

May 20, 2025

Ledyard Inland Wetland and Watercourses Commission
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

ATTN: Justin DeBrodt, Chairman

Re: Proposed Residential Development; 19, 29, 39 Military Highway, Gales Ferry

Dear Mr. DeBrodt:

Bohler Engineering is in receipt of a comment letter from CLA Engineers, dated May 5, 2025. On behalf of Applicant 19, 29, & 39 Military Highway, Bohler offers the following responses. For clarity, the original comments are in *italics*, while our responses are directly below in **bold** type.

Engineering Comments

Comment # 1 Please specify whether the project will be completed in one phase or if phased construction is planned. Applicant should consider phasing and/or sequencing to ensure no more than 5 acres of soil is disturbed/exposed at a time as recommended by the E&S Manual. Provide a detailed phasing and construction sequencing plan.

Response: Refer to the updated sequence of construction on Sheet C-603 and the E&S Phasing Plans on Sheet C-601 and C-602 which indicate two planned phases of construction.

Phasing considerations such as not performing all site-disturbing activities at once, coordinating cuts and fills to minimize the movement and storage of soils, managing runoff separately in each phase, and coordinating construction and residential access in later phases have been included in the sequence of construction.

The phasing plan will be refined prior to building permit approvals and coordinated with the selected contractor at a preconstruction meeting to ensure appropriate sequencing.

Comment #2 It appears that Pine Swamp Brook runs across the property through the identified wetlands. If this is true, please identify the watercourse on the plans.

Response: Acknowledged. The approximate location of Pine Swamp Brook has been included per FEMA GIS Mapping on the Proposed Site Plan Documents.

Comment #3 Test pit and boring locations should be shown on the site plans. Test pit data should be included on the site plans.

Response: **Acknowledged. Test pit and boring locations have been included in the Proposed Site Plan Documents. Test pit data has been included in the detail sheets as seen on Sheet C-907, C-908, and C-909.**

Comment #4 Test pits and permeability information should be provided for each of the basins, chambers, and rain garden.

Response: **Acknowledged. Test pit and boring locations are in the vicinity of all stormwater basins and the infiltration system. The rain garden infiltration rate is driven by the filtration media installed below the rain garden.**

Will be performed prior to construction to confirm the design intent is met. If the results dictate a large deviation from current data, a revised submission to the town can be made.

Comment #5 Test pit profiles within the Drainage Report appear to indicate water elevation at the time of excavation. These elevations should not be relied on for an accurate representation of the seasonal high-water table for stormwater system design.

Response: **Acknowledged. The test pit logs do not indicate any mottling or signs of groundwater above the noted water elevation in the test pits. The observed elevation of water aligns with the existing elevation of the wetland body on site as well.**

If required by the Town, monitoring wells can be installed to confirm seasonally high groundwater tables.

Comment #6 The 100-year flood plain line from the FEMA mapping should be depicted on the plans. This line may not correspond with the surveyed elevation in the field but would govern when determining the 100-year flood plain limits.

Response: **The 100-year floodplain is designated by the Base Flood Elevation and is the anticipated height of floodwater during a 100-year flood. The determined elevation for the 100-year floodplain on this site is 28.1 and has been marked out by the surveyor as seen on the plans. This is an accurate determination of the 100-year flood plain line.**

Comment #7 The FEMA Floodway limits should be depicted on the plans.

Response: **Acknowledged. The approximate FEMA Floodway limits per FEMA GIS Mapping have been depicted in the Proposed Site Plan Documents.**

Comment #8 Spot grades should be shown in the basin bottoms and top of berms.

Response: Acknowledged. Spot grades have been included in the basin bottoms and top of berms as seen on Sheet C-401.

Comment #9 There is a conflict in the top of basin elevation for Proposed infiltration basin 1E in the call-out vs. a spot grade on the berm on sheet C-401.

Response: The spot shot on the berm of Infiltration Basin 1E that reads 32.67 is indicative of the spillway elevation. The top of berm is 33.33. Sheet C-401 has been revised to clearly indicate the limits of the emergency spillway and the associated elevations.

Comment #10 Will there be footing or foundation drains for the buildings? If so, the locations and discharge points should be shown.

Response: Footing and/or foundation drains for the buildings will be coordinated with the architect prior to submitting for Building Permit approvals.

The current drainage design accounts for all stormwater on site and incorporating these foundation drains will not impact the current drainage design or the existing wetlands downstream.

Comment #11 Engineered slope stabilization measures and benching should be specified and provided for the 2:1 slope to the west of the large parking lot.

Response: Acknowledged. The 2:1 slope to the west of the large parking lot has been modified to 3:1 as seen on Sheet C-401 to prevent the necessity of the engineered slope stabilization measures per the 2024 Connecticut Guidelines for Soil Erosion & Sediment Control.

Slope stabilization will be maintained with SC150BN Temporary Matting and a conservation wildlife seed mix to provide permanent vegetative stabilization.

Comment #12 Sizing calculations for the temporary sediment traps on sheet C-601 should be provided.

