

Feb. 11, 2021

Jeffery Dewey, P.E., Project Manager  
BL Companies  
355 Research Parkway  
Meriden, CT 06450

**Re: IWWC #A20-10.3 / SIGNIFICANT IMPACT / 5 Research Parkway /  
Muddy River – Montante Construction, LLC - (industrial development)**

Dear Mr. Dewey,

Comments are provided below – in two sets, first, primarily for Project Engineer to address, and second, primarily for Wetlands Scientist to address - so that the Project Team can continue to improve the application as we move through the process. As conference time with the Wetlands Scientist present is foremost, we may want to focus on the wetlands issues first and meet again for engineering review.

This letter follows-up on:

- Further review of your application submittals to date,
- Nov. 4 and Nov. 6 conferences with this office,
- Dec. 10 virtual conference discussion which focused on the need to provide an adequate erosion control plan and the possible use of the two ponds, Items raised during the Public Hearing Special Meeting (Remote) on November 10 by the IWWC and BY the public
- Dec. 23 submittals
- ‘Wetlands Assessment & Impact’ report prepared by Davison, submitted Dec. 23,
- Contingency Plan, submitted Dec. 23
- Partial review of revised site plan set submitted Dec. 23 as it relates to wetlands and watercourse issues in particular.

At our conference<sup>4</sup> on Feb. 16, we can discuss the most appropriate format for submittal of corrected/additional information.

## **I. COMMENTS PRIMARILY FOR PROJECT ENGINEER**

### General – Miscellaneous

- 1) Newspaper article on Nov. 10, 2020 Public Hearing indicated Bill Manley, of Calare, stated, “*new plan produces almost 14 acres of woodlands*”. Clarify what he may have meant.

- 2) Provide figure for amount of land area anticipated to be ‘opened-up’ at any one time during the entire Project. Where is this figure (or a narrative) provided in the submittals? If not already provided, provide.
- 3) Where is the proposed lowering of the Small Pond (by 2 feet) described and/or depicted in submittals? Does this proposal represent a change post Dec.23 submittals?
- 4) Is there a plan change relative to water mains and Carpenter Lane since Dec. 23 submittal?
- 5) DEEP requires an Emergency Action Plan (EAP) to be updated once every two years. When was the last update for the Large Pond’s dam? What is the dam’s hazard rating?
- 6) Is the existing trails system proposed to remain and be periodically maintained?
- 7) Where are the ‘*Eastern Box Turtle Protection Plan*’ areas and *Eastern Box Turtle Protection Plan*’ protocols provided in site plan set? If not there, provide in next plan set submittal.
- 8) Shouldn’t the existing access road (near southern property border) off Barnes Road (loop road) be gated?

#### Landscaping Plan

- 1) Does not include the ‘*Habitat Restoration Plan*’ (information as presented on HR-1’ sheet). This should be provided somewhere in the site plan set, perhaps on Landscaping Plan sheet? Provide (unless I missed it.)
- 2) Depicts alphabet-symbols for ‘landscape-type’ tree plantings but these does not have a corresponding legend provided on the sheets. Provide.

#### Stormwater Plan

- 1) In conference, please review with this office the overall storm flow plan of existing verses proposed.
- 2) Previously, this office requested that approximated depiction of all existing culverts passing under roadways or through easements – including where Muddy River exits the site - be depicted. Revised plans omit same. Provide - schematic approximations are ok.
- 3) The existing southern parking lot flows – whole area and drives - drain to the Small Pond. Unclear how they leave the Small Pond and where they go from there. Do they exit to a wetland as indicated on page 6 of the ‘Wetlands Assessment’, or are they held in the Small Pond until OSC is overtopped wherein they flow into Large Pond? (I could not find that information in Wetlands Report but perhaps it is provided in some other document submitted.) Let’s discuss at conference.

- 4) Regarding the above, during the Construction Phase, at what size storm is it anticipated that possibly silty flows would exit the Small Pond and enter the Large Pond?
- 5) Is flocculent use proposed for the Small Pond? If yes, what circumstances would trigger its use in the Small Pond?
- 6) Today there is no southern storm basin and parking area and driveway flows are directed to the Small Pond. Can some of the proposed southern parking area storm flows (and construction flows) be directed to the north to feed that wetlands area located between the proposed Storm Basin #5 and the Small Pond? Let's discuss at conference.
- 7) In Nov. 10 Power Point document (submitted Nov. 18), we need to review 'Site Hydrology' plan therein, with this office:
  - a) Clarify blue lines in southern half of plan depicted.
  - b) The catchment area depicted in above plan is incorrect on the southeastern side as the drainage does not run along the property line here but actually extends further to the southeast. Why is it depicted like this? How does this affect the calculations? (This same issue was brought to your attention in October.)
- 8) Dec. 22 plans depict a much longer length of 'level infiltration trench' than the length of the previously proposed level spreader to discharge and disperse flows from the Storm Basin #5. This is a good improvement, however, it appears on the far southern end of the 'level infiltration trench', flows will travel downgradient and may enter private property at the southerly property line. Address.
- 9) Address the following to clarify the 'flow volume increase issue':
  - a) Because the flows are proposed to be detained to meet the requisite existing peak flow rate, the flows will continue to be discharged for a longer period of time after a given storm event and thus flow volumes overall (not at one point in time) increase to the designated receiving watercourse or wetland post-construction. Do you disagree with this characterization? Is it fact based or purely anecdotal? (This is generally expressed as a concern for change in conditions offsite downstream.)
  - b) Provide clarification of how your plans '*manage volumes*', i.e., where does all the increase in water volume resulting from surface areas that do not infiltrate ultimately end up?
  - c) What do your proposed plans provide to manage volume of flows that typical plans do not provide as typically volumes increase after development? Explain.
- 10) Provide a narrative how storm flows that currently runoff the existing southern parking area/drive into catch basins and hence to Small Pond are proposed to be handled in transition and re-routed to the new stormwater system and hence to Storm Basin #5, with some going to Small Pond.

- 11) Level infiltration trenches need to be called out as such to highlight there locations, e.g. the unit located northeast of the north end of Large Pond is not, - maybe others.
- 12) Daycare center:
  - a) Storm basin is omitted from all site plans set sheets. Provide on all pertinent sheets.
  - b) Revise Stormwater Management Maintenance Plan to provide regular maintenance of all different stormwater facilities (include types) around the daycare area.

#### Erosion Control Plan

- 1) Peer Review Draft report by George Cotter was hand-delivered Feb. 10. – not yet reviewed.
- 2) Independent E & S Implementation Monitor will be required by Town and will be onsite at all times (was a requirement of 2018 permit approval - details to be provided later on).
- 3) Regarding ‘*Erosion Control Contingency Plan*’, EX-19A & EX-19B, copies of these sheets need to be included in the final site plan set.
- 4) Regarding the ‘Contingency Plan’, at the mid-forested swamp crossing, should a significant amount of sediment be building up in detained flows upgradient of the stop-log installation, would it be feasible to plan for the pumping of flows to a unit for treatment or to a temporary upgradient contingency sediment basin near this location should such treatment be warranted? Explain.
- 5) Clarify if a ‘wash rack’ is proposed, as was in 2018 plan, and if yes, location. If no, why isn’t one needed during construction phase?
- 6) Snow disposal areas are depicted on the site plan. The IWWC feels runoff from melting snow piles needs to be pre-treated. Verify that this is the case for every snow disposal area provided.
- 7) A settling basin area was provided in the 2018 plan to the south of the anti-tracking pad on the sloping driveway (off Research Parkway) to intercept storm flows travelling down both sides of the pad toward the wetlands. (This features was previously requested.) Provide.
- 8) Add to E & S Plan – on pertinent sheet for respective phases - (if not already provided thereon):
  - a) Add location of E&S Control Supply Storage Container - to be installed at onset of site preparation.
  - b) Add note that E&S Control Supply Storage Container is to be kept fully stocked at all times with products and re-stocked ASAP upon use of product.
  - c) Add signage indicating DEEP Emergency Spill Reporting contact number and “*Wallingford Public Drinking Water Supply Watershed*” to be

displayed prominently on outside of all site trailers and Erosion Control Storage Containers.

