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April 17, 2020

Attn: Mr. Andy Port, Planning Director
Newburyport Planning Department
60 Pleasant Street
Newburyport, Massachusetts 01950

Re: Tax Map 98, Lot's 26, 27, 5, 4, off Colby Farm Road
OSRD Special Permit, response to Engineering Comments:

Dear Mr. Port:

On behalf of the applicant, The Daly Group, acting as project engineer, we are responding to the comments provided by PGC Engineering dated March 24, 2020 regarding the previously submitted "Open Space Residential Development" at the above referenced properties off Colby Farm Road. Attached herewith are the following supporting materials:

- Open Space Residential Plan Development Plan Set, prepared by LandPlex, LLC, dated February 14, 2020, revised April 13, 2020
- Stormwater Report, prepared by LandPlex, LLC, dated April 13, 2020

The following is our response to the engineering review performed by PGC Engineering as follows:

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

March 24, 2020

Review of Open Space Residential Development Plan Set
The Stables at Bashaw Farm
2/26/20

General Comment for all sheets in plan set.

If this submittal is considered to be a subdivision the appropriate signature blocks for the clerk and the planning board as well as Board of Health approval dates should be added to all of the sheets in the plan set and registry blocks added to all sheets.

Response: Signature blocks have been added to all sheets.

What is the purpose of the Proposed Plot Plan 57 Railroad Avenue Salisbury Massachusetts, February 18, 2020?

Response: The Proposed Plot Plan was submitted in error and should be ignored.

Cover Sheet - Sheet 1 of 9
Benchmark Missing

While in Note 4 reference is made to work in Colby Farm Lane as contained in the plans prepared for The Reserve at Bashaw Farm OSRD that information should be included in this plan set.

Response: Benchmark note added for clarification.

Existing Condition - Sheet 2 of 9

Topography in street needs to be added as well as limits of pavement and width of pavement
Permanent benchmark not shown. Need information about benchmark from which the temporary benchmark was developed. Need to show existing lot lines.

Response: Topography in the street has been added, as well as pavement width. Benchmark information has been added to the plan. Existing lot lines have been added to the plan.

Yield Plan - Sheet 3 of 9

Not reviewed

Plan of Land - Sheet 4 of 9

Bearings must be added to the lot lines. Existing and Proposed Monuments not shown on plan and work not tied into existing known monuments. Lot areas for Lots 1 and 2 not shown in acres

Response: Bearings have been added to the lot lines. Existing and proposed monuments have been shown.

Playground easement not shown. Easement not shown for access to sewer on 6 Colby Farm Lane.

Lot Widths not shown. Calculations not provided. Existing lot lines not shown .

Response: A proposed playground easement has been added to the plan . The proposed sewer is now tying into the proposed sewer manhole from 'The Reserve' (SMH3) to be located in the center of the street. Lot widths have been added to the plan. A lot closure calculation packet has been completed and will be submitted along with the revised plan. Existing lot lines have been added to the plan.

Layout & Landscaping Plan - Sheet 5 of 9

Minimal landscaping shown. Areas to be lawn should be specified. What is ground cover in Playground? Is the entire area to be playground or only the curvilinear area containing the words "prop.

playground"? Types of trees and shrubs not specified. Plan not stamped by landscape architect.

Response: Sheet 5 has been changed into a 'Layout & Lighting Plan', with landscaping removed. An additional Landscaping Plan by a landscape architect will be submitted instead. Only the area within the curvilinear area is to be playground, and the ground cover is to be determined, though it will be pervious.

Grading and Utility Plan - Sheet 6 of 9

Grading through the playground directs drainage to street. While contours are not provided in the street in the submitted plans the plan recently approved for the Reserve at Bashaw Farms shows that the roadway from u-pole #233/4 appears to be superelevated from the north side of the street to the south side directing water to the southwest and not to the wetland that is on the property.

The drainage analysis assumes all of the water flows to the wetland to the west of the site.

There are potential sewer and water cross-over problems for the single-family dwelling and the five units in the rear of the property.

There must be an 18-inch vertical separation from the bottom of the water pipe to the top of the sewer pipe. If the separation can't be accomplished the cross-over must be encased in concrete for 10 feet either side of the sewer. The cover required over the water line is 5 feet. The sewer should be designed with a minimum of 7 feet of cover to allow for the required 18 inches of separation. Since the sewer flows to a pump station and the excavation from the existing grade over much of the sewer length only 2 to 3 feet it would be easy to lower the sewer and avoid the conflict the present design creates.

A fire hydrant is not proposed in the project. The fire department and water Department should comment on whether one is needed or not. If a hydrant is not needed a blowoff should be provided. Thrust blocks should be located at the 8x8 tee and at all bends at the hydrant in the street. Left and right existing grades need to be added to the profile.

The CB has a rim elevation of 46.6. Assuming an 8" frame and grate, two courses of brick as specified on the detail sheets and a 10" flat top the bottom of the flat slab would be at elevation 44.68. The invert of the pipe is specified at 44.1. The pipe is 12 inches, therefore the obvert of the pipe is at elevation 45.1 which is higher than the bottom of the top slab. An additional problem is that the hood specified in the detail will not fit. The elevations provided in the plan or the details in the plan set should be modified to correct this problem.

The grading shown does not correspond to the limits shown for the drainage analysis. The contours show that the water will drain from the area behind the playground to the street. From elevation above 48 to 42 at the drive entrance and if the street topography from The Reserve at Bashaw Farms is added to the plan it will show the water will continue to flow across the street. Stormwater southeast of the trench drain will flow into the street. There is a swale between the single-family house and the drive that directs water to the street and water from the driveway serving the single-family house will flow to the street. The lawn in front of the single family is graded in such a way that part of the flow will be into the street. The design needs to be modified to match the stormwater analysis or the analysis modified to match the plan.

