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October 28, 2022
(Rev. January 23, 2023)

Mr. Bryan T. Healy
Village Manager
Village of Croton-on-Hudson
1 Van Wyck Street
Croton-on-Hudson, NY 10520

Re: Brook Street Drainage Basin
Village of Croton-on-Hudson

Dear Mr. Healy:

In response to your recent request and discussions with our staff, D&B Engineers and Architects (D&B) is pleased to submit its proposal to provide consulting services for updating one specific section, Brook Street Drainage Basin, of the Phased Storm Water Management Plan (Drainage Study) for the Incorporated Village of Croton-on-Hudson.

SCOPE OF WORK

Background

Over the years, the Hudson River and Croton River watershed areas have seen increasing development with a corresponding increase in concerns over the impact of runoff rates through the various watersheds. In response to this, D&B prepared for the Village a Drainage Study that provided a planning process to develop a storm water management plan. The Village has recently requested that D&B update the study but focusing solely on the Brook Street Drainage Basin.

To address the Village's concern, this scope of work involves a series of tasks/activities that will allow D&B to update, specifically, the Brook Street Drainage Basin reflecting the physical changes that have taken place in the intervening years since that initial study was completed.

The tasks to be performed are as follows:

- Gather and Evaluate Available Drainage and Other Related Information for Brook Street
- Calculate Hydrology/Runoff Conditions Using TR-55 Model
- Evaluate Hydrologic Restrictions
- Update the previously prepared models

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- Evaluate Modifications/Improvements
- Prepare Alternative Concepts for Brook Street and corresponding construction cost estimates

Evaluate Available Drainage and Other Related Information

This task will involve comparing our previously prepared mapping for the Brook Street Drainage Basin and gathering available mapping indicating any improvements that have taken place since D&B initially prepared the original study. Field inspection and editing of available mapping will be performed to ensure that an accurate updated map can be assembled.

Calculate Hydrology/Runoff Conditions Using TR-55 Model

Utilizing the available drainage and associated infrastructure information, D&B will utilize AutoCAD Storm & Sanitary Analysis (HydroCAD) to perform an analysis of the hydrologic conditions of the watershed utilizing TR-55 modeling. The output of the model will be used to evaluate areas requiring enhancement to existing drainage infrastructure.

Evaluate Hydrologic Restrictions in Brook Street Drainage Sub-drainage Areas

Field work will be conducted to confirm pertinent dimensions, invert elevations and general field conditions of existing hydrologic restrictions. This information will be used to model the routing of the subareas contributing storm water runoff through each of the restrictions.

The information obtained from this task will allow for the determination of the adequacy of the existing conveyance system (culvert, pipes, ponds, etc.) through which the storm water runoff traveled in the sub-drainage area.

Update Previously Prepared Models

Following the evaluation of hydrologic restrictions in the Brook Street area, a detailed hydraulic analysis will be updated using the newly revised mapping with new data for 2-year, 10-year and 100-year storms. The model will be used to calculate water surface profiles for steady, gradually varied flow.

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Evaluate Modifications/Improvements for the Brook Street Sub-basin Drainage Areas

This task will evaluate alternative modifications/improvements to alleviate/minimize the impact of the newly calculated runoff in the Brook Street drainage areas. This may include consideration of options such as:

- check dams
- detention basins
- spillway modifications
- new ponds/enlarged ponds
- diversions
- high flow bypass
- BMPs (controls on land clearing, development BMPs, etc.)

Identify Conceptual Improvements and Corresponding Costs

A draft report will be prepared that presents the findings of the above tasks together with up to three potential improvements to alleviate the drainage problems experienced in the Brook Street Drainage Basin and corresponding costs.

D&B proposes to hold three meetings with the Village:

- Confirm conditions and gather existing data
- Present draft report and findings
- Using input from the Village, finalize and present the final report

Schedule

The draft report for Village review will be completed within 4 months from a notice-to proceed and a final plan (which reflects a 1-month Village review) will be completed within 6 months of the notice.

COST PROPOSAL

D&B proposes to update the specific sections of the previously prepared computer drainage model incorporating any physical changes that have taken place in the Brook Street Drainage Basin. The computer model will then be used to identify the best three (3) conceptual improvements that can be made to potentially alleviate the drainage issue being experienced. Corresponding cost estimates will be prepared for each of the three (3) identified alternatives. These costs and improvements will be presented to the Village.

The Lump Sum Fee for these services will be \$47,800.00.

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Village of Croton-on-Hudson
October 28, 2022
(Rev. January 23, 2023)

Page 4

We look forward to working with the Village on this exciting project. If you should have any questions, please do not hesitate to contact me.

Very truly yours,



Steven E. Patak
Associate

RJCt/kb/cf

CC: R. Cotilla (D&B)
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W. Merklin (D&B)

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