


Local Agency Lake County Division of Transportation	L O C A L A G E N C Y	 Illinois Department of Transportation DRAFT Preliminary Engineering Services Agreement For Federal Participation	C O N S U L T A N T	Consultant Christopher B. Burke Engineering, Ltd.
County Lake				Address 9575 W. Higgins Road
Section Various				City Rosemont
Project No. Various				State IL
Job No. Various				Zip Code 60018
Contact Name/Phone/E-mail Address Mike Tuman/(847) 377-7474 mtuman@lakecountyil.gov				Contact Name/Phone/E-mail Address Mike Ziegler/847-823-0500 mziegler@cbbel.com

THIS AGREEMENT is made and entered into this _____ day of _____, _____ between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the PROJECT. Federal-aid funds allotted to the LA by the state of Illinois under the general supervision of the Illinois Department of Transportation (STATE) will be used entirely or in part to finance engineering services as described under AGREEMENT PROVISIONS.

Project Description

Name Various Route _____ Length _____ Structure No. NA

Termini _____

Description Project will consist of traffic signal modifications, traffic signal modernization, fiber optic interconnect and implementation of two Adaptive Signal Control Systems. The locations include Gilmer Road, Aptakisic Road, Cedar Lake Road, IL Route 83, US Route 12 and IL Route 120 (see attached scope of work for each location).

Agreement Provisions

I. THE ENGINEER AGREES,

1. To perform or be responsible for the performance, in accordance with STATE approved design standards and policies, of engineering services for the LA for the proposed improvement herein described.
2. To attend any and all meetings and visit the site of the proposed improvement at any reasonable time when requested by representatives of the LA or STATE.
3. To complete the services herein described within 365 calendar days from the date of the Notice to Proceed from the LA, excluding from consideration periods of delay caused by circumstances beyond the control of the ENGINEER.
4. The classifications of the employees used in the work should be consistent with the employee classifications and estimated man-hours shown in EXHIBIT A. If higher-salaried personnel of the firm, including the Principal Engineer, perform services that are indicated in Exhibit A to be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the payroll rate for the work performed.
5. That the ENGINEER is qualified technically and is entirely conversant with the design standards and policies applicable for the PROJECT; and that the ENGINEER has sufficient properly trained, organized and experienced personnel to perform the services enumerated herein.
6. That the ENGINEER shall be responsible for the accuracy of the work and shall promptly make necessary revisions or corrections resulting from the ENGINEER's errors, omissions or negligent acts without additional compensation. Acceptance of work by the STATE will not relieve the ENGINEER of the responsibility to make subsequent correction of any such errors or omissions or for clarification of any ambiguities.
7. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will affix the ENGINEER's professional seal when such seal is required by law. Plans for structures to be built as a part of the improvement will be prepared under the supervision of a registered structural engineer and will affix structural engineer seal when such seal is required by law. It will be the ENGINEER's responsibility to affix the proper seal as required by the Bureau of Local Roads and Streets manual published by the STATE.
8. That the ENGINEER will comply with applicable federal statutes, state of Illinois statutes, and local laws or ordinances of the LA.

9. The undersigned certifies neither the ENGINEER nor I have:
- employed or retained for commission, percentage, brokerage, contingent fee or other considerations, any firm or person (other than a bona fide employee working solely for me or the above ENGINEER) to solicit or secure this AGREEMENT,
 - agreed, as an express or implied condition for obtaining this AGREEMENT, to employ or retain the services of any firm or person in connection with carrying out the AGREEMENT or
 - paid, or agreed to pay any firm, organization or person (other than a bona fide employee working solely for me or the above ENGINEER) any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out the AGREEMENT.
 - are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency,
 - have not within a three-year period preceding the AGREEMENT been convicted of or had a civil judgment rendered against them for commission of fraud or criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property,
 - are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (e) and
 - have not within a three-year period preceding this AGREEMENT had one or more public transactions (Federal, State or local) terminated for cause or default.
10. To pay its subconsultants for satisfactory performance no later than 30 days from receipt of each payment from the LA.
11. To submit all invoices to the LA within one year of the completion of the work called for in this AGREEMENT or any subsequent Amendment or Supplement.
12. To submit BLR 05613, Engineering Payment Report, to the STATE upon completion of the project (Exhibit B).
13. Scope of Services to be provided by the ENGINEER:
- Make such detailed surveys as are necessary for the planning and design of the PROJECT.
 - Make stream and flood plain hydraulic surveys and gather both existing bridge upstream and downstream high water data and flood flow histories.
 - Prepare applications for U.S. Army Corps of Engineers Permit, Illinois Department of Natural Resources Office of Water Resources Permit and Illinois Environmental Protection Agency Section 404 Water Quality Certification.
 - Design and/or approve cofferdams and superstructure shop drawings.
 - Prepare Bridge Condition Report and Preliminary Bridge Design and Hydraulic Report, (including economic analysis of bridge or culvert types and high water effects on roadway overflows and bridge approaches).
 - Prepare the necessary environmental and planning documents including the Project Development Report, Environmental Class of Action Determination or Environmental Assessment, State Clearinghouse, Substate Clearinghouse and all necessary environmental clearances.
 - Make such soil surveys or subsurface investigations including borings and soil profiles as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations to be made in accordance with the current Standard Specifications for Road and Bridge Construction, Bureau of Local Roads and Streets Administrative Policies, Federal-Aid Procedures for Local Highway Improvements or any other applicable requirements of the STATE.
 - Analyze and evaluate the soil surveys and structure borings to determine the roadway structural design and bridge foundation.
 - Prepare preliminary roadway and drainage structure plans and meet with representatives of the LA and STATE at the site of the improvement for review of plans prior to the establishment of final vertical and horizontal alignment, location and size of drainage structures, and compliance with applicable design requirements and policies.
 - Make or cause to be made such traffic studies and counts and special intersection studies as may be required to furnish sufficient data for the design of the proposed improvement.
 - Complete the general and detailed plans, special provisions and estimate of cost. Contract plans shall be prepared in accordance with the guidelines contained in the Bureau of Local Roads and Streets manual. The special provisions and detailed estimate of cost shall be furnished in quadruplicate.
 - Furnish the LA with survey and drafts in quadruplicate all necessary right-of-way dedications, construction easements and borrow pit and channel change agreements including prints of the corresponding plans and staking as required.

II. THE LA AGREES,

1. To furnish the ENGINEER all presently available survey data and information
2. To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT, on the basis of the following compensation formulas:

Cost Plus Fixed Fee CPFF = 14.5%[DL + R(DL) + OH(DL) + IHDC], or
 CPFF = 14.5%[DL + R(DL) + 1.4(DL) + IHDC], or
 CPFF = 14.5%[(2.3 + R)DL + IHDC]

Where: DL = Direct Labor
 IHDC = In House Direct Costs
 OH = Consultant Firm's Actual Overhead Factor
 R = Complexity Factor

Specific Rate (Pay per element)

Lump Sum _____

3. To pay the ENGINEER using one of the following methods as required by 49 CFR part 26 and 605 ILCS 5/5-409:

With Retainage

- a) **For the first 50% of completed work**, and upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LA, monthly payments for the work performed shall be due and payable to the ENGINEER, such payments to be equal to 90% of the value of the partially completed work minus all previous partial payments made to the ENGINEER.
- b) **After 50% of the work is completed**, and upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LA, monthly payments covering work performed shall be due and payable to the ENGINEER, such payments to be equal to 95% of the value of the partially completed work minus all previous partial payments made to the ENGINEER.
- c) **Final Payment** – Upon approval of the work by the LA but not later than 60 days after the work is completed and reports have been made and accepted by the LA and the STATE, a sum of money equal to the basic fee as determined in this AGREEMENT less the total of the amounts of partial payments previously paid to the ENGINEER shall be due and payable to the ENGINEER.

