



**CHRISTOPHER B. BURKE ENGINEERING, LTD.**  
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April 24, 2013

Village of Orland Park  
Public Works Department  
15655 Ravinia Avenue  
Orland Park, IL 60462

Attention: Mr. John Ingram – Infrastructure Maintenance Director

Subject: Proposal for Professional Engineering Services for  
Fernway Subdivision – Stormwater Improvements

Dear Mr. Ingram:

Christopher B. Burke Engineering, Ltd. (CBBEL) is pleased to submit this proposal to provide professional engineering services for the design of stormwater improvements for the Fernway Subdivision. This proposal includes our Understanding of the Assignment, Scope of Services and Fee.

#### UNDERSTANDING OF ASSIGNMENT

The Fernway Subdivision stormwater management system is an open drainage system that outlets to Tinley and Midlothian Creeks which traverse the neighborhood. CBBEL previously completed design plans to replace all of the cross road culverts in the Fernway Subdivision and perform creek modifications to provide more efficient drainage. The Village of Orland Park (Village) would now like to extend the work out into the neighborhood by reestablishing the culvert and ditch flow lines that are critical to the effective functionality of an open drainage system.

CBBEL also previously assisted the Village with the preparation of concept plan sheets that the Village had previously proposed to use in house to perform some of the ditch and culvert work. These working plans sheets will be used in conjunction with culvert and storm sewer information collected by SPACECO as part of the Village's NPDES GIS storm sewer inventory project to provide the basis of the ditch and culvert design. As previously identified by CBBEL, there are significant lengths of existing ditches that cannot be regraded to an acceptable slope to allow for positive drainage. Therefore, several new storm sewers and new outlets into the creek will likely be required. To complete an accurate, bid worthy design and prepare construction documents, CBBEL must complete a topographic survey of both sides of the road

in order to determine location of existing utilities, trees, driveway elevations, etc. and to be able to design the proposed ditches and storm sewer.

Working with the Village and utilizing the existing topography, CBBEL has divided the subdivision into 6 sub-watersheds. The costs for the design will be separated out for each sub-watershed so that the Village can proceed with one or more sub-watersheds based on the availability of funding. The streets in each watershed are defined as below:

**Watershed No. 1:**

170<sup>th</sup> Place: 88<sup>th</sup> Avenue to eastern Village limit  
Robinhood Drive: 171<sup>st</sup> Street to 170<sup>th</sup> Place                      Length of Roadway: 1,500'

**Watershed No. 2:**

170<sup>th</sup> Street: 88<sup>th</sup> Avenue to eastern terminus  
169<sup>th</sup> Street: 88<sup>th</sup> Avenue to eastern Village limit  
168<sup>th</sup> Street: 88<sup>th</sup> Avenue to eastern terminus  
Robinhood Drive: 170<sup>th</sup> Place to Midlothian Creek                      Length of Roadway: 5,250'

**Watershed No. 3:**

167<sup>th</sup> Place: 88<sup>th</sup> Avenue to eastern terminus  
166<sup>th</sup> Place: 88<sup>th</sup> Avenue to Robinhood Drive  
166<sup>th</sup> Street: 88<sup>th</sup> Avenue to Robinhood Drive  
165<sup>th</sup> Place: Robinhood Drive to eastern terminus  
Robinhood Drive: Midlothian Creek to 165<sup>th</sup> Place                      Length of Roadway: 4,600'

**Watershed No. 4:**

Robinhood Drive: 88<sup>th</sup> Avenue to 165<sup>th</sup> Place  
Sussex Drive: Shorewood Drive to Robinhood Drive  
Shorewood Drive: Sussex Drive to eastern terminus  
164<sup>th</sup> Street: Tinley Creek to Shorewood Drive  
163<sup>rd</sup> Street: Tinley Creek to eastern terminus  
Laurel Drive: Tinley Creek to Shorewood Drive                      Length of Roadway: 4,400'

