Wilcox & Barton INC.
CIVIL • ENVIRONMENTAL • GEOTECHNICAL

MEMORANDUM

TO: North Hampton Public Library Trustees

FROM: Wilcox & Barton, Inc.

SUBJECT: Project Summary of Stormwater Management Design and Site Drainage Study
233 Atlantic Avenue, North Hampton, NH

DATE: May 20, 2020

The proposed project involves construction of a 12,000-square foot public library building and associated site improvements. Site improvements include 18 parking spaces including 2 ADA accessible spaces, accessible sidewalks from the new and existing parking spaces, a patio, and proposed street trees. The building will be serviced by municipal water, electric and natural gas. The building will be fully sprinklered. A new on-site septic system will be installed in the northeast corner of the lot. Stormwater controls on the site include drip edge around the perimeter of the building, on the west end of the parking lot and an underground Stormtech gallery to infiltrate runoff.

The pre-development watershed consists of the entirety of the subject parcel and has been divided into 3 points of interest (POI). POI #1 represents all runoff flowing to the western boundary line, to Alden Ave, or westbound on Atlantic Ave; POI #2 represents runoff that flows to the northeast; and POI #3 represents the runoff flowing to the southeast boundary, eastbound on Atlantic Ave, towards the Town's closed drainage system.

The post-development watershed consists of the same area as the pre-development watershed. Proposed construction does not change the POIs. The drip edges around the building addition infiltrate stormwater runoff from the majority of the new building. They are sized to retain and infiltrate at least the 10-year storm event and contain the majority of the flow from the 25-year event. The drip edge consists of a 3 to 4.5-foot wide by 3-foot deep trench along the edge of the building. There is also a drip strip along the west edge of the proposed parking lot which will be is 3 feet deep and between 3 and 10 feet wide comprise of NHDOT class C stone. All building perimeter drip edges shall maintain a maximum trench depth of 0.5-feet over all proposed foundation wall and column footings.

POI		Peak Discharge		
		2-yr	10-yr	25-yr
		Peak Q	Peak Q	Peak Q
#1	Pre	0.19 cfs	0.88 cfs	1.42 cfs
	Post	0.08 cfs	0.82 cfs	1.36 cfs
#2	Pre	0.05 cfs	0.23 cfs	0.41 cfs
	Post	0.03 cfs	0.10 cfs	0.17 cfs
#3	Pre	0.10 cfs	0.36 cfs	0.60 cfs
	Post	0.48 cfs	0.99 cfs	1.42 cfs

The preceding table summarizes the pre- and post-development peak flow rates based on the HydroCAD drainage models we developed for the site. The peak rate of runoff is attenuated to a level below the existing condition in POIs #1 and #2 in all modeled storm events. Stormwater is detained in the proposed drip edges and treated by means of travel through native materials prior to entering the groundwater table. There is a slight increase in the rate of stormwater runoff from POI #3 which includes the new driveway. However, due to the decrease in runoff from the other points of interest, additional runoff from the site is minimal.