



**MEISNER BREM CORPORATION**  
**ENGINEERS • PLANNERS • LAND SURVEYORS**

March 31, 2015

Lisa Davis Lewis, Chair  
Carlisle Board of Appeals  
Town Hall  
66 Westford Street  
Carlisle, MA 01741

Re: "The Birches"  
Civil Engineering Response to Nitsch Letter of 3-13-2015

Dear Ms. Lewis and the members of the Board of Appeals:

This office has made relatively minor revisions to the plan for the above referenced project based on comments received from the peer review of Nitsch Engineering of their letter of March 13, 2015. Prior to reviewing these plan changes, I thought it might be helpful to outline the peer review letters, our responses thereto and the status of each.

As you are aware, in their detailed letters, Nitsch Engineering continues to use their original numbering from the October 24, 2015 initial peer review so as to keep a continuing record of the reviews. In this way, items that are "completed" are still recorded in the final document. That is why the letter has grown to 27 pages. It is noted, however, that this method is not employed in interim email type reviews. For purposes of outlining the status of the review please see the following table outlining the civil reviews to date:

<u>Nitsch Peer Review Letter</u>	<u>Meisner Brem Response Letter</u>
October 24, 2014	December 8, 2014
December 22, 2014	February 6, 2015
Email: Feb 18, 2015	Email: Feb 26, 2015
March 13, 2015	March 31, 2015

This correspondence is responding directly to the March 13, 2015 Nitsch peer review, which is limited to the key components of the drainage system and appurtenances.

In previous letters, Nitsch uses the phrase: "This comment has been addressed" to identify issues that are resolved to their satisfaction. Other comments may remain in the letter as they may be directed to the Board of Appeals for action - such as conditions of approval - or in other cases, referrals to other town staff or departments. As this method is great for documenting the progress, it may get cumbersome to use as a guide to determining any outstanding items or items requiring further town response. Perhaps the Town may wish to have Nitsch add a matrix or chart to assist in focusing any further actions by either the applicant or the town through the Board of Appeals.

*(continued on other side)*

Our February 6, 2015 response outlines changes to the plans or comments reflecting our response to items: 5, 11, 17, 22, 24, 26, 27, 28, 29, 30, 31, 35, 36, 39, the nine performance standards of the Stormwater Handbook, and waiver comments 3, 9, and 15.

The latest civil engineering peer review is a culmination of an email review, an email response submission with a full set of plans and Stormwater Calculations (both dated 02-06-15), and then a letter response dated March 13, 2015 on the most pressing stormwater issues only. The net result of the emails and email responses (February emails) are 4 comments outlined on page 2 of 3 of the March 13 letter. The plans were recently revised, with a new revision date of March 27, 2015, to address these 4 comments as described below:

1. The peer reviewer recommends adding an underdrain system under the proposed vegetated swales and rain gardens to ensure no standing water. It is our opinion that this is overly conservative but we have provided this nonetheless. On the plan view this is shown directly under the swale by a description and reference label as it is impossible to show under the swale without decimating the swale information. To further clarify the vertical extent of the underdrain, we provided a profile view on Sheet 7. Further, the detail of construction of the underdrain is found on Sheet 9.
2. The peer reviewer requested the design engineer to consider curbing for the very beginning of the roadway at the intersection of Long Ridge Road. Upon consideration, we are providing a sloped granite curb for the first 100 feet of pavement edge (except in the location of the driveway for unit 1). Sloped granite is more durable and aesthetically pleasing compared to cape cod style bituminous curbing.
3. The Cultec recharge system detail was revised to match the HydroCAD model.
4. The grading and design of the driveway culverts was revised to provide sufficient cover. In addition, the charts were amended. Also, one foot contours were provided in these flatter but critical areas.

We also removed the notation relating to the subdivision covenant on Sheet 2 as requested by Attorney Chris Heep.

As the Board recently requested, I will be reviewing the plan changes made as described in this letter, the February emails, and the February 6 correspondence at the next Board of Appeals hearing on April 6, 2015.

Thank you for the opportunity to present these revisions to the Board of Appeals and to your peer reviewer consultant, Nitsch Engineering, Inc.

Sincerely,



Jeffrey A. Brem, PE  
Principal Engineer

Cc: Client  
Douglass Deschenes