

Municipality	L O C A L A G E N C Y	 Illinois Department of Transportation	C O N S U L T A N T	Name Hampton, Lenzini and Renwick, Inc.
Township				Address 380 Shepard Drive
County Lake County – Division of Transportation		Preliminary Engineering Services Agreement For Non-Motor Fuel Tax Funds		City Elgin
Section 16-00075-14-SW				State Illinois

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 improvement of the above SECTION. Motor Fuel Tax Funds, allotted to the LA by the State of Illinois under the general supervision of the State Department of Transportation, hereinafter called the "DEPARTMENT", will be used entirely or in part to finance ENGINEERING services as described under AGREEMENT PROVISIONS.

Section Description

Name Non-Motorized Travel 2018 Grass Lake Road

Route 18 Length 1.08 Mi. 5700.00 FT (Structure No. _____)

Termini 1660 feet NW of Gelden Road to 650 feet east of Federal Parkway

Description:

This project is the design of a 5-foot-wide concrete sidewalk on the north side of Grass Lake Road to fill in sidewalk gaps identified in the County's Non-Motorized Travel Gap Study.

Agreement Provisions

The Engineer Agrees,

1. To perform or be responsible for the performance of the following engineering services for the LA, in connection with the proposed improvements herein before described, and checked below:
 - a. Make such detailed surveys as are necessary for the preparation of detailed roadway plans
 - b. Make stream and flood plain hydraulic surveys and gather high water data, and flood histories for the preparation of detailed bridge plans.
 - c. Make or cause to be made such soil surveys or subsurface investigations including borings and soil profiles and analyses thereof as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations are to be made in accordance with the current requirements of the DEPARTMENT.
 - d. 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.
 - e. Prepare Army Corps of Engineers Permit, **Lake County Stormwater Management Commission Permit**, Department of Natural Resources-Office of Water Resources Permit, Bridge waterway sketch, and/or Channel Change sketch, Utility plan and locations, and Railroad Crossing work agreements.
 - f. Prepare Preliminary Bridge design and Hydraulic Report, (including economic analysis of bridge or culvert types) and high water effects on roadway overflows and bridge approaches.
 - g. Make complete general and detailed plans, special provisions, proposals and estimates of cost and furnish the LA with **one (1) copy of each document in both hardcopy and electronic format**. Additional copies of any or all documents, if required, shall be furnished to the LA by the ENGINEER at the ENGINEER's actual cost for reproduction.
 - h. Furnish the LA with survey and drafts in **duplicate** of all necessary right-of-way dedications, construction easement and borrow pit and channel change agreements including prints of the corresponding plats and staking as required.
 - i. Assist the LA in the tabulation and interpretation of the contractors' proposals.

- j. Prepare the necessary environmental documents in accordance with the procedures adopted by the DEPARTMENT's Bureau of Local Roads & Streets.
 - k. Prepare the Project Development Report when required by the DEPARTMENT.
 - l. **Services as included and/or defined in the attached Scope of Services.**
2. That all reports, plans, plats and special provisions to be furnished by the ENGINEER pursuant to the AGREEMENT, will be in accordance with current standard specifications and policies **of the LA and** of the DEPARTMENT. It is being understood that all such reports, plats, plans and drafts shall, before being finally accepted, be subject to approval by the LA and the DEPARTMENT.
 3. To attend conferences at any reasonable time when requested to do so by representatives of the LA or the Department.
 4. In the event plans or surveys are found to be in error during construction of the SECTION and revisions of the plans or survey corrections are necessary, the ENGINEER agrees that the ENGINEER will perform such work without expense to the LA, even though final payment has been received by the ENGINEER. The ENGINEER shall give immediate attention to these changes so there will be a minimum delay to the CONTRACTOR.
 5. That basic survey notes and sketches, charts, computations and other data prepared or obtained by the ENGINEER pursuant to this AGREEMENT will be made available, upon request, to the LA or the DEPARTMENT without cost and without restriction or limitations as to their use.
 6. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will show the ENGINEER's professional seal where such is required by law.

