

April 16, 2020

Mr. James Corliss, Chairman
Chesterfield Planning Board
Post Office Box 175
Chesterfield, New Hampshire 03443

Subject: **Application for Final Subdivision Approval
Pine Grove Springs Country Club, Inc.
NH Route 9A (Tax Map Lots 5K-B-8 & 5N-B-9-1)
Chesterfield, New Hampshire
KNA Project No. 20-0326-2**

Dear Mr. Corliss:

Pursuant to your Board's request this office has completed a technical review of project plans and supporting documents submitted to your Board by or on behalf of the applicant in the subject matter. Specifically, we acknowledge receipt of copies of the following documents, which were the subject of our recent review:

- Project plans (9 drawings), dated August 01, 2019 and last revised on March 03, 2020;
- A Stormwater Management Report, dated January 08, 2020 and last revised on February 19, 2020;
- Soil Test Pit Data observed on August 22, 2019; and
- Correspondence addressed to the applicant's consultant, prepared by applicant's counsel on March 05, 2020, covering draft copies of the following documents: Declaration of Stormwater management Easements & Covenants (with attached Exhibit Plans); Declaration of Common Driveway Easement – Lot 5K-B-8-2 & 5K-B-8-3; Declaration of Common Driveway Easement – Lot 5K-B-8-4 & Lot 5K-B-8-7; Declaration of Common Driveway Easement – Lot 5N-B-9-1 & Lot 5N-B-9-2; and draft Warranty Deeds for each of five proposed outparcel lots.

In addition to consideration and review of the aforementioned plans and documents we reviewed on-line minutes of a series of public meetings/hearings conducted by your Board between the dates of August 19, 2019 and February 03, 2020.

Based upon our careful consideration and review of the foregoing information we offer the following comments and recommendations at this time:

General Comments

1. As acknowledged by the text of Note No. 12 on Sheet 1 of 9 of the project plans, this proposal requires the following State project permits: (a) NHDES Subdivision Approval for proposed Lots 5K-B-8-1 through 5K-B-8-4 & 5N-B-9-2; and (b) a NHDOT Driveway Permit for each proposed individual or common driveway intended to intersect with New Hampshire Route 9A. We recommend each permit be received prior to or as a condition of application approval. Further, as shown on Sheet 4 of 9, a portion of work associated with construction of planned driveway and stormwater management system improvements at Lot 5K-B-8-1 are situated within the protected shoreland of Spofford Lake. Correspondingly, we recommend Note No. 12 on Sheet 1 of 9 be expanded to acknowledge a NHDES Shoreland Permit must be received prior to commencement of residential construction on that parcel.
2. We recommend your Board receive confirmation of Town Counsel's satisfactory review of those draft legal documents identified above prior to or as a condition of final application approval.

Zoning Matters

1. It appears that this proposal complies with all applicable requirements of the Zoning Ordinance as currently presented.

Planning/Design Matters

1. Note No. 3 on Sheet 1 of 9 correctly acknowledges that a portion of "Tax Map Lot 5K-B-8 is subject to the Spofford Lake Overlay District". Article II – Section 203.6 of the Zoning Ordinance defines the boundary of this overlay district as including "all lands extending 500 feet from the water line of Spofford Lake at full pond." In order to more precisely identify the boundaries of this overlay district we recommend: (a) the final subdivision plan specify full pond elevation; and (b) graphically depict the boundary of the district on the final project plans. It appears limited portions of proposed Lots 5K-B-8-1 through 5K-B-8-4 and all of proposed Lot 5N-B-9-2 are situated outside of the overlay district.
2. Note No. 16 on Sheet 1 of 9 makes reference to a "proposed Lot 5K-B-8-5". No proposed Lot 5K-B-8-5 is shown or defined on the current project plans.
3. Significant detail governing the nature of improvements ultimately constructed on lots platted under this application appears on Sheet 4 of 9. Given our anticipation that this drawing will not be recorded at the registry of deeds upon approval, we recommend the following note be added to Sheet 1 of 9 of the final project plans: "This subdivision plan includes a total of 9 drawings. Sheets 1 and 2 of 9 shall be recorded at the Cheshire County Registry of Deeds. All full set of project plans, as approved by the Chesterfield Planning Board, is on file with the Chesterfield Planning Board."

