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June 21, 2023

Duxbury Zoning Board of Appeals
Town Hall
878 Tremont Street
Duxbury, MA 02332

Subject: **50 Railroad Avenue – Comprehensive Permit**

Dear Board Members:

This is to advise that we have reviewed the 50 Railroad Avenue Application for a Comprehensive Permit related to the subject proposed development. Specifically we have reviewed the following attachments to the application:

- Site Development Plan (11 sheets), revised June 15, 2023, prepared by Crowell Engineering (Crowell)
- Drainage Analysis, dated June 12, 2023, prepared by Crowell
- Stormwater Management Policy, dated June 12, 2023, prepared by Crowell
- The Winsor at Millbrook Village – 6-Plex (5 sheets), dated June 6, 2023, prepared by Julia Chuslo: Architect (JCA)
- The Winsor at Millbrook Village – Duplex (3 Sheets) dated June 6, 2023, prepared by (JCA)
- Massachusetts Housing Finance Agency (MassHousing) eligibility approval letter with attachments, dated March 28, 2023
- Proposed Waiver List, dated April 2023

The purpose of our review has been to evaluate conformance with Duxbury Zoning Bylaws (ZBL), Duxbury Planning Board Rules & Regulations Governing the Subdivision of Land (R&R), Massachusetts Department of Housing and Community Development Comprehensive Permit Regulations (760 CMR 56.00), MassDEP Stormwater Management Standards (SMS) and good engineering practice.

Background

The proposal calls for constructing twelve residential condominium units south of the DuxPlex facility along Railroad Avenue. Three of the units would be affordable. The units would be in three duplexes and one six-unit building. The development site is a 62,463 square foot (s.f.) parcel that would be subdivided out of the DuxPlex property. The development site is mostly undeveloped woodland and wetland (4,858 s.f.). It is in the Neighborhood Business 2 (NB2) zoning district and the Medical Marijuana Overlay District (MMOD).

Access to the units would be by a twenty-two-foot-wide common driveway off Railroad Avenue. Each unit would have two outside parking spaces and one garage space. The proposed stormwater system would include catch basins, manholes, proprietary treatment units, two open-air infiltration basins, and a subsurface infiltration system consisting of perforated pipes surrounded by crushed stone. An onsite septic system would provide sewer service for the units. Water service would be provided by connection to the existing main in Railroad Avenue, however, the proposed water system is not shown on the plans. We assume that natural gas, electric and communication utilities would be connected to existing infrastructure in Railroad Avenue, but again, these proposed utilities are not shown on the plans.

Comments

1. Based on our review of the documents, we do not believe there is sufficient information for us to determine whether the development may be constructed as shown on the plans.

    a. As noted above, proposed water, gas and electric/communication utilities are not shown on the plans.

    b. The proposed sewerage and septic system are shown graphically on the Septic Plan (Sheet 6), but most of the components are not labeled. It is also not clear where the reserve area for the soil absorption system is located. Elevations of the test holes performed for the septic system should coincide with the elevations of the plan.

    c. The Lighting Plan (Sheet 9) does not include any lighting information.

    d. The Conservation & Landscape Plan (Sheet 10) does not show any proposed landscaping, nor does it show erosion controls.

    e. Additional construction details are required, including a pavement section, curbing, walks, basin details, etc.

    f. Three test pit logs are shown on the plans but there appears to be additional test hole locations shown. All soil testing information should be provided.

2. A mounding analysis is required for the septic system to demonstrate that the required five feet of separation from seasonal high groundwater will be provided when the mound is added to the groundwater elevation (310 CMR 15.212(2) and 15.240(12)).

3. The required setback from an infiltration facility to a surface water (wetlands are considered surface waters) is fifty feet (see SMS Table 2.3, copy attached). Both of the proposed open-air infiltration basins and portions of the subsurface infiltration system are within fifty feet of the wetlands.

4. The USGS topographic maps show a perennial stream within the wetland area at the rear of the site. The Applicant should document whether this stream is perennial or

intermittent. If the stream is perennial, then there is a Riverfront Area associated with it and the project must comply with the Riverfront Area performance standards.

5. The Proposed Waiver List only includes two waivers. Additional waivers will be required to construct the project as shown, particularly from the Duxbury Wetlands Protection Bylaw (Chapter 9) and the associated Duxbury Wetlands Regulations as they regulate the 100-foot buffer zone to wetlands. All required waivers should be included in the list.

6. The architectural and civil plans for the six-unit building do not match. The overall length of the building is 140 feet on the architectural plans and 139 feet on the civil plans. The two middle units appear to be accurate but the outer two units on each end differ.

The issues we have raised above (namely comments 2 and 3) will require a major redesign of the project. Therefore, we will provide more detailed comments when additional, more complete information is provided.

Please give us a call should you have any question.

Very truly yours,

PGB Engineering, LLC

By:

Patrick G. Brennan, P.E.

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enc.

Proximity to Critical Animal Habitats or Endangered Species

Some BMPs can be lethal traps for small animals such as frogs, salamanders, and turtles. Sediment forebays and dry detention basins with excessively steep or vertical side slopes (e.g., concrete steps) or improperly located catch basins can prevent a trapped animal from escaping. LID techniques may be more suitable for managing stormwater while at the same time, protecting indigenous animal populations as well as rare and endangered species.

Proximity to Septic Systems and Water Supplies

When evaluating the suitability of infiltration BMPs such as infiltration trenches, infiltration basins and dry wells, it is critical to consider setback requirements mandated under other state programs such as those addressing septic systems and drinking water supplies. Table 2.3 summarizes setback requirements for infiltration BMPs.

Table 2.3: Setbacks for Infiltration Structures

General Setback Requirements:

Soil Absorption Systems for Title 5 Systems: 50ft.
Private wells: 100 ft.
Public wells: Outside Zone I
Public reservoir, surface water sources for public water systems and their tributaries: Outside Zone A
Other surface waters: 50 ft.
Property Line: 10 feet
Building foundations: >10 to 100 ft., depending on the specific type of infiltration BMP. See infiltration BMP for specific setback.

Specific BMPs have additional setback requirements. See Chapter 2.

Proximity to Foundations

Infiltration of stormwater can cause seepage into foundations when BMPs are located too close to buildings; MassDEP requires a 10 to 100 foot setback depending on specific type of infiltration BMP.

Public Acceptance

Aesthetics are important in gaining acceptance of BMPs. BMPs can either enhance or degrade the amenities of the natural environment and the adjacent community. Careful planning, landscaping and maintenance can make a BMP an asset to a site. Frequently, ownership and maintenance responsibilities for BMPs in new developments fall on adjacent property owners. If adjacent residents will be expected to pay for maintenance, education and acceptance of the BMP are necessary.

BMP Treatment Trains

BMPs in series incorporate several stormwater treatment mechanisms in sequence to enhance the treatment of runoff. Known as "stormwater treatment trains," they consist of a combination of source control measures, natural features, and structural BMPs to maximize pollutant removal and subsurface recharge. Combining nonstructural and structural measures in series rather than using a single method of treatment improves the levels and reliability of pollutant removal. The effective life of a BMP can be extended by combining it with pretreatment BMPs, such as a vegetated filter strip or sediment forebay, to remove sediment prior to treatment in the