# *Ian T. Cole*

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March 8, 2021

Inland Wetlands and Watercourses Commission
North Stonington Town Hall
40 Main Street
North Stonington, CT 06359

RE: Wetland Analysis – Lee Winakor, 2021 Wetland Application for Shoreline Improvements to 24 Island Road, Assessor's ID 45-8000, North Stonington, Connecticut.

Dear Commissioners:

On behalf of the Applicant, I was retained to review the proposed activities and provide comments relative to assessing potential impacts to the inland wetlands and watercourses due to the proposed shoreline improvements at the above referenced property. I have also included recommendations to the Applicant to modify the previous 2020 wetland application #20-110 to better protect the regulated resources. This revised report supersedes my pervious report dated February 8, 2021.

**Proposed Activities**

The applicant is seeking approval from the Town of North Stonington to add improvements to the shoreline of Billings Lake. The proposal includes modifying the existing man-made terraced landscape to provide a more usable lakeside area. In addition to the applicant's provided site plans, the attached Figure 2 and Figure 4 illustrates the general locations of the proposed activities which include:

1. Maintain a natural 15' wide vegetated buffer along the shoreline.
2. Prior to the start of construction, a double row of silt fence backed by conservation haybales will be staked at grade along the limits of disturbance to provide erosion and sediment controls as well as a physical barrier to mark the limits of excavation. Additionally, as needed the silt fence will be backed by Snow Fencing to ensure no boulders escape the work zone. See details in Figure 5
3. Install a 60' +/- long natural boulder retaining wall along the existing sand beach with boulders unearthed during excavation. The retaining wall will minimize the footprint of grading along the existing beach shoreline and will provide excellent stabilization at the toe-of-slope.

4. Extend the existing lower terraced landing approximately 120' south along the shoreline.
5. Within the red boxed highlighted area shown on Figure 2 below, a heavy equipment operator in controlled phases will excavate the ground to match the lower terraced elevation or until Ledge is exposed. There is a 12' elevation change. The upper terrace would be excavated from elevation 370 down to approximately elevation 358.
6. Excess soil will be temporarily stock piled as shown on Figure 2. The temporary stockpile will be enclosed by silt fence. Excess soil material that is not slated for reuse in the work zone will be moved approximately 400' away from the Lake's edge and regraded in the upland area as identified on the plans.
7. The proposed site work is anticipated to be completed within 4 weeks.
8. Following final grading, exposed soil would either be re-vegetated with grass cover or where slopes are greater than 1:1 armored with riprap.

There are no direct wetland impacts associated with the proposed activities. The proposed activities will result in a modification of approximately 7,400 square feet of upland review area, most of which has been previously graded.

**Wetland Impact Assessment**

On January 28, 2021 I completed a site visit to document existing conditions and review the proposed activities in relation to the wetland resources.

The wetland boundary is well-defined and associated with the ordinary high waterline of the CTDEEP regulated lake level of Billings Lake. The subject property has approximately 1200 + feet of shoreline. Generally, the shoreline in the vicinity of the proposed improvements is steeply sloping and vegetated by a dense shrub layer of Mountain laurel, alder, willow, and highbush blueberry.

In November 2020, Connecticut Department of Energy and Environmental Protection (CTDEEP) Land Water Resource Division's (LWRD) Supervisor of the Southeast District (*Guilford to Stonington*) and Enforcement Supervisor, Brian Golembiewski visited the site, reviewed the proposed improvements, and provided comment via email on the impact of the proposed activities with respect to the wetland resources.

Mr. Golembiewski provided CTDEEPs regulatory opinion that "*the proposal as depicted in the attached documents show no direct impact to the lake or associated wetland edge, maintains a buffer of existing vegetation and generally reflects my previous recommendations.*"

It is noteworthy that Mr. Golembiewski is a registered Professional Soil Scientist. I concur with Mr. Golembiewski assessment that there is no direct wetland impact. I have recommended several additional erosion and sediment (E&S) controls for the applicant to add to the plans to ensure protection to the Lake during construction.