The LA Agrees,

1. ~~To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT according to the following method indicated by a check mark:~~
 - a. A sum of money equal to _____ percent of the awarded contract cost of the proposed improvement as approved by the DEPARTMENT.
 - b. A sum of money equal to the percent of the awarded contract cost for the proposed improvement as approved by the DEPARTMENT based on the following schedule:

Awarded Cost	Schedule for Percentages Based on Awarded Contract Cost	Percentage Fees
Under \$50,000		_____ (see note)
		_____ %
		_____ %
		_____ %

Note: Not necessarily a percentage. Could use per diem, cost-plus or lump sum.

2. To pay for all services rendered in accordance with this AGREEMENT at the actual cost of performing such work plus *percent to cover profit, overhead and readiness to serve - "actual cost" being defined as material cost plus payrolls, insurance, social security and retirement deductions. Traveling and other out-of-pocket expenses will be reimbursed to the ENGINEER at the ENGINEER's actual cost. Subject to the approval of the LA, the ENGINEER may sublet all or part of the services provided in section 1 of the ENGINEER AGREES. If the ENGINEER sublets all or part of this work, the LA will pay the cost to the ENGINEER plus an additional service charge of up to five (5) percent.

"Cost to Engineer" to be verified by furnishing the LA and the DEPARTMENT copies of invoices from the party doing the work. The classifications of the employees used in the work should be consistent with the employee classifications for the services performed. If the personnel of the firm, including the Principal Engineer, perform routine services that should normally be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the work performed. ***See the CECs**

The Total ~~Not to Exceed~~ LUMP SUM Contract Amount shall be \$80,860.00

3. That payments due the ENGINEER for services rendered in accordance with this AGREEMENT will be made as soon as practicable after the services have been performed. ~~in accordance with the following schedule:~~

~~a. Upon completion of detailed plans, special provisions, proposals and estimate of cost - being the work required by section 1 of the ENGINEER AGREES - to the satisfaction of the LA and their approval by the DEPARTMENT, 90 percent of the total fee due under this AGREEMENT based on the approved estimate of cost.~~

~~b. Upon award of the contract for the improvement by the LA and its approval by the DEPARTMENT, 100 percent of the total fee due under the AGREEMENT based on the awarded contract cost, less any amounts paid under "a" above.~~

By Mutual agreement, partial payments, ~~not to exceed 90 percent of the amount earned~~, may be made from time to time as the work progresses.

4. That, should the improvement be abandoned at any time after the ENGINEER has performed any part of the services provided for in sections 1 and 3 of the ENGINEER AGREES and prior to the completion of such services, the LA shall reimburse the ENGINEER for the ENGINEER's actual costs plus ___ percent incurred up to the time the ENGINEER is notified in writing of such abandonment - "actual cost" being defined as in paragraph 2 of the LA AGREES.
5. That, should the LA require changes in any of the detailed plans, specifications or estimates except for those required pursuant to paragraph 4 of the ENGINEER AGREES, after they have been approved by the DEPARTMENT, the LA will pay the ENGINEER for such changes on the basis of actual cost plus ___ percent to cover profit, overhead and readiness to serve - "actual cost" being defined as in paragraph 2 of the LA AGREES. It is understood that "changes" as used in this paragraph shall in no way relieve the ENGINEER of the ENGINEER's responsibility to prepare a complete and adequate set of plans and specifications.

It is Mutually Agreed,

1. That any difference between the ENGINEER and the LA concerning their interpretation of the provisions of this Agreement shall be referred to a committee of disinterested parties consisting of one member appointed by the ENGINEER, one member appointed by the LA and a third member appointed by the two other members for disposition and that the committee's decision shall be final.
2. 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 surveys, permits, agreements, preliminary bridge design & hydraulic report, drawings, specifications, partial and completed estimates and data, if any from traffic studies and soil survey and subsurface investigations with the understanding that all such material becomes the property of the LA. The ENGINEER shall be paid for any services completed and any services partially completed in accordance with section 4 of the LA AGREES.
3. That if the contract for construction has not been awarded one year after the acceptance of the plans by the LA and their approval by the DEPARTMENT, the LA will pay the ENGINEER the balance of the engineering fee due to make 100 percent of the total fees due under this AGREEMENT, based on the estimate of cost as prepared by the ENGINEER and approved by the LA and the DEPARTMENT.
4. That the ENGINEER warrants that the ENGINEER has not employed or retained any company or person, other than a bona fide employee working solely for the ENGINEER, to solicit or secure this contract, and that the ENGINEER has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the ENGINEER, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this contract. For Breach or violation of this warranty the LA shall have the right to annul this contract without liability.

