

P.O. Box 421 Killingly, CT 06241 Phone: 860-779-7299 www.killinglyengineering.com

January 20, 2022

Mr. James Bentley 33 Marcy Road Woodstock, CT 06281

RE:

Inspection of pond Excavation

Bungay Hill Road & Lake View Drive

Dear Mr. Bentley;

Per your request and per requirements of the Town of Woodstock Inland Wetlands Commission Killingly Engineering Associates (KEA) inspected work you conducted to enlarge a small pond at the referenced property. The pond is partially groundwater fed and also receives water from a drainage pipe that discharges from Bungay Hill Road to an on-site swale; it does not appear that the Town of Woodstock has an easement to drain to the property but historic aerial photographs dating back to 2004 that are available on the NEECOG website show that the condition has existed since then; Google Earth photographs show it as far back as 1991. KEA inspected the pond on Saturday, January 15<sup>th</sup> and again on Wednesday, January 19<sup>th</sup>. The January 15<sup>th</sup> inspection occurred during single-digit temperatures and no flow of water was observed from the outlet pipe. The second site visit was conducted in warmer conditions and the functionality of the outlet pipe could better assessed.

## Site Description

The drainage pipe from Bungay Hill Road onto your property is partially hidden and set back into the stone wall along the northern side of your property. It appears to be a 12" pipe and discharges to an embankment on your and into an excavation preceding the on-site swale which has created somewhat of a plunge pool. From the plunge pool, the swale flows south toward the pond where you have installed a 12" concrete pipe within the embankment. Photos 1 & 2 show the outlet pipe from Bungee Hill Road and the on-site swale that flows to the pond. It was noted that the plunge pool has a gravelly bottom

Based upon inspection of on-site conditions, it appears that overflow from the pond prior to it being enlarged discharged to a slope along the northern side of Lake View Drive and ultimately to a roadside swale. For the modified pond, the level is controlled by and 8" outlet pipe that is installed in the southwest embankment. This pipe drains to the same roadside swale. This 8" PVC pipe controls the level of the pond and discharges to the northern slope adjacent to Pond View Road. Ultimately, all discharge from this pipe flows down-gradient to a roadside swale and to a low point approximately 300' west where it then crosses under the road to a swale that flows to Lake Bungee. Photos 3 & 4 show the outlet pipe from the pond and the swale along the northern side of Lake View Drive.

There is a roadside catch basin located approximately 150' to the east from the discharge point and it is my understanding that there has been discussion of directing the outlet from the pond to this catch basin. Photo 5 shows this catch basin and the option to direct water from the pond to this basin is discussed further in this report under our recommendations.

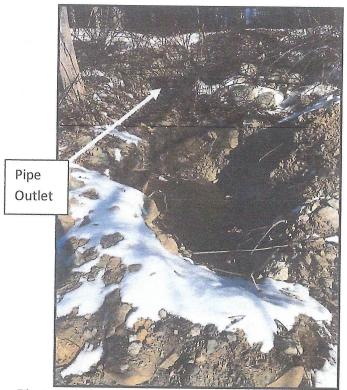


Photo 1: outlet pipe from Bungee Hill & "plunge pool"

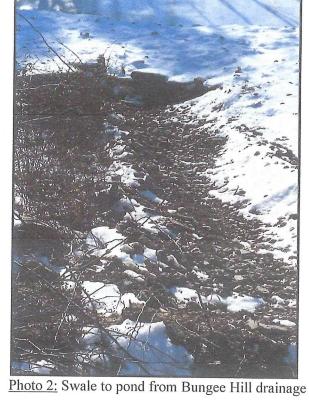




Photo 3: Outlet pipe from pond on Lake View



Photo 2: Swale along northern side of Lake View

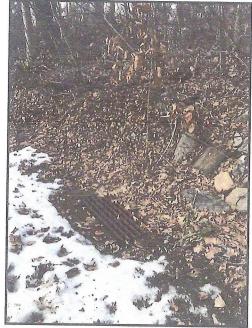


Photo 5: Catch basin along Lake View Drive

# Assessment & Recommendations

It is my professional opinion that the pond as constructed is stable and does not present any concerns for structural failure. As the outlet pipe is installed, there is approximately 18" of available freeboard along the south embankment which provides a suitable factor of safety. Although the pond pools a greater volume of water than the original depression, the "water in-water out" balanced rate of flow is unchanged. We note that there are details of the construction that should be addressed as follows to provide a completed product:

