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June 3, 2013

To: Hamilton County Drainage Board

Re: Sand Creek – 2 Stage Ditch Reconstruction

Attached are the engineering plans for the 2-stage ditch reconstruction for Sand Creek downstream of Cumberland Road, north of 106th Street in Fall Creek Township, Fishers, Indiana. The construction plans were prepared by Christopher B. Burke Engineering LTD dated June 5, 2013.

On March 24, 2011 after a large rain event a meeting was held on site near the Sybesma property to discuss repeated flooding of Sand Creek and Cumberland Road. In attendance at this meeting were Commissioner Steve Dillinger, Surveyor Kent Ward, Jason Armor of the Town of Fishers, Siavash Beik of Christopher Burke, Jan Crider of Indiana Department of Homeland Security and Michelle Sybesma. During this meeting the landowners disclosed that Cumberland Road and their private drive on the west side of Cumberland Road experiences flooding several times a year. The roads are impassable making it impossible to get to work or take their children to school.

After this meeting Mr. Ward asked Mr. Beik to prepare a proposal for a flood mitigation plan for Sand Creek at Cumberland Road. This proposal was presented at a Drainage Board meeting held on April 25, 2011 (see Hamilton County Drainage Board Minutes Book 13, pages 375-376). In attendance at this Drainage Board meeting was Michelle Sybesma, Siavash Beik, Jason Armor and Jeff Heiking.

Ms. Sybesma and Mr. Ward explained that the homes in the area were built to an elevation based on the 1982 FIRM Map from FEMA. The discharge rate that IDNR used to produce this map was incorrect and produced flood elevations that were too low. The flooding is not just a homeowner issue. The Town of Fishers doesn't want their roads to flood and homeowners blocked in. The roads flood at even smaller flood events. Burke has studied the area in 1997 and 2002 in an overall view. Mr. Ward stressed the need for a more focused study to correct flooding from smaller storm frequencies such as the 5, 10 and 25 year storm events. The Drainage Board approved the contract for Burke to prepare the Flood Mitigation Plan for Sand Creek at Cumberland Road.

On July 11, 2011 Mr. Beik presented this study at the Drainage Board meeting (see Hamilton County Drainage Board Minutes Book 13, pages 464-468). He stated that this area experienced 2-3 feet of flooding in the 2003 flood.

The study proposed multiple infrastructure improvements with various levels of flood protection. In order to make Cumberland Road passable in a 100-year storm event and allow free access to Cumberland Road from the collector roads the following improvements are required as shown on the attached exhibit:

- A. Enlarge the bridge over Sand Creek on Cumberland Road to pass more water downstream.
- B. Construct a 2-Stage ditch on Sand Creek downstream of Cumberland Road which will widen the channel.
- C. Raise Cumberland Road above the 100-year flood elevation.
- D. Add two berms to block the path of storm water to the roads when Sand Creek over tops its banks.

The four projects listed above will lower the 100-year flood elevation by 1.2 feet and allow ingress and egress during the storm event to the landowners. Cumberland Road will be passable during the 100-year storm event.

On August 22, 2011 a follow up meeting was held at the Drainage Board with the Town of Fishers (see Hamilton County Drainage Board Minutes Book 13, pages 535-536). At this meeting Fishers agreed to pay for raising Cumberland Road and the cost of the berms mentioned in parts C and D above. Mr. Ward asked the Boards approval to move forward with plans for construction of the 2-stage ditch listed in Part B above. The Drainage Board approved going forward with the plans for the 2-stage ditch. The Hamilton County Highway Department agreed to pay the cost to install a new Conspan bridge crossing over Sand Creek on Cumberland Road (part A above).

2-Stage Ditch Reconstruction

The construction plans have been prepared by Christopher B. Burke Engineering LLC. The proposed 2-Stage Ditch shelves are 20-30 feet wide on both sides of Sand Creek, starting downstream of the new Conspan Bridge replacement for approximately 350 linear feet, (Sta. 10+00 to Sta. 13+50). The west side of Sand Creek will be expanded with a 30' shelf from this point another 510 linear feet in length (Sta. 13+50 to Sta. 18+60). Downstream of Sta. 18+60 the shelf will vary in width, up to 25 feet wide, on both sides of the channel another 265 LF (Sta. 18+60 to Sta. 21+25). The total length of the 2 Stage Ditch Reconstruction is 1,125 feet. The shelves are constructed above the ordinary high water mark of Sand Creek therefore the IDEM, IDNR, Army Corps of Engineers and Fish and Wildlife permits are not required. Export consists of approximately 3,500 cubic yards and will be hauled offsite. The excavated shelves will be seeded with appropriate seed mix and stabilized with erosion control mats.

