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April 4, 2022

Chairman and Zoning Board Members
Borough of Fair Haven
748 River Road
Fair Haven, NJ 07704

Re: Residential Variance Application
Alan Nick
Tax Map Lot 9, Block 31
33 Cedar Avenue, Fair Haven, NJ

Dear Chairman and Board Members:

As requested, I have reviewed the following materials provided in support of the applicant's request for variance relief. My review is limited to my engineering opinion related to the calculation of building height and classification of the underground portions of the structure. Information that has changed from my previous review is now presented in **BOLD**:

1. Application to the Zoning Board of Adjustment of the Borough of Fair Haven.
2. "Plot Plan Block 31 Lot 9 33 Cedar Avenue", prepared by MidAtlantic Engineering, dated July 26, 2021, revised through **March 11, 2022**.
3. Grading Statement, prepared by MidAtlantic Engineering Partners, dated October 20, 2021, **revised March 2, 2022**.
4. "Proposed Additions & Renovations For: Nick Residence" prepared by Prestige Design Group, dated August 18, 2020, **consisting of Exhibits A through E, revised through March 11, 2022.**
5. "Topographic Plan", prepared by Charles Surmonte, PE, PLS, dated December 29, 2020

ENGINEERING REVIEW

1. Review of Existing Building Height

The topographic survey prepared by Charles Surmonte, P.E. & P.L.S., shows elevations at four corners of the existing dwelling, and two elevations requiring interpolation between existing contours (46.2, 47.3, 49.2, 49.7, 47.3, 47.3). The average of these grades is 47.8. The building height is defined as the vertical distance measured to the highest point of the existing dwelling from this original lot grade, which computes to **75.94 ft** – 47.8 ft = **28.14 feet**. **The architect has provided supplemental elevations showing the existing ridge elevation; thus, the previously calculated non-conforming building height is eliminated as a building height of 30 feet is permitted.**

2. Existing Underground Structure Classification

For purposes of classification of the underground portion of the structure, the Borough has consistently applied the difference between the finished floor elevation and basement floor elevation in formulating the height of the building below grade. In this case, the existing finished floor elevation is 53.04 and the existing basement floor elevation is 45.40. This yields a mid-point elevation of 49.22. Since 49.22 is greater than the average grade calculated above (47.8), more than 1/2 of the below grade story is above ground. The underground portion of the existing building therefore meets the ordinance definition of a basement. As such, the basement is considered a 1/2 story for zoning purposes. Considering the attic, basement, and two living floors, the existing building is three stories in height. **NO CHANGE**

3. Proposed Building Height

Consistent with the Borough's established practice for zoning applications, the proposed footprint of the expanded residential building is overlain on the existing topography of the lot. Like the process outlined under the calculation of Existing Building Height, the corners of the expanded structures are averaged to formulate the existing grade at the building perimeter. In this case, the building modifications adds **five** additional building corners (highlighted) to the computation of existing grade (46.2, 46.2, 45.9, 46.9, 47.8, 48.5, 49.2, 49.7, 47.3, 47.3). The existing grade at the proposed building perimeter is thereby calculated as 47.5. Therefore, the building height has increased to **77.04 ft – 47.5 ft = 29.54 ft**. **This is due in part to the expansion of the building perimeter over a lower area of the property, in addition to the increase in ridge elevation of new portions of the home (75.94 → 77.04)**. **However, given that the calculated building height remains under the 30' permitted, a variance for building height is no longer required.**

4. Proposed Underground Structure Classification

Similar to the methodology employed in the calculation of height below grade for existing conditions, the difference between the finished floor elevation and basement floor elevation is used to calculate the height of the building below grade. In this case, the finished floor elevation remains 53.04 and the existing basement floor elevation remains 45.40. This yields the same mid-point elevation of 49.22 as calculated for the existing building. Since 49.22 remains greater than the average grade calculated for the proposed building perimeter (47.5), more than 1/2 of the below grade story is above ground. The underground portion of the proposed building therefore meets the ordinance definition of a basement. As such, the basement is considered a 1/2 story for zoning purposes. Considering the attic, basement, and two living floors, the proposed building is three stories in height. The expansion of a nonconforming three-story building requires a variance. In addition, the floor area of the basement must be included in the relevant zoning calculations. Even if one were to utilize proposed grades of the structure **(46.6,**

46.6, 45.9, 50.0, 50.0, 50.7, 50.54, 50.5, 50.5, 48.3) an average proposed grade plane of <u>48.96</u> results, which remains lower than the calculated midpoint elevation between the basement floor and finished floor (49.22) and therefore a basement results from using the proposed grade plane.

In each calculation above, the ordinance and Borough's long-standing practice requires that the existing conditions be used for the grade plane calculation. In certain other circumstances such as subdivisions, where an approved building pad elevation is shown on the approved subdivision plan, the proposed approved grade may be used by the applicant for determining the grade plane. That is not the case here where an approved grading plan does not exist for the construction of the dwelling.

In addition to the above, I note the following:

1. **The grading plan is corrected to show the graphical front setback line of 30 feet.**
2. **EXHIBIT D of the submitted architectural plans indicate an average grade of 47.5 and 47.6 at the Existing Front and Existing Rear Elevations. This should be revised to note the Exiting Average Grade Plane of 47.8, calculated above. The existing building height at each elevation should similarly be corrected so as to measure from the existing ridge (75.94) to the existing average grade plane elevation (47.8).**
3. **The plot plan has revised the rear grading of the property, creating a lower "sunken" patio exterior to the walkout basement. The sunken patio is shown to be constructed with permeable pavers in order to dissipate runoff that would ordinarily collect in this area. The engineer should provide testimony describing the construction and maintenance of this area and the potential for stormwater and/or snow to impact the finished basement.**
4. **The grading statement is generally consistent with the calculations made herein. I note that in the description of the proposed condition, Mr. Domalewski indicates that the proposed height will be kept within 9" of the existing. The actual change in building height is (28.14' → 29.54' = 1.4 feet) or about 17 inches. Either way, the building height conforms to the maximum 30' permitted in the zone.**
5. **The driveway area exterior to the garage door is of insufficient width (16 feet) for a vehicle to properly exit the garage and make turning movements. The applicant should consider narrowing the driveway within the front yard to 10 feet wide and supplementing the asphalt width at the garage turn around area to provide proper vehicular circulation at the garage. This will also have the beneficial impact of reducing the impervious area within the front yard by 180 square feet. Grading modifications along the side lot line will be needed to widen the garage turn around area, in addition, the depressed concrete curbing should be narrowed to**

the width of the proposed driveway. The lot coverage should be recalculated for any changes to the net increase in driveway area.

Should you have any questions or require additional information regarding the above, please do not hesitate to contact me.

Sincerely,
Kennedy Consulting Engineers, LLC

James A. Kennedy, PE, PP
Zoning Board Engineer

cc: Sandra Papa, Zoning Board Secretary
Michael Irene, Esq., Zoning Board Attorney
Elena Gable, PP, AICP, CFM