MarksEngineering
4303 Routes 5 & 20
Canandaigua, NY 14424

February 29, 2023

Town of Canandaigua
% Mr. Doug Finch, Town Manager
5440 Routes 5 & 20 West
Canandaigua, NY 14424

Re: Sunset Ridge Estates - 3535 State Route 364 - Preliminary Overall Subdivision Plan Review, SWPPP/Engineer's Report Review - TM# 98.19-1-20.100

Dear Mr. Finch:

On behalf of our client, Sunset Ridge Estates, we offer the following in response to the MRB comment letter dated January 27, 2023. Our responses directly correspond to the comments listed below:

PRELIMINARY OVERALL SUBDIVISION COMMENTS
"These comments are to be addressed before signatures are affixed to the Preliminary Overall Subdivision Plans and prior to Final Subdivision Plan Approval of any phase."

1. *"Please ensure that the plan sheet revision table is updated with each submission of revised materials."*
   Acknowledged.

2. *"The hydrology modeling shows that the lower pond peak water elevation is only 0.22' below the top of berm elevation, whereas 1' vertical separation is required. The SWMF should be revised to ensure proper overflow protection."*
   The grading around the lower pond has been revised to ensure proper overflow protection is provided.

3. *"The following comments pertain to the WQv, RRv, and CPv calculations and modeling:"*
   a. *"The RRv area reduction practices used (i.e. disconnection of rooftop runoff) do not apply in the same way under Chapter 10 (Enhanced Phosphorus Removal) conditions as they would under normal conditions. These practices generally reduce the CN of each subcatchment, which in turn reduces the total runoff from the site, thus reducing the required WQv. As such, these practices should not be deducted in the way currently shown on the WQv calculation sheets. Please review chapter 10 of the design manual for additional information or reach out to NYSDEC for guidance."*
      Per Coordination with MRB group, we've removed disconnection of rooftop runoff from the RRv area reduction practices.

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b. *"Calculations determining the required CPv should not be separated out as the required CPv is the same total volume as the WQv in enhanced phosphorus removal criteria, however CPv and WQv are managed in different ways, and as such, different calculations are still required to demonstrate how the required CPv is managed/reduced. See section 10.3.3 of the SWMDM."*
Per coordination with MRB Group, the CPv calculation sheet has been revised as requested. The CPv volume for each pond is derived as a portion of the overall 1-year WQv for enhanced phosphorus removal conditions. As such, we've provided CPv volume calculations to ensure the CPv volume is met for each SWMF.

c. *"The required WQv should be inclusive of the site area and contributing drainage areas not treated as part of the Hopewell project."*
The overall site WQv has been updated to be inclusive of the Canandaigua project area and contributing areas not being treated as part of Hopewell project as requested.

4. *"The following comments pertain to the hydrology modeling and drainage area maps:"*
   a. *"It is our understanding that in the proposed condition model, the dual class HSG soils were partially or fully modeled as the better class because of underdrains being installed as part of home construction or roadway construction. Based on our review of the plans and associated documentation, the HSG soils should be modeled as the worse class in both existing and proposed conditions. If the design engineer disagrees, we would ask that they provide documentation or correspondence from NYSDEC in support of this, or schedule a conference call between the design engineer, MRB, and NYSDEC to discuss this."*
   Upon correspondence with the NYSDEC, the hydrology modeling has been updated for the worse class HSG soils.

   b. *"The drainage maps should show contours for all contributing drainage areas. The proposed conditions map appears to be missing labels for the Hopewell section subcatchments. Please provide this information. Also, the boundary between PR3 and PR-Offsite should be verified as is not what would be expected near the upper Canandaigua lots based on the contours shown."*
   The contours have been extended to the off-site portions of the drainage analysis. Drainage labels have been added for the Hopewell sub catchments. The boundary between PR3 and PR-offiste has been slightly adjusted.

