RCL Thompson
Experience Matters

July 13th, 2024

Stacy Radford
Zoning & Wetland Officer – Dept. of Land Use & Development
Town of Montville
310 Norwich -New London Tpke, Unkasville, CT 06382

SUBJECT: Response to Review Comments – 339 Chesterfield Road
Inland Wetland Application 24 IWX 7

Dear Stacy:

RCL Thompson LLC has reviewed the comments provided by CLA in the letter dated July 11, 2024. We offer the following responses. Additionally, revised plans are included in this and where necessary, a supplemental report has been prepared to address items not covered by the previous development report submitted.

1. *Beavers and beaver dams are a known issue in that pond and watershed area. We would recommend that the owner should be required to monito and mitigate any beaver activity at the new driveway culvert crossing.* **RCL Thompson acknowledges this comment and has informed the applicant of the concerns. Applicant is willing to monitor and mitigate beaver activity at the proposed water crossing.**
2. *Stormwater calculations for the sizing of the driveway culvert crossing should be provided.* **Stormwater calculations for the stormwater crossing are included in the supplemental report.**
3. *Pipe inverts and grading for the wetland crossing should be provided (spot grades or contours).* **Spot grades have been added to the plan.**
4. *The driveway culverts appear to end at the edge of driveway, how will the edge/embankment be stabilized? Will guide rail be required?* **The plan has been changed to show the culverts extending 1.5' from the edge of the driveway, and the driveway detail has been updated to show the side slopes. No guiderail is needed as there is a recoverable slope on each side of the driveway.**
5. *Is there adequate cover over the culverts for fire apparatus traffic loading specified?* **The plan calls for 1' of cover. According to the Plastics Pipe Institute, "Properly installed HDPE corrugated pipe can withstand AASHTO HS-25 loads with a minimum 1 ft of cover for pipe up to 48-in diameter". HS-25 loading is considered sufficient for fire apparatus.**
6. *Will electrical code allow for the installation of the underground electrical conduit within the 12+-" of soil over the driveway culverts?* **According to the National Electrical Code (NEC), if buried in galvanized metal electrical conduit, the minimum depth of burial is 6". It is anticipated that during installation, the contractor will follow all state and local standards and will install the electrical service in accordance with the electrical suppliers requirements, recommendations, and instructions. Further, prior to the electrical service going "live", the utility will inspect and approve of the installation.**
7. *Will additional temporary wetland disturbance be needed for the driveway and culvert construction?* **It is not anticipated that any additional temporary disturbance will be necessary.**

The culvert crossing can be constructed from each end (in line with the existing driveway), with the expectation that the placement of each culvert will be done predominantly using an excavator which will be positioned on either side of the wetland crossing (in line with the existing driveway). Similarly, the placement of the fill material around the culverts can be accomplished within the existing driveway area. All grading will take place from the existing driveway. This is both to limit disturbance but also because it is the most logical place to put the excavator due to access and slope. The placement of asphalt will be from the surface of the driveway. Therefore, the anticipated disturbance will all be within the limits of the existing driveway and any area of widening / grading.

8. *A construction narrative for the driveway and culvert construction through the wetland should be provided. Including construction sequencing and means for dewatering or water diversion as needed.* **A construction narrative has been added to the supplemental report.**
9. *The application does not include a wetland function and value assessment. Provide a description of if and how a variety of wetland functions may be impacted by the proposed development.* **This has been added in the supplemental report.**
10. *Provide information for replanting the land where the existing house is. How will the upland review zone be re-vegetated?* **The supplemental report now has a section devoted to answering this question.**
11. *How will disturbed soils throughout the site be re-vegetated?* **The supplemental report now has a section devoted to answering this question.**
12. *Will areas of temporary wetland disturbance be re-planted?* **It is the intention of the applicant to re-establish appropriate vegetation at any location that is disturbed according to best practices in Connecticut and in conformance to any suggestions / requests by the wetland commission. To be clear, the applicant has a strong desire to limit impacts to the greatest extent possible and to be a good steward of the resources as they are one of the main reasons for her desire to purchase the property and move to that location.**
13. *Show a feasible soil stockpile location.* **A soil stockpile location has been added to the revised plan.**
14. *Provide a copy of the plan signed by the soil scientist.* **All 14 of the original submitted plans were signed by the soil scientist on sheet 1 (existing conditions survey showing all of the wetland flags for the entire 55+/- acreas of the property). If this comment requires that the soil scientist sign the proposed development sheet as well, that will be problematic before the next meeting because the soil scientist is on vacation until early August. However, RCL Thompson does not feel this is necessary since the soil scientist has already signed the map.**
15. *Has wetland mitigation been considered?* ***Several alternatives are considered*** **in the development report already submitted. If mitigation is meant as establishing new wetland somewhere else on or off site, that is not considered because of the small amount of disturbed area proposed. The alternative chosen was done so because it is the least impactful option to provide safe access to the proposed residence.**
16. *Several test pits and percolation tests are noted on the project plans. Provide the data from these pits and perc tests.* **Soil testing data is being included with this submission.**
17. *Has the septic design been approved by Uncas Health District?* **Not yet. However, Uncas Health District was on site during the soil testing and has confirmed that the soils are adequate for a system. After gaining approval from the wetlands commission, a plot plan will be submitted for approval. This is also consistent with the Health District's response to the town's request for comments.**
18. *Show proposed limits of clearing adequately beyond the limits of proposed grading.* **Proposed clearing limits now shown on the revised plans.**

