Village of Lincolnshire

Agenda Item
3.32 COW

REQUEST FOR BOARD ACTION
COMMITTEE OF THE WHOLE
May 13, 2019

Subject:	Villagewide Drainage Study
Action Requested:	Approval of a Professional Service Contract with Christopher B. Burke Engineering, Ltd. for a Cost not to Exceed $149,832.00. (Village of Lincolnshire)
Originated By/Contact:	Wally Dittrich, P.E., Assistant Public Works Director/Village Engineer
Referred To:	Mayor and Board of Trustees

Summary / Background:
Staff issued a Request for Qualifications in February 2019 for consulting engineering services to perform a Village-wide Drainage Study to develop a stormwater master plan which would identify drainage issues as well as develop and prioritize solutions for inclusion in future capital plans.

Staff received proposals from twelve (12) consultants. After a thorough internal review, Staff interviewed three firms, and after the interviews, selected Christopher B. Burke Engineering as the preferred consultant based on their experience with similar work in other villages in and around Lake County; their understanding of the project and the Village's needs; as well as their experience in preparing drainage master plans and funding components of those plans.

The primary focus of the study will be the residential areas. The scope of work includes:

- Reviewing various data from the Village on its drainage system as well as other studies,
- Performing hydraulic modeling to identify what the deficiencies in the system are
- Developing alternatives to address existing deficiencies,
- Hosting a public meeting to collect public input on drainage concerns from residents,
- Developing drainage solutions with cost estimates including prioritization of projects.

Budget Impact:
There is currently $150,000 budgeted for the project in the 2019 budget.

Service Delivery Impact:
No Change

Recommendation:
Staff recommends approval of the agreement with Christopher B. Burke Engineering, Ltd.

Reports and Documents Attached:
- Project Agreement

Meeting History	
Committee of the Whole	**May 13, 2019**
Regular Village Board Meeting	**May 29, 2019**

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 West Higgins Road Suite 600 Rosemont, Illinois 60018 TEL (847) 823-0500 FAX (847) 823-0520

April 18, 2019
Revised April 29, 2019

Village of Lincolnshire
One Old Half Day Road
Lincolnshire, IL 60069-3035

Attention: Wally Dittrich, PE
Assistant Public Works Director/Village Engineer

Subject: Proposal for Professional Engineering Services
Village of Lincolnshire Stormwater Master Plan

Dear Mr. Dittrich:

Christopher B. Burke Engineering, Ltd. (CBBEL) is pleased to provide this proposal for professional engineering services related to the preparation of a Stormwater Master Plan for the Village. Included in this proposal is our Understanding of the Assignment, Scope of Services, and Estimated Fee.

UNDERSTANDING OF THE ASSIGNMENT

It is our understanding that the Village would like a Stormwater Master Plan prepared for the Village's drainage system. The majority of the Village is located within the Des Plaines River Watershed. The Des Plaines River flows north to south through the Village and separates it into two distinct sections. East of the Des Plaines River is largely residential, which will be the primary focus of the Stormwater Master Plan. There is a drainage divide through this residential area, and all area east of the ridge drains into the West Fork North Branch Chicago River which flows north to south adjacent to I-94 and acts as the eastern border of the Village. The majority of the area west of the Des Plaines River is commercial land use with some pockets of residential areas. There are two subwatersheds of the Des Plaines River basin in the western portion of the Village: Indian Creek and Aptakisic Creek. There is mapped floodplain and floodway associated with these rivers and tributaries in the Village.

The residential areas experience riverine overbank flooding from the Des Plaines River and local urban flooding from lack of storm sewer conveyance. Based on our discussion with the Village staff, this study will focus on the localized urban flooding from inadequate conveyance through the storm sewer system with the residential areas of the Village. This will include the interaction between Des Plaines River tailwater on the local storm sewer outfalls. We understand there is a levee along the east side of the Des Plaines River to protect the adjacent residential subdivision. This was previously investigated by the Village and their consultant and will not be an area of concentration for the Stormwater Master Plan.

The Village is similar to other communities we studied as it has older sections developed prior to modern stormwater management practices, as well as newer sections built after implementation of the Lake County Watershed Development Ordinance (WDO). Based on a review of historic aerial photography some residential portions of the Village were constructed as early as the 1950s. We have observed that the new sections of town have much fewer drainage problems. Based on our observations, we anticipate that the drainage problems in the older sections are due to insufficient stormwater storage, overland flow routes and storm sewer conveyance capacity.

In some cases, the storm sewer conveyance systems are undersized or may consist of antiquated pipes that are failing. These problem areas are also compounded by teardowns on residential lots in older sections and have more impervious area during the redevelopment process. The newer homes generate more runoff and are perceived by the surrounding neighbors as a significant contribution to the flooding problem. We have dealt with very similar issues recently in communities such as Elmhurst, Park Ridge, Libertyville and Wilmette. In all of these communities, storm events that exceed a few inches of rain in a short time period cause significant street, yard and residential structure flooding – a similar phenomenon as experienced in the Village.

A Stormwater Master Plan identifies flooding areas within the residential areas of the Village, sets criteria for evaluating those areas, develops flood reduction projects for the drainage problem areas, and prioritizes those projects. We are familiar with preparing Village-wide Drainage Studies for various municipalities within the Chicagoland Area. Within the past 5 years, we have completed or are in the process of completing Village-wide Drainage Plans or similar studies for the following communities:

Village of Wilmette	Village of Hawthorn Woods
Village of Cary	Village of Deer Park
Town of Merrillville, IN	Village of Winnetka
Village of Libertyville	Village of Riverside
Village of Lake Bluff	Village of River Forest
City of Park Ridge	Village of Elmwood Park

Based on this experience and discussions with Village staff, we are recommending the following Scope of Services for the Village of Lincolnshire Stormwater Master Plan.

