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April 9, 2018

Ms. Emily Wentworth, Senior Planner/Zoning Administrator
Hingham Zoning Board of Appeals
210 Central Street
Hingham, MA 02043

Subject: **River Stone – Comprehensive Permit**

Dear Ms. Wentworth:

This is to advise that we have reviewed the following supplemental documents, prepared by McKenzie Engineering Group, Inc. (MEG), pertaining to the subject Comprehensive Permit Application:

- Comprehensive Permit Plan, River Stone (17 sheets), revised March 9, 2018
- Preliminary Hydrologic Analysis, revised March 9, 2018
- Response to comments letter, dated March 9, 2018

The documents have been prepared to address comments raised in a number of correspondence from the Board's consultants, Town Boards and Departments and testimony at the public hearings.

The revised Comprehensive Permit Plan shows a new configuration of the development which would eliminate access to Ward Street at Viking Lane and shift the access to Ward Street through the 70 Ward Street property, approximately 640 feet south of Viking Lane. The revised plan continues to show access through Autumn Circle and shows a proposed raised island in the Autumn Circle turnaround. The proposed number of units remains at thirty-two.

Our previous letters raised a number of comments, many of which have been satisfactorily addressed by the Applicant's engineer. However, the following are comments that have not been fully addressed:

<u>Incomplete or Missing Information[1]:</u>

1. The revised list of requested waivers, dated February 12, 2018 is not complete and needs to be revised to reflect the current plan. Again, we note that the waivers should explain the exact regulation from which relief is being requested so that the Board fully understands the implications of each requested waiver. We believe that it is extremely important to identify where the project will not comply with Planning Board Rules and Regulations (R&R) Section 4 – Design Standards and Section 5 – Specifications for Construction of Required Improvements. This is required to determine if the design

[1] In the event that the information is not provided by the Applicant, requiring submittal of the information should be included as conditions of any decision of the Board.

complies with generally accepted public safety requirements and good engineering practice.

2. The Board asked for a photometric plan at the February 6, 2018 public hearing. No lighting plan has been received to date.

3. Soil information/test pits at all proposed infiltration systems. MEG has stated that "additional location specific soil testing will be performed in conjunction with the development of final construction plans." We have maintained that testing at this point would be a safer course of action for the developer but the required testing could be included as a condition of approval should the Board approve the project. Our suggested condition would be:

   Prior to the submission of final site development plans, a minimum of one test pit shall be excavated at each proposed infiltration system to verify soil textural analysis and depth to seasonal high groundwater. Test pits shall be excavated to a minimum depth of four feet below the proposed bottom of each infiltration system and shall be witnessed by an agent of the Town. Test pit logs shall be submitted to the Zoning Board of Appeals. The following actions shall be required based on test pit results:
   a. If the test pits confirm assumed soil textural analysis and depth to seasonal high groundwater then no further action is required.
   b. If the test pits indicate more-restrictive soil texture, then the design of the infiltration system(s) shall be reevaluated. Results of the reevaluation shall be submitted to the ZBA for review.
   c. If the seasonal high groundwater is found to be less than four feet from the bottom of any infiltration system a mounding analysis shall be performed and results submitted to the ZBA for review.
   d. If the seasonal high groundwater is found to be less than two feet from the bottom of any infiltration system the system shall be redesigned to provide a minimum of two feet of separation.
   e. *Any modifications to an infiltration system design shall be submitted to the ZBA for review.*

4. Documentation to demonstrate that adequate water supply is available for domestic use and fire protection. The revised plan shows only one proposed fire hydrant. Additional hydrants are needed and we suggest the Applicant consult with the Fire Department about the location and number of hydrants.

5. Full septic system design information to verify compliance with Title 5 (310 CMR 15) and to determine where the project will not comply with the Hingham Board of Health Supplementary Rules and Regulations for the Disposal of Sanitary Sewage. MEG has stated that "full septic system design plans will be submitted in conjunction with the development of final construction plans." Without the full design we cannot determine where the project will not comply with state and local regulations.

6. Information to document that the proposed septic system components (tanks and the soil absorption system) shown under proposed roadways are designed for loading as required by the Fire Department apparatus.

7. Updated pipe sizing calculations should be provided to reflect the revised drainage design.

Technical Comments

General/Roadway Comments

1. The proposed retaining wall between Units 23-25 on the subject site and 64 Ward Street will be up to nineteen feet high (previously fifteen feet).
   a. We question whether this wall can be constructed without disturbing the 64 Ward Street property.
   b. A portion of Unit 23 is only two feet off the wall and there is a roof drain pipe shown between the unit and the wall. Access to the roof drain pipe for maintenance would be limited. Also, proximity of the wall would block natural light and essentially render Unit 23 undesirable.
   c. The proposed decks/patios of Units 24 and 25 abut the wall. This will cause similar issues regarding natural light and visual impacts.
   d. A fence is proposed along the top of the wall but we have safety concerns with a wall of this height.

2. There also appears to be a six foot high retaining wall behind units 13-17, at the sediment forebay, yet this is not labeled on the plan.

3. We concur with Mr. Dirk's comment that the roadway widths should be a minimum of 24-feet.

4. In Mr. Dirk's April 3, 2018 letter to Ms. Wentworth, he notes that Road C has a grade of approximately 8 percent approaching Ward Street and recommends "a leveling area with a grade of 2 percent or less should be provided for a minimum distance of 50- feet approaching Ward Street." We agree that a leveling area should be provided and note that the R&R require a grade of not greater than three percent for a distance of 100 feet.

5. Roadway slopes are not shown on the Road C profile and between Sta. 2+00 and 3+00 on the Viking Lane profile (Sheet C-3).

6. The proposed trench drain at about Sta. 2+81 on Road C should be shown on the profile on Sheet C-3.

7. As noted in Mr. Dirk's April 3, 2018 letter, the sidewalk in front of Units 28 and 29 would be blocked if a vehicle were parked in either driveway.

Drainage and Utilities

1. The infiltration rates used for depression D-4 should be modeled in inches per hour (in/hr) to be consistent with the modeling of the other three depressions.

2. The post development HydroCAD results show that volume of stormwater runoff will be increased to the wetland area at the east side of the development. The calculations show that the rate of runoff will be decreased and the level of flooding in the wetland will not be increased. In our February 6, 2018 letter to the Board we questioned how the outlet from the wetland was modeled and asked for MEG to verify the outlet configuration and that the increase in runoff volume will not impact adjacent properties. In the March 9, 2018 response letter, MEG states that "additional information will be forwarded under separate cover." The revised calculations model the outlet from the wetland differently but no information has been provided to verify the outlet modeling (i.e. topography around the entire wetland to clearly show the outlet(s).

Board of Health Letter dated March 6, 2018:

1. The Board of Health (BOH) has indicated that the subject project is located within a nitrogen sensitive area (NSA) because there are nearby private drinking water wells. The Applicant has not responded to the BOH's letter. We believe that the BOH's letter raises valid health concerns and a response from the applicant is required.

Please give us a call should you have any question.

Very truly yours,

AMORY ENGINEERS, P.C.

By:

Patrick G. Brennan, P.E.

PGB