a.k.a. potholing).
5. The Consultant recognizes that not all of the affected tracts will require flagging of the proposed right-of-way and easements as part of the appraisal process. Therefore, the work effort required for this task will be provided as Additional Services to be negotiated at the hourly rates provided under this Agreement. The Consultant will place wooden stakes with station, offset and description to delineate easements and rights of way. No permanent monuments will be set.

6. Preparation of any environmental clearance documents.
7. Revisions or modifications to the legal descriptions and/or exhibits created by negotiations between the City and the property owner during property acquisition.
8. Printing and review of bidding documents.
9. Specific post-design services including shop drawing review (removed at City's request), construction observation, construction staking, and preparation of construction record drawings.
10. Design of an irrigation system for the landscaped and grassed areas.
11. Design of the major crossroad structures will be based on the HS20 – 44 Live Load. Design provisions for the Kansas Overload Provision and the AASHTO Alternate Military Load will not be required.
12. Channel change work, other than directly at the inlet and/or outlet end of roadway drainage structures, will not be required.
13. Architectural design features will be incorporated into the RCB head and/ or wing walls, if required. The architectural design features used will be limited to ornamental pedestrian handrails; ornamental pedestrian fencing; and use of form liner surface treatments on non-critical, exposed concrete surfaces.
14. Architectural design features to be incorporated into the retaining wall improvements (if required) will be approved by the City prior to beginning the Field Check plan development.
15. Design and detailing of non-KDOT standard and/or proprietary culvert systems will not be required.