Without Retainage

- a) **For progressive payments** – Upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LA, monthly payments for the work performed shall be due and payable to the ENGINEER, such payments to be equal to the value of the partially completed work minus all previous partial payments made to the ENGINEER.
- b) **Final Payment** – Upon approval of the work by the LA but not later than 60 days after the work is completed and reports have been made and accepted by the LA and STATE, a sum o money equal to the basic fee as determined in this AGREEMENT less the total of the amounts of partial payments previously paid to the ENGINEER shall be due and payable to the ENGINEER.

4. The recipient shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR part 26. The recipient shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31U.S.C. 3801 et seq.).

III. IT IS MUTALLY AGREED,

1. That no work shall be commenced by the ENGINEER prior to issuance by the LA of a written Notice to Proceed.
2. That tracings, plans, specifications, estimates, maps and other documents prepared by the ENGINEER in accordance with this AGREEMENT shall be delivered to and become the property of the LA and that basic survey notes, sketches, charts and other data prepared or obtained in accordance with this AGREEMENT shall be made available, upon request, to the LA or to the STATE, without restriction or limitation as to their use.
3. That all reports, plans, estimates and special provisions furnished by the ENGINEER shall be in accordance with the current Standard Specifications for Road and Bridge Construction, Bureau of Local Roads and Streets Administrative Policies, Federal-Aid Procedures for Local Highway Improvements or any other applicable requirements of the STATE, it being understood that all such furnished documents shall be approved by the LA and the STATE before final acceptance. During the performance of the engineering services herein provided for, the ENGINEER shall be responsible for any loss or damage to the documents herein enumerated while they are in the ENGINEER's possession and any such loss or damage shall be restored at the ENGINEER's expense.

4. That none of the services to be furnished by the ENGINEER shall be sublet, assigned or transferred to any other party or parties without written consent of the LA. The consent to sublet, assign or otherwise transfer any portion of the services to be furnished by the ENGINEER shall not be construed to relieve the ENGINEER of any responsibility for the fulfillment of this agreement.
5. To maintain, for a minimum of 3 years after the completion of the contract, adequate books, records and supporting documents to verify the amounts, recipients and uses of all disbursements of funds passing in conjunction with the contract; the contract and all books, records and supporting documents related to the contract shall be available for review and audit by the Auditor General and the STATE; and to provide full access to all relevant materials. Failure to maintain the books, records and supporting documents required by this section shall establish a presumption in favor of the STATE for the recovery of any funds paid by the STATE under the contract for which adequate books, records and supporting documentation are not available to support their purported disbursement.
6. The payment by the LA in accordance with numbered paragraph 3 of Section II will be considered payment in full for all services rendered in accordance with this AGREEMENT whether or not they be actually enumerated in this AGREEMENT.
7. That the ENGINEER shall be responsible for any and all damages to property or persons arising out of an error, omission and/or negligent act in the prosecution of the ENGINEER's work and shall indemnify and save harmless the LA, the STATE, and their officers, agents and employees from all suits, claims, actions or damages of any nature whatsoever resulting there from. These indemnities shall not be limited by the listing of any insurance policy.
8. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at the ENGINEER's last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all drawings, plats, surveys, reports, permits, agreements, soils and foundation analysis, provisions, specifications, partial and completed estimates and data, if any from soil survey and subsurface investigation with the understanding that all such material becomes the property of the LA. The LA will be responsible for reimbursement of all eligible expenses to date of the written notice of termination.
9. This certification is required by the Drug Free Workplace Act (30ILCS 580). The Drug Free Workplace Act requires that no grantee or contractor shall receive a grant or be considered for the purpose of being awarded a contract for the procurement of any property or service from the State unless that grantee or contractor will provide a drug free workplace. False certification or violation of the certification may result in sanctions including, but not limited to, suspension of contract or grant payments, termination of a contract or grant and debarment of the contracting or grant opportunities with the State for at least one (1) year but no more than five (5) years.

For the purpose of this certification, "grantee" or "contractor" means a corporation, partnership or other entity with twenty-five (25) or more employees at the time of issuing the grant, or a department, division or other unit thereof, directly responsible for the specific performance under a contract or grant of \$5,000 or more from the State, as defined in the Act.

The contractor/grantee certifies and agrees that it will provide a drug free workplace by:

- a. Publishing a statement:
 - (1) Notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance, including cannabis, is prohibited in the grantee's or contractor's workplace.
 - (2) Specifying the actions that will be taken against employees for violations of such prohibition.
 - (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will:
 - (a) abide by the terms of the statement; and
 - (b) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
 - b. Establishing a drug free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's or contractor's policy of maintaining a drug free workplace;
 - (3) Any available drug counseling, rehabilitation and employee assistance program; and
 - (4) The penalties that may be imposed upon an employee for drug violations.
 - c. Providing a copy of the statement required by subparagraph (a) to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
 - d. Notifying the contracting or granting agency within ten (10) days after receiving notice under part (B) of paragraph (3) of subsection (a) above from an employee or otherwise receiving actual notice of such conviction.
 - e. Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by,
 - f. Assisting employees in selecting a course of action in the event drug counseling, treatment and rehabilitation is required and indicating that a trained referral team is in place.
 - g. Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.
10. The ENGINEER or subconsultant shall not discriminate on the basis of race, color, national origin or sex in the performance of this AGREEMENT. The ENGINEER shall carry out applicable requirements of 49 CFR part 26 in the administration of DOT assisted contracts. Failure by the ENGINEER to carry out these requirements is a material breach of this AGREEMENT, which may result in the termination of this AGREEMENT or such other remedy as the LA deems appropriate.

**Attachment 1A: Scope of Services
Gilmer Road Adaptive Signal Control
Freemont Center Road to Schwerman Road
Section No.: 11-00999-23-TL
Lake County, Illinois
March 27, 2012**

UNDERSTANDING OF THE ASSIGNMENT

The project will consist of preparing traffic signal modernization and signal system interconnect plans for Gilmer Road between Freemont Center Road and Schwerman Road. This will include a proposed fiber optic interconnect from Hawley Street to Schwerman Road. This will complete the missing link between two existing closed loop signal systems on Gilmer. The proposed traffic signal interconnect sections to be installed will consist of approximately 1.40 miles of new fiber optic cable and conduit. This project will also include provisions for an adaptive signal control system as determined by LCDOT.

The existing traffic signal installation at Gilmer Road and Hawley Street will be modernized (replaced) as part of the overall improvements. The remaining traffic signal installations will be modified to include accommodate the proposed system and adaptive control improvements. These modifications will be performed at the following intersections: Gilmer Road at Fremont Center Road, Gilmer Road and IL Route 176, Gilmer Road at Schwerman Road , Gilmer Road and Midlothian Road and IL Route 176 and Hawley Street.

The Illinois Department of Transportation will administer the project due to the CMAQ funding. The consultant will be responsible for coordinating work activities with the County and IDOT including plan submittals and reviews.

The plans will consist of traffic signal modification, modernization and signal system interconnect plans in accordance with County and IDOT design criteria. The scope of work will include preparation of BLR form 19100 and special waste screening as part of Phase 1 engineering. Based on the results of the special waste screening a Preliminary Environmental Site Assessment (PESA) and Preliminary Site Investigation (PSI) will be conducted and the results summarized in a technical memorandum.

A topographic survey will be performed for Gilmer Road and Hawley Street. The County will provide the existing traffic signal plans, interconnect plans, and roadway plans for the project corridor to be used in preparing the base sheets for the project. The consultant shall be responsible for field verifying the accuracy of the plan information.

SECTION I - SCOPE OF BASIC SERVICES

Task 1 – Data Collection and Topographic Survey: This task will include collecting existing roadway plans, traffic signal plans and aerial photography and other related data from LCDOT and IDOT for the Gilmer Road corridor. A limited horizontal topographic survey will be conducted at the intersection of Gilmer Road and Hawley Street. This information will be used as the base for the traffic signal modernization plans. This data will be augmented by a field reconnaissance of the intersections to verify existing conditions. This task will also include special waste screening of the project corridor.

