

For Reference: Applicant Response to Emailed Questions Submitted by the Dover ZBA and
Peer Review Consultants
Submitted to Dover ZBA: July 30th 2021

1. The proposed building setback from the west-side lot line has been reduced from 35+ feet to 28 feet, which could increase the impact on the abutters. The landscaping plan will be a major factor in assessing that impact. What, if any, changes are you considering with respect to landscaping on that side of the building?

Yes, the setback was reduced, however the access driveway was removed to the East side of the property allowing for the existing mature trees along the property line to remain and also to be supplemented by additional landscape buffer. An updated landscaping plan reflecting will be submitted early next week representing recent changes.

2. Is there any significant change in the architectural design of the building, other than its shape?

There are no significant changes to the building style, finishes or fenestration. We are proposing a flat roof section where the two building wings meet to allow for HVAC equipment placement. Updated architectural drawings and programming will be submitted for the record now that we know that the peer review consultants are generally OK with the revised site plan.

3. It will be important to understand the vernal pool boundary given its potential impact on Title 5 soil absorption system (SAS) compliance. How was the vernal pool boundary delineated and why does it differ substantially from the wetland boundary?

The vernal pool boundary line differs significantly because in Dover the wetland line is delineated using VEGETATION ONLY not soils, as such the criteria are different. Therefore, the wetland line follows along the boundary between the upland and wetland vegetation so it extends uphill to a certain degree. We will submit the complete delineation report early next week as well as a more detailed explanation to this question.

4. The SAS is located over or next to test pits showing that the soils are problematic. For example, the soil log for test pit #4-2019 includes the note "No Good for SAS" and it is right on the edge of the system. Please address.

During testing, a well-defined transition zone was established and verified with the Dover Board of Health agent. The SAS layout is located in the area to the north of that area within the preferable soils. A bed inspection by the Board of Health and design engineer will be required to verify actual soil conditions under the SAS prior to installation of the soil adsorption system as in typically installations.

5. Stormwater standards require 50 feet of separation from the SAS, but the current plan shows only 36 feet of separation between the Title 5 system and the stormwater infiltration system, with no opportunity for increasing the offset. Please address.

The drainage design was presented as an iteration; admittedly not totally complete as we were seeking preliminary feedback from the peer review consulting team on the revised site plan and program approach. Now that we feel the site plan is generally supported, we will advance the drainage design.

We do note that the regulatory setback between the SAS and the stormwater infiltration system is 10 feet as prescribed in 310 CMR 15.211(1). Furthermore, the wetland regulations under 310 CMR 10.05(6) use the term "maximum extent practicable" when referencing compliance with the stormwater handbook. The Stormwater Handbook, a guidance document recommends a setback of 50 feet when designing a stormwater system. The Stormwater Management Standards provide in 310 CMR 10.05 (6)(k) through (q) do not provide any applicable setback requirements. The stormwater design present takes in all reasonable efforts to meet the general standards in the design document. As you can see the initial plans show a setback distance from the conventional system and the stormwater infiltration basins at their closest point 36 feet. The set back from the proposed Presby system to the infiltration basin is 50 feet or greater. This is one of the reasons for the selection of this system to provide the maximum extent practicable separation and meeting guidance noted in the Stormwater Handbook. Or put differently, we meet the 50' setback requirement on the system we are proposing. The 36' setback is for a theoretical system that we are not going to be building or using.

The proposed design meets all applicable DEP Regulations; but admittedly does not meet every DEP guideline or local bylaw as is not required under Chapter 40B.

6. How does the proposed setback of the infiltration system from the retaining walls meet the recommended foundation setbacks (minimum of ten feet) and the requirement of 50-foot setbacks from slopes greater than 15 percent?

The Stormwater Management Standards in 310 CMR 10 do not provide any applicable setback requirements. (see Table Below) The stormwater design present takes in all reasonable efforts to meet the general standards in the design document. The infiltration system is not within ten feet of any building foundation. The retaining wall and liner designed by Geotechnical Consultants of Marlboro address soil and hydraulic conditions for stability and any potential breakout at downgradient slope locations. The proposed design meets all applicable DEP Regulations; but admittedly does not meet every DEP guideline or local bylaw as is not required under Chapter 40B.

Proximity to Septic Systems and Water Supplies

When evaluating the suitability of infiltration BMPs such as infiltration trenches, infiltration basins and dry wells, it is critical to consider setback requirements mandated under other state programs such as those addressing septic systems and drinking water supplies.

