

PVI Site Design

18 Glendale Road, Norwood, MA - 339.206.1030
Master Planning - Civil Engineering - Land Entitlements

Wrentham Conservation Commission

Town of Wrentham
79 South Street
Wrentham, MA 02093

July 14, 2022

RE: Sheldon Meadow & Sheldon West – Engineering Review

To Whom it May Concern,

PVI Site Design, LLC (PVI) was retained by Janet Sozio of 1171 West Street and Joudrie and Bill Jones of 32 Hancock Street to review the proposed projects located at 1139 West Street and 20 Hancock Street respectively. PVI has done an initial review of the plans and application documents available on the Town of Wrentham website.

Below we offer a number of comments on the initial design to identify key elements that need to be addressed in order for the Conservation Commission to make a reasonable determination regarding the impacts of the project. All comments apply to both projects unless specifically noted otherwise.

Septic Design

1. The Health Department provided comment that they have not yet received design drawings for the proposed septic system, and no details have been provided.
2. Title 5 calls for setbacks to subsurface drains when the drains which discharge to tributaries of surface water supplies. The entire area falls within the Rhode Island Surface Water Protection Area and is tributary to the Diamond Hill Reservoir for the Pawtucket Water Supply. Setbacks from leach field areas to subsurface drains is required to be 100-feet. The proposed septic field for Hancock St is less than 100-feet from an underground infiltration system.
3. Reserve areas are not identified. Without additional details, it is unclear if there is adequate space for the septic systems proposed.

The Conservation Commission cannot make a reasonable finding to the Environmental Impacts of the project without knowing the details of the septic system.

Groundwater and Aquifer Protection

PVI has discussed the project with our client and multiple neighbors who experience groundwater issues on their property. It is reasonable to assume a project of this scale could alter groundwater patterns with negative impacts to existing properties. The

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applicant does not provide any specifics of groundwater patterns or effects of mounding from the leach field and infiltration systems proposed.

Water Supply

1. The DPW review letter has raised concerns about lack of water sources and water quality in the area of this development. In order to properly demonstrate that the solution is adequate for the development, and that the effort will result in an improvement to the neighborhood, the review of the mitigation required by the DPW should be presented to the board for their consideration prior to rendering a decision.
2. In addition to water quality, fire protection capability should be presented. Hydrant flows tests in the area should be performed to confirm working pressures and flows. Results should be reviewed by the Fire Department and compared to current standards and best practices.

Earthmoving

The applicant is seeking a Special Permit for Earth Removal. The client should provide detailed Cut & Fill calculations clearly on the drawings. The applications note 35,640 cubic yards (CY) for Hancock Street and 32,965 CY for West Street to be "transported from Site", yet only 21 CY and 124 CY respectively to be "excavated within the site".

These quantities do not appear consistent with the design. The grading plan illustrates that the site is primarily a fill site, yet the application implies an export site. The quantity "excavated within the site" should include the export amounts.

Without providing Construction Management Plans that address timing of truck movements, number of truck trip anticipated, and travel paths over public roads the applicant has failed to demonstrate that they will not create unreasonable detrimental effects to adjacent lands and public facilities.

Excessive travel by construction vehicles can lead to premature failure of roads and other infrastructure that may require mitigation. Sediment from trucks entering and existing on the road will runoff into adjacent lands, drainage systems and/or resource areas. No controls or notes about maintenance off-site have been provided on the plans or in the narratives.

Stormwater Review

As a project within the 100-Foot Buffer to a Bordering Vegetated Wetland and Riverfront Area, the project will need to comply with the 10 Stormwater Management Standards and design guidelines. The following items do not meet the guidelines outlined in the Stormwater Management Handbook:

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Infiltration Basin Design:

1. The Handbook states "Include access in the basin design. The area at the top of the basin must provide unimpeded vehicular access around the entire basin perimeter. The access area shall be no less than 15 feet." 10-feet or less is provided.
2. Vol. 3, Ch 1 – A mounding analysis is required when the vertical separation from the bottom of an exfiltration system to seasonal high groundwater is less than four (4) feet and the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm. The Stormwater Checklist notes that a mounding analysis is provided, but it is not included in the Supplemental Data Report.
3. Calculations are not provided for Water Quality Volume as it relates to the infiltration ponds.

General Stormwater Comments:

1. The stormwater calculations assume the entire bottom of the basins have an infiltration rate of 8.27 in/hr. The details call to modify the loam to allow for infiltration, however no back-up data on the infiltration rate of this material is provided. Typical Loam infiltration rates can be as low as 0.52 in/hr, a 94% reduction in infiltration capacity over the design assumptions.
2. Under existing conditions, surface water follows the natural grade from abutting properties onto the subject property. The low elevation allows this surface water to continue its natural path and pond up on the field after rainfall events providing a natural storage mechanism. The project proposes to fill the property 6-8 feet above the existing field elevations. Filling the site without proper perimeter conveyance systems will cause impoundments of surface water in neighboring properties. Specifically, the property edge at 1143R West Street and 32 and 46 Hancock Street. Little to no detail is provided on how surface water will be conveyed from the edges of these properties. Hydrologic calculations should be provided to demonstrate the flow in proposed conditions and details for the width & depth of a swales system provided to ensure proper drainage.
3. The assumptions for watershed areas and flow paths at 32 Hancock are inconsistent between existing and proposed conditions. It appears the the proposed conditions cause runoff from 40 Hancock to flow into 32 Hancock due to the proposed grading and retaining wall system.
4. The proposed retaining wall adjacent to 32 Hancock is shown to have a "Strip drain" at the top of the wall. Introducing water behind a retaining wall is a poor practice and can create hydrostatic pressure behind the wall leading to failure. In addition, common practice is to provide weep holes at the bottom of wall. This system would result in stormwater discharge into the back yard of 32 Hancock St.

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5. The stormwater report provides flow rates for new discharge points; however it does not provide sizing calculations based on velocity of stormwater per Volume 3 of the Stormwater Handbook.

For the reasons listed above we do not believe the applicant has provided adequate information for the Conservation Commission to make a determination on the project, and as presented, the project potentially creates substantial negative environmental impacts in the Watershed and Aquifer Protection Districts, surrounding neighborhood, and resource areas.

We appreciate the opportunity to submit these comments. We hope the Conservation Commission will take them into consideration prior to making any findings for the project.

Thank you.

PVI Site Design, LLC



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Copy: Janet Sozio
Enclosures: (none)