The survey will be used as a base map for design purposes and will include are the following survey tasks:

1. Horizontal Control: Utilizing state plane coordinates (NAD '83, Illinois East Zone, 1997 Adjustment); CBBEL will establish recoverable primary control.
2. Research at the Cook County Recorder's Office.
3. Field recon and survey to locate existing monumentation and boundary evidence.
4. Analyze Record and Field Data necessary to compute approximate Right-of-Way throughout project limits.
5. All above ground utilities including, but not limited to: water, sanitary sewer, storm sewer, telephone, electric, cable and gas, etc. Identify type, invert and rim elevations as well as pipe sizes.
6. Existing hardscape improvements located in the project limits including curbs, light fixtures, walks, street signs, fencing and gates, approximate R-O-W, and buildings (if any).
7. Office calculations and plotting of field and record data.
8. Drafting of an Existing Conditions Plan at a scale of 1"=20'.

Task 2 – Traffic Signal Improvement Plans – Gilmer Road: Fremont Center Road to Schwerman Road:

Task 2.1 - Base Sheet Preparation: Prepare base sheets at a scale of 1" = 20' for the traffic signal modernization plans and 1"= 50' for the traffic signal interconnect system using the existing traffic signal plan information to be provided by the County. This information shall be supplemented by a field reconnaissance of the existing traffic signal installations to verify existing conditions.

Task 2.2 - Traffic Signal Modification Plans: Prepare the traffic signal modification plans using the base sheet information from Task 1.1. The traffic signal plans shall be developed based on County and IDOT standards current at the time said plans are prepared. The traffic signal modernization plans shall include the following:

- a. Temporary Traffic Signal and Removal Plans
- b. Preliminary, pre-final and final traffic signal modification plans.
- c. Cable plan and schedule of quantities.
- d. Phase Designation Diagrams.
- e. Adaptive Signal Control Details
- f. Video or Loop detector detail and general notes.
- g. Traffic signal interconnect plan.
- h. Technical specifications employing County and IDOT special provisions to the extent that they apply will be assembled.

Task 2.3 – Supplemental Data: Prepare a project cost estimate and estimate of time for construction in accordance with IDOT BLR requirements.

Task 3 - Coordination with County and IDOT: The consultant shall be responsible for meeting with representatives from the County and IDOT to review the proposed scope of services and to determine specific design criteria required by the County and IDOT for proposed project. In addition, the consultant will review with the County and IDOT design review comments and project letting requirements. In addition, CBBEL will submit to the utility companies a set of pre-final and final engineering plans to verify or identify potential conflicts. CBBEL will notify the County of potential conflicts.

The PESA and PSI will be performed under this task as part of the overall coordination effort. This will provide sign off of the project to IDOT with respect to environmental conditions and allow for provisions in the design plans to address removal of hazardous waste, if any.

Task 4 - Consultation During the Design Process: The consultant will meet with the County to advise as to the status of the project and concerns regarding specific design elements. The meetings will also serve to clarify specific design requirements that the County, IDOT, and other local agencies may want incorporated into the plans.

Exhibit 1A - Preliminary Engineering

Consultant: Christopher B. Burke Engineering, Ltd.
 Route: Gilmer Road
 Local Agency: Lake County Division of Transportation
 (Municipality/Township/County)
 Section: 11-00999-23-TL
 Project: CMM-9003(924)
 Job No.: D-91-182-12

* Firm's approved rates on file with IDOT'S Bureau of Accounting and Auditing:	
IDOT Approved Overhead Rate:	146.48%
Project Overhead Rate:	
Complexity Factor =	0.0
Calendar Days	365.0

Method of Compensation:

Cost Plus Fixed Fee 1 14.5%[DL +R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL +R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]
 Specific Rate
 Lump Sum

Cost Estimate of Consultant's Services in Dollars

Element of Work	Employee Classification	Man-Hours	Payroll Rates	Payroll Costs (DL)	Overhead	Services by Others	Direct Costs	Profit	Total
Data Collection /Survey & Environmental	Engineer VI	8.00	70.00	560.00	820.29		\$ 2,650	\$200.14	\$4,230.43
	Engineer IV		45.82	0.00	0.00			\$0.00	\$0.00
	Engineer III	12.00	38.13	457.56	670.23			\$163.53	\$1,291.32
	Engineering Tech IV	8.00	48.50	388.00	568.34			\$138.67	\$1,095.01
	CAD II	40.00	40.50	1,620.00	2,372.98			\$578.98	\$4,571.96
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
Traffic Signal Improvement Plans	Survey I	80.00	40.00	3,200.00	0.00		\$ 500	\$464.00	\$4,164.00
	Engineer VI	40.00	70.00	2,800.00	4,101.44		\$ 250	\$1,000.71	\$8,152.15
	Engineer IV	60.00	45.82	2,749.20	4,027.03			\$982.55	\$7,758.78
	Engineer III	100.00	38.13	3,813.00	5,585.28			\$1,362.75	\$10,761.03
	Engineering Tech IV	80.00	48.50	3,880.00	5,683.42			\$1,386.70	\$10,950.12
	CAD II	80.00	40.50	3,240.00	4,745.95			\$1,157.96	\$9,143.92
Coordination with LCDDOT & IDOT	CAD I	120.00	30.00	3,600.00	5,273.28		\$ 1,365	\$1,286.63	\$11,524.91
	Engineer VI	16.00	70.00	1,120.00	1,640.58		\$ 6,450	\$400.28	\$9,610.86
	Engineer IV	16.00	45.82	733.12	1,073.87		\$ 250	\$262.01	\$2,319.01
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
Consultation	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
	Engineer VI	16.00	70.00	1,120.00	1,640.58		\$ 250	\$400.28	\$3,410.86
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
Totals		724.00	-	31,234.16	41,064.44	\$ -	\$11,715.00	\$10,483.30	\$94,496.89

**Attachment 2A: Scope of Services
Aptakistic Road Adaptive Signal Control System
Brandywyn Lane to Parkway Drive
Section No.: 11-00088-19-TL
Lake County, Illinois
March 27, 2012**

UNDERSTANDING OF THE ASSIGNMENT

The project will consist of preparing contract documents for a new Adaptive Signal Control System on Aptakistic Road from Brandywyn Lane to Parkway Drive. The traffic signals along this section of roadway are already interconnected and integrated into the existing Passage system.

The eight traffic signal installations that make this part of the Aptakistic Road system will be modified to include accommodate the adaptive control improvements. These modifications will be performed at the following intersections: Aptakistic Road and Brandywyn Lane, , Aptakistic Road and Prairie Road, Aptakistic Road and Buffalo Grove Road, Aptakistic Road and Weiland Road, Aptakistic Road and Bond Street, Aptakistic Road and Leider Lane, Aptakistic Road and Barclay Blvd and Aptakistic Road and Parkway Drive.

The Illinois Department of Transportation will administer the project due to the CMAQ funding. The consultant will be responsible for coordinating work activities with the County and IDOT including submittals and reviews.

It is anticipated that full size plans will not be required since the improvements will be limited to modifications within the existing controller and cabinet. If the Adaptive Signal Control System selected by LCDOT does require vehicle detection improvements, this information will be shown on the existing interconnect plans. The County will provide the existing traffic signal plans, interconnect plans, and roadway plans for the project corridor to be used in preparing the base sheets for the project. The consultant shall be responsible for field verifying the accuracy of the plan information.

SECTION I - SCOPE OF BASIC SERVICES

Task 1 – Data Collection: This task will include collecting existing roadway plans and traffic signal plans and other related data from LCDOT for the Aptakistic Road corridor. In addition, CBBEL will obtain the specifications and other material as it relates to the selected Adaptive Signal Control System.

CBBEL will also prepare BLR form 19100 and submit it to IDOT as part of the CE 1 process.

