

CLA Engineers, Inc.

Civil • Structural • Survey

317 MAIN STREET • NORWICH, CT 06360 • (860) 886-1966 • (860) 886-9165 FAX

September 10, 2024

Justin DeBrodt, Chairman
Ledyard Inland Wetland and Watercourses Commission
C/O Liz Burdick, Director of Land Use & Planning
Town of Ledyard
741 Colonel Ledyard Hwy
Ledyard, CT 06339-1511

RE: Third Party Review
IWWC#24-9 - 19, 29 & 39 Military Highway Multifamily Application
Ledyard, Connecticut
CLA-7925

To the Commission:

CLA Engineers, Inc. (CLA) has received the following application materials for the above referenced project: Attachments #1-#6, #13, #14-1, #14-2, and #23 on file for the record on the Town of Ledyard website:

<https://ledyardct.legistar.com/LegislationDetail.aspx?ID=6737486&GUID=463E8936-699D-4788-92A0-2C268081B0D6&Options=&Search=>

CLA staff have performed a field walk of the site on August 26, 2024 and September 9, 2024 and conducted a review of the application documents. The basis of review was the Town of Ledyard Inland Wetland Regulations, Town of Ledyard Ordinances, the 2024 CTDEEP Connecticut Stormwater Quality Manual (Stormwater Quality Manual), and the 2024 CTDEEP Connecticut Guidelines for Soil Erosion & Sediment Control (E&S Manual).

A preliminary review letter regarding the need for soil test pits was provided on September 4, 2024. A review letter regarding the inland wetland delineation was provided on September 9, 2024. We will reserve comment on potential wetland impacts until after the inland wetland boundary is settled.

We offer the following additional comments on the materials:

1. Please specify whether the project will be completed in one phase or describe phased construction if more than one phase 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.

2. Construction sequencing narrative does not describe start and end dates. Clearly outline this information on the plans.
3. Temporary sediment traps or basins should be depicted and sized per the E&S Manual.
4. 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.
5. State the total area of disturbed land and project area in the erosion control narrative.
6. Identify all site-specific erosion control concerns and issues.
7. Test pits are identified on the wastewater treatment system plans; these locations should be shown on the site plans as well. Test pit data should be included on the site plans.
8. 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.
9. Identify all low-impact development (LID) efforts planned for the project.
10. The survey map prepared by Dieter and Gardner identifies the 28.1ft elevation line. Indicate clearly on plans what this elevation represents (100-year flood plain limit?).
11. 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.
12. The FEMA Floodway limits should be depicted on the plans.
13. How will work in progress within the flood plain be protected/managed in a potential flood event?
14. Maintenance and operations requirements of the infiltration basin and detention basin should be added to the notes on sheet C-602.
15. 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.
16. Details and/or a narrative for potential trench or excavation dewatering activities should be provided.
17. A construction detail for the silt fence and silt sock installation should be provided.
18. Slope stabilization measures and benching should be specified and provided for the 2:1 slope to the west of Building D.
19. Will there be footing or foundation drains for the buildings? If so, the locations and discharge points should be shown.
20. The proposed site grading should be reviewed in the vicinity of the southwest side of the N/F Jeremiah & Dawm Taggart property. The proposed grades appear to create a depression in this area.
21. The proposed site grading should be reviewed in the vicinity of the boundary with the N/F The Landing at Gales Ferry LLC property. The proposed grades appear to create a depression in this area.
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.

23. It is not clear how the various infiltration trenches will function. The construction detail appears to depict fill over stone and perforated pipe. The Applicant should clarify the intended use, and how these trenches will function. It should be demonstrated that these trenches have adequate separation to the seasonal high groundwater table and will not introduce pollutants to the groundwater in accordance with the Stormwater Quality Manual.
24. The detention basin construction detail appears to show a sediment forebay that does appear to be depicted on the plans. The plan or detail should be modified depending on the Applicants intent.
25. A construction detail for the infiltration basin should be provided.
26. Spot grades should be shown in the infiltration basin.
27. Construction details for catch basin structures should be provided.
28. Riprap apron size, type, and construction details should be included on the plans.
29. Drainage Report: The Applicant has used the Rational Method for the site wide hydrologic calculations. This may be based on Town Ordinance #300-17 Regulating the Management of Stormwater, Part 3, Section 1.A noting use of the Rational Method for drainage areas between 0-200 acres. This Ordinance also notes in the same section “There may be circumstances where a method should be applied outside of the acreage limitations given above. This is acceptable as long as its application is consistent with guidance given in the supporting documentation for the selected method”. The Stormwater Quality Manual requires hydrologic calculations be performed using the SCS/TR-55 method for 24-hour duration storm events. In our opinion the SCS/TR-55 method should be used when detention or retention is proposed on a site, as it is in this application. The Rational Method underestimates the stormwater runoff volume for a given storm event, which is critical in sizing detention or retention features. The hydrologic calculations should be performed using the SCS/TR-55 method in accordance with the Stormwater Quality Manual.
30. Drainage Report: A table summarizing stormwater runoff volume for the various storm events should be provided.
31. Drainage Report: The time of concentration travel path for watershed PR-1A is along the eastern property boundary and produces a time of concentration of 25.61 minutes. This travel path appears to be present under the existing conditions and should therefore be used when determining the time of concentration for the existing condition watershed EDA-1.
32. Drainage Report: The calculated times of concentration that are longer than the hydrologic calculation method minimum don’t appear to have been used in the hydrologic calculations.
33. Drainage Report: A majority of the existing condition ED-1 watershed was considered lawn in the calculations. In our opinion a meadow would be a more appropriate designation for portions of the site and should be used based on observations during our field walk.
34. Drainage Report & Plans: Detention basin P-2 will be submerged in the 100-year flood event based on the established FEMA 100-year flood plain elevation, and potentially for

- other smaller storm events as well. The Applicant should determine what storm events will submerge this detention basin. The Applicant should demonstrate the effectiveness of detention basin P-2 to mitigate peak stormwater run-off rate and volume from the site under submerged conditions.
35. Drainage Report: The water quality calculation indicate pretreatment is provided for watersheds PD-1B and PD-1C. The Applicant should clarify where and how this pretreatment is provided.
36. Drainage Report: The source for the proposed hydrodynamic separator treatment flow rates should be provided.

Thank you for the opportunity to provide this review. Please feel free to call us at our office or email khaubert@claengineers.com or brusso@claengineers.com with any questions or comments.

Very truly yours,
CLA Engineers, Inc.



Kyle Haubert, P.E.



Robert Russo C.S.S.