- d) Add note: Should there be a hiatus in site activity between this Demolition Phase and the Construction Phase – be it regarding weather conditions, change in plans or scheduling – disturbed areas must be stabilized to the satisfaction of the Implementation Monitor, and monitoring for adequacy of erosion control measures by the Implementation Monitor and the Permittee’s designated Site Monitor is to continue throughout any ‘quiet period’.
- 9) Location of proposed riser pipe installation for lowering water level “12 inches” in Large Pond is not depicted on the E&S Plan sheets (may have been obscured by the Legend Block in upper left corner of plan sheet). Provide
- 10) Regarding Demolition Plan sheets:
- a) It is hard to believe that only three temporary sediment traps are adequate for this phase given the amount of ground to be disturbed. At minimum one should be provided near southern property line for when that access road is torn up – or maybe rows of staked hay bales across the steep slope of this roadway would suffice?
  - b) Add diversion trenches to direct flows to these TSTs.
- 11) Regarding the proposed use of Faircloth skimmers:
- a) How often are these anticipated to need to be cleaned out or replaced?
  - b) How do they function when there is ice in the sediment traps? Are they removed during low temperature (below freezing) periods? If affirmative, indicate in erosion control plan monitoring requirements in plan.
- 12) How do you proposed to forestall possible downstream impacts offsite during the construction phase, i.e. what sediment control contingencies are proposed in the event turbid (silty) flows are running offsite, e.g. turbidity curtains?

#### Water Quality-related Impacts

1. Provide a standard for acceptable turbidity levels in the Muddy River as it leaves the site. What is the mechanism for the determination about levels of turbidity/ suspended silt beyond subjective determination? Provide (if not already provided somewhere?).
2. Water Division is requesting proposed deicing material use on parking areas and drives to be restricted to non-sodium chloride? This stipulation appears in the proposed Site Operations & Management Plan. Provide suggestions regarding practical means of insuring this restriction is respected moving forward.

#### Earthwork

- 1) For the big ‘cut’ into slope in northeastern corner of site, wasn’t ‘geo-webbing installation’ proposed to insure integrity of sharp slope. Has it been foregone? Explain why it is deemed no longer necessary but once was.

#### Blasting information

1. Applicant had indicated that blasting of certain areas is possible. Provide this information and indicate areas on site plan (pertains to E&S and weeping).
2. During the 2018 development permit process, certain preliminary steps were taken in regard to possible impact of blasting activities on nearby private properties. Is this proposed?

Terracon letter (submitted Dec.23, 2020)

- 1) Comments appear to reflect Terracon's review of the BL's stormwater management reports of Dec. 2, 2020 compared to their own 2018 Hydrogeology Report of the 2018 development proposal and they state the difference/changes as less of an impact. This office agrees with Terracon that the current revised plan (no matter the date) appears to provide more groundwater recharge opportunities for the proposed development's engineered isolated stormwater discharges. That was not the concern expressed by Mr. Heilman and this office however. The concern expressed concerned removal of overburden soil deposits, deposits which today function to infiltrate rain water all over the northeastern hillside and slowly release it via groundwater downgradient to the wetlands. When a 20 ft. to 50 ft. layer of overburden (correct figure?) is removed down to the bedrock layer beneath it presents a whole new set of conditions. Development is proposed all along the wetlands boundary (to within 35 feet at closest point) resulting in loss of upland recharge area here as well. The latter is mitigated in small part through installation of several level infiltration trench facilities – at locations 150 feet or so apart along this encroachment area. The historic slow-release of groundwater flows all across the base of this hillside area to the long expanse of swamp below is significantly lost. The letter sidesteps this matter. Do any of the proposed engineered storm flow infiltration devices/measures provide a slow, sustained release after storm events? If affirmative, that has not been made apparent in Terracon's document.
- 2) Letter states, "... we have also reviewed the Stormwater Management reports dated Dec. 2, 2020." The Applicant did not submit any stormwater management reports dated Dec. 2, 2020. Clarify.
- 3) Letter does not state that Terracon reviewed a recent site plan. Clarify.
- 4) Letter states that 2018 borings indicate groundwater was found at 6 feet down in the wetlands but groundwater was not found in boring results in the hillside area.
  - a) The document did not indicate if that was an unusual finding for October in a drought year (which I believe it was). Clarify.
  - b) Explain how a drought year may have affected these findings.
  - c) Where was this particular wetland boring (referenced above) relative to the wetlands in this vicinity that the Wetlands Scientist has indicated in his report exhibit surface ponding? Clarify/explain.
  - d) Regarding the above, as the referenced area is a demarcated wetland, seasonal hydric conditions are found within a certain distance below the surface. Clarify how a wetland soil would be identified by mottling characteristics, etc., given that the groundwater was found at 6 feet down? Is that atypical for a wetland soil?

- 5) When the rain infiltrates on the hillside today, where do those groundwater flows end up and what path do they travel to get there? Or does Terracon believe there is no subsurface infiltration and recharge and most flows travel downgradient overland to the wetlands below? Clarify. Provide.

## **II. COMMENTS PRIMARILY FOR WETLANDS SCIENTIST**

The comments are presented below in three areas: Regulated activity list request, Report document comments page by page, and general topics that were insufficiently addressed in the Report that Davison Environmental should address under the pertinent section of the Wetlands Assessment document.

### **A. Regulated Activities List Requested**

A copy of the list of regulated activities for the 2018 development plan for this property (prepared by this office at the time) was provided to the Applicant early on and a copy of the 2018 listing is provided below. An accounting of proposed regulated activities on the property (and in Carpenter Lane) is requested to be provided following the format of the 2018 listing. The impact of each proposed regulated activity needs to be addressed per respective impact - rather than generically – with figures for proposed impact areas.

This office emphasizes that the scale of the subject Application does not obviate the need to identify and assess the impacts of individual proposed regulated activities as would be required of any permit application.

#### Regulated Activities in 2018 permit application

Twenty-four (24) regulated activities were approved in the 2018 permit, presented below by type of regulated activity under applicable Regulation subsection. Provide similar listing in same format for this application. Impacts of the proposed regulated activities on wetlands and watercourses- whether direct or indirect – should be discussed either associated with the listing or in body of revised report.

#### Under 2.1.z: Activity directly within wetlands or within watercourses

- Excavating and filling wetlands (457 s.f.) for construction of retaining wall/drive
- Drawdown of existing Large Pond and Small Pond throughout demolition and construction phase (by controlling drawdown gate valve) with precautions taken for aquatic life; and the introduction of construction site flows and flocculants to ponds
- Activities related to Carpenter Lane modifications entailing lowering grade of road and lowering tops of catch basins in two vicinities where flows discharge to Town drainage easement areas
- Activities related to Carpenter Lane modifications entailing lowering grade of road and lowering tops of catch basins in two vicinities where flows discharge to wetlands located on Eversource Energy property

- Introduction of construction site flows to onsite wetlands areas by filtration of flows through silt fencing

Under Sect. 2.1.z.2: Activity creating surfaced area increase over 10,000 s.f.

- Net proposed increase in surfaced area to be created on site: 1,523,441 s.f.
- Total surface area proposed on completed site (a 128% increase): 2,449,250 s.f.

