

HANCOCK

ASSOCIATES

October 10, 2016

BY HAND

Margaret Hoffman, AICP
 Planning Coordinator
 Town of Wenham
 Wenham, MA 01984

Re: *Response to Peer Review of Flexible Development Plan/Special Permit Application for Wenham Pines - Engineering, Flexible Development and Zoning Review*

Dear Margaret:

We are in receipt of a letter from Design Consultants Inc. ("DCI") to you dated September 6, 2016 in regard to the project referenced above. We have completed revisions to the Site Plan and documents to address the issues raised by Mr. Michael Clark. Please find attached the following revised documents and plans:

- Sheets prepared by Hancock Associates, numbered 1 through 36, dated 6 October 2016
- Sheets prepared by Ryan Associates, numbered 1 through 14, dated 7 October 2016
- Sheets prepared by Bayside Engineering, numbered 1 through 5, dated 3 October 2016

Hancock Associates, Inc. offers the following response to the specific comments contained in the DCI letter of September 6th:

Zoning 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.*

Response: Given the size of this site, all of the trees within the limit of proposed work that are greater than 6" caliper, are depicted on the Site Plan. Existing trees to

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be removed are shown with an “X” through them. To the extent that special permit relief is indeed required under this Section, then counsel will request leave to amend the existing application on the record with a request for such additional special permit relief.

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.*

Response: Sizes of plant material are shown on Sheet L-2.0 of the revised Plans.

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.*

Response. We agree that that special permit relief is indeed required under this Section and counsel will request leave to amend the existing application on the record with a request for such additional special permit relief. The current grading plans shows an area that measures approximately 30,000 S.F., which has a slope greater than 7:1 (or 15%).

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.

Response: Hancock’s original open space calculation took the resource areas on the southern side of the property into account. The open space calculation has been updated to clarify this point and to eliminate the two detention basins as noted in #5 below. On the southern side of the property, there are two (2) resource areas that have been broken down to the following;

- Bordering Vegetated Wetlands: 42,409 S.F.
- Bordering Land Subject to Flooding: 84,033 S.F.

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.

Response: The open space calculation has been updated to eliminate the two detention basins as noted in #5 below.

Open Space = 1,135,382 S.F.

Minus: (56,443 + 24,862 + 13,010 S.F.) = 1,041,067 = (73.4%)

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).

Response: The applicant's Yield Plan meets the requirements set forth in Section 11.1.7 of the Zoning By-law for a design that depicts the "number of lots which could *reasonably be expected to be developed* upon the site under a conventional plan in full conformance with all zoning, subdivision regulations, health regulations, wetlands regulations, and other applicable requirements."

To the extent that the development of some or all of the lots shown on the Yield Plan would require one or more special permits and/or Conservation Commission approval, those lots can be counted so long as the Planning Board determines that they could *reasonably be expected to be developed* by way of a special permit or with reasonable conditions imposed by the Conservation Commission. To find otherwise, would render this site ineligible for development under the Flexible Development By-Law.

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.

Response: With respect to the specific concerns raised with regard to the Lots 12 and 13, Hancock has revised the Yield Plan to address these concerns, including

the following specific changes which have resulted in a design which could reasonably be expected to be developed:

- The turnaround has been moved to eliminate construction within Alewife Brook.
- In lieu of an access road, the design includes a common driveway which traverses the Brook via a bridge; the common driveway is permitted with a special permit.
- A detail sketch of Lots 12 and 13 is included for clarification. Zoning and septic setbacks are shown on the revised Yield Plan in order to demonstrate the reasonably feasible building envelopes.
- Lots 5, 11, 16, and 18 have also been modified to address these same issues.

Based upon these changes, the applicant's Yield Plan, including Lots 12 and 13, represents a conventional subdivision design which takes into account wetland and other field conditions, and which is sufficiently engineered to permit the Planning Board to find that the Yield Plan is reasonably capable of being developed in accordance with existing zoning, subdivision and wetlands regulations.

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.

Response: In response to this comment, Detention Pond No. 1 has been redesigned and relocated ten (10) feet outside of the 50-foot buffer zone. Disturbance along the northern property line is minimal and will appear as a sloped lawn mound with proposed trees along the property line to function as a landscape buffer.

Civil Plans

9. **EC-1, EC-2 and EC-3:** Existing Conditions Plans should show all trees on the site. See Comment No. 1.

Response: Given the size of this site, we have revised the Site Plan to depict all of the trees within the limit of proposed work that are greater than 6" caliper, are depicted on the Site Plan, a total of over 260 surveyed trees. Existing trees to be removed are shown with an "X" through them and total 38, or approximately 15% of the trees within the limits of proposed work.

We note that the Applicant's landscaping plans include the additional planting of over 200 new trees on the site, including 50 street trees, 85 flowering trees, 30 small flowering trees and 36 evergreens.

10. **EC-1, EC-2 and EC-3:** Existing Conditions Plans should provide the Aquifer Protection District and Zone A Boundary.

Response. The Site Plan has been revised to show both boundaries.

11. **D-1:** Recommend that the culvert in the vicinity of WF A21 be removed and area be restored.

Response. The Applicant explored the possibility of removing the culvert. However, retaining the culvert will result in less disturbance to this shallow collection point and will also avoid regrading within a sensitive area, and therefore, it is preferable to retain it in its current location.

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.