Task 2 – Contract Booklet – Aptakisic Road: Brandywyn Lane to Parkway Drive:

This task will consist of preparing the contract booklet for the project. It is anticipated that full size plans will not be required for the project. A project contract booklet will be prepared that includes IDOT's boiler plat specifications, contract quantities/pay items and technical specifications for the Adaptive Signal Control System. In addition, reduced size plans sheets of the existing traffic signals and interconnect will be incorporated into the contract booklet for information purposes. County and IDOT special provisions to the extent that they apply will also be assembled.

Task 3 - Coordination with County and IDOT: The consultant shall be responsible for meeting with representatives from the County and IDOT to review the proposed scope of services and to determine specific design criteria required by the County and IDOT for proposed project. In addition, the consultant will review with the County and IDOT design review comments and project letting requirements.

Task 4 - Consultation During the Design Process: The consultant will meet with the County to advise as to the status of the project and concerns regarding specific design elements. The meetings will also serve to clarify specific design requirements that the County, IDOT, and other local agencies may want incorporated into the plans.

Exhibit 2A - Preliminary Engineering

Consultant: Christopher B. Burke Engineering, Ltd.
 Route: Aptakisic Road
 Local Agency: Lake County Division of Transportation
 (Municipality/Township/County)
 Section: 11-00088-19-TL
 Project: CMM-9003(926)
 Job No.: D-91-183-12

* Firm's approved rates on file with IDOT'S Bureau of Accounting and Auditing:	
IDOT Approved Overhead Rate:	146.48%
Project Overhead Rate:	_____
Complexity Factor =	0.0
Calendar Days	365.0

Method of Compensation:

- Cost Plus Fixed Fee 1 14.5%[DL +R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL +R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]
 Specific Rate
 Lump Sum

Cost Estimate of Consultant's Services in Dollars

Element of Work	Employee Classification	Man-Hours	Payroll Rates	Payroll Costs (DL)	Overhead	Services by Others	Direct Costs	Profit	Total
Data Collection	Engineer VI	4.00	70.00	280.00	410.14			\$100.07	\$790.21
	Engineer IV	8.00	45.82	366.56	536.94			\$131.01	\$1,034.50
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
Contract Booklet	CAD I	40.00	30.00	1,200.00	1,757.76			\$428.88	\$3,386.64
	Engineer VI	24.00	70.00	1,680.00	2,460.86			\$600.43	\$4,741.29
	Engineer IV	40.00	45.82	1,832.80	2,684.69			\$655.04	\$5,172.52
	Engineer III	80.00	38.13	3,050.40	4,468.23			\$1,090.20	\$8,608.83
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
Coordination with LCDOT & IDOT	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I	80.00	30.00	2,400.00	3,515.52		\$ 60	\$857.75	\$6,833.27
	Engineer VI	12.00	70.00	840.00	1,230.43		\$137.50	\$300.21	\$2,508.14
	Engineer IV	12.00	45.82	549.84	805.41			\$196.51	\$1,551.76
	Engineer III	8.00	38.13	305.04	446.82			\$109.02	\$860.88
Consultation	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
	Engineer VI	12.00	70.00	840.00	1,230.43			\$300.21	\$2,370.64
	Engineer IV	12.00	45.82	549.84	805.41			\$196.51	\$1,551.76
Totals	Engineer III		38.13	0.00	0.00			\$0.00	\$0.00
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
				0.00	0.00			\$0.00	\$0.00
Totals		348.00	-	14,504.56	21,246.28	\$ -	\$197.50	\$5,183.87	\$41,132.21

EXHIBIT 2B

DETAILED SUMMARY OF DIRECT COSTS

CONSULTANT: CHRISTOPHER B. BURKE ENGINEERING LTD.
ROUTE: APTAKISIC ROAD
PROJECT: CMM-9003(926)
SECTION: 11-00088-19-TL
COUNTY: LAKE
JOB NO.: D-91-183-12

INHOUSE DIRECT COSTS

TRAVEL
5 50 \$0.55 \$137.50
of trips x # of miles/trip x mileage rate Cost

- OR -
\$0.00
of days x mileage rate/day Cost

SURVEY SUPPLIES _____

PRINTING (breakdown in following manner: # of sets x # of prints/set x rate)

Blueprint _____

Reports: 10 x 50 x .12 \$60.00

OUTSIDE DIRECT COSTS

PRINTING

Mylars: _____

Bond: _____

Reports: _____

**Attachment 3A: Scope of Services
Cedar Lake Road Interconnect
Rollins Road to South Rosedale Court
Section No.: 12-00103-17-TL
Lake County, Illinois
March 27, 2012**

UNDERSTANDING OF THE ASSIGNMENT

The project will consist of preparing traffic signal modernization and signal system interconnect plans for Cedar Lake Road between Rollins Road and South Rosedale Court. This will allow the existing three signal system between Hart Road and South Rosedale Court to tie into the Lake County Passage network. The proposed traffic signal interconnect to be installed will consist of approximately 1.15 miles of new fiber optic cable and conduit.

The existing traffic signal installation at Cedar Lake Road and Clarendon Drive will be modernized (replaced) as part of the overall improvements. The remaining traffic signal installations will be modified to accommodate the proposed interconnect and system improvements. These modifications will be performed at the following signalized locations on Cedar Lake Road: Rollins Road, South Rosedale Court, Washington Street and Hart Road.

The Illinois Department of Transportation will administer the project due to the CMAQ funding. The consultant will be responsible for coordinating work activities with the County and IDOT including plan submittals and reviews.

The plans will consist of traffic signal modifications, modernization and signal system interconnect plans in accordance with County and IDOT design criteria. The scope of work will include preparation of BLR form 19100 and special waste screening as part of Phase 1 engineering. Based on the results of the special waste screening a Preliminary Environmental Site Assessment (PESA) and Preliminary Site Investigation (PSI) will be conducted and the results summarized in a technical memorandum.

A topographic survey will be performed for Cedar Lake Road at Clarendon Drive. The County will provide the existing traffic signal plans, interconnect plans, and roadway plans for the project corridor to be used in preparing the base sheets for the project. The consultant shall be responsible for field verifying the accuracy of the plan information.

SECTION I - SCOPE OF BASIC SERVICES

Task 1 – Data Collection and Topographic Survey: This task will include collecting existing roadway plans, traffic signal plans and aerial photography and other related data from LCDOT for the Cedar Lake Road corridor. A limited horizontal topographic survey will be conducted at the intersection of Cedar Lake Road and Clarendon Drive. This information will be used as the base for the traffic signal modernization plans. This data will be augmented by a field reconnaissance of the intersections to verify existing conditions. This task will also include special waste screening of the project corridor.

The survey will be used as a base map for design purposes and will include are the following survey tasks:

1. Horizontal Control: Utilizing state plane coordinates (NAD '83, Illinois East Zone, 1997 Adjustment); CBBEL will establish recoverable primary control.
2. Research at the Cook County Recorder's Office.
3. Field recon and survey to locate existing monumentation and boundary evidence.
4. Analyze Record and Field Data necessary to compute approximate Right-of-Way throughout project limits.
5. All above ground utilities including, but not limited to: water, sanitary sewer, storm sewer, telephone, electric, cable and gas, etc. Identify type, invert and rim elevations as well as pipe sizes.
6. Existing hardscape improvements located in the project limits including curbs, light fixtures, walks, street signs, fencing and gates, approximate R-O-W, and buildings (if any).
7. Office calculations and plotting of field and record data.
8. Drafting of an Existing Conditions Plan at a scale of 1"=20'.

Task 2 – Traffic Signal Improvement Plans – Cedar Lake Road: Rollins Road to South Rosedale Court

Task 2.1 - Base Sheet Preparation: Prepare base sheets at a scale of 1" = 20' for the traffic signal modernization plans and 1"= 50' for the traffic signal interconnect system using the existing traffic signal plan information to be provided by the County. This information shall be supplemented by a field reconnaissance of the existing traffic signal installations to verify existing conditions.

