May 5, 2014

Ms. Marcia Gasses
Town Planner and Land Use Administrator
Town of Barrington
P.O. Box 660
Barrington, New Hampshire 03825

Subject: River's Peak – Map 215 / Lot 1 – Cabernet Builders
Engineering Review

Dear Ms. Gasses:

As requested, we have completed our review of the plans and materials submitted for the above-referenced project. The plan set consisted of seventeen (17) sheets with a December 4, 2013 date, revised April 22, 2014. Also included for review were stormwater calculations dated April 25, 2014 and a Traffic Impact Assessment dated December 30, 2004. The following were comments noted during the review.

1. The Building Setback lines of Lots 1, 6, 7, 8, 11, 12, 13, 16, 17 on Sheet 5 of 12 do not match the setback lines on Sheets 1 and 2 of 12. We understand that the final mylars will reflect the correct setback lines.

2. Increases in the peak rate of runoff were noted for the area draining to Nippo Brook, as well as New Bow Lake Road. Pursuant to Article 7.4.3(7), there shall be no increase in runoff from the subject parcel. We understand that the Applicant will be requesting a waiver. We recommend that the Engineer and the Planning Board consider the effects of the additional flow to New Bow Lake Road, as the flow increase may have unintended consequences for existing ditches and culverts.

3. The Engineer provided drainage calculations showing that the depth of roadside ditches can handle the anticipated depth of flow from a 50-year storm. However, the velocity in all but one of the ditches exceeds 5 feet per second. We therefore recommend that the roadside ditches be armored with riprap to prevent erosion and washouts, with the exception of the area between Sta. 27+50RT to Sta. 29+50RT.

4. We recommend that the guardrail detail on Sheet 9 be updated to reflect the MELT-type terminal unit required by Article 12.8.7. We further recommend that the grading design near the terminal units be updated on the plans to include a MELT platform. **(REPEAT COMMENT)** It is noted that the text was revised to call for a MELT type terminal, but the grading, layout, and cross sections do not reflect this revision. Furthermore, the detail does not depict the grading and layout requirements of a MELT terminal unit.

5. The sight distance plans and profiles have been revised, but do not depict the sight distance measurements specified in the definition of *Minimum Sight Distance* and Figure 4A. After examining the sheets, it appears that the Town's requirements are met by the design. We recommend that the sight distance sheets be updated for clarity so that they depict the measurements called for in the regulations.

6. The previously approved traffic analysis was provided for our review. At your request, we have a

cursory review of their study, and offer the following comments:

- Between 2004 and now, the ITE's trip generation data has been updated, yielding higher trip generation for single family residential developments.
- Highway Capacity Manual has been updated with revised calculations for assessing the effectiveness of intersections in processing traffic.
- Additional crash data is now available covering the last 10 or more years.

Given that this project is relatively small at 20 units, just meeting the threshold requiring a study, we believe that updating the counts, trip generation, and analyses would not alter the conclusions of the 2004 report for the smaller, low-volume intersections. However, we noted in the US202/NH126 intersection capacity analysis showed a LOS D for the left turn movement out of NH126 in the 2015 AM no-build condition, dropping to a LOS E in the 2015 AM build case with the addition of less than 3 seconds of delay.

If you have any questions or comments, please do not hesitate to contact us.

Very truly yours,

DuBOIS & KING, Inc.

Jeffrey Adler, P.E.
Sr. Project Manager