

AMORY ENGINEERS, P.C.

WATER WORKS • WATER RESOURCES • CIVIL WORKS

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June 17, 2021

Hingham Planning Board
210 Central Street
Hingham, MA 02043

Subject: 0 Popes Lane, Site Plan

Dear Planning Board Members:

This is to advise that we have reviewed the following documents pertaining to the proposed raze and rebuild project at the subject site:

- Lot & Septic Design Plan (2 Sheets), dated May 26, 2021¹, prepared by Morse Engineering Company, Inc. (Morse)
- Site Plan Review Drainage Analysis letter, with attachments from Morse, dated May 26, 2021

The purpose of our review has been to evaluate conformance with Hingham Zoning By-Laws (ZBL), and good engineering practice.

Background

The project site consists of a ±24.3-acre parcel at 0 Popes Lane. It is located within the Residence C zoning district. There is an existing single-family dwelling with a number of outbuildings and a paved driveway. There is a large lawn area around the buildings but most of the parcel is woodland. There are wetlands on the parcel but they are more than 100 feet away from the proposed work. A portion of the existing dwelling is located within the 200-foot outer riparian riverfront area of Accord Brook which runs along the western property line.

The proposal calls for demolishing the existing dwelling and some of the outbuildings and construction of a new five bedroom dwelling with attached garage. The driveway in the vicinity of the dwelling would be reconfigured to provide access to the new garage. An existing well on the property will provide water service to the new dwelling. A new septic system would be installed and underground electric/telephone/CATV utilities would be routed from an existing utility pole on the property. A subsurface infiltration system consisting of plastic chambers surrounded by crushed stone is proposed to infiltrate runoff from the roof of the proposed dwelling. A mulch sock erosion control barrier is proposed along the south and west sides of the work area to protect the wetland and riverfront buffer areas.

¹ We have also reviewed an updated plan revised June 17, 2021 (see comment 1).

Comments

1. We had a comment related to the storage volume in the subsurface infiltration system that we conveyed to Morse via email on June 16, 2021 (copy of email attached). Mr. Jeff Hassett of Morse provided a revised post-development HydroCAD model which addressed our concern about the storage volume. The storage volume correction resulted in Morse increasing the size of the proposed subsurface infiltration system, which is indicated on the revised Lot & Septic Design Plan (revised today). The revised post-development HydroCAD model indicates that the post-development rate and volume of runoff will not exceed existing conditions.

We are satisfied that the drainage design as shown on the revised plan will adequately mitigate post-development runoff. We also believe that the erosion controls shown and detailed on the Lot & Septic Design Plan will adequately mitigate potential erosion of the site during construction activities.

Please give us a call should you have any question.

Very truly yours,

AMORY ENGINEERS, P.C.

By:



Patrick G. Brennan, P.E.



PGB
enc.

Pat Brennan <pbrennan@amoryengineers.com>

0 Popes Lane, Hingham

Pat Brennan <pbrennan@amoryengineers.com>

Wed, Jun 16, 2021 at 4:24 PM

To: "Gregory J. Morse" <gmorse@morsecoinc.com>, Jeff Hassett <jhassett@morsecoinc.com>Cc: "Stickney, Christine" <stickneyc@hingham-ma.gov>

Actually I see that the 4" overflow pipes are the inspection ports. I would still have them as high as possible in the model.

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On Wed, Jun 16, 2021 at 4:21 PM Pat Brennan <pbrennan@amoryengineers.com> wrote:

Greg & Jeff,

I'm reviewing the 0 Popes Lane submission for the Hingham Planning Board. I believe that the storage volume you have for the roof dry well system is incorrect. I note the following:

- The Arc 36 high capacity chambers have a capacity of 10.7 c.f. each x 18 chambers = 192.6 c.f., not 132 as listed in HydroCAD
- The chambers are 34.5" wide: $34.5 \times 3 = 103.5" = 8.625'$ + one foot each side = system width of 10.625'
- The chambers have an effective length of 60": $60 \times 6 = 360" = 30'$ + one foot each end = system length of 32'
- $10.625 \times 32 = 340$ s.f., not 465 s.f. as listed in HydroCAD, at 19" deep, total system is 538.3 c.f. minus 192.6 = 345.7 c.f. of stone x 40% voids = volume of 138 c.f. + 192.6 = 331 c.f.

Also, you should set the invert of the 4" overflow pipes as high as possible in the model because unless there are actually overflow pipes from the system you are over reporting post development runoff (I assume you put these in to reflect the wyes at the bottoms of the downspouts when the system surcharges). Would you correct the volume and send me the corrected HydroCAD file? No need to print as I just want to make sure the rates and volumes are still being mitigated.

Pat

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