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VIA EMAIL: livingstonsupervisor@yahoo.com

October 07, 2016

James Guzzi, Town Supervisor
Town of Livingston Town Board
County Route 19
Livingston, NY 12541

Re: Lot 192.20-3-39 Bathing Beach Permit
C&A #: HA101.40

Dear Mr. Guzzi:

Per your request, Crawford and Associates Engineering & Land Surveying, P.C. (C&A) has evaluated the potential limitations and obstacles regarding providing a public bathing beach on Lot 192.20-3-39, in the Town of Livingston. This letter summarizes C&A's findings after consulting applicable regulations including but not limited to: Chapter 1 State Sanitary Code Subpart 6-2, ADA access regulations, Town of Livingston Zoning Code and New York State Plumbing Code.

Introduction

Lot 192.20-3-39 is located on North Twin Lake in the Town of Livingston. The property is bound by County Route 19 (South), Lakeview Drive (West), an abutting residential property (North) and North Twin Lakes (East). The lot is approximately 2.5 acres (108,900 SF) and has roughly 300 linear feet of access to North Twin Lake. It is C&A's understanding that the Town acquired this property in 2008 and has not provided any improvements to the lot other than removing a deteriorated building. Historically this lot has served as access to the North Twin Lake for the Elizaville community. However, in 2008 when an article was published regarding the Town's acquisition of the lot, the Columbia County Department of Health (CCDOH) provided a letter advising that before it could be used as a public bathing beach an application pursuant to Subpart 6-2 would be required. This application requires detailed plans, sanitary survey and provisions for a supervision level IIB lifeguard. Subsequently after the Town was advised of the required application they provided "No Swimming" signs at the beach and have not pursued a bathing beach permit.

Acquiring Bathing Beach Permit

As discussed above, In order for the Town of Livingston to provide a public bathing beach, the DOH requires and application with design plans and a sanitary survey. The CCDOH uses Chapter 1 of the State Sanitary Code Subpart 6-2 as the standard for bathing beaches. Below C&A has provided a summary of the design requirements within 6-2 that existing beach would

be required to meet.

Based on a cursory desktop review of the existing conditions items in red text would be items that appear to be currently deficient according to Subpart 6-2 in the layout and/or equipment at the existing beach.

Table 1 – Section 6-2.19 Bathing Beach Design Standards

Code Section within 6-2.19	C&A Comments regarding improvements needed to meet standards
1. Bathers Use	
4.3 – Bathing Area	The minimum square foot of bathing area required is 25 SF/ Bather. From the aerial pictures of the beach area it appears that about sixty (60) bathers could occupy the beach (See Code 4.4 Below). For sixty (60) bathers the minimum bathing area would be 1,500 SF. For any bathing area deeper than (four) 4', 75 SF/Bather is required. These areas will need to be delineated by float lines and marker buoys see section below.
2. Bottom Slopes	
4.5- Bathing Area Slopes	While the existing bathing area slopes are currently unknown from aerial photography it appears that the water is fairly shallow up to 60' from the beach shore. This would indicate a gradual slope into the water. It does not appear that this design consideration would be a limitation in providing a beach. C&A would need to provide measurements of water depth to confirm.
3. Areas & Area Designations	
4.2- Water Body Area	The total surface area of the lake is approx. 32 acres. This far exceeds the minimum of 1 acre or the 4 acre with flow through requirement.
4.4 – Land Area	The existing sandy beach area observed from an aerial is approximately 2,200 sf. This land area was assumed as being no further than 50 lf from the edge of the water. According to 4.4 this would allow approximately sixty (60) bathers to be at the bathing beach at any one time. (35 SF/bather required)
4.7.1 – Float Lines	A float line with floats spaced not greater than 5' c/c will be required to outline the bathing area. In addition float lines will be required between the deep and shallow area to indicate that the water is deeper than 4'.
4.7.2 – Marker Buoys	Marker Buoys will be required every 25' of float line and where the float line joins together.
4.8.2 – Diving Boards	C&A assumes that diving will be prohibited at the beach. Signs will need to be provided indicating this.
4. Water Supply	

5.4 – Drinking Water Source	C&A assumes that the Town will not be providing a drinking water source at the site.
5.5 – Drinking Fountains	See above.
4.2 – Dilution water provided	Dilution water is not required due to surface water are of lake being greater than four (4) acres.
5. Water Quality	
4.11.3 – Water Clarity	Testing for water clarity would need to be performed by C&A to confirm the clarity.
4.11.1 – Testing Water Quality	The first Bacteriological water quality test has been performed. An additional seven (7) more tests would need to be completed for the Sanitary Survey.
4.9 – Water Currents	Water current would be assumed to be less than three feet / second and this design criterion should not be concern.
6. Bath House	
5.0 – Bath House	Pursuant to the State Plumbing Code, for a maximum of sixty (60) bathers a minimum of two (2) portable restroom facilities will be required to be placed on site and maintained. It is assumed that the Town would not like to provide a permanent structure with an onsite wastewater treatment system.
5.8 – Hose Bibs/Length of Hose	Due to the use of portable toilets being provided at the beach. A hose bib will not be required. A service contract with the toilet provider will ensure that the facilities remain clean.
7. Electrical	
4.12.2 – Overhead wires clearance	Overhead wires are assumed to run along County Route 19 but will not be within the required 20' horizontal separation from the bathing beach.
4.12.1 – NEC Code	C&A assumes that no electrical service will be provided on site
8. Safety Provisions	
6.1 – Warning Size	“No Lifeguard on Duty – Swimming Prohibited” signs will be required to be posted on the site. Lettering on the signs will be 2” inches in size. “No Diving” signs will need to be posed as well. Size of “No Diving” signs is not specified.

