

February 10, 2014

Middleborough Board of Selectman
Town Hall Building
10 Nickerson Avenue
Middleborough, MA 02346
Attn: Mr. Charles J. Cristello, Town Manager

Re: WRPD Application
90 East Grove Street
Cumberland Farms

Sub: Atlantic Design Response
Comments

Dear Mr. Cristello:

Please find enclosed a revised set of plans and supporting documentation regarding the above referenced project. The plans have been revised to address the comments in the Atlantic Design Engineers review letter dated February 5, 2014. Based on those comments we offer the following:

1. Comment acknowledged. Once we receive approvals from the Board of Selectman, final plans will be submitted to MassDOT for review and comment.
2. We have researched the existence of any drainage plans with both the Town and MassDOT and have determined that there are no plans to be found which would aid in determining the ultimately outfall of the drainage system along East Grove Street. In order to obtain the pertinent data to run an analysis on the East Grove Street drainage system we would be required to survey the entire roadway drainage system to the outfall location, which we feel is unreasonable since the site plan is a redevelopment project, shows a decrease in peak rates of runoff for all storm events and provides a stormwater management system that is a significant improvement over the current conditions. The proposed piped connection via the onsite drainage system is discharging runoff that is currently being collected by means of overland sheet and shallow concentrated flows draining into the East Grove Street drainage system. The current proposal "converts" the overland flows into piped flows routing the stormwater to the same point now providing treatment and a reduction in peak flows, consistent with the requirements of DEP and the Town regulations. In accordance with DEP standards, the site design is required to model the 2, 10 & 100-yr storm events. The 100-yr storm event is required to determine if there will be any impacts downstream and it is not required to meet pre vs. post conditions which is a requirement for the 2 and 10-yr storm events. Therefore, the proposed

stormwater design provides a decrease in the peak rate of runoff for the 100-yr design storm which would also confirm that there should be no impact to downstream areas as part of the proposed development and hence no reason to model the remaining drainage system.

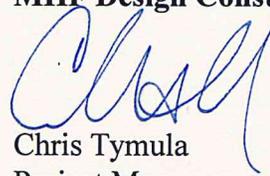
3. It is our opinion that a fence around the detention basin is not needed since it is designed as a shallow, dry detention basin with a low flow orifice at the bottom to fully drain the basin. A fence is also not a requirement by DEP in the Stormwater Handbook.
4. The detail for OCS#2 was previously shown on Sheet 10 of 11, CFG9.1.
5. No comment #5 provided by Atlantic Design.
6. The outlet elevation for the roof infiltration system previously shown as 98.25 was a typo and has been revised to 99.25, consistent with the previously submitted stormwater calculations. The flood elevation in the "model" has been revised to account for the 4" of stone above the pipe and therefore meets the peak elevation for the 100-yr storm event. It should be noted that according to the Stormwater Handbook that within infiltration trenches it is "Generally it is not practical to provide storage for large infrequent storms such as the 100-yr storm".
7. DMH-1 is shown with a low flow outlet designed to pass the 1" WQV design storm. It is also equipped with a higher flow outlet to pass storm events larger than the 1" WQV.
8. Street sweeping is outlined in both the Operations/Maintenance Construction Phase and Regular Maintenance notes on Sheet 6, note 9 & note 3 respectively. Note 8 has been added to Sheet 6 referring to the O&M Plan for additional information and the notes within the plans and report have been checked for consistency.
9. The calculations for the sizing of the Oil/Water Separator were previously shown on the detail for the structure as shown on Sheet 10 of 11, CFG9.1.
10. The sizing of the 15" opening has no affect on the smaller orifice openings within the structure and is designed to be one pipe size larger than the outlet pipe to avoid any constriction of flow. It is the smaller openings in the structure that regulate the outflow from the basin. The 15" opening under all flow conditions will be able to pass more water than the orifices in the outlet structure. To put it another ways, the 15" opening will never restrict the flow more than the 3" and 8" orifices. As far as providing a drop between the 3" orifice and 12" outlet pipe, we believe that this is unnecessary.
11. The minimum Tc has been revised to 6.0 minutes. It should be noted that this had little change in the overall design results.



12. The detention basin is designed as a dry detention basin under normal conditions with the low flow outlet located at the bottom of the basin. The CN value is based on groundcover conditions at the start of the storm. At that time since the basin is not saturated, therefore the selection of a CN value based on grass, good conditions is an appropriate classification and a typical design approach.
13. The 4'-4" square overflow grate is designed as an emergency overflow device. The elevation of this grate is lower than the top of the basin berm and will provide the necessary device to divert overflows from abutting properties. In addition, the outlet structure is designed with a trash grate on the inlet opening to prevent clogging and has a 4' deep sump to collect any dirt or debris which also lessens the need for an additional emergency overflow device.

Please review the attached revised information and should you have any questions, please feel free to contact our office at your convenience.

Sincerely yours,
MHF Design Consultants, Inc.



Chris Tymula
Project Manager

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cc: Richard Tabaczynski, Atlantic Design Engineers, Inc.
Doug Troyer, MEEC
Dawn Johnson, Cumberland Farms, Inc.
Gary McNaughton, McMahan Associates