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A Division of
The DDS Companies
45 Hendrix Rd.
W. Henrietta, NY 14586

September 12, 2019

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

Reference - Gifford/Campbell, Retaining Wall and Break Wall project .
4681 North Meneth Drive tax map number 140.11-1-12.000

General comments and Response to the PRC Comments. --

Included in the attached are three drawings to give you the necessary information for this project. Also include are several site photos. The existing site conditions are shown on the survey map prepared by Venezia. The Site Plan, prepared by Design Works, shows the proposed activities. The last drawing shows the construction details and layout for the installation of a retaining wall on the uphill side of the house. This is done by licensed engineers from DDS, as required by the Steep Slopes section of the law. Also included is a copy of the DEC permit that was obtained by us, to relocate and reconstruct a replacement break wall.

The key note of this project is that the general purpose for all the proposed actions on this property are for the long-term preventative maintenance of the existing residential dwelling, which was built in the early 1900s, and for maintaining the relatively small usable space on this rather large waterfront parcel. Since the house was built, a concrete break wall was built between the house and the Lake. The current condition of this concrete wall has deteriorated to the point where it will soon be in danger of tipping into the Lake, from undermining and cracking. Over the years the wave action has eroded the around the North end of this wall to the point that at high water levels the Lake is now within a few feet of the front porch. We have spent quite a bit of time working with the DEC to come up with a compromise replacement and relocation of this existing vertical faced break wall. This has reduced the "front lawn" from approximately 12 feet to 7 feet. The new wall will be only 7 feet from the front porch but will extend further to the North to protect that portion of the house. The Town ZBA has agreed and approved this compromise, as this is a very unique situation. There is an existing corrugated metal pipe that provides some drainage for a very small area of land above the house. The drainage basin for this is only from the centerline of County Road 16, in a triangular shape. There are no cross culverts feeding water from the west side of the road. This pipe currently goes across the driveway and lawn area and discharges directly into the Lake through the existing break wall. This pipe arrangement is not only a long-term maintenance issue, as it is quite old, but also does not allow for or any natural treatment of the surface water. To correct this issue we are proposing that a replacement culvert will be positioned to allow continued access across the driveway. However, this will discharge into a proposed dry stream bed. This dry stream bed will allow for surface water with any contaminants or soil particles to percolate through the stones and fabric into the soil rather than being directly discharged into the Lake, for a more natural water treatment. Water only flows through the system a few days during the spring snowmelt and if there is a major storm event. On the up land side of the house, the hillside has slowly eroded and subsided to the point where the base of the slope and vegetation is now encroaching on the foundation of the house and a small concrete retaining wall will soon be overtopped. Also in this area are many trees that are on the hillside, some have now matured to the point where they are overhanging the house and are presenting a very serious potential hazard. Along with this, is the desire to making the gravel driveway parking area more useful. The area now is somewhat triangular shaped so that when more than two cars are parked it is extremely difficult to get turned around to exit. The installation of this proposed retaining wall will accomplish the several issues on this side of the house. The soil that has accumulated at the base of the very steep slope will be removed. The trees that are overhanging the house will be removed also. The retaining wall will replace the stabilizing factor that the tree roots currently provide. The drainage system behind the wall will reduce the amount

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of dampness in the existing crawl space under the house. The proposed lawn area and gravel driveway area expansion will allow more surface water to be absorbed into the ground in a more natural fashion. No increase in impervious surfaces are proposed.

Reference the Steep Slope Protection

The proposed activities are in compliance with the purpose of the steep slope protection section of the local zoning law. A(1)- As stated above, the proposed activities are to provide for the long-term maintenance of this property. The addition of this retaining wall will increase slope stability by controlling the subsidence of the steep area above. There may be some decrease in storm water runoff due to the use of the dry stream bed as a infiltration device. In a small way this dry stream bed will decrease the contaminants to the surface water of the lake. There would be no unexpected change to the effectiveness of the on-site wastewater treatment system. A(2)- the main purpose of this retaining wall system is exactly to guard against property damage and personal injury. A(3)- we have taken every precaution to minimize the potential for erosion, slope failure, stream siltation, not increasing storm water runoff or any contamination of the surface waters in and around Canandaigua Lake. A(4)- we are removing only the trees that are absolutely necessary to prevent property damage. There will be no significant reduction in the steep slope wood lands surrounding this area. As this work zone is in the extremely steep area as defined in these regulations, we are limiting the activity to comply with the general regulations of Section E. The disturbance for this retaining wall will be approximately 1100 ft.², which is much less than the 15,000 ft.² allowed. The maximum height of the proposed wall will be at the maximum of 10 feet allowed. This is an average of 5 feet, again, with 1100 ft.² being approximately half of the 2500 ft.² allowed. As this structure is more than 3 feet tall, we have provided the design by a New York professional engineer, as required in paragraph 4. We will comply with the erosion control requirements as described in paragraph 8 and 9. And as stated above, only the trees which are a safety hazard because they are leaning over the house, or will become unhealthy because their root system will be disturbed, will be removed. No trees are being removed to enhance Lake views. And along that line of reasoning, the view from the Lake will not be significantly changed, as there are many, many trees up land from the proposed work zone, which is mostly behind the house as viewed from the Lake. We believe that we have included all the necessary requirements of paragraph G in the attached drawings. We have not included all of the trees on this parcel but only those that would be relevant to the work area. As a note, all of the roof drains as shown discharge directly to the ground, at the location of the downspout. The discharge from the new drainage behind the proposed retaining wall will discharge in the lawn area north of the existing house.

(Please note that the following was part of the submission to the ZBA, and is included here for your reference.)

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

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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 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.

Reference the Soil Erosion Section of the Code

These plans and activities are all in compliance with section 165 – 3, relating to the purpose of erosion control. We will also comply with the sections of 165-9, compliance. The attached plans are showing all the permit application materials required, with the phasing and timing described below. The standards of section 165-11 are appropriate to this project and we will comply with those, with no anticipated threat to neighboring properties or the general public. We will be using a combination of silt fence and turbidity curtain to contain any soil erosion materials on the jobsite. In addition to those measures, we are fully aware of the requirements in the steep slope sections and will use a combination of turf reinforcing mat or other rolled goods to minimize the exposure of their soil, especially since this activity is planned for this fall and vegetation will not be effective until

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next spring. No excavated material will be stored on-site. It will be loaded directly on trucks and hauled to a disposal site in the town of South Bristol. The total amount of excavated material should be approximately 230 yd.^{3} for all phases of this project. New backfill materials will be #2 stone primarily. This will be trucked in and placed immediately. We will install the silt fence and the turbidity curtain as required, prior to the start of any activities related to soil disturbance. We anticipate three basic phases to this project. The first phase will be the work on the replacement/ relocated corrugated metal pipe and installation of the dry stream bed. This phase will take approximately 5 days to complete with an anticipated start date of late October, 2019. The next phase would be the removal of the existing break wall and installation of the replacement. We would expect this work to start early in November 2019 and take approximately 14 days to complete. The third phase would be the excavation and installation of the new retaining wall behind the house. This phase of the work will require approximately 21 days to complete. The anticipated costs of the erosion control measures will be approximately $4000 or less.

Sincerely,

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09/06/2019 09:17