

# ***PGB ENGINEERING, LLC***

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September 25, 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 following documents related to the subject project:

- Site Development Plan (12 sheets), revised September 22, 2023, prepared by Crowell Engineering (Crowell)
- Groundwater Mounding Analysis, prepared by Crowell

The documents have been revised to address comments contained in our June 21, and September 21, 2023 letters to the Board. Below are the comments from our June 21 letter in plain text, followed by the status of the comment in *italic text* at of the writing of our September 21, 2023 letter, followed by the current status of each in **bold text**.

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. **See comments below.**
  - a. As noted above, proposed water, gas and electric/communication utilities are not shown on the plans. *Addressed – proposed water, gas and electric/communication utilities are 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. *Septic components are now labeled on the plans and the elevations between test holes and septic design are consistent. However, Reserve Area 2 crosses over one water line and it is within ten feet of another water line, which is not permissible under Title 5. Additionally, the proposed soil absorption system is an alternative system (Presby), and Section II.6.c) of the MassDEP “Standard Conditions for Alternative Soil Absorption Systems with General Use Certification and/or Approved for*

*Remedial Use,” revised March 5, 2018, requires that the plans “must clearly indicate an area for a full-sized conventional primary SAS and a full-sized conventional reserve area.” The design calculations on Sheet 7 show that the reserve area meets the full-size requirements, but the primary soil absorption system is the Presby system and it is reduced by 40%. We don’t believe that there is sufficient room on the site for full-size conventional primary and reserve soil absorption systems, especially since Reserve Area 2 cannot be configured as shown on the plans and will need to be reduced.*

**Addressed – the water main servicing the units has been reconfigured and it is now ten feet from the reserve area. The conventional primary system is shown in three pieces on the proposed condo site and in front of the Duxplex. As a result, the proposed condo site is no longer proposed to be a separate lot, but rather an exclusive use area. The final plans should clearly show that the lot is not being subdivided.**

- c. The Lighting Plan (Sheet 9) does not include any lighting information. *The lighting information shown on the plan is a legend that has a symbol for “post lights (onion lights)” and locations of the post lights. Specification should be provided or specified on the plans.* **Addressed – a proposed Light Post Detail is shown on Sheet 12, which shows a typical residential driveway lantern.**
  - d. The Conservation & Landscape Plan (Sheet 10) does not show any proposed landscaping, nor does it show erosion controls. *Landscaping is shown on Sheet 9. It consists of a stockade fence along a portion of the 114 Alden Street property line; arborvitae along the Duxplex property line; a combination of hydrangea & beach grass in the green spaces in front of the units; and loam and seed in all other areas. Erosion controls are shown graphically and detailed on Sheet 10 but they are not labeled in plan.* **A legend has been added to identify the perimeter erosion controls.**
  - e. Additional construction details are required, including a pavement section, curbing, walks, basin details, etc. *Some details have been added to the plans but there should be details for the wet basins and the walks.* **Addressed – details for the basin have been added and Mr. Crowell advised that the Bit Concrete Paving Detail on Sheet 12 is for the driveways and walks.**
  - 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. *Addressed – test pit logs for all test pits excavated on site have been 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)). **Addressed**

**– the mounding analysis shows that the required separation from groundwater will be provided when the mound is added to the to the groundwater elevation.**

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. *Addressed – the open-air basins are now designed as wet basins, not infiltration basins so the fifty-foot setback does not apply. The proposed subsurface infiltration system is set back a minimum of fifty feet from the wetlands. We note that since the two open-air basins are now wet basins and do not provide any groundwater recharge, there is an increase in post-development volume of runoff. We asked Mr. Crowell to quantify the impact the increase in volume would have on flooding levels in the receiving wetlands. His analysis, as well as our own analysis, indicate that the additional runoff volume will not increase flood levels in the receiving 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. *Addressed – the Applicant provided an Order of Resource Area Delineation from the Conservation Commission, dated January 9, 2018 indicating that the stream is in fact an intermittent stream, and therefore, does not have a Riverfront Area associated with it.*
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. **The waiver list includes two waivers and we believe that these are the waivers required to construct the project as proposed.**
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. *Addressed – the civil plans have been revised to match the architectural plans.*

*New Comments – September 12, 2023 Plans*

7. *Bearings are missing from the north and west property lines as well as from the drainage easement on the Duxplex property. Addressed – bearings are shown. The lot is not being subdivided off the Duxplex property so the lines are now lines delineating an exclusive use easement and not a separate property so the drainage easement is no longer necessary. The final plans should clearly show that the lot is not being subdivided.*

8. *The Utility Plan (Sheet 5) shows that the existing 6-inch water main in Railroad Avenue will be replaced with an 8-inch water main from Alden Street about 290 feet along Railroad Avenue. The Applicant should confirm the limits of replacement (a note on the plan showing the end of the replacement main would define the limits). **Addressed – there is now a note delineating the end of the main replacement.***

Please give us a call should you have any questions.



Very truly yours,

*PGB Engineering, LLC*

By:

A handwritten signature in cursive script that reads "Patrick G. Brennan".

Patrick G. Brennan, P.E.

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