Task 2.2 - Traffic Signal Improvement Plans: Prepare the traffic signal improvement plans using the base sheet information from Task 1.1. The traffic signal plans shall be developed based on County standards current at the time said plans are prepared. The traffic signal modernization plans shall include the following:

- a. Temporary Traffic Signal and Removal Plans
- b. Preliminary, pre-final and final traffic signal modification plans.
- c. Cable plan and schedule of quantities.
- d. Phase Designation Diagrams.
- e. Video or Loop detector detail and general notes.
- f. Traffic signal interconnect plan.
- g. Technical specifications employing County and IDOT special provisions to the extent that they apply will be assembled.

Task 2.3 – Supplemental Data: Prepare a project cost estimate and estimate of time for construction in accordance with IDOT BLR requirements.

Task 3 - Coordination with County and IDOT: The consultant shall be responsible for meeting with representatives from the County and IDOT to review the proposed scope of services and to determine specific design criteria required by the County and IDOT for proposed project. In addition, the consultant will review with the County and IDOT design review comments and project letting requirements. In addition, CBBEL will submit to the utility companies a set of pre-final and final engineering plans to verify or identify potential conflicts. CBBEL will notify the County of potential conflicts.

The PESA and PSI will be performed under this task as part of the overall coordination effort. This will provide sign off of the project to IDOT with respect to environmental conditions and allow for provisions in the design plans to address removal of hazardous waste, if any.

Task 4 - Consultation During the Design Process: The consultant will meet with the County to advise as to the status of the project and concerns regarding specific design elements. The meetings will also serve to clarify specific design requirements that the County, IDOT, and other local agencies may want incorporated into the plans.

Exhibit 3A - Preliminary Engineering

Consultant: Christopher B. Burke Engineering, Ltd.
 Route: Cedar Lake Road
 Local Agency: Lake County Division of Transportation
 (Municipality/Township/County)
 Section: 12-00103-17-TL
 Project: _____
 Job No.: _____

* Firm's approved rates on file with IDOT'S Bureau of Accounting and Auditing:	
IDOT Approved Overhead Rate:	146.48%
Project Overhead Rate:	_____
Complexity Factor =	0.0
Calendar Days	365.0

Method of Compensation:

Cost Plus Fixed Fee 1 14.5%[DL +R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL +R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]
 Specific Rate
 Lump Sum

Cost Estimate of Consultant's Services in Dollars

Element of Work	Employee Classification	Man-Hours	Payroll Rates	Payroll Costs (DL)	Overhead	Services by Others	Direct Costs	Profit	Total
Data Collection & Topo Survey & Environmental	Engineer VI	8.00	70.00	560.00	820.29		\$ 2,650	\$200.14	\$4,230.43
	Engineer IV	12.00	45.82	549.84	805.41			\$196.51	\$1,551.76
	Engineer III	24.00	38.13	915.12	1,340.47			\$327.06	\$2,582.65
	Engineering Tech IV	8.00	48.50	388.00	568.34			\$138.67	\$1,095.01
	CAD II	24.00	40.50	972.00	1,423.79			\$347.39	\$2,743.17
	CAD I	40.00	30.00	1,200.00	1,757.76			\$428.88	\$3,386.64
	Survey 1	80.00	40.00	3,200.00	0.00		\$412.50	\$464.00	\$4,076.50
Traffic Signal Improvement Plans	Engineer VI	40.00	70.00	2,800.00	4,101.44			\$1,000.71	\$7,902.15
	Engineer IV	40.00	45.82	1,832.80	2,684.69			\$655.04	\$5,172.52
	Engineer III	80.00	38.13	3,050.40	4,468.23			\$1,090.20	\$8,608.83
	Engineering Tech IV	60.00	48.50	2,910.00	4,262.57			\$1,040.02	\$8,212.59
	CAD II	40.00	40.50	1,620.00	2,372.98			\$578.98	\$4,571.96
	CAD I	100.00	30.00	3,000.00	4,394.40		\$ 2,340	\$1,072.19	\$10,806.59
Coordination with LCDDOT & IDOT	Engineer VI	16.00	70.00	1,120.00	1,640.58		\$ 6,450	\$400.28	\$9,610.86
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
Consultation	Engineer VI	16.00	70.00	1,120.00	1,640.58			\$400.28	\$3,160.86
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III		38.13	0.00	0.00			\$0.00	\$0.00
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
				0.00	0.00			\$0.00	\$0.00
Totals		636.00	-	27,314.48	35,322.89	\$ -	\$11,852.50	\$9,082.42	\$83,572.29

EXHIBIT 3B

DETAILED SUMMARY OF DIRECT COSTS

CONSULTANT: CHRISTOPHER B. BURKE ENGINEERING LTD.
ROUTE: CEDAR LAKE ROAD
PROJECT: _____
SECTION: 12-00103-17-TL
COUNTY: LAKE
JOB NO.: _____

INHOUSE DIRECT COSTS

TRAVEL
15 50 \$0.55 \$412.50
of trips x # of miles/trip x mileage rate Cost
- OR -
_____ \$0.00
of days x mileage rate/day Cost

SURVEY SUPPLIES _____

PRINTING (breakdown in following manner: # of sets x # of prints/set x rate)

Blueprint _____

Reports: _____

OUTSIDE DIRECT COSTS

PRINTING

Mylars: 2 X 30 X 24 \$1,440.00

Bond: 30 X 15 X 2 (24 X 36) \$900.00

Reports: _____

ENVIRONMENTAL

SPECIAL WASTE SCREENING \$2,650.00
PESA \$3,000.00
PSI \$3,450.00

**Attachment 4A: Scope of Services
IL Route 83 Interconnect
North Avenue to Millstone Drive
Section No.: 12-00999-25-TL
Lake County, Illinois
March 27, 2012**

UNDERSTANDING OF THE ASSIGNMENT

The project will consist of preparing traffic signal system interconnect plans for IL Route 83 between North Avenue and Millstone Drive. This will provide connectivity into the Passage system for IL Route 83 from North Avenue to Millstone Drive and also IL Route 132 east of IL Route 83. This will connect the existing four signal system between North Avenue and IL Route 173 into 7 existing free standing signalized intersections between Grass Lake Road and Millstone Drive. The proposed traffic signal interconnect to be installed will consist of approximately 6 miles of new fiber optic cable and conduit.

The existing traffic signal installations on IL Route 83 within the limits of the project are relatively new. Therefore, the improvements will be limited to the traffic signal interconnect and modifications to the existing signal installations, including the addition of PTZ cameras at locations to be determined by LCDOT. These modifications will be performed at the following signalized locations on IL Route 83: IL Route 173, Grass Lake Road, Petite Lake Road, IL Route 132, Engel Drive, Monaville Road and Millstone Drive.

The Illinois Department of Transportation will administer the project due to the CMAQ funding. The consultant will be responsible for coordinating work activities with the County and IDOT including plan submittals and reviews.

The plans will consist of traffic signal modifications, modernization and signal system interconnect plans in accordance with County and IDOT design criteria. The scope of work will include preparation of BLR form 19100 and an Environmental Survey Request (ESR) form and submittal to IDOT as part of the CE 1 process.

. A topographic survey will not be performed for the IL Route 83 corridor. CBBEL will obtain existing traffic signal plans, interconnect plans, and roadway plans from IDOT and LCDOT for the project corridor to be used in preparing the base sheets for the project. The consultant shall be responsible for field verifying the accuracy of the plan information.

SECTION I - SCOPE OF BASIC SERVICES

Task 1 – Data Collection and Topographic Survey: This task will include collecting existing roadway plans, traffic signal plans, interconnect plans and aerial photography and other related data from IDOT and LCDOT for the IL Route 83 corridor. This information will be supplemented by a field reconnaissance of the entire corridor and of each intersection to verify existing conditions.

Task 2 – Traffic Signal Improvement Plans – IL Route 83: North Avenue to Millstone Drive

Task 2.1 - Base Sheet Preparation: Prepare base sheets at a scale of 1" = 50' for the traffic signal improvement plans using the existing traffic signal plan information obtained in Task 1.

