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ALLEN & MAJOR ASSOCIATES, INC.

April 26, 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 April 15, 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.
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.

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.

A&M: 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.

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.

Comment 8. Provide monitoring ports for each pipe and specify HS-20 loading.

Response: Monitoring ports have been shown to be installed and a detail has been added to the plan.

PSC: We could not locate the referenced detail.

Response: Monitoring ports have been shown on the plan.

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

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.

Response: The footprint of the biorention 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.

THE PINES – STORMWATER MANAGEMENT PROGRAM

The Stormwater Management Program incorporates as a post-construction ordinance the Rules and Regulations off the Planning Board Part 2.3.6.a.ii, §3.4.2.16 and §4.4 and §12 of the Board of Health Regulations.

The Planning Board Regulations require that all runoff be held on-site unless otherwise approved (RRPB §3.4.2.~~19~~ 16).

Response: Pre vs post reduction achieved, which concludes that the net difference of the runoff is held on-site.

PSC: Peak rate of runoff is limited by on-site controls. The volume of runoff increases and is not held on-site.

Response: In accordance with MADEP requirements, the peak rate is controlled on site and will not cause a detriment to offsite site properties.

Comment 21. Evaluate the option of holding all runoff on-site.

Response: As exists today, stormwater runoff exits the subject parcel and it is unrealistic to presume that this runoff would be required to held solely within the parcel limits ahead of any development. The intent of RRPB 3.4.2.16 is for the protection of adjacent properties or natural resources. Through the use of currently accepted methods (TR-55 Urban Hydrology for Small Watersheds, developed by the U.S. Department of Commerce, Engineering Division and the HydroCAD 10.00)an estimation of the peak rate of runoff from various rainfall events has been provided for both existing and proposed conditions. Through the implementation of a stormwater management system, the analysis indicates that the proposed site development reduces the rate of runoff during all storm events at the identified points of analysis. In our professional opinion, the spirit and intent of RRPB 3.4.2.16 is met as the difference in runoff (pre vs post) from the site is illustrated to be held on-site.

PSC: Attenuation of peak rates is not functionally equivalent to retention of all runoff. The failure to comply is of concern given the discharge to a catchbasin-to-catchbasin drainage system.

Response: As previously stated, through the implementation of a stormwater management system, the analysis indicates that the proposed site development reduces the rate of runoff during all storm events at the identified points of analysis. In our professional opinion, the spirit and intent of RRPB 3.4.2.16 is met as the difference in runoff (pre vs post) from the site is illustrated to be held on-site. Since discharge from this project is not to a catchbasin-to-catchbasin, but a signal roadway culvert, additional concerns seem unwarranted.

THE PINES – STORMWATER MANAGEMENT BYLAW REGULATIONS

The Stormwater Management Bylaw Regulations apply as disturbance exceeds 40,000 sq.-ft. The Regulations require compliance with the stormwater management standards. Neither the rate or volume of stormwater runoff leaving the site shall increase nor shall nor shall runoff be discharged to any adjoining properties, public ways, or any wetland resource areas, unless otherwise permitted based on improvement over existing conditions (Comment 21). Runoff volumes discharged off-site increase and runoff is discharged to adjacent property without benefit of an easement (Comment 3). The Regulations require application of fertilizers and pesticides sparingly and encourage use of slow release nitrogen and low phosphorus fertilizers (Comments 16, 17, and 18).

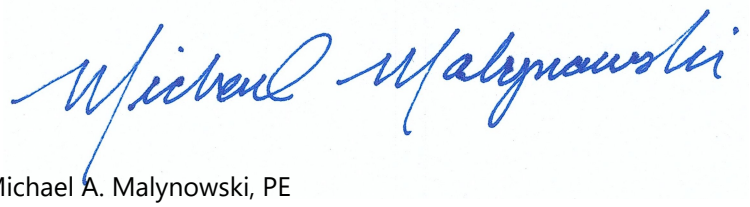
Response: The project reduces the rate of runoff for all design storm events, for all Study Points, which is an improvement over existing conditions. As mentioned above, the Operation & Maintenance Plan includes limitations on fertilizers and pesticides.t

PSC: Runoff volumes discharged off-site increase and runoff is discharged to adjacent property without benefit of an easement. the Operation & Maintenance Plan includes limitations on fertilizers and pesticides.

Response: As previously stated and in accordance with MADEP requirements, 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.

We trust that this information is responsive to the comments that were raised in the April 15, 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)