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MATRIXNEWORLD
Engineering Progress

August 11, 2023

Via UPS Ground & E-Mail

Township of Verona Planning Board
Verona Town Hall
600 Bloomfield Avenue
Verona, NJ 07044

Attn: Marcie Maccarelli, Acting Planning Board Secretary

RE: PRELIMINARY AND FINAL MAJOR SITE PLAN
VERONA SUNSET URBAN RENEWAL, LLC
1 SUNSET AVENUE – BLOCK 303, LOT 4 (TOWNSHIP OF VERONA)
BLOCK 301, LOT 5 & BLOCK 401, LOT 1 (TOWNSHIP OF MONTCLAIR)
ESSEX COUNTY, NEW JERSEY
MATRIX NO. 19-720

Planning Board Members:

This letter has been prepared in response to comments contained within your July 25, 2023 letter.

We are submitting the following items in support of the application:

1) Ten (10) copies of the plans entitled “Preliminary and Final Major Site Plan, Verona Sunset Urban Renewal, LLC, Block 303, Lot 4, Township of Verona, and Block 301 Lot 5 and Block 401 Lot 1, Township of Montclair, Essex County, New Jersey” prepared by Matrix New World Engineering and last revised August 8, 2023

2) Ten (10) copies of the report entitled “Stormwater Management Report, Verona Sunset Urban Renewal, LLC, Block 303, Lot 4, Township of Verona, and Block 301 Lot 5 and Block 401 Lot 1, Township of Montclair, Essex County, New Jersey” prepared by Matrix New World Engineering and last revised August 8, 2023

3) Ten (10) copies of the Memorandum entitled “Runoff Volume Memo” prepared by Matrix New World Engineering and dated July 31, 2023

4) Ten (10) copies of the Memorandum entitled “Stormwater Report Memo” prepared by Matrix New World Engineering and dated August 7, 2023

5) Ten (10) copies of the Memorandum entitled “Pre- and Post-Dev. Hydrographs” prepared by Matrix New World Engineering and dated August 7, 2023

6) Ten (10) copies of the Site Plan Revisions Memo dated August 9, 2023

7) HydroCAD files utilizing both the Delmarva and SCS Hydrograph (via E-Mail)

In addition to the above enclosures, please review the point-by-point responses below for the above-referenced review letter; *italicized* text indicates review comments and **bold** indicates our response.

BOSWELL ENGINEERING REVIEW LETTER DATED JULY 25, 2023

Geotechnical Report

1. *The document named “2023-06-30 Rev Geotech Report (S+S)” described the subsurface conditions; surficial materials (consisted of 6” asphalt), upper stratum (presence of sand and silt with varying amounts of gravel), intermediate strata (presence of silt, sand and clay), decomposed bedrock (presence of decomposed bedrock underneath the intermediate strata), and bedrock (basalt underneath the previous layers).*

The report concluded that "[…] since the site is located on a rocky ridge and the elevation of the Site is higher than the surrounding area and tributary, the water table can be anticipated in the valley rather than at a shallow depth on Site. Heavy rainfall was noted in the days prior to and during the test pit excavations conducted in October 2022. The saturation and soil mottling in some of the test pits can be attributed to these heavy rainfall events […]." Additionally, the report stated that "*[…] the ground water and mottling encountered in the geotechnical investigation are not the result of the true groundwater level but instead a perched water condition*."

Boswell Comment: *After reviewing the rainfall reported at Rain Gage NJ-ES-40 of the Co-Co-Rahs network (**Co**mmunity **Co**llaborative **R**ain, **Ha**il and **S**now Network), it was confirmed that rainfall was registered on October 4, 5, and 6, 2022 as follows:*

- *October 4, 2022: 1.45" (no soil test performed this date). This event is nearly equivalent to a 60-minute 2-year storm.*
- *October 5, 2022: 0.50" (soil test performed).*
- *October 6, 2022: 0.16" (soil test performed).*

As discussed in the hearing, we intend to complete additional testing at Basins A and B in order to confirm our recent conclusions that the site is subject to perched water and not true groundwater. Two (2) borings will be completed at Basin A, and one (1) boring will be completed at Basin B in accordance with NJDEP BMP Manual Chapter 12 regarding testing in the presence of bedrock.