   c. *"In the existing and proposed condition models, the offsite drainage subcatchment nodes should be routed to the total off-site drainage link node, and the offsite drainage node should also include either a reach and/or pond node to*

model the effects of the changes in conveyance on the peak discharge rates from the site. Please update this accordingly."
Existing conditions model has been updated to include a reach modeling the off-site discharge through the channel on-site. The proposed conditions model has been updated to include two pond nodes to model the 36" culvert pipe segments and a reach for the remaining channel.

d. *"It is our understanding that the existing conditions model will be revised to remove the boundary between the Hopewell section and Canandaigua section."*
Existing conditions model has been updated.

e. *"PR Sub 3: the total impervious has decreased from the previous submission, however the drainage maps show the same impervious areas included within the subcatchment boundary. It is our understanding that Marks Engineering will review and resolve this discrepancy."*
Discrepancy has been resolved, impervious area within PR #3 matches previous submissions.

f. *"The Tc paths shown for the existing conditions do not follow the expected path based on the contours shown. Also, please turn off the steep slope shading or ensure that it is shown transparent as it is occluding the Tc pathing and contour lines. It is our understanding that the drainage map will be revised accordingly. As the steep slope shading has not yet turned off, and as it covered over end points of Tc path segments, we were unable to complete a review of some of the proposed conditions Tc calculations. Additional comments may be provided upon receipt of revised mapping."*
Tc path under existing conditions model has been revised. The Steep slope shading has been turned off.

g. *"The two reach swale cross sections do not match what is shown on the plans with regards to shape and depth. The surface conditions should also be grass, not earth. Please update accordingly."*
A detail of the swale cross section has been added to the plans to portray the constructed swale on sheet c605. The slope/width/shape is consistent throughout the entire swale section, on both sides of the road. The hydroCAD modeling has been updated to earth, grassed & winding as that description matches the characteristics of the swale the most.

h. *"The upper pond node still shows a 12"x6" horizontal orifice not shown on the detail."*
Detail has been updated. Orifice has been removed.

i. *"Pond 25P Dry Swale: the storage volume is larger than that of the upstream dry swale node, however the plans show that it should be substantially similar in*

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volume or less than the upstream node. 25P also shows a volume similar to the downstream node, 24P, however 24P is shown on the plans to be substantially larger. Other dry swales were also noted to have similar discrepancies. Please review all modeled dry swale volumes and revise as necessary."
Volumes have been adjusted as necessary.

j. *"Numerous dry swale pond nodes show overflow spillway inverts that are greater than what are shown on the plans. Please review the dry swale nodes and plans, and resolve these discrepancies."*
Spillway inverts have been updated.

k. *"Ponds 20P, 21P, 22P, and 23P Dry Swale: the downstream inverts of the outlet culverts do not match what is shown on the plans."*
Discrepancies have been resolved.

l. *"Ponds 17P, 18P, 19P, 20P, 21P, and 22P Dry Swale: the starting elevations of the storage volumes are lower than the lowest contours shown on the plans for these dry swales."*
Pond elevations have been updated to match the plans.

m. *"Ponds 18P, 19P, and 21P Dry Swale: the outlet culvert sizes do not match what is shown on the plans."*
Discrepancies have been resolved.

n. *"Pond 17P Dry Swale: the only outlet for this dry swale should likely be exfiltration and the last check dam within this swale (acting as a weir), as the swale continues into the roadside swale of the Canandaigua section."*
Dry swale outlet conditions have been updated as requested.

FINAL SUBDIVISION & SITE PLAN COMMENTS
"These comments are be addressed as part of the first submission of Final Subdivision Plan review and prior to signatures being affixed to the Final Subdivision Plans."

1. *"The grading plans show a proposed retaining wall around lots 2 and 3. Additional top and bottom of wall labels should be provided. A typical detail should also be provided for the retaining wall. Also, please review and clean up this area of the sheet as it appears that there is leftover temporary linework."*
Additional wall labels have been added. A typical detail will be added as requested.

2. *"As part of final for phase 1, the design engineer shall coordinate with the Town Highway Superintendent to determine the design criteria and required safety features for the channel between DC-2 and DC-1. The design engineer should also provide documentation supporting the necessity of this channel."*

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Documentation will be provided as requested with Final Phase 1 plans.

