



**The Dubay Group, Inc.**

136 Harvey Road Bldg B101

Londonderry, NH 03053

(603) 458-6462

November 23, 2021

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

**RE: Town of Hudson Planning Board Review – Drainage Review Response Memo  
Friars Drive Industrial Facility Site Plan, 161 Lowell Road  
Tax Map 209 Lot 1**

Dear Mr. Groth:

We have revised the design based on the recent hearings and site walk input. We also have updated the plans and calculations reflecting the 10-15-2021 Fuss & O'Neill drainage review comments as follows:

**Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)**

e. HR 275.9.A.1 and 290.5.A.5. The applicant provided reasoning for an increase in runoff at Analysis Point #2 within the Drainage Analysis. The applicant should discuss if this project requires a waiver with the Town Engineer as well as the NHDES Alteration of Terrain (AoT) reviewer. F&O takes no exception to the request of a waiver if deemed necessary.

**TDG Response:** *It has been determined that a portion of Subcat L was identified as “grass” in the post-development analysis while that same area was previously identified as “brush” in pre-development. This caused the weighted curve number for the subcat to increase, therefore showing an increase in runoff. This area is now consistently “brush” in the pre- and post-development models. As there is no increase, no waiver will be required.*

f. HR 290-5.A.1 and 290-5.A.3. The applicant should provide language in the Drainage Analysis Report stating if and how low impact development (LID) strategies for stormwater runoff were evaluated for this project.

**TDG Response:** *Additional language has been added to the stormwater narrative under section C (Proposed Site Conditions).*

g. HR 290-5.A.5. The northwest property line, representing Analysis Design Point #4, abuts numerous properties along Hickory Street. The applicant should ensure runoff at every property line is analyzed to ensure runoff does not exceed pre-development rates, as is also required by NHDES AoT regulations.

**TDG Response:** *We redesigned the subject area, including eliminating pavement and retaining large areas of existing woods. The developed portion of the site that would drain towards design point #4 is simply the backside of the proposed landscape berm. A*



*three foot wide by two foot deep infiltration trench has been added to the bottom of this berm to capture all runoff for all design storm events. The only water that drains towards these abutting properties now is the wooded undisturbed area that drains there as is.*

h. HR 290-5.A.10. The applicant should review with NHDES AoT the need for a double row of silt sock along the 50' wetland setback lines.

**TDG Response:** *A double row of silt sock has been added along the 50' wetland setback lines.*

i. HR 290-5.A.11. The applicant should note upon the plan set the requirement to keep the Town informed of the Soil Testing required for the soil amendment as noted upon the Site Details-9 plan sheet.

**TDG Response:** *The note on Site Details-9 has been revised to include information regarding the Town of Hudson*

j. HR 290-5.A.11. The applicant should expand upon the required soil amendment and testing, noting the required infiltration rate (or a range) proposed/required to meet design calculations.

**TDG Response:** *The soil amendment note specifies a design rate of 10 inches per hour.*

k. HR 290-5.A.12. The applicant should review with Town if a signed long-term maintenance plan and agreement is required.

**TDG Response:** *The operation and maintenance plan and report have been added to the drainage report.*

l. HR 290-6.A.8. The applicant should add a note to the plan for the requirement to coordinate a pre-construction meeting with the Town Engineer.

**TDG Response:** *Note #1 under the Construction Sequence on Site Details-2 notes the need for a pre-construction meeting between the contractor, owner, and town agents.*

m. HR 290-6.A.9. The applicant should add a note to the plan set regarding the time limits for stabilization of disturbed soil areas.

**TDG Response:** *Note #1 under Winter Notes on Site Details-2 notes that "all proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1..."*

n. HR 290-7.A.7. The applicant should keep the Town informed of all communication with the local advisory committee (LAC).



**TDG Response:** *Comment noted. The town will be kept informed of any communication with the local advisory committee, which may be moot as virtually all of the proposed development pavement and building have been kept away from the quarter-mile river offset, and none of the NHDES Shoreland jurisdictional areas to the river are involved in construction.*

o. HR 290-7.A.7. The applicant has provided information on the proposed cut and fill volumes of the project. The applicant should confirm that this information has been considered in any potential impacts to traffic and the surrounding Town/State roads.

**TDG Response:** *This project was designed to have as much as a net zero impact as possible. The cut/fill analysis plan (analyzing to the built finish surface) calls for an import of material essentially equivalent to the volume of selects/concrete/pavement that would be brought to the site.*

p. HR 290-7.A.7. Although the test pits provided within the Infiltration Feasibility Report do not illustrate potential ledge, blasting of ledge may be found to be required for this project. If so, the applicant must provide additional information on blasting locations, schedules, and quantities proposed to the Town prior to those events as part of the permitting process. Also, abutting residential property owners will need at a minimum to be provided advanced notice of pending blasting operations, and the applicant will be required to follow all other notification requirements of blasting permits.

