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January 27, 2026

West Orange Planning & Development Department
66 Main Street, Room 214
West Orange, NJ 07052

Attn. Ms. Jamilet Baquerizo Vita
Planning Board Secretary

Re: **Steep Slope ordinance 25-28**
525 Northfield Avenue
West Orange, NJ 07052
Block# 159.04, Lot# 1.01, 1.02 & 1.03
Planning Board Application No. PB-25-11
ANS File # ANV-6549

Dear Ms. Baquerizo Vite:

This response letter has been prepared to address review comment 13 in accordance with a review memo prepared by CME Associates, dated December 22, 2025 for the above referenced project. The project needs to comply with the Township ordinance 25-28 regarding steep slope and natural features to the greatest extent possible. We have incorporated the ordinance requirements and provided compliance responses.

1). Identification of soil types on the property, with specific reference to highly erodible soils as identified by the United States Department of Agriculture Soil Conservation Service or other recognized authority;

ANS: On-site soil in boring B-6 & B-7 which are the nearest to the existing railroad tie retaining wall to be removed indicated Silly Sands type "SM" soil. See sieve analysis reports in our SB report, Appendix-B. Boring Location are shown in geotechnical report previously submitted.

2). Erosion potential of exposed soils;

ANS: None anticipated. We have recommended Friction Angle of 31°. Existing railroad tie retaining wall base is at the elevation +393.00' at left end and +396.00' at right end. The elevation of ground of Lot 81.02, at the top of the slope above this retaining wall is 24 feet higher. This grade changes within 50 feet distance. The slope of the existing slope is 25.64°, which is flatter than our recommended friction angle of 31°.

3). Length, steepness and surface roughness of exposed slopes;

ANS: Since existing slope will not be disturbed, its length, width and height will remain untouched, it has been stable and incident free for over 65 to 75 years, we do not anticipate any slope stability issue due to a retaining wall construction at the base. Proposed new tree planting will add in erosion prevention after tree roots hold the soil in few years of their growth.

4). Resistance of soil to compaction and stability of soil aggregates;

ANS: As indicated in item-3 above, existing slope will not be disturbed, its length, width and height will remain untouched, it has been stable and incident free for over 65 to 75 years, we do not anticipate any slope stability issue due to a retaining wall construction at the base. Visual observation has indicated no accumulation of rocks at the bottom of the slope indicating stone/rock pieces being stable and not prone to movement.

5). High-water table, water infiltration capacity and capacity of soil profile;

ANS: Our soil boring B-6 performed on 8-20-2024 have indicated static water at 11'-1" below grade. Seasonal High-Water table at 6'-0" below grade. In boring B-8, we have noted static water at 8'-9" below grade. Existing slope behind the retaining wall not have any detrimental effect on the stability of the slope due to water table 8 to 11 feet below the base of the hill.

6). Type and location of construction activity, including the amount of site grading;

ANS: The construction activities are shown of the site plans prepared by Jarmel Kizel, Inc. The steep slope area consists of 26,433sf of which 7,781sf is proposed to be disturbance. A retaining wall with a maximum height of 6 feet is proposed along the entire toe of slope, which will stabilize the slope.

7). Location of construction access roads;

ANS: Construction access will be provided from the existing paved parking area at the toe of slope.

8. Stormwater management plan;

ANS: A stormwater management report has been prepared by Jarmel Kizel in compliance with Township stormwater Control Ordinance 25-29.

9). Soil erosion and sediment control plan, including, but not limited to, a plan explaining how the applicant will minimize adverse impacts upon existing natural features;

ANS: A Soil Erosion and Sediment Control plan has been prepared as part of the site plan set by Jarmel Kizel to comply with the Hudson Essex Passaic Soil Conservation District.

10). Plans and specifications for any retaining walls, steps, or other soil protective structures proposed;

ANS: The proposed retaining wall detail has been provided on the site plans. The wall will be a large block wall with a height of 6 feet to minimize steep slope disturbance. The new retaining wall design will not affect the stability of the slope. Final design and specifications shall be provided to the West Orange Building Department during construction permit process.

11). A stabilization and revegetation plan prepared, signed and sealed by a New Jersey professional engineer, including a complete description of the existing vegetation, the vegetation to be planted and slope stabilization measures to be installed;

ANS: A landscaping plan has been provided as part of the site plan set. The ground cover and landscaping proposed will minimize steep slope erosion. The retaining wall will have a stormwater drain behind it that will prevent any hydrostatic pressure built-up at the base of wall.

Additionally, a Soil Erosion and Sediment Control plan has been prepared by Jarmel Kizel, Inc. to comply with the Hudson Essex Passaic Soil Conservation District.

