



Oak Consulting Group

February 13, 2019

Project 12012

Mr. Charles Tirone, Conservation Administrator  
Reading Conservation Commission  
Town Hall  
16 Lowell Street  
Reading, Massachusetts 01867

RE: Notice of Intent  
Single Family Home, Map 23 Lots 125 and 126  
Azalea Circle  
Reading, Massachusetts

Dear Chuck:

We are in receipt of a review memo of the above referenced project by Mr. Alexander Rozycki, P.E. of the Reading Engineering Division, dated December 12, 2018 as well as comments from the Commission at our hearing in December. The plans have been revised in response to those comments. Below is a summary of the changes made to respond to the comments received.

Please find the enclosed:

- PDF file of the Site Plans, revised February 13, 2019;
- Revised HydroCAD Post Development Calculations;
- Copies of the recorded utility easement documents.

**STORMWATER**

- The plans have been revised to include a 20’ long stone infiltration trench along the eastern-most parking area. This trench will capture and help infiltrate stormwater from the parking area and drive. The stormwater analysis was updated to include this detail. The result it a decrease in the rate and volume of runoff for all storm events. Below are tables presented in the stormwater study with the updated analysis results.

Table 2.2.1	Rainfall Events			
	2-Year (3.31 Inches)	10-Year (5.22 Inches)	25-Year (6.41 Inches)	100-Year (8.24 Inches)
Existing (cfs)	1.35	3.27	4.6	6.78
Proposed (cfs)	1.35	3.12	4.32	6.45
<b>Change (cfs)</b>	<b>0.00</b>	<b>(0.15)</b>	<b>(0.28)</b>	<b>(0.33)</b>

Additionally the site was analyzed assuming no infiltration in the pervious pavers and considering them to be impervious. Those results are summarized in the table below.

Table 2.2.2	Rainfall Events			
	2-Year (3.31 Inches)	10-Year (5.22 Inches)	25-Year (6.41 Inches)	100-Year (8.24 Inches)
Existing (cfs)	1.35	3.27	4.6	6.78
Proposed (cfs)	1.40	3.21	4.43	6.59
<b>Change (cfs)</b>	<b>0.05</b>	<b>(0.06)</b>	<b>(0.17)</b>	<b>(0.19)</b>

As demonstrated in Table 2.2.1, the proposed plan has been designed to provide no significant change in the runoff characteristics of the site. All storm events modeled show a slight decrease in the rate of runoff from the site. The additional theoretical analysis assuming the proposed pervious pavers in a failure condition shows a reduction in flow for all flood storms and a minor increase for the 2-year storm which would be des minimis and will not result in adverse impacts to the BVW or other down-stream receptors.

- The stone trench will have a storage volume of approximately 16 cubic feet. The infiltration chambers have a total storage volume of 249 cf of (1,862 gallons) storage and the leaching catchbasin and stone has 130 cf (972 gallons) of storage below the overflow outlet. The total stormwater static storage capacity is 395 cubic feet (2,955 gallons)
- Additional detail on of the level spreader is provided on Sheets C-003 and C-004.

## SEWER

- Additional survey of the sewer in Azalea Circle and Carnation Drive has been obtained to explore alternative to tie the house into the sewer system without disrupting the existing retaining wall within the existing easement.

Due to the 24" RCP drain culvert it is not possible to bring a sewer out to Azalea then up to the existing manhole at the corner of Azalea and Carnation. To bring the sewer pipe under the drain, the invert would be too low to meet the existing sewer. If the sewer were brought over the drain it would be too shallow where the sewer exits the site drive and along Azalea (2' or less of cover).

The survey did discover the existing manhole in the easement in the condo drive has 3 stubs extending towards the applicants property. On February 5, 2019, these lines were camera inspected to see if they could be used.

The camera inspection showed that one of the stubs (8") did not extent beyond the manhole. The two other stubs (6") did extend beyond the manhole and under the wall to a point approximately 25 feet from the manhole. The plans have been updated to show these locations. The inspection showed that the pipes under the wall have settled likely due to the weight of the wall and have a "belly" approximately 8-9' from the manhole with a low point approximately 2-3" below the outlet to the manhole. This low point makes these pipes unusable for a gravity sewer.

Mr. Charles Tirone, Conservation Administrator  
Town of Reading

- The plans have been revised to use a sewer ejector pump within the proposed house. The force main from the house will connect to one of the 6" stubs to the manhole and use this pipe as a sleeve to reach the manhole. This approach will limit the disturbance within the easement area to within an existing grassed area which will be restored after construction.
- Enclosed are the recorded easement document and plan documenting the existing easement and rights of use.

We believe the plan changes and additional information provided address the outstanding issues. In the meantime, please feel free to contact me at if you have any questions or require additional information.

Sincerely,

OAK CONSULTING GROUP, LLC



Sean P. Malone, P.E.  
Vice President

SPM:  
Enclosures

Cc: Alexander Rozycki, P.E., Town Engineering Department

**ENCLOSURES**