Task 2.2 - Traffic Signal Improvement Plans: Prepare the traffic signal improvement plans using the base sheet information from Task 1. The traffic signal plans shall be developed based on County standards current at the time said plans are prepared. The traffic signal modernization plans shall include the following:

- a. Preliminary, pre-final and final traffic signal modification plans.
- b. Cable plan and schedule of quantities.
- c. Phase Designation Diagrams.
- d. Video or Loop detector detail and general notes.
- e. Traffic signal interconnect plan.
- f. Technical specifications employing County and IDOT special provisions to the extent that they apply will be assembled.

Task 2.3 – Supplemental Data: Prepare a project cost estimate and estimate of time for construction in accordance with IDOT BLR requirements.

Task 3 - Coordination with County and IDOT: The consultant shall be responsible for meeting with representatives from the County and IDOT to review the proposed scope of services and to determine specific design criteria required by the County and IDOT for proposed project. In addition, the consultant will review with the County and IDOT design review comments and project letting requirements. In addition, CBBEL will submit to the utility companies a set of pre-final and final engineering plans to verify or identify potential conflicts. CBBEL will notify the County of potential conflicts.

Task 4 - Consultation During the Design Process: The consultant will meet with the County to advise as to the status of the project and concerns regarding specific design elements. The meetings will also serve to clarify specific design requirements that the County, IDOT, and other local agencies may want incorporated into the plans.

Exhibit 4A - Preliminary Engineering

Consultant: Christopher B. Burke Engineering, Ltd.
 Route: IL Route 83
 Local Agency: Lake County Division of Transportation
 (Municipality/Township/County)
 Section: 12-00999-25-TL
 Project: _____
 Job No.: _____

* Firm's approved rates on file with IDOT'S Bureau of Accounting and Auditing:	
IDOT Approved Overhead Rate:	146.48%
Project Overhead Rate:	_____
Complexity Factor =	0.0
Calendar Days	365.0

Method of Compensation:

- Cost Plus Fixed Fee 1 14.5%[DL +R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL +R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]
 Specific Rate
 Lump Sum

Cost Estimate of Consultant's Services in Dollars

Element of Work	Employee Classification	Man-Hours	Payroll Rates	Payroll Costs (DL)	Overhead	Services by Others	Direct Costs	Profit	Total
Data Collection	Engineer VI	16.00	70.00	1,120.00	1,640.58		\$ 275	\$400.28	\$3,435.86
	Engineer IV	86.00	45.82	3,940.52	5,772.07			\$1,408.33	\$11,120.92
	Engineer III	32.00	38.13	1,220.16	1,787.29			\$436.08	\$3,443.53
	Engineering Tech IV	32.00	48.50	1,552.00	2,273.37			\$554.68	\$4,380.05
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
Traffic Signal Improvement Plans	Engineer VI	80.00	70.00	5,600.00	8,202.88			\$2,001.42	\$15,804.30
	Engineer IV	120.00	45.82	5,498.40	8,054.06			\$1,965.11	\$15,517.56
	Engineer III	160.00	38.13	6,100.80	8,936.45			\$2,180.40	\$17,217.65
	Engineering Tech IV	160.00	48.50	7,760.00	11,366.85			\$2,773.39	\$21,900.24
	CAD II	240.00	40.50	9,720.00	14,237.86		\$ 1,800	\$3,473.89	\$29,231.75
	CAD I	480.00	30.00	14,400.00	21,093.12		\$ 2,880	\$5,146.50	\$43,519.62
Coordination with LCDOT & IDOT	Engineer VI	12.00	70.00	840.00	1,230.43			\$300.21	\$2,370.64
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
Consultation	Engineer VI	16.00	70.00	1,120.00	1,640.58			\$400.28	\$3,160.86
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III		38.13	0.00	0.00			\$0.00	\$0.00
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
				0.00	0.00			\$0.00	\$0.00
Totals		1,482.00	-	60,948.20	89,276.92	\$ -	\$ 4,955	\$21,782.64	\$176,962.77

EXHIBIT 4B

DETAILED SUMMARY OF DIRECT COSTS

CONSULTANT: CHRISTOPHER B. BURKE ENGINEERING LTD.
ROUTE: IL Route 83
PROJECT: _____
SECTION: 12-00999-25-TL
COUNTY: LAKE
JOB NO.: _____

INHOUSE DIRECT COSTS

TRAVEL			
10	50	\$0.55	<u>\$275.00</u>
# of trips x # of miles/trip x mileage rate			Cost
- OR -			
_____			<u>\$0.00</u>
# of days x mileage rate/day			Cost
SURVEY SUPPLIES			_____
PRINTING (breakdown in following manner: # of sets x # of prints/set x rate)			
Blueprint	_____		_____
Reports:	_____		_____

OUTSIDE DIRECT COSTS

PRINTING			
Mylars:	<u>2 X 60 X 24</u>		<u>\$2,880.00</u>
Bond:	<u>60 X 15 X 2 (24 X 36)</u>		<u>\$1,800.00</u>
Reports:	_____		_____

**Attachment 5A: Scope of Services
US Route 12 (Rand Road) Interconnect
IL Route 176 to Miller Road
Section No.: 12-00999-26-TL
Lake County, Illinois
March 27, 2012**

UNDERSTANDING OF THE ASSIGNMENT

The project will consist of preparing traffic signal modernization and signal system interconnect plans for US Route 12 between IL Route 176 and Miller Road. This will allow the existing four signal system on IL Route 176 and the free standing signals in this section of US 12 tie into the Lake County Passage network. The proposed traffic signal interconnect to be installed will consist of approximately 4.35 miles of new fiber optic cable and conduit.

The existing traffic signal installations at the US Route 12 NB and SB ramps at IL Route 176 will be modernized (replaced) as part of the overall improvements. The remaining traffic signal installations will be modified to accommodate the proposed interconnect and system improvements. These modifications will be performed at the following signalized locations on US Route 12: Main Street, Old McHenry Road and Miller Road. In addition, the traffic signal installations on IL Route 176 at Larkdale Row and at the shopping center entrance will be modified. The modifications will also include the addition of PTZ cameras at locations to be determined by LCDOT

The Illinois Department of Transportation will administer the project due to the CMAQ funding. The consultant will be responsible for coordinating work activities with the County and IDOT including plan submittals and reviews.

The plans will consist of traffic signal modifications, modernization and signal system interconnect plans in accordance with County and IDOT design criteria. The scope of work will include preparation of BLR form 19100 and an Environmental Survey Request (ESR) form and submittal to IDOT as part of the CE 1 process.

A topographic survey will be performed for the US Route 12 NB and SB ramps at IL Route 176. CBBEL will obtain existing traffic signal plans, interconnect plans, and roadway plans from IDOT and LCDOT for the project corridor to be used in preparing the base sheets for the traffic signal modifications and interconnect. The consultant shall be responsible for field verifying the accuracy of the plan information.

SECTION I - SCOPE OF BASIC SERVICES

Task 1 – Data Collection and Topographic Survey: This task will include collecting existing roadway plans, traffic signal plans and aerial photography and other related data from IDOT and LCDOT for the US Route 12 and IL Route 176 within the limits of the project. A limited horizontal topographic survey will be conducted along IL Route 176 at US Route 12 NB and SB ramps. This information will be used as the base for the traffic signal modernization plans. This data will be augmented by a field reconnaissance of the intersections to verify existing conditions

The survey will be used as a base map for design purposes and will include are the following survey tasks:

1. Horizontal Control: Utilizing state plane coordinates (NAD '83, Illinois East Zone, 1997 Adjustment); CBBEL will establish recoverable primary control.
2. Research at the Cook County Recorder's Office.
3. Field recon and survey to locate existing monumentation and boundary evidence.
4. Analyze Record and Field Data necessary to compute approximate Right-of-Way throughout project limits.
5. All above ground utilities including, but not limited to: water, sanitary sewer, storm sewer, telephone, electric, cable and gas, etc. Identify type, invert and rim elevations as well as pipe sizes.
6. Existing hardscape improvements located in the project limits including curbs, light fixtures, walks, street signs, fencing and gates, approximate R-O-W, and buildings (if any).
7. Office calculations and plotting of field and record data.
8. Drafting of an Existing Conditions Plan at a scale of 1"=20'.