- 1. The cross-sectional area of the 12" pipe from Bungee Hill Road and at the end of the swale is 113 square inches and the 8" outlet pipe from the pond is slightly over 50 square inches. In order to ensure that the pond level is continuous, the 18" of freeboard is maintained, and that in and out flow rates are consistent, a second 8" outlet pipe from the pond should be installed on the eastern end that discharges to the embankment adjacent to and up gradient from the existing catch basin.
- 2. As a result of the cease and desist issued by the IWWC, the pond embankments have not been finished. Weather permitting, we recommend final grading and raking of the embankments and planting of grass to stabilize. If the embankments will be mowed, a mixture of a perennial rye grass and white clover would be a suitable choice. If you are not planning on mowing the embankments, a creeping red fescue/tall fescue mix would be more appropriate.
- 3. The embankment along Lake View Drive should be cleared of debris at the pipe discharge points and riprap outlet protection should be installed. I would recommend installation of a filter fabric under the riprap which should consist of 6"-8" angular stone ("modified" riprap per CTDOT specifications). Extend the riprap protection full length down the slope to the existing roadside swale and catch basin.
- 4. The outlet from the pipe at Bungee Hill Road should also be reinforced with modified riprap. Since this is a pipe from a Town discharge, it would be reasonable to request that the Town of Woodstock public works department conduct this work or you are compensated for the time and materials to complete the work.
- 5. All areas adjacent to the pond should be raked and seeded to prevent excessive sediment from eroding into the pond and ultimately being discharged to Lake View Drive.

Please feel free to contact me if you have any further questions or concerns.

Sincerely;

Normand Thibeault, Jr., P.E.

# REGULAR MEETING Monday, February 7, 2022 7:00 PM Virtual Via Zoom

The IWWA meetings will be conducted on zoom until further notice.

Public sign-in instructions can be found on the town website, woodstockct.gov prior to the meeting time.

Documents for the meeting can be found on the website under the IWWA tab.

The recording of this meeting can be view at <a href="https://www.youtube.com/watch?v=jDgXEKhYKp0">https://www.youtube.com/watch?v=jDgXEKhYKp0</a>

#### 1. Call to Order

a. Chairman Mark Parker called meeting to order at 7:15 pm

#### 2. Roll Call

Members Present- Mark Parker, Marla Butts, William Rewinski, Stuart Peaslee (alternate) Others Present- Wetlands Agent Ashley Stephens, Recording Secretary Amy Monahan, Members of the public including LBTD Roads Chair Ross Ellison, LBTD Compliance Chair Kathleen Ellison, James Bentley, Mark Reynolds, Chris Casadei, Chris Mokrzecki, George & Carolyn Looby, Todd Looby, Michelle Wood, Ron Petro, David Held of Provost and Rovero

# 3. Appointment of Alternates

a. Stuart Peaslee seated

#### 4. Action on Minutes of Previous Meeting

- a. Regular Meeting January 10, 2022
  - i. From the meeting minutes on January 10, 2022, the commission recommends changing the following-
    - It was Vice Chairman William Rewinski that called the meeting to order and mediated the meeting on January 10, 2022- Not Chairman Mark Parker as documented. Chairman Mark Parker attended the January 10, 2022 meeting virtually.
  - ii. William Rewinski made a \*Motion to accept minutes as presented with the change under Call to Order noted above. \*Seconded by Marla Butts. \*The motion passed unanimously.

