

United Consultants, Inc.

850 Franklin Street Suite 11D
Wrentham, MA 02093
508-384-6560 FAX 508-384-6566

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Town of Norfolk – Zoning Board of Appeals
One Liberty Lane
Norfolk, MA 02056

Attn: Chris Wider - Chairman

**Re: Norfolk, MA – The Preserve at Abbyville – Chapter 40B
Peer Review**

General

- A. The Traffic Impact Analysis estimates an ADT of 690 vehicles per day for the project roadway (Road A). In accordance with Section 4.14.6 of the Subdivision Regulations, the roadway should be classified as a Secondary Road.
- The design proposes a 26-foot roadway (Road A) that terminates at a cul-de-sac. The proposed street width is in accordance with the Town's regulations and is appropriate for the anticipated use. **Pavement is 24 feet face of berm to face of berm and there are two 1 foot wide berm curb located on each side of the roadway for a back of curb width of 26 feet.**
 - The proposed right of way width for the 26-foot roadway is 50 feet. Subdivision requirements specify a 60-foot right of way for secondary roads. However, the proposed 50-foot right of way is sufficient to provide the 26-foot pavement, planting strips and 5-foot sidewalk proposed for the roadway section. A waiver will be required. **Agreed a waiver request is necessary, no additional comment.**
 - The proposed cul-de-sac is approximately 1,900 feet long. In accordance with Section 14.14.9.1 of the Subdivision Regulations, the maximum cul-de-sac length is 500 feet. A waiver will be required. **Agreed a waiver request is necessary, no additional comment.**
- B. The proposed design appears to be creating a separate parcel within the entire property. Is Planning Board approval for an ANR lot required to create this parcel?
We anticipate the proposed condominium parcel will be created at the time of endorsement of the site plans.
- C. There are numerous proposed retaining walls noted on the plans. The plans note that the final design is to be provided by a structural engineer. The Board should consider determining the type (material) of retaining wall that should be installed as part of their approval process.
The applicant will provide details and pictures of the proposed retaining wall block.
- D. The proposed design will require waivers from local zoning and subdivision regulations, as well as other Town by-laws. These waiver requests will be evaluated as the peer review process advances.
No response.

Civil/Site

- 1) The proposed Grading and Utility sheets and the Post-Development Watershed Plan are extremely difficult and confusing to read. The existing and proposed features are all generally the same line weight and when printed together it is difficult to distinguish between the two.

Recommendation: Applicant should screen back the existing features on all of the proposed plans to improve readability.

The revised plans will include screened existing conditions.

- 2) Designated rights of way are shown for the roadways within the Preserve. This indicates the possibility that the Town could be asked to accept the streets in the future. This should be a consideration in evaluating requested waivers for roadway geometry.

Recommendation: Further discussion of any required waivers from the Subdivision standards for secondary roadways is warranted.

The applicant will address the proposed roadway waivers with the Zoning Board.

- 3) The proposed site grading indicates that there will be significant cuts and fills throughout the site, and based on a conversation with the applicant's designer, it is anticipated that the project will generate a significant volume of excess material.

Recommendation: The applicant should provide a cut and fill analysis for the project to demonstrate that the site generally balances. If the analysis indicates significant volume of excess material to be removed then an assessment should be provided of potential impacts. As with previous project submissions, the applicant should provide the following evaluations at a minimum:

- Effect on ground water table
- Number of construction trucks per day anticipated and the duration of the earthwork operation
- Blasting requirements/ledge removal, if any
- Construction routes and impact to the existing bridge over Bush Pond.

A cut to fill analysis was completed comparing the existing grades to the proposed grades of the site. This analysis indicated that the proposed development would require approximately 23,200 cubic yards of fill. The applicant will provide details of the additional material volumes in an updated construction management plan.

- 4) The proposed infiltration basin is located on portions of proposed Lots 15, 16 and the Condominium parcel. The Grading and Utility Plan (GUP) sheet 3 appears to show an easement around the basin. The Plan of Land sheets 4 and 5 appear to show only a portion of the drainage easements.

Recommendation: The limits of the entire drainage easement for the infiltration basin should be added to the Plan of Land sheets 4 and 5.

We will evaluate the need for an easement on the condominium parcel based on ownership and maintenance responsibilities and if necessary, we will expand the easement.

