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October 6, 2017

Jonathan M. Sachs, Chair Zoning Board of Appeals Town of Wayland 41 Cochituate Road Wayland, MA 01778

- Attn: Elizabeth Reef, ZBA Administrator
- Ref. T0737.03
- Re: 24 School Street Comprehensive Permit Civil/Stormwater Peer Review

Dear Mr. Sachs and ZBA Members:

On behalf of the Town of Wayland, TEC, Inc. reviewed documents as part of the civil engineering and stormwater management peer review for the Comprehensive Permit Application for the proposed Windsor Place Townhome Project to be located at 24 School Street. The following documents were received as part of our review:

- *Existing Conditions Site Plan (1 sheet)* 24 School Street, prepared by MetroWest Engineering, Inc., dated May 23, 2017;
- Proposed Site Plans (6 Sheets) 24 School Street, prepared by MetroWest Engineering, Inc., dated September 6, 2017;
- Stormwater Report 24 School Street, prepared by Metrowest Engineering, Inc., revision dated September, 2017;

TEC completed a review of these documents for the Town of Wayland and compiled the following comments during our review:

General Civil Review Comments

TEC developed the following comments based on the Town of Wayland Zoning Bylaws and engineering industry standards:

- 1. It appears that over time, the previous property owner has encroached upon the neighboring parcel, owned by the Town of Wayland. The Applicant has indicated that the encroachment will be removed and a wildflower seed mix will be spread in the area. TEC recommends that the Town of Wayland Conservation Commission provide a list of desired restorative features this area, including native trees and bushes.
- 2. The Board should note that the Applicant has requested a waiver from the following Zoning Bylaws:
 - 198.70 Front Setback 30 feet required, (20.3 feet requested)
 - 198.701.1 Max Stories 2.5 stories required (3 stories requested)

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- 3. The Board should note that the Applicant has requested a waiver from the following Board of Health Regulations:
 - II.C.1 Design flow 165 GPD required (110 GPD requested)
 - II.D.1 Offset to Wetlands 100-feet required (54.6-feet requested)

TEC recommends that the Board use caution before approving these waivers which could affect the nearby wetlands. TEC recommends that the Board only approve these waivers after being reviewed by an environmental specialist.

- 4. The Applicant proposes a wastewater soil absorption system approximately 5 feet from a new retaining wall. Although TEC is not conducting a review of the proposed septic system as part of this assignment, the Board may wish to have a specialty soils consultant provide a review to make sure the system meets all state requirements and a project-specific groundwater mounding analysis.
- 5. The Applicant has indicated that a 30-foot rear yard setback is required, however the proposed structure (Unit 6B) is 15.3 feet from the rear lot line. The Applicant will need to request an additional waiver for rear yard setback.
- 6. The Applicant has indicated a Building Coverage of 20% and 17.4% in the Zoning Table on the Proposed Layout Plan. The Applicant should clarify the required and proposed Building Coverage.
- 7. The Site Plans do not indicate any area for dumpsters or trash removal. The Applicant should indicate how trash removal will occur and provide turning templates for a truck if it will be required to enter the site for pickup operations.
- 8. The Applicant should review the potential need for an ADA-accessible parking stall within the visitor parking area.
- **9.** The Proposed Grading Plan shows several areas within proposed pavement area that is between 10-14% slope. This is extremely steep and could be unsafe during winter months. TEC recommends that the proposed grading within proposed pavement be reviewed and attempt to reduce grades closer to 5% maximum.

Stormwater Review Comments

TEC developed the following comments based on the Massachusetts Stormwater Management Handbook, published by the Massachusetts Department of Environmental Protection (MassDEP):

- 10. The Applicant has conservatively assumed that the entire site is a Hydrologic Soil Group B. TEC agrees with this approach, however, based on the NRCS soil map, a portion of the site is within a Hydrologic Soil Group D. The Applicant should revise the stormwater report to include this soil group.
- 11. The Applicant should provide full-size, scaled Watershed Delineation Plans for TEC's review.
- 12. The boundaries of E.C.B-1 & 2 should be revised based on the existing contours.



- 13. The boundaries of P.D.B-2 & 4 should be revised based on the high point in the proposed driveway.
- 14. Based on the provided calculations, the project will result in a reduced peak rate of runoff and total volume of runoff for the 2-, 10-, 25-, and 100- year storm events.
- 15. The Applicant has indicated an infiltration rate of 1.02 inches per hour, which is a standard infiltration rate for sandy loam soils.
- 16. TEC recommends that the Applicant use rainfall data from the Extreme Precipitation Tables published by the Northeast Regional Climate Center. The higher rainfall rates will provide for a more conservation design of the infiltration basin.
- 17. The Applicant should provide calculations for the time of concentration for existing and proposed watersheds.
- 18. The Applicant should add overall pervious/impervious values for the entire site to the Watershed Delineation Plans.
- 19. The Existing Conditions Plan shows two different locations for Percolation Test 5 & 6. The Applicant should clarify where these tests were performed.
- 20. Based on the provided test pit logs, the Estimated Seasonal High Groundwater (ESHGW) was observed at elevation 156.60 feet (DTH-5 elevation 162.60 feet, redoximorphic features observed at 72 inch depth). The vertical separation from the bottom of the exfiltration system (bottom of stone elevation 158.00 feet) to the ESHGW is 1.40 feet AND the recharge system is proposed to attenuate the peak discharge from a 10-year, 24-hour storm. Per Volume 3, Chapter 1 of the MassDEP Stormwater Handbook, a mounding analysis is required and must demonstrate that the Required Recharge Volume is fully dewatered within 72 hours. As noted in Comment #4, the Board should expand the review, directly or through TEC's contract, to engage a groundwater expert to review requested analysis.
- 21. Per Volume 2, Chapter 2 of the MassDEP Stormwater Handbook, infiltration basins must have a minimum separation from seasonal high groundwater of at least 2 feet. The Site Plans should be revised to meet this requirement.
- 22. The project utilizes BMPs including deep sump and hooded catch basins, water quality units, and a subsurface infiltration basin to achieve the required 80% TSS removal.
- 23. The Applicant should provide documentation that the proposed water quality units have been sized based on MassDEP guidance. Refer to "Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices" published by MassDEP, dated Sept. 10, 2013.
- 24. Per MassDEP guidance, proprietary stormwater treatment devices shall be designed "offline", unless approved otherwise by MassDEP.
- 25. Per MassDEP guidance, the proposed subsurface infiltration basin should include an overflow pipe for large storm events.





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- 26. The stormwater calculations indicate an 8-foot crest length and crest elevation of 162.80 feet. The Applicant should clarify what the 8-foot crest refers to.
- 27. The stormwater calculations for the 100-year storm event indicate that a flow of 0.09 cubic feet per second will flow thru an overflow device. The Applicant should indicate if an overflow device will be provided, and where the runoff will be directed.
- 28. MassDEP recommends that one foot of free board be provided in infiltration basins to account for design uncertainty.
- 29. TEC recommends that all deep sump catch basins be cleaned by vacuum truck, not clamshell bucket.
- 30. The Operation and Maintenance Plan should be revised to provide a detailed explanation of how the subsurface infiltration basin will be cleaned.

If you have any questions regarding the peer review, please do not hesitate to contact us at (978) 794-1792. Thank you for your consideration.

Sincerely, TEC, Inc. "*The Engineering Corporation*"

Kevin R. Dandrade, PE, PTOE Principal

Peter F. Ellison, PE Senior Civil Engineer