Table 2.3: Setbacks for Infiltration Structures

General Setback Requirements:

Soil Absorption Systems for Title 5 Systems: 50ft.

Private wells: 100 ft.

Public wells: Outside Zone I

Public reservoir, surface water sources for public water systems and their tributaries: Outside Zone A

Other surface waters: 50 ft.

Property Line: 10 feet

Building foundations: >10 to 100 ft., depending on the specific type of infiltration BMP. See infiltration BMP for specific setback.

Specific BMPs have additional setback requirements. See Chapter 2.

7. Given the extremely constrained space available for the infiltration system, we will have to be certain that the model used for system sizing is accurate. Please review the comments in the April 25, 2021 TetraTech letter (particularly notes 24-26) and address accordingly.

The responses provided to #24 (directly below) as well as #26 (further down this page) address these concerns in the April 25th 2021 TetraTech letter.

24. Stormwater infiltration systems must be at least 50 feet from the wastewater subsurface disposal system and ideally the reserve area as well so that the infiltration system does not need to be relocated if the reserve area is to be used.

See Applicant Answer to #5.

25. The proposed method of underground storage seems poorly suited to installations in fill. We have experience with similar systems repeatedly failing during backfilling due to lateral loading. We recommend the Board ask the applicant to consider more proven storage solutions.

The proposed design is an acceptable construction approach. The concerns identified by the TetraTech, which we do not agree with, can be minimized through appropriate construction means and methods. Moreover, the original design was situated with only 20% in fill. Based on the revised site plan and program, we would expect the total amount of fill to decrease to even less than 20%.

26. The level spreader threshold elevation is 10 feet below the infiltration pond outlet. This suggests water will drop 10 feet into the stilling basin below with what appears to be less than 10 feet between the outlet and the discharge. Please provide the basis for the designs shown addressing how the energy of the falling water will be dissipated before encountering the spillway.

The Outlet control structure will provide flow control and dissipate energy prior to the level spreader. The design is represented on sheet C7 of original submittal.

8. Please check the required Enviro Septic line length. The plans indicate that 4,250 feet are required, but TetraTech calculates that 5,250 feet are required, based on manufacturer's guidance (70 LF/BR X 75 Bedrooms = 5250 LF).

Attached is the proposed calculations & layout from the Presby Environmental system manufacturer.

This project is considered commercial for the design of size and type of system. The sizing of the AES pipe is correct for this application. As far as justification for why this would be appropriate, when residential units are collected together, the peak flows and potential abuse are averaged due to the fact that people use their homes differently. For every homeowner who is cooking all the time there are others who barely cook at all, etc.

(8,500 GPD ÷ 100) x 50 = 4,250 FT of AES pipe minimum. This design uses 4,320 FT of AES pipe so is well above the minimum required.

RESTRICTION

30' ROW LENGTH
SECTION #3 (ROWS 6 - 10)

12.0 Table A: Pipe Required (1 – 60 MPI)
The AES pipe required is calculated at 70 ft. per bedroom for residential systems and 50 ft. of pipe per 100 GPD of daily flow for commercial systems (see para. 4.35 on pg. 7 for high strength wastewater).

Table A: Minimum AES Pipe Requirements (1-60 MPI)

Perc. Rate (MPI)	Bedrooms					Additional Room	*Commercial per 100 GPD
	2	3	4	5	6		
1-60	140	210	280	350	420	70	50
AES Pipe Required min. (ft.)							

* minimum commercial daily flow is 300 GPD

13.0 Table B: Long Term Acceptance Rate (LTAR)
Find the percolation rate and soil class to determine the LTAR (Long Term Acceptance Rate) in GPD/sq. ft. The 40% reduction in bedrock allowed by DEFRA is already reflected in the values.

9. With respect to the driveway circle, what size vehicles can it accommodate? Can other vehicles pass a vehicle that is stopped in the driveway?

The current one way entry rotary is intended for residential drop off and pickup from passenger vehicles. The design can also accommodate most delivery vehicles. The entry and exit points are at 12' widths and widen to 20 feet at the entry canopy to allow for vehicles to pass. Resident move-ins and ~~very~~ larger box trucks will be directed to use the parking lot entrance in the rear of the property. Fire tenders will be able to pull up at the front of the property but will need to back out.

