



January 6, 2025

Mr. Zachary McBride, Chair
Sherborn Zoning Board of Appeals
Town Hall
19 Washington Street
Sherborn, MA 01770

**Re: Pine Residence Multi-Family Residential Development – Comprehensive Permit
Engineering Peer Review – Stormwater
41 North Main Street
Sherborn, Massachusetts**

Dear Mr. McBride:

Tetra Tech (TT) has reviewed specific submittal materials for the above-referenced Project to assist the Sherborn Zoning Board of Appeals (Board) in its Comprehensive Permit review of the proposed Pine Residence development. The following letter provides comments generated during our review of Applicant submittals and generally focus on substantive concerns that speak to issues whose eventual resolution may substantially impact Project design or could otherwise result in potentially unsafe conditions or unanticipated impacts.

The Project includes development of 28 multi-family housing units on approximately 7.24 acres of land. The site is primarily accessed from North Main Street via existing Powerhouse Lane and an access at the signalized intersection of North Main Street and Elliott Street, an access roadway is also proposed to Hunting Lane. The site is bounded by Hunting Lane to the north, North Main Street to the east, existing business to the south and railroad property to the west. The site currently contains a single-family home, a barn and is mostly cleared of vegetation. The Project proposes several at-grade and subsurface stormwater best management practices (BMP's) with what we assume will be a standard curb and gutter system to manage stormwater runoff. A shared septic system is proposed in the southeastern corner of the subject property under the access roadway. Water service will be by proposed well located on the abutting property to the west of the rail line.

Our review is based on materials received from the Board comprising the following pertinent documents:

- A stormwater report titled "Limited Stormwater Management Analysis, Proposed Multi-Family Residential Development, 41 North main Street, Sherborn, MA" dated December 6, 2024, prepared by Highpoint Engineering Inc. (HEI)

As requested by the ZBA, the Plans and accompanying materials were reviewed for stormwater related scope as well as good engineering practice. Our initial comments are provided below.

STORMWATER

The Project scope includes development of 28 units of housing with proposed access roadways and driveways clustered on approximately 7.24 acres of land with a total impervious coverage of approximately 315,778 square feet (sf). Several stormwater basins are proposed which include an at-grade detention basin, at-grade infiltration basin, a rain garden and a subsurface detention basin. The Applicant has not shown proposed stormwater infrastructure on the Plans, but we assume stormwater runoff generated by the Project will be routed through traditional piped infrastructure to the proposed basins. The Applicant has provided a 'limited stormwater report' detailing the Projects' stormwater design and analysis. NOAA Atlas 14 24-hour rainfall depths were used in the stormwater model which is current accepted practice across the industry. The Site is located in the Town's Regulated MS4 area (MS4 Area) and the southern end of the site is mapped within an interim wellhead protection area (IWPA) as shown on MassMapper.

Stormwater scope was reviewed for compliance with Massachusetts Department of Environmental Protection Stormwater Standards (Standards) and associated Stormwater Handbook (Handbook) as well as good engineering practice. It should

be noted that minimal details were provided for the entirety of the stormwater system and assumptions had to be made to determine viability of the conceptual design. We reserve the right to provide additional comments and/or amend the below comments as more detailed information is provided by the Applicant.