IN WITNESS WHEREOF, the parties have caused the AGREEMENT to be executed in quintuplicate counterparts, each of which shall be considered as an original by their duly authorized officers.

Executed by the LA:

County of Lake of the
(Municipality/Township/County)
ATTEST: State of Illinois, acting by and through its
County Board
By _____
Lake County Clerk
(Seal)

By _____
Title Chairman of the County Board
RECOMMENDED FOR EXECUTION

Shane E. Schneider, P.E.
Director of Transportation/County Engineer
Lake County

Executed by the ENGINEER:

Hampton, Lenzini and Renwick, Inc.
Engineering Firm
380 Shepard Drive
Street Address
Elgin, Illinois
City, State
ATTEST:
By D.P.H. Hill
Title PRES. / CEO
By Regina Lyon
Title Executive Vice President

Note: Five (5) Original Executed Contracts – (2) LCDOT; (2) IDOT District 1, Local Roads; (1) Consultant



September 25, 2017

Mr. Michael J. Burke
Design Engineer
Lake County Division of Transportation
600 West Winchester Road
Libertyville, Illinois 60048

**Re: 16-00075-14-SW Non-Motorized Travel 2018 Project
Survey, Appraisal and CCDD Services Proposal**

Dear Mr. Burke:

We have prepared this letter to serve as the agreement between the Lake County Division of Transportation (LCDOT) and our firm for services to provide topographic survey, plat of highway, appraisals, negotiations, and Clean Construction Demolition Debris (CCDD) compliance and permitting for Grass Lake Road, between Wedgewood Road and Beck Road in Lindenhurst Illinois.

1.) Topographic Survey Scope of Work

HLR will provide a topographic survey along the north side of Grass Lake Road for four areas as outlined in email dated September 21, 2017. HLR will follow topographic survey standards as outlined in the Lake County Division of Transportation Design Survey Standards. Limits of survey will be from the existing centerline to 10 feet beyond proposed right-of-way. HLR will use existing county benchmarks for the vertical control and Illinois State Plane East Coordinate system 1983 datum for the horizontal control on this project. The final deliverable will be a Microstation dgn. HLR will follow LCDOT CAD Standards.

Fee \$11,000.00

2.) Plat of Highway

HLR will provide a plat of highways for seven parcels as identified in the September 21, 2017 email. HLR will perform boundary surveys on all seven parcels and will also order title reports for all seven parcels. HLR will follow the Lake County Division of Transportation Plat guidelines for plats and legal descriptions. Final right-of-way will be monumented per plat guidelines.

Fee \$25,660.00

3.) Appraisals & Negotiations

HLR will provide appraisal and negotiation services as identified in the September 21, 2017 email. HLR will perform appraisals and negotiations for Parcels 1, 2, 3 and 7. Parcels 4, 5 and 6 appraisals and negotiations to be handled by Lake County Division of Transportation. Parcels 1 & 3 will use the NC-1 report format and Parcels 2 & 7 will use the NC-2 report format.

Fee \$33,000.00

4.) Clean Construction Demolition Debris (CCDD)

Task 1: Environmental Background Research and 662 Application

The initial step will include an environmental database search for all records pertaining to contamination within project limits. The information generated in the database search will be utilized to provide LCDOT with a map delineating potentially impacted properties (PIPs). The areas not adjacent to PIPs should be eligible for processing with a 662 application. The spoils generated from these sites will only require pH testing, which will be provided by HLR with a mobile testing device. HLR will coordinate with local CCDD facilities for 662 pre-approval. In the unlikely event that any PIPs are found on or adjacent to the site, LCDOT staff would be notified of the options

available for material disposal prior to commencing Task 2. If any areas are adjacent to PIPs, the site will require Task 2 for additional testing and analysis, for processing with a 663 application.