**TDG Response:** *Comment noted. If blasting is required, appropriate measures will be taken and abutting property owners will be notified. The geotechnical engineer did conduct additional borings in the development areas, with essentially no blasting required based on that data.*

q. HR 290-7.B.13. The applicant should provide the Site Specific Soils report and mapping required by NHDES AOT upon the plan set as well as documentation within the Drainage Report.

**TDG Response:** *The Site Specific Soils Report has been added to the Drainage Report.*

r. HR 290-8.A.4 & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.

**TDG Response:** *A bond or escrow will be coordinated with the Town Engineer, these requirements were noted in the project notes sheet for site regulations 275-10 & 12.*

s. HR 290-8.A.10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain and Wetlands Permits being requested to ensure NHDES comments do not alter the drainage design/calculations.

**TDG Response:** *Comment noted. The town will be kept informed of all communication with NHDES. As discussed with the Planning Board, the AOT application now includes this latest design revision and calculations package.*



t. HR 290-8.A.10.A. We note that additional items will be required for the NHDES Aot Permit, which could potentially affect the stormwater calculations and/or construction of the site. Please provide additional detail on the following items:

i. The applicant should review typical NHDES screening layers as well as the NHDES PFAS sampling maps.

**TDG Response:** *The required database screening layers were included in the report. We are not aware of PFAS data on the site that would affect the project permitting.*

ii. We note the phasing of the site will be required to meet the 5-acre disturbed area limit from NHDES Env-1505.03 unless a waiver is requested.

**TDG Response:** *On similarly-sized building projects, the NHDES AOT permitting documentation allowed work beyond the limit by integrating construction phase plan information.*

iii. We note the phasing of the site will be required to meet the 1-acre winter disturbed area limit from NHDES Env-1505.06(b)(1) unless a waiver is requested.

**TDG Response:** *See response above, we have coordinated these same issues on large building projects within the AOT process, without initiating waivers.*

u. Engineering Technical Guidelines and Typical Details (ETGTD) Section 930.13. Although this is not a public roadway cut section, due to some areas of significant cut upon the site (in the range of 10'-15'), the applicant should review the need for underdrain to help prolong the life of the pavement, drainage system, and building structures. The applicant should also comment on how this ground water, soon to be surface stormwater, is accounted for within the drainage calculations.

**TDG Response:** *The testing and boring data acquired to-date does not indicate the direct need for underdrains. We are having the geotechnical engineer evaluate the data and would recommend to add notes and provisions to the plans requiring underdrain shop drawings as part of the building permit review phase. If this is still not acceptable to F&O, then we will certainly add underdrains to the specific areas that are recommended, based on review of the soils testing data. Any underdrain intercepts could be easily and efficiently tied to the drainage system components that are already designed for those areas. The data is indicating that any seep would easily be interfaced with no flow characteristics of concern within the drainage systems already designed.*

v. ETGTD Section 920.4.2. The applicant has not shown equipment storage locations on the plans.

**TDG Response:** *Equipment storage that is ancillary to specific tenant needs are accommodated within the building perimeter paved areas. These areas are typically*



*reserved within the locations of the supplemental loading docs as flexible space planning. Equipment needs could vary by actual tenant, and commonly could be screened enclosures, pads for equipment, materials, or encapsulated waste handling.*

w. ETGTD Section 930.3. The applicant should provide a detail for outlet structures E and H which illustrate the proposed orifices within the outlet structures.

**TDG Response:** *Invert details for E & H have been added to the OCS detail on Site Details-9.*

x. ETGTD Section 930.3. The applicant should provide a detail of the cross section of ponds E and H to coincide with other cross sections provided upon the detail sheet.

**TDG Response:** *Cross section elevations for ponds E and H have been added to the typical pond section detail.*

y. ETGTD Section 930.3. The applicant should add the required 4' minimum cover to the "Typical Trench Detail" on the Site Details-10 plan sheet.

**TDG Response:** *The detail has been revised to include the minimum 4 feet of cover.*

z. ETGTD 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 discuss with the Town Engineer if this pipe slope is adequate. F&O takes no exception to the request of a waiver if deemed necessary if the applicant can illustrate the drain line velocities are self-cleaning.

**TDG Response:** *The regulation specifically allows the situation if it is otherwise approved by the Town Engineer. The design calculations demonstrate full functionality/performance to acceptable industry standards, and on other similar projects in Hudson, the Town Engineer has likewise approved the designs, and no waivers were required under that review and approval procedure.*

aa. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements.

**TDG Response:** *This statement has been added to the first notes sheet (#16). A SWPPP will be developed prior to construction and managed throughout, which would incorporate those requirements.*

bb. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state, or local laws, rules, or regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric, and geotechnical conditions and developments may affect the information and conclusions set forth in



this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact the review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.

**TDG Response:** *Comment noted.*

Please let us know if there are any further questions or comments.

Sincerely,  
**The Dubay Group, Inc.**

A handwritten signature in black ink, appearing to read 'D. MacGuire'.

Doug MacGuire, PE  
Vice President