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October 9, 2014

To: Hamilton County Drainage Board

Re: Lee Lambert Drain Reconstruction

Attached is a petition, drainage map, drainage shed map and schedule of assessments for the reconstruction of the Lee Lambert Drain. The Lee Lambert Drain is listed as number ten (10) on the 2014 Drain Classification List under reconstruction.

The Lee Lambert Drain was petitioned for reconstruction on August 5, 2011 by ten (10) property owners representing 53.83% of the total acreage of 655.75 in the watershed.

The Lee Lambert Regulated Drain was constructed in 1931. The drain consists of 2,366 linear feet of 15 inch tile and 1,036 linear feet of 18 inch tile, located south of 276th Street between Ditch Road and Six Points Road. The Lee Lambert Open Channel begins on the north side of 276th Street and runs 5,481 linear feet to its confluence with Prairie Creek. The Drainage Area of Lee Lambert covers portions of Adams Township, Hamilton County, Township 20 North, Range 3 East, Sections 9, 10, 15 and 16.

Andy Conover, project inspector and Christie Kallio, the project engineer, visually inspected the drain in March of this year. During the inspection log jams, broken bridge decking and a steel culvert blocking the drain upstream of Prairie Creek were found. These items were removed in April and paid out of the drain maintenance fund.

The existing 56"x36" elliptical corrugated metal pipe culvert under 276th Street is undersized and frequently overtops the roadway. The open channel north of 276th Street is laden with sediment and tall grasses. The last time it was dredged was in 1977. The regulated tile south of 276th Street doesn't have an adequate outlet at 276th Street. The water backs up in the tiles causing excessive pressure in the tiles causing them to blow out. Large holes in the farm fields result from the blown out tiles.

The following drain complaints and work orders are on file at the Hamilton County Surveyor's Office:

<u>Landowner</u>	<u>Date</u>	<u>Complaint</u>
Radford Dunning	April 8, 1981	Blow Hole
Harold Billingsley	April 23, 1981	Hole in Road
Don Carpenter	May 28, 1982	Lower Culvert under 276 th to Outlet Tile to Open Ditch
Roy Delph	September 14, 1984	Repair Breather
Jeff Newcom	November 16, 1989	4 Holes in Tile South of 276 th St.
Hamilton County Surveyor's Office	January 25, 1990	Replace Tile
Jeff Newcom	November 17, 1992	6 Holes in Tile South of 276 th St.
Jeff Newcom	December 28, 1993	Hole in Tile
Jeff Newcom	June 14, 1994	6' Hole in Tile
Garrick Mallery	July 6, 1994	Blow Hole in Tile
Garrick Mallery	September 24, 1996	11-12 Blow Holes in Field
Hamilton County Surveyor's Office	October 15, 1997	Dredge Open Ditch to Relieve Back Pressure on Tile. Clean CMP at 276 th Street
Hamilton County Surveyor's Office	June 10, 1998	Blow Holes
Mr. Delph (Dale & Dan) W.O. 99-063	February 11, 1999	Washed Out Outlet Pipe North of 276 th St.
Garrick Mallery DC-2001-00214 WO-2001-00177	October 30, 2001	Broken Tile
Dale Delph DC-2003-00683 WO-2004-00045	December 9, 2003	Broken Outlet/Erosion
Jeff Newcom (for Gerrick Mallery) DC-2004-00257 WO-2004-00169	June 8, 2004	Holes

Kenneth Carlisle DC-2006-00327 WO-2006-00175	August 14, 2006	Erosion on Open Ditch
Jeff Newcom (for Gerrick Mallery) DC-2007-00172 WO-2007-00093	April 4, 2007	Sink Hole
Bob Davis DC-2008-00150 WO-2008-00104	April 17, 2008	Hole
Gerrick Mallery DC-2008-00339	July 14, 2008	Ditch Needs Dredged
Gerrick Mallery DC-2008-00425 WO-2008-00261	October 16, 2008	4 Holes
Ronald Delph DC-2012-00098	March 21, 2012	Trees in Ditch
Hamilton County Surveyor's Office DC-2012-00315 WO-2012-00280	October 8, 2012	Hole
Mark Law DC-2013-00384	June 26, 2013	Needs Dredged

All the work orders have been completed to date.