Under Sect. 2.1.z.3: Activity within upland review area (within 50 feet of a wetland or a watercourse)

- Grading/berming/excavating/stabilizing adjacent to “perched” northeastern wetland
- Disturbances due to utility demolition
- Disturbances due to utility demolition
- Construction-related grading, utilities, retaining wall work near proposed southwest corner of Warehouse #1
- Construction drive, utilities, driveway near entranceway at Carpenter Lane
- Construction-related grading/utilities/retaining wall activities near southwest corner of Warehouse #1
- Re-construction and grading of existing drive for “emergency drive”
- Construction of road, utility installation and retaining wall construction immediately south of Muddy River culvert crossing
- Discharge of overflow drainage from upgradient sand filter to Large Pond
- Road, utilities, retaining wall construction between the two existing ponds
- Utility installations at day care center area near stream crossing
- Creation of mitigation wetland in upland
- Carpenter Road modification work near Town drainage easements and wetlands
- Carpenter Road modification work near Eversource Energy culvert and wetlands
- Discharge of a portion of Warehouse #1 roof flow to Muddy River
- Discharge of a portion of Warehouse #1 roof flows to location upgradient of wetland near emergency road and central footbridge area
- Discharge of a portion of Warehouse #1 roof flows upgradient of northern wetland
- In southwest area of site, introduction of storm flows to Muddy River and associated wetlands from upgradient discharge of flows from outlet of (new) stormwater basin

**B. Comments specific to “Wetland/Biological Assessment and Impact Report”, dated 12/22/20 – (with pertinent page numbers)**

- 1) Page 3, Regarding Section 2.0, ‘General Site Description’;:
  - a) Any reference to the location of the site within the Wallingford Watershed, a public drinking supply watershed, was omitted. Add to this section.
  - b) The designation of the Muddy River (onsite) as a Class AA tributary to a public drinking supply reservoir was omitted. Add to this section.

- 2) Page 4, Regarding Table #1, '*Wetland Flagging Sequences*':
  - a) Last entry in table: '*Eastern site boundary along right of way (existing wetlands flagging utilized)*'. Clarify this reference. Are the flags still there in the field? Provide the numbers if flags are numbered. If they are not numbered, why aren't they numbered? All wetlands on site should be flagged and numbered. Are the flags in field and on plans from 2018 flagging? If yes, are they still up? Clarify and provide.
  - b) '*Regulated areas-mapped but not field flagged*'. Clarify. How do they become 'mapped' while not being 'field flagged'?
  - c) In Dec. 22 letter to this office, Project Engineer, stated, "*Northeastern wetlands (flags #1 Y to 43 Y) added swale along drive to collect potential slope weep.*" (I believe he left out that both were added.) Wetland Report does not mention slope weep. Add somewhere.
  
- 3) Page 6, at top, "*Unnamed perennial watercourse that flows through northern swamp south to large Pond area.*" (This office notes that this stream is depicted on Existing Conditions sheet in site plan set.) Description (width, etc.) and photograph was omitted from Report and should be provided. As this area is proposed to possibly have Stop-logs installed, information on existing conditions of this perennial stream has extra importance.
  
- 4) Page 6, Table 2, indicates, "*Wetland 1 E: The southern stormwater pond [aka Small Pond] which drains via a culvert to a forested shrub swamp that drains to the Muddy River ....*". Verify that this pond does, in fact, discharge as stated. I cannot discern that from the site plan set.
  
- 5) Page 6, references certain wetlands in Wetland #1 onsite are '*permanently flooded*'. Provide a rough approximated depiction of this area on the appropriate plan sheets.
  
- 6) Page 15, Regarding the northeastern wetlands, text indicates, "*Physical groundwater control measures have been incorporated into the plan*", answer the following:
  - a) What '*groundwater control measures*' are proposed? Provide in answer in text.
  - b) Where are they located on plan? (Was this eliminated?)
  - c) Does statement imply that the cut slope is not anticipated to weep in this vicinity? Any weeping of groundwater should be discussed.
  
- 7) Page 15, Regarding proposed use of Eastern Hemlock:
  - a) Provide latest status on longevity of the recommended Eastern hemlock in terms of the wooley adelgid problem and confirm that this is no longer an issue for hemlocks to thrive?
  - b) Proposed here is a "*1:1 mix of two species*". Correct text as only one species is named here.
  
- 8) Page 16, Clarify if Eastern Box Turtle Protection Plan proposed is a '*mitigation*', as per text. The IWWC interprets '*mitigation*' as some enhancement the

Applicant offers or that the IWWC may request to ‘offset’ overall or specific impacts proposed.

- 9) Page 16, The following six (6) regulated activities ‘*directly within wetlands and watercourses*’ were omitted from bulleted list in section ‘7.1.’ – and there may be more. (See initial comment, Regulated Activities List Requested, above. Somewhere in the Report the proposed regulated activity impacts should be discussed):
- Drawdown of Small Pond
  - Use of Small Pond for settling basin function for site flows during Construction Phase
  - Re-routing of flows currently discharging to Small Pond and hence to Large Pond now proposed to enter the proposed southern Storm Basin (SWQB #5) with discharge to the wetlands to the southwest.
  - Drawdown of Large Pond and installation of riser pipe (if still proposed)
  - Use of Large Pond for settling basin function for site flows during Construction Phase
  - Discharge of roof flows to Muddy River (mid-site where it enters subject property) in vicinity of eastern property line.
- 10) Page 16, Regarding the section, ‘*Mitigation Plan*’, it is noted that the ‘Wetland and Biological Assessment’ document submitted Oct 6, 2020 devoted 3 pages to the detailing of a 5,400 s.f. Wetlands Creation Area to be located just south of Small Pond. Why was this ‘mitigation’ omitted?
- 11) Page 16, Confirm that all 15,580 s.f. of habitat restoration lies within wetlands, per text– as opposed to a portion within Upland Review Area.
- 12) Page 16, “*Total surfaced area increase (compared to prior use): 801,540 s.f.*”. Clarify if this means total net increase in surfaced area (which is figured as proposed surfaced area minus prior use’s surfaced areas. (This assumes we are counting the rubble pile as prior uses’s surfaced area.) So the proposed will result in 801,540 s.f. more surfaced area than the previous use, correct?
- 13) Page 17, Correct reference to Section 9 in text as it is Section 10.
- 14) Page 17, Text indicates lowering of in two ponds as a contingency measure in advance of a large storm event. My current understanding is that the ponds will be lowered at the start of Demolition Phase. Clarify with Engineer and correct this text as may be needed. The impact would be different - see more below under “Ponds” section.
- 15) Page 20, Provide information to support the statement in text, “*Not counting recharge that will occur in the detention basins, groundwater recharge volume provided exceeds the minimum DEEP requirement by a factor of 8.5 : 1*”.
- a) Where does this figure come from?
  - b) Where exactly are you accounting for groundwater recharge in this statement?

- c) Clarify if ‘*detention basins*’, as used here, refers to subsurface units or surface storm basins.
- 16) Page 20, Report does not adequately address the potential loss of groundwater recharge in the areas located upgradient to the east of the western forested swamp wetlands. The former area is proposed to be significantly ‘cut’ and overburden removed resulting in loss of recharge area here which currently holds the groundwater while it moves slowly down gradient westward feed in the wetland below. Describe how this function has been ‘*mimiced*’ (per Report) in the proposed plan as it appears the proposed recharge provided (via flows from infiltration trenches, sand filters, basin bottoms) is, a.) located close to the wetlands being fed, and, b.) is occurring immediately, over a short duration after storm events – not slowly as occurs today.
- 17) Page 20, States “*the northeast wetland is supported by a perched water table.*” How do we know that to be the case? Provide.
- 18) Page 20 & 21, Regarding proposed activities to the west of the offsite northeastern wetland, will this ‘cut’ result in weeping of groundwater down the ‘cut’ wall slope? The text omits any mention. Address.
- 19) Page 21 – Section entitled, “*Discharge of degraded surface water or groundwater*”, clarify if this title was supposed to be “*to groundwater*”? If yes, correct. If not, explain. (This section would be more accurately entitled, “*Post-construction discharge of degraded surface water*”, as it discusses post-construction conditions only.)
- 20) Page 22, Section 9.0, ‘*Wetland and Wildlife Impact Mitigation Measures*’, needs further information added to address the following:
- a) Omitted reference in the text to the ‘Habitat Restoration Plan – HR-1’ sheet (copy provided in pocket of report). Add sheet reference to text.
  - b) Provide more information regarding Eastern box turtle protection, as follows:
    - i. Text indicates plan was modified to preserve 1.5 acres of box turtle habitat but text omits location of same and sheet HR-1 does not depict same. Add to text and depict on some plan sheet (unless I missed it on some sheet).
    - ii. Address why this particular 1.5 acre area was selected. (Report indicates only one live box turtle was found on site, so selection of this particular area is of interest.)
    - iii. Reiterate here - in this section - that box turtle protection from construction activities is proposed to occur over the entire site during tree clearing phase, demolition phase, construction phase and stabilization phase, if that is the case. If it is not proposed in all phases, this should be provided to occur.
- 21) Page 22, Text does not mention any mitigation or restoration plantings proposed for northern half of site? Is there any? (No HR-2 sheet was submitted.) Address

why no restoration activities or eradication of invasive plants are proposed in north. Certainly, there are acres of Autumn olive growing there observed all along the eastern border of the western wetlands system. Was it considered but rejected for some reason?

