



June 19, 2020

Mr. Brian Groth  
Town Planner  
Town of Hudson  
12 School Street  
Hudson, NH 03051

Re: Town of Hudson Planning Board Review – Stormwater Design Review  
Hudson Logistics Center, Lowell Road  
Tax Map 239, Lot 1; Acct. #1350-949  
Reference No. 03-0249.1930

Dear Mr. Groth:

Fuss & O'Neill, Inc. has reviewed the first submission of the materials received on May 19, 2020, related to the above-referenced project. Authorization to Proceed was received on June 8, 2020. The scope of this review letter is related to stormwater aspects of the project design only. Site plan, subdivision, and other review elements will be provided under separate cover.

This review is based on the recently adopted Stormwater Regulations (Chapter 290), Subdivision Regulations (Chapter 289), Site Plan Review Regulations (Chapter 275), Hudson's Engineering Technical Guidelines and Typical Details, and general engineering practices. Due to the size and complexity of this project we have separated our stormwater review comments based on the Subdivision and Site Plan plan sets prepared by the applicant.

The following items are noted:

7. Drainage Design/Stormwater Management

Subdivision Plan and Master Plan – Green Meadow Drive Plan Sets Prepared By Hayner/Swanson, Inc.

- a. Hudson Regulation HR 289-18.B.4. We note that the creation of the cul-de-sac is creating what appears to be a "land-locked" wetland pocket. The applicant should review the need for an outlet structure from the center of the cul-de-sac and/or describe the intent of this design.
- b. HR 289-20.B.(2). The Regulation requires a catch basin at all four corners of roadways and interesting streets. The applicant is proposing to convert an existing catch basin to a drain manhole at the south side of the Green Meadows Drive/Lowell Road intersection and not proposing to install a new catch basin at the curb line of the widened road.
- c. HR 290-5.A.11. We note that the drainage run HW 90 to HW 91 is illustrated within the Langan Site Plan set, but is not illustrated within this roadway plan set. The applicant should coordinate all proposed stormwater drainage between all submitted plan sets.
- d. HR 290-6.A.1. The dimensions for the FES outlet for CES1 and CES2 is not listed within the scour hole details on plan sheet 15. The applicant should add all proposed outlet apron dimensions to the plan set.

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- e. HR 290-6.A.1. The applicant should provide rip rap outlet and/or scour hole sizing calculations for all FES locations, including but not limited to HW 90/HW 91 and CES 1/CES 2.
- f. HR 290-6.A.1. The applicant should provide the locations and appropriate related notes for the Erosion and Sediment BMPs illustrated within the Detail Sheets on the design sheets of the plan set.
- g. HR 290-10.A & B. Due to the multiple plan sets concurrently submitted, the applicant should list all related required Town, State, or Federal permits as well as related plan sets (as references) within the plan. This will ensure that if a contractor acquires only one of the multiple plan sets, they are fully aware of the connectivity of the plan sets.
- h. Hudson Engineering Technical Guidelines and Typical Details (HETGTD) Section 930.1. The applicant should review the design on Plan Sheet 4 of 22, and note that CB 117 and CB 118 are illustrated to have less than 4.0' feet of cover. We note the design does not match the detail on Plan Sheet 15 of 22, illustrating a minimum of 4' of cover.
- i. HETGTD Section 930.4. We note that the majority of the stormwater design utilizes pipe slopes of less than the required 2.0%. The applicant should review these pipe slopes with the Town Engineer to determine if these are adequate. Fuss & O'Neill would take no exception to the applicant requesting a waiver for these slopes if deemed necessary, as long as the applicant can illustrate that the drain line velocities are self-cleaning.
- j. We note that Stations 8+75 and 0+70± illustrate what appears to be approximately 6" of separation between proposed water and drain lines, where 18" is typical engineering standard. The applicant should review this separation with the Town Engineer and if acceptable provide appropriate means of frost protection for the water piping.
- k. HETGTD Section 930.10. We note the Town Requirement of curb inlet drainage structures at all vertical sags.
- l. HETGTD Section 930.13. We note that there appears to be a cut section between Stations 16+50± and 19-50±. The applicant should review and provide underdrain as required for this section of roadway.

Site Plan & Wetlands Conditional Use Applications Plan Set Prepared By Langan Engineering & Environmental Services, Inc.

- m. HR 290-5.A.10. Due to the proximity of wetlands and other buffer zones to the proposed locations for installation of erosion control practices, the applicant should review the need for relief from this requirement by the Planning Board.
- n. HR 290-5.A.11. The applicant should utilize the most recent BMP worksheets available on the NHDES website. BMP worksheets provided appear to be outdated with dates of December of 2017 and March of 2019.
- o. HR 290-5.A.11. The applicant should provide additional detail for the installation of the basin with notes similar to Env-Wq 1508.06.L (infiltration basin requirements). Additional detail should include but is not limited to: side slopes, bottom prep, bottom material, type of ground cover (capable of being inundated for prolonged periods of time), tilling of soil, do not compact soil, riprap weir dimensions (depth, width, lengthy, stone gradation, and size), etc.
- p. HR 290-5.A.11. We note that Basin B6-2 is proposed to be constructed over an existing wetland, which typically results in a greatly reduced infiltration rate. The applicant should

