

AMORY ENGINEERS, P.C.

WATER WORKS • WATER RESOURCES • CIVIL WORKS

25 DEPOT STREET, P.O. BOX 1768
DUXBURY, MASSACHUSETTS 02331-1768

TEL.: 781-934-0178 • FAX: 781-934-6499
WWW.AMORYENGINEERS.COM

May 18, 2020

Halifax Zoning Board of Appeals
499 Plymouth Street
Halifax, MA 02338

Subject: Country Club Estates – Chapter 40B Comprehensive Permit

Dear Board Members:

This is to advise that we have reviewed the following documents related to the subject Comprehensive Permit Application:

- Comprehensive Permit Site Plan (13 sheets), dated January 13, 2020, prepared by Silva Engineering Associates, P.C. (SEA)
- Drainage Evaluation, dated January 13, 2020, prepared by SEA
- Project Eligibility Letter from MassHousing to the Applicant, dated June 4, 2019
- Narrative Description of design Approach, prepared by SEA
- List of Requested Waivers, dated September 17, 2018

We have forwarded the Traffic Impact and Access Study¹ to Gillon Associates, our traffic consultant for peer review. The purpose of our review has been to evaluate conformance with the By-Laws and the Code of the Town of Halifax (Bylaws), Massachusetts Department of Housing and Community Development (DHCD) Comprehensive Permit Regulations (760 CMR 56.00), Massachusetts Department of Environmental Protection (DEP) Stormwater Management Standards (SMS) and good engineering practice.

Background

The proposed development includes construction of thirty residential condominium units in five, two-unit and five, four-unit buildings with associated utilities, stormwater system and an approximately 857-foot long dead-end cul-de-sac roadway (driveway)². The development would be located off the south side of Plymouth Street with driveway access through the signalized intersection at the Stop & Shop supermarket east driveway entrance. The property is comprised of three parcels within the Commercial and Business (B) Zoning District, Map 63, Lot 6B is a 0.41-acre parcel, Map 63 Lot 6C is a 1.27-acre parcel and Map 63, Lot 31 is a 3.75-acre parcel (total area is about 5.43 acres). There is also work proposed³ within easements on the Halifax Country Club parcel (Map 73, Lot 5) to the south, which is within the Agricultural-Residential (AR) zoning district. The project parcels are currently used for growing agricultural crops which

¹ Dated October 2019 and prepared by Green International Affiliates, Inc.

² We note that the construction of the proposed roadway would be equivalent to a proposed subdivision roadway. However, this is a condominium project where there is no subdivision of land so the proposed roadway is located on the same parcel as the proposed dwellings and not within a right-of-way so it could be considered a driveway.

³ Portions of a septic system leaching facility and drainage piping and basins.

support the Nessralla Farm stand at 314 Plymouth Street. There are approximately 0.68-acres of bordering vegetated wetlands located on the site.

The proposed access roadway would have a twenty-four-foot wide travel way with twelve-inch Cape Cod berm on each side and a bituminous concrete sidewalk on the east side from Plymouth Street to the cul-de-sac turnaround and on the west side from about Sta. 4+20 to about Sta. 7+05. The stormwater system would include catch basins, drain manholes, piping, sediment forebays, and infiltration basins. About half of the stormwater system would be located on the Country Club parcel. Each dwelling unit would have its own septic tank and grinder pump which would pump sewage through a force main to a shared septic leaching system which would be located partially on the project parcels and partially on the Country Club parcel. The water system would include a new 8-inch PVC watermain connected to the Town's distribution system in Plymouth Street. Underground electric, telephone, cable television and gas utilities would be installed along the proposed roadway.

Variance & Waiver Requests

The applicant is seeking relief from the following provisions of the Bylaws:

- Variance from Bylaw Chapter 164 – Wetlands Protection, §164-13, which establishes the Rules and Regulations of the Conservation Commission. Section 2.02(3) of those rules and regulations require a fifty-foot (50-ft.) 'no touch' buffer from a bordering vegetated wetland and the Applicant is requesting a reduction to a twenty-five foot (25-ft.) 'no touch' buffer.
- Special Permit from Bylaw Chapter 167 – Zoning (ZBL), §167-7 D(2) to allow for a multifamily development in the B zoning district.
- Variance from ZBL §167-12 A(5) to allow for a reduction of the required rear setback of 100 feet to 13.4 feet, the required separation between buildings of 100 feet to 15 feet, the required side setback of 30 feet to 25 feet and the requirement that the side setback be vegetated and free of parking and structures.