- 22) Page 23, Provide a definition (with dimensions) of the term, ‘scalp mowed’ as used herein.
- 23) Page 23, In Section 9.1, ‘Habitat Restoration Area Construction Sequence’, the sequencing order provided omits installation of trees and shrubs. Add installations to text in proposed sequence.
- 24) Page 24, Regarding Table 9.2, ‘Habitat Restoration Planting Schedule’:
- a) Clarify if “Sweet Gum” was intended as Black Gum also known as Sour Gum. Isn’t Sweet Gum’ a different species than intended?
  - b) Regarding tree placement, text indicates “As shown”, I assume a reference to the habitat plan sheet, but it is not referenced in this section and the symbol “NS” for this tree does not appear depicted on the Sheet. Provide locations and reference in text.
  - c) Diversity of proposed planting species is very limited. Diversity is key. Was this choice driven by a desire for a landscaped “look” with uniform groupings? Clarify the following:
    - i. Explain why only one species of tree is proposed.
    - ii. Explain why only three species of wetlands shrubs are proposed.
    - iii. Explain why only three species of non-wetlands shrubs are proposed.
- 25) Page 24, Regarding the statement in Section 9.3, ‘Habitat Restoration Monitoring’, that the success of habitat restoration is measured as “at least 75% of the surface area shall be established with indigenous species within three growing seasons”, address the following:
- a) What percent (%) invasive plant species are acceptable in this scenario?
  - b) Explain in text how deer browse is proposed to be addressed for Restoration Plant Program success.
- 26) Page 24 & 25, Regarding Section 9.4, ‘Eastern Box Turtle Protection Plan’, provide further information and clarification regarding the following:
- a) Regarding Box turtle protection efforts, the pertinent areas should be scouted for presence of box turtles immediately prior to tree-clearing operations on the site. Do you concur? If yes, add.
  - b) Reiterate here - in this section - that box turtle protection from construction activities is proposed to occur over the entire site during tree clearing phase, during the demolition phase, during the construction phase, and during the stabilization phase, if that is the case. If not the case, explain.
  - c) Report calls for use of non-reinforced silt fencing. Clarify as Engineer indicated ‘reinforced’ silt fencing material will be used to prevent possible breaching of silt fence, I believe.

- 27) Page 26, Per text, “*Prior to start of construction each day, the Contractor shall search the entire work area for turtles*”. Do you really mean Contractor or is this Contractor’s biological consultant? Somehow, given the size of the work area, I do not think this will actually occur.
- 28) Page 27, Regarding Section 10, “*Contingency Plan*’, and Section 10.1, ‘*Temporary Water level control at existing stream crossing*’, address the following for the latter proposed regulated activity:
- a) Text discusses wetland but omits characterization as a swamp. It is a swamp (elsewhere in report termed such) and, as such, may be inundated.
  - b) No information has yet been provided as to typical water levels that can be expected during the year in this northern swamp. Provide.
  - c) Text states, “*there will not be any significant accumulation of sediment at any one point*” and indicates that sediment – if there is any after a big storm event - would collect in the ‘*pool*’ located upgradient for the crossing but gives no basis for this assumption such as elevation information. Provide.
  - d) What are the dimensions of this ‘*pool*’ - in springtime and in dry period of the year? Provide.
  - e) Wouldn’t the silt-laden flows back up in the swamp leaving a silty film all over the ground growth and tree trunks when waters recede?
  - f) Under “*Contingency Plan*’, correct text as it indicates lowering of the two ponds as a contingency measure in advance of a large storm event which I believe has changed.
- 29) Page 28, Regarding Section 11.0, ‘*Conclusion*’,
- a) Discussion of many elements were omitted from report – see items above and topic areas below.
  - b) Overall, it appears the single greatest concern relative to impact of the development proposal is in term of water quality. Due to the fine, silty composition of the soils onsite, turbidity in the Muddy River seems inevitable, even given all the erosion controls and precautions provided in the revised application. The Report does not address this adverse impact directly however. Provide.

C. **Topic Areas Not Adequately Addressed - To Be Addressed in Revised Report**

Ponds

1. If the term, ‘*ornamental pond*, per report, is to be used, a definition of same is requested as this office is unfamiliar with the term, except when referring to a koi pond. Provide.
2. Report omitted description of aquatic life in ponds, e.g. large fish were reported.
3. Clarify latest proposal of when the lowering of the two ponds would be conducted, e.g. pre-demolition phase, or pre-construction phase?

4. Clarify if the Large Pond still is proposed to be lowered to the bottom in order to install the proposed riser pipe or just one foot down?
5. Report omitted addressing possible impacts to the two ponds from the 'lowering' activity' mentioned in report. Response should address impact of lowering for each pond respectively relative to:
  - Description of existing aquatic life
  - Depth of proposed lowering
  - Different impacts anticipated for given season lowering may be conducted
  - Impact on fish life
  - Impact on other pond life
  - Proposal regarding planned re-location/protection of bigger pond life
  - Once lowered, anticipated impacts and issues relative to different seasons, e.g. impact of low dissolved oxygen levels in summertime and its effect on aquatic life and algae blooms, etc., or impacts with frozen /ice conditions relative to aquatic life and relative to functioning to settle incoming silty flows
  - How much degradation of water quality from suspended silt is tolerated by various aquatic organisms living in these ponds?
6. How does the Small Pond drain today? Provide.
7. How will use of Small Pond for settling basin change the existing drainage pattern, e.g. less flow into Large Pond?
8. Draining of 2 foot-depth from Small Pond into Large Pond needs to be proposed to be coordinated with the proposed lowering of Large Pond by 1½ feet (revised plan indicates 12 inches?). What is the best sequence in terms of least impact to current aquatic life in the Large Pond from these two related draining activities?
9. How will the flocculent use impact the two ponds? (Mr. Cotter suggests use at small footbridge located across very tip of Large Pond and, I believe, in Small Pond as well-?) Provide.
10. Report omitted proposed restoration activity to be conducted at the close of construction period for the two ponds (this does not mean surrounding plantings). Provide for each pond respectively:
  - a. Anticipated impact on pond from its proposed function as a settling pond for upgradient construction flows at the close of construction phase
  - b. Assessment of the need for possible removal of construction-related sediments at bottom of ponds (color of sediment would be indicative). Town would need to be involved in this determination.
  - c. Process for removal activity should it be determined necessary.
  - d. In the event sediment removal is determined to be not necessary, provide anticipated impact of this post-construction sediment layer deposited on pond bottom relative to possible future pond conditions, such as:
    - i. Nutrient source for algal blooms,

- ii. Stirring up of sediment into the water column during large storm events leading to possible introduction of silty flows to Muddy River below
11. Wetland/Biological Assessment and Impact Report', page 6, Table 2, indicates "Wetland 1 E" is the "southern stormwater pond" [aka Small Pond] and it drains south to forested swamp and hence Muddy River. Provide information on the outlet of Small Pond as described. If it does drain thusly, provide impact information for pond's silty flows that will exit the pond to the swamp (assuming they will). Are there any erosion controls proposed for that discharge area? If no, provide. (I think it does not drain here.)
  12. Omitted discussion of impact of the proposed decrease of storm flows to be directed to the Small Pond. Most of the storm flows from the proposed parking area and drives are proposed to enter the enormous new southern storm basin SWMB #5. Today they enter the Small Pond. This appears to be a big change. Discuss.
  13. Provide discussion of impact to eastern side of Small Pond once the level infiltration trench (length of approx. 150 feet) is installed above the pond and collected flows are discharged down this slope to pond. Is erosion a concern?