- 5) The project includes 20 single-family units and 22 duplex townhouse units for a total of 64 units. All the units will utilize subsurface disposal systems for sanitary disposal, currently shown on the GUP sheets as squares designated as "SAS Area". The single family units are proposed to have individual septic systems on each lot. A shared septic system is proposed for the townhouse units. The actual dimensions and locations will need to be confirmed through review by the Board of Health. We note that some systems are shown in areas of significant cut which may impact the soil characteristics and corresponding size of the systems.

Recommendation: It appears that the project needs to be in conformance with the guidelines in Title V for Aggregation of Flows and Nutrient Loading as outlined in 310 CMR 15.216. As with previous submittals, the applicant should provide a hydrogeological analysis of the site development to evaluate groundwater flow, water table depth, the potential nutrient loading and any associated impacts to abutting private wells (within 400 feet of the site), wetlands or Bush Pond.

The soil testing and septic systems will be design in accordance with Title V. Soil testing will be completed and the Board of Health agent will be present. Plan review for the individual lots as well as the condominium area will be submitted for review and approval from the Norfolk Board of Health.

- 6) All proposed underground utilities should be shown on the GUP sheets to identify any potential conflicts. We note that the typical section shows these underground utilities.

Recommendation: The applicant should show the proposed utility locations including transformers on the GUP sheets.

The applicant proposes to have a utility plan completed by the utility companies after approval of the project. Transformer locations would be included in this design. Planning Board Regulations section 3.3.2.17 provide for the Planning Board to be provided a copy of the utility design plan which the applicant would propose to provide to the Zoning Board of Appeals.

- 7) Applicant proposes extensive retaining walls along the east side of the project site in Lots 9-12. These walls appear to be 4-ft in height and are staggered to create a buildable area within these lots along the subdivision roadway. A note on GUP sheet 3 states "final retaining wall design to be completed by a structural engineer).

Recommendation: The applicant should provide a standard retaining wall detail. Given the need for both extensive grading and the construction of retaining walls, the applicant should also provide a section through Lots 10 and 11 demonstrating the PRE/POST grading conditions.

The applicant will provide details of the proposed retaining wall along with pictures of similar walls.

We will prepare a section depicting the existing grades as well as the proposed walls and finish grades.

- 8) Proposed grading behind lots 5, 6, 8-11 show 2:1 side slopes. Section 4.15 of the Subdivision regulations allow for a maximum of 3:1 slopes. Retaining walls are proposed on these lots.

Recommendation: Consider modifying the slope and retaining wall height to achieve a 3:1 slope. This will also help promote vegetative growth and reduce the potential for erosion.

The wall height have been limited to 4 feet for aesthetics. The landscape architect will provide details for the stabilization of the 2 to 1 slopes.

- 9) The driveways for the single family units are long enough to provide parking for several cars. This will reduce/eliminate the need for on-street parking.

Agreed. No additional comment.

- 10) The driveways for the townhouse units appear to provide parking for two cars per unit. An additional 10 visitor spaces are provided. This parking appears adequate to reduce/eliminate the need for on-street parking.

Agreed. No additional comment.

- 11) The townhouse units should be numbered on the plan for reference purposes.

We will add unit numbers to the townhouse units.

- 12) Section 4.14.9 of the subdivision regulations requires that cul-de-sacs have a 15-foot diameter planted center island. The plans do not show a center island.

Recommendation: Include a center island as required or request a waiver.

The applicant is not opposed to a center island and if the Zoning Board prefers a center island it will be added to the plans.

- 13) No pavement radii are shown on the plans at the intersection with Lawrence Street, the intersections with the condominium roadway or the cul-de-sac. The information should be provided to confirm that large vehicles and emergency vehicles can properly maneuver.

Recommendation: Provide roadway layout plans.

The curb radii at the intersection is 25 feet. The applicants traffic engineer Greene International, will provide information regarding trucks and emergency vehicles.

- 14) Based on the proposed grading it appears that ledge removal may be required behind the condominiums at station 4+00 left. The proposed side slope appears to be 2:1.

Recommendation: Confirm if blasting is proposed for removal of the ledge and provide approximate volume of rock excavation.

This area has been revised with two buildings being removed from the area. The proposed grading has been revised to a 2 to 1 slope. We will discuss the grading and potential ledge removal in this area with the Zoning Board of Appeals.

