

MidAtlantic

Engineering Partners

August 31, 2020

APR-184

Via Hand Delivery

West Windsor Township
271 Clarksville Road
West Windsor, NJ

Attn: Mr. Francis A. Guzik, PE, CME

Reference: Heritage at West Windsor
PB 19-08
Preliminary / Final Major Site Plan and Subdivision
Block 28; Lots 15 & 21
Township of West Windsor, Mercer County, New Jersey

Dear Mr. Guzik:

In reply to your review memo dated August 4th, please find the following responses, where one is warranted.

1.0 General

1.03 *A minimum of two project benchmarks are required to be established and documented on the plans. Two benchmarks have been added to the survey prepared by Ensurlan, Inc. These need to be added to the site plan and on the grading plans with reference note. This is a Site Plan checklist requirement and needs to be addressed on the formal submission to the Planning Board.*

The two benchmarks, inclusive of a reference note, have been added to the Existing Conditions Plan, Geometry, Signage and Striping Plans and Grading Plans.

1.04 *The northerly third or so of the overall development, as well as the access drive off of Princeton Hightstown Road, is proposed to be constructed with a significant amount of fill. Twenty-six buildings plus the group home propose finished floor elevations more than 4 feet above the existing grades, with the maximum being approximately 10 feet above existing grade. Site earthwork calculations are to be provided. The applicant should estimate how much fill will be required to be imported and provide justification to support the proposed grading. Fill will have to be tested for contaminants and proven to be suitable for residential use. If approved by the Board, the applicant shall engage the services of a geotechnical engineer who will supervise the site fill and roadway construction and certify that acceptable compaction and moisture contents are obtained in compliance with NJDOT specifications.*

A spreadsheet printout and color plan of the on-site earthwork have been provided (Submission Item P, above) and appears to indicate that the earthwork will be relatively balanced. However, this assumes that material excavated from proposed basement areas will be suitable for use as structural fill for roadways, etc. Should they not be suitable, the requirements for import fill previously mentioned will be in effect. For purposes of Board review, a note is to be added to the plans reflecting this.

The requested note has been added to the Grading Plans.

2.0 Access and Circulation

- 2.04 *There appear to be a total of 198 surface parking stalls, with 23 of those designated as being “land banked”. Stalls not intended to initially be constructed should show the required curbing to construct them as not being constructed, via a call-out and with a lighter line type in the applicable areas. **The banked parking areas still do not show the initial curbing to be constructed across their face, to be removed when or if it is determined that the additional parking is necessary. This should be incorporated into the plans formally submitted to the Planning Board.***

Curbing within areas of banked parking has been revised accordingly.

The calculations indicate that 119 stalls are required for the garden apartments, with none allocated for the group home. This leaves 56 stalls for guest/common parking spaces.

The applicant indicates that 74 spaces are allocated for guest parking (97 minus 23 banked); the applicant will be required to provide testimony on the total number of on-street/common parking spaces and the breakdown between affordable unit residents and guest spaces.

Testimony will be provided.

- 2.05 *The site circulation design includes “speed tables” in six locations crossing Roads A and B. A standard detail for these features has been provided, but it’s unclear how the 4’-wide bicycle lanes integrates with each one. Further detail is required. **The current plan set appears to propose three (3) speed tables: one at the intersection of Road “A” with Road “D” and two on Road “B” at its intersections with Roads “C” & “E”. The applicant has clarified that the bike lanes will be outside of the speed table with curb ramps exiting the sidewalk to the bike lane, crossing the 4’-wide lane and then ramping up at 1:12 (8%) to a plateau, and then back down on the other side to meet the bike lane heading in the opposite direction of travel. This design essentially creates a truncated pyramid between the two bike lanes, with a base area of 22’ x 22’ sloping up to a level top area of 10’ x 10’. During passage of two vehicles headed in opposite directions, one wheel will be on the upper “flat” with the other wheel on the 8% slope to the right, resulting in a tendency for the car to want to turn toward the bike lane and curb. To avoid the slope requires a vehicle to drive in the middle of the road. Further attention to the design is required.***

The speed table detail has been further revised / redesigned to address the stated concerns.