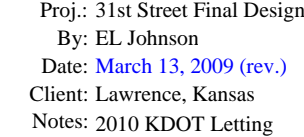


EXHIBIT A

FEE ESTIMATE WORKSHEET

By: EL Johnson Date: March 13, 2009 (rev.) Client: Lawrence, Kansas Notes: 2010 KDOT Letting		WCI DEPT WCI CLASS	ESTIMATED MANHOURS									TOTAL HOURS	LABOR EFFORT (\$)	EXPENSE EFFORT (\$)	TOTAL FEE (\$)	
			8151 P7	8151 P5	8151 PD2	8151 P6	8151 P3	8320 OP7	8320 OP5	8320 OP3	8320 PD1					8320 OD3
			Senior Project Manager	Project Engineer	CADD Designer	Senior Traffic Engineer	Traffic Designer	Chief Photogrammetrist	Photogrammetrist, Supervisor	Stereo Operator	CADD Designer					Drafter, Detailer
TASK I.D.	TITLE WORK TASK DESCRIPTION CADD USAGE LABOR COST															
		\$62.67	\$46.00	\$25.67	\$54.00	\$34.00	\$74.00	\$30.00	\$14.00	\$22.00	\$18.67					
Data Collection, Field Survey and Aerial Mapping																
1.1	Locate section corners and property corners		1									1.00	\$ 136.91	\$ 5,229.00	\$ 5,365.91	
1.2	Establish survey control tied to Douglas County Control Network		1									1.00	\$ 136.91	\$ 4,726.00	\$ 4,862.91	
1.3	Locate utilities.		2									2.00	\$ 273.82	\$ 2,886.00	\$ 3,159.82	
1.4	Obtain aerial prhotography control.		2				10	4			6	22.00	\$ 3,166.90	\$ 3,146.00	\$ 6,312.90	
1.5	Develop TIN model from photogrammetric mapping		2	2			2	4	60	10	24	104.00	\$ 5,712.85	\$ 536.00	\$ 6,248.85	
1.6	Locate obscure areas not visible from aerial photography												\$ -	\$ 3,006.00	\$ 3,006.00	
1.7	Locate culverts and streambeds.												\$ -	\$ 5,229.00	\$ 5,229.00	
1.8	Obtain pavement hardhsots.		2									2.00	\$ 273.82	\$ 4,186.00	\$ 4,459.82	
1.9	Locate storm and sanitary sewer structures												\$ -	\$ 2,616.00	\$ 2,616.00	
1.10	Locate manmade objects.												\$ -	\$ 3,372.00	\$ 3,372.00	
1.11	Obtain creek profiles and valley sections		2									2.00	\$ 273.82	\$ 13,235.00	\$ 13,508.82	
1.12	Locate lateral fields and septic tanks.												\$ -	\$ 1,443.00	\$ 1,443.00	
1.13	Locate geotechnical borings.	1	2									3.00	\$ 460.34	\$ 2,853.00	\$ 3,313.34	
1.14	Develop field notes.	1	2									3.00	\$ 460.34	\$ 3,120.00	\$ 3,580.34	
1.15	Establish property lines and ownerships.		2	1								3.00	\$ 350.22	\$ 3,600.00	\$ 3,950.22	
1.16	Mark project baseline for Field Check visit.												\$ -	\$ 3,366.04	\$ 3,366.04	
	Subtotal	2	18	3	0	0	12	8	60	10	30	143.00	\$ 11,245.96	\$ 62,549.04	\$ 73,795.00	
Geotechnical Investigation and Recommendations																
2.1	Project initiation for exploratory borings.	1	1	2								4.00	\$ 476.22	\$ 4,784.40	\$ 5,260.62	
2.2	Borings along the cut areas.		1									1.00	\$ 136.91	\$ 3,685.00	\$ 3,821.91	
2.3	Boring for natural rock bluff.		1									1.00	\$ 136.91	\$ 1,745.00	\$ 1,881.91	
2.4	Borings for retaining walls.		1									1.00	\$ 136.91	\$ 820.00	\$ 956.91	
2.5	Borings for soil classification analysis.		1									1.00	\$ 136.91	\$ 525.00	\$ 661.91	
2.6	Complete laboratory testing.												\$ -	\$ 6,460.00	\$ 6,460.00	
2.7	Prepare geotechnical report.	2	8	2								12.00	\$ 1,621.12	\$ 6,085.61	\$ 7,706.73	
	Subtotal	3	13	4	0	0	0	0	0	0	0	20.00	\$ 2,644.99	\$ 24,105.01	\$ 26,750.00	
Roadway Design																
3.1	Field Check Plan Development (55%)												\$ -	\$ -	\$ -	
3.1.1	Prepare project work plan for construction plan development	8										8.00	\$ 1,492.15	\$ 14.00	\$ 1,506.15	
3.1.2	Develop digital terrain model with Geopak		4	4								8.00	\$ 853.22	\$ 75.00	\$ 928.22	
3.1.3	Modify conceptual typical section based on geotech report		4	4								8.00	\$ 853.22	\$ 4.00	\$ 857.22	
3.1.4	Input horizontal alignment.	4	40	24	24	40						132.00	\$ 15,961.19	\$ 215.20	\$ 16,176.39	
3.1.5	Input vertical alignment.	4	40	24								68.00	\$ 8,056.00	\$ 40.00	\$ 8,096.00	
3.1.6	Design underground storm drainage for 3-lane section	4	40	24								68.00	\$ 8,056.00	\$ 20.00	\$ 8,076.00	
3.1.7	Develop roadside storm drainage system	4	60	60								124.00	\$ 13,544.39	\$ 84.00	\$ 13,628.39	
3.1.8	Develop crossroad culvert design	4	36	24								64.00	\$ 7,508.35	\$ 84.00	\$ 7,592.35	
3.1.9	Develop water main extension plan and profile sheets	2	36	32								70.00	\$ 7,746.46	\$ 47.00	\$ 7,793.46	
3.1.10	Coordinate with City for sanitary sewer encasement pipe(s)		4	8								12.00	\$ 1,158.79	\$ 7.00	\$ 1,165.79	
3.1.11	Develop erosion control plan	2	20	32								54.00	\$ 5,555.86	\$ 12.00	\$ 5,567.86	
3.1.12	Prepare cross sections at 25-foot intervals.	28	48	80								156.00	\$ 17,905.75	\$ 311.40	\$ 18,217.15	
3.1.13	Prepare preliminary drawings for traffic control.			4	8	18						30.00	\$ 3,412.89	\$ 4.00	\$ 3,416.89	
3.1.14	Prepare Field Check Plans.	16	60	100								176.00	\$ 18,838.34	\$ 2,051.55	\$ 20,889.89	
3.1.15	Prepare Opinion of Probable Construction Cost.	1	8	16								25.00	\$ 2,504.11	\$ 32.00	\$ 2,536.11	
3.1.16	Attend Field Check meeting.	4	4									8.00	\$ 1,293.72	\$ 379.00	\$ 1,672.72	
3.2	Right-of-Way Plan Development												\$ -	\$ -	\$ -	
3.2.1	Revise plans based on Field Check comments	8	24	60								92.00	\$ 9,361.63	\$ 135.00	\$ 9,496.63	
3.2.2	Order title report updates.												\$ -	\$ 25.00	\$ 25.00	
3.2.3	Prepare descriptions and exhibits.		12									12.00	\$ 1,642.95	\$ 7,140.00	\$ 8,782.95	
3.3	Office Check Plan Development (85%)												\$ -	\$ -	\$ -	
3.3.1	Prepare list of plan corrections from Field Check review		2									2.00	\$ 286.15	\$ 1.00	\$ 287.15	
3.3.2	Develop Haskell Avenue intersection details		2	18	16	40						76.00	\$ 8,640.39	\$ 17.00	\$ 8,657.39	
3.3.3	Modify City standard water main details for KDOT sheet use.	1	8	24								33.00	\$ 3,255.44	\$ 17.00	\$ 3,272.44	
3.3.4	Develop fencing plans.		10	24								34.00	\$ 3,346.67	\$ 67.00	\$ 3,413.67	