SCOPE OF SERVICES

CBBEL has identified the tasks that will lead to a successful completion of the Village-wide Drainage Study:

Task 1 – Kickoff Meeting with Village Staff: CBBEL will attend a kickoff meeting with the Village to memorialize the project goals and schedule. We understand the importance of schedule and will work to perform the highest level of professional service while meeting the schedule set forth by the team. We will obtain all available data from the Village including storm sewer atlases, plans, studies, etc. At this meeting, we recommend a field visit to the known drainage problem areas with Village staff. Identification of these areas is key to the success of the project.

Task 2 – Data Collection & Analysis: CBBEL will collect, review and analyze the following data for use in the initial phases of the drainage analysis. A GIS database will be developed using the spatially oriented data.

- Lake County 1-foot aerial topographic mapping and LIDAR data.
- Village GIS mapping and database information.
- Reported flooding problem areas, photographs, written accounts, etc.
- Village database of 56 detention and retention ponds throughout the Village.
- All available GIS including utilities, land use, zoning, soils, etc.
- Previous studies including the 2017 Lincolnshire Creek Study.
- Historic rainfall data from Lake County and the Village that resulted in flooding will be reviewed and analyzed.
- Storm sewer televising tapes.
- Historic flood crests on the Des Plaines River.
- Relevant Lake County, FEMA and IDNR-OWR data for the Village, including draft floodplain maps.
- Relevant elevation certificates of flood prone houses.

Task 3 - Open House and Flood Questionnaires: Collection of additional data from the public will be critical to the success of the project. With the information collected and developed in previous tasks, we will prepare exhibits for an Open House for the purposes of collecting flooding information from the residents of the Village directly. To fully engage the public, we propose to utilize our on-call public relations firm, Serafin, to determine the best method of engaging the public which may include: starting a website to advertise the project and public meetings, building a campaign to promote public awareness of flooding, etc.

For other successful projects, we have prepared a PowerPoint presentation that continually runs in a loop while CBBEL (we propose 4 CBBEL staff) and Village staff utilize large boards of different areas of the Village with aerial boards where we can mark up the flooding locations that the residents provide. We will hand out and collect a flood questionnaire to all residents attending the Open House. We will also provide the flood questionnaire to the Village in a digital format where residents can complete the form online for a month-long period immediately after the Open House. The flooding information from the residents will be compiled along with the Village information into a GIS database that can be spatially viewed and analyzed. We will meet with the Village to discuss the results of the compiled Open House information and identify the drainage problem areas to be studied in greater detail.

Task 4 – Topographic Survey: CBBEL will identify the survey needs for the drainage problem areas based on the information previously provided by the Village. We utilize our sub consultant, Thomson Surveying Ltd., to complete pickup survey where needed of the existing drainage system, overland flow paths and residential structures. We propose to use County Lidar data and Village GIS storm sewer data as the main data sources for model development. The survey will focus on critical flood areas and any missing storm sewer data

that we determine is imperative for model development. We estimate 4 days of field survey as part of this scope and fee.

Task 5 – Existing Conditions Hydrologic and Hydraulic Analysis: The hydrologic and hydraulic modeling is the backbone of the technical analysis in the Village-wide Drainage Study. To evaluate the Village's current drainage system, existing storm event level of service and protection, we will utilize the XP-SWMM hydrologic and hydraulic models. Because the focus of this study is residential areas of the Village, we will utilize all available information, including any previous modeling, gathered as part of Task 2 for the existing conditions modeling. Lake County 1-foot topography as well as the Village's GIS storm sewer data will be used to delineate subbasins throughout the entire residential area of the Village. NRCS hydrologic methods will be utilized to calculate a unique runoff curve number and time of concentration for each subbasin. We propose to input these subbasins and storm sewer network into XP-SWMM modeling software.

XP-SWMM is a comprehensive, dynamic hydrologic and hydraulic model that models rainfall runoff which is directed into the storm sewer network or the ground surface if the storm sewer capacity is exceeded. CBBEL will build a detailed hydrologic and hydraulic model of the storm sewer system(s) within the study area using XP-SWMM computer software. The study area within the Village will be divided into watersheds and subwatersheds to analyze the existing drainage system, level of service, and anticipated flooding during large storm events. The level of detail will be fine enough to include all previous flooding as identified by the Village and from the flood questionnaires. Based on the Village's storm sewer atlas and the Lake County aerial topography, we anticipate that the Village will be divided into **10** residential study areas. We have budgeted for a 11th area for the commercial development at the intersection of Half Day Road and Milwaukee Avenue.

Once the model is developed for each study area, we will calibrate the model to historical storm events, where possible, and the results will be compared with historic flooding information. We will also utilize the Village's and SMC's flood problem database as well as information collected from Task 3 to verify the existing conditions model is reflective of the real-world flooding observations. Due to the proximity of the Des Plaines River and the West Fork of the North Branch Chicago River, we understand tailwater will impact drainage through the local residential sewer system. CBBEL will analyze both the free outfall condition and tailwater conditions to determine the effect on the sewer system. Design storm events will be utilized to run a critical duration analysis for each drainage problem area to determine the level of service and protection for the existing stormwater conveyance system.

Our detailed hydrologic and hydraulic analysis will pinpoint the cause of flooding in these drainage problem areas, whether it is limitations in capacity of the local sewers, the trunk system or overland flow routes. The model results will identify the existing level of service and guide the design of the proposed stormwater improvement projects. We will meet with the Village staff upon completion of this task to discuss the results and existing level of flood protection provided at each drainage problem area.

Task 6 – Capital Improvement Plan Development

Task 6.1 – Proposed Conditions XP-SWMM Analysis: Based on our experiences with similar projects, CBBEL will develop proposed drainage improvement projects to reduce the risk of future flooding. This will include all of the identified drainage problem locations where

existing detention basins are in the vicinity, these will be specifically analyzed to determine if they can be expanded to provide drainage benefits. Similarly, if Village owned property is located within the drainage basin (or property that could be acquired by the Village) it will be evaluated to see if it can provide floodwater storage that would benefit drainage at the flood problem area.