3. *"The outlet control structure details reference a NYSDOT Grate No. 17, however we were unable to locate any recent specifications or standard details for said grate number. Please verify that this is a valid reference."*
   Detail has been updated with Overall Preliminary plans.

4. *"The dry swale detail should be revised to specify a soil mix media. The bottom width should be between 2' and 8' wide per NYSDEC specifications. The grading of the proposed dry swales is to be revised to consistently meet the allowable longitudinal slope throughout the swales. What is the depth of the stone depth layer? This should be more clearly indicated. Also, a suitable geotextile should encompass the stone drainage layer. Lastly, soil testing and exploration will be required to be completed prior to any granting of final approvals."*
   Dry swale detail has been updated to per above specifications. Note has been added to detail for dry swale exploration prior to installation.

5. *"As part of final, the plans should include both a profile and cross section of each emergency spillway, and should identify the type of stone fill used, and the depth of stone fill."*
   Details have been added to sheet C605.

6. *"As part of final, the plans should better detail how runoff from lots 1, 2, and 17 will be directed to the SWMF."*
   Plans will be updated with Final Phase 1 submission.

7. *"As part of final phase 1, DB-6 and its outlet pipe should be adjusted to maintain sufficient separation from the existing sanitary manhole as it may conflict as shown."*
   Inlet DB-6 has been adjusted with Overall Preliminary plans.

SWPPP COMMENTS

8. *"Please note that if both SWMFs are not constructed as part of the first phase, then modeling should be provided during final phase 1 to verify that the first SWMF is adequately sized for the contributing drainage area, and that any temporary features designed to handle the runoff from the undeveloped future phase areas are adequately sized as well."*
   Sizing for temporary diversion swale will be provided with Final Phase 1 plans.

9. *"The following comments pertain to the WQv, RRv, and CPv calculations and modeling:"*
   a. *"The following comments pertain to the dry swales:"*
      i. *"In the dry swale modeling, the Tc calculations for dry swale 2 are shown as direct entry, whereas the components and the parameters of said component should be shown."*

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Dry swale #2 characteristics have been updated from previous submittals. The Tc calculations are shown.

ii. *"The dry swale modeling should include reach nodes for dry swale 1 and dry swale 2, and should demonstrate that the WQv is released over a minimum duration of 30 minutes, and that the 10-year design storm is safely conveyed with 6" of freeboard. The flow depth indicated in the dry swale worksheets should be based on the results of this modeling."*
Dry swale modeling will be updated with Final Phase 1 submission.

iii. *"The dry swale worksheet for dry swale 1 indicates a bottom width of 8' and side slopes of 15:1, whereas the plans show a bottom width that tapers from 8' wide to 5.5', and side slopes around 3:1 or 4:1. Also, the depth is indicated to be 0.75', however this would result in overflow into the roadway as the swale is not sufficiently deep."*
Dry swale #1 worksheet has been updated as requested.

iv. *"The dry swale worksheet for dry swale 2 indicates side slopes of 15:1, whereas the average appears to be less. Also, the flow depth is indicated to be 2' whereas only 1' is permitted."*
Dry Swale #2 characteristics have been updated from previous submittals. The dry swale worksheet has been updated accordingly.

10. *"The following comments pertain to the hydrology modeling and drainage area maps:"*
    a. *"Additional calculations, mapping, and/or modeling is to be provided to determine the existing flows to the segment between the proposed upper pond outlet and the ultimate discharge point of the site; as part of final subdivision review, the segment between the outlet of the upper pond and the existing channel (site discharge point) will need to be evaluated to verify that the area downstream of the upper pond is capable of handling the new point source (pond outlet pipe and the emergency spillway) and that the proposed peak discharge rates do not exceed existing discharge rates."*
    Modeling will be provided with Final Phase 1 submission.

Please do not hesitate to contact me with any questions.

Sincerely,

Brennan Marks, P.E.
Marks Engineering, P.C.
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