

HANCOCK ASSOCIATES

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#24819

October 26, 2022

Patrick Reffett, Director
Planning and Inspectional Services
Town of Hamilton
577 Bay Road
Hamilton, MA 01936

RE: Stormwater and Septic Peer Review
Asbury Commons 421 Asbury Street Site Plan Review

Dear Mr. Reffett,

On behalf of our client (Harborlight Community Partners), Hancock Associates respectfully submits eight sets of the following documents:

- Revised Site Plans entitled "Preliminary Site & Utility Plan" revised though 10/25/22
- Revised Stormwater Report entitled "Stormwater Management Report" revised though 10/21/22
- Conceptual Subdivision Plan entitled "Conceptual Subdivision Plan" dated 10/25/22
- Septic System Plan entitled "Septic System Design Plan" dated 10/26/22
- Mounding Analysis dated 9/27/22

These documents are submitted in response to the peer review by GM2 Associates, Inc. dated August 31, 2022. In addition, the Conceptual Subdivision Plan is being filed to document the increase in the land area proposed for this project. The increase is from 4.891 acres as originally filed to 23.765 acres. This increase in area will alleviate the need to file for an Aggregate Plan with the Board of Health. We will now meet the 440GPD/builders acre required for Septic Systems within in a Zone II Drinking Water Supply and documents we adequately protect the Town's Drinking Water Supply under Title V. Additionally, we now meet the impervious area restriction for land within the Groundwater Protection Overlay District under Section 9.1.9(3) of the Hamilton Zoning Bylaw further documenting protection of the Town's Drinking Water Supply under the Zoning Bylaw. Our impervious area will now be 5.8% of the lot area, less than the 15% that would require a Special Permit. We hereby withdraw our request for a waiver from this section of the Bylaw.

Also, we respectfully submit these responses to the peer review comments previously referenced. For ease of review peer review comments will be in italicized print and our responses will be in regular bold.

Standard 2 – Peak Rate Attenuation:

Pre-development Subcatchment Plan

The flow path for subcatchment 20s appears to run uphill at the end of its path. Applicant should revise flow path and tc calculation.

This flow path and tc calculation has been updated in the HydroCAD model.

Post-development Subcatchment Plan

Flow paths are not shown on the Post-development Subcatchment Plan.

Flow Paths have been added to the revised Post-development Subcatchment Plan

HydroCAD Report

The proposed infiltration basin (Pond 200P) is modeled using a 2.41in/hr infiltration rate. While this rate is consistent with Rawls Rates for Loamy Sand, the provided percolation test result for TP-8/P-8 is 49 minutes per inch. Percolation tests are not allowed for use in designing stormwater infiltration BMPs, but the results indicate that the actual infiltration capacity in that location may be less than 2.41in/hr. GM2 recommends the Engineer revises their model of Pond 200P using a more

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conservative infiltration rate. We do not foresee the change in exfiltration rate impacting the rate in flow that would increase the flow to design point 200R to a point where it would not meet Standard 2.

The proposed infiltration basin (Pond 200P) was revised to model its infiltration rate as 1.02 in/hr. which is the Rawls Rate for sandy loam. Although we agree that percolation tests are not allowed to use for design this rate is more conservative and ultimately does not impact the flow rate extensively and the design is still in compliance with Standard 2 for the design point 200R.

Standard 3 – Recharge:

The proposed underground infiltration system (Pond 300P) is reported to be sited 2 feet above estimated seasonal high groundwater, however, there are no test pits shown within the limit of the system. The Handbook requires soil evaluations to be performed at the “specific location where recharge is proposed.” Considering the minimum groundwater separation is being held, additional test pits may be appropriate to verify the system meets the 2-foot groundwater separation requirement. Also, where the design is held at the 2-foot required separation we recommend a groundwater mounding analysis be provided.

Additional soil testing was conducted in the area of the proposed underground system. The results of this testing showed no evidence of estimated seasonal high groundwater in the test pits dug, however the depth of TP-2022-8 was 92” below existing grade (Elevation 47.3) and raised the elevation of our assumed estimated seasonal high groundwater. This result has changed the chamber model from StormTech MC-4500 to StormTech SC-740 chambers and can be seen on the revised site plan.

A mounding analysis was performed and is provided in the revised stormwater report. The results of the analysis show the peak mound beneath the system after a 24 hour storm event and 72-hour drawdown period is approximately 1.25 feet and is incorporated in the design of the underground system. This is reflected in the revised estimated seasonal high groundwater elevation (Elevation 48.6) under the underground system. The bottom of the proposed underground system is 51.60 and is greater than the required 2-foot separation from estimated seasonal high groundwater.