A range of projects will be investigated for each drainage problem area to determine what would be necessary to provide varying levels of flood protection for each area. This could include new storm sewers, stormwater storage basins, overland flow paths, green infrastructure, and other drainage improvements. Joint projects with other jurisdictions (LCSMC, LCDOT, IDOT, etc.) will be investigated for potential cost-sharing and grant opportunities. We will meet with the Village staff upon completion of this task to discuss the proposed flood risk reduction projects and associated flood elevation reductions for the design level storm event.

Task 6.2 – Concept Plan Preparation: We will prepare a concept plan for each of the proposed drainage improvement alternatives at each location. The concept plan will be based on the hydrologic and hydraulic model results and will utilize the Lake County aerial topography, aerial photos, site visits, pickup survey and available utility information from the Village and utility companies. It is envisioned that each concept plan will be on an 11x17 exhibit.

Task 6.3 – Engineer's Estimate of Probable Cost: We will prepare an engineer's estimate of probable cost for the concept plans. The cost estimates will be broken down into unit costs and quantities for the different pay items. The unit costs will be based on recent bid openings where possible. The engineer's estimate of probable cost will include design engineering, permitting and construction engineering costs. Calculation of the costs relies on years of experience in cost estimating projects of this nature and anticipating cost such as sanitary sewer and water service replacement. Upon meeting with Village staff, the estimates will be updated based on comments received.

Task 6.4 – Benefit Analysis: The benefits of a particular drainage improvement project can be measured in a variety of ways including; reduction in street flooding (duration and elevation), flood protection provided to residential structures, reduction in property flooding, and other metrics. We envision the metric used to quantify benefits in this study will be structures and properties benefited. We will work with the Village to determine any additional benefits to be quantified. CBBEL will complete a benefits analysis for the various projects at each drainage problem location. The benefits will be based on the design level service event(s).

Task 6.5 – Stormwater Project Summary Matrix: A GIS database is a key foundational component of the Village-wide Drainage Study. This also helps create clear exhibits that can be easily understood by a non-technical audience. The benefits and costs for each project area must also be clearly presented in a way that allows a decision of what project should be completed at each study area and allow the study areas to be prioritized amongst each other. A comprehensive matrix will be developed across all of the drainage problem areas. The matrix will include:

- Project costs
- Number of structures protected

- Level of protection provided (10-year, 100-year, etc.)
- Number of properties protected
- If easements or land acquisition is required.
- Utility conflicts that require significant relocation
- Permitting challenges
- If the potential for grant funding is available.

The matrix will allow for easy comparison of projects across the Village as capital funding becomes available. We will work with the Village on the ranking system within the matrix, and we understand that priority shall be given to projects based on the benefits for the design level service event.

Task 6.6 – Coordination with Outside Agencies: CBBEL has an outstanding relationship with outside agencies such as SMC and IDNR-OWR that may require permitting or input on the various project. The agencies may also be a source of funding for certain types of drainage projects. We also have a strong knowledge of FEMA and USACOE permit requirements. As necessary, we will coordinate with these outside agencies to verify permitting requirements and funding potential. At a minimum, we recommend meeting with SMC to discuss the results of the drainage analysis as they may be able to incorporate the results into their planning documents and they also have the highest potential for contributing funding.

Task 6.7 – Final Plan Report: We will summarize the Village-wide Drainage Study in a written report. The report will include the following:

- plan purpose,
- past flooding events within the Village and floodplain maps,
- comprehensive summary of all flooding reports from residents and Village staff,
- existing drainage problem areas and evaluation of level of service,
- procedure for developing drainage projects and summary of drainage projects,
- evaluation funding sources
- evaluation of programs such as overhead sewers, private drainage improvements and groundwater mitigation,
- project matrix with separate sections for each drainage problem area and associated projects with exhibit, costs, benefit/cost ratio.

The report will be a living document that will be designed to be updated as necessary.

Task 7 – Village Meetings: In addition to the meetings outlined above, additional meetings will be required with the Village to finalize the Stormwater Master Plan.

CBBEL staff will attend meetings with Village staff, residents and the Village Board as necessary.

Task 8 – Stormwater Funding Summary: The work completed in the prior tasks of this proposal provide an assessment of the Village's existing stormwater infrastructure and plans of the proposed improvements, including an estimated cost of the improvements. The selected improvements by the Village can then be used to develop a long range plan and budget to provide the funding to construct the improvements. In this phase of the project we will summarize various options for funding the proposed improvements including stormwater utility fee, grants, Special Service Areas (SSAs) and others. This summary will include a description of the various stormwater utility fee options, how credits could be incorporated and information on project implantation budgeting. A summary of how other adjacent communities are funding stormwater improvements will also be presented. This task will not include calculations of a specific stormwater utility fee or project implementation table for the fee. If requested by the Village, a full stormwater utility fee analysis can be completed as part of a separate scope of services.

FEE ESTIMATE

Please refer to attached spreadsheet for fee estimate.

We will bill you at the hourly rates specified on the attached Schedule of Charges and establish our contract in accordance with the attached General Terms and Conditions. Direct costs for blueprints, photocopying, mailing, mileage, overnight delivery, permit fees, data collection fees, messenger services and report compilation are included in the fee estimate. These General Terms and Conditions are expressly incorporated into and are an integral part of this contract for professional services. It should be emphasized that any requested meetings or additional services are not included in the preceding fee estimate and will be billed at the attached hourly rates.

Please sign and return one copy of this agreement as an indication of acceptance and notice to proceed. Please feel free to contact us anytime.