RECONSTRUCTION PROJECT

This reconstruction of the Lee Lambert Drain will not include any relocation of the existing drain. Clearing of trees will take place to facilitate an operational side for the equipment needed to dredge the channel. This will create a side for future maintenance access and will generally be on the east and north banks as shown on the attached in house plans dated June 10, 2014.

The channel will be dredged approximately two (2) feet deep starting at the existing 56"x36" elliptical CMP on the north side of 276th Street. This is Station 0+41 per the plans, Station 34+97 of the original description. The fall of the proposed channel will be 0.10% from Station 0+41 to Station 13+00 per the plans, Station 34+97 to Station 47+56 of the original description. The proposed channel slope is 0.32% from plan Station 13+00 to 26+00, Station 47+56 to Station 60+56 of the original description. The slope of the proposed channel is 0.26% from plan Station 26+00 to the terminus of the project at plan Station 49+30, Station 60+56 to Station 83+86 of the original description. The proposed channel bottom is four (4) feet wide the entire length of reconstruction. The channel side slopes will be cut at 2 to 1 to meet the existing top of bank.

Two (2) existing farm crossings will be lowered to meet the proposed flow line. One existing 68" steel culvert at plan Station 15+96 to plan Station 16+36 will be lowered and one existing 66" steel culvert at plan Station 32+80 to plan Station 33+21 will be lowered to the proposed flow line.

A fabricated corrugated aluminum toe wall and drop spillway will be installed with this reconstruction on the south side of 276th Street. The drop structure is necessary to direct storm water into the culvert under 276th Street and dissipate energy to allow increased transfer of storm water downstream. This will minimize erosion currently evident at the tile outlets and reduce the amount of standing water in the farm fields.

Fifty (50') of new 18" double wall, smooth bore plastic pipe will replace the existing 18" regulated clay tile between Stations 34 +47 and Station 34+97 per the original description. This tile will be lowered to meet the drop structure and to facilitate the construction of a grass waterway at some point in the future by the landowner.

Included with the reconstruction and shown on the plans is the installation of a twenty foot (20') filter strip along both sides of the open drain in the agricultural land uses. The filter strip shall affect the following properties:

<u>Current Owner</u>	<u>Parcel</u>
Delph, Dale G. Trustee of Dale G. Delph Revocable Trust	01-01-10-00-00-012.000
Delph, Ronald Adam & Shelly K.	01-01-10-00-00-012.003
Delph, Ronald E.	01-01-10-00-00-012.002
Martin, David V. & Cassidy E.	01-01-10-00-00-001.002

HYDROLOGY, DESIGN AND ENVIRONMENTAL PERMITS

The following flow rate information was determined. The Lee Lambert Drain at Prairie Creek Confluence:

Q10 = 145 ft³ per Second
 Q100 = 287 ft³ per Second

The channel is designed to carry/contain the 10 year storm frequency within the banks at all locations.

The project shall include excavation of 6,000 yards of sediment from the channel, extension of 18 farm outlets, 1 sediment basin and lowering of 2 farm crossings. Installation of one fabricated corrugated aluminum toe wall and drop structure, 50' of 18" double wall, smooth bore plastic pipe to replace existing 18" tile, rip rap bend protection and surface water pipes will be installed as needed. The dredging of Lee Lambert Drain will include tree removal and clearing of debris.

The reconstruction of this drain will not require acquisition of new easement for the entire length of the drain. The drain is being reconstructed in place and the existing 75 foot easement from

the top of bank per IC 36-9-27-33 will be maintained. No additional easement acquisition will be required since the spoils of the project will be spread within the existing easement.

A U.S. Army Corps of Engineers 404 Permit and an Indiana Department of Environmental Management 401 permit are not required because we are not impacting jurisdictional wetlands.

The SWPPP (Storm Water Pollution Prevention Plan) has been approved by the Hamilton County Soil and Water District and the Rule 5, Notice of Intent, will be sent to the Indiana Department of Environmental Management (IDEM) upon Drainage Board approval of reconstruction.