**Watershed No. 5:**

Shorewood Drive: 88<sup>th</sup> Avenue to Tinley Creek  
164<sup>th</sup> Street: 88<sup>th</sup> Avenue to Tinley Creek  
163<sup>rd</sup> Street: Western terminus to Tinley Creek  
162<sup>nd</sup> Street: 88<sup>th</sup> Avenue to Laurel Drive  
Laurel Drive: Tinley Creek to 162<sup>nd</sup> Street  
Chadborne Drive: 90<sup>th</sup> Avenue to 88<sup>th</sup>  
88<sup>th</sup> Avenue: 164<sup>th</sup> Street to Chadborne Drive  
90<sup>th</sup> Avenue: 164<sup>th</sup> Street to Chadborne Drive  
Byran Drive: 163<sup>rd</sup> Street to 164<sup>th</sup> Street  
89<sup>th</sup> Court: 164<sup>th</sup> Street to cul-de-sac                      Length of Roadway: 8,300'

Watershed No. 6:

162<sup>nd</sup> Street: 88<sup>th</sup> Avenue to Laurel Drive

161<sup>st</sup> Place: 88<sup>th</sup> Avenue to Laurel Drive

Laurel Drive: Tinley Creek to 164<sup>th</sup> Place

Length of Roadway: 1,200'

Total Length of Roadway: 25,250'

Total Length of Existing Ditches: 50,500'

It is important to note that this project will be designed to accommodate general overland flow and nuisance flooding (temporary standing water in poorly graded ditches) it is not intended to solve the flooding issues in large rain events. Because this neighborhood lies within the floodplain/drainage area of both Midlothian and Tinley Creeks, solving the flooding from large storm events would require a significantly larger amount of infrastructure, land and design engineering.

### SCOPE OF SERVICES

Based on our experience with similar projects, our anticipated scope of services is detailed below:

**Task 1 – Topographic Survey:** CBBEL will collect survey data as needed to supplement the existing plan and survey data previously provided. CBBEL will survey edge of pavement grades' top of ditch grades, driveways and grade at approximate right-of-way line. CBBEL will also utilize GIS information collected for the culverts and storm inlets by SPACECO as part of the Village's NPDES storm sewer inventory project.

**Task 2 – Utility Coordination:** CBBEL will identify utilities that may have facilities within the project limits and send a Preliminary Utility Request to known utility companies to obtain pertinent information. Based on the information received from the utility companies, CBBEL will include locations of facilities on the plans, identify potential conflicts with the proposed project and design the proposed improvements to minimize utility conflicts.

**Task 3 – Drainage Analysis:** Based on the data collected in Task 1, CBBEL will analyze the existing drainage information to determine tributary areas, outlet locations and other stormwater related data based on the actual field conditions. CBBEL will then prepare the design of the proposed conveyance system, including ditch design and culvert sizing, for each of the sub-watersheds. For the areas determined to be too flat to allow for positive overland flow, CBBEL will design and size a pipe conveyance system capable of accommodating the flows. CBBEL will attempt to utilize existing drainage patterns and outlets for the proposed system; however if a more efficient option is available or an alternate route allows for more effective transport of stormwater, CBBEL will propose these options to the Village to reduce or eliminate the existing poor drainage conditions present throughout the Fernway Subdivision.

**Task 4 – Preliminary Engineering:** When the Working Plan Sheets were created in 2011, the plans provided new culvert and ditch grades for these areas which were favorable to a ditch regrading effort. There were numerous block of streets which were simply too flat to provide

adequate revised ditch grading. For these areas, storm sewer will be required in order to obtain positive ditch flow. Storm sewer design is more man-hour intensive and will require sewer plan and profile sheets and design of specific structures. Furthermore, providing a sewer design on one street will affect the ditch and culvert grading on upstream and downstream streets.

It is assumed that separate plan sets/bidding documents will be completed for each watershed area due to funding limitations. If more than one area are bid together simultaneously, a small reduction of manhours would be realized. The following sheets will be completed for each watershed area:

SHEET HOURS	AVERAGE HOURS/SHEET	WS 1		WS 2		WS 3		WS 4		WS 5		WS 6	
		# OF SHEETS	HOURS	# OF SHEETS	HOURS	# OF SHEETS	HOURS	# OF SHEETS	HOURS	# OF SHEETS	HOURS	# OF SHEETS	HOURS
Title Sheet	4	1	4	1	4	1	4	1	4	1	4	1	4
General Notes/ Summary of Quantities/ Typical Sections	20	2	40	2	40	2	40	2	40	2	40	2	40
Alignment Ties & Benchmarks	8	1	8	1	8	1	8	1	8	1	8	1	8
Sewer Plan & Profile Grading Sheets 1"=20'	20	3	60	9	180	9	180	7	140	14	280	3	60
Erosion Control & Landscaping Plans & Details 1"=50'	6	2	12	4	24	4	24	3	18	5	30	3	18
Cross-Sections	8	4	32	16	128	15	120	11	88	19	152	3	24
Construction Details	6	2	12	2	12	2	12	2	12	2	12	2	12
Specifications	(14)	-	14	-	14	-	14	-	14	-	14	-	14
Opinion of Probable Costs/Quantity Calculations	(14)	-	14	-	16	-	16	-	14	-	16	-	14
QA/QC	(8)	-	6	-	8	-	8	-	8	-	8	-	6
<b>TOTALS</b>		<b>15</b>	<b>202</b>	<b>35</b>	<b>434</b>	<b>34</b>	<b>426</b>	<b>27</b>	<b>346</b>	<b>44</b>	<b>564</b>	<b>15</b>	<b>200</b>