6.2 – Life Saving Equipment	The following safety items will be required to be provided at the site, rescue board, rescue tube with six feet of line or a rescue can with 500' hauling line, CPR mask, First Aid Kit and telephone. A telephone will be required with the numbers posted of nearest squad, physician, ambulance, police agency and hospital. The phone can be either a permanent line to a phone or a cell phone that the Town supplies the supervising lifeguard. For a cell phone to be acceptable the Town will be required to prove that adequate cellphone service is available.
6.4 – Emergency Care Room	This provision does not apply as beach does not exceed the 500 bather capacity.
6.2.2.1 – Life Guard Chairs	Two (2) lifeguard chairs will be required to be onsite.
Required Attachments	
3.0 – Sanitary Survey	A sanitary survey will need to be submitted from licensed engineering discussing the potential pollution sources of the lake and the current status of the water quality. While C&A could not located public information regarding the water quality, at the Towns request C&A could foil the DEC to see if any additional information regarding the water of the North Twins Lake exists.
3.6 – Bacterial Testing	One (1) week of testing has already been performed. An additional seven (7) weeks of testing will be required to submit to the NYSDOH. The test identifies the levels of fecal coliform, total coliform, enterococci and E.coli. The first test has shown levels of bacterial testing acceptable for a bathing beach.

If the Town wanted to pursue a beach, in general, it appears that the majority of necessary updates to bring the North Twin Lakes beach into compliance with Subpart 6-2 include providing safety equipment and formalizing the bathing area with float lines and marker buoys. It would also be beneficial to provide a small building on site to store equipment in over the winter and during the times the beach is closed. In order for the application to be completed additional site investigation would be required including water quality, clarity and depth testing and a sanitary survey performed by a licensed engineer. Engineering and permitting costs to conduct the sanitary survey, complete the water sampling, and prepare a beach application would be approximately \$12,000 to \$15,000. Additionally, a fee of \$200.00, made payable to the County Health Department, is required for the initial application.

Operating a public beach carries annual operation and maintenance expenses. In addition to the equipment the Town will be required to provide a level IIB lifeguard on duty at the beach. When the adequate supervision is not provided the beach is to be considered closed. Given the current beach configuration the Town will be required to provide a minimum of two (2) lifeguards on duty. Section 6-2.17 requires that a least on aquatic supervisory staff person having at least the required supervision level shall be provided for each 50 yards of beach front. C&A has provided a summary of the requirements of a level IIB lifeguard:

1. Has a minimum age of 16 years (15 is acceptable if a supervisory lifeguard is present; and
2. Has a Current A.R.C Basic Life Support for the Professional Rescuer, CPR or equivalent certification; the certification period shall not exceed on year; and
3. Demonstrates a current ability to swim 300 yards non-stop using various strokes in good form; and surface dive to minimum 9 foot depth and bring a 10lb. object to surface; and tread water for one minute; and
4. Possesses a current certification from a recognized certifying agency acceptable to the State Health Commissioner or has within not more than a consecutive three year period of time, completed a minimum of 20 hours (24 hours if first aid skills are included) of training acceptable to the Commissioner covering those items outlined below (Time Periods do not include final examination time or conditioning swims).

Maintenance Obligations

To keep a valid bathing beach permit with the CCDOH the Town will be required to maintain the equipment and the supervision of the site. CCDOH will perform two (2) inspections during the year. The first inspection will be at the start of the swimming season and will require the Town to perform a water quality test for fecal coliform. The water quality test could be performed for under \$100 by a Town employee. The Town will also be required to provide the certification of the lifeguards that will be supervising during swimming hours. The second inspection will be at the end of the year and will identify and deficiencies that may have occurred over the swimming season with regards to equipment. This gives the Town the time to acquire the equipment by start of the next swimming season. Other requirements may include aquatic mats to reduce the weed population and supplementing sand as required.

The Town would be required to renew the bathing beach permit every year. Currently the annual permit fee is \$125.00. As for other yearly obligations required to provide a bathing beach, certification of the lifeguards and cellphone or landline bills would be required.

Other Design Considerations

In addition to being required to meet the requirements of the CCDOH the change in use would require the project to meet both the requirements of the 2010 ADA standards and the Town of Livingston Zoning Code. A summary of potential deficiencies for each is described below:

1. 2010 ADA Standards

- a. While the 2010 ADA standards are silent regarding requirements to access a public beach, per section 242.3 the guideline do specify that one (1) means of sloped access shall be required for a wading pool which most similarly represents a public bathing beach. Generally, access to the beach and bathing area are provided using a mat system that can be rolled out from the water to nearest accessible point.

2. Town of Livingston Zoning Code

- a. Per section 4.27 of the Town of Livingston Zoning Code parking for the facility would be required to be provided onsite. While the number of spaces per attendee is not provided for a public recreation the regulation states the reasonable and appropriate parking will need to be provided. From our site visit it appears that an informal parking area already exists however the Planning Board may require the Town to prove that adequate parking is provided for the potential sixty (60) bathers.

Conclusion

While it appears that the Town would incur some upfront cost to provide a public bathing beach at the North Twin Lakes parcel the reoccurring costs appear to limited. C&A has identified some permitting requirements that do not appear to present any substantial obstacles in achieving a permitted beach. C&A would be happy to assist the Town in laying out the dimensions of the public beach, perform the initial water quality testing, provide a sanitary survey and submit a bathing beach application with CCDOH consistent with the requirements of Subpart 6-2. Should you have any questions regarding this please do not hesitate to contact us at (518)-828-2700 Ext. 1123 (Brandee) or Ext. 1124 (Ryan).

Sincerely,
Crawford & Associates Engineering, PC



Brandee Nelson, P.E.
Vice President



Ryan Morrison, E.I.T
Staff Engineer

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