Sincerely,

Christopher B. Burke, PhD, PE, D.WRE, Dist.M.ASCE
President

Encl. Schedule of Charges
General Terms and Conditions

THIS PROPOSAL, SCHEDULE OF CHARGES AND GENERAL TERMS AND CONDITIONS ACCEPTED FOR VILLAGE OF LINCOLNSHIRE:

BY: _____

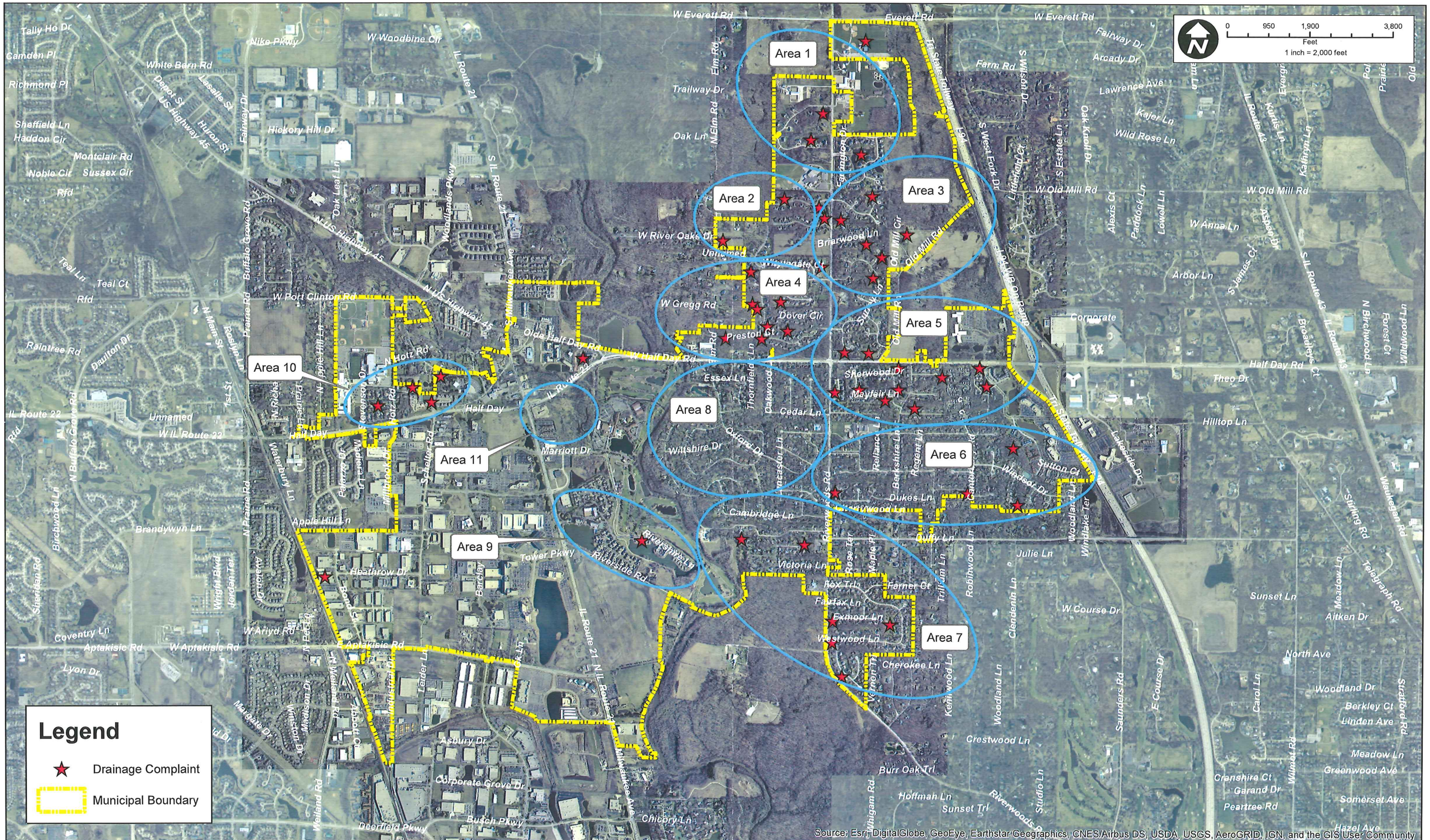
TITLE: _____

DATE: _____

FEE ESTIMATE

Village of Lincolnshire
Village-wide Drainage Study and Analysis
Detailed Cost Breakdown
Thursday, April 18, 2019
Revised April 30, 2019

TASK	Engineer VI	Engineer V	Engineer IV	Engineer III	Engineer I/II	By Others	BUDGET Hours	BUDGET Dollars
Task 1 - Kickoff Meeting with Village Staff	4	8	8				20	$ 3,564
Task 2 - Data Collection & Analysis		12	32				44	$ 6,956
Task 3 - Open House and Flood Questionnaires	4	8	16		40		68	$ 8,988
Task 4 - Topographic Survey (if necessary)						$ 9,600	0	$ 9,600
Task 5 - Existing Conditions Hydrologic and Hydraulic Analysis		8	145		142		295	$ 37,992
Task 6 - Capital Improvement Plan Development								
Task 6.1 - Proposed Conditions XP-SWMM Analysis		8	102		100		210	$ 27,176
Task 6.2 - Concept Plan Preparation		12	40		24		76	$ 10,684
Task 6.3 - Engineer's Estimate of Probable Cost		8		40			48	$ 6,840
Task 6.4 - Benefit Analysis		4	12		24		40	$ 5,060
Task 6.5 - Stormwater Project Summary Matrix		8	16		4		28	$ 4,272
Task 6.6 - Coordination with Outside Agencies	4	4	4				12	$ 2,232
Task 6.7 - Final Plan Report		8	50		10		68	$ 9,940
Task 7 - Village Meetings	4	12	12				28	$ 4,896
Task 8 - Stormwater Funding Summary	16	8	24				48	$ 8,632
Total Hours per Classification	32	108	461	40	344			
Average Hourly Rate (Reduced 2015 Rates)	$225.00	$185.00	$148.00	$134.00	$106.00			
Total Cost Per Job Category	**$7,200**	**$19,980**	**$68,228**	**$5,360**	**$36,464**	**$9,600**	**985**	$ 146,832
							Direct Costs	**$3,000.00**
							Total Cost	**$149,832.00**



CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT:
VILLAGE OF LINCOLNSHIRE

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME

DSGN.	DRB
DWN.	DRB
CHKD.	DTO
SCALE:	1"=
PLOT DATE:	
CAD USER:	
MODEL:	

