From: Teresa Barnes
To: "Steve E. Fox"
Cc: Melissa A. Miller; Eric Pottenger; Matthew Loeffler
Subject: RE: Burger King SR4/Horseshoe Bend
Date: Friday, December 22, 2017 11:48:10 AM

Steve

As previously stated, BCEO would not be likely to approve a site plan that raises the water surface elevation for the property to the south. With a headwater of 757.5-feet upstream of a proposed pipe, this would eliminate this choice from BCEO perspective. Therefore, BCEO preference would also be the stream relocation. Note – the proposed grading provided would need some alteration as the point the stream leaves the south property is below 753. The proposed grading fills this are to above 754. In any case, given that the stream is "regulated" and a permit from the USACE will be required – BCEO will defer to the permit issued by USACE for the stream.

A few additional comments:

1. The existing access on the opposite side of Horseshoe Bend shall be shown on the site plan – to ensure that alignment is provided.
2. No information has been included as to how the site intendeds to address storm water quality or quantity. The site will be required to address both.
3. BCEO will need a copy of the signed easement agreement with the property to the west along SR 747.

Let me know if you have any questions.
THANKS

Teresa

Teresa K. Barnes, P.E., CPESC
DESIGN ENGINEER
1921 Fairgrove Avenue
Hamilton, OH 45011
513-785-4142
Fax 513-867-8549
barnest@bceo.org

From: Steve E. Fox [mailto:SFox@manniksmithgroup.com]
Sent: Thursday, December 21, 2017 4:39 PM
To: Teresa Barnes
Cc: Melissa A. Miller
Subject: Burger King SR4/Horseshoe Bend

Hi Theresa,

Per our conversation last week, here are some exhibits for a couple of scenarios that we ran with the existing stream:

- Liberty Township is requiring a 6' mound, with an 8' fence for the entire length of south property line.
- Per Streamstats, the 100-yr Q=221 CFS
- Our Eco department has determined that the stream is regulated and we'll need a USACE permit for either the culvert or relocated channel
- The option with the stream relocation seems to be my preferred, as the depth stays at 754' carrying the 221 cfs and allows for flood routing.
- If we use a 60" pipe, the depth gets up to 757.52, close to the FF of the existing house south of us

Please review and let us know your thoughts. We aren't sure how committed the township is to having the mound along the entire south parcel line yet.

Steve Fox, PE, CPESC
Project Manager
The Mannik & Smith Group, Inc.
1160 Dublin Road, Suite 100
Columbus, OH 43215-1052
614-441-4222 (Office)
614-452-4628 (Direct)
614-623-5717 (Mobile)

www.MannikSmithGroup.com

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