



FUSS & O'NEILL

March 6, 2016

Mr. Richard Harris, AICP  
Director of Planning & Conservation  
Town of South Hadley  
116 Main Street  
South Hadley, MA 01705

RE: Peer Review of the Stormwater Management  
Center for Human Development  
Fuss & O'Neill Reference No. 20150214.P30

Dear Mr. Harris:

Fuss & O'Neill has conducted a review of the documents submitted by Associated Builders, Inc. related to the development of a human development facility located on Old Lyman Road adjacent to Big Y. The overall concept of the project appears to be feasible however there are several technical items which need to be addressed in order to verify the proposed design meets the South Hadley Stormwater Bylaws. We have conducted a review of the following materials as they relate to the stormwater management and standard engineering practice.

#### **Materials Reviewed**

1. "Center for Human Development Proposed Facility" plan set issued for local approvals prepared by Associated Builders, Inc., dated 02.01.2019.
2. "Stormwater Report & Pollution Prevention Plan" prepared by Associated Builders, Inc. dated February 4, 2019.
3. "Application for Plan Review for Exempt Project" prepared by Associated Builders, Inc. dated February 4, 2019.

1550 Main Street  
Suite 400  
Springfield, MA  
01103  
† 413.452.0445  
800.286.2469  
f 413.846.0497

[www.fando.com](http://www.fando.com)

California

Connecticut

Maine

Massachusetts

New Hampshire

Rhode Island

Vermont

#### **Stormwater Management**

1. Per Section 16-1.1, B3 of the Stormwater Management Bylaw, the stormwater management system shall minimize the volume and rate of stormwater which is discharged. The applicant has provided documentation demonstrating that there will be a slight increase in volume and peak rates of for the 10-year and 100-year storm event. This increase is minimal and should not impact the downstream areas. It's at the discretion of the Planning Board to allow the small increase. However, peak flows may need to be reevaluated because revisions that may be required due to review comments.

Mr. Harris  
March 6, 2019  
Page 2

2. Per Section 16-4.1 of the Stormwater Management Bylaw, no land owner or land operator shall receive any of the building, grading, or other land development permits required for land disturbance activities, and no land owner shall commence land disturbance activities without approval of a Stormwater Management Permit from the Planning Board. A permit has not been provided within the review materials, Planning Board shall ensure a Stormwater Management Permit is submitted prior to the start of construction.
3. Per Section 16-4.2, B and Section 16-8 of the Stormwater Management Bylaw, information for the outline in this section must be provided within the ongoing maintenance agreement. The Applicant has provided a Post-Construction Operation and Maintenance Plan, however it does not sufficiently include information required by Section 16-8.
4. Per Section 16-4.6 of the Stormwater Management Bylaw, adequate provisions for the inspection of the property shall be developed with Town Department/Boards as required. The Applicant shall work with the Planning Board to ensure provision as outlined in the Section 16-4.6 are developed.
5. Per Section 16-5.1(b) a locus map must be provided. A locus map does not appear to have been provided.
6. Per Section 16-6.1 of the Stormwater Management Bylaw, projects must meet the Massachusetts Stormwater Management Standards. The following Stormwater Management Standard 2 have not been met:
  - a. Standard 2: Post-development peak discharge rates exceed pre-development peak discharge rates.
  - b. Standard 3: Calculations for groundwater recharge and 72 hour drawdown must be presented as outlined in Volume 3, Chapter 1 in order to adhere to Standard 3.
  - c. Standard 3: 44% Pretreatment must be provided when BMP are located within areas with rapid infiltration rates.
  - d. Standard 4: Calculations for water quality must be presented as outlined in Volume 3, Chapter 1 in order to adhere to Standard 4 as it relates to the removal of 80% of post-construction TSS removal. In addition MassDEP TSS worksheets must be provided for each treatment train to demonstrate how 80% is achieved.
7. Per Volume 3, Chapter 1 of the Massachusetts Stormwater Handbook, when sizing infiltration BMPs using the “static” or “simple dynamic” method the Rawls rate provided in Table 2.3.3 of the Handbook must be used. When sizing infiltration BMPs using the “Dynamic Field” method no more than 50% of the in-situ saturated hydraulic conductivity rate can be used. It appears has the Applicant has sized the infiltration basins using the “static” method, thus the Rawls rate of infiltration must be used.



Mr. Harris  
March 6, 2019  
Page 3

8. Per Volume 3, Chapter 1 of the Massachusetts Stormwater Handbook, a Title 5 percolation test is not an acceptable test for determining the saturated hydraulic conductivity rate. It appears has the Applicant has used the infiltration rate determined by the percolation for exfiltration rate for the basin when modeled within HydroCAD. The Rawls Rate provided Table 2.3.3 of the Handbook must be used in determining exfiltration rates for proposed infiltration ponds..
9. Subcatchment area boundary for PR1 of the Proposed Conditions Drainage Map should be revised slightly in the southern corner to be at the high point along the berm in the area between PR1 and PR5.

**General**

10. Show location of silt fence on sheet L1.1, rather than only noting that it should be provided at the perimeter.
11. Show location of temporary sediment basins on sheet L1.1.
12. Provide a note or callout for existing utilities to remain or be demolished/abandoned in place on sheet L2.1.
13. Water quality units are generally online within a stormwater drainage system. The Applicant proposes the ADS Barracuda system as a standalone designed at grade with no proposed pipe inlet or outlets. The Applicant should provide documentation the system as designed by the manufacture can be used in this manner.
14. Please provide the water quality unit inlet/outlet size on sheet L3.1 or on the detail on sheet L5.1
15. Provide spot elevations within the 241 contour on the outlet side of WQU-1 to help convey stormwater runoff to the bottom of the southern drainage basin on sheet L3.1
16. Revise the 240 contour or the limit of work line at the northeast of the entrance drive on sheet L3.1.
17. Confirm FFE of the east wing. If 244.5, provide an additional step outside of the building.
18. A detail for installation of straw bales should be provided.
19. A detail for the concrete splash block should be provided.



Mr. Harris  
March 6, 2019  
Page 4

20. Revise the Doghouse Sewer Manhole (SMH) detail on sheet L5.1 to provide a drop inlet on the proposed sewer pipe.
21. Indicate the water quality flow on the Water Quality Unit detail on sheet L5.1
22. The elevation on Basin Berm Overflow Weir detail indicates a 1' min. grade change between the top of the berm and top of the overflow weir. The grading plan shows a grade change of 0.6' between top of berm and top of the overflow weir. Revise the grading plan to provide 1' of grade change. In addition it is standard engineer practice to provide one foot of freeboard when designing basins.
23. The weir outlet for the basin does not appear to have been modeled within the HydroCAD calculation. To ensure the stormwater system functions as designed the weir should be modeled within the HydroCAD calculations.
24. The Detention Basin Berm Section detail shows an outlet control structure. The site plans and hydrologic modeling do not indicate the use of an outlet control structure. Please clarify.

The above comments are based on plans and documentation received at the time of review. Any revisions to the plans and documentation will require further review. Please feel free to contact us with any questions.

Sincerely,

Aimee Bell  
Project Engineer

Reviewed by:

Daniel F. DeLany, P.E.  
Associate/Department Manager