



PESCE ENGINEERING & ASSOCIATES, INC.

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April 2, 2024

Mashpee Planning Board
Attn: Mr. Evan Lehrer, Town Planner
Mashpee Town Hall
16 Great Neck Road North
Mashpee, MA 02649

RE: Engineering Review of the **Proposed Commercial/Retail Building**
Located at 474 Main Street & 31 Ashumet Road, Mashpee, MA

Dear Mr. Lehrer & Members of the Planning Board:

Pesce Engineering & Associates, Inc. is pleased to provide you with this engineering review of the Special Permit application package for the proposed commercial & retail building to be located at 474 Main Street (Rt. 130) & 31 Ashumet Road, Mashpee, MA. We have evaluated the plans for consistency with the Town's Zoning Bylaw, and conformance with the Massachusetts Stormwater Management Regulations.

In addition to a site visit on March 14th, we have reviewed the following new information to prepare this letter report:

- Site Plans entitled "Proposed Site Development at #474 Main Street & 31 Ashumet Road, Mashpee, Massachusetts," prepared by Bracken Engineering, Inc., 7 Sheets, dated February 19, 2024.
- Drainage Analysis Report, #474 Main Street & 31 Ashumet Road, Mashpee, MA, prepared by Bracken Engineering, Inc., dated February 19, 2024.
- Architectural Plans (floor plans & elevations), prepared by Giampietro Architects, 4 Sheets, dated January 29, 2024.

This project calls for the construction of a proposed new commercial & retail building at the subject address. The proposed project is a 2-story, 6,000 square foot (SF) building with 9 parking spaces. The 2 parcels for this project total 2.27 acres of land located in the Commercial-3 (C-3) Zoning District, as well as partially within the Residential-5 (R-5) Zoning District (a portion of the 31 Ashumet Rd. parcel). The project site is located within a DEP-designated Zone II of a public drinking water supply well, and, also within the Ground Water Protection Overlay District. The project site is entirely upland area, and is not located within the 100-yr. floodplain. The proposed building will be serviced by the municipal water system and an on-site Title 5 septic system.

The following are our review comments:

Site Plan, Layout & Utilities

Overall, the site engineering design is sound and reasonable, and we have minimal/minor comments as a result. The site layout & parking/circulation design has been performed in accordance with the requirements of the Mashpee Zoning Bylaw, and good engineering practice.

We have the following site plan, layout and utilities comments:

1. We recommend that this project be reviewed by the Mashpee Fire Dept. (with comments provided in writing via letter or e-mail to the Board or staff), regarding the adequacy of access for emergency vehicles, which may involve providing a swept path analysis (via AutoTURN software or other method with the size of fire truck as directed by the Fire Dept.).
2. We recommend that a Lighting Plan be prepared for the Board to review. This plan should include the proposed parking lot and building mounted lighting. All fixtures should be designed to be "Dark Sky" compliant (downward facing light, fitted with proper shields, or guards, to provide a 90-degree vertical cutoff of light).
3. We recommend that a "STOP" sign and painted stop line be provided for safety, on the exit lane of the site access/egress driveway at Ashumet Road.
4. Based on our site visit, we recommend that a note be added to the plans indicating that the existing vegetation on Ashumet Road shall be pruned/cleared to provide adequate safe sight distance at the proposed driveway. Care should be observed regarding the location of future signage at this location as well.
5. We have the following comments regarding the proposed septic design:
 - a. We note that the proposed septic design indicates frames and covers to be brought to grade (on the plan view on Sheet 5) for two of the proposed leaching chambers. We recommend that the "System Profile" view on this sheet be amended to reflect this requirement as well, to avoid any confusion during construction.
 - b. We recommend that the proposed location of the required SAS vent be added to the site plans (and odor control provided).
6. The following comments pertain to the proposed Holding Tank:
 - a. Sheets 4 & 5 show a label for the proposed Holding Tank as a "Tight Tank" on the plans. A minor point of clarification is that the term "Tight Tank" refers to a sanitary waste tank in Title 5, while the term "Holding Tank" refers to an industrial wastewater holding tank in 314 CMR 18.00. However, in order to avoid any confusion, we recommend that this tank label be amended to be a "Holding Tank."
 - b. We recommend that addition construction detail information for the proposed Holding Tank be added to the plans for clarity during construction. This should

include the required audible & visual alarm (and mounting locations), when the volume in the tank reaches 75% of capacity (reference 314 CMR 18.08, Design and Operation Requirements for In-ground Holding Tanks).

Stormwater Management

This project proposes to mitigate post-development runoff via the use of a new stormwater management system. The runoff from the new parking area and driveway access will be collected into two (2) swales (one paved, one grassed) which flow to a sediment forebay. The forebay then discharges to a rain garden. This rain garden has an overflow inlet to a subsurface stormwater infiltration system consisting of sixteen (16) leaching pits (6 ft. diameter) with crushed stone all around them. This system will effectively remove the additional Total Suspended Solids (TSS) required in a Zone II (Mass. Stormwater Handbook, Standard #6, treatment before infiltration for stormwater discharges within a Zone II).

A separate stormwater infiltration system consisting of 4 leaching pits (with crushed stone) has been sized to accommodate the roof runoff from the new building. Both stormwater management systems have been designed for the 100-yr. storm event.

We have the following stormwater management comments:

1. The drainage design references USDA TP-40 (Technical Paper 40) for the selection of the design storm events. TP-40 has been replaced with the NOAA (National Oceanic and Atmospheric Administration) Atlas 14, Volume 10, Version 3, Point Precipitation Frequency Data. Use of this data base has essentially become the state-of-the-art now for most drainage analysis applications, since it uses the latest rainfall data that is based on the changing storms as a result of climate change conditions. Using this NOAA data is more conservative, and we recommend that the 100-yr. storm event be based on this reference (7.52" vs. 7.0" in the design), and the drainage system amended as required.
2. We have the following comments for the O&M Plan, Emergency Spill Plan & Drainage Analysis Report:
 - a. The O&M Plan should include an inspection log form, and the certification sheet should be signed & dated by the Applicant.
 - b. Line 3) d. of the Emergency Spill Cleanup Plan should be amended with the label of the "Mashpee" Board of Health.
 - c. The Illicit Discharge should also be signed and dated by the Applicant.

Thank you for this opportunity to assist the Planning Board in their review of this project, and as always, please call or e-mail me if you have any questions or comments.

Sincerely,

PESCE ENGINEERING & ASSOCIATES, INC.



Edward L. Pesce., P.E., LEED ® AP
Principal

cc: Zac Basinski, P.E., Bracken Engineering, Inc.