Response: Acknowledged. Sizing calculations for the temporary sediment traps have been included with a temporary sediment trap detail on Sheet C-604.

Comment #13 The temporary sediment traps appear to be remotely located, temporary measures should be depicted to direct stormwater runoff to these traps.

Response: Acknowledged. Temporary diversion swales have been included on the E&S Plans as well as contributing drainage areas to each temporary sediment trap as seen on Sheet C-601 and C-602.

A temporary diversion swale detail has been included on Sheet C-604.

Comment #14 A detailed narrative for the conversion of the temporary sediment trap to the final infiltration basin should be provided.

Response: Acknowledged. Refer to construction sequencing on Sheet C-603 which includes the detailed narrative on converting the temporary sediment trap to the final infiltration basin conditions in accordance with the 2024 CT Erosion and Sediment Control Guidelines to remove the accumulation of any sediment and restoration of the pre-construction infiltration capacity of the underlying soils.

Comment #15 On sheet C601 at the toe of the southerly proposed steep slope extend the silt fence to the limit of disturbance.

Response: Acknowledged. The limit of silt fence has been extended to the limit of disturbance as seen on Sheet C-601.

Comment #16 On Sheet C602 specify an appropriate erosion control blanket and compost filter sock.

Response: Acknowledged. The North American Green SC150BN matting has been specified for the project as a biodegradable matting with a lifespan of 18 months that is suited for steep slopes of 1:1 to 3:1. In addition the erosion control blanket staple pattern has been provided on Sheet C-604 as well.

The compost filter sock detail has been provided on Detail Sheet C-604 and the specific filter sock utilized will be reviewed during the preconstruction meeting.

Comment #17 Provide contact information for the party responsible for the erosion and sediment controls. This can be revised as the project proceeds.

Response: The contact information for the party responsible for installing the erosion and sediment controls will be the selected contractor. Refer to Note 11 of the E&S Narrative on Sheet C-603 which states "Contractor or person shall be named prior to preconstruction meeting" for the person responsible for maintenance during construction of the project.

Comment #18 In section 7 of the erosion control narrative, specify that a CTDEEP Construction Stormwater General Permit is required.

Response: Acknowledged. Section 7 of the Erosion Control Narrative has been revised to include the CTDEEP Construction Stormwater General Permit as a required permit in addition to Ledyard Planning & Development Approvals, CTDPH Subsurface Sewage Disposal System Approvals, and an OSTA Major Traffic Generator Certificate.

Comment #19 Maintenance and operations requirements of the infiltration basins, infiltration chambers, and rain garden should be added to the notes on sheet C-602.

Response: Acknowledged. Maintenance and operations requirements of the infiltration basins, infiltration chambers, and rain garden have been included in the Operation and Maintenance Plan section of the Erosion & Sediment Control Notes & Details Sheet C-603.

Comment #20 Sheet C-602 Erosion and Sediment Control Notes, Item 11 should require approval from Town Staff prior to removal of erosion and sedimentation control measures.

Response: Acknowledged. The recommended construction sequence has been updated to include Town Staff inspection and approval prior to removal of erosion and sedimentation control measures as seen on Sheet C-603.

Comment #21 Details and/or a narrative for potential trench or excavation dewatering activities should be provided.

Response: Acknowledged. Dewatering measures have been addressed in the E&S Plans and recommended construction sequence through dewatering bags located at the outlet of the temporary sediment traps. A detail for the dewatering bags have been provided on Sheet C-604 as well as a maintenance plan on Sheet C-603.

It should be recognized that any dewatering plan typically needs to be modified due to unforeseen site conditions or alternate methods available to the contractor. A note for the contractor to provide a dewatering plan to reviewing agency for review and approval has been added on Sheet C-601 and Sheet C-602.

Comment #22 The downstream side of the proposed detention basin and infiltration basin appear to be constructed with fill berms. A section detail and material specifications should be provided for these berms.

Response: Acknowledged. Basin berm details have been added to Sheet C-902 that include the section detail and material specifications for these berms.

Comment #23 There are two Outlet Control Structure C-30 details (one should be labeled B-30).

Response: Acknowledged. Detail Sheet C-903 has been revised to include the appropriate labeling of OCS C-30 and B-30.

Comment #24 Drainage Report: A table summarizing stormwater runoff volume for the various storm events should be provided.

Response: Acknowledged. Table 1.2 has been included in the Drainage Report comparing the pre- and post-development runoff volumes for the various design storm events analyzed.

Comment #25 Drainage Report: A Type D storm distribution should be used in accordance with the Stormwater Quality Manual.

Response: Acknowledged. The HydroCAD Reports for existing and proposed conditions, found in Appendix C and D of the Drainage Report, have been revised to utilize the Type D Storm Distribution in lieu of the Type III Storm. No significant change from the previous calculations charts have been updated accordingly.

Comment #26 Drainage Report: Existing time of concentration travel paths should be shown on the existing watershed mapping.

Response: Acknowledged. The Existing Drainage Map in Appendix C has been updated to include the time of concentration travel paths.

