

January 12, 2024

Mr. William F. O'Connell, Jr.
Bellingham Planning Board
Municipal Center
10 Mechanic Street
Bellingham, MA 02019

**RE: Zoning/Civil Engineering Technical Review
Proposed Warehouse Building Development
306 Maple Street, Bellingham**

Dear Mr. O'Connell,

This letter is to advise that we have reviewed the materials submitted for the proposed warehouse building development project located at 306 Maple Street in Bellingham, Massachusetts. The submission includes the following documents:

1. Application Package entitled "Development Plan Review & Stormwater Permit Applications," prepared by Allen Engineering & Associates, Inc., dated September 6, 2023;
2. Plans entitled "Site Plans for Proposed Warehouse Building at 306 Maple Street," prepared by Allen Engineering & Associates, Inc., dated September 6, 2023;
3. Report entitled "Drainage Analysis for Proposed Warehouse Building at 306 Maple Street," prepared by Allen Engineering & Associates, Inc., dated September 6, 2023; and
4. Report entitled "Traffic Impact and Access Study," prepared by Chappell Engineering Associates, LLC, dated August 31, 2023.

These documents have been reviewed for conformance with the following Bylaws and Regulations:

- Bellingham Zoning Bylaws including dimensional requirements and parking requirements;
- Massachusetts Department of Environmental Protection Stormwater Management Standards;
- Town of Bellingham Subdivision Rules and Regulations (§ 245-13 Stormwater Management);
- Town of Bellingham Planning Board Procedural Rules (Section Seven: Post-Construction Stormwater Management Plan for New Developments and Redevelopments); and
- Bellingham Wetland Regulations (§ 247-33 Stormwater Compliance).

Environmental Partners Group, LLC (EP) have prepared a zoning/civil engineering review and a traffic review of the project. This letter only includes the zoning/civil review of the project. For the traffic review, refer to the traffic review letter prepared by EP.

Background

The proposed project at 306 Maple Street includes the construction of a 59,400 square foot single story warehouse building with associated parking and loading areas, site driveways, stormwater management system, and on-site sewage disposal system.

The 11.5-acre site is bounded to the north by commercial property, to the south by single family dwellings, to the east by vacant land in the Town of Franklin, and to the west by Maple Street and commercial properties.

The site is currently wooded and undeveloped with the exception of a small single-family dwelling, detached garage, and shed structure. Wetland resources areas on-site include a Perennial Stream in the northeast corner, an associated 200-foot Riverfront Area, and Bordering Vegetated Wetlands.

Comments

Our comments note missing items and noncompliance with various standards as outlined below.

Bellingham Zoning Bylaws

1. § 240-17. B. (1) (j) requires site plans submitted under an application for development plan approval to include the location, height, size, materials, and design of all proposed signage. Additional details should be provided for the proposed monument sign.
2. In the Project Narrative, the Applicant claims that the project is proposed within the Industrial Zoning District, in which “Warehouse” use is allowed by right. However, both the Town of Bellingham, Massachusetts Zoning Map dated March, 2020 and the Town of Bellingham GIS indicate that the subject property is fully within the Suburban Zoning District. “Warehouse” use is prohibited in the Suburban District.
3. The Zoning Table on Sheet C-5 of the Site Plans shows the zoning requirements for the Industrial Zoning District. As described above, the subject property lies within the Suburban Zoning District.
4. The Site Plans do not contain a detail of the lighting fixture poles. The Applicant should add a detail of all proposed lighting fixture poles with heights, conforming to the requirements outlined in § 240-49.
5. § 240-48 and § 240-52 pertain to noise and vibration requirements, respectively. The Applicant has not submitted any materials providing information regarding the project’s conformance to these noise and vibration requirements.
6. § 240-63 requires one bicycle parking space for every 20 off-street automobile spaces required. The Site Plans do not show any bicycle parking spaces or bicycle rack construction details.
7. § 240-136 stipulates that “any private party intending to submit an application for building construction ... which may be fully or partially within the Water Resource District must meet with the Zoning Inspector” to determine if the requirements of the Water Resource District under Article XX of the Zoning Bylaw apply. Based on Bellingham’s “Water Resource District

Map”, there is a small portion of the back of the subject property within the Water Resource District. While it does not appear that any work is proposed within the Water Resource District, we defer to the Zoning Inspector whether Article XX applies to this project.