In addition to the specific relief listed, there is a statement in the List of Requested Waivers that reads "the Board hereby waives and all local rules, regulations and/or bylaws necessary to construct the project consistent with the plans of approval as stipulated in the decision by the Halifax Zoning Board of Appeals." This statement appears to be a blanket request for relief to construct the project as proposed.

Comments

Based on review of documents we offer the following comments:

Zoning

1. A variance is needed from ZBL §167-7 D (2)(a) which requires that each building in a multifamily development complex be on an individual lot with continuous frontage on a public way. The proposal calls for ten buildings on a single lot.

2. A variance is needed from ZBL §167-11 to allow for a reduction of the required frontage of 150-feet to 110.98-feet.
3. A variance is needed from ZBL §167-12 A (1) which specifies that “the number of units in a multifamily development shall not exceed the number of acres in the parcel on which they are to be built.” Thirty units are proposed on 5.43 acres.
4. A variance is needed from ZBL §167-12 A (3) which specifies that the minimum parcel size shall be ten (10) acres. As noted above, the parcel size is 5.43 acres.
5. ZBL §167-12 A (6) requires a minimum of 750 square feet (s.f.) of residential floor area on the lowest level (ground floor). The architectural plans indicate that the first floor of each unit would contain about 632 s.f.
6. ZBL §167-12 A (7)(a) requires an automatic fire detection system for all multifamily developments. We did not find any mention of a fire detection system in the documents we reviewed.
7. ZBL §167-12 A (7)(b) requires that the watermain be looped. The proposed watermain is shown as a dead-end. ZBL §167-12 A (7)(b) also requires that the proposed hydrant system be capable of supplying the required fire flow, plus fifty percent (50%). Documentation should be provided to demonstrate that the proposed water system will provide the required fire flow in accordance with ZBL §167-12 A (7)(b).
8. ZBL §167-12 B requires 2.5 parking spaces per unit. The plans indicate that there are two spaces provided for each unit.
9. ZBL §167-28 G (3) requires a plan showing all adjacent properties within 300 feet of the project site, “including structures and their uses, parking areas, driveways, pedestrian ways and other significant features...” Only the building at 314 Plymouth Street is shown on the plans.
10. ZBL §167-28 G (4)(a)[7] requires garbage and trash disposal facilities to be shown on the Site Plan. The Applicant should explain how garbage and trash will be handled and, if a dumpster is proposed, it should be shown on the plan with appropriate screening.
11. ZBL §167-28 G (4)(a)[12] requires any outside lighting, fencing, screening or signs to be shown on the Site Plan. If proposed, these items should be shown and detailed on the plans.
12. ZBL §167-28 H (6) requires “residential privacy provided by site and unit layout.” As proposed there would be little privacy for occupants of Units 7-20 because of their proximity to the golf course.

Roadway

1. As noted above, the access roadway is proposed to access Plymouth Street at the signalized intersection at the Stop & Shop supermarket east driveway entrance. The centerline of the proposed roadway appears to be approximately 10- to 15-feet west of the centerline of the Stop & Shop driveway across Plymouth Street. The centerline of the proposed roadway should be in line with the centerline of the Stop & Shop driveway centerline.
2. The proposed sidewalk is shown to be immediately adjacent to the back of the Cape Cod berm. There should be a grass strip between the berm and sidewalk to provide a visual separation between vehicular and pedestrian traffic. We recommend a minimum width of five feet for the grass strip. If there is not sufficient room for a grass strip a vertical curb should be provided to protect pedestrians from vehicular traffic.
3. Roadway stationing should be shown in plan on the drawings.
4. The cul-de-sac turnaround does not appear to be shown correctly in profile on Sheet 6.

Utilities and Stormwater Management

1. To more accurately compare pre- vs. post-development runoff, the HydroCAD calculations should model two design points, one to the wetlands on site and one to the golf course.
2. The impervious areas used in the recharge calculations are not consistent with the impervious areas in the HydroCAD model.
3. It is not clear how many roof recharge systems are proposed. The calculations indicate that one trench is required for each unit but the plans appear to show one trench for every two units (except for Units 23 and 24 where there appear to be two trenches).
4. The HydroCAD post-development subcatchment areas DV-A and DV-D include areas of brush. Areas of proposed brush should be identified/specified on the plans.
5. The time of concentration for subcatchment area DV-D should be six minutes (the calculations are using the same time of concentration as subcatchment area DV-C).
6. We note that catch basin CB1 is piped to catch basin CB2 (connected in series). While the subdivision regulations (Bylaw Chapter 235, §235-32 A (5)) allow drain pipes to extend through up to three catch basins we recommend against this. Also, the DEP SMS require catch basins to be off-line in order to take credit for 25% total suspended solids (TSS) removal (see attached TSS removal table from the SMS). In order for the stormwater system to provide the required TSS removal, the catch basins cannot be connected in series. We recommend either connection to a drain manhole or each catch basin discharge directly to the sediment forebay.

