



ENGINEERING,
INC.

ENGINEERS
SURVEYORS

January 18, 2022

Town of Wareham
Planning Board
Attn: Mr. Richard Swenson, Chairman
54 Marion Road
Wareham, MA 02571

Planning
Office
Copy

RE: Warren QOZB, LLC – Response to Peer Review
59 Main Street
Wareham, MA
G.A.F. Job No. 20-9438

Dear Chairman Swenson,

G.A.F. Engineering, Inc., on behalf of our client Warren QOZB, LLC, has prepared revised plans dated January 18, 2022 and provides the following responses to the engineering peer review letter dated January 10, 2022, prepared by Charles L. Rowley, P.E., P.L.S.

This letter has been formatted for clarity by listing the review comment first in standard type followed by our italicized responses.

Plans

Sheet 2 of 11

1. Four soil tests were done on the site in November 2021 which show varying conditions for soils. These conditions indicate that some adjustment may be needed for the disposal of surface runoff. Further information is below.

Informational. Further responses below.

Sheet 3 of 11

1. There is an existing catch basin on the northerly side of Main Street near Cedar Street that is situated on the property. There is no indication as to whether there is an outlet that should be explored.

We have performed additional survey of the existing catch basins in Main Street and Cedar Street. The catch basin on the subject property has a 12" outlet pipe which connects to the catch basin on the opposite side of Main Street. That catch basin also has a 12" outlet pipe which extends to the north in Main Street.

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2. The sheet indicates that there are three separate lots within the property limits. Will these lots be combined to form one lot?

We will prepare a recordable lot consolidation plan if necessary to obtain a building permit.

3. The entire property is partially within the 100-foot buffer zone to Wareham River, is wholly within a flood zone and wholly within the Riverfront Area as noted on the plans. Therefore, the project will require approval from the Wareham Conservation Commission before construction could commence.

We have filed a Notice of Intent with the Wareham Conservation Commission and MassDEP for this project.

Sheet 4 of 11

1. The most westerly entrance to the site is shown as only 20 feet in width. This will be a "choke point" for vehicles trying to enter or leave the property. The entrance should be made 24 feet wide as is the most easterly entrance.

The 20-foot width is in compliance with Section 932.3 of the Zoning By-Laws which stipulates a minimum width of 18 feet and maximum width of 24 feet. The exit lane of this access drive has been specified with a 25-foot radius to allow more room for vehicles to make a right turn out and not impede incoming vehicles.

2. The location of the existing utility pole opposite Cedar Street has a guy wire as noted on Sheet 3 of the plan set. The guy wire is not shown on this sheet and would be within a proposed parking space. How will the utility pole be supported if the guy is removed?

The guy wire is specified to be relocated to the nearby proposed landscaped island in coordination with the utility company.

Sheet 5 of 11

1. The plan does not show the invert elevations of the existing sewer main in Main Street. Slope and inverts of proposed sewer lines for the restaurant and other smaller building should be shown.

We have added the invert elevations of the existing sanitary sewer main in Main Street. We have also specified slopes and inverts for the services at

the buildings and new manholes in Main Street.

Sheet 6 of 11

1. The grading plan suggests that filling will be required immediately adjacent to the proposed restaurant on the northwesterly side. To avoid the fill in a flood zone that may be subject to currents of the Wareham River on an ebb tide would it make sense to consider a retaining wall around the lower level rather than the sloped grade? Is the fill required over the proposed infiltration system to give it proper cover?

The fill grades have been specified to create a sloped lawn area that matches in with the grade of the patio and adjacent sidewalk. In our opinion a retaining wall is not necessary for erosion control at this location. Minimal cover is provided over the infiltration units.

2. The flow diffuser units shown on the plan have only 12 inches of cover at the lowest point. To avoid the potential for erosion of the fill covering the flow diffusers, I recommend a short retaining wall to elevation 5 or above between the diffusers and the river.

The existing bulkhead wall and cement concrete sidewalk are both slightly above elevation 5 and therefore provide the same erosion protection. The finish landscaping over the flow diffusers will also provide protection from erosion.