19. *The stone diaphragm proposed along the driveway is at the edge of the wetland and beneath a cut slope. It is likely to remain saturated. There may be a need to move the driveway further from the wetland or elevate is on the proposed location.* **This has been considered extensively. It is also discussed in the previously submitted development report. RCL Thompson offers the following comments in response to this comment.**
    a. **Moving the driveway away from the wetlands was considered but rejected due to the significant increase in earthwork / tree removal that would be required to excavate into the slope and raise the roadway profile. That increase directly impacts the upland review area in a way that is far more intrusive than keeping the driveway as it is located along the existing driveway ruts.**
    b. **While it is true that the stone diaphragm may be continuously saturated, it is okay for this to be the case because the primary function of the diaphragm remains unimpeded. The primary function is to allow for the settlement of pollutants from the driveway prior to water entering the wetland system. Even if the diaphragm is filled with water to within the top inch, it still provides a filtering system, as water flowing into the diaphragm will remain long enough to allow sediment to settle.**
20. *Show a feasible soil stockpile location greater than 50 feet from the inland wetland.* **A soil stockpile location has been added to the revised plan.**
21. *Show the proposed limits of clearing.* **Proposed clearing limits now shown on the revised plans.**
22. *Show grading for the septic system. This may extend the limits of clearing further downhill.* **The soil data allows for a leaching system to be placed below existing grade and there is no anticipation of any downhill grading for the septic system. Further, there is no need to clear any trees on the wetland side of the septic system as the location it is proposed is already clear of trees. The entire leach field system can be installed without any clearing / grading needed.**
23. *Clearly show and call out all E&S controls along the edge of disturbed soils.* **The plan already has E&S controls shown on the plan. The line with "X" in it is the proposed silt fencing. However, effort has been made to make them more clear and as there are other comments requesting additional E&S controls, those have also been added to the plan.**
24. *Provide woodchips or hay bales co-located with the silt-fence barrier in the upland.* **This is now included in the revised plan.**
25. *Use woodchip berms for E&S within the wetland.* **This is now included in the revised plan.**
26. *Quantify the temporary wetland disturbance including cutting of vegetation and placement of E&S.* **A table with the areas requested has been added to the supplemental report.**
27. *The North Arrows on the given plans do not line up between plan sheets. The North arrow on Sheet 2 ("Site Development Plan") should be pointing towards the top of the page.* **This has been corrected.**

Respectfully,

Ryan E. Thompson, PE, LS
Principal Engineer & Land Surveyor
RCL Thompson LLC

SUPPLEMENTAL DEVELOPMENT REPORT

1. CULVERT CROSSING STORMWATER CALCULATIONS

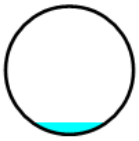
Summary for Reach C1: CULVERT CROSSING

Inflow Area = 4.504 ac, 0.00% Impervious, Inflow Depth > 1.44" for 10-yr event
Inflow = 0.29 cfs @ 22.89 hrs, Volume= 0.540 af
Outflow = 0.29 cfs @ 22.90 hrs, Volume= 0.540 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.31 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 0.2 min

Peak Storage= 3 cf @ 22.89 hrs
Average Depth at Peak Storage= 0.09' , Surface Width= 3.49'
Bank-Full Depth= 1.00' Flow Area= 4.7 sf, Capacity= 16.04 cfs

A factor of 6.00 has been applied to the storage and discharge capacity
12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 15.0' Slope= 0.0133 '/'
Inlet Invert= 382.40', Outlet Invert= 382.20'



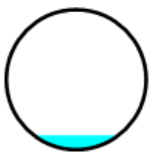
Summary for Reach C1: CULVERT CROSSING

Inflow Area = 4.504 ac, 0.00% Impervious, Inflow Depth > 1.74" for 25-yr event
Inflow = 0.35 cfs @ 22.49 hrs, Volume= 0.654 af
Outflow = 0.35 cfs @ 22.50 hrs, Volume= 0.654 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.38 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 0.2 min