## 5. Preliminary Discussion

- a. Lake Bungee lot discussion- Kathleen Ellison
  - i. Kathleen Allison is looking for clarification from the IWWA that the planned activities on lake owned lot are not regulated. Specifically, can trees over 2" be cut without permit and can sand be placed on land (not in water) as non-regulated use.
  - ii. Marla reviewed previous decision of IWWA pertaining to that lot. It was previously found that activities were acceptable as long as the lot was not clear cut and there was no land disturbance such as stump removal.
  - iii. No complaints have been made to the Land Use Office from the neighbor of property in question.
  - iv. The IWWA finds no need to change the outcome of previous discussion for the lot in question and that the activities can continue as planned by the LBTD.
- **b.** 01-22-03-Timber Harvest Notification- Chris Mokrzecki (Chris's Loggin LLC) 400 new Sweden Rd follow up discussion
  - i. A meeting was set up with Darcy Winter at DEEP and Ashley Stephens to clarify how to deal with timber harvest notifications.
  - ii. Ashley Stephens obtained additional maps from harvester. There is a question of dispute on a lot in timber harvest area.
  - iii. Chris explained it is not uncommon to make survey map from surrounding surveys.

    There is a dispute in ownership of a lot between Wentworth and Withers. Tax bills show that Mr. Withers holds current tax bill and the timber harvesters will not go on that property in this project. The map will have to be updated to show land to be harvested. The lot marked as dispute lot was marked incorrectly and will be updated as well.
  - iv. It was determined that the IWWA meeting was not the place to determine ownership and/or permission to timber. That is a civil issue for another venue.
  - v. It was also determined that as long as the timber harvest process follows what was discussed at the previous meeting, there is no reason to change the decision of the previous meeting and the application is approved under use permitted as of right under agriculture as previously decided.

# 6. Pending Applications

- **a.** 11-21-11- James Bentley- 33 Marcy Road expand pond, replace culvert pipe and concrete pipes, and maintenance on stream
  - i. James Bentley had submitted a seal certified letter to the Town of Woodstock from Killingly Engineering Associates with evaluation of site and recommendations.
  - ii. The commission feels that the work to be completed needs to be presented in the form of a site plan, not a letter. A site plan would show where all recommendations will take place on the property and include details such as waterflow/hydraulic calculations.

- iii. New application was presented on November 15, 2021 and a 60 day extension was granted at last meeting on January 15, 2022. This application has only 30 days remaining to render a decision.
- iv. James Bentley will contact Ashley Stephens to get complete list of needs of the IWWA. He will then bring the list to Killingly Engineering Associates for completion and bring the requested plan to the next IWWA meeting.
- b. 12-21-14- Morris Lewis Hemlock Dr, 34 Lot 68- new home construction
  - i. Mark Reynolds, applicant's representative, is present and has material to share.
    - Location Map shared with commission including wetland areas and proposed work, work plan including erosion sediment control plan. The stormwater runoff and flagging of wetlands brought up at previous meeting has been addressed on updated plan.
  - ii. Marla Butts requested additional information about the standard quick 4 bottom chamber infiltration units proposed on plan and they were described by Mark Reynolds. Stuart Peaslee requested actual distance to the wetlands and it was found to be 30 feet.
  - iii. This application was submitted on January 15, 2022 and a decision does not have to be rendered at this meeting.
  - iv. Kathleen Ellison, Compliance Chair for LBTD, reminded applicant that he must also submit application and documents to the lake association and that there is a driveway bond required as well.
  - v. Marla Butts would like additional time to review and research some items on this plan before approval.
  - vi. Marla Butts made a \*Motion to table application 12-21-14- Morris Lewis Hemlock Dr, 34 Lot 68- new home construction until the March 7, 2022 IWWA Meeting. \*Seconded by Bill Rewinski. \*The motion passed unanimously.

## 7. New Applications

- a. 01-22-04- George & Carolyn Looby- 534 Senexet Rd- clean existing farm pond
  - i. Marla Butts questioned where the form presented originated as it was not a commonly submitted form. It was decided that all IWWA forms should be reviewed and updated as needed.
  - **ii.** Marla Butts is familiar with the drainage of Bull Hill Rd to the pond in question. She has been in contact with Department of Public Works about the drainage in the past.
  - **iii.** The property owners shared that Jim Pioppi would be the contractor and explained the plan of work. Marla asked for a drawing of proposed work and if the applicants had approached the town to see if they would take the sediment removed.