Comment #27 Drainage Report: Identify the source for the exfiltration rates (permeability) for each of the post development ponds/chambers. The Whitestone Report indicates a lower value should be used for design.

Response: The exfiltration rate of the infiltration basins and StormTrap Infiltration system has been revised to 3.2 in/hr. The source of this rate is the recommendation for the Whitestone Report which states "Whitestone recommends that the unfactored infiltration rate not exceed eight inches per hour and that a FoS of at least 2.5 be applied to the rate for design purposes."

The Rain Garden is designed with an infiltration rate of 0.5 in/hr to account for the infiltration rate of the proposed soil filtration media below the rain garden.

Comment #28 Drainage Report: Stormsettler hydrodynamic separator sizing and treatment data should be provided.

Response: Acknowledged. StormSettler sizing calcs and treatment data have been provided in Appendix E of the Drainage Report.

Comment #29 Per the CTDEEP Stormwater General Permit, the site will require regular inspection. The Commission may wish to receive copies of the inspection reports.

Response: Acknowledged.

Bohler Engineering is in receipt of a comment letter from Trinkaus Engineering, LLC, dated April 15, 2025. On behalf of Applicant 19, 29, & 39 Military Highway, Bohler offers the following response.

The Proposed Site Plan Documents prepared by Bohler Engineering, dated 2/19/2025, revised through 5/20/2025 have been designed to meet or exceed the Town of Ledyard Zoning Regulations. In addition, the plans have been designed in accordance with the 2024 Connecticut Stormwater Quality Manual and 2024 Connecticut Guidelines for Soil Erosion & Sediment Control. Bohler Engineering has incorporated all comments from the third-party reviewer, CLA Engineers, as noted above as well.

The Drainage Report prepared by Bohler Engineering, dated 2/19/2025, revised through 5/20/2025 demonstrates a stormwater management system that reduces peak runoff rates and runoff volumes in the post-development condition as summarized in **Table 1.1** and **Table 1.2** of the Drainage Report. In addition, Flared End Structures with rip rap aprons or scour holes have been sized to handle the 100-year storm events and we have maintained greater than a 100' buffer between the discharge locations of the stormwater system and the existing, flagged wetlands. The 100' buffer of existing grassed / farmed area, while not modeled in the drainage design, provides additional infiltration capacity and longer time of concentrations prior to runoff entering the wetlands.

Treatment of stormwater runoff is addressed through two (2) infiltration basins, an underground StormTrap infiltration system, and a rain garden. Design infiltration rates have been determined from the geotechnical report prepared by Whitestone Engineers, which incorporates a Factor of Safety of 2.5. Prior to runoff discharging into the infiltration systems, the required pretreatment is addressed through proprietary HDS structures sized to handle the equivalent Water Quality Flow, or through a sediment forebay that is well oversized, as seen in **Appendix E**. The sediment forebay has been designed with an oversized footprint to treat double the required pretreatment volume, and a depth of 2' that is recommended in the 2024 Stormwater Quality Manual. The Required Retention Volume is met through the Water Quality Volume infiltrated in each system as seen in **Appendix E**.

Per the 2024 Stormwater Manual, "A proposed stormwater management system meets or exceeds the average annual pollutant load reductions when the Required Retention Volume is retained on-site using suitable stormwater retention practice (refer to Figure 8-1)."

Table 4. 3 Minimum Average Annual Pollutant Load Reductions When Evaluating BMP Selection and Sizing (Only needed when additional stormwater treatment is needed¹)

Water Quality Parameter	New Development	Redevelopment/Retrofits
Total Suspended Solids (TSS)	90%	80%
Total Phosphorus (TP)	60%	50%
Total Nitrogen (TN)	40%	30%

¹ Pollutant load reduction percentages are calculated based on average annual loading and not based on any individual storm event. Load reductions based on post-construction stormwater management standards contained in the EPA Massachusetts MS4 General Permit.

- A proposed stormwater management system meets or exceeds these average annual pollutant load reductions when the Required Retention Volume is retained on-site using suitable stormwater retention practices (refer to [Figure 8- 1](#)).⁴⁸
- If the stormwater runoff volume retained on-site does not meet the Required Retention Volume (100% or 50% of the site's WQV), and therefore additional stormwater treatment is required, the project proponent should document that the proposed stormwater management system meets or exceeds the minimum required average annual pollutant load reductions through the use of EPA Region 1 stormwater BMP performance curves (see the following section).



The Erosion and Sediment Control Plans, Details, and Notes have been updated per the comment letter received from the third-party review engineer, CLA Engineers, to include a phasing plan, updated sequence of construction, and sizing calcs for the temporary sediment traps to be installed during construction of the project.

We trust the above as well as the attached information are sufficient for your review of the project. Should you have any questions or require additional information, please do not hesitate to contact me at (860) 333-8900. Thank you.

Sincerely,
Bohler Engineering

A handwritten signature in blue ink that reads "Jeff Bord".

Jeff Bord, P.E.