Peak Storage= 4 cf @ 22.49 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 3.63'
Bank-Full Depth= 1.00' Flow Area= 4.7 sf, Capacity= 16.04 cfs

A factor of 6.00 has been applied to the storage and discharge capacity
12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 15.0' Slope= 0.0133 '/'
Inlet Invert= 382.40', Outlet Invert= 382.20'



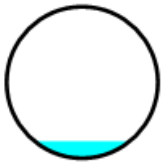
Summary for Reach C1: CULVERT CROSSING

Inflow Area = 4.504 ac, 0.00% Impervious, Inflow Depth > 2.21" for 100-yr event
Inflow = 0.44 cfs @ 20.19 hrs, Volume= 0.829 af
Outflow = 0.44 cfs @ 20.20 hrs, Volume= 0.829 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.48 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 0.2 min

Peak Storage= 4 cf @ 20.19 hrs
Average Depth at Peak Storage= 0.11' , Surface Width= 3.81'
Bank-Full Depth= 1.00' Flow Area= 4.7 sf, Capacity= 16.04 cfs

A factor of 6.00 has been applied to the storage and discharge capacity
12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 15.0' Slope= 0.0133 '/'
Inlet Invert= 382.40', Outlet Invert= 382.20'



2. CONSTRUCTION NARRATIVE:
    a. The driveway and wetland crossing will be constructed in accordance with the following sequence and techniques. It should be noted that the contractor may modify the sequence as necessary during construction after consultation with the engineer in the event that field conditions warrant a change.

INSTALLATION OF E&S CONTROLS

i. No work shall be performed prior to the installation of E&S control as shown on the plans.

CULVERT CROSSING CONSTRUCTION

ii. The existing concrete slab over culvert at the existing wetland crossing will be removed using an excavator backhoe (positioned on the existing driveway alignment). This will be disposed of in the back of a mason dump truck.
iii. Once the wetland crossing is free of existing structure, the excavator will place the 6 culverts “in the wet” as there is no current through the area. The culverts will be placed on existing grade and held in place with timbers on top.
iv. After placing the culverts, the processed aggregate will be placed and compacted around the culverts “in the wet” and up to the proposed final grade.
v. Electrical conduit will be installed.
vi. Once the culvert crossing is complete it will remain in place without the final pavement course during the duration of remaining construction and will be paved at the same time the entire driveway is paved.

STONE DIAPHRAM CONSTUCTION

vii. After the culvert crossing is completed, the stone diaphragm will excavated and filled with stone before any other driveway work is performed.

DRIVEWAY GRADING AND CONSTRUCTION

viii. Upon completion of the stone diaphragm, the driveway will be graded to final grade minus asphalt pavement thickness.

PAVING

ix. The final task will be to pave the entire driveway.

3. WETLAND FUNCTIONS AND VALUES IMPACT:
    a. The wetland system being impacted by this development includes the following functions and values:

WETLAND FUNCTION AND VALUES	SUITABILITY	IMPACT
Groundwater Recharge / Discharge	Principal	No Impact
Sediment / Shoreline Stabilization	Unlikely	N/A
Floodflow Alteration	Principal	No Impact
Fish and Shellfish Habitat	Principal	Short term, minor impact during construction
Sediment / Toxicant / Pathogen Retention	Secondary	No Impact
Nutrient Removal / Attenuation	Secondary	No Impact
Production Export	Unlikely	N/A
Wildlife Habitat	Secondary	Short term, minor impact during construction
Recreation	Unlikely	N/A
Educational Scientific Value	Unlikely	N/A
Uniqueness / Heritage	Unlikely	N/A
Visual Quality / Aesthetics	Secondary	Short term, minor impact during construction
Listed Species Habitat	No	N/A

4. Re-Vegetation Narrative:
    a. It is the intent of the applicant to re-vegetate all disturbed areas in the upland review area and the wetland area with an appropriate seed mix in accordance with 2002 Connecticut Guidelines for Soil and Erosion Sediment Control.
    b. All excess material not used for backfilling / grading during construction must be evenly spread onto the disturbed areas to restore grades.
    c. Topsoil removed during construction will be replaced, seeded, and mulched.
    d. Revegetation shall be performed within 7 days of completion of final grading.

5. WETLAND DISTURBANCE AREA TABLE

WETLAND DISTURBANCE AREA TABLE	
	AREA
Placing E&S Controls	50 SF
Cutting Vegetation	104 SF
Earthwork	0 SF