Task 2 – Traffic Signal Improvement Plans – US Route 12: IL Route 176 to Miller Road

Task 2.1 - Base Sheet Preparation: Prepare base sheets at a scale of 1" = 20' for the traffic signal modification/modernization plans and 1"= 50' for the traffic signal interconnect system using the existing information collected in Task 1. This information shall be supplemented by a field reconnaissance of the existing traffic signal installations to verify existing conditions.

Task 2.2 - Traffic Signal Improvement Plans: Prepare the traffic signal improvement plans using the base sheet information from Task 1.1. The traffic signal plans shall be developed based on County standards current at the time said plans are prepared. The traffic signal modernization plans shall include the following:

- a. Temporary Traffic Signal and Removal Plans
- b. Preliminary, pre-final and final traffic signal improvement plans.
- c. Cable plan and schedule of quantities.
- d. Phase Designation Diagrams.
- e. Video or Loop detector detail and general notes.
- f. Traffic signal interconnect plan.
- g. PTZ camera details.
- h. Technical specifications employing County and IDOT special provisions to the extent that they apply will be assembled.

Task 2.3 – Supplemental Data: Prepare a project cost estimate and estimate of time for construction in accordance with IDOT BLR requirements.

Task 3 - Coordination with County and IDOT: The consultant shall be responsible for meeting with representatives from the County and IDOT to review the proposed scope of services and to determine specific design criteria required by the County and IDOT for proposed project. In addition, the consultant will review with the County and IDOT design review comments and project letting requirements. In addition, CBBEL will submit to the utility companies a set of pre-final and final engineering plans to verify or identify potential conflicts. CBBEL will notify the County of potential conflicts.

Task 4 - Consultation During the Design Process: The consultant will meet with the County to advise as to the status of the project and concerns regarding specific design elements. The meetings will also serve to clarify specific design requirements that the County, IDOT, and other local agencies may want incorporated into the plans.

Exhibit 5A - Preliminary Engineering

Consultant: Christopher B. Burke Engineering, Ltd.
 Route: US Route 12
 Local Agency: Lake County Division of Transportation
 (Municipality/Township/County)
 Section: 12-00999-26-TL
 Project: _____
 Job No.: _____

* Firm's approved rates on file with IDOT'S Bureau of Accounting and Auditing:	
IDOT Approved Overhead Rate:	146.48%
Project Overhead Rate:	_____
Complexity Factor =	0.0
Calendar Days	365.0

Method of Compensation:
 Cost Plus Fixed Fee 1 14.5%[DL +R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL +R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]
 Specific Rate
 Lump Sum

Cost Estimate of Consultant's Services in Dollars

Element of Work	Employee Classification	Man-Hours	Payroll Rates	Payroll Costs (DL)	Overhead	Services by Others	Direct Costs	Profit	Total
Data Collection & Topographic Survey	Engineer VI	8.00	70.00	560.00	820.29		\$ 275	\$200.14	\$1,855.43
	Engineer IV	71.00	45.82	3,253.22	4,765.32			\$1,162.69	\$9,181.22
	Engineer III	32.00	38.13	1,220.16	1,787.29			\$436.08	\$3,443.53
	Engineering Tech IV	32.00	48.50	1,552.00	2,273.37			\$554.68	\$4,380.05
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I	100.00	30.00	3,000.00	4,394.40			\$1,072.19	\$8,466.59
Traffic Signal Improvement Plans	Survey I	200.00	40.00	8,000.00	0.00			\$1,160.00	\$9,160.00
	Engineer VI	40.00	70.00	2,800.00	4,101.44			\$1,000.71	\$7,902.15
	Engineer IV	60.00	45.82	2,749.20	4,027.03			\$982.55	\$7,758.78
	Engineer III	80.00	38.13	3,050.40	4,468.23			\$1,090.20	\$8,608.83
	Engineering Tech IV	80.00	48.50	3,880.00	5,683.42			\$1,386.70	\$10,950.12
	CAD II	120.00	40.50	4,860.00	7,118.93		\$ 1,500	\$1,736.94	\$15,215.87
Coordination with LCDOT & IDOT	CAD I	240.00	30.00	7,200.00	10,546.56		\$ 2,400	\$2,573.25	\$22,719.81
	Engineer VI	12.00	70.00	840.00	1,230.43			\$300.21	\$2,370.64
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
Consultation	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
	Engineer VI	16.00	70.00	1,120.00	1,640.58			\$400.28	\$3,160.86
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III		38.13	0.00	0.00			\$0.00	\$0.00
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
Totals		1,139.00	-	46,161.30	55,898.67	\$ -	\$ 4,175	\$14,798.70	\$121,033.67

EXHIBIT 5B

DETAILED SUMMARY OF DIRECT COSTS

CONSULTANT: CHRISTOPHER B. BURKE ENGINEERING LTD.
ROUTE: US Route 12
PROJECT: _____
SECTION: 12-00999-26-TL
COUNTY: LAKE
JOB NO.: _____

INHOUSE DIRECT COSTS

TRAVEL		
10	50	\$0.55
<hr/>		
# of trips x	# of miles/trip x	mileage rate
	- OR -	
<hr/>		
# of days x	mileage rate/day	
<hr/>		
SURVEY SUPPLIES		
<hr/>		
PRINTING (breakdown in following manner: # of sets x # of prints/set x rate)		
Blueprint	_____	_____
Reports:	_____	_____

OUTSIDE DIRECT COSTS

PRINTING		
Mylars:	<u>2 X 50 X 24</u>	<u>\$2,400.00</u>
Bond:	<u>50 X 15 X 2 (24 X 36)</u>	<u>\$1,500.00</u>
Reports:	_____	_____

**Attachment 6A: Scope of Services
IL 120 Interconnect
IL Route 134 to US 45
Section No.: 12-00999-27-TL
Lake County, Illinois
March 27 2012**

UNDERSTANDING OF THE ASSIGNMENT

The project will consist of preparing traffic signal modernization and signal system interconnect plans for IL Route 120 between IL Route 134 and US 45. This will allow the existing free standing signals in this section of IL Route 120 to tie into the Lake County Passage network. The proposed traffic signal interconnect to be installed will consist of approximately 3.48 miles of new fiber optic cable and conduit.

The existing traffic signal installations at the intersections of IL Route 120 & IL Route 134, IL Route 120 & Hainesville Road and IL Route 120 & Lake Street will be modernized (replaced) as part of the overall improvements. The remaining traffic signal installations will be modified to accommodate the proposed interconnect and system improvements. These modifications will be performed at the following signalized locations on IL Route 120: Alleghany Road, IL Route 83, Atkinson Road and US Route 45. The modifications will also include the addition of PTZ cameras at locations to be determined by LCDOT

The Illinois Department of Transportation will administer the project due to the CMAQ funding. The consultant will be responsible for coordinating work activities with the County and IDOT including plan submittals and reviews.

The plans will consist of traffic signal modifications, modernization and signal system interconnect plans in accordance with County and IDOT design criteria. The scope of work will include preparation of BLR form 19100 and an Environmental Survey Request (ESR) form and submittal to IDOT as part of the CE 1 process.

Topographic surveys will be performed for IL Route 134, Hainesville Road and Lake Street at their intersections with IL Route 120. CBBEL will obtain existing traffic signal plans, interconnect plans, and roadway plans from IDOT and LCDOT for the project corridor to be used in preparing the base sheets for the traffic signal modifications and interconnect. The consultant shall be responsible for field verifying the accuracy of the plan information.