TITLE:
PROPOSED STUDY AREAS

PROJ. NO. 00-0000
DATE:
SHEET 0 OF 0
DRAWING NO.
EXH

CHRISTOPHER B. BURKE ENGINEERING, LTD.
STANDARD CHARGES FOR PROFESSIONAL SERVICES
JANUARY, 2015

Personnel	Charges* ($/Hr)
Principal	257
Engineer VI	225
Engineer V	185
Engineer IV	148
Engineer III	134
Engineer I/II	106
Survey V	207
Survey IV	175
Survey III	149
Survey II	108
Survey I	84
Engineering Technician V	175
Engineering Technician IV	142
Engineering Technician III	127
Engineering Technician I/II	111
CAD Manager	154
Assistant CAD Manager	135
CAD II	134
CAD I	105
GIS Specialist III	128
GIS Specialist I/II	71
Landscape Architect	148
Environmental Resource Specialist V	189
Environmental Resource Specialist IV	146
Environmental Resource Specialist III	122
Environmental Resource Specialist I/II	100
Environmental Resource Technician	96
Administrative	95
Engineering Intern	57
Information Technician III	113
Information Technician I/II	104

Direct Costs	
Outside Copies, Blueprints, Messenger, Delivery Services, Mileage	Cost + 12%

*Charges include overhead and profit

Christopher B. Burke Engineering, Ltd. reserves the right to increase these rates and costs by 5% after December 31, 2015.

CHRISTOPHER B. BURKE ENGINEERING, LTD.
GENERAL TERMS AND CONDITIONS

1. Relationship Between Engineer and Client: Christopher B. Burke Engineering, Ltd. (Engineer) shall serve as Client's professional engineer consultant in those phases of the Project to which this Agreement applies. This relationship is that of a buyer and seller of professional services and as such the Engineer is an independent contractor in the performance of this Agreement and it is understood that the parties have not entered into any joint venture or partnership with the other. The Engineer shall not be considered to be the agent of the Client. Nothing contained in this Agreement shall create a contractual relationship with a cause of action in favor of a third party against either the Client or Engineer.

   Furthermore, causes of action between the parties to this Agreement pertaining to acts of failures to act shall be deemed to have accrued and the applicable statute of limitations shall commence to run not later than the date of substantial completion.

2. Responsibility of the Engineer: Engineer will strive to perform services under this Agreement in accordance with generally accepted and currently recognized engineering practices and principles, and in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, express or implied, and no warranty or guarantee is included or intended in this Agreement, or in any report, opinion, document, or otherwise.

   Notwithstanding anything to the contrary which may be contained in this Agreement or any other material incorporated herein by reference, or in any Agreement between the Client and any other party concerning the Project, the Engineer shall not have control or be in charge of and shall not be responsible for the means, methods, techniques, sequences or procedures of construction, or the safety, safety precautions or programs of the Client, the construction contractor, other contractors or subcontractors performing any of the work or providing any of the services on the Project. Nor shall the Engineer be responsible for the acts or omissions of the Client, or for the failure of the Client, any architect, engineer, consultant, contractor or subcontractor to carry out their respective responsibilities in accordance with the Project documents, this Agreement or any other agreement concerning the Project. Any provision which purports to amend this provision shall be without effect unless it contains a reference that the content of this condition is expressly amended for the purposes described in such amendment and is signed by the Engineer.

3. Changes: Client reserves the right by written change order or amendment to make changes in requirements, amount of work, or engineering time schedule adjustments, and Engineer and Client shall negotiate appropriate adjustments acceptable to both parties to accommodate any changes, if commercially possible.

4. Suspension of Services: Client may, at any time, by written order to Engineer (Suspension of Services Order) require Engineer to stop all, or any part, of the services required by this Agreement. Upon receipt of such an order, Engineer shall immediately comply with its terms and take all reasonable steps to minimize the costs associated with the services affected by such order. Client, however, shall pay all costs incurred by the suspension, including all costs necessary to maintain continuity and for the

resumptions of the services upon expiration of the Suspension of Services Order. Engineer will not be obligated to provide the same personnel employed prior to suspension, when the services are resumed, in the event that the period of suspension is greater than thirty (30) days.

5. Termination: This Agreement may be terminated by either party upon thirty (30) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. This Agreement may be terminated by Client, under the same terms, whenever Client shall determine that termination is in its best interests. Cost of termination, including salaries, overhead and fee, incurred by Engineer either before or after the termination date shall be reimbursed by Client.

6. Documents Delivered to Client: Drawings, specifications, reports, and any other Project Documents prepared by Engineer in connection with any or all of the services furnished hereunder shall be delivered to the Client for the use of the Client. Engineer shall have the right to retain originals of all Project Documents and drawings for its files. Furthermore, it is understood and agreed that the Project Documents such as, but not limited to reports, calculations, drawings, and specifications prepared for the Project, whether in hard copy or machine readable form, are instruments of professional service intended for one-time use in the construction of this Project. These Project Documents are and shall remain the property of the Engineer. The Client may retain copies, including copies stored on magnetic tape or disk, for information and reference in connection with the occupancy and use of the Project.

When and if record drawings are to be provided by the Engineer, Client understands that information used in the preparation of record drawings is provided by others and Engineer is not responsible for accuracy, completeness, nor sufficiency of such information. Client also understands that the level of detail illustrated by record drawings will generally be the same as the level of detail illustrated by the design drawing used for project construction. If additional detail is requested by the Client to be included on the record drawings, then the Client understands and agrees that the Engineer will be due additional compensation for additional services.

It is also understood and agreed that because of the possibility that information and data delivered in machine readable form may be altered, whether inadvertently or otherwise, the Engineer reserves the right to retain the original tapes/disks and to remove from copies provided to the Client all identification reflecting the involvement of the Engineer in their preparation. The Engineer also reserves the right to retain hard copy originals of all Project Documentation delivered to the Client in machine readable form, which originals shall be referred to and shall govern in the event of any inconsistency between the two.