All of the proposed construction will occur within the regulated drain easements on the following parcels:

<u>Parcel</u>	<u>Owner</u>	<u>Location</u>
13-15-05-00-00-018.003	Tippman, Henry J. & Cynthia S.	East & West side of Sand Creek
19-15-05-00-15-001.000	Gricius, Wendy E. & Mark T.	Possible Minor Clearing
19-15-05-00-16-001.000	Mud Creek Golf Course	East & West side of Sand Creek
19-15-05-00-15-002.000	Vaught, Dawn E. & Gerald K.	Possible Minor Clearing
19-15-05-00-15-003.000	Gray, Darrin D. & Leslie D.	East side of Sand Creek
19-15-05-00-15-004.000	Plessinger, Bradley J. & Lyndsey A.	East side of Sand Creek
19-15-05-00-09-011.000	Collard, Paul D. & Doreen M.	East side of Sand Creek

Recently Jerry Liston and I walked the construction site and found an abandoned gas well in the location of the western shelf of the 2-stage ditch. We contacted Brian Royer of IDNR, the Division of Gas and Oil. He told us the well was constructed in 1937 and was producing gas up to 1973. We will cap this well per IDNR's specifications by an approved IDNR contractor as part of this project.

Hamilton Southeastern Utility (HSE) owns two deep manholes and sanitary lines that cross under Sand Creek within the existing regulated drain easement. The manholes extend above the proposed shelf or the west side of Sand Creek. HSE was notified of the 2 Stage Ditch Reconstruction and was asked to relocate the manholes. Jim Hart of HSE asked us to move the shelf to the opposite bank (east side) in this location at their expense. Christopher Burke has reviewed the hydraulic model and has determined that this change will not impact the function of the 2 Stage Ditch.

This change will be bid as "Alternate 1" on the construction plans. HSE has committed to paying the additional construction and engineering costs associated with this modification.

Construction Costs

The engineering and construction costs are itemized below:

Engineering and Survey

Sand Creek at Cumberland Flood Mitigation Plan	\$ 56,000.00*
Berm Design and Additional Modeling for Bridge	\$ 25,800.00*
Design Plans, Survey and Well Capping	\$ 33,047.95*
Construction Survey and Asbuilts	<u>\$ 12,000.00</u>
Engineering Total	\$126,847.95

*Already paid from Maintenance

Construction

Temporary Access Drives (2)	\$ 10,000.00	
Mobilization and Demobilization	\$ 9,000.00	
Maintenance of Traffic	\$ 10,000.00	
Temporary Erosion Control Measures	\$ 6,000.00	
Tree Removal	\$ 25,000.00	
Cap Gas Well Per IDNR Standards	\$ 20,000.00	
Excavation and Grading (Removal of Export)	\$105,000.00	
Seeding and Site Restoration	\$ 20,000.00	
Erosion Control Mats	<u>\$ 40,000.00</u>	
	Subtotal	\$245,000.00
	15% Contingency	<u>\$ 36,750.00</u>
	Construction Total	\$281,750.00
	Total Projected Cost	\$408,597.95

The cost of the construction listed above will be paid for from the Mud Creek/Sand Creek maintenance fund. The current balance in this fund is \$1,645,551.21. The Mud Creek/Sand Creek maintenance assessment collects \$536,719.72 per year.

Public informational meetings have been held with the surrounding landowners on February 19, March 13, and April 4, 2013.

I have made a personal inspection of the land described above. Upon doing so I believe that the drain is practicable, will improve the public health, benefit a public highway and be of public utility and that the costs, damages and expenses of the proposed drain will probably be less than the benefits accruing to the owners of land likely to be benefitted.

