



County of Albemarle
Department of Community Development

Memorandum

To: Mariah Gleason, Community Development Planning and Zoning Review
From: Frank Pohl, PE, County Engineer, Community Development Engineering Review
Date: March 8, 2021
Subject: SP202000005 – Ivy Proper – Critical Slopes Impact Review

The critical slope waiver request has been reviewed. The engineering analysis of the request follows:

Description of critical slope area and proposed disturbance:

The critical slopes proposed to be impacted appear to have been created as early as 1937 for the construction of the railroad tracks based on historical aerial photography. The slopes are currently stabilized with understory shrubs, groundcover and trees and are located across the central to upper portion of the site. The applicant proposes to grade within critical slopes for the construction of a parking lot, retaining walls, a dumpster pad, and a sanitary sewer drainfield.

Areas	Acres (sf)	
Total site	0.87 acres (37,897 sf)	
Critical slopes	6,880 sf	18.2% of total site
Critical slopes disturbed	5,515 sf	14.6% of total site 80.2% of total preserved slopes

Exemptions to critical slopes waivers for driveways, roads and utilities without reasonable alternative locations: The proposed disturbance is not one of the listed exemptions and therefore a waiver is required.

Compliance with Zoning Ordinance 18-4.2.5(a)(1):

“rapid and/or large-scale movement of soil and rock”

Existing critical slopes are stable. Disturbance of critical slopes will entail cutting/excavating earth to install retaining walls. The maximum height of cut will be approximately 10-ft. The applicant’s first submittal showed an upper wall almost touching the railroad property line. The second submittal included adjustments to the parking lot layout to increase the distance between the railroad property line and the upper wall. A geotechnical engineer will need to verify the stability of soils and the contractor will need to proceed with caution during the excavation. If the slope fails during excavation, the height of cut is small enough to contain material from the failed slope within the site. However, there is a risk that a failure could impact the railroad right-of-way. Considering this, a geotechnical recommendation for wall installation will be required with the retaining wall design prior to approval of the VSMP application to minimize the chances of rapid and large-scale movement of soil and/or rock.

“excessive stormwater run-off”

The impacted critical slopes will be replaced with a combination of retaining walls, impervious areas (pavement), and pervious areas (landscaping). Additional runoff resulting from the change in land cover will be detained in an underground detention system so that post-development runoff meets minimum standards for channel and flood protection.

“siltation of natural and man-made bodies of water”

There are no nearby man-made bodies of water. Little Ivy Creek, a natural body of water, is approximately 300-ft from the site. The floodplain does not extend to this site. Grading of the critical slopes results in additional disturbed areas that would otherwise remain undisturbed. However, the slopes to be impacted are relatively small (e.g. less than 6,000 sf) so wall installation should be completed fairly quickly as an initial phase of construction, which would minimize exposure and the potential of sediment release from this area of disturbance.

“loss of aesthetic resources”

The critical slopes to be impacted will be located behind the proposed building and between the proposed and existing building on the adjacent parcel. The site is partially wooded and this development will result in the loss of most of the wooded area. Proposed walls will be limited to 6-ft tall so soften their visual impacts, if seen from 250.

“in the event of septic system failure, a greater travel distance of septic effluent”

The development proposes to install a drainfield near the railroad. Septic effluent will be pumped to the drainfield since it will be higher than the building finished floor elevation. VDH permitting will be required and the permit states VDH “may revoke or modify any permit if, at a later date, it finds that the system would threaten public health or the environment”. Staff does not believe disturbance of the critical slopes would result in a greater travel distance of septic effluent in the event of system failure; the presence of retaining walls may even reveal a system failure sooner than if walls were not installed (smell and/or leaching through wall).

The following are additional factors to be considered by the commission for this application (§18-4.2.5(a)(3)):

The commission may grant a modification or waiver if it finds that the modification or waiver:

- 1) would not be detrimental to the public health, safety or welfare, to the orderly development of the area, or to adjacent properties;

Staff does not find the waiver would be detrimental to the public health, safety or welfare, to the orderly development of the area, or to adjacent properties.

- 2) would not be contrary to sound engineering practices; and

Staff does not find this request to be contrary to sound engineering practices.

- 3) at least one of the following:

- a. Strict application of the requirements of [section 4.2](#) would not forward the purposes of this chapter or otherwise serve the public health, safety or welfare;

Staff is unable to support this finding because the strict application of the requirements of section 4.2 would forward the purposes of this chapter and otherwise serve the public health, safety or welfare by prohibiting development on areas of critical slope.

- b. Alternatives proposed by the developer or subdivider would satisfy the intent and purposes of [section 4.2](#) to at least an equivalent degree;

Staff is unable to support this finding as alternative designs were not presented.

- c. Due to the property's unusual size, topography, shape, location or other unusual conditions, excluding the proprietary interest of the developer or subdivider, prohibiting the disturbance of critical slopes would effectively prohibit or unreasonably restrict the use of the property or would result in significant degradation of the property or adjacent properties; or

Staff recognizes the site is unusual in topography and shape and is limited in size (0.87 acres). The applicant is limiting development to approximately 2/3s of the site. The critical slopes to be impacted extend through the middle portion of the site, making it difficult to develop the site without impacting them. Staff's opinion is that prohibiting the disturbance of critical slopes would unreasonably restrict the use of the property.

- d. Granting the modification or waiver would serve a public purpose of greater import than would be served by strict application of the regulations sought to be modified or waived.

Staff is unable to support this finding.

Based on the review above, there are no engineering concerns which should prohibit the disturbance of the critical slopes as shown and engineering staff recommends approval of the Critical Slopes waiver request.