The Client understands that the automated conversion of information and data from the system and format used by the Engineer to an alternate system or format cannot be accomplished without the introduction of inexactitudes, anomalies, and errors. In the event Project Documentation provided to the Client in machine readable form is so converted, the Client agrees to assume all risks associated therewith and, to the fullest

extent permitted by law, to hold harmless and indemnify the Engineer from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising therefrom or in connection therewith.

The Client recognizes that changes or modifications to the Engineer's instruments of professional service introduced by anyone other than the Engineer may result in adverse consequences which the Engineer can neither predict nor control. Therefore, and in consideration of the Engineer's agreement to deliver its instruments of professional service in machine readable form, the Client agrees, to the fullest extent permitted by law, to hold harmless and indemnify the Engineer from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising out of or in any way connected with the modification, misinterpretation, misuse, or reuse by others of the machine readable information and data provided by the Engineer under this Agreement. The foregoing indemnification applies, without limitation, to any use of the Project Documentation on other projects, for additions to this Project, or for completion of this Project by others, excepting only such use as may be authorized, in writing, by the Engineer.

7. Reuse of Documents: All Project Documents including but not limited to reports, opinions of probable costs, drawings and specifications furnished by Engineer pursuant to this Agreement are intended for use on the Project only. They cannot be used by Client or others on extensions of the Project or any other project. Any reuse, without specific written verification or adaptation by Engineer, shall be at Client's sole risk, and Client shall indemnify and hold harmless Engineer from all claims, damages, losses, and expenses including attorney's fees arising out of or resulting therefrom.

   The Engineer shall have the right to include representations of the design of the Project, including photographs of the exterior and interior, among the Engineer's promotional and professional materials. The Engineer's materials shall not include the Client's confidential and proprietary information if the Client has previously advised the Engineer in writing of the specific information considered by the Client to be confidential and proprietary.

8. Standard of Practice: The Engineer will strive to conduct services under this agreement in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as of the date of this Agreement.

9. Compliance With Laws: The Engineer will strive to exercise usual and customary professional care in his/her efforts to comply with those laws, codes, ordinance and regulations which are in effect as of the date of this Agreement.

   With specific respect to prescribed requirements of the Americans with Disabilities Act of 1990 or certified state or local accessibility regulations (ADA), Client understands ADA is a civil rights legislation and that interpretation of ADA is a legal issue and not a design issue and, accordingly, retention of legal counsel (by Client) for purposes of interpretation is advisable. As such and with respect to ADA, Client agrees to waive any action against Engineer, and to indemnify and defend Engineer against any claim arising from Engineer's alleged failure to meet ADA requirements prescribed.

Further to the law and code compliance, the Client understands that the Engineer will strive to provide designs in accordance with the prevailing Standards of Practice as previously set forth, but that the Engineer does not warrant that any reviewing agency having jurisdiction will not for its own purposes comment, request changes and/or additions to such designs. In the event such design requests are made by a reviewing agency, but which do not exist in the form of a written regulation, ordinance or other similar document as published by the reviewing agency, then such design changes (at substantial variance from the intended design developed by the Engineer), if effected and incorporated into the project documents by the Engineer, shall be considered as Supplementary Task(s) to the Engineer's Scope of Service and compensated for accordingly.

10. Indemnification: Engineer shall indemnify and hold harmless Client up to the amount of this contract fee (for services) from loss or expense, including reasonable attorney's fees for claims for personal injury (including death) or property damage to the extent caused by the sole negligent act, error or omission of Engineer.

    Client shall indemnify and hold harmless Engineer under this Agreement, from loss or expense, including reasonable attorney's fees, for claims for personal injuries (including death) or property damage arising out of the sole negligent act, error omission of Client.

    In the event of joint or concurrent negligence of Engineer and Client, each shall bear that portion of the loss or expense that its share of the joint or concurrent negligence bears to the total negligence (including that of third parties), which caused the personal injury or property damage.

    Engineer shall not be liable for special, incidental or consequential damages, including, but not limited to loss of profits, revenue, use of capital, claims of customers, cost of purchased or replacement power, or for any other loss of any nature, whether based on contract, tort, negligence, strict liability or otherwise, by reasons of the services rendered under this Agreement.

11. Opinions of Probable Cost: Since Engineer has no control over the cost of labor, materials or equipment, or over the Contractor(s) method of determining process, or over competitive bidding or market conditions, his/her opinions of probable Project Construction Cost provided for herein are to be made on the basis of his/her experience and qualifications and represent his/her judgement as a design professional familiar with the construction industry, but Engineer cannot and does not guarantee that proposal, bids or the Construction Cost will not vary from opinions of probable construction cost prepared by him/her. If prior to the Bidding or Negotiating Phase, Client wishes greater accuracy as to the Construction Cost, the Client shall employ an independent cost estimator Consultant for the purpose of obtaining a second construction cost opinion independent from Engineer.

12. Governing Law & Dispute Resolutions: This Agreement shall be governed by and construed in accordance with Articles previously set forth by (Item 9 of) this Agreement, together with the laws of the **State of Illinois**.

Any claim, dispute or other matter in question arising out of or related to this Agreement, which can not be mutually resolved by the parties of this Agreement, shall be subject to mediation as a condition precedent to arbitration (if arbitration is agreed upon by the parties of this Agreement) or the institution of legal or equitable proceedings by either party. If such matter relates to or is the subject of a lien arising out of the Engineer's services, the Engineer may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the matter by mediation or by arbitration.

The Client and Engineer shall endeavor to resolve claims, disputes and other matters in question between them by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Requests for mediation shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

13. Successors and Assigns: The terms of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns: provided, however, that neither party shall assign this Agreement in whole or in part without the prior written approval of the other.

14. Waiver of Contract Breach: The waiver of one party of any breach of this Agreement or the failure of one party to enforce at any time, or for any period of time, any of the provisions hereof, shall be limited to the particular instance, shall not operate or be deemed to waive any future breaches of this Agreement and shall not be construed to be a waiver of any provision, except for the particular instance.