- 15) The plans should show the location and type of proposed erosion controls.

We will add a silt fence detail and locations to the site plans.

- 16) Designated snow storage areas should be shown, particularly for the condominium parcel.

We anticipate the roadway to be plowed with windrows on each side. We will provide locations for snow removal should the need to stockpile snow be necessary.

Drainage Report & Stormwater Management Design

- 17) In the HydroCAD model included in the Stormwater Report, Pipe Reach 56 from DMH 56 to the sediment forebay is modeled as a 24-inch pipe. On the Grading and Utility Plan (GUP) Sheet 3 of 3, the pipe is labeled as 30 inch.

Recommendation: The Applicant should verify the correct pipe size and invert elevations for pipe reach 56 and confirm the rim elevation of DMH 56.

The site plans will be revised to reflect the 24" pipe.

- 18) The Applicant has modeled the proposed Infiltration Basin with the only control discharge outlet being exfiltration. The Applicant has used an exfiltration rate of 20 in/hr, which was agreed upon with BETA during earlier peer reviews of previous stormwater submittals.

Recommendation: As this is a significant revision to previously submitted project designs, the Applicant should provide all backup stormwater related data including data previously submitted with earlier designs so that the stormwater report for this submittal can stand alone from any others.

The stormwater report will be revised and will include the information requested.

- 19) The Pre-Development Watershed Plan does not appear to include the site entrance roadway area from Lawrence Street. Also, it appears that the total site area analyzed under existing conditions does not equal the total area analyzed under proposed conditions.

Recommendation: The applicant should revise the PRE/POST Development Watershed Plans to accurately reflect the site area analyzed in the stormwater report. Also, the total site area analyzed under PRE/POST Development conditions should be confirmed.

The site entrance roadway area is being captured in the street drainage system and directed to the infiltration basin which is accounted for in the pre-development vs. post-development comparison.

We will add the area to the pre-development analysis and update the site areas.

- 20) Appendix F – Sediment Forebay sizing.

Recommendation: The applicant should review the forebay sizing calcs to confirm their accuracy.

The sediment forebay sizing calculations will be revised.

- 21) The Applicant appears to have utilized HydroCAD to model the proposed roadway drainage system. Each catch basin (CB) was modeled as a contributing catchment area and the drainage pipes modeled as pipe reaches. From Sta 0+0 at Lawrence Street to Sta 19+50, the proposed roadway features a consistent downward gradient and all of the proposed CBs along this roadway will function as CBs on grade. It is unlikely the CBs will capture 100% of the runoff directed to each of them from their catchment areas, so bypass flow will continue along the roadway gutter line until it reaches the end of the cul-de-sac. HydroCAD is not effective at determining bypass flow.

Recommendation: The applicant should analyze the proposed drainage system and determine the amount of bypass flow for each inlet CB and what impacts that may have on the structures at the end of the drainage system. The applicant should also provide a legible catchment area plan delineating the catchment areas for each proposed CB.

We will add a note indicating that cascading grates will be provided in roadway area where the grade exceeds 4%. Refer to Subdivision Regulations sections 5.3.1 and 5.3.3.1

- 22) TSS Removal Worksheet: The applicant has taken separate credit for sediment forebay treatment (25%) and infiltration basin treatment (80%). The 80% TSS removal credit for infiltration basins already includes the sediment forebay credit.

Recommendation: The applicant should revise the TSS Removal worksheet and remove the separate credit taken for the sediment forebay.

The TSS removal calculations will be revised.

- 23) Standard 3 Recharge to Groundwater: The applicant proposes to recharge all of the proposed site-generated stormwater runoff in the proposed infiltration basin. The applicant has not provided a required recharge volume calculation based on the amount of proposed impervious area.

Recommendation: The applicant should provide a required recharge volume calculation to confirm compliance with Standard 3.

We will add a recharge volume calculation to the stormwater report. The design does indicate that post-development runoff volume will be less than the pre-development runoff volume.

- 24) Standard 5 – Higher Potential Pollutant Loads: The applicant's response to standard 5 is that a SWPPP will be provided prior to construction.

Recommendation: A residential subdivision development is not considered a site subject to higher potential pollutant loads, providing a SWPPP is not applicable to this standard.

The response will be revised.