

## Genna Porter

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**From:** Rob Gordon  
**Sent:** Monday, January 11, 2016 1:16 PM  
**To:** 'Charlie@intracoastalengineering.com'  
**Cc:** Brian Chambers; Genna Porter  
**Subject:** Eng Review - Wrightsville Beach Brewery  
**Attachments:** WilmEngOutput\_Wrightsville Brewery.pdf

Engineering has reviewed the plans for the Wrightsville Beach Brewery and have the following comments. Please note, I reviewed the plans sealed 12/22, the detail sheets submitted 11/10 and the application packet prepared on or about 11/11/15.

1. There is a very minor discrepancy with the amount of pavement between the plans and the application/calcs. Please revise.
2. Please include an inlet and BMP drainage area map with the submittal. Please make sure each DA is labeled and quantified.
3. I did not see a pervious concrete supplement. If you would like to receive credit for the PC, I need a supplement. You do not need to add it as a DA on p4 of the application unless it is a self-treating infiltration device (which it does not appear it is...).
4. Please specify a detail and location of the pervious concrete signage and monitoring well. Please make sure to dimension the sign.
5. Please include a construction sequence for the pervious concrete
6. Note Only – as discussed previously, the leaf litter and pollen from the live oaks is going to necessitate regular maintenance of the pervious concrete in order to maintain functionality.
7. Note Only – So the idea is that runoff will flow out the back of the overflow structure during a large event into the landscape area near the Southern corner of the property bound by the berm and parking lot? It is not completely clear that a swale is supposed to be graded at elevation 22.42 into that landscape area. You may want to add a few spot elevations along that swale.
8. Note Only - Why the second half of the overflow structure? Without an outlet at the bottom, it will just fill with debris/water. Could you just cut a weir in the back end of a single box...or add a bottomless component to the second half?
9. You've got a 3' weir noted on your model but only a 2' cut in the box draining to the vegetative filter.
10. The stage-storage is not clear. There are 1427 tanks, each with a specified volume of 4.22 cf for a total volume of 6022 cf at the overflow of 22.42. The volume at that elevation in the spreadsheet appears to be about 6500 sf. Also, the stage-storage does not appear to adequately represent the overflow area.
11. The system does not appear to meet the overflow requirements. These type of systems are notoriously difficult to model, especially by spreadsheet. I plugged the system in to hydraflow (see attached). I had to make many assumptions, but I think how I set it up and the assumptions I had to make will be intuitive. Please revise as necessary.
12. Note Only - Overall, I (and I think the rest of TRC staff) really like the layout and configuration of this site, but I am worried with the way the parking lot is graded, there is the potential to lose a lot of runoff out the Greenville Ave entrance if it is not graded exactly as intended. I would suggest a trench drain across the entrance with a MH on the South side of the entrance (to collect roof drains). You might not need either of the two CI's with this configuration. We have had to require additional structures after construction because of excess bypass drainage, it is not desirable for anyone.

These comments will be uploaded to the 12/28 submittal on protrak. Please submit one full set of plans and calcs and any requested or revised forms to Engineering for additional review. Please call or email if there are any questions. Thank you.

Robert Gordon, PE  
Plan Review Engineer

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