Response. The Applicant prefers to keep the existing cart paths and to allow residents to use the paths as walking trails. We note that Section 11.1.5.3 allows up to 10% of the open space to be paved for pedestrian walks and/or bike paths when accessory to the use and enjoyment of the open space. These paths will allow the southern portions of the site to be accessible for pedestrians and light maintenance purposes consistent with the uses and maintenance obligations associated with the open space.

13. **LM-1:** A location has not been designated for the septic system pump controls, including power supply and instrumentation.

Response: Septic pump and controls are shown on the revised Subsurface Sewage Disposal plans submitted to the Board of Health and also included on LM-2.

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.

Response: A structural engineer will prepare the final retaining wall plans and the applicant will file for a Building Permit for these walls.

15. **GD-1:** There are no guard rails and fences for the road and sidewalk for the stream crossing structure and the retaining wall.

Response: Sheet GD-1 now includes wooden guard rails as part of the final bridge design.

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.

Response: We have added additional erosion control measures to Sheet GD-1.

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.

Response: The Applicant proposes to use a gas generator.

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.

Response: A structural engineer will prepare the final retaining wall plans and the applicant will file for a Building Permit for these walls.

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.

Response: The Applicant believes that these small retaining walls between driveways will serve to effectively and safely demarcate the exclusive use areas in the common driveway serving each duplex. Based upon experience in another development having this feature, the design team is confident that the walls will not pose a hazard to residents. The height of the walls may vary, but the maximum height will not trigger the need for a guardrail/railing in our opinion.

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.

Response: The grading has been reviewed and a lawn inlet will be added at the low point and is shown on the revised Sheet GD-2.

21. **GD-3:** Suggest that FES#3 be a level spreader. Details not provided for what appears to be rip rap.

Response: The Site Plan has been revised to confirm that FES#3 is a level spreader and detail for rip rap has been provided.

22. **GD-1, GD-2 and GD-3:** There is no limit of work boundary.

Response: The limit of work boundary has been added to these sheets.

23. **PR-1:** There does not appear to be enough cover for the 10-inch cast iron pipe crossing station 16+25±.

Response: Sheet PR-1 is revised and now shows that Applicant will replace the 6" PVC pipe with a 6" ductile iron pipe. The 10" ductile iron pipe will not be used. The 1.0' of cover will be adequate with this modification.

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.

Response: The Sewage profile has been revised on new “Septic Plans” (included for your review). The revised profile depicts a minimum cover of three (3) feet over the septic pipes, which is sufficient to address the concerns regarding freezing. Three (3) feet of cover over the 4” PVC pipe satisfies AASHTO H-25 loading requirements and local guidelines for depth of cover in freezing conditions.

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.

Response: This Road section has been corrected and is now consistent with the other site 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.

Response: Detention Basin cross section has been revised.

27. **SD-2:** Please identify where the infiltration trench will be constructed.

Response: The locations for the infiltration trenches are now shown on the revised plan.

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.

Response: Under Section 11.1.5 of the Zoning By-Law, Open Space shall be perpetually kept “in an open state...preserved for exclusively agricultural, *horticultural*, educational or recreational purposes, and that it shall be maintained in a manner which will ensure its suitability for intended purposes.” (Emphasis added). Further, Section 11.1.5.2 provides that the contiguous open space shall be used for a variety of uses, including, among others, conservation, recreation, park purposes, horticulture, scenic vistas” or any combination of such uses. Areas of irrigated and mown lawn which are managed under a comprehensive landscape management plan to ensure the overall scenic, horticultural and recreational qualities of the project are consistent with the restrictions on the use of the open space under the By-Law. Irrigation and/or mowing is not prohibited and maintenance for supported uses is permitted.

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.*

Response: In response to this comment, the LA Plans have been amended to include the following note:

“The ‘Meadow’ areas will be maintained by means of occasional mowing for the purpose of preserving these areas as open grassland and preventing the process of succession into forest. At a minimum, mowing shall occur on an annual or biennial basis at the end of the growing season. At a maximum, mowing shall occur on a biannual basis. If biannual, the first mowing shall occur within the middle third of the growing season and the second at the end of the growing season. Biennial, annual, and biannual mowing may be used in combination to promote varied visual interest, varied habitat, and encourage increased biodiversity of the former golf course play areas.”

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?

Response: The connection from the pump house is now shown on Revised Sheet L-50. Currently our note reads: “Existing main to be used from pump house to new looped main. All other existing irrigation components to be removed and/or abandoned and connections broken.” Access to the pump house for maintenance will be via a small pickup truck utilizing the existing cart path.

31. **Sheet L-6.1:** The sod detail shows 6-inches of loam please clarify areas to be sodded and seeded.

Response: We have added the following note: “The extent of areas to be sodded/seeded are depicted on the Management Plan (L-4.0, L-4.1, and L-4.2) as ‘Irrigated and Mown Lawn.’ Excluded from these areas are planting beds and other landscape features as shown on the Materials and Layout Plans, L-2.0 and L-2.1.”

32. **Sheet L-6.1:** The bridge side elevation does not match the proposed bridge structure.

Response: These plans have been revised to correct this error.

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.

Response: Foundation drains have been added to the plans. These drains will discharge to daylight at various locations and are shown on Sheets GD, GD-1, GD-2, and GD-3.

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.

Response: The statement in the application was not correct. The septic system is designed to service 8,140 GPD.

HydroCAD® Analyses

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

Response: HydroCAD comments were addressed in the NOI section.

Thank you for the opportunity to address DCI's comments in writing. Please contact me if you require any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Roy A. Tiano". The signature is written in a cursive style with a large initial "R" and "T".