



Civil Engineering / Land Planning / Construction Services

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July 7, 2022

Effingham Planning Board
Attn: Theresa Swanick, Chair
68 School Street
Effingham, NH 03882

Subject: Engineering Review Letter
Meena, LLC
NH Route 25 & Leavitt Road
Effingham, New Hampshire
NPE Proj. No. 22026

Dear Board Members,

At the request of the Planning Board, Northpoint Engineering, LLC (Northpoint) has performed a second technical review of the updated plans and material for the subject project that have been provided to us. The application material and plan documents were reviewed to determine conformance with local regulations, state and Federal requirements as well as generally accepted engineering practices.

The material that we reviewed included, but was not limited to, the following items:

- Letter from Horizons Engineering dated June 30, 2022 (Horizons Letter);
- Three sheet plan set prepared by Horizons Engineering date June 2022 that include a Stormwater Management Plan sheet, a Stormwater Management Details sheet and a Existing Conditions Plan sheet (collectively referred to as the Horizons Plans in this letter);
- Spill Prevention, Control, and Countermeasure (SPPC) Plan prepared by Horizons Engineering, dated June 2022;
- Project Location Plan (8 ½" x 11") prepared by Horizons Engineering, dated June 2022;
- Test Pit Evaluation Report prepared by Doiron Environmental LLC, dated 6/16/22;

We offer the following comments and recommendations:

1. The Applicant has provided a legal opinion stating that the project is not subject to the Special Use Permit requirement of Zoning Ordinance Article 22 Groundwater Protection. The Planning Board will need to make a decision on that matter. We recommend that the Board consult with your Town council if you feel that an additional legal opinion is warranted. Regardless of whether the Special Use Permit is required, the Applicant has recognized and agreed that the applicable performance standards set forth in Section 2210, would still apply to the project. Conformance to the performance standards would

have the same practical effect as obtaining the Special Use Permit, relative to the desired protection of the aquifer and groundwater.

2. We assume that the Horizons Plans are intended to replace the McConkey Stormwater Management Plan. However, it would seem that the McConkey Site Plan is still intended to be part of the application. The McConkey Site Plan contains references to grading and drainage design, including the previously proposed paved swale in the driveway. It should be revised accordingly or a separate Site Plan should be prepared. We recommend that all applicable site improvement plan and detail sheets be included in one plan set under a common cover sheet, for clarity purposes.
3. The Horizons Plans include a new design for the grading and stormwater management that involve a closed stormwater collection system. The Horizons Letter describes the system as containing deep sump catch basins, oil water separator, infiltration basin and level spreader. The plans do contain three deep sump catch basins, two of which are “off-line” basins – meaning that they do not have inlet pipes. Off-line, deep sump catch basins are used as an initial measure to capture coarse sediment and floating materials before stormwater is released downstream. It appears that intent of the grading design is for all stormwater runoff from the fuel dispensing and fuel storage areas to drain to one of these three catch basins. The catch basins then outlet to an oil/water separator which is an underground storage structure that contains multiple chambers designed to further capture coarse sediments, floating debris and some hydrocarbons. The oil/water separator then outlets to a level spreader, which is a mechanism that disperses runoff as sheet flow, rather than concentrated flow – this helps to prevent downstream erosion. The level spreader discharges the stormwater runoff into the existing DOT retention basin, which the Horizons Letter refers to as an “infiltration basin” and “infiltration area.” We recommend that Horizons document this proposed stormwater treatment train design in a narrative fashion (i.e. drainage report) as part of the formal application approval process. The narrative should identify the area of the site that is draining to this stormwater system and provide an appropriate analysis of each treatment device.
4. The *NH Stormwater Management Manual – Volume 2* published by NHDES contains the design criteria for industry standard treatment and pre-treatment of stormwater runoff. “Treatment” or primary treatment, refers to the permanent and primary method(s) or devices installed in stormwater management practices that minimize the discharge of pollutants to surface waters and groundwater. “Pre-treatment” refers to methods or devices that are installed upstream of the primary treatment that are intended to collect coarse sediment in order to help prevent excessive sediment build-up in the primary treatment device. Treatment and pre-treatment devices are commonly referred to as Stormwater BMP’s (best management practices). The deep sump catch basins and the oil-water separator, as designed, appear to meet industry standards for pre-treatment for the stormwater runoff from the site. However, it is not evident how the design is intending to meet the primary treatment standards. The pre-treatment devices will provide some ability for hydrocarbon containment but they do not meet the industry standards for pollutant removal levels. If the intent is for primary treatment to be accomplished via infiltration through the DOT retention basin, then additional design