Northern Forested Swamp - (Some for Project Engineer to also address)

1. Omitted issue of possible sediment deposition in the swamp from upgradient activities, e.g. silty flows entering the wetlands on a routine basis during construction phase (as the site's soils have fine silts) and from potential breaches of silt fencing should they occur. Address this impact.
2. Provide engineering calculation relative to anticipated inundation levels in forested swamp upgradient of Stop-Logs installation, e.g., during a 5-year storm, water level in the forested swamp anticipated to rise one foot above the water level elevation that would occur during a 5-year-storm with current conditions (with no blockage).
3. Regarding above, the Existing Conditions sheet (site plan set) depicts this 'unnamed perennial watercourse', (per Page 6) that flows through the northwestern wetlands system and depicts it flowing to and under this crossing. Address the impact of blocking up this flowage of this stream - separate from the general inundation of the swamp area indicted to occur once stop-logs are installed.
4. Regarding the above regulated activity, the 'Contingency Plan' document, dated revised. Dec. 21, indicates, page 2, "All accumulated sediment to be removed prior to removal of Stop-Logs." Using "...method as approved by (Project Engineer)". Regarding the latter statement, provide the following:
  - a) Provide best method for proposed removal of 'accumulated sediment', per above, with least impact.

- b) Indicate a time period within which the removal is proposed to be completed, e.g. within one week after storm event where the Independent Erosion Control Plan Monitor has deemed that sufficient sediment has accumulated to warrant removal activities.
5. Omitted impact to Box turtle population – or other organisms - that may occur in this vicinity from the inundation of swamp when stop-logs are installed and area inundates. Provide.
6. Omitted addressing possible impact to large forested swamp from removal of soil overburden on abutting hillside to the east down to bedrock. This office agrees with Terracon that the current revised plan (no matter the date of plans they actually reviewed) appears to provide more groundwater recharge opportunities for the proposed development’s engineered isolated stormwater discharges of various designs/functions than were provided in the 2018 plan. Wetlands Scientist needs to address if these designs sufficiently replace the existing groundwater release from the hillside that serve to feed the down gradient wetlands area over the year and through dry periods such that:
- a) the wetlands downgradient will not impacted short-term
  - b) the wetlands downgradient will not impacted in the long-term.

*Flocculent Impact*

Address impact of the introduction of residual flocculent material in flows off the construction site uplands on biological systems located in receiving wetlands systems and streams, etc., and in waters flowing offsite.

Very Truly Yours,

Erin O’Hare  
Environmental Planner

## MEMORANDUM

**To:** Alison Kapushinski, Town Engineer; Erik Krueger, Senior Engineer, Water & Sewer Division; Rob Baltramaitis, Director, Public Works; George Cotter, OCC Group, Peer Reviewer; Thomas Cody, Esq., Robinson & Cole; Jeffery Dewey, Project Engineer, BL Companies; Michael Klein, Wetlands Scientist & Principal, Davidson Environmental  
**From:** Erin O'Hare, Environmental Planner  
**Date:** Dec. 4, 2020  
**Subject:** IWWC

**Re: IWWC #A20-10.3 / SIGNIFICANT IMPACT / 5 Research Parkway / Muddy River – Montante Construction, LLC – Meeting on pond(s)**

Access information to the GotoMeeting Remote Meeting will be forwarded to all next week so that all can join in this discussion regarding means to protect downstream water quality during the proposed development construction phase, the potential for adverse impact to the two ponds on site, the proposal to lower the water level in the pond(s), etc. The latter strategy was put forth by the Water Division in 2018 and was incorporated into the 2018 permit approval (see excerpts at close).

### **(Remote) Meeting**

**Thursday, Dec. 10, 2020, 10:00 a.m. – 12:00 a.m.**

Some suggested discussion elements (a drawing of ponds is attached for quick reference):

1. Importance of employing stringent and elaborate erosion controls throughout site and at lower limit of construction activities to prevent failures with consequent impacts to wetlands systems and ponds.
2. Limit the proposed 'opening-up' of 60 acres all at one time
  - a) Will DEEP Construction Stormwater Permitting allow?
  - b) Alternatives to decrease areas 'opened-up' at one time
3. 2002 Sedimentation & Erosion Control Guidelines do not account for 2020 storm conditions: heavier storms in shorter duration
4. Impacts to pond(s) during Construction Phase from siltation/sedimentation from proposed activities – with or without a drawdown
  - a) Water quality

- b) Aquatic life impacts: fish, turtles, frogs, etc.
  - c) Emergent wetlands and wetlands upstream of the Large Pond
5. Erosion control methods for protection of water quality of Large Pond
- a) Protections inside pond, e.g. turbidity curtain across north end of pond
  - b) Flocculents
6. Small Pond
- a) not connected to extensive wetlands system
  - b) can be controlled at the outlet to culvert that discharges to Large Pond
7. Impacts of a possible drawdown activity
- a) Water quality
  - b) Aquatic life impacts: fish, turtles, frogs, etc.
  - c) Emergent wetlands and wetlands upstream of the Large Pond
  - d) Seasonal considerations (drought, freezing, etc.)
8. Level of pond(s)
- a) Existing depth of pond(s)
  - b) Drawdown level (“mid-level”)
  - c) Drawdown’ sm pact on storage capacity/calculations provided
  - d) Dynamic system
9. Hydraulics/Mechanics of a drawn-down pond system
- a) How is ‘snorkel’ pipe actually to be installed
  - b) Upper water levels are cleaner than lower in silty conditions, so pump (or siphon) top layer off first?
  - c) Objective: no silty flows to go over dam – which is feasible up to a --?---yr. storm
  - d) Would ‘snorkel’ be capped in any situations?
  - e) Procedure for gate valve/culvert to be used to control levels
  - f) Pumping of high flows (upper cleaner level) over dam
10. Precautions & protections to be installed downstream of Large Pond (at several locations)
- a) in advance of initial drawdown (when murky water is drawn off near bottom of pond)
  - b) in advance of planned release of silty flows through gate valve/culvert system
  - c) in advance of silty flows discharging over dam during large storm events
11. Post-construction restoration of ponds if affected by sedimentation
- a) Establish existing pond bottom conditions
  - b) How determination of need to restore is made, i.e., how much sediment deposition is acceptable condition, if any
  - c) Interim restorations over 1-2 year construction period a possibility?
  - d) Scope of restoration required
  - e) Method of restoration

- f) Impacts of restoration
- g) Restoration Plan to be submitted

12. DEEP Construction Stormwater Permitting regarding pond (s)

- a) drawdown of pond(s) acceptable?
- b) level of acceptable impacts to pond(s) to result from construction activities with or without a drawdown

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Considerations – taken from 2018 permit:

- 1) (2018) Condition of Approval:  
*Regarding initial drawdown of the Large Pond and Small Pond associated with this permit, Permittee to perform review of condition and functionality of Large Pond's draw down gate valve and associated 30-inch diameter culvert near the spillway to assure that facilities are free of debris and there are no deficiencies; to inspect vicinity of the outlet to ensure there is proper armoring in place to avoid scour or erosion, and, if issues are found, they are to be addressed prior to any further site activities, i.e., exclusive of indoor demolition activity.*
  
