100 Commerce Way, Suite 5, Woburn, MA 01801 | T (781) 935-6889 | F (781) 935-2896
allenmajor.com

ALLEN & MAJOR ASSOCIATES, INC.

April 9, 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 March 20, 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 1. *Provide full information on the existing drainage structure at SP-1.*
Response: **The existing drainage structure is a 12" RCP drainline under Hunting Lane**

Comment 2. *Show the swale on adjacent property more clearly on the drawings and calculate the open channel flow capacity of the swale vs the peak discharge to the swale.*
Response: **The existing area adjacent to the property line (between subject parcel & railroad) would be more classified as a shallow detention basin verse a swale. This methodology has been incorporated into both the existing and proposed hydraulic calculations.**

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).*
Response: **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.**

Comment 4. *Raise the inverts of Catchbasins 4, 15, and 16 above elevation 171.64.*
Response: **Although not required per MADEP requirements, the inverts have been adjusted to the maximum extent practical to an elevation of 171.36. This will still provide proper clearance between the top of the pipe and the rim of the structure.**

Comment 5. *If practicable, raise the inverts of all catchbasins connected to Infiltration #2 above 172.02.*
Response: **Although not required per MADEP requirements, the inverts have been adjusted to the maximum extent practical**

THE PINES – LOW IMPACT DEVELOPMENT

Comment 6. Include a detailed evaluation of Low Impact Development measures considered and specific reasons why they could not be implemented.

Response: Bioretention areas are considered a form of Low Impact Development (LID) and have been incorporated into the design, in one location adjacent to the existing railroad. Other forms of LID, such as vegetated rooftops or large open constructed wetlands are impractical for a development such as this. Due the architecture of the building, green roofs are not practical and constructed wetlands would utilize valuable real estate which would require additional impacts to the site.

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.

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.

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.

Comment 9. Provide a TSS removal spreadsheet for the pavement runoff directed to the reconstructed swale though the curb break northwest of the Common Building to SP-1.

Response: The TSS removal spreadsheets for each treatment train have been provided as requested in the revised Drainage Report.

THE PINES – PHOSPHOROUS

10. Reduce the Proposed Condition Phosphorous Loading by 4.89 lbs./yr.

Response: The phosphorus loading has been recalculated as requested.

THE PINES – WELLHEAD PROTECTION

There is an existing Zone I and Interim Wellhead Protection Area (IWPA) which overlies the south portion of the site. Buildings are not allowed within an IWPA so we anticipate that the Proposed "Common Building" must be relocated outside the Zone 1 (310 CMR 22.21) (1) (b) 5) and (BRP Policy # BRPP-2011-01).

Comment 11. Relocate the Proposed Common Building outside the Zone I and modify the site plan to accommodate this change.

Response: Although not required as the existing aforementioned Zone 1 is non-compliant because the area around the well is not owned or controlled by the property owner for which it serves and because inappropriate existing land uses currently exist within the Zone 1 area (including buildings at 33 North Main Street, 5 Powderhouse Lane and 31 North Main Street, as well as existing parking, driveways and Powderhouse Lane itself), the Common has been relocated outside of the non-compliant Zone 1 area.

Comment 12. Eliminate the shallow infiltration basin within the Interim Wellhead Protection Area.

Response: The shallow infiltration basin is an existing area which under pre-development conditions received stormwater flows from the existing residence and allowed to infiltration. In the post development scenario, this area will continue to receive only flows from the existing residence and not the new parking area, therefore the basin has been kept in the design.

Comment 13. Replace the unlined swale with a lined swale or provide a sealed drainline extending to beyond the IWPA.

Response: The treatment of the stormwater from this specific area along the project's access drive, including the Common House now incorporates a lined bio-retention filtration area included pre-treatment structures. As this area is currently a combination of pavement, compacted gravel and material stockpiles associated with the adjacent landscaping business, with no means of stormwater treatment, the proposed system is a vast improvement. The swale now only receives flows from the undeveloped portions of the property.

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.

Comment 15. Provide a treatment train for pavement runoff in the swale or swale/pipe system providing TSS removal.

Response: The TSS removal spreadsheets for each treatment train have been provided as requested in the revised Drainage Report.

Comment 16. Include a "no salt' (sodium chloride) prohibition in the Operation & Maintenance Plan.

Response: The Operation & Maintenance Plan has been revised to indicate that sodium chloride should not be used, as requested

Comment 17. Include a restriction limiting fertilizer to slow-release organic fertilizer in the Operation & Maintenance Plan.

Response: The Operation & Maintenance Plan includes instruction only use slow-release fertilizer.

Comment 18. Include a requirement to develop and implement an Integrated Pest Management Program in the Operation and Maintenance Plan.

Response: The Operation & Maintenance Plan includes instruction to implement an Integrated Pest Management program.

COA: The Board reserves the right to reexamine the design of the stormwater management system should wellhead protection zones be designated by DEP or should other restrictions be placed on the public water supply impacting on-site stormwater management.

Response: Based on the current proximity of the existing bedrock wells (approximately 500 ft) to be utilized for domestic water for the project as compared to the stormwater systems, it is unlikely that a Zone 1 wellhead protective radius of that size would be possible. Therefore, the aforementioned condition is not relevant.

THE PINES – MS4

Stormwater management systems shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site (MA MS4 2.3.6). An average annual pollutant removal equivalent to 60% of the average annual load of Total Phosphorus (TP) related to the total postconstruction impervious surface area on the site is required (MA MS4 2.3.6). As-built drawings are required no later than two (2) years after completion of construction projects.

Comment 19. Verify 90% TSS removal and 60% TP removal.

Response: 90% TSS removal and 60% TP removal have been provided. Calculations for each can be found in the Appendix of the Drainage Report.

Comment 20. Add the requirement to submit an as-built plan to the drawings.

Response: A note has been added to the Grading & Drainage Plan, as requested.

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.

Soil percolation and/or permeability tests are required to document the capacity of the soil to accommodate the discharge design (RRPB §3.4.2.~~19~~ 16) (Comment 7).

Response: Published rates used

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.

THE PINES – SHERBORN WETLANDS ADMINISTRATION BYLAW REGULATIONS

The Proposed Project is subject to the Sherborn Wetlands Administration Bylaw Regulations as work includes work within the buffer and work within the inner and outer Riparian Zone Resource Area. The Sherborn Wetlands Administration Bylaw Regulations incorporates the Sherborn Stormwater Management Bylaw by reference.

The Regulations incorporate by reference the Sherborn Stormwater Management Bylaw's primary goal of incorporating Limited Impact Development (LID) principles in the project design (Comment 6). Also, the Regulations expand water quality impacts to include chemical and nutrient contamination. These pollutants also critical with respect to Wellhead Protection and Phosphorous abatement (Comments 10, 16, 17, and 18).

Response: **Although the project was issued a negative Determination of Applicability by the Sherborn Conservation Commission on 9-20-2018, the above mentioned requirements have been met with the current stormwater management system.**

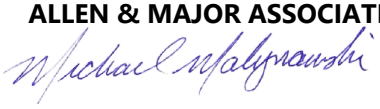
THE PINES – STORMWATER MANAGEMENT BYLAW REGULATIONS

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**

We trust that this information is responsive to the comments that were raised in the March 20, 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

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