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Ms. Liz Burdick
Director, Land Use and Development
Department Town of Montville
310 Norwich-New London Turnpike
Uncasville, CT 06382

June 1, 2023

**Re: A&B Excavation
69 Fitch Hill Rd & Leffingwell Rd
Montville, CT**

The following are Green Site Design's responses to the comments received to date:

Boundaries:

Stormwater Conveyance

- The plan proposes conveyance of stormwater using permanent diversion swales. Since the swales will be part of the permanent stormwater management system it would be beneficial to include the proposed grading for the swales in the site development plans in addition to the flow direction arrows. Specifically, proposed topography for the diversion swale along the easterly property line would help demonstrate how the swale should be constructed between the top of the proposed 2H:1V slope and the adjacent property line.
Sheet 5 has been revised to show the grading for the swale.
- The off-site contributing drainage area to the east should be evaluated for sizing and stabilization details for the proposed diversion swale. The diversion swale ends upgradient of the proposed access driveway. Please evaluate if the design flows from the swale are minor enough that they should be allowed to sheet flow over the driveway.
The drainage report has been revised to include the calculations and design for the swales. The drainage map has been revised to include the off-site contours for the area contributing to the swales. The calculations show that there is only 2.5 cfs from the swales in a 25 year storm event. It is our opinion that these flows are allowable for sheet flowing over the paved driveway. A riprap pad has been added to sheet 5 to spread the flows.
- Please review the proposed grading on the north side of Building 1 to determine if runoff from the paved area north of the building has the potential to flow to the north instead of to Water Quality Basin 1. Additional spot elevations to clarify intended runoff flow patterns north of the building may be warranted.
- **Sheet 5 has been revised to show the grading, with spot grades in this area, to clarify the runoff to the basin.**
- The Drainage Map and stormwater model excludes the proposed building addition and parking areas near Fitch Hill Road. Please evaluate if detention or treatment of runoff

from these new impervious areas is warranted. Additional spot elevations to clarify intended runoff flow patterns west of the driveway low point may be warranted if treatment and detention is not required.

Due to the size of disturbance for the building addition, 0.9 acres, a temporary sediment trap is not required. The General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities states that “For points of discharge from disturbed sites with a total contributing drainage area of between two to five acres, a temporary sediment trap or temporary sediment basin shall be designed and installed in accordance with the Guidelines.

Due to the size of disturbance for the building addition, under one acre, providing Water Quality Volume does not apply. Section 7.2 Criteria Applicability, of the Stormwater Water Quality Manual, states that “The design criteria presented in this chapter are generally applicable to the following types of development and redevelopment projects, including phased developments:

Any development resulting in the disturbance of greater than or equal to one acre of land.”

The grading on sheet 6 has been revised to clarify the flow patterns. The above narrative has been included in the revised drainage report.

- Please provide additional details regarding the “-CD-“ line to the west of Building 3. It appears this line may be intended to direct runoff from the proposed pavement west of Building 3 to Water Quality Basin 1, but no construction details, notes or sizing information is available. If this is not intended to convey runoff to the Water Quality Basin, it appears that the paved area to the west of Building 3 will not drain to a Water Quality Basin.
A detail has been provided on sheet 10 for the curtain drain. The curtain drain has been noted on sheet 5 also. The curtain drain will collect the runoff from the parking area behind building 3, and has the capacity for this 0.25 acre area (1.4 cfs in 25 year storm).
- The Erosion Control & Sedimentation Narrative refers to diversion swale locations shown on Sheet 3. Please update as appropriate.
This reference has been revised on sheet 10.

Erosion and Sedimentation Control

- In some areas proposed sediment fence runs perpendicular to the slope. Please incorporate sediment fence wings or checks in accordance with DEEP Guidelines.
Fence wings have been added on sheet 6.
- Some of the 2H:1V slopes exceed 15 vertical feet. Please provide additional details of how these slopes comply with Section 5(b)(2)(A)(i) of the DEEP Construction General Permit.
A reverse bench has been added on sheet 5 and a detail on sheet 10.
- Please evaluate if the proposed silt fence and wood chip berm should be replaced with a

check dam immediately downgradient of the proposed sediment trap discharges. Will the potential concentrated flows impact the integrity of the silt fence?

We have found on multiple projects that the wood chip berms backed by silt fence holds up very well at basin outlets. The wood chips add significantly to the filtering of the flow. In all but the 100 year storm, there will be very little flow leaving the basins.

- Please provide details for the proposed stone check dams called for in the easterly diversion swale (12-inch depth).

A detail has been added to sheet 10 for the stone check dam.

