

May 5, 2021

To: Mr. Richard S. Novak, Chair
Zoning Board of Appeals
Town of Sherborn
19 Washington Street
Sherborn, MA 01770

A&M Project #: 2513-01A
Re: Response to Peer Review of Stormwater
Management System & Stormwater Report
The Pines – 41 North Main Street (Route 27)
Sherborn, Massachusetts

Copy:

Dear Chair Novak and Members of the Zoning Board of Appeals:

Please find Allen & Major Associates, Inc. (A&M) responses to the Stormwater Peer Review dated May 4, 2021 as prepared by Professional Services Corporation, PC (PSC) in reference to their review of The Pines multifamily residential community to be located at 41 North Main Street (Route 27) in Sherborn, Massachusetts (hereafter referred to as the "Project"). Listed below are the non-traffic related comments from the PSC peer review letter followed by our response on behalf of the Applicant. Responses to the remaining comments will be provided by others under separate cover.

PART I – THE PINES STORMWATER

THE PINES – STORMWATER COLLECTION SYSTEM

Comment 3. Provide downgradient easements to the benefit of the Applicant over the adjacent property at FES1 and FES2 or eliminate the discharge for the 25-year frequency storm event (Town's design storm).

A&M: Based on MADEP Stormwater Standards, "Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates." Since the project has been designed to reduce the peak rate of discharge at the abutting property, therefore an easement is not warranted.

PSC: Regardless of whether the peak rate increases, the proposed stormdrain system creates new point sources directing new concentrated flow across the property line impacting the property rights of the downgradient abutter Conrail Corporation.

1st Response: As previously stated, the peak rate is decreased to abutting properties, additional measures have been added to further dissipate the flow as it exits the parcel onto the existing depression. As flow currently enters this offsite depress, from the subject parcel, the property rights of the downgradient abutter would not be impacted.

PSC: Open item. It is standard engineering practice that runoff cannot be discharged from a point source across a property boundary without benefit of a downgradient drainage easement. However, this is a matter of stormwater law. It should be noted that the Applicant must obtain an easement for a domestic water supply line over the same property.

Response: As previously stated, stormwater flow currently enters the abutting property, its release has been slowed and dissipated over a larger area through the use of gabion style energy dissipater so as to not cause erosion to downstream areas. Therefore, no new "point source" discharges are proposed.

The proponent understands the need for an easement from Conrail for the construction of the domestic water service and other utilities which are anticipated to cross under the existing railroad. The is an entirely different matter, separate from stormwater and will be addressed during the permitting process for the public water supply with DEP.

THE PINES – BMPs

Comment 7. Provided a minimum of 4 test pits for Infiltration Structure 1 and a minimum of 6 test pits for Infiltration Structure 2 having a minimum 10 ft. length and in compliance with the requirements of Volume 3 of the Stormwater Handbook that are logged by a Massachusetts Soil Evaluator.

1st Response: Per (SWHB V. 2: C. 2: P. 88-89) One soil sample for every 5000 ft. of basin area is recommended and a minimum of three test pits are required for a site. A total of three test pits were performed on site in the area of IS-1, with a minimum of 2 were within the footprint of the infiltration system, the locations of which are shown on the Grading & Drainage Plan. Based on the footprint of the system (6176 sf), the 2 pits within the footprint meet the requirement. As the footprint extends into an area of the existing structure, test pits are impractical at that location. In the area of Infiltration #2, test pits were not conducted as the system will be constructed within the partial limits of an existing structure and in a fill condition, making test pits impractical. As the system will be constructed above the existing grade, the fill material can be closely monitored and an evaluated for permeability during the construction process. Specific notes regarding the placement of fill under the infiltration system have been added to the plans. Test pit logs are provided in the Appendix of the revised Drainage Report and illustrate that the separation to the estimated seasonal high ground water is achieved.