Massachusetts Stormwater Management Standards

8. *Standard 1: No new untreated discharges to wetlands*

As stated in the Drainage Analysis, the new stormwater discharges are treated and provide hardened outfalls to prevent surface erosion.

9. *Standard 2: Peak rate attenuation*

The Drainage Analysis provides tables that compare peak rates and volumes of runoff between pre-development and post-development conditions at the design point for the 2-, 10-, 25-, and 100-year storm events. We have the following comments on the stormwater design that may impact this analysis:

- a. The invert elevations for the Cultec System (Pond 1P in HydroCAD) do not exactly match the corresponding elevations of the Cultec System on the Site Plans and construction details.
- b. The elevations of the outlet devices of the basin (Pond 4P) in HydroCAD do not match the corresponding elevations on the Site Plans (namely, the 12” orifice and the broad crested weir/spillway). The narrative also claims the top berm of the basin is 220.00’, whereas it is shown as 220.50’ on the Site Plans. All submitted materials (Site Plans and HydroCAD) should have consistent elevations pertaining to stormwater best management practices (BMPs).
- c. The peak surface elevation of the 100-year storm in the Cultec System is 230.73’. This is higher than the upstream catch basins (rim at 230.50’) as well as the top of stone in the system. We recommend increasing the storage capacity of the Cultec System such that there is no surface ponding during the 100-year storm.
- d. The three test pit logs associated with the Detention and Infiltration Basin show mottles at approximately 40-inches below existing grade, suggesting that the groundwater table slopes consistently with the ground surface. The grading of the proposed Detention and Infiltration Basin is designed such that the proposed finished grade is at least two feet above estimated seasonal high groundwater (ESHGW) elevations along this slope. We recommend the Applicant observe the construction of this basin to ensure that it is constructed with the same level of precision as the design, thus preventing groundwater breakout. This slope will need to be monitored for groundwater breakout.

10. *Standard 3: Recharge*

- a. The Applicant should provide the stage storage tables that show the static recharge volume provided at: (1) below the lowest outlet of the Cultec chamber system (elevation 229.35’ per the construction detail), and (2) below the lowest outlet of the Detention and Infiltration Basin (elevation 214.50’ per the construction detail).

- b. The 72-hour drawdown calculations for the Detention and Infiltration Basin in the Drainage Analysis are inconsistent with the values in HydroCAD. The storage capacity of the basin up to the spillway elevation is approximately 11,000 cf, and the area of the bottom contour (211') is 880 sf. The calculations in the Drainage Analysis use significantly smaller numbers.

11. *Standard 4: Water Quality*

As stated above in Comment 10a, the Applicant should provide stage storage tables that show the static recharge volume provided below the lowest outlet of the Cultec chamber system (elevation 229.35' per the construction detail). In the Drainage Analysis, the Applicant indicates that the volume provided below the lowest outlet of the Detention and Infiltration Basin is 21,743 cf. This is not consistent with the HydroCAD model. The lowest outlet of the basin is the 8" diameter orifice at elevation 214.50'. The storage provided by the basin at elevation 214.50' is 7,285 cf, not the 21,743 cf indicated by the Applicant.

12. *Standard 5: Land use with higher potential pollutant loads (LUHPPL)*

The proposed project is not considered a LUHPPL and therefore Standard 5 does not apply.

13. *Standard 6: Critical areas*

The project site does not discharge to or near a critical area and therefore Standard 6 does not apply.

14. *Standard 7: Redevelopment*

The project is a new development project and therefore subject to full compliance with the Stormwater Management Standards.