Water Quality Basins

- The Water Quality Basins are proposed to be used as temporary sediment traps during construction. The DEEP Stormwater Quality Manual recommends not using infiltration basins as temporary sediment traps due to the negative impact of construction equipment and sedimentation on the long-term infiltration rate. Please identify alternate locations for the sediment traps or incorporate procedures that will protect the long-term infiltration rates of the Water Quality Basins.

The basins are not designed to be infiltration basins. They are designed to function like hybrid stormwater ponds or pocket pond. We have run the TR-55 models without utilizing the infiltration rates. As the natural soils on the site have very high infiltration rates, after the construction is completed and the site is stable, we have called for the basins to be cleaned out and then to be over excavated 12 inches, installing 12 inches of topsoil. The topsoil will provide additional cleansing of the water and will slow the infiltration rates. The basins were designed to intercept the ground water levels to provide a wet bottom to the basins, which will promote the growth of vegetation in the basins. This vegetation will provide a higher level of treatment.

- The proposed bottoms of the Water Quality Basins appear to be near the elevation of the wetland system on site. The nearest test holes to the Water Quality Basins indicate a restrictive layer between 10 and 45 inches below existing grade. Please provide additional information regarding the intent for meeting recommended separating distances between the bottom of the Water Quality Basins and seasonal high groundwater.

The basins were designed to intercept the ground water levels to provide a wet bottom to the basins, which will promote the growth of vegetation in the basins. This vegetation will provide a higher level of treatment. The basins are designed to function like hybrid stormwater ponds or pocket pond. Which are supposed to be at or below the groundwater levels.

- Pre-treatment of stormwater runoff is recommended for stormwater infiltration practices with infiltration rates of greater than 3 inches per hour per the DEEP Stormwater Quality Manual. Please consider whether sediment forebays or other pretreatment measures should be incorporated into the design to meet the recommendation.

Forebays have been added on sheet 5.

- A factor of safety of 2 is recommended for stormwater infiltration practices per the DEEP Stormwater Quality Manual. Please evaluate whether a factor of safety for the infiltration rates has been incorporated into the stormwater model.

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- Please provide additional information regarding the determination of the design infiltration rates and how those rates comply with Section 5(b)(1)(B)(v)(c) of the DEEP Construction General Permit.

.We have run the TR-55 models without utilizing the infiltration rates.

General

- The existing conditions topography on the northerly half of Sheet 4 is not plotted on the PDF. **Not sure why that happened, but it has been fixed.**
- The northerly Water Quality Basin is labeled Water Quality Basin 2 on all sheets. Based on the narrative in the Drainage Report it should be labeled Water Quality Basin 1. **This has been corrected.**
- The Erosion Control & Sedimentation Narrative on Sheet 10 references the Town of Salem. **This has been corrected.**
- Based on the existing and proposed contours it appears that the proposed retaining wall along the easterly property line has a maximum height of approximately 18 to 20 feet. Is there adequate space between the wall and the property line for the construction of the footing or placement of grid reinforcement for a wall of that height?
Building 2 has been shifted to reduce the wall height to a maximum of 12 feet, to allow room for the construction. The space between the wall and the property line is 15 feet.

CLA:

1. Provide greater detail about the recent activity, mentioned in the soil scientist report of 3/22/2022, in the vicinity of flags ## 117 to 127. Are the soils in this area now stable?
This disturbance was observed in 3/22/22. All work in this area has stopped and the area is stable with new vegetation growth. We would recommend that the area be left undisturbed.
2. The Soil scientist must sign the plans.
We will provide his signature on the plan once all comments have been satisfied.
3. Show proper E&S (erosion control mat or other means) along east side of the proposed driveway where extensive grading is proposed.
Erosion control matting has been called for on sheet 6.

4. Show the existing topography in upper left hand corner (northeast) of sheet 5.
5. Show appropriate E&S on the 2:1 slope above Building 1.
Erosion control matting has been called for on sheet 5. And a reverse bench has been added on sheet 5 and a detail on sheet 10.
6. Provide a seed mix for the vegetated swale on the east (uphill) side of the site.
A planting plan, sheet 11, has been added.
7. Provide planting plans for the stormwater basins.
A planting plan, sheet 11, has been added.
8. Consider not requiring silt fence barrier in locations where topography and existing vegetation make it unnecessary.
The silt fence barrier has been trimmed back on sheet 5.
9. Add stone check dams to the swale that runs along the proposed driveway from the 68-foot contour to the 54-foot contour.
Stone check dams have been added on sheet 6.
10. Show the proposed construction entrance on plan sheet 6.
The construction entrance has been shown on sheet 6.

If you have any questions, please do not hesitate to contact me.

Very truly yours,



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