- iv. Marla recommended to table this item until plan and drawings from contractor are provided showing the process of work to be performed. An erosion and sediment control plan and water handling plan will also be needed from the contractor.
- v. Marla Butts made recommendation to table application 01-22-04- George & Carolyn Looby- 534 Senexet Rd- clean existing farm pond until the March 7, 2022 IWWA Meeting.
- b. b. 01-22-05- Timber Harvest Notification- Michelle Wood- Hull Forest Products- 0 Brockway Rd (MBLU: 6387-41-06)
  - i. Michelle Wood has a forwarder crew available immediately to start. The landowner is interested in long term management. Hull will be doing an improvement thinning of approximately 30%. There is one wetland and one stream crossing that will both be bridged and corduroyed during the harvest. There will be no cutting in the wetlands-only crossing.
  - ii. Marla Butts made a \*Motion to approve the request for timber harvest as a use permitted as of right under agriculture for application number 01-22-05- Timber Harvest Notification- Michelle Wood- Hull Forest Products- 0 Brockway Rd (MBLU: 6387-41-06). \*Seconded by Bill Rewinski. \*The motion passed unanimously.
- c. 02-22-06- Daniel Flynn- 56 West View Drive- new home construction
  - i. Bill Rewinski noted that the home construction will be on Joy Road and address on agenda is residential address of the applicant.
  - ii. David Held of Provost and Rovero present to represent the applicant.
  - iii. This application is for work in upland review area and is a Wetland Agent Approval.
  - iv. Marla Butts made a \*Motion that this application be processed as Wetland Agent Approval only after approval of NDDH for septic design. \*Seconded by Bill Rewinski. \*The motion carries unanimously.
  - v. Marla Butts made a \*Motion to have Ashley Stephens notify the Planning & Zoning Commission that IWWA has no objection to development as proposed on application 01-22-06- Daniel Flynn- map 7278 block 32 lot 88-2 providing septic is approved by NDDH. \*Seconded by Bill Rewinski. \*The motion carries unanimously.

#### 8. Administrative Business

- **a.** An email was received by Sianna Green stating that the proposed culvert work described in her application has been put on hold until they find a new contractor that can provide work done with required materials.
- **b.** Election of Officers
  - Stuart Peaslee made a \*Motion to reinstate the current officers to their current positions for the year going forward. \*Seconded by Marla Butts. \*The motion carries unanimously.

# c. By-Law Review

- i. Bi-Laws will be reviewed and approved at the next meeting on March 7, 2022.
- d. Marla Butts requests that the application receipt date and map/block/lot numbers be included in the agenda with application information for reference purposes. She also requests for rights to enter property during activities to be included in process with a separate signature line on the application. Review of forms will be added to the agenda in an upcoming month under administrative business.

## 9. Citizen's Comments

- a. Ron Petro shared that work done on the steam bed and driveway held up and did its job in the last storm and the pond is now very full. However, run off from Paine Rd has now filled the culvert and John Navarro will attend to that issue this week. He expressed concerns that the work that will be needed in the small ponding in the future will repeat the long and expensive process gone through for work already completed. He is asking for help from the town for the area from the roadway to the small pools and asking if his application includes work in that area.
  - i. Marla Butts recommended that he request a non-regulated use for conservation of soil and water when he needs to address the pool areas. He will need a sketch for areas to remove sediment.
  - ii. The IWWA would like to find a way with various agencies to address the instability of the road to avoid the expense to Ron Petro for continual repairs. A different system needs to be created to avoid the annual maintenance. Stuart Peaslee recommends that an engineering analysis for Paine Rd needs to be executed. Marla Butts recommends working with NRCS for the Paine Rd issues. She also suggested to contact Joe Polulech for possible contact information pertaining to this issue.

#### 10. Adjournment

a. Marla Butts made a \*Motion to adjourn. \*Seconded by Bill Rewinski. The motion passed unanimously. Meeting adjourned at 9:41 pm.

Respectfully submitted by Amy Monahan, Recording Secretary. DISCLAIMER: These minutes have not yet been approved by the IWWA. Please refer to next month's meeting for approval/amendments.

jimbsmail@charter.net < jimbsmail@charter.net > Fri 3/4/2022 10:19 AM

To: Ashley Stephens <u>AshleyStephens@woodstockct.gov</u>

#### Ashley,

At this time I am withdrawing  $\,$ my application and  $\,$ will submit a new application within 90 days with the supporting documentation the commission is looking for.

