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August 2, 2016

Ms. Teresa Barnes, P.E.
Design Engineer
Butler County Engineer's Office
1921 Fairgrove Avenue
Hamilton, Ohio 45014

Re: The Oaks: Keefe Tracts 2 & 3

Dear Teresa:

Enclosed is one set of the revised preliminary construction drawings and storm water calculations for The Oaks (Keefe Tracts 2 & 3) project. The plans have been revised per your comments and as described below.

1. The allow release rate was calculated for the entire drainage shed. The post-development release rate was calculated by adding the peak basin outflow to the peak flows from the commercial and bypass areas.
2. On sheet C4.1, a reference to the outlet structure detail (1/C5.3) was added.
3. Please see page 34 of the attached detention calculations for a summary of the existing detention basin volume.
4. Please see page 3 of the attached detention calculations for a summary of the proposed detention basin volumes and elevations. Want stage storage table
5. Calculations of the box culvert capacity are included at the end of the detention report for your review (see pages 46-48). The box culvert is adequately sized to convey the 100-year release rate from the pond.
6. We have added a note indicating the location of the flood route between buildings C and D. The proposed floor elevation of both buildings is elevated above the flood route elevation of 863.7. ends @ CB...
7. In addition to treating runoff from the roof of buildings 3 and 4, the proposed water quality unit and storm sewer on the east side of buildings 3 and 4 were revised to treat runoff from Taylor Street. The water quality unit located on the west side of buildings 1 and 2 is proposed as a future system to only treat runoff from the roof tops of these buildings. does not show how water backs up into system
8. The label refers to 45° bends in the water main and not the storm sewer.
9. I understand the County's desire to avoid work within the pavement limits of Liberty Way. However, access to the existing utilities, in this case storm and water, requires an open cut of the roadway. As part of the Liberty Way improvements, a 24" storm sewer connection point was provided near structure 121. However, this sewer does not have sufficient capacity to convey the total runoff from the residential area. Also, the connection point is not at an elevation low enough to pick-up the storm sewer system proposed along the

The 5.23 acres and 8 acres are not included in the calculations need additional drainage map!

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west side of buildings 1 and 2. Therefore, the storm connection proposed at structure 133 is necessary. Due to the location of the existing water mains, fire hydrant and gas main, the best option to connect to the storm sewer appeared to be as proposed. The location of the water main connection was chosen to tap the portion of the 1082 (higher pressure) portion of the system. The existing water main located along the south curb line of Liberty Way is connected to the 1000-foot system which is the system in which we encounter many service issues before ultimately extending the 1082 system to serve the Liberty Center property. Based on the reasons stated above, we did not eliminate these proposed connections from the plan and request that they are permitted as shown. If necessary, I can meet with you and your team to discuss these issues further.

10. The elevation of the driveway at the garage entrances is listed as 6" above the garage floor elevation. A transition between the 6" lip and the garage floor elevation will occur inside the building. The trench drain which sits 5' in front of the entrance sits slightly lower than the 6" lip and will intercept storm water runoff from the drive pavement prior to it entering the building. If the capacity of the trench drain is exceeded, the grades are such that the runoff will spill to the right of the entry and directed to a catch basin.
11. Per the storm calculations (Area 125), the 10-year flow rate tributary to the trench drain at building 5 equals 1.09 cfs. The grate capacity at 0.08' is equal to 4.9 cfs and the capacity of the trench is 1.32 cfs. See attached calculations. We have added inverts to the trench drain to ensure a minimum trench depth of 15".
12. Revised storm pipes as necessary to a minimum of 12" in diameter.
13. The bends were removed.
14. No trench drain is required at the entrance to building 3. The drive pavement slopes away (west) from the entrance.
15. The proposed access to Liberty Way is for emergency purposes. A gate will be installed at this location.

Please review the plans and forward any questions or comments to my attention. As I noted in our original submittal, we have not submitted a Final Development Plan application to West Chester Township. We are simply requesting approval for an Earth Moving Permit and the box culvert so that we are in position to begin earthwork operations at our earliest opportunity.

Sincerely,

John Del Verne, P.E., LEED AP

CC: Mitch Fry

does not answer if water will shoot right over top...