15. *Standard 8: Construction period pollution prevention and erosion and sedimentation control*

- a. The proposed project will disturb greater than one (1) acre of land and discharge into a municipal system and is therefore subject to the filing of a National Pollutant Discharge Elimination System (NPDES) Stormwater Construction General Permit. A draft SWPPP has not been provided at this time. We recommend the Planning Board require the final SWPPP be submitted for review and approval prior to the commencement of construction.
- b. The Massachusetts Stormwater Handbook indicates that BMPs used during construction to address erosion and sedimentation must be different from the BMPs that will be used to handle stormwater after construction is completed. This protects post-construction stormwater BMPs from experiencing the high concentrations of sediment typically found in construction runoff. Sheet C-4 indicates that the proposed Detention and Infiltration Basin is proposed to be used as a temporary sedimentation basin during construction. Consistent with the Massachusetts Stormwater Handbook, we do not recommend proposed infiltration basins be used as sedimentation basins during construction. The collection of sediment in the sediment basin could inhibit infiltration in this area.

16. Standard 9: Operation and maintenance plan (O&M plan)

The Drainage Analysis contains a Long-term Operation & Maintenance Plan consistent with the requirements of Standard 9.

17. Standard 10: Prohibition of illicit discharges

A signed illicit discharge statement is provided in the Drainage Analysis.

Bellingham Subdivision Regulations (§ 245-13 Stormwater Management)

18. Per § 245-13. A. (2), detention facilities should be based on a 100-year storm. As stated above in Comment 9d, the peak surface elevation of the 100-year storm in the Cultec System is 230.73'. This is higher than the upstream catch basins (rim at 230.50') as well as the top of stone in the system. We recommend increasing the storage capacity of the Cultec System such that there is no surface ponding during the 100-year storm.
19. Per § 245-13. B. (1), all drains shall have a minimum of three-foot cover, except where reinforced concrete pipe is used. However, Per § 245-13. C. (5), depth of cover over ADS pipes must be two feet. Some of the proposed pipes have less than two feet of cover.
20. Per § 245-13. D. (2) (a), detention basin depth shall not exceed five feet. The Detention and Infiltration Basin is approximately 9.5' from bed to top of berm.
21. Per § 245-13. D. (2) (f), The basin side slopes and bottom shall be provided with four inches of loam, seeded at the rate of two pounds Red Top, 15 pounds Creeping Red Fescue and 20 pounds Tall Fescue per acre. The construction detail of the basin in the Site Plans is not consistent with this requirement.

Bellingham Planning Board Procedural Rules (§ 7.0 Post Construction Stormwater Management Plan for New Development and Redevelopments)

22. Per § 7.8.1, the Applicant is required to submit a complete copy of the SWPPP (including the signed Notice of Intent and approval letter). EP has not received a draft SWPPP at this time.
23. Per § 7.8.1 (J), a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading, and material stockpiling areas is required. EP has not received a construction sequence narrative.
24. Per § 7.8.1 (N), a description of provisions for phasing a project is required where 40,000 square feet of contiguous area or greater is to be disturbed. The project proposes to disturb more than 40,000 square feet of area, and we have not received a description of phased construction.

Bellingham Wetland Regulations (§ 247-33 Stormwater Compliance)

25. Per § 247-33 (B) (9), there shall be no increase in runoff volume from a development for up to the 25-year storm. In the "Summary of Hydrology" section of the Drainage Analysis, the Applicant incorrectly swapped existing and proposed volumes of stormwater runoff for the 25-year and 100-year storm events. Per the HydroCAD results, the proposed volumes of runoff from the 25- and 100-year storms exceed the existing volumes.

General Comments

26. We recommend that local public safety officials review the emergency access road on the south of the proposed building. If this road is intended to provide access for a fire truck, we are concerned that an internal radius of 15' may be too restrictive. We recommend the applicant provide a truck turning plan demonstrating emergency vehicles can make this turn.
27. We recommend providing grate sizing calculations for the catch basins in the northeast corner of the parking lot, since these catch basins capture a significant area of stormwater runoff.

Our review is based on the information that has been provided. As noted above, additional review will be required to verify comments that have been incorporated into the revised submission.

We appreciate the opportunity to be able to assist you with this important project. Please feel free to contact me at (617) 595-5180 or sdt@envpartners.com with any questions or comments.

Very Truly Yours,



Scott D. Turner, PE, AICP, LEED AP ND
Director of Planning
P: 617.595.5180
E: sdt@envpartners.com



Dylan J. O'Donnell, PE
Senior Project Engineer
P: 413.335.7666
E: djo@envpartners.com