



February 5, 2014

Board of Selectmen
c/o Mr. Charles J. Cristello, Town Manager
Town Hall Building
10 Nickerson Avenue
Middleborough, MA 02346

Re: *Initial Engineering Review*
WRPD Application – Cumberland Farms – 90 East Grove Street
ADE Project #2518.24

Dear Board Members:

Atlantic Design Engineers, Inc. (ADE) has completed our initial engineering review of site plans and stormwater calculations for the above referenced project relative to a Special Permit request under the Water Resource Protection District (WRPD) bylaw. The plans are dated 12/9/13 and are prepared by MHF Design Consultants for Cumberland Farms, Inc. of Framingham, MA. Note that our review only pertains to the stormwater management system and does not include a review of zoning, underground fuel tanks, hazardous materials storage, etc.

We have the following comments:

1. The drainage system proposes to tie directly into the existing drainage system on East Grove Street via a proposed pipe tying into an existing catch basin. MassDOT approval will be required. It is our understanding that the proponents have met informally with MDOT and they are conceptually accepting of the proposed tie-in. This approval is critical to the stormwater design as proposed.
2. More information is needed regarding the existing East Grove Street storm drainage system, other than the existing 12" pipe leaving the catch basin near the site. Please provide pipe configuration, pipe sizes, types, slopes, capacities, flow rates for all design storms and the ultimate discharge location. State drainage piping systems are rarely sized for the 100-year storm yet the site drainage design is proposing to discharge 100-year flows directly into the piping system.

The current depth of flow in the East Grove Street piping network that the proposed site is tying into may affect the ability of the detention basin's outlet pipe to function as designed, particularly if the system is at or near capacity. The basin outlet structure calculations need to consider the depth of flow in the existing system, as it is likely that the basin's outlet culvert will not be functioning under a free-flowing outlet condition as the calculations presently assume.

3. The Board should determine whether the basin should be fenced in for safety.
4. A detail could not be found for outlet control structure #2.

6. The roof infiltration system has an outlet pipe invert 6" below the invert of the infiltration pipes. Provide a detail of how this will be built and confirm the calculations. The calculated 100-year peak elevation in the subsurface infiltration system is above the actual elevation of the system.
7. For DMH-1, what storm event or flow rate is considered "low flow" that will be diverted to the oil/water separator?
8. Street sweeping needs to be added to the O&M Plan on Sheet 6. Please cross check all of these notes with the O&M notes in the stormwater report and address any conflicts.
9. Provide calculations for sizing the oil/water separator.
10. The hydrocad modeling of the basin outlet structure does not take into account the initial 15" opening into the concrete structure, which may affect the flow into the ADS control device. Also, we recommend a drop between the invert of the orifices and the outlet culvert for more free-flow condition through this structure. See also comment #2.
11. TR-55/TR-20 recommends using a minimum Tc of 6.0 minutes. Please revise subcatchments, accordingly.
12. The detention basin area should be considered impervious in the CN calculations for subcatchment 10S as it will effectively be a water surface, not a grassed area, during the storm event.
13. In case of failure/blockage at the outlet structure, the basin should have some form of emergency overflow to divert overflow away from abutting properties.

If you have any questions, please do not hesitate to call me at (508) 888-9282.

Sincerely,

ATLANTIC DESIGN ENGINEERS, INC.



Richard J. Tabaczynski, P.E.
Vice President

Cc: MHF Design Consultants

Jacqueline Shanley

From: Rich Tabaczynski <rtab@atlanticcompanies.com>
Sent: Thursday, February 06, 2014 11:22 AM
To: cmt@mhfdesign.com
Cc: Charles Cristello; Jacqueline Shanley
Subject: RE: Cumberlands WRPD - Department Comments

Chris,
The below email refers to the predevelopment calcs. In addition, the post development 10 and 100 year were incomplete. Please send

Richard J. Tabaczynski, P.E.
Vice President
Atlantic Design Engineers, Inc.
P.O. Box 1051
Sandwich, Massachusetts 02563
P: (508) 888 – 9282
F: (508) 888 – 5859
C: (508) 274 – 1712

From: Rich Tabaczynski [<mailto:rtab@atlanticcompanies.com>]
Sent: Thursday, February 06, 2014 11:07 AM
To: 'cmt@mhfdesign.com'
Cc: 'Charles Cristello'; 'Jacqueline Shanley'
Subject: RE: Cumberlands WRPD - Department Comments

Chris,
In the PDF of the stormwater report, the 2 and 10 year hydrocad calculations were not included. Only the 100 year. Please send.

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From: Jacqueline Shanley [<mailto:jshanley@middleborough.com>]
Sent: Wednesday, January 29, 2014 10:09 AM
To: rtab@atlanticcompanies.com
Cc: Charles Cristello
Subject: FW: Cumberlands WRPD - Department Comments

Hi Rich,

I had gone ahead and asked Attorney Troyer if he could send me an electronic copy and he just responded here. I am also attaching the application packet and the plans. If you need anything

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From: Jacqueline Shanley [<mailto:jshanley@middleborough.com>]

Sent: Wednesday, January 29, 2014 10:09 AM

To: rtab@atlanticcompanies.com

Cc: Charles Cristello

Subject: FW: Cumberlands WRPD - Department Comments

Hi Rich,

I had gone ahead and asked Attorney Troyer if he could send me an electronic copy and he just responded here. I am also attaching the application packet and the plans. If you need anything else, please either let me know, or, based on the email below, feel free to contact Doug Troyer directly. As you will see, he is asking if he will get to see your comments before Monday's meeting. Would you mind responding to his question directly? If for some reason you can't, please let me know and I will respond.

Thank you.

Jackie

Jackie Shanley
Executive Assistant to Board of Selectmen
Town of Middleborough
10 Nickerson Ave.
Middleborough, MA 02346
508 946-2405 Tel.