

February 21, 2023

Ron Wolanski, AICP
Town Planner
Town of Middletown
350 East Main Rd.
Middletown, RI 02842

**Re: Washville-WAS04-078 991-995 Middletown, RI;
Crossman Engineering Comments**

Dear Mr. Wolanski,

As the Engineer of Record for the Applicant developing the above referenced Washville Carwash, we respectfully submit the below responses, **in red**, to the comment email prepared by your Crossman Engineering, dated December 1, 2022 and shared with the applicant on February 16, 2023. Our responses detail how we will update the drawings and engineering design, however, our design has advanced and been modified since the comments were made. Crossman Engineering reviewed the drawing package dated November 23, 2022. A revised plan set, dated February 15, 2023, contained multiple site updates which are in part a result of negotiations with an adjacent landowner and improving constructability. The changes include: shifting the site facilities to the north while maintaining the location of the building, selecting different vacuum producer equipment, removing a retaining wall, changing the height of the fence, etc.. Due to the changes in design and timing of receipt of the comments, the following letter serves to detail how we intend to address the Crossman Engineering comments and we will incorporate into future plan sets.

Comments Responses Below:

1. The Town's GIS shows that a portion of the land behind the carwash lot drains into this site but it is not accounted for in the calcs. Their watershed limits are the property lines. **The offsite portion that drains to the site is intended to be bypassed through the site using a swale along the south side of the property. The stormwater report will be revised to incorporate an analysis of this additional area.**
2. The proposed grading at the rear right appears to direct flow that currently drains through the site towards the abutter on the right side. The flow may or may not be small but they should quantify it. **The stormwater report will be revised to incorporate the requested analysis and quantification. The undetained area was previously accounted for but recent changes to the site plan will require an update to the analysis.**
3. The sand filter detail shows a 4 inch drain outlet but the calcs use a 3 inch outlet.

The calculations use a 3-inch outlet because that is the size of the restrictor orifice in the outlet control structure that is restricting the flow of the entire system so that it meets the required runoff.

4. The sand filter detail should call out the orifice sizes and wrap the pipe in fabric. The PDF was fuzzy, so I could not tell if they did. For the sand filter outlet, normally we would run flow through the sand, then the multiple orifices and then the underlying pipe to confirm which restricts the flow the most. They only analyzed the underlying pipe (but a pipe size that doesn't match the details)

The detail calls out the mentioned items. We will revise it so these items print out more clearly. As mentioned in response #3, the modeling analyzes the proposed 3" restrictor orifice within the outlet control structure. This will be the most restrictive and is what is required in order for the system to meet the runoff requirements.

5. I did not see the soil evaluations used to document seasonal high groundwater levels. Soil borings were provided but I did not see the soil evals.

We will review and provide the additional information as needed.

6. The calcs did not include the 100 year pipe to pipe calculations. This should be provided to show that runoff can reach the underground system.

We will provide the storm sewer calculations.

7. They are seeking a waiver from the recharge standard. They should consider piping the rooftop into an underground system to provide recharge. Also, with the fill in the front, they could consider extending the sand filter layer down to the Seasonal high water level to promote infiltration.

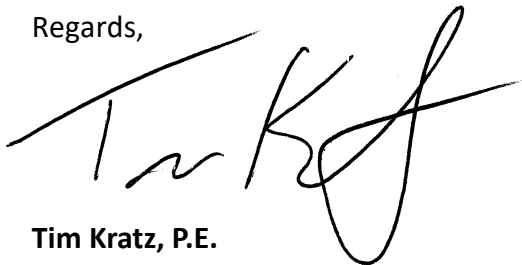
We will review these recommendations and take them into consideration.

8. If they didn't, they should submit an O&M Manual.

Enclosed is a copy of the most recent O&M Manual that was submitted.

Thank you for your time and attention to this matter. If you have any further questions, please feel free to contact us.

Regards,



Tim Kratz, P.E.

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