Task 2: Sampling and 663 Application

Task 2 includes taking two soil samples for soil characterization. These samples will be used to establish pre-existing conditions and also for potential CCDD coordination. The soil samples will be submitted to a NELAC approved laboratory for analysis. We may analyze each soil sample for metals, volatiles, semivolatiles, polynuclear aromatic hydrocarbons and PCBs. The results of the analysis would be compared to the limits outlined in the Maximum Allowable Concentrations (MAC) of Chemical Constituents In Uncontaminated Soil Used as Fill Material At Regulated Fill Operations (35 Ill. Adm. Code 1100.Subpart F). A 663 will be prepared if levels meet MAC table limits.

If the soils come back with any elevated levels, additional TCLP or SPLP analysis on those specific constituents may be required to determine if they are within the MAC table limits. This testing would be used to create a waste profile if it is necessary to take it to a landfill.

Tasks	Cost
Task 1. Environmental Background Research and 662	\$2,880.00
Task 2a. Soil sampling, laboratory coordination and 663 (if needed)	\$1,920.00
2b. Laboratory analysis- Per sample, up to 8 samples anticipated \$800 per sample (If needed)	\$6,400.00
TOTAL	\$11,200.00

* Above includes Environmental Database Review (EDR) cost.

Services not set forth above are specifically excluded from the scope of the Consultant's services. The Consultant assumes no responsibility to perform any services not specifically listed above.

COMPENSATION

Billing Terms

For our services we will be paid \$80,860.00 per the table below. The CCDD costs will be reduced to only include those tasks which are required to complete the 662 or 663 applications.

Tasks	Cost
1.) Topographic Survey	\$11,000.00
2.) Plat of Highway	\$25,660.00
3.) Appraisals & Negotiations	\$33,000.00
4.) Clean Construction Demolition Debris (CCDD)	\$11,200.00
TOTAL	\$80,860.00

Payment Terms

If the Client fails to make payments when due or otherwise is in breach of this Agreement, the Consultant may suspend performance of services upon 30 calendar days' notice to the Client. The Consultant shall have no liability whatsoever to the Client for any costs or damages as a result of such suspension caused by any breach of this Agreement by the Client. Upon payment in full by the Client, the Consultant shall resume services under this Agreement, and the time schedule and compensation shall be equitably adjusted to compensate for the period of suspension plus any other reasonable time and expense necessary for the Consultant to resume performance.

If the Client fails to make payment to the Consultant in accordance with the payment terms herein, this shall constitute a material breach of this Agreement and shall be cause for termination of this Agreement by the Consultant.

If the Client objects to any portion of an invoice, the Client shall so notify the Consultant in writing within ten (10) calendar days of receipt of the invoice. The Client shall identify in writing the specific cause of the disagreement and the amount in dispute and shall pay that portion of the invoice not in dispute in accordance with the other payment terms of this Agreement. Any dispute over invoiced amounts due which cannot be resolved within ten (10) calendar days after presentation of invoice by direct negotiation between the parties shall be resolved within thirty (30) calendar days in accordance with the Dispute Resolution provision of this Agreement. Interest as stated above shall be paid by the Client on all disputed invoice amounts that are subsequently resolved in the Consultant's favor and shall be calculated on the unpaid balance from the due date of the invoice.

Payments to the Consultant shall not be withheld, postponed, or made contingent on the construction, completion, or success of the project or upon receipt by the Client of offsetting reimbursement or credit from other parties who may have caused Additional Services or expenses. No withholdings, deductions, or offsets shall be made from the Consultant's compensation for any reason unless the Consultant has been found to be legally liable for such amounts.