WS = Watershed Area

Preliminary Plans, Specifications and opinion of probable cost will be submitted to the Village for review. This task includes one review meeting with Village Staff.

**Task 5 – Permitting:** Although the Village has jurisdiction over the majority of the areas where work is proposed, several other agencies and/or municipalities are located in one or more of the sub-watersheds. As needed to permit and/or construct the proposed improvements, CBBEL will coordinate with Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), Cook County, Illinois Department of Natural Resources – Office of Water Resources (INDR-OWR), Illinois Department of Transportation (IDOT), Tinley Park, and Orland Hills. CBBEL will also prepare a Stormwater Pollution Prevention Plan (SWPPP) consistent with the requirements of the Village’s NPDES Phase II permit and submit it to the Illinois Environmental Protection Agency (IEPA).

**Task 6 – Final Engineering:** Upon meeting with the Village Staff to review their comments on the preliminary submittal, CBBEL will revise and finalize the contract documents and cost estimate. During this task, the exact letting date will be determined and an estimated construction schedule will be provided.

**Task 7 – Local Agency Coordination/QA-QC/Administration:** Although the Village owns the majority of the roadways where most of the work is proposed, there may be a need for coordination with adjacent municipalities or Cook County. CBEL will meet and/or coordinate with all local governmental agencies as needed throughout the course of the design to obtain concurrence and /or approval for the proposed activities. All QA/QC aspects and project administration is included under this item.

**Task 8 – Bid Assistance:** CBEL will assist the Village in advertising for bids, distribute plans and specifications to all bidders, and be present at the bid opening. CBEL will review and tabulate all of the bids and make a recommendation of award.

**FEE**

The estimated costs for the tasks provided above are as follows:

TASK	DESCRIPTION	WATERSHED AREAS					
		1	2	3	4	5	6
1	Topographic Survey	\$5,930	\$19,890	\$17,640	\$17,600	\$31,870	\$4,650
2	Utility Coordination	\$870	\$870	\$870	\$870	\$870	\$870
3	Drainage Analysis	\$2,400	\$4,800	\$3,900	\$3,900	\$6,000	\$2,000
4	Preliminary Engineering	\$16,400	\$34,600	\$34,600	\$28,000	\$45,825	\$16,250
5	Permitting	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
6	Final Engineering	\$8,850	\$18,650	\$18,650	\$15,250	\$24,675	\$6,000
7	Local Agency Coordination/QA-QC/Administration	\$2,400	\$3,000	\$3,000	\$2,400	\$3,000	\$2,000
8	Bid Assistance	\$1,200	\$1,200	\$2,000	\$2,000	\$2,000	\$1,200
Sub Total		\$40,450	\$85,410	\$83,060	\$72,420	\$116,640	\$35,370
Direct Costs		\$750	\$1,910	\$1,760	\$1,390	\$2,230	\$685
<b>Total</b>		<b>\$41,200</b>	<b>\$87,320</b>	<b>\$84,820</b>	<b>\$73,810</b>	<b>\$118,870</b>	<b>\$36,055</b>

We will bill you at the hourly rates specified on the attached Schedule of Charges and establish our contract in accordance with the previously accepted General Terms and Conditions for the Village. It is assumed that no federal funding or MFT funding will be utilized. The fees listed for each watershed area are for independent plan sets. If more than one watershed area is designed concurrently, a reduction in design fees is warranted.

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

Attachment: Standard Charges

THIS PROPOSAL, SCHEDULE OF CHARGES AND GENERAL TERMS & CONDITIONS ACCEPTED FOR  
THE VILLAGE OF ORLAND PARK:

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_