



BOSWELL ENGINEERING

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180 Main Street • P.O. Box 571 • Chester, NJ 07930 • (908) 879-6209 • Fax (908) 879-6597

July 26, 2024

Township of West Orange Planning Board
66 Main Street
West Orange, New Jersey 07052

Re: West Essex Highlands LLC
Preliminary and Final Site Plan Application
Block 179, Lot 32
Warner Road
BE Project No. VA-183

Dear Chairman and Members of the Board:

As the Board is aware, the above referenced application proposes the construction of 496 residential units on a parcel known as lot 32 in block 179 which is comprised of approximately 120 acres. The proposal has the potential to impact the Township of Verona based on the changes in land cover and runoff that will discharge towards Verona and the Peckman River. The site plans, prepared by Anderson Consulting Services and revised through May 6, 2024 and the Drainage Report, prepared by Paul W. Anderson, PE revised through October 30, 2023, have been reviewed in the context of the potential impacts on Verona.

The comments below are based on a review of the documents that have been submitted. It should be noted that these comments are focused on the portion of the site that drains towards the Peckman and Verona, however similar comments should be applied across the entire site.

1. There are two separate HUC-14's that bisect the property. The first HUC-14 includes the Canoe Brook and its tributaries. The bulk of the proposed improvements are within this HUC-14 and drains towards the south away from the Township of Verona.
2. The second HUC-14 includes the easterly portion of the subject site that drains towards Peckman River. For the purposes of this report, we will consider this HUC-14 watershed the Peckman River watershed. Peckman River originates in Eagle Rock Preserve before winding its way northerly through the Township of West Orange, through the Montclair Golf Club, before entering the Township of Verona through the Essex County Park, across Bloomfield Avenue before eventually exiting Verona Township at its northerly border with Cedar Grove.
3. The survey depicts a ridgeline along the easterly portion of the subject site, that divides runoff between the two HUC-14 areas referenced above. There is an existing 25' wide utility easement that traverses the site in a north-south direction located easterly of the ridgeline. Aerial imagery indicates the existing site is covered by woods.

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4. The Overall Site Plan depicts deer fence encompassing 17.9 acres within the easterly portion of the site within the Peckman River watershed. The plan label indicates this area is to be vacant. In order to prevent future detrimental impacts on the Peckman River, this area should be placed into a permanent conservation easement.
5. Site Plan E and F (sheets SP-9 and SP-10) and Grading Plan E and F (sheets SP-16 and SP-17) depict building D1 and D2 generally being constructed along the ridgeline that divides the two HUC-14 watersheds.
6. The predevelopment and overall drainage area map indicate the proposed improvements associated with building D, including the roof, are within the Canoe Brook watershed area.
7. Based on the utility plans, a portion of the runoff area behind proposed building D1 will be collected via two inlets that will drain under the building footprint to the front of the building into the drainage system (DA#4) that is being designed to discharge to the Canoe Brook tributary. The remainder of the area behind building D1 appears to drain to a low point at what appears to be a proposed patio area. It is not clear how runoff to this area is being addressed, although the Overall Drainage Area Map indicates this area will drain to DA#4 and DA#5, both of which are within the Canoe Brook watershed. It appears additional information needs to be provided in this area to confirm the area will discharge within DA#4 and DA#5, both of which ultimately discharge to Canoe Brook. If the area were to discharge towards the east to the Peckman River watershed, then an additional analysis point would need to be provided to confirm compliance with the applicable stormwater management rules. It is our recommendation that the area be collected with additional inlets/piping and piped to DA#4 and DA#5 consistent with the drainage area map.
8. Based on the proposed grading, the area behind proposed building D2 is proposed to drain to the Canoe Brook watershed area and is depicted within DA#5.
9. The limit of disturbance behind buildings D1 and D2 varies from approximately 15' to 30'. It is recommended the limit of disturbance as currently depicted on the plans be staked out prior to construction and the existing wooded area protected with tree protection fencing.
10. The predevelopment drainage area map depicts DA#6 which includes a portion of the emergency access drive that is being constructed along the north side of building D1 that will connect to an existing cul-de-sac at Howell Drive, located in the Township of West Orange. This portion of the proposed emergency access is within the Peckman River watershed area. The Grading Plan F (Sheet SP-17) and Utility Plan F (sheet SP-24) depict the emergency access and it scales approximately 150 feet long by 16 feet wide. The design indicates 130 linear feet of porous pavement will be utilized within the access to provide water quality, water quantity and groundwater recharge. It is noted that the NJDEP BMP Manual limits the slope of porous pavement to 5% while the proposed grading indicates a design slope of 9.2% so the use of porous pavement in this application is not acceptable. It is not clear how

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storage within the porous pavement system will be achieved based on the slope of the emergency access drive (a detail of the porous pavement system was not found on the plans that were reviewed). Also, the drainage report indicates an infiltration rate of 0.31 in/hr is being utilized in the analysis. It is not clear what this rate is based upon. A minimum field-tested hydraulic conveyance rate of 1.0 in/hr needs to be provided for the system (see Chapter 12 of the NJDEP Manual). The Overall Drainage Area Map indicates DA#6 encompasses an area of 0.27 acres (11,774 sf) of which approximately 0.07 acres (3,000 sf) are impervious. Compliance with the stormwater management rules should be demonstrated for this area.

11. Conveyance calculations were not found in the report. The capacity of the roof drainage system (gutters, downspouts, leader drains), and proposed storm sewer system, for Building D should be confirmed. The Township Engineer's report indicates that the system must be designed for the 25 year storm. The system must have capacity for the maximum design storm (100-year event) and or demonstrate drainage boundaries will be maintained if any portions of the system were to surcharge. Inlets or pipes that surcharge for this higher event must overflow to the BMPs to which the piping is directed or the design will not be valid for the 100 year event.

It is respectfully requested that the Planning Board consider these comments as it reviews the application.

Very truly yours,



Paul W. Ferriero, PE, CME
Boswell Engineering



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