FRASER POLYENGINEERING SERVICES
TRAFFIC, TRANSPORTATION, CIVIL SITE, AND
SURVEYING ENGINERING SERVICES
236 Huntington Avenue – Suite 404 Boston, MA. 02115
Business Phone: 617-377-4110 Cell Phone: 617-291-2423
Email: kurt@fraseres.com

MEMORANDUM

DATE: April 11, 2022

TO: Connie Alexander
Tisbury Planning Board
P. 0. Box 602
Vineyard Haven, MA 02568

FROM: Kurt A. Fraser P.E. - President - Fraser Polyengineering Services (FPES) KAF
Keith A. Coleman, P.E. Senior Civil Engineer (FPES)

SUBJECT: 4 State Road, Tisbury – Stormwater Management System Review

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In response to the April 6, 2022, additional information received we would like to offer the following comments for the revised stormwater system.

1) Submitted plans provide additional changes to include piping inverts, catch basin revisions, proposed grades, rim and invert elevations, and clearer dimensioning to determine the location of the system on the site. However, there are numerous deficiencies within the plans.

2) The plan submitted is for approval to proceed with construction, however, there are several references that state "To Be Determined." The proposed plan should clearly indicate all proposed features such that the planning board can expect that the construction will comply with those approved plans.

3) The plan lacks dimensions of the proposed drainage pipes in order to determine that the minimum pipe slope of 1% is achieved.

4) The proposed drainpipe connection to the chambers is incorrectly shown (4 pipes from the same end of the pipe)

5) The gutter drain is shown on the plan without a detail provided.

6) The trench drain is shown on the plan without a detail provided.

7) There is no provision to collect the proposed runoff from the site in the rear of the parking area. We were not able to determine what type of surface is proposed for the rear parking area. As currently designed the runoff would travel down the stairs into the park.

8) The applicant has not provided an erosion and sediment control plan for the proposed site. This plan should show how sediment and debris would be kept off neighboring properties, and what provisions will be made to prevent construction vehicle traffic from depositing residual soil onto Town Roads.

9) The overflow pipe shown exiting the infiltration chambers must be sized and should be positioned at the top of the chamber not the bottom.

10) Currently the stormwater system has been designed to infiltrate at an unrealistic rate of infiltration (57.4 inches/hour) that would be unlikely to be sustainable throughout the life of the system.

11) The design approach utilized does not provide adequate storage of the volume of runoff from the design storm event. We suggest the applicant provide additional chambers installed per manufacturer's recommendations. The current design is utilizing stone above the chambers for storage. Only the stone from a level 6" above the chambers should be considered in the storage calculation.

12) We suggest the applicant recalculate the storage volume of the chambers and the surrounding stone. The applicant should endeavor to collect and convey as much of the runoff as feasible as well as provide storage to allow the runoff to infiltrate into the subsurface soils.

13) The retaining wall design should be an integral part of this submittal, not to be determined. This wall is a critical component of the overall site design and should be reviewed by a competent structural professional.

14) We recommend that the Town require the applicant to submit a detailed As-Built plan upon completion of the project. The plan should indicate all inverts, rim elevations, pipe lengths and sizes, structure dimensions and any other relevant information. The plan should be certified and stamped by a licensed professional.

Best Regards,

Kurt A. Fraser P.E. — Keith Coleman P.E.

Kurt A. Fraser

President - FPES — Senior Civil Engineer - FPES