- 2.06 *The profiles for the various project roadways should be revised to identify the existing and proposed centerline profiles. In addition, they should also show the roadway design elements, such as PVIs, tangent slopes, vertical curve lengths, “K” values, etc. Also, correct any instances of text overlap on the profiles.*

The line that represents the existing ground profile along the roadway centerline has not been identified as such. Most of the vertical design elements have been added. However, the profiles need to show existing ground and proposed design centerline elevations at specific stations, typically every 25 feet. The road stationing also needs to be displayed on the plan view sheets.

One other issue with the utility profiles is that all of the proposed structures are treated as if they were “B” inlets, with TC and GR elevations, instead of Rim elevations for sanitary and storm manholes, and inverts and top of pipe for flared-end sections.

The following revisions have been made to profiles: existing grade along the road centerlines have been labeled as such; existing and proposed design centerline elevations have been labeled

every 100 feet; storm structure label types have been corrected. Road stationing has been added to the Geometry, Signage and Striping Plans.

2.09 *The applicant has submitted a construction phasing plan with the application (Submission item E, above). Phase 1 is to consist of the following:*

- *Boulevard entrance and Active Recreation facilities;*
- *Nine residential buildings, as follows in proposed order of construction:*
 1. *Building 43 (Model Unit Type D)*
 2. *Building 42 (Model Unit – Type A)*
 3. *Building 27 (Type E)**
 4. *Building 26 (Type B)*
 5. *Building 41 (Type E)**
 6. *Building 44 (Type D)*
 7. *Building 40 (Type E)**
 8. *Building 2 (Type A), and*
 9. *Building 3 (Type B)*
- ** - Affordable housing unit components;*
 - *Stormwater Basin and associated piping to Phase 1 improvements;*
 - *All of Road B;*
 - *All of Road C;*
 - *Portion of Road A;*
 - *Portion of Road E;*

The remainder of the site improvements are indicated to be within Phase 2 of construction.

A more detailed phasing plan will need to be submitted showing how the interim condition will be functionally complete and safe for vehicles and pedestrians. § 200-109.A requires that stormwater control improvements shall be completely installed and stabilized, except for final landscaping, prior to issuance of any building permit for the development. This is required to be reflected in the schedule and construction sequence.

Phase 2 is proposed to be cordoned off using fencing and signage with a locked gate providing access to the retention basin from Road “B”. The Phasing Plan has been revised to add a note that the issuance of building permits are tied to the completion of the temporary sediment basin. The Sequence of Construction on the SESC plans must also address stormwater management installation timing as well.

The Sequence of Construction on the SESC plans have been revised accordingly.

2.10 *Provide standard typical section details for each of the proposed roadway cross-sections (boulevard entrance; 30'-wide with bike lanes; 24'-wide secondary streets).*

Standard typical roadway cross section details have been added to Sheet 37.

3.0 **Stormwater Management**

3.02 *The applicant has provided a geotechnical report that concludes that, “(t)he test pits performed at the proposed stormwater basin and infiltration trench locations encountered predominantly surficial cohesive soils.” This indicates only that several areas of the site tested have insufficient permeability.*

If the intent is for the entire development site to be deemed devoid of soils suitable for groundwater recharge, then the soils consultant, French & Parello, needs to provide a specific certification to that effect and indicate that no additional testing onsite is warranted. Sheet 3 of 37 requires updating to reflect the F&P report.

The applicant's cover letter indicates that a certification regarding infiltration provided by French & Parello was included with the submission, but none was included in the submission package received by this office. This remains an open item.

The certification was provided via email and first-class mail on August 10th.