Standard 4 – Water Quality:

The calculations demonstrate that the water quality requirements have been met. The Engineer attributes the Contech VortSentry Unit with providing 80% TSS removal. Supporting documentation should be submitted to support this claim. The efficiency of third-party water quality units often varies based on the reporting sources. Since the dissolution of the MassSTEP program, which provided independent testing of third-party water quality units, application reviewers and approving authorities must often rely solely on data from the manufacturers themselves. This data is often anecdotal and may not reflect the removal rate that will be provided by being used in this project. However, the required pretreatment TSS removal rate, prior to infiltration, is 44% and is achieved using deep sump and hooded catch basins (25% TSS Removal) and crediting the Contech VortSentry Unit with as little as 25%. Combined with infiltration of the required water quality volume, the treatment train for each of the two BMPs provides 88.8% TSS removal. This exceeds the 80% TSS removal rate required by Standard 4.

Supporting documentation for Contech VortSentry Unit’s TSS removal efficiency has been provided with the revised stormwater report. The TSS removal efficiency of the Contech VortSentry Unit’s TSS removal will be evaluated in the final drainage design. As stated in the comment above, this stormwater BMP along with deep sump hooded catch basins is intended to provide the required 44% TSS removal pretreatment and agree that the design meets the requirements for Standard 4.

Standard 6 – Critical Areas:

The project discharges stormwater to a Zone II Wellhead Protection Area. For clarity, the Engineer should specify the critical area to which the project discharges and state the requirements related to that critical area. Discharging to a Zone II requires 44% pretreatment prior to discharging to the

infiltration BMP and requires 1-inch of runoff from impervious areas be used in calculating the Water Quality Volume (Standard 4). Both of these requirements are met in the design.

Our statement regarding compliance for Standard 6 has been revised to reflect the critical area we are discharging to, as well as the design requirements that are necessary to satisfy this Standard.

Standard 7 – Redevelopment Subject to the Standards Only to the Maximum Extent Practicable:

Non-redevelopment projects are fully subject to all standards, not to the extent practicable. The Engineer should re-write their response for clarity.

This statement has been clarified on the revised stormwater report.

Standard 8: Construction Period Pollution Prevention and Erosion & Sedimentation Controls

The Engineer has submitted an Erosion & Sediment Controls plan that is consistent with the Handbook. A more thorough NPDES Stormwater Pollution Prevention Plan is required prior to construction.

This comment is noted and a NPDES Stormwater Pollution Prevention Plan shall be provided by the owner prior to construction.

Standard 9: Operation & Maintenance Plan

The cleaning schedule provided for the StormTech MC-4500 Chambers references the Isolator Row sediment depths. The Isolator Row is a different StormTech product that provides pre-treatment; therefore, it is expected to see sediment build up in that product. The MC-4500 Chambers should be receiving pre-treated water for the purpose of exfiltrating it back into the groundwater table. StormTech does not provide a threshold for sediment depths in infiltration chambers at which cleaning is recommended because the chambers are designed to be used with the Isolator Row. The Engineer should incorporate inspection ports into the underground infiltration system design and provide a threshold for which cleaning is recommended as well as direction on how the system should be cleaned

Although Stormtech does not specify a specific sediment depth for chambers without an isolator row. We believe they should follow a similar maintenance schedule. There are two pretreatment BMP's provided that have the potential remove the required sediment prior to discharge to the infiltration chambers.

Standard 10: Illicit Discharges to Drainage System

As noted, the Owner shall submit a "no illicit discharges statement" prior discharge of stormwater to post construction BMPs.

This comment is noted and an illicit discharge statement shall be provided by the owner prior to post construction BMP's.

Town of Hamilton Stormwater Management Permit Rules & Regulations

The submitted documents do not address the local regulations. While it does appear that the local, more stringent regulations are met, the Engineer should address each standard and document compliance.

The revised stormwater report now states the local, more stringent regulations that his proposed development applies to. They are now included in Standard 3 and Standard 4 of the revised report.

Additional Stormwater Comments

Siting of infiltration basin limits development potential on abutting property, as the Handbook states that a private well should be 100ft from an infiltration basin. Additionally, the overflow for the infiltration basin is designed to discharge to the abutting property to the west. GM2 recommends that the overflow be redirected away from the abutting property.

The abutting property to the west is subject to a Conservation Restriction and cannot be developed. There are no private wells located within 100ft of the proposed infiltration basin. The siting of this infiltration basin and overflow device has been approved by the western property owner who is also the seller for this project.

Regards,
Hancock Associates acting on behalf of Harborlight Community Partners



Charles Wear III, PE
Engineering Manager/Senior Project Manager



Russell Tedford, EIT
Project Engineer

Cc: Andrew DeFranza, Harborlight Community Partners