

September 6, 2016

Margaret Hoffman, AICP
Planning Coordinator
Town of Wenham

Wenham, MA

Re: Engineering, Flexible Development and Zoning Review
Wenham Pines, Wenham, MA

Dear Ms. Hoffman:

Design Consultants Inc. (DCI) is pleased to submit this peer review of the above reference project. This review is limited to the Notice of Intend filing. The Project Applicant is Wenham Pines LLC (Proponent). The Project's civil engineer is Hancock Associates. (Engineer). The Project's Attorney is Glovsky & Glovsky (Attorney). The Landscape Architect is Ryan Associates (LA). The following documents have been provided by the Town of Wenham (Town) for review:

- Hancock Associates., "Permit Site Plan, Flexible Development, Wenham Pines, 56/60 Main Street in Wenham, MA, 18 July, 2016", (Civil Plans)
- Glovsky & Glovsky LLC, "Wenham Pines (56-60 Main Street) Application for Planning Board Special Permit and Site Plan Review, July 21, 2016" (Application)
- Ryan Associates, "Wenham Pines, 56/60 Main Street in Wenham, MA, July 19, 2016" (LA Plans)
- Grazado Velleco Architects, "Wenham Pines, 56/60 Main Street in Wenham, MA, July 19, 2016" (Building Plans Plans)

The following are DCI's comments on the Flexible Development Application.

The Zoning By-Laws (ZBL) of the Town of Wenham

Section 8.0 Landscaping Requirements

1. 8.4 Planted Area Requirements: All existing trees are not shown on the existing conditions plan. The Engineer or LA should show all trees to be removed, there species and diameter measured in accordance with this Section. *Removal of any trees with a caliper over 6-inches requires a Special Permit.*
2. 8.4 Planted Area Requirements: The size of the plant materials should be specified. *Any plants that do not meet the dimensions and size specified in this section will require a Special Permit.*

Section 9.0 Additional Performance Standards

3. **9.3 Erosion Control:** There appears to be over 20,000 square feet of grading that will be steeper than 15% on the lot. *This requires a Special Permit.*

Section 11.0 Special Residential Regulations

11.1 Flexible Development

4. **11.1.5 Contiguous Open Space;** The calculations for contiguous open space appear to be based on an undefined wetland number. The limits of two resource areas on the southern side of the property have been undefined. These resource areas are the Bordering Vegetated Wetlands and the Inland Bank. Until these areas are defined this calculation is incomplete.
5. **11.1.5.2 Contiguous Open Space:** It appears that the two detention basins should be removed from the open space calculation as stormwater management is not use specified in this section.
6. **11.1.7 Basic Maximum Number of Dwelling Units:** As much of the site is in the Flood Plain Overlay District (FPOD) any alterations to any land in the FPOD, whether structural or non-structural, except for those uses permitted by right, require a Special Permit. (ZBL 12.2.5). The roadway will alter land in the FPOD and therefore a Special Permit is required. Without the FPOD Special Permit, only Lot No. 16 on the Yield Plan is a use permitted by right (ZBL 12.2.4).
7. **11.1.7 Basic Maximum Number of Dwelling Units:** The Application states on Page 5 that a “Yield Plan” has been provided that supports 18 lots on this site by *a matter of right*, and is in conformance with the existing zoning, subdivision, wetlands and septic issues. Based on our review it appears that Lots 12 and 13 do not meet this requirement. The following are specific examples on how that these two lots may not meet this requirement. It is important to note that DCI is making several assumptions as the yield plan only presents lot lines, lot areas, upland areas and wetland areas. No further design and engineering specifications have been provided, and it is the Proponent’s responsibility to provide this information.
 - a. The construction of turnaround is located in Alewife Brook. Under the Wetlands Protection Regulations (310 CMR 10) Alewife Brook is Land Under Water Bodies and Waterways.(10.56 (2)). In accordance with 10.56(4)(a) the proposed work shall not impair the water carrying capacity of within the defined channel. It is clear that the turnaround will reduce the water carrying capacity and is therefore not able to be conditioned under the Wetlands Protection Regulation.
 - b. Lot No. 12 is almost entirely in the FPOD, and construction of a residence on that is not permitted without a Special Permit (ZBL12.2.5).
 - c. The proposed road that crosses the intermittent stream impacts over 2,500 square feet, and the turnaround and driveways to Lot Nos. 12 and 13 impact over 2,500 square feet of area specified in Section 10.02(1)(f) any land subject to flooding of the Wenham’s Water Resources Protection By-Law Regulations. In accordance with Section 10.51(1)(a), access roads shall not fill more than 2,500 square feet.

- d. Under the Wenham's Water Resources Protection By-Law Regulations 10.54 Adjacent Upland Resource Areas, residences are required to be 70 feet away and septic systems 100 feet away from any areas specified in 10.02(1)(a-f). It does not appear that a residence or septic system could be sited on Lot No. 5, 11, 12 and 13.
8. **11.1.13 Buffer Areas:** There does not appear to be suitable buffer areas as defined in this section. Detention Pond No. 1 is less than 50-feet from a residential property. Along the northern property line, existing vegetation is being disturbed within the buffer area, abutting properties that are residentially zoned, although the current use may not be residential.