GENERAL TERMS AND CONDITIONS

Changed Conditions

If, during the term of this Agreement, circumstances or conditions that were not originally contemplated by or known to the Consultant are revealed, to the extent that they affect the scope of services, compensation, schedule, allocation of risks, or other material terms of this Agreement, the Consultant may call for renegotiation of appropriate portions of this Agreement. The Consultant shall notify the Client of the changed conditions necessitating renegotiation, and the Consultant and the Client shall promptly and in good faith enter into renegotiation of this Agreement to address the changed conditions. If terms cannot be agreed to, the parties agree that either party has the absolute right to terminate this Agreement, in accordance with the Termination provision hereof.

Delays

The Client agrees that the Consultant is not responsible for damages arising directly or indirectly from any delays for causes beyond the Consultant's control. For purposes of this Agreement, such causes include, but are not limited to, strikes or other labor disputes; severe weather disruptions or other natural disasters; fires, riots, war, or other emergencies or acts of God; failure of any government agency or utility to act in timely manner; failure of performance by the Client or the Client's contractors or consultants; or discovery of any hazardous substances or differing site conditions.

In addition, if the delays resulting from any such causes increase the cost or time required by the Consultant to perform its services in an orderly and efficient manner, the Consultant shall be entitled to an equitable adjustment in schedule and/or compensation.

Indemnification

The Consultant agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Client, its officers, directors, and employees (collectively, Client) against all damages, liabilities, or costs, including reasonable attorneys' fees and defense costs, to the extent caused by the Consultant's negligent performance of professional services under this Agreement and that of its subconsultants or anyone for whom the Consultant is legally liable.

The Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Consultant, its officers, directors, employees, and subconsultants (collectively, Consultant) against all damages, liabilities, or costs, including

reasonable attorneys' fees and defense costs, to the extent caused by the Client's negligent acts in connection with the Project and the acts of its contractors, subcontractors, or consultants, or anyone for whom the Client is legally liable.

Neither the Client nor the Consultant shall be obligated to indemnify the other party in any manner whatsoever for the other party's own negligence.

Mediation

In an effort to resolve any conflicts that arise during the design and construction of the Project or following the completion of the Project, the Client and the Consultant agree that all disputes between them arising out of or relating to this Agreement or the Project shall be submitted to nonbinding mediation unless the parties mutually agree otherwise.

The Client and the Consultant further agree to include a similar mediation provision in all agreements with independent contractors and consultants retained for the Project and to require all independent contractors and consultants also to include a similar mediation provision in all agreements with their subcontractors, subconsultants, suppliers, and fabricators, thereby providing for mediation as the primary method for dispute resolution between the parties to all those agreements.

Notice of Delay

If the Consultant becomes aware of delays due to time allowances for review and approval being exceeded, delay by the Contractor, the Client, the Client's consultants, or any other cause beyond the control of the Consultant, which will result in the schedule for performance of the Consultant's services not being met, the Consultant shall promptly notify the Client. If the Client becomes aware of any delays or other causes that will affect the Consultant's schedule, the Client shall promptly notify the Consultant. In either event, the Consultant's schedule for performance of its services shall be equitably adjusted.

Right of Entry

The Client shall provide for the Consultant's right to enter the property owned by the Client and/or others in order for the Consultant to fulfill the Scope of Services included hereunder. Although the Consultant will exercise reasonable care in performing its services, the Client understands that use of testing or other equipment may unavoidably cause some damage, the correction of which is not part of this Agreement. The Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Consultant, its officers, directors, employees, and subconsultants (collectively, Consultant) against any damages, liabilities, or costs, including reasonable attorneys' fees and defense costs, arising or allegedly arising from procedures associated with testing or investigative activities or connected in any way with the discovery of hazardous materials or suspected hazardous materials on the property.

Standard of Care

In providing services under this Agreement, the Consultant will endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

Suspension of Services

If the Project or the Consultant's services are suspended by the Client for more than thirty (30) calendar days, consecutive or in the aggregate, over the term of this Agreement, the Consultant shall be compensated for all services performed and reimbursable expenses incurred prior to the receipt of notice of suspension. In addition, upon resumption of services, the Client shall compensate the Consultant for expenses incurred as a result of the suspension and resumption of its services, and the Consultant's schedule and fees for the remainder of the Project shall be equitably adjusted.

