

Engineering has reviewed the plans for the Bluewater Motorsports project submitted October 24, 2018 and have the following comments:

Stormwater Calculations:

- 1) Provide Calculation for Proposed Design Volume to include Void Ratio for Rain Tanks within Sealed Calculations. Rain tanks only provide for a depth of 17.32'. Is there a reason sand is being proposed opposed to washed stone for system perimeter? Void ratio will need to be adjusted based on whether washed stone or sand are to be used.
- 2) Provide 10yr Storm routing calculations. All other storm events along with 10yr No Infiltration for emergency spillway were submitted.
- 3) Update Predevelopment Rational C Factor to 0.15 for 2yr Design Storm Routing.
- 4) Provide Rip Rap Sizing Calculations
- 5) Storm/HGL Calculations: Adjust pipe length between SDMH-1 to R-Tank for both 10yr. & 50yr.

Supplements

- 6) Compliance with the Applicable Stormwater Program: Design Volume of 42,500 cf seems to be very large for surface (contour) area of 18,000 sf and Depth of 2.16'. Please update and provide sizing calculation with void ratio for Rain Tanks and Washed Stone. Assure that this number gets updated on Supplement matching provided calculations.
- 7) General MDC from 02H.1050: Answer #5. Is there a bypass for excess of the design flow? Mark as YES. Weir Box provides bypass for excess design flow.
- 8) Infiltration System MDC From 02H.1051
 - a. #4: Describe Pretreatment: Please write in Curb Inlets with Sump.
 - b. #5: Stone Void Ratio %: This ratio cannot be 90% especially if sand is being used. Typically a 40% void ratio is used for washed #57 stone.
 - c. #5 Surface area of the bottom of infiltration trench needs to be 20,682 sf and not account for voids.

Plans:

- 9) Site Inventory (C1): Provide note confirming Wetlands Delineated or that "None Exist". I was not able to find provided note, please clarify.
- 10) Drainage (C3): Trim 60' 24" RCP Connection from SDMH#1 into Rain Tank System.
- 11) Drainage (C3): Proposed Weir Box needs to be reconfigured away from property line so it can be constructed and maintained without encroachment onto adjacent property. 4'x8' weir box may be able to fit within parking space with minor adjustment to design.
- 12) Details (C4): Provide Rip Rap Detail
- 13) Details (C4): Provide SDMH with Sump Detail.
- 14) Details (C6): Please show Non-Woven Geotech layer on Single R-Tank Elevation & Construction Equipment Details.
- 15) Details (C6): Please clarify why sand is being used in lieu of washed #57 for rain tank system top and perimeter. If sand is being used please update calculations.
- 16) Details (C6): Weir Box bottom elevation needs to be adjusted to allow for 15" RCP tie-in to R-Tanks which sit at 38.75'. A Sump also needs to be provided, on the CI side of the weir box, to allow for pretreatment and maintenance.
- 17) Drainage Area Map (D1): I did not see updated DA Map was submitted with square footage/acreage of each drainage area to support the pipe calculations. Please submit.

Payment In-Lieu:

18) We are awaiting final confirmation, from NCDOT, that payment in-lieu is waived for this project.

Please submit revised plan sheets, supplement, calculations and any other documentation to Engineering for additional review. Please call or email if there are any questions.