15. Entire Understanding of Agreement: This Agreement represents and incorporates the entire understanding of the parties hereto, and each party acknowledges that there are no warranties, representations, covenants or understandings of any kind, matter or description whatsoever, made by either party to the other except as expressly set forth herein. Client and the Engineer hereby agree that any purchase orders, invoices, confirmations, acknowledgments or other similar documents executed or delivered with respect to the subject matter hereof that conflict with the terms of the Agreement shall be null, void & without effect to the extent they conflict with the terms of this Agreement.

16. Amendment: This Agreement shall not be subject to amendment unless another instrument is duly executed by duly authorized representatives of each of the parties and entitled "Amendment of Agreement".

17. Severability of Invalid Provisions: If any provision of the Agreement shall be held to contravene or to be invalid under the laws of any particular state, county or jurisdiction where used, such contravention shall not invalidate the entire Agreement, but it shall be construed as if not containing the particular provisions held to be invalid in the particular state, country or jurisdiction and the rights or obligations of the parties hereto shall be construed and enforced accordingly.

18. Force Majeure: Neither Client nor Engineer shall be liable for any fault or delay caused by any contingency beyond their control including but not limited to acts of God, wars, strikes, walkouts, fires, natural calamities, or demands or requirements of governmental agencies.

19. Subcontracts: Engineer may subcontract portions of the work, but each subcontractor must be approved by Client in writing.

20. Access and Permits: Client shall arrange for Engineer to enter upon public and private property and obtain all necessary approvals and permits required from all governmental authorities having jurisdiction over the Project. Client shall pay costs (including Engineer's employee salaries, overhead and fee) incident to any effort by Engineer toward assisting Client in such access, permits or approvals, if Engineer perform such services.

21. Designation of Authorized Representative: Each party (to this Agreement) shall designate one or more persons to act with authority in its behalf in respect to appropriate aspects of the Project. The persons designated shall review and respond promptly to all communications received from the other party.

22. Notices: Any notice or designation required to be given to either party hereto shall be in writing, and unless receipt of such notice is expressly required by the terms hereof shall be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed, and addressed to the party to whom such notice is directed at such party's place of business or such other address as either party shall hereafter furnish to the other party by written notice as herein provided.

23. Limit of Liability: The Client and the Engineer have discussed the risks, rewards, and benefits of the project and the Engineer's total fee for services. In recognition of the relative risks and benefits of the Project to both the Client and the Engineer, the risks have been allocated such that the Client agrees that to the fullest extent permitted by law, the Engineer's total aggregate liability to the Client for any and all injuries, claims, costs, losses, expenses, damages of any nature whatsoever or claim expenses arising out of this Agreement from any cause or causes, including attorney's fees and costs, and expert witness fees and costs, shall not exceed the total Engineer's fee for professional engineering services rendered on this project as made part of this Agreement. Such causes included but are not limited to the Engineer's negligence, errors, omissions, strict liability or breach of contract. It is intended that this limitation apply to any and all liability or cause of action however alleged or arising, unless otherwise prohibited by law.

24. Client's Responsibilities: The Client agrees to provide full information regarding requirements for and about the Project, including a program which shall set forth the Client's objectives, schedule, constraints, criteria, special equipment, systems and site requirements.

The Client agrees to furnish and pay for all legal, accounting and insurance counseling services as may be necessary at any time for the Project, including auditing services which the Client may require to verify the Contractor's Application for Payment or to ascertain how or for what purpose the Contractor has used the money paid by or on behalf of the Client.

The Client agrees to require the Contractor, to the fullest extent permitted by law, to indemnify, hold harmless, and defend the Engineer, its consultants, and the employees and agents of any of them from and against any and all claims, suits, demands, liabilities, losses, damages, and costs ("Losses"), including but not limited to costs of defense, arising in whole or in part out of the negligence of the Contractor, its subcontractors, the officers, employees, agents, and subcontractors of any of them, or anyone for whose acts any of them may be liable, regardless of whether or not such Losses are caused in part by a party indemnified hereunder. Specifically excluded from the foregoing are Losses arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications, and the giving of or failure to give directions by the Engineer, its consultants, and the agents and employees of any of them, provided such giving or failure to give is the primary cause of Loss. The Client also agrees to require the Contractor to provide to the Engineer the required certificate of insurance.

The Client further agrees to require the Contractor to name the Engineer, its agents and consultants as additional insureds on the Contractor's policy or policies of comprehensive or commercial general liability insurance. Such insurance shall include products and completed operations and contractual liability coverages, shall be primary and noncontributing with any insurance maintained by the Engineer or its agents and consultants, and shall provide that the Engineer be given thirty days, unqualified written notice prior to any cancellation thereof.

In the event the foregoing requirements, or any of them, are not established by the Client and met by the Contractor, the Client agrees to indemnify and hold harmless the Engineer, its employees, agents, and consultants from and against any and all Losses which would have been indemnified and insured against by the Contractor, but were not.

When Contract Documents prepared under the Scope of Services of this contract require insurance(s) to be provided, obtained and/or otherwise maintained by the Contractor, the Client agrees to be wholly responsible for setting forth any and all such insurance requirements. Furthermore, any document provided for Client review by the Engineer under this Contract related to such insurance(s) shall be considered as sample insurance requirements and not the recommendation of the Engineer. Client agrees to have their own risk management department review any and all insurance requirements for adequacy and to determine specific types of insurance(s) required for the project. Client further agrees that decisions concerning types and amounts of insurance are

specific to the project and shall be the product of the Client. As such, any and all insurance requirements made part of Contract Documents prepared by the Engineer are not to be considered the Engineer's recommendation, and the Client shall make the final decision regarding insurance requirements.

25. Information Provided by Others: The Engineer shall indicate to the Client the information needed for rendering of the services of this Agreement. The Client shall provide to the Engineer such information as is available to the Client and the Client's consultants and contractors, and the Engineer shall be entitled to rely upon the accuracy and completeness thereof. The Client recognizes that it is impossible for the Engineer to assure the accuracy, completeness and sufficiency of such information, either because it is impossible to verify, or because of errors or omissions which may have occurred in assembling the information the Client is providing. Accordingly, the Client agrees, to the fullest extent permitted by law, to indemnify and hold the Engineer and the Engineer's subconsultants harmless from any claim, liability or cost (including reasonable attorneys' fees and cost of defense) for injury or loss arising or allegedly arising from errors, omissions or inaccuracies in documents or other information provided by the Client to the Engineer.