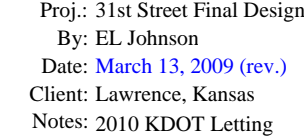


EXHIBIT A

FEE ESTIMATE WORKSHEET

By: EL Johnson Date: March 13, 2009 (rev.) Client: Lawrence, Kansas Notes: 2010 KDOT Letting		ESTIMATED MANHOURS										TOTAL HOURS	LABOR EFFORT (\$)	EXPENSE EFFORT (\$)	TOTAL FEE (\$)
WCI DEPT WCI CLASS		8151 P7	8151 P5	8151 PD2	8151 P6	8151 P3	8320 OP7	8320 OP5	8320 OP3	8320 PD1	8320 OD3				
TASK I.D.	TITLE WORK TASK DESCRIPTION CADD USAGE LABOR COST	Senior Project Manager	Project Engineer	CADD Designer	Senior Traffic Engineer	Traffic Designer	Chief Photogrammetrist	Photogrammetrist, Supervisor	Stereo Operator	CADD Designer	Drafter, Detailer				
		\$62.67	\$46.00	\$25.67	\$54.00	\$34.00	\$74.00	\$30.00	\$14.00	\$22.00	\$18.67				
3.3.5	Cross road culvert coordination, quantities.	2	40	40								82.00	\$ 9,305.99	\$ 62.00	\$ 9,367.99
3.3.6	Prepare permanent signing and pavement marking plans		16	40								56.00	\$ 5,482.40	\$ 62.00	\$ 5,544.40
3.3.7	Prepare Special Provisions (estimated 4 required).		10									10.00	\$ 1,430.73	\$ 2.00	\$ 1,432.73
3.3.8	Prepare Office Check plans.	40	80	160								280.00	\$ 32,015.25	\$ 2,151.20	\$ 34,166.45
3.3.9	Prepare Opinion of Probable Construction Cost.		8	4								12.00	\$ 1,463.91	\$ 2.00	\$ 1,465.91
3.4	Final Check Plan Development (95%)												\$ -	\$ -	\$ -
3.4.1	Revise plans based on comments from Office Check review	4	40	80								124.00	\$ 12,889.04	\$ 1,784.00	\$ 14,673.04
3.4.2	Modify Special Provisions based on review comments		4									4.00	\$ 572.29	\$ 1.00	\$ 573.29
3.4.3	Prepare Opinion of Probable Construction Cost.		4	16								20.00	\$ 1,849.59	\$ 1.00	\$ 1,850.59
3.5	Final Plans, Special Provisions, and Estimate (100%)												\$ -	\$ -	\$ -
3.5.1	Revise plans based on comments from Final Check review	2	16	48								66.00	\$ 6,510.87	\$ 1,634.00	\$ 8,144.87
3.5.2	Modify Special Provisions based on review comments		2									2.00	\$ 286.15	\$ 1.00	\$ 287.15
3.5.3	Prepare Opinion of Probable Construction Cost.		2	1								3.00	\$ 365.98	\$ 1.00	\$ 366.98
3.5.4	Prepare mylar drawings, submit to KDOT for bidding.		1	2								3.00	\$ 302.72	\$ 3,013.08	\$ 3,315.80
	Subtotal	138	685	953	48	98	0	0	0	0	0	1922.00	\$ 213,748.57	\$ 19,496.43	\$ 233,245.00
Permitting															
4.1	Environmental Permitting		12	10								22.00	\$ 2,515.19	\$ 44.81	\$ 2,560.00
	Subtotal	0	12	10	0	0	0	0	0	0	0	22.00	\$ 2,515.19	\$ 44.81	\$ 2,560.00
Utility Coordination															
5.1	Resubmit Utility Location Report with Concept Alignment												\$ -	\$ 30.15	\$ 30.15
5.2	Attend City's Utility Group meeting project issues		8									8.00	\$ 1,095.30	\$ 238.40	\$ 1,333.70
5.3	Attend City's Utility Group to discuss Field Check plans		8									8.00	\$ 1,095.30	\$ 299.40	\$ 1,394.70
5.4	Attend City's Utility Group to discuss Right-of-Way plans		8	1								9.00	\$ 1,224.42	\$ 619.40	\$ 1,843.82
5.5	Attend City's Utility Group to discuss Office Check plans.		8	1								9.00	\$ 1,224.42	\$ 619.40	\$ 1,843.82
5.6	Attend City's Utility Group to discuss Final Check plans		8	1								9.00	\$ 1,224.42	\$ 619.40	\$ 1,843.82
	Subtotal	0	40	3	0	0	0	0	0	0	0	43.00	\$ 5,863.85	\$ 2,426.15	\$ 8,290.00
Project Meetings															
6.1	Attend kick-off meeting at City Hall.	4	4									8.00	\$ 1,293.72	\$ 149.00	\$ 1,442.72
6.2	Attend eight (8) bi-weekly project meetings	32	32									64.00	\$ 10,815.51	\$ 500.15	\$ 11,315.66
6.3	Attend one (1) public meeting to discuss the Field Check plans	4	8	8								20.00	\$ 2,562.88	\$ 465.40	\$ 3,028.28
6.4	Attend one (1) City/ County Commission meeting	3	3	6								12.00	\$ 1,492.94	\$ 150.40	\$ 1,643.34
	Subtotal	43	47	14	0	0	0	0	0	0	0	104.00	\$ 16,165.05	\$ 1,264.95	\$ 17,430.00
Project Management and Quality Control															
7.1	Team coordination, bi-weekly meeting prep, general management	24										24.00	\$ 4,677.88	\$ 36.66	\$ 4,714.54
7.2	Provide project quality control.	40										40.00	\$ 7,796.46	\$ 734.00	\$ 8,530.46
	Subtotal	64	0	0	0	0	0	0	0	0	0	64.00	\$ 12,474.34	\$ 770.66	\$ 13,245.00
TOTALS (Hours)		250	815	987	48	98	12	8	60	10	30	2318.00	\$ 264,657.94	\$ 110,657.05	\$ 375,315.00