- 2) (2018) Regulated Activity, Under 2.1.z: Activity directly within wetlands or within watercourses:  
*Drawdown of existing Large Pond and Small Pond throughout demolition and construction phase (by controlling drawdown gate valve) with precautions taken for aquatic life; and the introduction of construction site flows and flocculants to ponds.*

*Attachment -drawing*

## MEMORANDUM

**To:** IWWC  
**From:** Erin O'Hare, Environmental Planner  
**Date:** January 28, 2021

**Re: IWWC #A20-10.3 / SIGNIFICANT IMPACT / 5 Research Parkway /  
Muddy River – Montante Construction, LLC - (industrial development)**

### ENVIRONMENTAL PLANNER'S REPORT

Regarding the subject application, please be advised of the status as follows:

- The matter is not on the Feb. 3, 2021 IWWC Meeting agenda and the application will not be discussed outside of the Public Hearing per the Law Department.
- The Public Hearing, opened Nov. 10, 2020, will be continued at a date to be scheduled once the Peer Review reports have been completed: Erosion Control Plan Peer Review by George Cotter, OCC Group, and Peer Review of Stormwater Plan, Hydrogeology, and Wetlands Impacts by SLR International Corporation. (Note: Milone & MacBroom, Inc. was recently acquired by SLR.)

CC: Tom Cody, Esq.

## MEMORANDUM

**To:** IWWC  
**From:** Erin O'Hare, Environmental Planner  
**Date:** February 26, 2021

**Re: IWWC #A20-10.3 / SIGNIFICANT IMPACT / 5 Research Parkway /  
Muddy River – Montante Construction, LLC - (industrial development)**

### ENVIRONMENTAL PLANNER'S REPORT

#### **Status - Nov. 10 (Remote) Public Hearing to Present**

- 11/10/20: (Remote) Public Hearing opens. Hearing is continued.
- 12/2/20: IWWC Meeting: Chairman states no date set yet for continuation of Public Hearing and no extension needed
- 12/10/20: Remote conference re: E&S and use of ponds held with Applicant representatives, E&S Peer Reviewer, Town Engineer, Water Division
- 12/23/20: Revised documents & new documents submitted by Applicant [*copies forwarded in today's IWWC packet*]
- 12/30/20: Review conference held with Project Engineer & Town Engineer
- 1/8/21: Review conference held with Project Engineer
- 1/11/21: Environmental Planner forwards Scope of Work to SLR re: Peer Review of Stormwater Plan, Hydrogeology, and Wetlands Impacts and to Applicant
- 1/28/21: EPR forwarded to IWWC indicates hearing “*will be continued at a date to be scheduled once the Peer Review reports have been completed: Erosion Control Plan Peer Review by George Cotter, and Peer Review of Stormwater Plan, Hydrogeology, and Wetlands Impacts by SLR International Corporation. (Note: Milone & MacBroom, Inc. was recently acquired by SLR.)*”
- 1/28/21: Copies of all documents provided to SLR; Water Division provided copies of Watershed District regulations (per Town of Wallingford Zoning Regulations) & ‘Technical Standards & Specifications for Watershed’
- 2/10/21: E&S Peer Review “Draft Report” (7 pp.), dated 2/9/21, submitted (copies provided to Applicant & SLR) [*copy forwarded in today's IWWC packet*]
- 2/11/21: E&S Peer Review ‘Preliminary Review’ (3 pp.) with attached marked-up Demolition Phase and E&S Phase Plan sheets (10) submitted (copies provided to SLR; Applicant received copy 1/28/21 via contractor) [*copy forwarded in today's IWWC packet*]

- 2/11/21: Comments completed by Environmental Planner and provided to Applicant & SLR *[copy forwarded in today's IWWC packet]*
- 2/12/21: SLR Comments (12 pp., 2 figures), dated 2/12/21, submitted (via email) *[copy forwarded in today's IWWC packet]*
- 2/16/21: Review conference held with Project Engineer & Project Wetlands Scientist
- 2/22/21: Comments from Erik Krueger, Senior Engineer, Water Division, dated 2/19/21, provided to Applicant & SLR *[copy forwarded in today's IWWC packet]*
- 2/24/21: Virtual meeting held (1 hr.) requested by Applicant for clarification of certain SLR comments of 2/12/21
- 2/25/21: E&S Peer Review partial payment authorized. Phone conference with Applicant Atty.

### **Upcoming Schedule**

- Environmental Planner to forward comments (if any) to E&S Peer Reviewer & SLR Peer Reviewers regarding recently submitted materials
- Applicant to submit:
  - Responses to respective previous comments from E&S Peer Reviewer, SLR Peer Review team, Water Division, and Environmental Planner
  - Revised documents/site plan set (incorporating the above changes/improvements)
- E&S Peer Reviewer to submit Final Report Findings upon review of Applicant's revised submittals and any further Town comments to date
- SLR Peer Reviewer to submit comments/findings upon review of Applicant's revised submittals & further Town comments to date (may not be final)
- Water Division to submit comments upon review of all of the above
- Environmental Planner to complete comments on all of the above & forward
- Applicant to submit response to all the above and pertinent revised documents, as may be needed
- Chairman to set date for continuation of Public Hearing – sometime in April

CC: Tom Cody, Esq.

Jeff Dewey, P.E., Project Engineer, BL Companies

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**INTEROFFICE MEMORANDUM**

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**TO:** ERIN O'HARE, ENVIRONMENTAL PLANNER  
**FROM:** ERIK KRUEGER, P.E., SENIOR ENGINEER - WATER AND SEWER DIVISIONS *EAK*  
**SUBJECT:** INLAND WETLANDS AND WATERCOURSES PERMIT APP. NO. A20-10.3  
MONTANTE CONSTRUCTION LLC - 5 RESEARCH PARKWAY  
**DATE:** FEBRUARY 19, 2021

CC: N. AMWAKE, P.E.; R.C. VANSKI; D. SULLIVAN; J. PAWLOWSKI; A. KAPUSHINSKI, P.E., TOWN ENGINEER; T. TALBOT, ACTING TOWN PLANNER; BYRON DELUKE, MONTANTE CONSTRUCTION, LLC; J. DEWEY, BL COMPANIES

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The Wallingford Water and Sewer Divisions received documents for the subject Inland Wetlands application on December 22, 2020 and an additional set of documents for a Planning and Zoning Special Permit application on January 8, 2021. It appears that the two sets of documents are essentially the same and we have not completed a detailed review of both sets of documents to determine if there are any differences between the two sets. The staff of the Water and Sewer Divisions first began the review of the December 22, 2020 documents and the following comments are based on that set of documents. The comments contained herein are in addition to previous comments made in my memo to Erin O'Hare dated November 6, 2020 all of which still apply.

It is requested that the following comments and questions in addition to all other comments that have been previously submitted be made conditions of approval to be resolved prior commencing activities at the site and prior to issuance of a building permit for the proposed structures:

**1. Storm water management and treatment systems:**

Please respond to the following questions and comments regarding the proposed storm water treatment systems:

- a. It appears that the volume of the sand filters for the project have been designed using the volume of the first 1-inch of rainfall on only the impervious parking areas tributary to each sand filter. The areas adjacent to the parking lots that drain into the same drainage system and will contribute flow to the storm water treatment system were not included in the calculated volume of the sand filters or the loading for the basin area. The minimum volume of the sand filters shall be equal the volume of 1-inch of rainfall over the entire contributing area with at least 1-foot of freeboard. Kindly provide a revised calculation to account for the runoff tributary to the sand filter including non-paved areas or exclude those areas from entering the storm-water treatment system.
- b. The proposed size of the pipes from the diversion structures to the oil/water/grit separators range in size from 6-inches to 10-inches. As these pipe will be carrying stormwater that may contain leaves, sticks, garbage and other solids it is recommended that the size of the these storm pipes be increased to a minimum of 12-inches for a project of this magnitude.

