

From: Rob Gordon
To: ["Branch Smith"](#)
Cc: [Jeff Walton](#)
Subject: Eng Review - AAI Pharma
Date: Monday, April 04, 2016 9:54:00 AM
Attachments: [Avg Depth AAI.xlsx](#)
[image002.png](#)

Engineering has reviewed the submittal for AAI Pharma submitted 2/11/16 and have the following comments:

1. Your narrative and calcs identify Craven soils as type D soils. Per City tech standards and TR-55, Craven soils are type C soils. Please revise.
2. In response to your avg depth comment – I follow your logic on the formula adjustment for the 6' shelf, and the formula appears correct. However, the surface areas used in your calculation do not match your stage-storage and the "depth" is supposed to reflect the distance from the bottom of the shelf to the top of the sediment storage. I get a value closer to 3.5 ft - see attached. Please clarify.
3. There are several discrepancies between the inlet drainage area map and the DA listed in the calcs. Please clarify
4. Your inlet DA map shows drainage from the building split between 208 and 201, when there appears to be a roof leader collector shown that directs all building runoff to 201. Please clarify.
5. Please add a few spot elevations on the gravel turnaround to verify it is being directed to an inlet of the forebay.
6. Please add additional construction detail for the main entrance culvert.
7. Please address the following comments with the entrance culvert an
 - a. The invert of the arch pipe is listed as 14.9 on the ESC plan, but it is much lower on the exhibit and the ground contours appear lower. If the invert of the pipes is installed at 14.9, there would be less than 1 ft of cover in parts over the CAPA pipe.
 - b. Can the HY-8 output show the invert of the pipe being analyzed? The tailwater and crossing data each include elevations, but without the culvert invert elev, it is impossible to know if the culvert is being analyzed correctly.
 - c. Is there a required bury depth for the culvert? Was this bury depth factored into the hydraulic analysis?
8. The detail specifies a 3:1 slope below PP and a 3.5:1 slope above permanent pool. However, the contour lines appear steeper below permanent pool. Please clarify.

Please submit one full set of plans and calcs along with any 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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