Bioretention Basin Memo

2. *The applicant provided the drain time calculation of the proposed bioretention basin (Basin C). The estimated drain time was 1.70 hours, which complies with the maximum rain time of 72 hours set forth in the NJDEP BMP manual chapter 9.7. However, the applicant shall adjust the bottom of Bioretention Basin (Basin C) to comply with the BMP requirements (2-ft separation)…*

   The Stormwater Management Report and Site Plans have been revised so that the bottom elevation of the Bioretention Basin (Basin C) complies with the BMP requirement of 2-ft separation. The revised Stormwater report and site plans are included with this submission.

Additional Pending Comments

Stormwater

3. *The applicant shall revise and provide in the report an explanation about the post-development flow volume values provided in the latest version of the Stormwater Management Report (dated May 5, 2023) as they are equal to the flow volume values reported in previous versions of said report, despite the fact the peak flow values increased…*

   A memo entitled "Runoff Volume Memo" is included with this submission which demonstrates that when all other design input parameters remain the same, the peak flow volume remains the same when switching from the Delmarva hydrograph to the SCS hydrograph. For this memo, a generic example with an area of 1-acre and a runoff coefficient of 74 was utilized at different time of concentration values (TC=10 min., TC=15 min, and TC=20 mins). As shown in this memo, the peak flow volumes using the Delmarva hydrograph and SCS hydrographs remains the same for the 2-, 10- and 100- year storm events at the different times of concentration.

   Additionally, a memo entitled "Stormwater Report Memo" in included with this submission which demonstrates through our site-specific stormwater design that the peak flow volume in the January 11, 2023 (Delmarva Hydrograph) remained the same in the August 7, 2023 stormwater report (SCS Hydrograph) in the 2-, 10- and 100- year storm events when all other design input parameters remained the same for each drainage area.

   The HydroCAD files utilizing the Delmarva and SCS Hydrographs have been provided via E-Mail to the Board Engineer.

4. *The Applicant shall provide in the report the reduction of peak flow in drainage areas 1, 3, and 4 (DA-1, DA-3, and DA-4). A table with the values pre- and post-development might be provided…*

   The stormwater management report has been revised to clarify which NJDEP quantity method was used for reduction for each drainage area. This clarification is provided under Tables 5-8 in the Stormwater Management Report.

5. *The Applicant shall provide in the report a section displaying the assessment of the existing stormwater sewer capacity in the context of the 2-, 10-, and 100-year flow coming out of the site. A table with the values might be provided…*

   The stormwater management report has been revised to include the Existing Stormwater System Capacity analysis completed. The discussion of this analysis is provided on Page 8 of the Stormwater Management report, with supporting documentation located in Appendix J of the report.

Sanitary

6. *The Applicant shall assess the adequacy of the existing sanitary sewer capacity to handle the additional wastewater flow generated by the proposed development…*

   We agree to investigate and coordinate with Township professionals. It is our belief that this can be included as a condition of approval by the Board. This item will be addressed as part of the NJDEP TWA permitting process.

Drinking Water

7. *Project's water demand: According to documentation provided by the Applicant, the average water demand is 32,308 GPD (or 22.4 gpm). Using a peaking factor of three [per NJAC 5:21-5.2(d)], the peak flow will be 96,924 GPD (or 67.3 gpm). The Township's water system capacity to supply the demand shall be assessed/determined…*

   We agree to investigate and coordinate with Township professionals. It is our belief that this can be included as a condition of approval by the Board. This item will be addressed as part of the NJDEP BWSE permitting process.

8. *Project's fire flow demand: Per both NJAC 5:21-5.3(i)3 and NJAC 7:10-12.37(b), "the design capacity of every distribution main and every service line shall be such as to provide a minimum pressure of 20 psi at ground level under all flow conditions." The Applicant should calculate their fire flow demand, which must be compared to the flow available (resulting from the hydrant test) in order to assess whether the Township's water system has enough capacity to handle the fire flow. This should be also evaluated by the Township Fire Official. Lastly, the fire flow demand calculation might be performed irrespective of the current Township water capacity…*

   We agree to investigate and coordinate with Township professionals. It is our belief that this can be included as a condition of approval by the Board. This item will be addressed as part of the NJDEP BWSE permitting process.

Should you have any questions or require additional information please do not hesitate to contact me by phone at (973) 295-3604 or via email to ssavage@mnwe.com.

Sincerely,

Sean M. Savage, PE
Director of Land Development