3. At the northwest corner of the building the entrance grade is 8.2. The opposite side of the sidewalk at top of curb is 7.5. This is a difference of 8 inches over a short distance. Is there a step at the entrance? How does this work with a patio grade of 8.0?

Based on a 6-inch curb reveal the opposite side at the top of curb is approximately 7.8. There is a step at the entrance to get to the patio grade.

4. A grade of 14.5 is shown at the southwest corner of the restaurant at the proposed ramp. What is the ramp slope and is there a railing between levels?

A ramp slope of 8.33% maximum has been listed on the plan. A railing will be installed for the full length of the ramp as required by ADA standards. The ramp will be detailed on the Architectural/Structural drawings.

5. The grading of the cement patio area on the southeast side of the building drops toward the proposed dumpster area and toward the river. Is there any provision for protecting the dumpster area from surface runoff? Could the dumpsters be located further away from the river? How will the dumpsters be unloaded? The one nearest the building is close to being in line with a stairwell on that side of the building. Are the dumpsters loaded or offloaded by truck? If so, the cement pad needs to be designed for H-20 loading to avoid cracking of the concrete.

Dumpsters will be picked-up by the trash hauler, one dumpster will be for trash the other for cardboard. These dumpsters are not considered roll-offs and are placed on a concrete pad with enclosure. Access to the dumpsters is across the concrete pad. Spot grades have been added so that runoff will be diverted around the dumpster area. The location was chosen to screen them from the street.

Sheet 8 of 11

1. The plan should include erosion control on the river side of the project area. None is shown.

Erosion control barrier has been shown along the river side of the project.

Sheet 9 of 11

1. The gravel base shown on the pavement cross section will need to be fine graded and compacted to a point 8 inches below finish grade prior to placing the 4 inches of dense grade base material. This should be made as a prominent note for construction on the plans.

A note has been added to the cross section detail as requested.

Sheet 10 of 11

1. Show the ADS pipe in the Peastone Trench Section with drain holes down. Will the peastone be of uniform size or from 1/8" to 1/4" in size?

ADS perforated pipe is manufactured with 3 slots in a 120-degree pattern which are rotated every valley. This will provide a sufficient number of downward facing slots. The plans have been revised to specify 1" – 2" river stone for the trench.

2. How are the drainage emitters connected to the infiltration chambers?
Show in detail.

The emitters will be connected to the chambers at the center knock out on the side of the chambers. This has been noted on the detail.

Sheet 11 of 11

1. For the doghouse sewer manhole the new inlet pipe should follow a flow line into a new channel and not just drop onto a flat surface. The channel should be in the direction of flow in the existing pipe.

A detail is provided for an "outside the manhole" drop inlet in compliance with the Wareham Sewer Department Specifications. The flow lines from each lateral will follow a newly constructed channel.

Stormwater

1. The soil tests show that there is a variation on the soil materials on the site. Prior to constructing any of the infiltration systems shown on the plan additional exploratory testing should be done to determine if unsuitable soil is present and to what extent.

We have no objection to this recommendation. A note has been added to the detail for the chambers. Unsuitable material will be removed and replaced with sand in the event it is encountered.

2. Unsuitable soil should be removed and should be replaced with permeable materials compatible with the medium to coarse sand found in test holes 2 and 3. In all cases the stone under chambers should be in contact with the latter materials or the replacement material as necessary.

Similar to above we have added a note for removal and replacement of unsuitable soils. See number 1 above.

3. A minimum distance of 2 feet should be maintained between the bottom of stone and the high water elevation.

The current design inverts for the chamber systems provides the required 2-foot separation to groundwater. We have revised the listed depth of the stone beneath the chambers from 12" minimum to 12" maximum to ensure compliance.

We look forward to further discussion of the project at the upcoming continued public hearing. Please contact me directly if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "William F. Madden".

William F. Madden, P.E.

WFM/lmf

cc: Charles L. Rowley, P.E., P.L.S.
Danny Warren
Dan Warren
Mary Healy

Enclosures