All of the construction of the 2-Stage Ditch will be within the existing 75' regulated drainage easements or platted street right of way of Cumberland Road and Valley Farm Court. Therefore, no additional easements are required for the project. I believe no damages will result to the landowners. Damages are set at zero (0).

I recommend that the Board set a hearing for this proposal for July 22, 2013.

Sincerely,



Christie Kallio, P.E.
Hamilton County Surveyor's Office

CK/llm

Mud Crk/Sand Crk #347

Sand Creek - 2 Stage Ditch Reconstruction
 Area SE of Valley Farm Ct & Cumberland Rd
 Hearing: 07/22/13

COST ESTIMATE:
 Engineering & Survey: \$ 126,847.95

*No change in current maintenance assessment. This project will affect 1,100' of drain.
 *Reconstruction cost to be paid from the maintenance fund except for Alternate 1.

Construction: \$ 245,000.00
 15% Contingency: \$ 36,750.00
 Construction Total: \$ 281,750.00

Hamilton Southeastern Utility will pay for additional cost & engineering associated with modifications from original plan and will be bid as Alternate 1.

Total Project Cost: \$ 408,597.95

Parcel	Owner	Description	Benefit	MntAsmt	Reconst	Percent
15-15-06-00-07-002.000	Bacon, Richard W Jr & Karen	S6 T17 R5 Walnut Creek Lot 2	*	*	*	5.555%
15-15-06-00-07-003.000	Black, Brook L & Loretta J	S6 T17 R5 Walnut Creek Lot 3	*	*	*	5.555%
19-15-05-00-09-011.000	Collord, Paul D & Doreen M Tr	S5 T17 R5 Spyglass Hill 4C Lot Pt 232	*	*	*	5.555%
15-15-06-00-07-004.000	Compton, Michael R & Somer N	S6 T17 R5 Walnut Creek Lot 4	*	*	*	5.555%
19-15-05-00-15-003.000	Gray, Darrin D & Leslie D	S5 T17 R5 Spyglass Hill 4I Lot 230	*	*	*	5.555%
19-15-05-00-15-001.000	Gricius, Wendy E & Mark T	S5 T17 R5 Spyglass Hill 4I Lot 228	*	*	*	5.555%
99-99-99-99-999.001	Hamilton Co. Highway Dept.	S5 T17 R5 Cumberland Rd, Bridge 163	*	*	*	5.555%
15-15-06-00-07-005.000	Kennedy, Hans & Leila M	S6 T17 R5 Walnut Creek Lot 5	*	*	*	5.555%
19-15-05-00-16-001.000	Mud Creek Golf Course Inc.	S5 T17 R5 Ironwood, 13.23 Ac	*	*	*	5.555%
19-15-05-00-16-002.000	Mud Creek Golf Course Inc.	S5 T17 R5 Ironwood, 163.57 Ac	*	*	*	5.555%
19-15-05-00-16-002.000	Mud Creek Golf Course Inc.	S6 T17 R5 Walnut Hills Lot 16	*	*	*	5.555%
19-15-06-02-04-016.000	Oruche, Odili E & Ukamaka M	S5 T17 R5 Spyglass Hill 4I Lot 231	*	*	*	5.555%
19-15-05-00-15-004.000	Plessinger, Bradley J & Lynndsey A	S6 T17 R5 Walnut Hills Lot 17	*	*	*	5.555%
15-15-06-02-04-017.000	Replogle, David E & Dawn M	S5 T17 R5 Move shelf to east side.	*	*	*	5.555%
	SAMCO	S6 T17 R5 Walnut Creek Lot 1	*	*	*	5.555%
15-15-06-00-07-001.000	Sybesma, Jamie Michelle	S5 T17 R5 Valley Farm Estates Sec 2 Lot 14	*	*	*	5.555%
13-15-05-00-00-018.003	Tippmann, Henry J & Cynthia S	S5 T17 R5 Cumberland Rd, S of Valley Farm Ct	*	*	*	5.555%
99-99-99-99-999.007	Town Of Fishers	S5 T17 R5 Spyglass Hill 4I Lot 229	*	*	*	5.555%
19-15-05-00-15-002.000	Vaught, Dawn E & Gerald K		*	*	*	5.555%

Parcels: 18

