



November 4, 2022

Attn: Matthew Heins
Planning Board Assistant
Town of Pembroke
100 Center Street
Pembroke, Massachusetts 02359

**RE: 2ND REVIEW OF CONVENTIONAL SUBDIVISION CONCEPT PLAN FOR PURPOSES OF DENSITY
Pembroke Country Club Age Qualified Cluster Development
94 West Elm Street, Pembroke**

Dear Mr. Heins and Board Members;

This letter is being submitted in response to the second peer review letter provided by Merrill Engineering and Land Surveyors, via email on October 28, 2022 regarding the proposed Age Qualified Cluster Development. Crocker Design Group, LLC (CDG) offers the following responses to each comment below. In addition to the following revised and supporting documents are enclosed:

- Enclosure 1: Updated Sheets D-1 through D-3 last revised by CDG on 11/4/2022

Merrill's review comments are indicated below in standard text with CDG's responses in **bold text**.

1. Please clarify all wetland resources on site as the ORAD indicates inland bank to a perennial stream and riverfront area.

CDG Response: The perennial stream commences at the outlet of the pond associated with Wetland Series "I" and extends north off the property. The Inland Bank associated with the perennial stream has been labeled on Sheet D-3 to state "Inland Bank-Series A" and is located south of the Milford Street cul-de-sac and on the northeastern corner of proposed conventional Lot 84. The 100' Inner Riparian Zone has also been added Sheet D-3. Lots 83 and 84 would be designed in accordance with the performance standards of the River's Protection Act (310 CMR 10.58), which allows for the alteration of up to 5,000 square feet or 10% of the riverfront area within the lot whichever is greater.

2. A Bulk Grading and Drainage Concept plan has been provided illustrating the high and low points along the proposed roadways with several drainage areas. Comment partially addressed. There are several roadway low points that are difficult to understand which drainage facility the low point is intended to discharge to. Please provide a summary of the drainage assumptions for how the roadway low points will discharge to the drainage areas.

CDG Response: Please refer to the updated Bulk Grading and Drainage Concept Plan (Sheet D-3) attached. Stormwater throughout the conventional layout will be handled in a typical approach for residential subdivisions in Pembroke which include the following:



- Deep-Sump, Hooded Catch Basins, spaced no more than 300-feet apart on both sides of the center-crowned roadway to capture road runoff and associated yards and driveways.
- Drainage Piping to convey the captured runoff from the catch basins to proposed stormwater basins located throughout the site.
- Prior to discharge into the basins, the runoff will receive treatment either through proprietary treatment devices, such as CDS Water Quality Units or via sediment forebays attached to the basins themselves.
- The conveyance piping between the network of catch basins and the stormwater basins would typically be designed to follow along shared property lines where possible when outside the Right-of-Ways, enclosed in drainage easements.
- The basins would be designed to provide stormwater detention for peak rate reduction/control and stormwater infiltration/recharge where appropriate.
- Stormwater would ultimately be discharged into the wetland and stream systems that exist through the property today.

We concur that the initial grading concept included a few locations that warranted clarification. In particular, the following areas have been revised on the attached Sheet D-3 and are described as follows:

- Lots 100 – 103: The roadway elevations have been raised in this section to convey runoff from the roadway and lots to a new proposed basin located on Lots 101-103. The basin is positioned such that it could then discharge to the adjacent wetland system after appropriate treatment and detention.
- Lots 141 – 146: The roadway elevations previously included a low point at Elevation 100+/- at the intersection between Lots 46 & 145. This intersection has now been raised up to Elevation 106 with a high point now added between Lots 144 & 145, to raise the west end of the “loop roadway”. This update allows for more vertical separation to convey runoff from the roadway and lots to the internal basin proposed at the rear of the associated lots.
- Hazelwood Entry Drive (by 84 Hazelwood): The roadway low point has been raised and shifted to provide more vertical separation between the roadway and adjacent wetland elevations. This update allows for proper conveyance of the roadway to the proposed basin and from the basin to the wetland.
- There are some areas around the perimeter of the site where the grades would need to be lowered to create low points for drainage basin installation and collection of the surrounding runoff. Where this occurs, it is anticipated that the change in grades would either be handled with slopes where possible and where sufficient horizontal space does not exist, retaining walls would be incorporated into the design.



Should you have any questions or require any further information, please do not hesitate to contact Gabe Crocker, P.E. at gabecrocker@crockerdesigngroup.com or 781-919-0808.

Sincerely,
Crocker Design Group LLC

A handwritten signature in blue ink, appearing to read "Gabe Crocker", is positioned above the printed name.

Gabe Crocker P.E.
President