26. Payment: Client shall be invoiced once each month for work performed during the preceding period. Client agrees to pay each invoice within thirty (30) days of its receipt. The client further agrees to pay interest on all amounts invoiced and not paid or objected to for valid cause within said thirty (30) day period at the rate of eighteen (18) percent per annum (or the maximum interest rate permitted under applicable law, whichever is the lesser) until paid. Client further agrees to pay Engineer's cost of collection of all amounts due and unpaid after sixty (60) days, including court costs and reasonable attorney's fees, as well as costs attributed to suspension of services accordingly and as follows:

    Collection Costs. In the event legal action is necessary to enforce the payment provisions of this Agreement, the Engineer shall be entitled to collect from the Client any judgement or settlement sums due, reasonable attorneys' fees, court costs and expenses incurred by the Engineer in connection therewith and, in addition, the reasonable value of the Engineer's time and expenses spent in connection with such collection action, computed at the Engineer's prevailing fee schedule and expense policies.

    Suspension of Services. If the Client fails to make payments when due or otherwise is in breach of this Agreement, the Engineer may suspend performance of services upon five (5) calendar days' notice to the Client. The Engineer 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. Client will reimburse Engineer for all associated costs as previously set forth in (Item 4 of) this Agreement.

27. When construction observation tasks are part of the service to be performed by the Engineer under this Agreement, the Client will include the following clause in the construction contract documents and Client agrees not to modify or delete it:

Kotecki Waiver. Contractor (and any subcontractor into whose subcontract this clause is incorporated) agrees to assume the entire liability for all personal injury claims suffered by its own employees, including without limitation claims under the **Illinois** Structural Work Act, asserted by persons allegedly injured on the Project; waives any limitation of liability defense based upon the Worker's Compensation Act, court interpretations of said Act or otherwise; and to the fullest extent permitted by law, agrees to indemnify and hold harmless and defend Owner and Engineer and their agents, employees and consultants (the "Indemnitees") from and against all such loss, expense, damage or injury, including reasonable attorneys' fees, that the Indemnitees may sustain as a result of such claims, except to the extent that **Illinois** law prohibits indemnity for the Indemnitees' own negligence. The Owner and Engineer are designated and recognized as explicit third party beneficiaries of the Kotecki Waiver within the general contract and all subcontracts entered into in furtherance of the general contract.

28. Job Site Safety/Supervision & Construction Observation: The Engineer shall neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences of procedures, or for safety precautions and programs in connection with the Work since they are solely the Contractor's rights and responsibilities. The Client agrees that the Contractor shall supervise and direct the work efficiently with his/her best skill and attention; and that the Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction and safety at the job site. The Client agrees and warrants that this intent shall be carried out in the Client's contract with the Contractor. The Client further agrees that the Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work; and that the Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the subject site and all other persons who may be affected thereby. The Engineer shall have no authority to stop the work of the Contractor or the work of any subcontractor on the project.

When construction observation services are included in the Scope of Services, the Engineer shall visit the site at intervals appropriate to the stage of the Contractor's operation, or as otherwise agreed to by the Client and the Engineer to: 1) become generally familiar with and to keep the Client informed about the progress and quality of the Work; 2) to strive to bring to the Client's attention defects and deficiencies in the Work and; 3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. If the Client desires more extensive project observation, the Client shall request that such services be provided by the Engineer as Additional and Supplemental Construction Observation Services in accordance with the terms of this Agreement.

The Engineer shall not be responsible for any acts or omissions of the Contractor, subcontractor, any entity performing any portions of the Work, or any agents or employees of any of them. The Engineer does not guarantee the performance of the

Contractor and shall not be responsible for the Contractor's failure to perform its Work in accordance with the Contract Documents or any applicable laws, codes, rules or regulations.

When municipal review services are included in the Scope of Services, the Engineer (acting on behalf of the municipality), when acting in good faith in the discharge of its duties, shall not thereby render itself liable personally and is, to the maximum extent permitted by law, relieved from all liability for any damage that may accrue to persons or property by reason of any act or omission in the discharge of its duties. Any suit brought against the Engineer which involve the acts or omissions performed by it in the enforcement of any provisions of the Client's rules, regulation and/or ordinance shall be defended by the Client until final termination of the proceedings. The Engineer shall be entitled to all defenses and municipal immunities that are, or would be, available to the Client.

29. Insurance and Indemnification: The Engineer and the Client understand and agree that the Client will contractually require the Contractor to defend and indemnify the Engineer and/or any subconsultants from any claims arising from the Work. The Engineer and the Client further understand and agree that the Client will contractually require the Contractor to procure commercial general liability insurance naming the Engineer as an additional named insured with respect to the work. The Contractor shall provide to the Client certificates of insurance evidencing that the contractually required insurance coverage has been procured. However, the Contractor's failure to provide the Client with the requisite certificates of insurance shall not constitute a waiver of this provision by the Engineer.

The Client and Engineer waive all rights against each other and against the Contractor and consultants, agents and employees of each of them for damages to the extent covered by property insurance during construction. The Client and Engineer each shall require similar waivers from the Contractor, consultants, agents and persons or entities awarded separate contracts administered under the Client's own forces.

30. Hazardous Materials/Pollutants: Unless otherwise provided by this Agreement, the Engineer and Engineer's consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of or exposure of persons to hazardous materials/pollutants in any form at the Project site, including but not limited to mold/mildew, asbestos, asbestos products, polychlorinated biphenyl (PCB) or other toxic/hazardous/pollutant type substances.

Furthermore, Client understands that the presence of mold/mildew and the like are results of prolonged or repeated exposure to moisture and the lack of corrective action. Client also understands that corrective action is a operation, maintenance and repair activity for which the Engineer is not responsible.