James L Bentley 33 Marcy Rd Woodstock, CT. 06281 860-625-4220

# KARL F. ACIMOVIC, P.E. & L.S.

## **CONSULTING ENGINEER**

588 Stonehouse Road · Coventry, CT 06238-3138 · TEL (860) 742-9019 · e-Mail: karl277@earthlink.net

February 21, 2022

William Wagner, Pres. Lake Bunggee Tax District P.O. Box 231 Woodstock, CT 06281

Re:

Drainage Issue at Lake View Drive

Lake Bunggee District

Dear Bill:

On Thursday February 17<sup>th</sup>, I met with Ross Ellison to examine the drainage issue along the north side of Lake View Drive (a gravel road) just southwest of Bungay Hill Road. The area examined lay just downstream of a pond area recently enlarged by excavation on the property lying to the north of the road. The pond was located directly adjacent to a stone wall running along the top of the slope separating the pond from the downstream road. A storage pile of uncovered and un-stabilized soil was situated just north of the stonewall and west of the excavated and expanded pond area; no sedimentation or erosion controls were noted. A drainage pipe situated near the top of the slope was found to be discharging flow directly from the pond along the relatively steep slope (7 – 8 feet above the road surface) into a shallow gutter running alongside the north edge of the gravel road. Seepage was also noted emanating from the embankment in several locations at the time of the inspection. Exacerbating these problems were the presence of several large trees in some of the saturated areas along the top and side of these slopes, along with low hanging utility wires along the same side.

It was apparent that the flow from the ponded area was contributing to an unstable shoulder situation on the north side of the gravel road surface. The outflow was collected in a shallow swale and subsequently directed westerly toward a small drainage pipe crossing the road and then channeled toward Lake Bunggee between properties at No. 32 and No. 42 Lake View Drive. Just prior to the crossing, it was evident that a layer of sediment was also obstructing the flow entrance to the pipe crossing, some of it coming from the road and some from the adjacent property to the north.

From these observations, it is evident that the instability and saturation of the gravel road surface and, in particular the shoulder area, is due to two factors, one being the seepage of groundwater in the direct vicinity of the slope downstream of the pond and,

William Wagner Page 2 February 21, 2022

most importantly, the directed flow of the drainage pipe emanating from the pond and into the swale area directly adjacent to the travel surface of the road. Overall, the transport of sediment will also be detrimental in the long term to the degradation of water quality in the lake by the introduction of sediment from upstream watershed areas.

In order to alleviate the issues identified here, I would highly recommend the installation of a proper drainage system which, at this point, will necessarily include the discharge from the pond that shows signs of recent enlargement by excavation. This will necessitate a proper topographic survey, delineation and assessment of the overall wetland situation, design of drainage improvements and, finally, the construction of new facilities.

Should you have any questions, please feel free to contact me at your convenience.

Respectfully yours,

Karl F. Acimovic, P.E. & L.S.

Karl F. Limovie

# KARL F. ACIMOVIC, P.E. & L.S.

## **CONSULTING ENGINEER**

588 Stonehouse Road · Coventry, CT 06238-3138 · TEL (860) 742-9019 · e-Mail: karl277@earthlink.net

March 21, 2023

Edward Adams, Pres. Lake Bunggee Tax District 46 Lake View Drive Woodstock, CT 06281

Re:

Drainage Issue in the Area of 16 - 32 Lake View Drive

Lake Bunggee District

Dear Ed:

On February 17, 2022 I inspected the drainage issue in the vicinity of 16 to 32 Lake View Drive, made certain observations with respect to drainage problems and embankment stability issues, and subsequently made a recommendation for alleviating these issues. On March 16, 2023 I once again inspected the same area with you and found that conditions had not only remained unchanged, but appeared to have worsened.

As noted in the previous communication, the area in question along Lake View Drive lay just downstream of a steep slope with a small pond on top of the adjacent embankment. The slope and embankment essentially act as a dam, holding back the water impounded by the pond. The embankment represents a sheer drop (1H:1V or less in some cases), is covered with brush and large trees, has an unstable and exposed soil berm along its crest, and is saturated, leaking and seeping throughout the slope area adjacent to the pond and the road.

