



100 GROVE ST. | WORCESTER, MA 01605

October 17, 2016

Shrewsbury Zoning Board of Appeals
c/o Shrewsbury Office of Planning and Economic Development
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Shrewsbury, MA 01545

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**Subject: The Pointe at Hills Farm, 440 and 556 Hartford Turnpike
40B Comprehensive Permit
Preliminary Plan Review**

Dear Zoning Board of Appeals Members:

We received the following document via e-mail on October 17, 2016:

- Correspondence from Waterman Design Associates, Inc. to Shrewsbury Zoning Board of Appeals dated October 17, 2016, with attachment.

Graves Engineering, Inc. (GEI) has been requested to review and comment on the plans' conformance with applicable "Zoning ByLaw of the Town of Shrewsbury, Massachusetts" adopted June 19, 1967 and amended through May 20, 2015; Massachusetts Department of Environmental Protection (MADEP) Stormwater Management Policy and standard engineering practices. As part of our initial review GEI visited the site on January 20, 2016.

This letter is a follow-up to our previous review letters dated January 22, 2016, July 21, 2016 and October 11, 2016. For clarity, comments from our previous letters are *italicized* and our latest comments to the design engineer's responses are depicted in **bold**. For brevity, comments previously addressed by the design engineer and acknowledged by GEI have been omitted. Previous comment numbering has been maintained.

Our comments follow:

Zoning By-Law

Zoning By-Law comments were previously addressed.

Rules Relative to the Submission and Review of a Comprehensive Permit Application

6. *GEI has no issues relative to compliance with these rules.*
No further comment

Rules and Regulations Governing Special Permits & Site Plan Review

7. *GEI has no issues relative to compliance with these rules and regulations.*
No further comment.

Subdivision Rules and Regulations

8. *Not applicable. The driveways within the project will not become public ways.*
No further comment.

Hydrology, Hydraulic Calculations & Stormwater Management Policy

11. *GEI reviewed the hydrology computations. We found the computations to be in order except as noted in the following two comments.*
The revised hydrology computations are in order.
15. *GEI reviewed the plans and supporting documents for compliance with MADEP Stormwater Standards in the context of a preliminary plan submittal. Documentation for compliance with certain standards (peak rate attenuation, groundwater recharge and water quality) that pertain to project viability were reviewed whereas other Standards (e.g. construction-phase erosion controls, long-term operation and maintenance plans and illicit discharge statements) apply to the preparation of construction documents. The following four comments pertain to project viability.*
Additional information (i.e. a draft Stormwater Pollution Prevention Plan to address the project's construction phase, a long-term operation and maintenance plan and an illicit discharge statement) was included in the revised Stormwater Management Report. Specific concerns or issues are discussed below.
19. *Sheet C1.02 of the plans proposes a new drain pipe to convey stormwater across Stoney Hill Road. During my site visit, I viewed the accumulation of ice on the Stoney Hill Road sidewalk about ten to twenty feet north of the proposed pipe location. This ice was a result of stormwater runoff from the site. In short, the concept of collecting stormwater before it enters the Stoney Hill Road right-of-way doesn't seem unreasonable. However, further consideration of this proposal is warranted. The applicant should elaborate about the ability to obtain permission from the land owner(s) on the southwest side of Stoney Hill Road to install a new pipe and its discharge. Also, the design engineer should provide adequate information to demonstrate that negative impacts downstream of this new discharge point will not occur. Finally, the location of the new drainage pipe's inlet and the drainage system's detailed design will have to be addressed. This level of detail could be done during the preparation of construction plans if the project goes forward.*

July 21, 2016:

The design engineer reported that the applicant has obtained an easement from the downstream property owner to install the drainage improvement. Sheet C1.02 was revised to include additional work at the drainage pipe inlet and outlet. Based upon observations of ice formation and water flow in January 2016 (water flowed from the wetland area in the vicinity of Wetland Flag H), consideration should be given to excavating a shallow depression to direct runoff from this area to the depression around Catch Basin 29. Finally, the engineer has not addressed the potential for negative impacts downstream of the proposed discharge point.

October 11, 2016:

Sheet C1.02 was revised to include a depression to direct runoff to catch Basin 29 and Sheet C1.03 was revised to include a new drain manhole (DMH 100). A riprap

depression is proposed at the pipe's outlet and there is a receiving water (bordering vegetated wetland) down-gradient of the discharge point. We don't have an issue with the concept of this proposed drainage system configuration, however we have not received any response or additional information pertaining to the potential for negative impacts downstream of the proposed discharge point.

Acknowledged. Waterman Design Associates, Inc.'s October 17, 2016 correspondence and attached plan excerpt eliminated the drainage pipe that was formerly proposed across Stoney Hill Road due to non-engineering reasons. The Stormwater Management Report was previously found to be in order and addressed compliance with the MassDEP Stormwater Standards at the inlet to the formerly-proposed drainage pipe. Nevertheless, we hereby offer our opinion that the formerly-proposed drainage pipe was a benefit in that it would have addressed an existing ice formation issue in the Stoney Hill Road right-of-way.

21. *The concept of perimeter erosion controls was shown on Sheets C1.02 and C2.02. If the project is approved, the Board may wish to consider a condition of approval that requires the applicant to prepare a more detailed erosion control plan during the preparation of construction plans.*

This issue will be addressed in greater detail during review of the Notice of Intent filing.

General Engineering Comments

25. *We defer to the Town of Shrewsbury whether fences should be provided around the stormwater facilities to deter access to these facilities. If fences are to be required, they should either be shown on the preliminary plans or addressed as a condition in the Comprehensive Permit.*

No further comment.

26. *We understand that the Shrewsbury Water Department and its consultant will review the proposed water utilities and will address the availability of water. Likewise, we understand that the Shrewsbury Sewer Water Department and its consultant will review the proposed sewer utilities and will address the availability of sewer capacity.*

No further comment.

27. *The plans propose fire hydrants located throughout the site. If not already done, the Applicant should solicit input from the Fire Department and Water Department relative to the proposed number and locations of the fire hydrants.*

No further comment. GEI is not aware if the fire hydrant locations on these revised plans have been reviewed by the Fire and Water Departments.

30. *The retaining wall at the Phase I stormwater basin will have to be designed to withstand periodic inundation. Retaining wall structural designs are typically addressed prior to the start of construction.*

No further comment.

General Comments

33. *For both phases of the project, the "Zoning Summary Tables" include the requirements for the Route 20 Overlay District. This information should also be included within the permit application section labeled; "Section 9 List of Exceptions wavier requests."*

October 11, 2016:

The "Zoning Summary Tables" on Sheets C1.01 and C2.02 were revised to include the Route 20 Overlay District. GEI did not receive an updated List of Exceptions.

Acknowledged. The engineer responded that the two remaining waiver requests pertain to use of the parcel and to water and sewer fees, which are beyond the scope of this engineering review.

We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Vice President