



WORDEN HILL — MARINE —

A Division of
The DDS Companies

45 Hendrix Rd.
W. Henrietta, NY 14586

ZBA
Town of Canandaigua
5440 Routes 5 & 20 West
Canandaigua, NY 14424

Gifford/Campbell CPN-18-024

4681 North Meneth Drive tax map number 140.11-1-12.000

Response to the PRC and ECB Comments.

Reference the Shoreline Development Guidelines.

The purpose of this project is to replace the failing existing concrete bulkhead. As part of this replacement we are also trying to protect the foundation of the existing house. The current situation is such that the wave action is eroding around and behind the existing concrete and at the high Lake level, the water is now within 2 feet of the porch on the North side of the house.

Regarding visual impacts-

The existing face as viewed from the Lake is currently 60 feet long. Our original proposal to the DEC was to have a face that you would see from the Lake that would be 59 feet long. This would therefore not change the existing conditions. However, the DEC requested that we change the sections of the wall to be angled relative to the front face area. The purpose of this was to help reduce the impact of a wave as it approaches the shoreline. Also part of that request was that we would put the riprap along these two wall faces to prevent shoreline scour as the new wave water returns to the Lake. With that requested change, the Lake face is now a total of 69 feet, so that the owner has reasonable access around the porch to the north side of the property. This is not a significant change as viewed by the boating public. Obviously there is no change of the vista from the homeowners' property. There will obviously be a significant reduction in the space available between the house and the new wall face. The homeowners are willing to accept this reduction in order to protect their house. Currently there is only one small shrub on the existing concrete wall face that will need to be removed as it will be in the Lake as a result of the proposed action. There will be no other vegetation removal involved in this break wall project. Therefore there will be no change in the view from a Lake regarding the vegetative screening as described in the Shoreline Development Guidelines. With only 7 feet between the porch and the water's edge, it will be difficult to plant any significant screening without significantly reducing the access for things like carrying canoes and other large objects, which are stored on the North side of the cottage. Therefore no significant plantings for screening are planned at this time.

Regarding Shore Line Treatment—

This project is quite unique in the sense that the existing conditions are such that the current break wall is only 11 feet from the front edge of the porch of the house. The elevation of the first floor of the house is only about 3 feet (692.3) above mean high Lake level (689.4). The porch is at elevation 689.7 feet, which is only .3 feet above mean high Lake level. This means that at high Lake level the porch is only 4 inches above the Lake level. With any type of wave action the water will be on the porch. The preferred use of riprap for shoreline development presents an issue in this case. The use of riprap or any other sloped shoreline creates a ramp. As wave energy comes to this ramp it rides up to a higher elevation until that energy is dissipated. With the porch being this close to the Lake and the very small difference in elevation, the sloped waterfront with either vegetation or riprap would cause further encroachment of wave water up to the building structure. Therefore a vertical wall face is much more desirable in this situation. The vertical wall face dissipates the wave energy in a vertical fashion both up and down. This will not encroach as much on the building foundation. This is why we have proposed the vertical wall face. The main reason we have not proposed riprap along the base of the main wall face is that the size of the stone required to be effective would be

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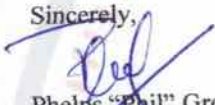
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problematic in two respects. One is the additional fill in the Lake which is generally not desirable. The second reason involves the technical aspects of what size stone is effective. The DEC require stone sizes of 12 inches and smaller, in part because this size stone can be moved by hand and does not require machinery. However, it has been our observation and from research on the ice protection literature that a 12 inch stone is nowhere near large enough to be effective for the long-term. In the past 30 years of observation and from the literature, the maximum stone size needs to be the equivalent of two times the ice thickness. We have observed ice thicknesses of 1 1/2 to almost 2 feet over the course of 30 years. This means that the stone size would be the equivalent of a round stone that would be at least 3 feet in diameter. The research also indicates that more than 50% of the stones need to be at least equal to the ice thickness. This would mean that the bulk of the stones would need to be almost 2 feet in diameter. This size stone is obviously too large for movement by anything but machinery. Therefore, in order to repair or maintain a riprap structure with stones of this size another DEC permit would be required. We have used riprap of the 12 inch size as required and found that after one or two years it has been dissipated, moved and is no longer effective. Also we have found and the research indicates, that the slope of the riprap must be no greater than 1 foot vertical to 3 feet horizontal, to be effective in consideration of the icing problems. This slope would be very detrimental to the wave water problems on the foundation of the house. As a general rule the DEC will only allow a slope of 1 foot vertical on 2 feet horizontal.

Sincerely,


Phelps "Phil" Greene
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1/11/2019

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