The detail for the 1500-gallon Separator specifies an 8-inch inlet but the plan shows the use of a 12" pipe. Show risers to grade for Separators. Specify risers in the details.

Snow storage locations should be shown on the plan.

Are handicapped access ramps required for the sidewalks?

TH-1 at unit#2 shows an estimated ground water table at Elev. 41.3. Board of health rules require the basement be two feet higher than the ground water level. Thus, the basement floor should be at elevation 43.3 and with an eight-foot foundation the top of foundation would be at approximately 51.3. The elevation shown on the plan is 49.2 which is two feet too low. The site grading should be adjusted to accommodate the higher house. A note should be added to the plan that test holes to determine ground water elevations need to be done at each building location prior to construction.

The rim on separator 1 is specified as 45 in plan view but appears to be 44 in the profile.

Response: Existing topography through the street has been added to the plan. There is an existing swale adjacent to the northern edge of pavement of the roadway the stormwater runoff will follow without flowing across the street, and the proposed grading has been modified and notes have been added to the plan to show and explicitly state that the swale is to be maintained and improved upon to ensure runoff will not flow across the street.

The proposed sewer has been re-designed as a gravity system with the sewer pipes to be not located within the proposed access drive and provide no conflict with the proposed water.

Based on conversations with the Fire Department, two hydrants are now proposed on-site.

Thrust blocks are noted as proposed at the hydrants and tee.

Existing grade offset lines 10' left and 10' right of the center-line are now shown on the profile. Since this is not a Definitive Subdivision, 25' left and right offsets were not used.

The catch basin detail has been changed to low-profile catch basin detail.

The separator detail has been changed to eliminate the 8" pipe notation, and modified to include risers to grade. Risers to grade have been added to the separators in the profile.

Snow storage locations have been noted in the Layout Plan.

Handicap access ramps are now shown for the sidewalk.

The plan has been clarified to note that basements are not proposed for any dwelling except the stand-alone single-family dwelling. For separator 1 in the profile view, the top of the structure was shown. Now, with the risers to grade being also shown in the profile, hopefully the visual depiction is more clear.

Restoration and Erosion Control Plan - Sheet 7 of 9

The erosion control line should be extended along the existing street. A construction entrance for sedimentation control should be provided. A note should be added that all drainage and stormwater facilities should be protected with the use of silt sacks or diversion of water until final paving is in place.

Response: *The erosion control line has been extended along the existing street. A temporary construction entrance (with accompanying detail added to the details sheets) has been added to the plan. A note regarding silt sacks has been added to the 'Erosion Control Notes' section of the plan.*

Emergency Vehicle Sweep Path Analysis - Sheet 8 of 9

Is the outside turning radius of the truck shown 47 feet as required by foot notes 1 and 2 in Tables A and B in section 6.8 of the subdivision rules? The length of the paved area from the guardrail at the end of the turnaround to the curb is 51 feet and the truck shown is approximately 43 feet in length. Is the figure showing that the truck can reverse direction without backing up more than once as required by notes 1 and 2?

Response: *The outside turning radius of the truck shown is 47 feet. The Fire Department approves the proposed swept path as shown, per conversations with the Fire Department.*

Details - Sheet 9 of 9

The following details need to be added to the plan

- o Driveway Cross-section
- o Water main, tees, hydrant, shut offs, trench section and a blowoff detail if needed.
- o Drain trench detail
- o Sewer trench detail
- o Thrust block details
- o Retaining wall details
- o Construction entrance for sedimentation control
- o Silt sacks
- o Sedimentation control (wattles, haybales or silt fence)
- o Check with the Sewer division on preferred force main to manhole detail. The force main usually discharges vertically downward and not horizontally.
- o Handicapped access ramps
- o Dewatering pump and sump details

Response: *Driveway Cross-Section detail added, water main details added as needed, pipe trench detail added, thrust block detail added, retaining wall detail added, temporary construction entrance detail added, silt sack detail added, erosion control line detail added, a note has been added to the force main to manhole detail stating contractor to confirm with sewer division on preferred force main to manhole method, handicap access ramp detail added, & dewatering pump & sump detail added.*

Review of Stormwater Report
8,10,12, & 18 Colby Farm Lane
February 14, 2020

Subcatchment 1S in the predevelopment analysis is the entire upland area of the site. It occupies 63,340 square feet of which 28,830 square feet are woods grass combination with gravel roads and paved parking and roofs. The time of concentration is calculated to be 10.5 min flowing over 220 feet. Subcatchment 10S in the post development analysis has an area of 35,765 square feet with 24,595 grass cover but was modeled with the exact same time of concentration over the same distance as predevelopment 1S. (See attached PDFs from the report). The descriptions of flow are identical in both cases even though a quick glance would show the drainage areas to be substantially different. As mentioned in the plan review area 10S does not in its entirety flow to the on-site wetlands as modeled but the easterly portion of 10S probably flows across the street. The analysis needs to be redone to reflect the proper time of concentration and the proper direction of flow.

Response: The time of concentration for Subcatchment 10S has been updated. Additionally, existing topography through the street has been added to the plan. There is an existing swale adjacent to the northern edge of pavement of the roadway the stormwater runoff will follow without flowing across the street, and the proposed grading has been modified and notes have been added to the plan to show and explicitly state that the swale is to be maintained and improved upon to ensure runoff will not flow across the street. Finally, the Post-development HydroCAD has been revised to take into account the modified layout, specifically related to the revised location of the proposed walkway.

Please call me directly at 978-201-9390 if you have any questions or require any additional material.

Sincerely,
LandPlex, LLC



Matt Hamor
Project Engineer

cc. The Daly Group
Attorney Lisa Mead