

Engineering has reviewed the plans for the Woodlands Landing at Echo Farms-Tract 3A project submitted April 1, 2019 and have the following comments:

- **Will Paramounte be modifying Phase 3B or Norris & Tunstall? Any idea when the modification will be submitted?**

Stormwater Management Permit Application Form (Form SWP 2.2)

1. IV. Project Information; #11: The Project Percent of Impervious Area appears to be incorrect. Should be 49.3% instead of 47%. #10 should be divided by #5.
2. IV. Project Information; #14: The Percent Impervious Area (%) appears to be incorrect. I calculate 62.9%.

Supplement-EZ Form

3. Pond 3A-3; Wet Pond MDC from 02H .1053:
 - a. #2: Elevation of the top of the temporary pool appears to be incorrect.
 - b. #5: Volume of the forebay may change based on calculations comment.
 - c. #7: Drawdown time for the temporary pool appears to be incorrect.

Stormwater and Erosion Control Narrative

4. Pond #A-2 has changed slightly in drainage area and proposed impervious surface area. Please update Wet Pond 3A-2 (Pond Node 7P and Post Dev Node 6S) in the Proposed Stormwater Control Measures section.
5. Update the Pond 3A-2 NCDEQ Wet Retention Calculations to reflect the minor changes in drainage area and impervious surface area.
6. Wet Pond 3A-3 NCDEQ Wet Retention calculations: Recheck the Provided Forebay Volume and Forebay Percentage. The forebay Stage-Area-Storage Calculations has an error. Surface area of Elevation 8.0' is less than the surface area of elevation 7.0'.
7. Storm Drain Design Computations – Pond 3A-3: How were the tailwater elevations for the Pond 3A-3 pipe systems determined? Provide a brief explanation.
8. Storm Drain Design Computations – Pond 3A-3: Once again, the drainage areas for CI 403 and DI 404 do not reflect the permitted Phase 3B drainage areas. DI 403 picks up not only road runoff but also a portion of lot 12. DI 404 picks up runoff from the rear of lots 5 thru 12 in 3B. See Sheets C1 and C-1.5 in the approved 3B plans. The storm drain calculations must show that these areas are being collected by CI 403 and DI 404 unless Phase 3B is going to revise the lot grading to take the runoff to other structures.
9. Storm Drain Design Computations –Bypass 500 System: The system only has a cumulative drainage area of 0.16 acres, yet the drainage area for that same system on DA-2 appears to have a large off-site drainage area coming through it. Please verify.
10. Pond 3A-1 routing lists a 50-foot emergency spillway length, but the detail on C-7.2 has it at 100 feet. Plan view on C-4.3 also scales to 100 feet. Please verify.
11. Pond 3A-1 outlet pipe length of 40 feet and 0.50% slope does not agree with detail on C-7.2.
12. Update Pond 3A-2 routing to reflect the minor changes in the drainage area and impervious surface area.
13. Pond 3A-3 outlet pipe length does not agree with the detail on C-7.3.
14. Pond 3A-3 Routing has a notch at elevation 12.00' which would be the temporary pool elevation. The NCDEQ retention calculations does not address this notch at all, but lists the top of the outlet structure at 12.50' as the temporary pool. The supplement also lists the temporary pool at 12.50'. If the notch is to remain then the temporary pool elevation is 12.00'. Please verify.

15. Pond 3A-3 routing has a 120 foot emergency spillway at elevation 14.10, but the detail on C-7.3 has it at 100 feet at 14.00. Please verify.
16. Check the emergency spillway lengths and elevation in the Blocked Routings for each pond.

Plans

17. C-2: Is Paramounte designing the MUP that is shown on NHC property?
18. C-2.1: It would appear that the pond will outlet across the proposed MUP? Please clarify.
19. C-2.3/4.3: Did not see the addition of the private drainage easement over the equalizer pipe in Pond 3A-3.
20. C-4.1: It appears that the 500-series SD system is conveying runoff from the public right-of-way. The system therefore needs to be in a public drainage easement. The width should be determined based on the technical standards for easements.
21. C-4.2: Label DI 304-1.
22. C-4.3:
 - a. CI 403 and DI 403 do not appear to collect drainage from Phase 3B as permitted and approved.
 - b. MH 401 cannot remain in the sidewalk.
23. C-5.0-5.3: There appear to be SSMHs that are located within the sidewalk. Please relocate the MH or the sidewalk where feasible.
24. C-7.0: City standard details are illegible. Please correct.
25. DA-3:
 - a. Delineate the drainage areas for CI 403 and DI 404.
 - b. Make the inlet drainage areas for CI 301 and CI 321 clearer. It appears that CI 301 does not have a drainage area delineated.
26. Landscape Plans:
 - a. Resubmit landscape plans with the correct storm drain layout. There are a lot of extraneous SD pipe layouts. It is very difficult to tell what is correct.
 - b. Neither landscape plans nor stormwater design plans demonstrate compliance with City standard detail SD 15-16. Also, add the detail to the plan set.

Please submit one complete set of plans, the stormwater application, supplement, narrative, calculations and any other supporting documentation to Engineering for additional review. Please call or email if there are any questions. Thank you.