SECTION I - SCOPE OF BASIC SERVICES

Task 1 – Data Collection and Topographic Survey: This task will include collecting existing roadway plans, traffic signal plans and aerial photography and other related data from IDOT and LCDOT for the IL Route 120 within the limits of the project. Limited horizontal topographic surveys will be conducted for the intersections of IL Route 120 & IL Route 134, IL Route 120 & Hainesville Road and IL Route 120 & Lake Street.. This information will be used as the base for the traffic signal modernization plans. This data will be augmented by a field reconnaissance of the intersections to verify existing conditions

The survey will be used as a base map for design purposes and will include are the following survey tasks:

1. Horizontal Control: Utilizing state plane coordinates (NAD '83, Illinois East Zone, 1997 Adjustment); CBBEL will establish recoverable primary control.
2. Research at the Cook County Recorder's Office.
3. Field recon and survey to locate existing monumentation and boundary evidence.
4. Analyze Record and Field Data necessary to compute approximate Right-of-Way throughout project limits.
5. All above ground utilities including, but not limited to: water, sanitary sewer, storm sewer, telephone, electric, cable and gas, etc. Identify type, invert and rim elevations as well as pipe sizes.
6. Existing hardscape improvements located in the project limits including curbs, light fixtures, walks, street signs, fencing and gates, approximate R-O-W, and buildings (if any).
7. Office calculations and plotting of field and record data.
8. Drafting of an Existing Conditions Plan at a scale of 1"=20'.

Task 2 – Traffic Signal Improvement Plans – IL Route 120: IL Route 134 to US Route 45

Task 2.1 - Base Sheet Preparation: Prepare base sheets at a scale of 1" = 20' for the traffic signal modification/modernization plans and 1"= 50' for the traffic signal interconnect system using the existing information collected in Task 1. This information shall be supplemented by a field reconnaissance of the existing traffic signal installations to verify existing conditions.

Task 2.2 - Traffic Signal Improvement Plans: Prepare the traffic signal improvement plans using the base sheet information from Task 1.1. The traffic signal plans shall be developed based on County standards current at the time said plans are prepared. The traffic signal modernization plans shall include the following:

- a. Temporary Traffic Signal and Removal Plans
- b. Preliminary, pre-final and final traffic signal improvement plans.
- c. Cable plan and schedule of quantities.
- d. Phase Designation Diagrams.
- e. Video or Loop detector detail and general notes.
- f. Traffic signal interconnect plan.
- g. PTZ camera details.
- h. Technical specifications employing County and IDOT special provisions to the extent that they apply will be assembled.

Task 2.3 – Supplemental Data: Prepare a project cost estimate and estimate of time for construction in accordance with IDOT BLR requirements.

Task 3 - Coordination with County and IDOT: The consultant shall be responsible for meeting with representatives from the County and IDOT to review the proposed scope of services and to determine specific design criteria required by the County and IDOT for proposed project. In addition, the consultant will review with the County and IDOT design review comments and project letting requirements. In addition, CBBEL will submit to the utility companies a set of pre-final and final engineering plans to verify or identify potential conflicts. CBBEL will notify the County of potential conflicts.

Task 4 - Consultation During the Design Process: The consultant will meet with the County to advise as to the status of the project and concerns regarding specific design elements. The meetings will also serve to clarify specific design requirements that the County, IDOT, and other local agencies may want incorporated into the plans.

Exhibit 6A - Preliminary Engineering

Consultant: Christopher B. Burke Engineering, Ltd.
 Route: IL Route 120
 Local Agency: Lake County Division of Transportation
 (Municipality/Township/County)
 Section: 12-00999-27-TL
 Project: _____
 Job No.: _____

* Firm's approved rates on file with IDOT'S Bureau of Accounting and Auditing:	
IDOT Approved Overhead Rate:	146.48%
Project Overhead Rate:	_____
Complexity Factor =	0.0
Calendar Days	365.0

Method of Compensation:

Cost Plus Fixed Fee 1 14.5%[DL +R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL +R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]
 Specific Rate
 Lump Sum

Cost Estimate of Consultant's Services in Dollars

Element of Work	Employee Classification	Man-Hours	Payroll Rates	Payroll Costs (DL)	Overhead	Services by Others	Direct Costs	Profit	Total
Data Collection & Topographic Survey	Engineer VI	8.00	70.00	560.00	820.29			\$200.14	\$1,580.43
	Engineer IV	76.00	45.82	3,482.32	5,100.90			\$1,244.57	\$9,827.79
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV	8.00	48.50	388.00	568.34			\$138.67	\$1,095.01
	CAD II	40.00	40.50	1,620.00	2,372.98			\$578.98	\$4,571.96
	CAD I	80.00	30.00	2,400.00	3,515.52			\$857.75	\$6,773.27
	Survey I	360.00	40.00	14,400.00	0.00		\$412.50	\$2,088.00	\$16,900.50
Traffic Signal Improvement Plans	Engineer VI	40.00	70.00	2,800.00	4,101.44			\$1,000.71	\$7,902.15
	Engineer IV	80.00	45.82	3,665.60	5,369.37			\$1,310.07	\$10,345.04
	Engineer III	100.00	38.13	3,813.00	5,585.28			\$1,362.75	\$10,761.03
	Engineering Tech IV	120.00	48.50	5,820.00	8,525.14			\$2,080.04	\$16,425.18
	CAD II	120.00	40.50	4,860.00	7,118.93		\$ 1,200	\$1,736.94	\$14,915.87
	CAD I	240.00	30.00	7,200.00	10,546.56		\$ 1,920	\$2,573.25	\$22,239.81
Coordination with LCDOT & IDOT	Engineer VI	12.00	70.00	840.00	1,230.43			\$300.21	\$2,370.64
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III	16.00	38.13	610.08	893.65			\$218.04	\$1,721.77
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
Consultation	Engineer VI	16.00	70.00	1,120.00	1,640.58			\$400.28	\$3,160.86
	Engineer IV	16.00	45.82	733.12	1,073.87			\$262.01	\$2,069.01
	Engineer III		38.13	0.00	0.00			\$0.00	\$0.00
	Engineering Tech IV		48.50	0.00	0.00			\$0.00	\$0.00
	CAD II		40.50	0.00	0.00			\$0.00	\$0.00
	CAD I		30.00	0.00	0.00			\$0.00	\$0.00
				0.00	0.00			\$0.00	\$0.00
Totals		1,364.00	-	55,655.32	60,430.79	\$ -	\$3,532.50	\$16,832.49	\$136,451.10

EXHIBIT 6B

DETAILED SUMMARY OF DIRECT COSTS

CONSULTANT: CHRISTOPHER B. BURKE ENGINEERING LTD.
ROUTE: IL Route 120
PROJECT:
SECTION: 12-00999-27-TL
COUNTY: LAKE
JOB NO.:

INHOUSE DIRECT COSTS

TRAVEL
15 50 \$0.55 \$412.50
of trips x # of miles/trip x mileage rate Cost

- OR -
of days x mileage rate/day \$0.00
Cost

SURVEY SUPPLIES

PRINTING (breakdown in following manner: # of sets x # of prints/set x rate)

Blueprint

Reports:

OUTSIDE DIRECT COSTS

PRINTING

Mylars: 2 X 40 X 24 \$1,920.00

Bond: 40 X 15 X 2 (24 X 36) \$1,200.00

Reports:

EXHIBIT 7

COST SUMMARY

LCDOT CONGESTION MITIGATION AND AIR QUALITY (CMAQ) DESIGN ENGINEERING

Christopher B. Burke Engineering, LTD.

March 27, 2012

Project Number	Section No.	Project Name	Summary of Project Costs
1	11-00999-23-TL	Gilmer Road Adaptive Control	\$94,496.89
2	11-00088-19-TL	Apatkisic Road Adaptive Control	\$41,132.21
3	12-00103-17-TL	Cedar Lake Road - S. Rosedale to Rollins Road	\$83,572.29
4	12-00999-25-TL	IL Route 83 - Millstone Drive to IL Route 173	\$176,962.77
5	12-00999-26-TL	US Route 12 - Miller to 176	\$121,033.67
6	12-00999-27-TL	IL Route 120: IL Route 134 to US 45	\$136,451.10
Total Not to Exceed Cost			\$653,648.93