PSC: The response incorrectly cites the section of the Stormwater Handbook for infiltration basins. Subsurface structures are proposed not infiltration basins. For subsurface structures using chambers or perforated pipes "Take the same number of borings or observation pits as for infiltration trenches" (SWHB V. 2: C. 2: P. 104). Based upon requirements for infiltration trenches, take 4 test pits for Infiltration Structure 1 and a minimum of 6 test pits for Infiltration Structure 2. Taking no test pits at subsurface structure 2 is unacceptable. Placing a system in fill does not alleviate the requirement for test pits. The feasibility of infiltration at this location is solely dependent upon the infiltration rate at the interface between fill and in situ soils. For all test pits as provided and to be provided, show the elevation in feet of ESHGW at each test pit on the Grading and Drainage Plan.

1st Response: As previously stated, the footprint of Infiltration System #1 extends into areas of existing active structures, making conducting test pits impractical and or impossible. The ESHGW elevation has been noted on the plan based on the information obtained, which illustrates that proper separation is achieved. In the area of Infiltration #2, test pits were not conducted as the system will be constructed within the partial limits of an existing structure and in a fill condition, making test pits impractical and or impossible. As the system will be constructed above the existing grade, the fill material can be closely monitored and an evaluated for permeability during the construction process. Specific notes regarding additional test pits have been added to the plans.

PSC: No test pits were excavated at Infiltration Structure 1 (IS-1) resulting in a design infiltration rate without a quantitative basis. Two test pits were taken within the footprint of IS-2 that were clustered at one end leaving 230 linear feet of the system with no test pits. We recommend that any favorable Decision include a Condition of Approval requiring that soil testing to determine soil textural classifications and estimated seasonal high groundwater elevations be taken by a Massachusetts soil evaluator prior to placement of stone for the subsurface structures. A minimum of four tests shall be performed at infiltration system 1 and a minimum of 4 additional tests shall be performed at infiltration system 2. The engineer of record shall submit a letter bearing the engineer's signature and seal stating that the soil tests corroborate the design infiltration rate and the design ESHGW elevation. If the infiltration rate is less than the rate used in design or if the ESHGW elevation is higher than used in design, the Applicant shall submit a revised infiltration system design to the Zoning Board of Appeals for approval prior to installation.

Response: The test pits conducted within the area of the infiltration system are consistent with published NRCS soil information which in our profession opinion provides a "quantitative basis" for the design infiltration rate. The project team is in agreement with a condition requiring additional test pits prior to construction and re-certification by the design engineer should the in situ materials be different than presumed.

Comment 14. If the lined swale option is selected, provide test pits to establish the elevation of seasonal high groundwater.

1st Response: As the swale is intended for conveyance purposes only, separation requirements are not applicable. PSC: The lined swale was not provided. A bioretention area is provided which is lined. The limits of the bioretention area are not shown on the plans. Separation to groundwater is not at issue. The concern is that shallow groundwater could create buoyant uplift damaging the lining of the bioretention area. Therefore, a test pit is required.

2nd Response: The footprint of the bioretention area has been more clearly defined on the plans. As this area extends into areas of existing stockpiles associated with the active landscaping company operations on the property, making conducting test pits impractical and or impossible. Specific notes regarding conduction additional test pits have been added to the plans.

PSC: We recommend that any favorable Decision include a Condition of Approval requiring that soil testing to determine estimated seasonal high groundwater elevations be taken by a Massachusetts soil evaluator prior to construction. A minimum of one test shall be performed. The engineer of record shall submit a letter bearing the engineer's signature and seal stating that the ESHGW elevation is below the liner or that the system is designed to resist buoyancy.

Response: The project team is in agreement with a condition requiring additional test pits prior to construction and re-certification by the design engineer should the in situ materials be different than presumed.

We trust that this information is responsive to the comments that were raised in the May 5, 2021 *Peer Review of Stormwater Managements Systems and Stormwater Reports* prepared by PSC. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact our office.

Very Truly Yours,

ALLEN & MAJOR ASSOCIATES, INC.



Michael A. Malynowski, PE
Senior Project Manager

Professional Engineer in MA, ME, and NH

Attachments

1. Revised Grading & Drainage Plan

cc: G. Barsky - Barsky Estate Realty Trust (via email)
L. Sweet – LDS Consulting Group (via email)
P. Haverty – Blatman, Bobrowski & Haverty, LLC (via email)