If the Consultant's services are suspended for more than ninety (90) days, consecutive or in the aggregate, the Consultant may terminate this Agreement upon giving not less than five (5) calendar days' written notice to the Client.

If the Client is in breach of the payment terms or otherwise is in material breach of this Agreement, the Consultant may suspend performance of services upon five (5) calendar days' notice to the Client. The Consultant shall have no liability to the Client, and the Client agrees to make no claim for any delay or damage as a result of such suspension caused by any breach of this Agreement by the Client. Upon receipt of payment in full of all outstanding sums due from the Client, or curing of such other breach which caused the Consultant to suspend services, the Consultant shall resume services and there shall be an equitable adjustment to the remaining project schedule and fees as a result of the suspension.

Termination

In the event of termination of this Agreement by either party, the Client shall within fifteen (15) calendar days of termination pay the Consultant for all services rendered and all reimbursable costs incurred by the Consultant up to the date of termination, in accordance with the payment provisions of this Agreement.

The Client may terminate this Agreement for the Client's convenience and without cause upon giving the Consultant not less than seven (7) calendar days' written notice.

Either party may terminate this Agreement for cause upon giving the other party not less than seven (7) calendar days' written notice for any of the following reasons:

- Substantial failure by the other party to perform in accordance with the terms of this Agreement and through no fault of the terminating party;
- Assignment of this Agreement or transfer of the Project by either party to any other entity without the prior written consent of the other party;
- Suspension of the Project or the Consultant's services by the Client for more than ninety (90) calendar days, consecutive or in the aggregate;
- Material changes in the conditions under which this Agreement was entered into, the Scope of Services or the nature of the Project, and the failure of the parties to reach agreement on the compensation and schedule adjustments necessitated by such changes.

In the event of any termination that is not the fault of the Consultant, the Client shall pay the Consultant, in addition to payment for services rendered and reimbursable costs incurred, for all expenses reasonably incurred by the Consultant in connection with the orderly termination of this Agreement, including but not limited to demobilization, reassignment of personnel, associated overhead costs and all other expenses directly resulting from the termination.

Third-Party Beneficiaries

Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Client or the Consultant. The Consultant's services under this Agreement are being performed solely for the Client's benefit, and no other party or entity shall have any claim against the Consultant because of this Agreement or the performance or nonperformance of services hereunder. The Client and Consultant agree to require a similar provision in all contracts with contractors, subcontractors, subconsultants, vendors and other entities involved in this Project to carry out the intent of this provision.

Unauthorized Changes

In the event the Client, the Client's contractors or subcontractors, or anyone for whom the Client is legally liable makes or permits to be made any changes to any reports, plans, specifications or other construction documents prepared by the Consultant without obtaining the Consultant's prior written consent, the Client shall assume full

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Grass Lake Road
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responsibility for the results of such changes. Therefore the Client agrees to waive any claim against the Consultant and to release the Consultant from any liability arising directly or indirectly from such changes.

In addition, the Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Consultant from any damages, liabilities, or costs, including reasonable attorneys' fees and costs of defense, arising from such changes.

In addition, the Client agrees to include in any contracts for construction appropriate language that prohibits the Contractor or any subcontractors of any tier from making any changes or modifications to the Consultant's construction documents without the prior written approval of the Consultant and that further requires the Contractor to indemnify both the Consultant and the Client from any liability or cost arising from such changes made without such proper authorization.

If this agreement meets with the approval of the Lake County DOT, please have the proper official sign and date where indicated on the next page and return one (1) copy for our file. If you have any questions about any of the above, please call myself or Karen Kase.

Sincerely,
HAMPTON, LENZINI AND RENWICK, INC.