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- provide additional information for this basin, as well as other similar basins, regarding whether a soil amendment is proposed which will promote infiltration and treatment.
- q. HR 290-5.A.11. Basins A1-2, B1-2, and B6-2 illustrate the use of an underdrain outlet connected to the closed drainage system. With the use of an underdrain, the stormwater is not infiltrated, it simply offsets the peak discharge time, and is reintroduced into the stormwater system. The applicant should review the calculations to ensure this stormwater is intended to be "lost" by infiltration, or if it appropriately accounted for within the stormwater calculations.
  - r. HR 290-5.A.11. If the above mentioned underdrain is designed to account for frozen ground conditions and is removed to meet stormwater calculations, the applicant should reassess frozen ground conditions and provide additional information on how these conditions will be accounted for.
  - s. HR 290-6.A.1. We note the Inspection and Maintenance manual references a Green Snow Pro applicator. The applicant should add this requirement to the plan set as well.
  - t. HR 290-6.A.1. We note the requirement of Env-Wq 1507.05 "Channel Protection Requirements" is not compared within the Stormwater Management Report.
  - u. HR 290-6.A.8. We note the requirement for the applicant to coordinate a pre-construction meeting with the Town Engineer. This should be stated on the plans.
  - v. HR 290-6.A.13. The applicant should provide rip rap outlet and/or scour hole sizing calculations within the sediment forebays.
  - w. HR 290-6.A.13. The applicant should illustrate the location of the Construction Entrances upon all phased Erosion and Sediment Control Plans.
  - x. HR 290-7.A.6. We note that the provided Infiltration Feasibility Report states "To be completed during construction". To ensure infiltration is an acceptable treatment upon this project, the applicant should update the Infiltration Feasibility Report as per Env-Wq 1504.13.
  - y. HR 290-7.A.6. The Stormwater Management Report calculations/analysis illustrate that a proposed infiltration rate of 1.5 inches per hour is utilized. The applicant should provide additional conversion calculations to support the use of that infiltration rate.
  - z. HR 290-7.A.6. We note the provided GZA Geotechnical Report does not properly label the test pits and borings, due to what appears to be a "black wipeout". The applicant should provide a clear and readable location plan.
  - aa. HR 290-7.A.6. The applicant should provide the locations of the test pits upon both the Topographic Subdivision plan and the Grading and Drainage plans, in order to be able to properly analyze the proposed infiltration.
  - ab. HR 290-10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain, Shoreland, and Wetlands Permits to ensure NHDES comments do not alter drainage design/calculations.
  - ac. HR 290-10.A. Due to the multiple plan sets submitted concurrently, the applicant should list all related required Town, State, or Federal permits as well as related plan sets (as references) within this plan. This will ensure if a contractor acquires only one of the multiple plan sets, they are fully aware of the connectivity of the plan sets.
  - ad. HR 290-10.A. The applicant should to confirm and provide the pre- and post-subcatchment areas are equal in size per NHDES requirements.

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- ae. HR 290-10.A. We note the Stormwater Management Report does not directly state/illustrate the stormwater on Green Meadow Drive. After review of the calculations, it is evident that the proposed roadway and cul-de-sac is accounted for. Please provide more information within the write up to note that the roadway is accounted for within the overall stormwater analysis.
- af. HR 290-10.A. We note that additional items will be required for the NHDES AoT Permit which could potentially effect the stormwater calculations and/or construction of the site. The applicant should provide additional detail related to the following items:
  - i. The applicant should review typical NHDES screening layers as well as the NHDES PFAS sampling maps. We note the close proximity of the site to the Hampshire Chemical Corp directly across the Merrimack River, which has four test locations that illustrate the site contains elevated levels of PFAS, considered higher than health based levels.
  - ii. We note the phasing of the site will be required to meet or request a waiver from the 5-acre disturbed area limit from NHDES Env-1505.03.
  - iii. We note the phasing of the site will be required to meet or request a waiver from the 1-acre winter disturbed area limit from NHDES Env-1505.06(b)(1).
- ag. HR 290-10.B. The applicant should add the requirements for the EPA GCP, E-NOI, and SWPPP to the plan set.
- ah. HETGTD Section 920.3.12. We note that there are storm drains that exceed the listed maximum velocity of 10.0 fps. The applicant should review these velocities with the Town Engineer for acceptance. Fuss & O'Neill takes no exception if a waiver from this requirement is deemed necessary.
- ai. HETGTD Section 920.3.13. We note that there are storm drains that exceed the listed minimum velocity of 2.0fps. We request the applicant review these velocities with the Town Engineer for acceptance. Fuss & O'Neill takes no exception if a waiver from this requirement is deemed necessary.

Please feel free to call if you have any questions.

Very truly yours,



Steven W. Reichert, P.E.

SWR:mjt

Enclosure

cc: Town of Hudson Engineering Division – File  
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