There is one small outlet pipe that was visible at the time of inspection, near the top of the slope, discharging a small amount of water. However, the majority of flow at the gutter line of the road was emanating from and through the approximate center of the embankment in an area covered by dense brush, cut tree trunk sections and varied pieces of cut wood and bark. This is an unstable situation which, during a strong or severe storm situation could easily result in slope failure (e.g., a landslide) through erosion and sloughing, with the resultant blockage of the roadway and potential movement of earth materials onto adjacent properties and / or flooding due to a sudden release of the impoundment. You also informed me that during a heavy rain period during the beginning of the week, flow emanated through the embankment not only in the area seen this day, but through a longer portion of the roadside slope.

Edward Adams Page 2 March 21, 2023

Potentially affected residential properties include those along the south side of Lake View Drive running from No. 16 through No. 32. In addition to infrastructure and property damage, I would expect additional impact to the lake environment due to significant erosion and transport of sediment to the shoreline of the lake.

Note that when compared to issues with regard to dam embankments, slopes with improper zoning of soils and without underdrainage that become saturated during a storm, can not only slough and erode the embankment, but can also result in the toppling of the many trees in the area. When overturned, these trees will take out a significant root base, resulting in an opening of the embankment with a resultant dynamic wave moving downstream. In this case, any trees that drop toward the road will fall across utility wires running along the road.

If the pond atop the embankment is to remain, I would highly recommend that it be properly designed and passed through a thorough permitting process, subsequently supervised by qualified consultants or experts knowledgeable in the required disciplines involved. In any case, this will require a proper drainage system from the pond and its incoming stream, as well as along the current gutter line on the north side of Lake View Drive. I would make reference to my correspondence of February 17, 2022 for further evaluations and insights.

Should you have any questions, please feel free to contact me at your convenience.

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Karl F. Acimovic, P.E. & L.S.

Kalf. Limovie

Attachments: Photos

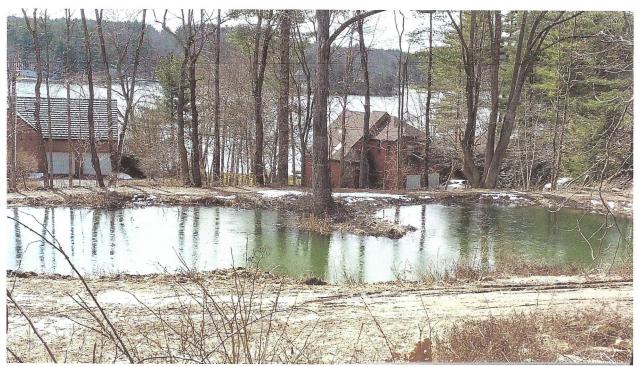


Photo 1 - The pond as seen from Bungay Hill Road, looking south toward Lake Bunggee.



Photo 2 – Looking westerly along Lake View Drive. The pond is atop the embankment in the right of the photo. The circled area points out the location of the sole outlet pipe and the seepage area noted in the following photo.



Photo 3 – The outlet seepage area pointed out in the previous photo. The seepage extends over an approximate 6-foot width emanating from under the pile of logs.



Photo 4 – The location of a small outlet pipe within the exposed soil berm atop the embankment.



Photo 5 – The same viewpoint as noted in Photo 2, showing the tall trees noted in the previous narrative and the utility lines along the road. The circle area once again represents the seepage outflow area shown in the previous photos.

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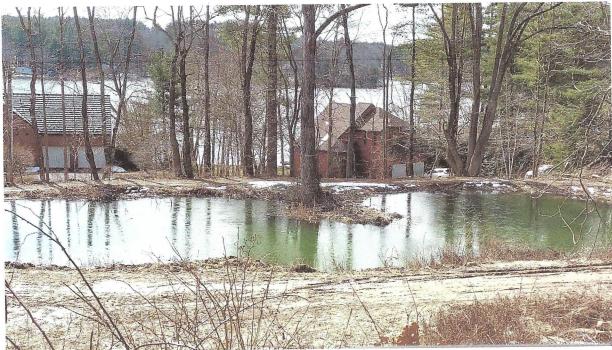


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