criteria should be evaluated. It does not appear that there is adequate separation to groundwater based on the test pit data and the presence of wetlands. We recommend that the engineer document how the proposed treatment methods are meeting current industry standards for stormwater treatment and revise the design if necessary. It would appear to us that the onsite runoff should be fully treated prior to being discharged to the DOT right-of-way. Our expectation is that this would include appropriate treatment and pre-treatment for the water quality flow or water quality volume of stormwater runoff from the subject area of the site.

5. We recommend that the applicant provide a Stormwater Inspection and Maintenance (I&M) Manual (I&M) or some other form of a long-term operation and maintenance procedure that complies with the industry standards of the NH Stormwater Manual. We acknowledge that the SPCC Plan does include a brief narrative description of the stormwater system and also includes an inspection form for some of the stormwater management devices. However, the content contained in the SPCC Plan is not sufficient to ensure the long-term integrity of the stormwater system.
6. The current design includes proposed grading and proposed drainage structures within the DOT right-of-way. This work will require a separate permit or approval from DOT and an agreement with DOT pertaining to the long-term maintenance of the drainage structures.
7. The SPCC Plan prepared by Horizons appears to address the requirements of Section 2211 of the Effingham Zoning Ordinance as well as the industry standard. We have several minor comments on the SPCC Plan, as follows:
 - a. The plan should be updated to align with any changes that are made to the stormwater management design. Currently it refers to a treatment swale (on pages 5 & 8) which is not a part of the current stormwater design.
 - b. The plan requires monthly routine inspections along with an annual comprehensive inspection. It states that all inspection records shall be made a part of the plan and shall be maintained for at least three years. The Planning Board may want to have those inspection forms made available to the Town upon request. If so, we would recommend adding such language to the SPCC Plan.
 - c. The SPCC Plan will need to be approved by the Fire Department;
8. The Stormwater Management Details plan contains a Concrete Pad Grading Plan detail. It is not clear on that plan how the grading works between the fuel pumps and the existing building and whether or not that paved area can drain to the catch basins. We recommend expanding the grading detail plan to show additional existing and proposed spot grades and flow arrows throughout the entire portion of the site that will drain to the proposed catch basins, to ensure that there is adequate positive drainage.

9. We recommend that the plans include the location of the existing well on the property along with all required protective well radii, including those that may apply to fuel dispensing areas and underground storage tanks.
10. We recommend that the Existing Conditions Plan clarify the edge of wetlands that are shown in the DOT right-of-way. Was that delineated by a certified wetland scientist?
11. We recommend that the Existing Conditions Plan include a note indicating the vertical datum and provide an onsite or nearby benchmark.
12. We recommend that the Existing Conditions Plan be stamped by a Licenses Land Surveyor or Professional Engineer.
13. We note that the NHDES approval letter for the UST construction was dated February 23, 2021 and was valid for one year. We recommend that the Planning Board require receipt of a current and valid approval from NHDES, if one has not yet been provided.

This completes our second review of the submitted items. If you have any questions please feel free to reach out to me.

Sincerely,



Jeffrey W. Lewis, PE
Principal Engineer
Northpoint Engineering, LLC