7. The catch basins should be modeled as ponds with insignificant/zero storage capacity in the HydroCAD model.
8. The HydroCAD model has the discharge pipe from catch basin CB2 as a 15-inch pipe whereas it is specified to be 18-inch on the plans. The HydroCAD model has the invert of the discharge pipe from catch basin CB3 at El. 67.25 whereas it is shown to be El. 67.08 on the plans.
9. We recommend that the sediment forebays and stormwater basins be mowed regularly during the growing season rather than twice per year as specified in the Operation and Maintenance Schedule.
10. Aside from sewer, there are no proposed utilities shown for Units 1 and 2.
11. The proposed hydrant located furthest into the development is shown in different locations in plan and profile.
12. There is a detail for "Forced Main Cleanout Manhole" (SMH's 1 and 4) shown on Sheet 11. A detail for SMH's 2 and 3 should also be included.
13. Water and sewer services for Units 17-19 should be shown to be a minimum of ten feet apart.
14. We assume that the Board of Health is reviewing the septic system design so we have not commented on that.

We will forward the comments from Gillon Associates related to the traffic study once we receive them. Should you have any question, please give us a call.



Very truly yours,

AMORY ENGINEERS, P.C.

By:

A handwritten signature in blue ink that reads "Patrick G. Brennan". The signature is fluid and cursive, written over a white background.

Patrick G. Brennan, P.E.

PGB
enc.

Table TSS

TSS Removal Efficiencies for Best Management Practices	
Best Management Practice (BMP)	TSS Removal Efficiency
Non-Structural Pretreatment BMPs	
Street Sweeping	0-10%, See Volume 2, Chapter 1.
Structural Pretreatment BMPs	
Deep Sump Catch Basins	25% only if used for pretreatment and only if off-line
Oil Grit Separator	25% only if used for pretreatment and only if off-line
Proprietary Separators	Varies – see Volume 2, Chapter 4.
Sediment Forebays	25% if used for pretreatment
Vegetated filter strips	10% if at least 25 feet wide, 45% if at least 50 feet wide
Treatment BMPs	
Bioretention Areas including rain gardens	90% provided it is combined with adequate pretreatment
Constructed Stormwater Wetlands	80% provided it is combined with a sediment forebay
Extended Dry Detention Basins	50% provided it is combined with a sediment forebay
Gravel Wetlands	80% provided it is combined with a sediment forebay
Proprietary Media Filters	Varies – see Volume 2, Chapter 4
Sand/Organic Filters	80% provided it is combined with sediment forebay
Treebox filter	80% provided it is combined with adequate pretreatment
Wet Basins	80% provided it is combined with sediment forebay
Conveyance	
Drainage Channels	For conveyance only. No TSS Removal credit.
Grass Channels (formerly biofilter swales)	50% if combined with sediment forebay or equivalent
Water Quality Swale – wet & dry	70% provided it is combined with sediment forebay or equivalent
Infiltration BMPs	
Dry Wells	80% for runoff from non-metal roofs; may also be used for runoff from metal roofs but only if metal roof is not located within a Zone II, or IWPA or at an industrial site
Infiltration Basins & Infiltration Trenches	80% provided it is combined with adequate pretreatment (sediment forebay or vegetated filter strip, grass channel, water quality swale) prior to infiltration
Leaching Catch Basins	80% provided a deep sump catch basin is used for pretreatment
Subsurface Structure	80% provided they are combined with one or more pretreatment BMPs prior to infiltration.
Other BMPs	
Dry Detention Basins	For peak rate attenuation only. No TSS Removal credit.
Green Roofs	See Volume 2, Chapter 2. May reduce required water quality volume. No TSS Removal Credit.
Porous Pavement	80% if designed to prevent runoff and with adequate storage capacity. Limited to uses identified in Volume 2, Chapter 2.
Rain Barrels and Cisterns	May reduce required water quality volume. No TSS Removal Credit.