



PESCE ENGINEERING & ASSOCIATES, INC.

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February 27, 2023

Mashpee Planning Board
Attn: Mr. Evan Lehrer, Town Planner
Mashpee Town Hall
16 Great Neck Road North
Mashpee, MA 02649

RE: Engineering Review of the Proposed **Cranberry Point at Willowbend** Residential Development, 275 Quinaquisset Avenue, Mashpee

Dear Mr. Lehrer & Members of the Planning Board:

Pesce Engineering & Associates, Inc. is pleased to provide you this engineering review of the proposed Cranberry Point at Willowbend residential development. We have evaluated the plans for consistency with the Town's Zoning Bylaw, and general conformance with the Massachusetts Stormwater Management Regulations.

In addition to a site visit on February 16th, we have reviewed the following information to prepare this letter report:

- Site Development Plans entitled "Cranberry Point at Willowbend Site Construction Plans," prepared by Baxter Nye Engineering & Surveying, 19 Sheets, dated January 16, 2023.
- "Stormwater Management Drainage Report for Cranberry Point at Willowbend Golf & Country Club," prepared by Baxter Nye Engineering & Surveying, dated January 16, 2023.
- Residential Unit Option 1 architectural floor plans, 4 sheets, prepared by Raybun Architects, dated January 3, 2023.

This project calls for the redevelopment of an existing single-family parcel, containing 5.065-acres, to provide 14 residential cottages (approx. 2,407 SF footprint each) off Quinaquisset Ave., as part of the Willowbend residential development. This parcel is located in the Residential 3 (R-3) Zoning District. The project site has both upland area, and wetland resource areas (including riverfront area), but is not located within the 100-yr. floodplain. This site is also not located within a mapped priority habitat of rare or endangered species (per the MA Natural Heritage & Endangered Species Program), nor within a Zone II of a public drinking water supply. The proposed residential project will be serviced by the municipal water system and a privately operated wastewater collection system and treatment facility.

The following are our review comments:

Site Plan, Layout & Utilities

1. This project, as part of the proposed design, will require the alteration of some wetland resource areas throughout the parcel. The proposed wetland mitigation is shown on sheet C6.0 "Master Mitigation Plan." This project will of course require a Notice of Intent filing with the Mashpee Conservation Commission, and also an application for a Mass DEP 401 Water Quality Certificate. Since during this rigorous wetland review process, there will likely be some site plan revisions, we recommend that a Condition of Approval of this project require the applicant submit the final plans (after the wetland permitting is completed) to the Planning Board for their files.
2. We recommend that the applicant provide documentation for the project files, indicating that the proposed project and the estimated wastewater design flow can be connected to the existing private wastewater treatment plant (under the currently approved operating permit capacity).
3. We recommend that the Mashpee Fire Dept. review these plans and provide comments to the Planning Board (if they haven't already) regarding the adequacy of emergency vehicle access, and the proposed number of fire hydrants and their locations. Additional related comments:
 - a. We note only 1 fire hydrant is proposed (near Cottage 5). A second hydrant near cottages 7 or 8 is recommended to allow for future flushing of the line for maintenance.
 - b. The community driveway/roadway is proposed to be 16 ft. wide, with 1 ft. wide Cape Cod berms on each side. This is just barely wide enough for the required 18 ft. wide Fire Dept./emergency vehicle access. We note the proposed concrete sidewalk in front of Cottage 14, and the proposed 7 ft. wide seashell shoulder along the entrance drive up to Cottages 6 & 10. We recommend that this shoulder area be designed to allow for fire truck access, and that the appropriate construction detail be added to the plans for review.
 - c. We note that the edge of the turning path for the proposed fire truck swept path analysis shown on sheet C3.4 touches the concrete island for the security gates at the entrance. We recommend that the entrance area be modified/widened to provide more clearance between the truck path and the gate island.
4. We note that the Zoning Table shown on sheet C3.0 refers to the Willowbend Special Permit regarding the maximum lot coverage (structures). In order to confirm compliance, we recommend that this be amended to show the amount of lot coverage proposed, and how it complies with the special permit.
5. A Rip Rap erosion control pad should be provided for the roof drain outlet for Cottage 9.
6. We recommend that a construction detail be added to the plans showing the design cross-section of the proposed gravel golf cart path.

7. No Landscape Plan or Lighting Plan were included with the plan set. We recommend that the application discuss with the Board the need/requirements for these plans. At the discretion of the Board, these plans could be submitted at a later date as a Condition of Approval in the Decision.
8. We recommend that sheets C4.0 & C4.1 refer to/show a "Silt Sack" or other similar erosion controls for the proposed catch basins, and an appropriate note added to the "Grading & Drainage Notes" on sheet C4.1. (We acknowledge that Construction Detail C-628 for a silt sack is shown on sheet C7.1).
9. The final revised plans submitted to the Board should have the stamp & signature of the record project land surveyor on all appropriate sheets.

Stormwater Management

This project proposes to mitigate post-development runoff with 2 main stormwater management (SWM) areas, and multiple water quality basins (on the west side of the site). Runoff on the site driveway will flow to catch basins with outlet hoods and 4 ft. sumps, piped to the 2 sediment forebays, which will discharge to the existing wetland area on the east side of the site, which is modeled as a wet pond. The roof runoff is also piped to flow either through the stormwater collection piping, or directly to Forebay 3, for ultimate discharge to the wetlands area. These stormwater management systems are designed for the 100-yr. storm event.

We have the following stormwater management comments:

1. We recommend that a Stormwater Management Operation & Maintenance Plan be prepared for this project. This plan should include a line for the name, date, and signature by the owner, and an inspection log form. This will ensure that the owner/applicant is aware of and understands the recommended maintenance and inspections that will be required in the future.
2. Catch Basin (CB) 1 & Catch Basin 2 are piped together in series. This is not generally accepted practice per the DEP Stormwater Management Policy, since the flow entering CB 2 from CB1 (which also includes the runoff flow from the roof drains from Cottages 2-5) will have the effect of "stirring up" the contents/accumulated sediments in CB 2, and not allowing them to properly collect and settle. Therefore, we recommend that a separate drainage manhole be provided to collect the flow from these 2 CBs.
3. We note the proposed retaining walls in several locations behind proposed residences. The low points of these retaining walls (on the upland side) behind cottages 10 & 12 will cause ponding and potential drainage issues (behind the walls). We recommend that consideration be given to providing some sort of drainage outlet (with erosion controls) at these locations.
4. The proposed outlet pipes for the water quality basins on the west side of the site do not appear to have any trash/leaf/debris protection in the inlet side of the pipe. We recommend

that some consideration be given to protecting these inlets from debris accumulation and blockage (to ensure that they continue flow as designed).

5. The grading and drainage plans reference/show Forebays 1 & 3. Is there a Forebay 2 that is missing?
6. Two boring "B-6" labels are shown on the existing conditions plan (sheet C2.0). Please correct the numbering for this boring. Additionally, the soil boring logs do not contain any information regarding the depth to groundwater. We recommend that this information be provided, along with the estimated seasonal high groundwater (ESHW) elevation.

Thank you for this opportunity to assist the Planning Board in their review of this project, and please call or e-mail me if you have any questions or comments.

Sincerely,

PESCE ENGINEERING & ASSOCIATES, INC.



Edward L. Pesce., P.E., LEED ® AP
Principal

cc (via e-mail):

Matthew Eddy, PE, Baxter Nye Engineering & Surveying
Lt. Leonard Goldman, Fire Inspector, Mashpee Fire Dept.