June 25, 2021

Ms. Katherine Kalinowski, Chair
TOWN OF CLIFTON
PLANNING COMMISSION
P.O. Box 126
Clifton, Virginia 20124

RE: 7184 Clifton Road Retaining Wall Revision
Gordon Project Number 1620-0101 Task 124B

Dear Ms. Kalinowski:

The following observations, comments and field report are based on a site visit to the subject property on June 18, 2021. A comparison review of the approved Preliminary Use Permit to the town of Clifton, titled "Infill Lot Grading Plan Cover Sheet Lot 106 Clifton, 7184 Clifton RD" dated March 19, 2015, and revised to March 27, 2015, prepared by AMA Engineers, and the approved Fairfax County Plans did not reveal any significant discrepancies besides the well relocation and the retaining wall revision. The retaining walls were revised with the updated package titled "01_Cover Sheet, 02_Retaining Wall Revision, 03_Approved Site Grading Plan" for Lot 106- 7184 Clifton Road Clifton VA 20124" dated November 2020 prepared and sealed on November 4, 2020, by Curt R. Crouch, P.E. The plan shows the front and rear retaining wall layout that was constructed. The retaining wall structural design was prepared by Master Engineers & Designers titled "Timber Retaining Walls" and shows specifications for the materials, footers for the post, post spacing based on the height of the walls and identifies a maximum height of 2'-10-1/2" for the retaining wall design. The following comments are based upon the site visit to the property.

1. Front yard retaining wall issues:
    a. Many of the post supporting the retaining wall are separating from the retaining boards on all the walls.
    b. There are several areas that the height of the wall exceeds the maximum height of 2'-10-1/2" as shown on retaining wall detail sheet prepared by Master Engineer & Designers Plans titled "Timber Retaining Walls". The height of the retaining wall varies from 3' to 3.5' in height and may be higher once the accumulated sediment is removed from the bottom of the wall next to the silt fence.
    c. There are numerous instances where the support post exceeds the maximum spacing between post as shown on the retaining wall detail sheet prepared by Master Engineer & Designers Plan titled "Timber Retaining Walls". Per the Master Engineer & Designers Plan the post spacing is dependent on the wall height. The post spacing design for a wall height of one (1) foot and below is a maximum of five (5) feet apart, the design post spacing for a wall height of one (1) to two (2) feet in height is a maximum of three (3) feet, and the design post spacing for a wall height of two (2) feet to 2'-10-1/2" is a maximum of two (2) feet.
    d. Two of the retaining wall boards along the front retaining wall appear to be bowing.
    e. The upper rear retaining wall boards appear to be bowing.
    f. Accumulated sediment needs to be removed in between the wall and the silt fence, so the sediment does not impact the tree save vegetation area and end up in the storm sewer system and ultimately in Popes Head Creek.

Recommendation: Since the retaining walls in the front yard facing the ravine along Clifton Road are not built-in accordance with the structural plan and exceed the structural plan's maximum wall design height of 2'-10 1/2", a new structural retaining wall design reflecting the constructed wall heights needs to prepared. The existing retaining walls will need to be removed and built-in accordance with the new structural design. If the retaining walls fail, it would impact the existing tree save area and

existing vegetation, possibly creating a sediment control issue, and therefore having to provide tree mitigation and additional water quality measures for the increased land disturbance caused by the wall failure. The failure of the walls may cause the Department of Environmental Quality (DEQ) to cite the Town for failing to control development in accordance with the Chapter 11 Chesapeake Bay Preservation Ordinance of the Town code. As a minimum, the front and rear retaining walls need to be evaluated, brought up to the' Virginia Residential Construction Code" (2015 International Residential Code) and ANSI/AWC NDS-2012 "National Design Specification for Wood Construction" standards, and certified by an independent structural engineer licensed in the state of Virginia.

2. Pedestrian guard issues:
    a. Guard Posts are separating from the top rail.
    b. Numerous pickets were spaced greater than 4" center to center design requirement per the Master Engineer & Designers Plan.
    c. There is no visual evidence of a concrete foundation for the guard post as required per the Master Engineer & Designers Plan.

Recommendation: The pedestrian guard in the front yard needs to be repaired and/or removed and replaced. The pedestrian guard needs to be evaluated, brought up to the' Virginia Residential Construction Code" (2015 International Residential Code) and ANSI/AWC NDS-2012 "National Design Specification for Wood Construction" standards, and certified by an independent structural engineer licensed in the state of Virginia.

3. Grading
    a. A swale draining to the northwest behind retaining wall 1 is missing per the Fairfax County approved grading plan.
    b. A swale draining to the northeast behind rear retaining wall 1 is missing per the Fairfax County approved grading plan.
    c. A swale draining to the northwest behind rear retaining wall 2 is missing per the Fairfax County approved grading plan.
    d. A swale draining to the northeast behind rear retaining wall 2 is missing per the Fairfax County approved grading plan.

Recommendation: The missing swales should be implemented per the Fairfax County approved grading plan to reduce runoff over toping the rear retaining walls and to reduce erosion and sediment from the property and minimize/prevent runoff from flooding the house.

4. Miscellaneous:
    a. The asphalt driveway is shown to abut the porch on the county plan but is not constructed to the porch in the field.
    b. The edge of the driveway is higher than the abutting grade causing water to pond and back up against the porch and conner of the house.

Recommendation: Raise the grade in between the driveway and house/porch to be level with the top of the driveway or extend the asphalt driveway tot the house/ porch so the runoff can drain away from the house and not be trapped.

To summarize, the construction of the retaining walls, pedestrian guard and grading did not conform to the approved plans. My recommendation to the Planning Commission is to not issue/approve the final Residential Use Permit until the retaining wall and other issues can be resolved.

If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,
WILLIAM H. GORDON ASSOCIATES, INC.

Scott Peterson, P.E.

cc David L. Guglielmi, Infill by Design, LLC