

James Engineering, Inc.
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July 21, 2019

Mrs. Mary Savage-Dunham
Director of Planning and Community Development
Town of Hingham
210 Central Street
Hingham, MA 02043

Re: 85 Tower Road, Site Plan Review

Mrs. Dunham and Members of the Planning Board;

In response to the comments we received from the Board at our last hearing and the letter from the Boards review engineer, Chessia Consulting Services, LLC, dated July 17,2019, attached for your review and approval are 8 sets of the revised plans and 2 copies of the stormwater report for the above noted site. As requested by the Board, all of the trees within the proposed limits of work have been located and are identified by size and species. In response to the review engineers' comments, I offer the following;

Section I-1 Site Plan Review

1. No comment
2. No comment
3. No comment
4.
 - a. The Zoning data and table is shown on sheet 1. House dimensions are now shown on sheet 3 of 5. All dwellings within 100' of the parcel are shown on Sheet 1.
 - b. Floor plans will be submitted under separate cover.
 - c. Driveway details have been added to correspond with the stationing.
 - d. No comment required
 - e. A proposed water service to the dwelling is identified on the plans. The Board of Health has commented on the plans and these items have been corrected. The basin between the driveway and Tower Road is a detention basin that will drain between events. Since it will be created by fill, the quality of the fill soil is the more important issue not the native soils.
Electric will be overhead and HMLP will set the utility pole locations.
Existing trees have been located. All trees within the limits of grading will be removed. No landscaping plan is proposed. All disturbed areas will be loamed & seeded.
 - f. There are 5 spot grades at the toe of the wall along Tower Road and 3 shots along the toe in front. The height of the wall above Tower Road is now shown.

At the northeast corner of the house, as requested by the Building Inspector, the retaining wall on this corner has been eliminated and the regrading is now shown. The retaining walls have all been eliminated and converted to 2h:1v slopes.

There are no test pits in the area of the proposed dwelling because this area is not accessible by an excavator except across the neighbor's yard.

- g. The existing foundation will be removed in conjunction with this proposal. Accordingly, any foundation drain will also be removed.

h. Storm Water Standards

Standard 1- Untreated Stormwater

The subsurface infiltration system is being used to reduce peak flow rates. No credit for treatment will be derived from infiltration.

The small basin between the proposed driveway and Tower Road will not treat any impervious surface either. It is a detention basin which will drain between events based primarily on the fill that will be introduced for the driveway. Since there is no treatment intended by this basin, the native soil composition is not relevant.

Sizing calculations for the stone at the outfall are shown in the report. See page 6 of the calculations although the Mass Erosion and Sediment Control manual indicates that vegetation is an acceptable alternative for flow velocities up to 6 ft/se.

Standard 2-Post Development Peak Discharge Rates

The Tc calculations have been extended to the wetlands, which is where the runoff will enter the receiving waters. The limit of the analysis coincides with the limit of disturbance. The analysis is a determination as to whether the proposed development will increase the peak flow off the disturbed area. Since the peak flow rate off this portion is the same for both existing and proposed, the peak flow rate for the entire watershed into the wetlands is not impacted by the development. The remainder of the area into the receiving wetlands is the same watershed for both existing and proposed conditions. These results will therefore be the same. Since the Tc calculations extend to the wetlands and we know that the area between the development and the wetlands will have a shorter Tc, the time of the peak flow rate will not differ from the analysis. Thus, in accordance with set theory;

Given;
a = existing peak flow
b = proposed peak flow
c = peak flow rate of undisturbed area
if $a < b$
then $a + c < b + c$

Regardless, expanding your analysis area is normally a methodology considered not acceptable to the Department because it tends to diminish the impact of the peak flow rate increases from the development.

Although the setback requirements to a steep slope are noted for an Infiltration Trench not subsurface structures in Volume 2 Chapter 2, the proposed infiltration chamber system has been moved to the toe of the slope away from the existing foundation. The design grades over the system are now enough to provide a minimum of a foot of cover. In addition, the grade below the system has been changed to 20%. The reason the system was in the foundation area was to ensure that no mature trees would need to be removed to install this system. By complying with the request of the review engineer, 2 of the most significant trees on site will need to be removed. The system is now located over the test pit and the existing leaching facilities. A second test pit through the existing leaching facilities will not be of any use since the soil colors have all been modified by the sewage flow from use by the occupants of the prior dwelling.

Test pits in the area between the foundation and Tower Road have not been conducted because of access and safety issues. In addition, the infiltration rate of the native soils in this area is not relevant because of the fill. If the fill is a sandy soil, the 100-year storm volume will drain between events in approximately 14 hours at a rate of 2.4" per hour. The overflow pipe was removed from the calculation. The catch basin remains since it will be the emergency overflow from this basin.

The existing tree line is shown on the plans. In existing conditions analysis, all areas within this tree line are assumed to be wooded. All other areas are assumed to be landscaped or a gravel driveway. For proposed conditions, it was assumed that all areas would be landscaped or impervious and no wooded areas would remain.

Standard 3-Recharge to Groundwater

The infiltration system was not located on the ledge which is shown on the plan. Regardless, this issue and the testing issue has been resolved by moving the system down.

Standard 4-80% TSS Removal

The treatment train proposed is not dependent upon the treatment being provided by the infiltration. Like the systems in Patterson Pond estates and the Herb

Chambers site, the filter fabric wrap is providing the final leg in this treatment train not infiltration, so pretreatment is not an issue.

All the runoff from the impervious surfaces is being treated. The water quality volume is not significant, but this volume has been corrected in the calculations.

Standard 5-Higher Potential Pollutant Loads

No Comment required

Standard 6-Protection of Critical Areas

See Standard 4 above

Standard 7-Redevelopment

No credit for redevelopment was taken

Standard 8-Erosion/Sediment Control

A schematic plan for erosion control has been added.

Standard 9-Operations and Maintenance

A note is in the O & M report *to notify an engineer* if the basin does not drain within 72 hours.

Standard 10-Illicit Discharge Statement

No Comment required

- i) No lighting is proposed beyond the house

- j) No comment required

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If you have any further question or comments regarding the submission, please do not hesitate to contact me. I look forward to meeting with the Board to discuss this further.

Very truly yours,

Gary D James
Gary D. James, P.E.