Mr. James Corliss

April 16, 2020

4. We recommend notes be added to the final subdivision plat acknowledging both the existence and applicability of both the Declaration of Stormwater Management Easements & Covenants and each Declaration of Common Driveway Easements to be recorded at the Cheshire County Registry of Deeds.
5. In order to satisfy the requirements of Section 700:5 of the Land Development Regulations we recommend Sheet 2 be revised to specify the intent to install stone or concrete boundary monuments at each relevant point coincident with public right-of-way at NH Route 9A. We further recommend all boundary monuments, specified as “to be set” on the final plat, be installed prior to or as a condition of final application approval.
6. Sheet 2 of 9 includes a series of notes indicating a portion of proposed parcels created by subdivision of Lot 5K-B-8 are to include land situated to the north of the Channel Road right-of-way. As currently presented, these notes generically refer to Lots 1 through 4. For improved clarity, we recommend the final subdivision plan be revised to refer to future Tax Map Lot numbers 5K-B-8-1 through 5K-B-8-4.
7. Boxed notes on Sheets 2 and 3 of 9 refer the reader to “Sheet 1 of 1 (SB-1) for notes ...” We recommend the text of this note be revised to refer to “Sheet 1 of 9 ...”
8. Sheet 4 of 9 includes significant information governing future use of each proposed lot for single-family residential construction. Based upon our review of this drawing we offer the following remarks:
 - a. We recommend the drawing be expanded to: specify headwalls (see detail on Sheet 5 of 9) are to be installed on the inlet ends of each proposed culvert; and to specify either headwalls or flared end-sections installed on discharge ends of each such pipe.
 - b. Stormwater management improvements planned on Lots 5K-B-8-1 through 5K-B-8-4 are situated immediately upslope (south) of delineated edge of jurisdictional wetland. In order to protect the adjacent wetland during the construction period the design engineer has specified installation and maintenance of silt fence at appropriate locations along the proposed limit of work. In order to best insure stability and durability of proposed silt fence we recommend the design engineer revise the drawing to indicate proposed silt fence is to be reinforced with temporary construction (snow) fence throughout the construction period.
 - c. We recommend Sheet 4 be expanded to specify erosion blanket protection (see detail on Sheet 6) is to be installed over the finished surface of fill embankments planned directly adjacent to proposed stormwater management improvements (swales and rain gardens) on Lots 5K-B-8-2 and 5K-B-8-3.

- d. We recommend Sheet 4 be expanded to specify temporary stabilized construction entrance drive aprons, constructed of crushed stone, are to be installed and maintained at each proposed driveway until such time as final driveway construction has been completed.
9. Based upon our reading of minutes of a series of public meetings/hearings your Board has conducted over the past several months we understand both members of your Board and the public have expressed concern that this proposal has potential to adversely impact the water quality of Spofford Lake. Although we have not reviewed the content of previous technical submittals which your Board may have reviewed and discussed at each prior meeting, we did undertake an exhaustive review of the most recent submittal. On that basis we offer the following remarks:
- a. Specific performance standards, which collectively impose local regulatory requirements for the management of site generated stormwater are contained in Section 604 of the Land Development Regulations. Sections 604.2.B and 604.2.E respectively specify applicable quantitative and qualitative requirements applicable to stormwater management. Specifically, Section 604.2.B specifies “no significant increase in surface runoff shall be permitted ...” As demonstrated by calculations appended to the Stormwater Management Report, and further summarized at Table 1.1 within the Report, the series of individual on lot stormwater management improvements proposed by the design engineer are anticipated to *decrease* both peak and total discharge volumes of site generated stormwater directly tributary to Spofford Lake for both the 10 and 50 year return frequency design storm events. Correspondingly, it is this writer’s opinion that the requirements of Section 602.4.B will have been satisfied upon successful completion of construction of all specified design improvements.
 - b. Section 602.4.E of the Land Development Regulations specifies: “Surface water runoff carried into existing water-courses or drainage-ways ... shall not unreasonably degrade surface water quality.” In the current instance the design engineer has specified a series of individual stormwater improvements on each proposed lot. Specifically, as shown on Sheet 4 of 9 stormwater runoff from those portions of each lot to be disturbed by future residential construction is to be captured and directed to individual on-lot rain-gardens by conveyance swales. Given the length, grade and typical cross-section of specified swale construction it is anticipated a modest level of stormwater treatment will be realized prior to arrival at individual rain-gardens. Accordingly, the design engineer’s use of conveyance swales in the current instance may be properly viewed as providing a modest level of “pre-treatment” of stormwater ultimately tributary to the series of individual rain-gardens. In the current instance, rain-gardens, a form of bio-retention system recognized as a preferred Low-Impact Development (LID) Best Management Practice by the NHDES (See New Hampshire Stormwater Manual: Volume 2 published by the NHDES) are intended to provide primary stormwater treatment. In this writer’s opinion the design engineer’s use of rain gardens in the current setting is most appropriate given demonstrated ability of these

