

April 24, 2019

Mr. Thomas Harrigan  
Zoning and Planning Administrator  
Village of Elm Grove  
13600 Juneau Boulevard  
Elm Grove, WI 53122-0906

Re: 1375 Woodlawn Circle  
Revised Permeable Paver Location and Installation Plan Review

Dear Mr. Harrigan:

As requested, I have reviewed the revised Permeable Paver Location and Installation Plan (Plan) submitted to the Village for the new single family home at 1375 Woodlawn Circle. My findings and recommendations are as follows:

1. The Plan includes a copy of the Site Grading Plan dated July 6, 2018, which was revised after my last review. This review focused on the proposed permeable paver system only. I did not review the Site Grading Plan to determine if the newer version addressed comments in my comment letter dated July 3, 2018.
2. The Plan shows the proposed impervious area coverage for the property to be 10,216 square feet (32.85% of the gross parcel area), which exceeds the limit set by Section 335-17.H of the Village Code for RS-1 Zoning (30% Max.).
3. The Plan includes installation of 947 square feet of permeable pavers to meet the requirements of Section 335-12.C.
4. Provide spot grades and slopes of the permeable paver surface area.
5. The Site Grading Plan shows at least one downspout directed toward the permeable paver system. The permeable paver system watershed area needs to be enlarged to include the roof area tributary to the downspout.
6. Calculations provided show the following:
  - a. Total runoff volume tributary to the permeable paver system is 0.017 acre-feet (740 cubic feet).

Mr. Thomas Harrigan

Re: 1375 Woodlawn Circle – Revised Permeable Paver Location and Installation Plan Review

April 24, 2019

Page 2

- b. Temporary storage volume (below drain tile perforation elevation) is 568 cubic feet (947 SF x 24 inches / 12 inches per foot \* 0.30 void space factor = 568 CF).
  - c. Assumed underlying soil infiltration rate is 0.07 inches per hour.
  - d. Drain tile outlet operates during rainfall events with intensities greater than 10-year storms.
  - e. Draw down time for a 100-year storm event is 65 hours.
7. The design will need to be revised to provide enough temporary storage volume so that the drain tile outlet does not need to operate for the 100-year storm event. This is typically addressed by increasing (deepening) the stone temporary storage layer thickness below the perforation openings of the outlet pipe.
  8. The calculations will need to be revised to reflect the additional tributary roof drainage area and deeper temporary storage layer.

We recommend the items listed above be addressed to the Village's satisfaction prior to approval. Please contact our office with any questions regarding this matter. Thank you for allowing us to be of service to the Village of Elm Grove.

Very truly yours,

RUEKERT & MIELKE, INC.



Anthony D. Petersen, P.E. (WI, IA)

Senior Project Manager

[apetersen@ruekert-mielke.com](mailto:apetersen@ruekert-mielke.com)

ADP:adp

cc: David De Angelis, Village of Elm Grove  
Richard Paul, Jr., Village of Elm Grove  
File