PGC Engineering PLLC
10 Chase Street, West Newbury, MA 01985
978-994-4550 philchristiansen.pe@gmail.com

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Newburyport Planning Board
City Hall
60 Pleasant Street
Newburyport MA 01950

Re: Open Space Residential Development – The Stables at Bashaw Farms

Dear Board Members:

I have reviewed the following material submitted by the applicant

Revised plan set dated 4/28/2020
Revised Stormwater Report dated 4/13/2020
A Planting Plan dated 4/23/20
A response letter to Andy Port dated 4/17/2020

I offer the following comments.

Plan Review

The plans have been revised to reflect my comments from the first review.

Two minor additions to the plan should be made

1) Need to add a note for thrust blocks on the water main at each bend.
2) A trailer is encroaching along the rear of the easterly property line on lot 2. The trailer needs to be removed or an easement added to the plan to allow it to remain in place.

The submitted Landscape Plan is not stamped and does not match revised site plan. Sidewalk on east side of site not shown in architect plan. The plans should be correct to reflect the same information.

In the response letter, it is stated that the Fire Department approves the proposed swept path as shown on sheet 8 of 10. Planning regulations specify in section 6.8, that a T or Y turn-around is permitted if a truck can reverse direction with only one backup. The submitted swept path analysis shows two backups. A waiver of that section of the regulations should be requested even if the current design is approved by the Fire Department.

On the submitted Swept Path Analysis plan there are in the turning paths, abrupt changes in direction. For instance, the curve to a straight line near the entrance or two curves, one clockwise and the other counterclockwise in the same path. The design engineer states that these direction changes are at stops with changes in steering direction.

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Stormwater Review

The time of concentration for post development 10S was determined by using inputs of distance slope, surface conditions and type of flow and was calculated to be 6.7 minutes. Yet for all other subcatchments in the post development analysis the time of concentration was input directly as 6 minutes. For instance the driveway to the single family house is area 13S with a paved area of 630 square feet, flowing to an adjacent infiltration trench which in no farther than 25 feet from the farthest point of the driveway, and it is given a 6 minute time of concentration. Area 10S is 34,775 square feet primarily woods and grass with a flow path 340 feet long has a calculated time of concentration of 6.7 minutes. The comparison of the areas demonstrated that the 6-minute time of concentration for area 13S is not reasonable. For instance, the time of concentration for area 12S which is paved would be closer to 2 minutes if calculated rather than the 6 minutes directly inputted into the program.

The time of concentration does not affect the volume of runoff but does affect the peak rate of flow. The shorter the time of concentration the greater the peak flow rate. Proper sizing of pipes and stormwater management facilities is dependent upon knowing the correct flow rate and volume.

I will accept the HydroCAD analysis as presented because the area being developed is small, though concentrated, and is only 1.4 acres of a 7.6-acre site and the engineer has included Best Management Practice systems to control the peak rate of flow. Additionally, the analysis only included flow from the developed portion of the site and the flow from the wetland area was ignored. Ignoring the wetland area exaggerates the percent increase between Pre and Post flows of the site as a whole resulting in designing greater reduction in peak flows than if the entire site were analyzed.

In the response letter it is stated that there is a “swale adjacent to the northern edge of pavement”. That swale is not apparent when on site. The design engineer proposes a future swale along the frontage of the property to direct stormwater to Lot 3, the Open Space Lot.
If Colby Farm Road were to be improved to full pavement width with sidewalks the swale would be an impediment to that work. This issue should be discussed with Jon-Eric White.

Conclusion

I recommend the engineering plan and drainage analysis be accepted as presented with the two minor changes noted above. However, the construction of the swale along the Northern edge of Colby Farm Lane needs to be discussed with Jon-Eric White to determine if it is feasible considering future improvements to Colby Farm Lane.

Very truly yours

Philip Christiansen P.E.