I recommended that the applicant keep intact and maintain a 15-foot-wide vegetated buffer to Billing Lake in its current undisturbed vegetated state. The vegetated buffer will act as a filter to intercept and absorb nutrients and sediment carried in stormwater runoff that flows across or through the buffer. A vegetated buffer slows the flow of runoff which both reduces erosion of the buffer area and allows silt and other suspended solids to settle out within the buffer before reaching adjacent wetlands. Additionally, any contaminants attached to the trapped sediment are retained in the buffer area and do not reach the wetland. Slowing the speed of runoff also allows the water to infiltrate the soil and ultimately discharge to the wetland as groundwater rather than as overland flow thereby reducing the volume of surface runoff.

Short-term impacts during construction will be reduced through measures to control sedimentation and erosion. These measures will minimize the chance that siltation and sedimentation will encroach beyond the limits of disturbance or into the regulated wetlands. These controls as well as compliance with the state and local regulations and permit approvals will assure that no permanent adverse effects will impact the receiving wetlands or wildlife habitat. As the proposal does not include any direct wetland impact, and the activity of constructing a terraced the landscape is inherently an engineered solution to reduce the risk of erosion and minimize runoff, no secondary effects are anticipated to have an adverse effect on the wetlands and watercourses.

**Conclusion**

Many of the residential lots with Lake Frontage on Billings Lake have a developed man-made shoreline. The applicant's proposal provides a suitable vegetated buffer and will provide a stable shoreline while maintaining the ecological integrity of Billings Lake. It is my professional opinion that the applicant's proposed activities will not reduce the natural capacity of the wetlands, and the reformation of the landscape and grading if appropriately constructed with maintained E&S controls until the site is stabilized, does not pose a significant impact or adverse effect to the wetland resources.

For commissioners who may have not had the opportunity to visit the site I have attached several photographs which demonstrate the site's stability.

Please do not hesitate to contact me at (860) 514-5642 if you have any questions or need any additional information.

Sincerely,

Ian T. Cole
Registered Professional Soil Scientist
Professional Wetland Scientist #2006