- 12). The developer of a parcel with steep slopes shall submit a geotechnical analysis of the slope stability and the need for remedial work such as shaping of the rock face, pinning and/or grouting of the exposed rock for stabilization and the installation of safety netting in areas of concern. The geotechnical analysis shall be performed by a qualified Professional geotechnical engineer licensed in the State of New Jersey, with a minimum of five years of professional experience in the geotechnical field.

The analyses of local and global, rockslide, and rock face slope stability shall be conducted by a qualified professional geotechnical engineer adhering to the principles of geotechnical engineering for soil and rock mechanics and utilizing conventional methods of analyses. The determination of slope stability shall include, but is not limited to, geologic research, subsurface explorations, laboratory testing to assess soil/rock properties, visual evaluations, stereoscopic analyses of the rock face, and adequate factors of safety against failure.

ANS: Not Applicable, the slope is vegetated with existing trees. Rock faces are not visible.

- 13). In areas where the potential for rockslides exists, a rock fall zone, or catchment area width, shall be provided at the toe of slope. The required width of the rock fall zone would be determined by the geotechnical engineer utilizing established criteria such as those developed by Arthur M. Ritchie and included in the Rockfall Catchment Area Design Guide.
(<https://www.dot.ny.gov/main/businesscenter/designbuildproject13/repository/Oregon%20DOT%20Rockfall%20Area%20Design%20Guide%20-%2020141211.pdf>)

ANS: Since existing slope will not be disturbed, its length, width and height will remain untouched, it has been stable and incident free for over 65 to 75 years, we do not anticipate any slope stability issue due to a retaining wall construction at the base. Proposed new tree planting will add in erosion prevention after tree roots hold the soil in few years of their growth. The slope is vegetated with existing trees.

- 14). If the parcel being developed is adjacent to a parcel with steep slopes, then the developer shall obtain the approval of the owner of the adjacent parcel to perform the required geotechnical analysis to determine the slope stability and the potential for rockslides. If the developer is unable to obtain the approval of the owner, then the geotechnical engineer shall evaluate the worst-case scenario and shall provide an appropriate rock fall zone as discussed above.

ANS: It is my professional opinion that there is no slope stability concern at this time. Since existing slope will not be disturbed, its length, width and height will remain untouched, it has been stable and incident free for over 65 to 75 years, we do not anticipate any slope stability issue due to a retaining wall construction at the base. Proposed new tree planting will add in erosion prevention after tree roots hold the soil in few years of their growth. The slope is vegetated with existing trees.

- 15). The developer of a parcel with steep slopes shall prepare a maintenance plan to ensure that the slope is maintained in a safe and stable condition over the years. The maintenance plan shall include site inspections every two years which would include visual observations with pertinent photos of the slope, rock face, and vegetation status at the site.

The steep slope maintenance plan must be prepared by a New Jersey licensed geotechnical engineer and must be recorded against the deed of record for each property on which the steep slope is located. The steep slope maintenance plan shall address, but not be limited to, the following: monitoring movement and property condition changes, inspection and maintenance of slope drains,

installation of drought-tolerant ground cover, over-irrigation of slope landscaping, direct drainage to slopes, disposal of soil or debris on slopes, ponding of water against retaining walls, monitoring movements and property condition changes.

If any deficiencies are noted during the inspection, the necessary corrective action must be taken. Copies of the inspection reports must be filed with the Township of West Orange immediately following completion of the inspection.

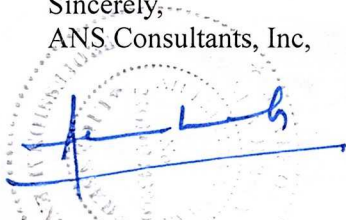
ANS: "A maintenance plan, if needed, will be provided as a condition of approval".

- 16). For areas at the top of a steep slope or adjacent to a parcel with steep slopes, a minimum setback of 50 feet is required from the top of slope to any proposed improvements such as buildings, roads, parking lots, septic fields, swimming pools, hot tubs, ponds, or other uses at or near the top of steep slopes, except as otherwise recommended by a qualified professional. Where development is near steep slopes greater than 30%, increase setback to a minimum of 100 feet, except as otherwise recommended by a qualified professional. The minimum setback shall be established considering site-specific topographic conditions and the recommendations of the qualified professional geotechnical engineer performing the slope stability analysis.

ANS: Not applicable. Top of slope has been previously developed with single family homes that vary from 3.1 feet to 9 feet. No improvements are proposed at the top of slope.

Should you have any questions or require additional information, please do not hesitate to contact the undersigned at (908)754-8383.

Sincerely,
ANS Consultants, Inc,



Atulkumar N. Shah, PE, PP, F. ASCE
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