By:



Erica Spolar
Vice President

ACCEPTANCE

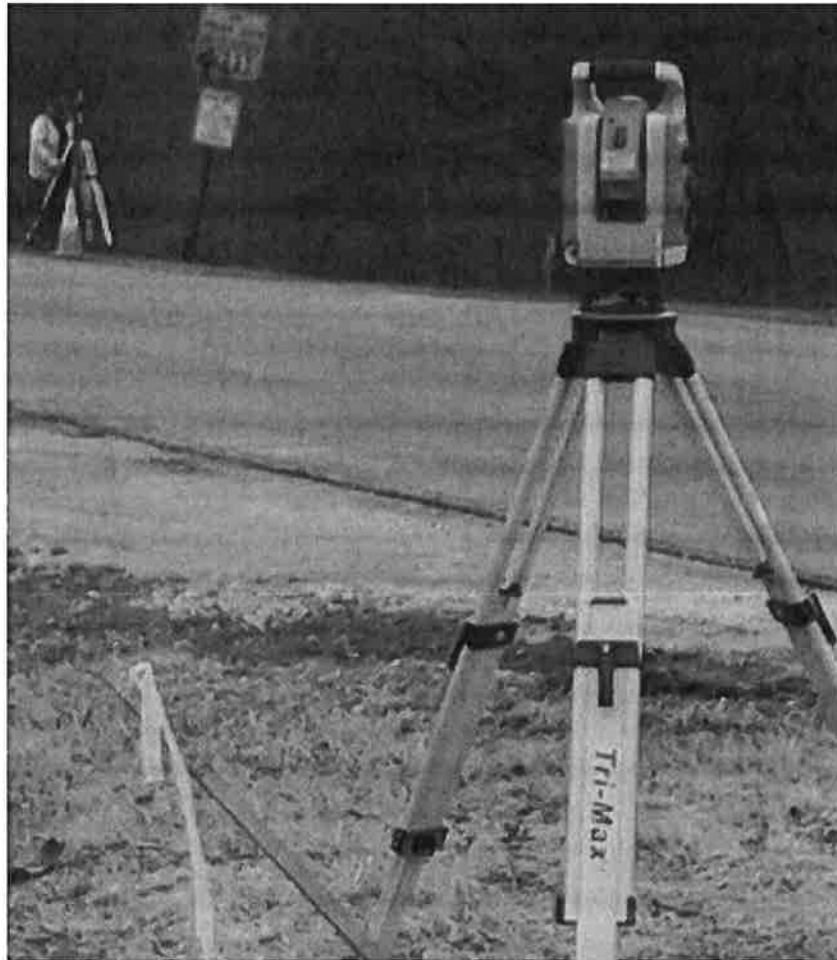
The terms and conditions of this letter agreement are hereby accepted by the Lake County DOT for the activities set forth above.

By

_____ Date

Title

DESIGN SURVEY PROCEDURES



DESIGN SURVEY PROCEDURES (Revised 3/10/17)

HORIZONTAL ALIGNMENT

Unless otherwise specified in the services contract, the CONSULTANT is to provide the horizontal alignment. The CONSULTANT will conduct all surveying, stationing, and preparation of required plans using English units of measure and the U.S. Survey Foot. The CONSULTANT'S SURVEYOR will try to re-establish the original horizontal alignment as shown on the recorded R.O.W. plats. The CONSULTANT shall contact LCDOT's Land Surveyor to obtain R.O.W. plats and field notes before establishing the horizontal alignment and stationing. The CONSULTANT shall notify LCDOT's Surveyor immediately if the alignment cannot be reproduced or if in the CONSULTANT'S opinion the existing alignment information is in error.

The CONSULTANT'S SURVEYOR, prior to construction, shall stake the PCs, PIs, PTs, and POTs so that the alignment location can be verified before construction staking is initiated. The CONSULTANT'S SURVEYOR will provide four reference ties to all U.S. Public Land Survey Monuments that are located within the construction limits. The reference points should be located outside of the anticipated construction limits if practical, so that they can be used after construction to replace the monuments. The CONSULTANT shall record Monument Records for all Section and Quarter Section corners set or found within the construction limits.

The CONSULTANT will mark the baseline for relocated alignments when off pavement at the PCs, PTs, and POTs with iron rods. The rods shall be set one foot below the surface in farmed land. The CONSULTANT will advise the County of any pavement alignment variations. In cases where the proposed centerline of construction or survey baseline is different from the existing centerline of R.O.W., both shall be shown and the relationship between them shall be indicated on an Alignment & Tie sheet.