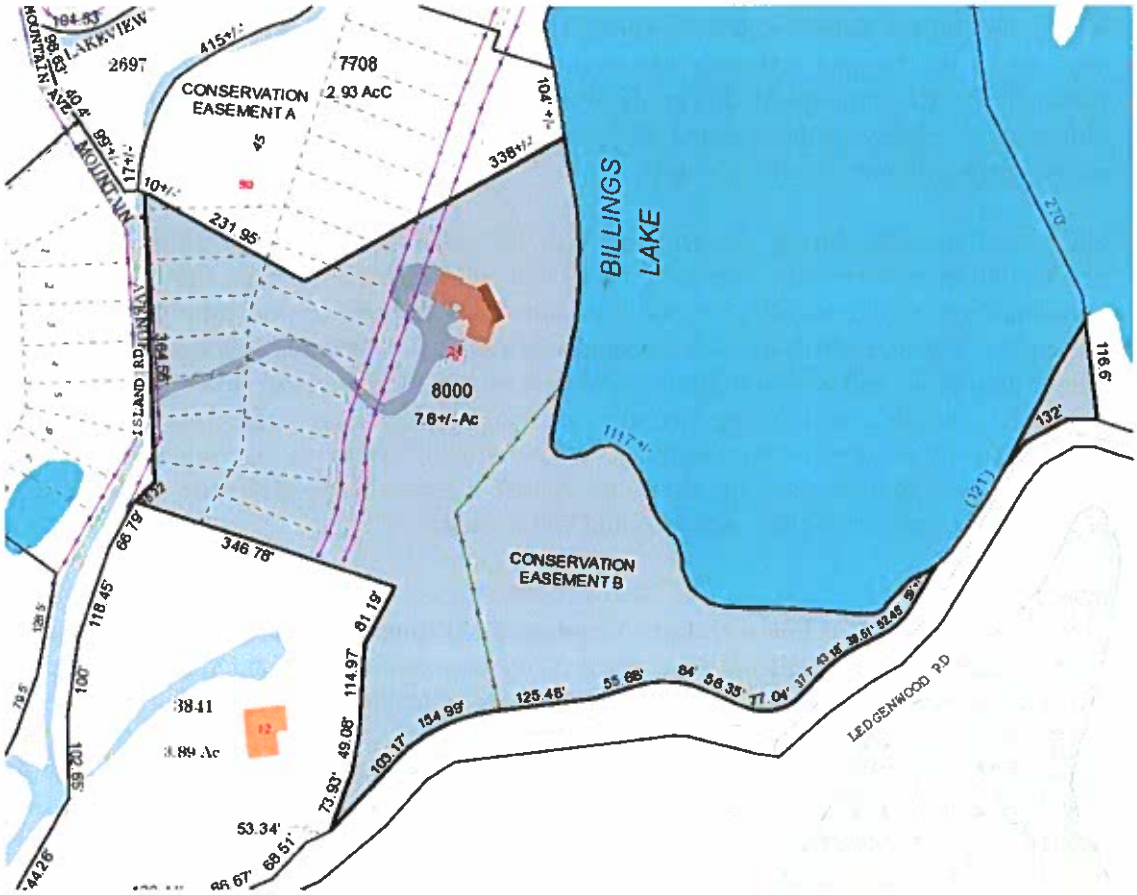


Figure 1: GIS Parcel Map of 24 Island Road


FIGURE 2 : Proposed Shoreline Improvement Location Sketch


Figure 3: Topographic Map

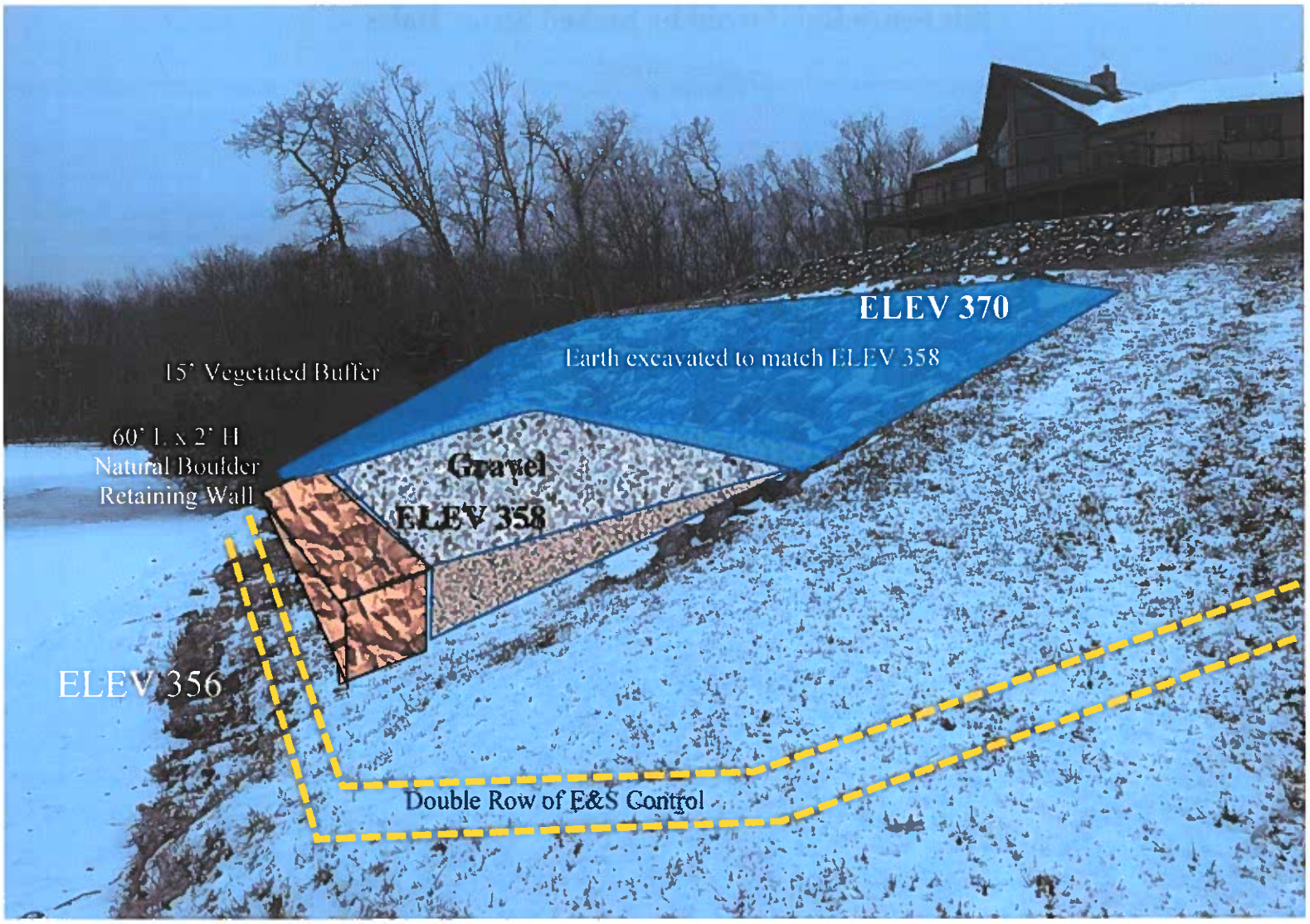


Figure 4: Visual Simulation of Proposed Activities

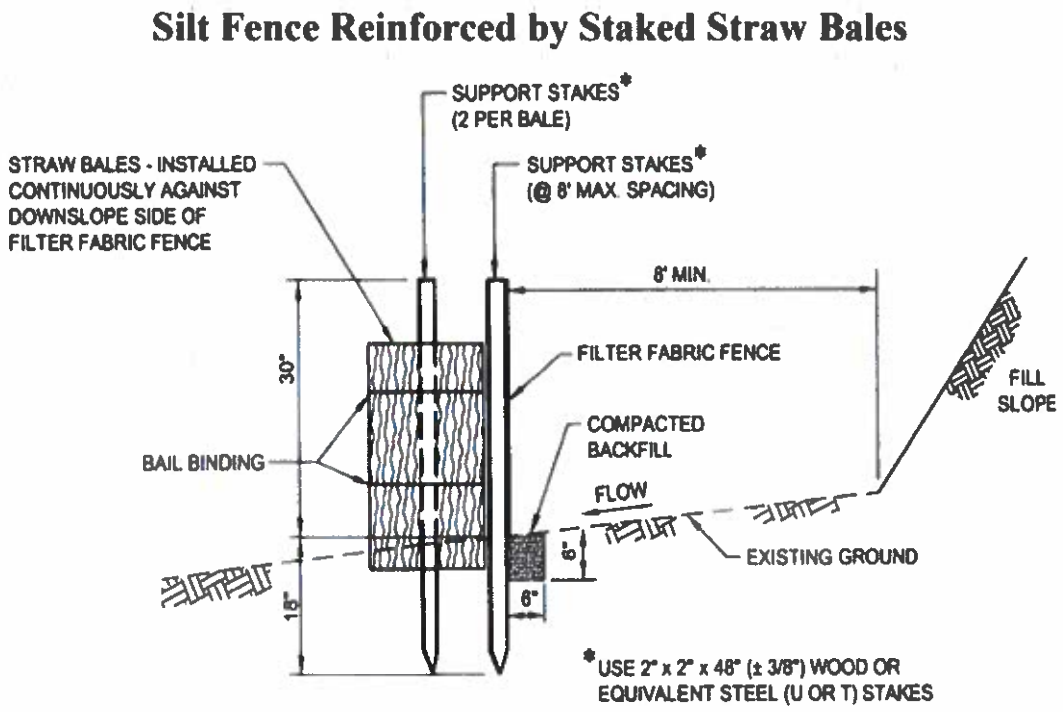


Figure 5: Erosion and Sediment Control Detail

Photo 1: Lakeside view of existing conditions, illustrating grade change.


Photo 2: Top of existing terrace which is proposed to be excavated to match lower-level grade or expose ledge.

Photo 3: Proposed upland area for excess excavated soil which would be re-graded to blended into landscape between the two ledge outcroppings.