systems to effectively filter/capture sediments and nutrients which would otherwise be carried by stormwater directly downstream. In addition, the series of proposed rain-gardens serves to promote infiltration of stormwater into the underlying soil mass, thus reducing the volume of runoff otherwise tributary to the lake. On that basis it is this writer's opinion the requirements of Section 602.4.E will be satisfied upon successful installation of specified design improvements. That said we do recommend the Rain Garden Typical Section provided on Sheet 5 of 9 be expanded to specify appropriate species of native plants and vegetation to be installed within each proposed rain garden.

10. A boxed note appearing on Sheet 4 of 9 reads as follows: "The purpose of this plan is to depict potential layout for each lot meeting local regulations. Final house placement is subject to change based on individual land owner preferences." Minutes of a public hearing conducted on February 03, 2020 reflect members of your Board were concerned approval of something other than definitive design plans for individual homes could prove problematic. Given detailed design accommodations for stormwater management undertaken by the applicant's consultants as discussed above we concur. In order to both overcome this concern and provide an effective means of administering future applications for building permits on individual subdivision lots we recommend the following:

- a. Sheet 4 of 9 includes boxed data (upper right corner), which identifies the estimated area of future impervious lot coverage realized as a result of construction of individual homes and related improvements in the manner presently illustrated on this drawing. Further, Erosion & Sediment Control Plan Note No. 3 on the same drawing indicates the estimated area of lot disturbance on each lot contemplated by the current design layout. Taken together, these data correspond with assumed conditions considered by the applicant's consultant when designing individual lot by lot stormwater management improvements specified on the drawings and supported by detailed design calculations presented in the Stormwater Management Report. Although we recommend your Board consider verbatim construction of stormwater management improvements shown on the plans mandatory absent future Planning Board approval of an alternate design arrangement on an individual lot basis, it would appear future individual lot owners or builders could be afforded latitude in terms of home dimensions and placement provided threshold area values of impervious lot coverage and lot disturbance currently identified on Sheet 4 are not exceeded. That is to say, if stormwater improvements currently specified on Sheet 4 are constructed in a manner consistent with the current design, it would be reasonable to expect those improvements would effectively treat stormwater from upslope building and site improvements in a manner equivalent to that demonstrated by the design engineer provided the extent of impervious lot coverage and ground disturbance situated upslope of those improvements does not increase.

Mr. James Corliss
April 16, 2020

- b. It is important to recall that prior to issuance of a building permit for residential construction on any individual lot it will be necessary for the building permit applicant to cause a detailed septic system design plan be prepared and approved by the NHDES. As part of that work, the septic design plan typically identifies dimensions, location and finish grade elevations of the proposed dwelling and associated site improvements. Your Board could require, as a subsequent condition of application approval, that prior to the issuance of individual building permits that the then owner/applicant submit a drawing to your municipal building code official which effectively demonstrates the intent to construct stormwater management improvements shown on Sheet 4, as well as demonstrate the measure of impervious lot coverage and lot disturbance situated upslope of those improvements, are less than or equal to those area values specified on Sheet 4 of the final subdivision plans. If the then owner/applicant is able to demonstrate those outcomes will be achieved by implementation of the then proposed lot development plan, the building code official could then issue the building permit without need for further action by the Planning Board. Alternately, if a future owner/applicant wishes to either modify the design of stormwater management provisions or pursue improvements having additional impervious or disturbed land surface on an individual lot, a properly worded condition could then require that applicant obtain Planning Board approval of an alternate design prior to issuance of a building permit for that specific lot.
11. Lot 5K-B-8-1 appears to be mislabeled as Lot 5K-8-4 in the data table accompanying the Rip-Rap Outlet Protection Detail provided on Sheet 5 of 9.

We trust the foregoing comments and recommendations will prove useful to your Board in its continued consideration and review of the subject application. As always, please contact the writer in the event you should have specific questions or further instructions germane to this application.

Sincerely:

Steven B. Keach, P.E.
President
Keach-Nordstrom Associates, Inc.