ALIGNMENT & TIE SHEET

An Alignment & Tie Sheet shall be provided as part of the final plans. The plans are to be prepared using English units of measure and the U.S. Survey Foot. The station, offset, and coordinates of the alignment points (PCs, PTs, PIs, and POTs) and survey control (traverse) points shall be shown. Coordinates for all projects shall be on the Illinois State Plane Coordinate System, - East zone, NAD83 (Adjustment). The grid (combination) factor for the project shall be shown. A list of traverse points with station, offset, and coordinates shall be provided.

VERTICAL ALIGNMENT

The North American Vertical Datum of 1988 (NAVD 88) shall be used for vertical control. Lake County Mapping Benchmarks are available on-line (<http://gis.lakeco.org/maps/>). NAVD88 benchmarks are available on-line from the National Geodetic Survey. LCDOT's Land Surveyor may also be contacted for benchmarks that may be in the area. The primary benchmarks and site benchmarks shall be listed and described on the Alignment & Tie Sheet. The location of the site benchmarks shall also be shown on the plan sheets with a symbol. Site benchmarks are to be located at less than 1000-foot intervals with a minimum of two (2) on each project.

All benchmarks shall be located on stable objects. LCDOT prefers these objects to be outside the construction limits. Some acceptable benchmark examples are, spikes in poles, bolts on fire hydrant rings, and concrete foundations.

TOPOGRAPHY

The CONSULTANT shall cut cross-sections at 50-foot intervals and at all points needing clarification. For areas of superelevation or requiring greater detail, cross-sections shall be cut at 25-foot intervals. The cross section interval should be defined in the engineering services contract.

Full cross-section profiles will be taken at all cross streets, alleys, cross road culverts, and entrances (commercial, private, and field). Half cross-sections will not be accepted because they skew the computer terrain model.

The CONSULTANT will locate and identify all trees (6 inches in diameter or greater) within the area either side of the centerline, defined by the proposed ROW or construction limits (whichever is greater) plus an additional 10 feet. The trees shall be identified by species and size. The trees shall be located by station/offset and have a ground elevation.

Streams, tributaries, or major drainage ditches located within a lateral distance of 250 feet from centerline (upstream and downstream) shall be surveyed. Alignment, profiles, and cross-sections shall be taken. The stream width shall be shown as the distance measured between the tops of the stream banks. Profile elevations along the bottom of the watercourse shall be taken at a minimum of 50-foot intervals.

The survey shall extend a minimum of 200 feet beyond the roadway construction limits. Cross-sections shall be taken a minimum of 10 feet beyond the proposed R.O.W. or construction limits (whichever is greater). Cross-sections will extend 30 feet beyond the proposed R.O.W. at entrances and 150 feet at minor side roads.

All survey data shall be collected in Illinois State Plane Coordinates – East Zone. The collected survey data for the existing topography shall have a minimum of 3rd Order Accuracy horizontally with readings to the nearest 0.1 feet for vertical on gravel or ground and readings to the nearest 0.01 feet for vertical on all other surfaces.

RAILROAD INSURANCE

The CONSULTANT will comply with the railroad's requirements when conducting a survey on the railroad's R.O.W. Usually, this includes obtaining a permit, paying a fee, obtaining Railroad Protective Liability Insurance, notification of a flagman to be present near the rails during the survey operations, and any other requirements of the railroad. The CONSULTANT is responsible for all of the foregoing requirements.

DELIVERABLES

- I. Copies from the CONSULTANT'S field books, showing benchmarks, level circuits, & structure details, such as size and inverts etc.

- II. The Base Drawing at 1:1 scale. All the topographic information shall be plotted electronically. The data shall be in Illinois State Plane Coordinates – East Zone and be recorded in a MICROSTATION (dgn) format. All CAD work shall be according to LCDOT CAD Standards. ASCII files, gpk files, and/or InRoads files containing all point information as described below shall be included. A filename "ID" acronym explanation sheet shall be provided. Backup CDs shall be provided.

- III. Point Information:
 - (1) Point number
 - (2) Northing and Easting coordinate values
 - (3) "Z" elevations
 - (4) Point identification by code
 - (5) Notes