- c. In reviewing the calculations for the stormwater treatment systems the average flow into the oil/water/separator is much less than the runoff associated with the 25 year storm return frequency rainfall event (Q25). The Wallingford Water Division (WWD) Technical Standards require that the oil/water/grit separator including the inlet and outlet piping be design to have sufficient capacity to pass the peak rate of flow from the Q25 event without backup. The applicant shall revise the drawings and calculations to meet the requirements of the Wallingford Water Division Technical Standards.
- d. Most or all of the sand filters shown on the proposed plan have spillways or overflow structures built into the design. If the weirs in the diversion structures upstream of the oil/water/grit separator are sized appropriately and set at the proper elevation to divert all flow in excess of the 25 year return frequency water quality flow away from the sand filter, spillways and/or overflow structures may not be required. The weir in the diversion structure is intended to act as the overflow device for the sand filter.
- e. All oil/water/grit separators and stormwater treatment systems shall be designed to limit the maximum liquid level in the tank to an elevation no higher than 3-inches down from the inside of the top slab for all storm runoff flows up to and including the peak runoff rate from a 100-year storm return frequency rainfall event for the tributary area.
- f. Please confirm that the storm water flows will be diverted around the storm water treatment system as described above without surcharging the oil/water/grit separators and sand filters by providing summaries of the calculations and hydraulic profiles that show how the system will work under various storm flows including the 25-year and 100-year storm return frequency rainfall event.
- g. A detailed review of each stormwater treatment system including the surface water elevations associated with the 25 year and 100 year rainfall event shall be provided by the applicant. The Water Division has performed a preliminary review of the storm water treatment systems and found that there are many inconsistencies on the drawings and in the stormwater calculations found in the "Stormwater Management Report Appendix". The Water Division has not made an exhaustive review of each system; however, we provide the following observations:
  - i. The tabulated areas, volumes and computations shown in the tables of Attachment 4 – Water Quality & Groundwater Recharge Calculation in the Stormwater Management Plan do not match the areas, volumes and computations shown in Attachment 5 – Sand Filter Calculations.
  - ii. There are many inconsistencies in the elevations shown in the table on sheet DN-12 for the Diversion structures when compared to the elevations shown on the Grading and Drainage Plan sheets.
  - iii. All or most of the sand filters show riprap outlet protection at the water quality outfall, a concrete splash pad is required by WWD Technical Standards.
  - iv. **Sand Filter System SF-2 (Plan sheets GD-3 & GD-7)**
    1. The 8-inch perforated drain into DIV-2A should bypass the sand filter.

2. The invert elevation of the water quality outlet from DIV-2A is 404.0 on the drainage plan but is shown as 404.5 in the table on DN-12.
  3. The invert elevation of the SWMB outlet from DIV-2A is 404.25 on the drainage plan but is shown as 404.5 in the table on DN-12.
  4. Top of Frame elevation for HDS-2A is shown as 408.5 but based on the detail on sheet DN-12 the elevation of the bottom of slab inside the structure will be 407.8. More elevation difference is needed between bottom of slab inside the structure and the top of frame.
  5. The invert elevation of the water quality outlet from DIV-2B is 390.15 on the drainage plan but is shown as 389.72 in table on DN-12.
  6. The slope of water quality outlet pipe from DIV-2B is shown as 66%; this must be reduced to provide subcritical flow velocities into the sand filter. The WWD Technical Standards call for a maximum slope of 0.5% for the water quality outfall pipe.
  7. The roof drainage system for the east side of the building does not include any type of infiltration or detention system. It seems some sort of infiltration system or detention system similar to the one shown for the roof drain on west side of the building should be added for the east side of the building.
- v. **Sand Filter system SF-3 (Plan sheets GD-4 & GD-8)**
1. Sand filter system SF-3ABC: HDS-3C is referenced in the calculations but there is no HDS-3C shown on the drawings. Apparently flow from DIV-3C now flows into HDS-3B.
  2. Based on the elevations shown on the drawings and the surface water elevations shown in the stormwater calculations, HDS-3B will be surcharged under both the 25 year and 100 year events.
  3. The drainage area acreage shown in the calculations in the Stormwater Management Report Appendix for SF-3ABC does not match the drainage area acreage shown in Attachment 4 – Water Quality & Groundwater Recharge Calculation in the Stormwater Management Plan.
  4. Sand filter system SF-3D: Elevations of the sand filter in the storm water management plan calculations do not match the elevations shown on the drawings.
  5. Provide a detail of the diversion structure at CB-113.
  6. The invert elevation of the SWMB outlet from DIV-3B is 407.92 on the drainage plan but is shown as 407.70 in the table on DN-12.
- vi. **Sand Filter system SF-4 (Plan sheets GD-2 & GD-6)**
1. The invert elevation of the water quality outlet in DIV-4A-1 as shown on sheet GD-6 (364.5) is not the same as shown in the table shown on sheet DN-12 (364.25). Also the elevation of the weir is shown as elevation 364.5 which would be the same as the invert of the water quality outlet. This doesn't seem correct, please clarify. The elevation of the 15-inch outlet to SWMB-4A on sheet GD-6 (362.5) does not match the elevation shown in the table on sheet DN-12 (363.5).

2. Based on the invert elevation of 364.25 for HDS-4A-1 the elevation of the bottom of slab inside the structure will be 368.25 which is higher than the top of frame elevation of 364.79 shown on the plans.
3. Based on the invert elevation of 365.75 for structure HDS-4A-2 the unit will be surcharged under both the 25 year and 100 year rainfall events. Also the structure is shown as 11 feet deep.
4. The weir elevation of 368.00 in DIV-4A-2 is higher than the top of frame elevation of 365.00 for outlet structure OCS-4A in SWMB-4A. Stormwater will be spilling from the outlet in SWMB-4A before any water is diverted around the sand filter SF-4A, is this correct?
5. The underdrain shown on GD-2 should not be connected to the storm drain tributary to HDS-4A-2 and should by-pass the stormwater treatment system.
6. The spillway elevation from SF-4B is shown incorrectly as 395.00. The calculations show it as 350.50.
7. The invert elevation of the water quality outlet from DIV-4B-1 is 351.50 on the drainage plan but is shown as 351.00 in the table on DN-12.
8. The invert elevation of the water quality outlet from DIV-4B-2 is 348.65 on the drainage plan but is shown as 349.25 in the table on DN-12.
9. The invert elevation of the inlet to DIV-4B-2 is 347.20 on the drainage plan but is shown as 347.70 in the table on DN-12.

vii. **Sand Filter system SF-5 (Plan sheets GD-5 & GD-9)**

1. Based on the invert elevation of 343.88 for HDS-5-100 the elevation of the bottom of slab inside the structure will be 347.88 which is higher than the top of frame elevation of 345.75 shown on the plans. Also the 100 year water surface elevation is approximately 347.8 which would leave no free board inside stormwater treatment structure HDS-5-100.
2. The spillway elevation from SF-5A is shown incorrectly as 395.00. The calculations show it as 347.50.
3. The spillway elevation from SF-5B is shown as 337.00 on the plan; however, it is shown as 336.50 in the calculations.
4. The 25-year storm event discharge to HDS-5-100 of 5.10 cfs exceeds the capacity of the Vortechs 3000 hydro-dynamic separator of 4.5 cfs.

Given the number of inconsistencies discovered during my less than exhaustive review and the comments contained in the third party review undertaken by SLR International Corporation; it is our recommendation that the Applicant ensure all inconsistencies on the drawings and in the calculations are identified and corrected, and that all revisions needed to bring the proposed plan into conformance with the Water Divisions Technical Standards for the stormwater treatment systems be corrected before a Wetlands permit is issued.