EXPENSE SUMMARY

Project : 31st Street Final Design
 By : EL Johnson
 Date : March 13, 2009 (rev.)
 Client : Lawrence, Kansas

ITEM	ITEM DESCRIPTION \ RELATED TASK	QUANT.	UNITS		UNIT PRICE		TOTAL OTHER COST
REPRODUCTION CHARGES	Letter Copy	796.00	Each	@	\$ 0.10	per Each =	\$ 79.60
	11" x 17" Copy	13640.00	Each	@	\$ 0.20	per Each =	\$ 2,728.00
						Subtotal	\$ 2,807.60
EQUIPMENT CHARGES	B&W Wide Format	29800.00	Sq Ft	@	\$ 0.25	per Sq Ft =	\$ 7,450.00
	B&W Mylar Wide Format	1440.00	Sq Ft	@	\$ 2.00	per Sq Ft =	\$ 2,880.00
	Color Wide Format	1800.00	Sq Ft	@	\$ 0.75	per Sq Ft =	\$ 1,350.00
	B&W Wide Format	144.00	Sq Ft	@	\$ 0.25	per Sq Ft =	\$ 36.00
	Mapping Workstations	60.00	Hr	@	\$ 8.00	per Hr =	\$ 480.00
						Subtotal	\$ 12,196.00
VEHICLE CHARGES	Project Miles	2020.00	Mile	@	\$ 0.73	per Mile =	\$ 1,474.60
						Subtotal	\$ 1,474.60
OFFICE CHARGES	Postage/Shipping	1003.85	Lump Sum	@	\$ 1.00	per Lump Su =	\$ 1,003.85
	Postage/Shipping	20.00	Lump Sum	@	\$ 1.00	per Lump Su =	\$ 20.00
						Subtotal	\$ 1,023.85
EXTENDED SERVICES	Terracon Consultants	24015.00	Unit	@	\$ 1.00	per Unit =	\$ 24,015.00
	Peridian Group, Inc.	69140.00	Unit	@	\$ 1.00	per Unit =	\$ 69,140.00
						Subtotal	\$ 93,155.00

TOTAL PROJECT "OTHER COSTS" ESTIMATE: \$ 110,657.05