- 3.05 *Tributary flows to each of the proposed culvert systems have been provided and storm sewer calculations show that the culverts can pass the 25-year design storm. However, there is very little excess capacity in FES-3C, and the spreadsheet calculations may or may not take into account entrance losses, which could exacerbate backwater effects at the upstream side for the 100-year storm. A backwater analysis should be performed to determine the extent of flooding that will occur at that point*

The applicant's response letter indicates that the extent of ponding is shown on an exhibit entitled "100-Year Stormwater Analysis Plan"; however, this document was not included in the submission packet submitted to this office for review. This remains an open item.

The plan was provided via email and first-class mail on August 10th.

- 3.06 *Applicant must demonstrate that the development's 100-year post-development runoff to the stormwater basin will in fact reach the basin through the use of oversized piping and/or overland swales, with minimal internal flooding.*

The applicant's response letter indicates that the extent of ponding is shown on an exhibit entitled "100-Year Stormwater Analysis Plan"; however, this document was not included in the submission packet submitted to this office for review. This remains an open item.

The plan was provided via email and first-class mail on August 10th.

- 3.07 *Ordinance Section 200-63.C (1) (Drainage and Conservation Easements) states that the Planning Board may require a stormwater and drainage easement and right-of-way along a property which is bordered by a watercourse of any kind. A drainage easement to the Township along the northern border with adjacent Lot 3 and to Lot 106.53, following and along the existing watercourse that begins at Route 571, is recommended. Further requirements of said and its language are specified in the section.*

A varying 15'-wide or 30'-wide drainage easement is shown along the northerly property line. No easement instruments or legal descriptions for same were submitted for review. This remains an open item.

Legal Descriptions have been prepared and are enclosed with this submission.

- 3.09 *Other SWM comments:*

- g. *A Stormwater BMP Operation & Maintenance Manual for the proposed stormwater controls must be submitted for review prior to recommending the application proceed to Planning Board.*

The Maintenance Plan submitted was not prepared in accordance with the NJDEP

“Maintenance Guidance” document, which can be found on the NJDEP’s Stormwater website. The applicant’s engineer is requested to reference the manual submitted for the recent “Woodstone @ West Windsor” development as a template for this project’s document.

The O&M Manual has been revised as requested.

5.0 Lighting

5.01 *The applicant is proposing to install a total of 105 street lights (Holophane 68W LED “acorn” fixtures) for the development which appears generally adequate, but not excessive. Point plotting of the light intensities have been provided but calculations of the maximum, minimum and average lighting intensities have not. Calculations in accordance with Township Land Use Ordinance Section 200-31.K. must be provided before recommending the project proceed to Planning Board. Ordinance Section 200-31K requires photometric calculations that demonstrate an average intensity of 3.0 footcandles at intersections, a maximum of 1.0 footcandles at property lines and an average of 0.6 footcandles throughout residential areas. The lighting plan has only a single calculation showing an average of 0.9, a maximum of 2.0 and a minimum of 0.3 that are identified as being taken over the roadways and sidewalks. This indicates that the average of 3.0 at intersections isn’t being met, and the average of 0.6 for residential areas is exceeded. This remains an open item.*

The lighting plan has been revised to meet the ordinance requirements of:

- **Average minimum of 3.0 fc at intersections with county roads**
- **Average maximum of 0.6 fc throughout residential areas**

Calculation zones that correspond to the presented footcandles have been shown on the Lighting Plans.

6.0 General Comments

6.02 *Metes and bounds descriptions for all proposed easements and dedications, along with closure calculations, will be required for review and approval. The applicant wishes to defer submission of these items until the time of resolution compliance, should the Board approve this application. I have no objection to this request, subject to the applicant recognizing this may result in a longer resolution compliance review period.*

Metes and bounds descriptions for all easements are enclosed with this submission.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

MidAtlantic Engineering Partners, LLC



Michael V. Weseloski, P.E.