Civil Plans

9. **EC-1, EC-2 and EC-3:** Existing Conditions Plans should show all trees on the site. See Comment No. 1.
10. **EC-1, EC-2 and EC-3:** Existing Conditions Plans should provide the Aquifer Protection District and Zone A Boundary.
11. **D-1:** Recommend that the culvert in the vicinity of WF A21 be removed and area be restored.
12. **D-1:** DCI recommends that the gravel and paved cart paths removed and either loamed and seeded or loamed and planted with the appropriate wetlands mix.
13. **LM-1:** A location has not been designated for the septic system pump controls, including power supply and instrumentation.
14. **GD-1:** The retaining wall near the stream crossing is greater than four feet in height and requires a design by a professional engineer and a building permit.
15. **GD-1:** There are no guard rails and fences for the road and sidewalk for the stream crossing structure and the retaining wall.
16. **GD-1:** The perimeter controls, and erosion controls around the stream crossing are insufficient. There is grading being performed down gradient of the perimeter controls.
17. **GD-1:** Generator slab needs to be on a flat area. Suggest a gas generator in lieu of a diesel generator to prevent spillage in the Aquifer Protection District.
18. **GD-2:** Retaining walls around the structures are greater than 4-feet and will require a building permit and design by a professional engineer.
19. **GD-2:** Unit Nos. 21 and 22, Unit Nos. 12 and 13, and Unit Nos. 14 and 15 have a small retaining wall between the two driveways. This is a trip and fall hazard and should be eliminated.

20. **GD-2:** Unit Nos. 10 and 11. Just to the east of the building there is a depression that is 2 feet deep. It appears to be put in place to protect tree roots. However, the fill and possible puddling in this area may damage the trees. Please review this grading.
21. **GD-3:** Suggest that FES#3 be a level spreader. Details not provided for what appears to be rip rap.
22. **GD-1, GD-2 and GD-3:** There is no limit of work boundary.
23. **PR-1:** There does not appear to be enough cover for the 10-inch cast iron pipe crossing station 16+25±.
24. **Sewage Profiles 1, 2 and 3:** There are several locations where the cover over the sewer pipes is less than 4 feet, in some cases the cover approaches 2-feet. DCI recommends that the Engineer review the depth of the sewer pipes. It has been our experience that these pipes with shallow cover are susceptible to freezing. In addition, please provide calculations the pipe will not be impacted by traffic loads.
25. **SD-1:** This drawings shows gas under the median on one side of the street and electrical/cable/communications in the landscape area on the other side of the street. This is inconsistent with the site plans which show these services under the pavement. This detail also shows the water under the grass strip between the sidewalk and the roadway. This is inconsistent with the plans.
26. **SD-1:** Schedule B of the Detention Basin Cross Section will need to be recalculated based on the revaluation of the HydroCAD[®] Model.
27. **SD-2:** Please identify where the infiltration trench will be constructed.
28. **OS:** The Open Space Plan is inconsistent with the LA's Management Plan L-4.0. These plans show significant areas of irrigated and mown lawn. It appears that mown and irrigated lawn is inconsistent with the uses specified in ZBL 11.1.5.2.

LA Plans

29. **Sheets L-4.0, L-4.1 and L-4.2:** The sheets show an overall site maintenance plan, including maintenance of meadow in the wetlands resource areas. The LA Plans should provide the criteria for maintaining the meadow in the wetlands resource areas, adjacent uplands resource areas, buffer zone, and riverfront area. This detail should be consistent with Exhibit C of the Application. *This should be added to the Notice of Intent.*
30. **Sheet L-5.0:** The connection from the pump house to the irrigations system needs to be shown. In addition, this should be added to the Notice of Intent as there is a new use at the site. Finally, how will Pump House be accessed for maintenance?
31. **Sheet L-6.1:** The sod detail shows 6-inches of loam please clarify areas to be sodded and seeded.
32. **Sheet L-6.1:** The bridge side elevation does not match the proposed bridge structure.

Building Plans

33. The building plans show full basements. As the groundwater table may intercept the basement level, please provide foundation drain details. The Engineer should provide details for handling the discharge.

Application

34. Page 3: The onsite sewage discharge is indicated to be 10,000 gallons per day, however 25 units at 330 gallons per day is 8,250 gallons per day. Flows equal to or greater than 10,000 gallons per day are likely to require treatment prior to discharge. Please clarify.

HydroCAD® Analyses

35. Previous comments have been provided in the letter related to the Notice of Intent filed with the Conservation Commission.

We trust that the contents of this report satisfies your current needs. Should you have any questions, please do not hesitate to contact me at (781) 733-1214.

Sincerely,
Design Consultants Inc.



Michael F. Clark, P.E.
Associate

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