**2. Site Grading:**

The slope of the embankment on the west side of the proposed access road shown on sheets GD-7 and GD-8 has been increased to a slope of 1 vertical to 1 horizontal. A portion of the slope at the northeast corner of the building as shown on sheet GD-4 has also been increased to 1 vertical to 1 horizontal. Slopes of this magnitude have the potential to be a

source for erosion and slope instability. Section 6.27 of the Wallingford Zoning Regulations states "...land shall be evenly graded to slopes not exceeding 1 foot vertical rise to 2 feet of horizontal distance." It is strongly recommended that all finished embankments have a maximum slope of 1 vertical to 2 horizontal in order to meet the requirements of the Wallingford Zoning Regulations, ensure slope stability and reduce the possibility of erosion.

### **3. Erosion Control and Construction Site Contingency Plan for Erosion Control and Emergency Spills:**

Plan sheet EXH-19B includes a detail for solid stop-logs to be installed upstream of two footbridges. One will be located where the upper wetlands area converges and the second just upstream of the large pond. These stop-log structures are being proposed to help settle any suspended solids in the stream prior to stormwater entering the large pond. At our meeting held on December 10, 2020 we discussed using a pervious type check dam at these locations that would remain in place during construction. Water trapped behind such a pervious barrier would eventually drain out and not need to be installed and removed before and after a rain event. The preferred alternate to a solid stop log would be a pervious check dam constructed of hay bales, crushed stone and filter fabric. A water tight barrier was not recommended to be the final solution during our December 10, 2020 meeting.

The Erosion Control Contingency Plan text shall be revised to address the method of keeping the ponds drawn down during construction utilizing an overflow riser pipe as discussed at our December 10, 2020 meeting. Sheet EXH-19B shows the detail for the overflow riser pipe; however, the text in the plan currently states that ponds shall be drawn down prior to a major storm utilizing the gate valve on the outlet.

The Erosion Control Contingency Plan shall also be revised to denote that it will be the Owner's responsibility to control all water features on the site. The Wallingford Water Division will not be responsible for direction of operations nor operation of any stormwater control features including the outlet of the ponds at the site. The WWD will however, provide feedback and recommendations as necessary to assist the Owner and/or Contractor in their maintenance and operation of the site during construction. All text that indicates the WWD will perform any operation, maintenance or testing of stormwater control devices shall be removed from the Erosion Control Contingency Plan and Detail sheet EXH-19B.

As previously stated in my November 6, 2020 memo to Erin O'Hare, it is imperative that all possible best management plans be properly implemented and maintained during construction to reduce the possibility of sediment laden runoff leaving the site. That being said, the erosion control plan has been reviewed by the Town's independent third party reviewer, CW International. It is our recommendation that all comments, conditions and revisions requested by the third party reviewer be implemented as part of the proposed plan.

### **4. Site Operations and Management Plan:**

The "Forms" section shown on page 4 of the plan lists three different checklists that will be developed for the maintenance program. These forms shall be subject to the review and approval of the Water Division and shall be included as part of the Site Operations and Management Plan.

The "Inspection and Leak Detection" section on page 6 is written poorly and the second sentence does not make sense.

The second paragraph of "Section A – Catch Basins, Yard Drains, and Manholes" on page 7 shall be revised to remove the sentence "The road sand may be reused for winter sanding but may not be stored on-site." And replaced with "Road sand shall not be stored on-site."

The third paragraph of "Section A – Catch Basins, Yard Drains, and Manholes" on page 7 is not clear and should be rewritten to indicate when sediment, floatables, oil and scum are to be removed.

The third paragraph of "Section B – Hydrodynamic Separators (or approved equal)" on page 7 shall be revised to state "For the first year of operation following construction, inspect each HDS once each month for the months of January, February, March and April, once every four months thereafter and after every major storm event with greater than 1-inch of rainfall."

"Section H – Dam" on page 9, states that the last dam inspection was done in 2013. It appears an inspection was due in 2020, was such an inspection performed?

"Section L – Parking Lots" add the following "Sweepings and road sand shall be removed from the site and disposed of properly."

"Section N- Outdoor Storage" on page 11 shall be revised to include no storage of road sand.

#### **5. Water and sanitary sewer utilities:**

Per my discussions with the mechanical design team for the BL Companies, in order to provide adequate water service to the proposed building at elevation 416.70 it will be necessary to install a domestic booster pump and a fire pump. In order to maintain adequate suction pressure at the pump inlet, the pump station will need to be located remotely from and down gradient of the proposed building. All required backflow devices and meters shall be installed in accordance with the technical standards, details and requirements of the Wallingford Water Division.

The size of the required domestic water service, booster pump, fire service, and fire pump will be based on plumbing fixture counts and needed fire flows to be supplied by the Owner and as approved by the WWD.

It is my understanding that the proposed pump house will be located west of the proposed entrance off of Carpenter Lane where the existing ground elevation is approximately 380 feet. Suction lines from the water main in Carpenter Lane would need to be extended to the pump house and high pressure discharge lines would need to be laid to the building.

The proposed 12-inch private water main loop through the property will remain as part of the plan to provide low pressure fire service water to hydrants around the building and throughout the site.

None of the improvements associated with the remote pump house are shown on the drawings that have been submitted as part of this application. It will be necessary to show these improvements to determine if there will be any impacts to wetlands, watercourses or upland buffer areas.

The fire protection system, fire hydrants and remote fire department connection shall be installed at locations and in accordance with the requirements of the Fire Marshal.

Sanitary sewer service for the proposed warehouse building will be provided by constructing a new extension to the municipal sanitary sewer gravity main in Carpenter Lane

to the driveway entrance at the north end of the site. A private sanitary sewer main to serve the building will be constructed along the driveway.

A plan and profile of the proposed public sanitary sewer main shall be submitted to the Wallingford Sewer Division for review and approval. Also, after construction is complete, the Owner will be required to provide a statement signed and sealed by a Professional Engineer licensed to practice in the State of Connecticut that all aspects of the project meet, at a minimum, the requirements of the current New England Interstate Water Pollution Control Commission "Guides for the Design of Wastewater Treatment Works" (TR-16)

Per my discussions with the mechanical design team for BL Companies, there will be a scrubber dump in the building to accept wastewater discharges from cleaning the floor of the warehouse. The discharge associated with such scrubber dump and other mechanical equipment will require the use of an outside in-ground oil water separator prior to discharge into the municipal sanitary sewer system. It will also require the necessary registrations of such discharges under the applicable Connecticut Department of Energy and Environmental Protection (CT-DEEP) general permits. The oil water separator and details shall be added to the proposed site utility plan and shall be submitted for review and approval by the Wallingford Sewer Division.

A monitoring manhole will be required to be installed on the sanitary sewer line in order to monitor the non-domestic wastewater discharge associated with the required oil water separator. Currently the drawings show a "metering" manhole which is not required and shall be removed from the plan. A monitoring manhole shall be installed in accordance with the technical standards, details and requirements of the Wallingford Sewer Division (WSD).

Details of the proposed water and sanitary sewer services to the proposed new guard house and existing chemical treatment building to remain are not clearly delineated on the current plan. The Owner's Engineer shall meet with the Water and Sewer Divisions to review the proposed utility services to these two building and all such utilities shall be constructed in accordance with the technical standards, details and requirements of the Wallingford Water and Sewer Divisions.

The "New Connection Detail to Existing Manhole" on Sheet DN-7 is not acceptable and shall be removed. Connections to existing manholes shall be made by coring a neat hole in the manhole wall and installing a flexible manhole connector. If it is not possible to core a hole in the existing manhole, a new manhole shall be installed to replace the existing manhole.

The Owner will be required to post with the Water and Sewer Divisions Utility Performance and Maintenance Bonds to cover the installation of the required utility extensions in accordance with the requirements of the Water and Sewer Divisions. The total amount of the bond will be determined at a later date and will be based upon the final water and sanitary sewer layout and any off-site improvements required.

It is anticipated that additional comments regarding the storm water management systems for this application will be generated by this office when the plans are revised. Also, additional comments regarding the details of the water and sanitary sewer utilities will be generated as part of the Planning and Zoning application process.