MA DEP Stormwater Standards/Handbook

1. We recommend the Applicant include the existing culvert located adjacent to the northwest corner of the site as a Design Point in the analysis and evaluate conditions at the culvert during the required storm events in both the pre- and post-development conditions. (Standard 2)
2. The Applicant has not provided any test pit data at the proposed Rain Garden location. The Applicant has not provided a cross-section or detail of the Rain Garden to confirm subsurface design of the best management practice (BMP). Rain Gardens are generally considered infiltration BMP's and shall maintain minimum two feet of separation from estimated seasonal high groundwater (ESHWG). (Standard 3)
3. We recommend the Applicant show the interim wellhead protection area (IWPA, mapped area shown on MassMapper) associated with properties to the south of the site. It appears the proposed Rain Garden may be located within this area which will require additional pre-treatment of runoff prior to discharge of surface runoff to the BMP. (Standard 3)
4. The Applicant shall provide location of existing septic system and water supply well on the adjacent property to the south of the subject property to confirm general setback requirements from the proposed Rain Garden are maintained. (Standard 3)
5. It appears impervious cover within subcatchment areas PR WS-1D and WS-1E will not be directed to the proposed infiltration basin based on the routing diagram shown in the HydroCAD report. A capture area adjustment shall be provided for any impervious area not directed to infiltration BMP's. (Standard 3)
6. Flow from Subcatchment PR WS-1E does not appear to meet the 80% Total Suspended Solids (TSS) removal requirement. However, the Applicant may provide calculation to show the weighted average of discharge at the outfall yields the required removal rate. (Standard 4)
7. It appears the Applicant is proposing a Contech CDS water quality structure to treat discharge from Stormwater Basin B and achieve the required 80% TSS removal rate. It is standard practice to provide these types of structural pre-treatment practices upstream of the basin to limit sediment impact at the basin and reduce frequency of costly maintenance. We recommend an additional CDS unit be proposed in the treatment train upstream of the basin to treat runoff from Subcatchment PR WS-1D which is standard practice and will reduce the basin maintenance burden to future owners/residents of the Project. (Standard 4)
8. The Applicant has applied the 50% TSS removal efficiency credit for the Extended Dry Detention Basin (EDDB, Stormwater Basin B). EDDB's require a sediment forebay be designed to achieve the 50% TSS removal rate. (Standard 4)
9. The Applicant has not provided a Long-Term Pollution Prevention Plan (LTPPP). This plan details practices for pollution prevention as it relates to stormwater runoff and includes procedures for management of snow, storage and use of fertilizers, vehicle washing, pet waste management, etc. (Standard 4)
10. Snow storage areas are minimal at the site, and we anticipate off-site export of snow will be required during heavy snow events. Snow piles shall also not impede sight distances at intersections. Details of snow management shall be included in the LTPPP. (Standard 4)
11. As noted, a portion of the site is within the interim wellhead protection area (IWPA) which is considered a critical area. The Stormwater Report notes that the site does not discharge to a critical area which does not appear to be consistent with the Project scope provided. The Rain Garden appears to be located within the IWPA and will discharge within that area. (Standard 6)
12. The Applicant has not provided a Construction Period Pollution Prevention Plan, details of construction period erosion controls should be included on the Plans to ensure protection of adjacent resource areas and public infrastructure during construction. We also recommend earthwork volumes, truck travel routes, construction access points, etc. be provided in a construction management plan (CMP) for review by the Town. (Standard 8)

13. The Project appears to meet the requirements for coverage under the US EPA NPDES General Permit for Discharges from Construction Activities (CGP). We recommend a Condition requiring the Applicant provide proof of coverage under the NPDES CGP and provide a copy of the approved Stormwater Pollution Prevention Plan (SWPPP) prior to construction. (Standard 8)
14. The Applicant has not provided a Long-Term Operation & Maintenance Plan (O&M Plan) which details required inspection and maintenance procedures for the proposed stormwater management system. (Standard 9)
15. The Applicant has not provided an Illicit Discharge Compliance Statement. (Standard 10)
16. The containment embankment for proposed Stormwater Basin B is approximately three feet wide at its top which is not sufficient to allow access by maintenance vehicles and may be prone to failure. Access shall be 15 feet wide as required to allow maintenance of critical components of the basin such as the outlet control structure and sediment forebay. The proposed fence and retaining wall will further limit maintenance access to the basin. EDDB's also require emergency spillways. (Vol. 2, Ch. 2, Pg. 53)

General Stormwater Comments

17. The 10-year peak water surface elevation in the infiltration basin and subsurface detention basin (hydraulically connected) is above a portion of the driveway adjacent to the intersection with Hunting Lane. This condition will require careful design during development of the final Plans for the Project to limit discharge out of proposed catch basins and limit off-site discharge to Hunting Lane. This site is in the Town's MS4 Area and off-site discharge should be limited to the extent practicable. We recommend the Applicant coordinate with the DPW related to this condition.
18. Stormwater Basin B is designed with an outlet orifice that is 1.5 feet above the bottom of the basin which requires infiltration to dewater the basin. As such, it appears this basin will function as an infiltration basin and shall meet all necessary requirements for siting and designing infiltration basins including test pits and setbacks to structures, septic systems, wells, etc.
19. We recommend the Applicant include assumed piped stormwater infrastructure on the Plans and provide sizing calculations to convey the 25-year storm event.
20. Proposed grading between dwellings upgradient of Stormwater Basin B is directing runoff toward foundations which may cause scour against foundation walls. We recommend these areas be graded with shallow swales between the structures to reduce potential impact to building foundations. Additionally, a swale should be proposed to direct runoff around Building 9 as the upgradient areas are graded in a manner that directs stormwater to the rear of that building.
21. The proposed 175 contour at the proposed at-grade infiltration basin (Stormwater Basin A) does not appear to tie out correctly at the north end of the basin. A berm should be graded on this end of the basin to limit potential embankment failure.
22. We recommend roof runoff be piped to proposed basins to limit intermingling flow with surface runoff. Roof runoff (non-metal roofs) is considered clean and can be directly discharged to infiltration BMP's without pre-treatment.
23. The proposed subsurface detention system appears to accept surface runoff and we recommend the Cultec Separator Row be implemented in the final design to capture first flush flow and extend the life of the system.

These comments are offered as guides for use during the Town's review and additional comments are likely to be generated during the course of review. The Applicant shall be advised that any absence of comment shall not relieve them of the responsibility to comply with all applicable local, state and federal regulations for the Project. If you have any questions or comments, please feel free to contact us at (508) 786-2200.

Very truly yours,



Steven M. Bouley, PE
Project Manager