An IDNR Construction in a Floodway permit is not required because the upstream watershed is less than 1 square mile and the Lee Lambert Regulated Open Channel is less than 10 miles in length.

QUANTITIES & COST ESTIMATE

The cost estimate for this work will be as follows:

Item Description	Quantity	Unit	Unit Cost	Total Cost
Excavation of Channel	4,890	LF	\$6.00	\$ 29,340.00
4"x20' CMP with Animal Guard	1	EA	\$500.00	\$ 500.00
6"x20' CMP with Animal Guard	7	EA	\$500.00	\$ 3,500.00
8"x20' CMP with Animal Guard	6	EA	\$650.00	\$ 3,900.00
10"x20' CMP with Animal Guard	3	EA	\$700.00	\$ 2,100.00
12"x20' CMP with Animal Guard	1	EA	\$900.00	\$ 900.00
Lower Existing 66" Farm Crossing	1	EA	\$6,000.00	\$ 6,000.00
Lower Existing 68" Farm Crossing	1	EA	\$6,000.00	\$ 6,000.00
Clearing	1	LS	\$7,500.00	\$ 7,500.00
Rip Rap Corner Protection	90	LF	\$90.00	\$ 8,100.00
Estimated Surface Water Pipes	5	EA	\$1,000.00	\$ 5,000.00
7-9 inch Rip Rap Installed for Farm Crossings & Tile Outlets	1	LS	\$30,000.00	\$ 30,000.00
Seeding for 20 Ft. Filter Strips	4	AC	\$2,500.00	\$ 10,000.00
Seeding for Channel Side Slopes	1.8	AC	\$3,500.00	\$ 6,300.00
Corrugated Alum. Drop Structure	1	EA	\$15,000.00	\$ 11,250.00
18" Double Wall, Smooth Bore Plastic Pipe	50	LF	\$3,750.00	\$ 3,750.00
			Sub-Total	\$134,140.00
			Contingency 15%	<u>\$ 20,121.00</u>
			Total	\$154,261.00

The Hamilton County Drainage Board determined on June 9, 2014 that only the benefitted drainage area for the reconstruction should be assessed for this reconstruction. (See Hamilton County Drainage Board Minutes Book 15, pages 444-445). The benefitted drainage shed for this reconstruction project is 625.05 acres. I have reviewed the benefitted drainage shed and upon considering each parcel individually, I believe each parcel within the drainage shed will have equal benefits as provided by the drain. Therefore, I recommend each tract be assessed on the same basis equally. I also believe that no damages will result to landowners by reconstruction of this drain. I recommend a reconstruction assessment of \$245.29 per acre with a minimum assessment of \$245.30.

LANDOWNER PARTICIPATION

On June 25, 2014 an informational meeting was held with the major landowners adjacent to the Lee Lambert Drain. The meeting was held in the Commissioner's Conference Room 1A in the Hamilton County Judicial Center.

Thirteen (13) landowners and farmers attended the meeting. The project parameters were discussed and the preliminary reconstruction assessment roll was given to each landowner. All were in favor of the reconstruction project.

During this meeting, an upstream landowner asked if a grassed waterway could be added over the existing Lee Lambert regulated clay tile south of 276th Street. The Drainage Board decided on July 14, 2014 that the landowner should install his own grass waterway. (Hamilton County Drainage Board Minutes Book 15, pages 472).

Several landowners asked if the existing culvert at 276th Street could be replaced due to the frequent overtopping of the roadway. The Hamilton County Highway Department has agreed to upsize the culvert at 276th Street with an 81"x59" (or larger) elliptical corrugated pipe at their expense. This will pass the 100 year storm event. The cost of the new culvert is not included in the cost of this project and is not included in the reconstruction assessment.

At this time the maintenance fund for the Lambert Drain is \$3,988.45 in the red. The drain has 655.75 acres in its drainage shed. The rates were increased in 2007 to the following:

1. Maintenance assessment for agricultural tracts at \$1.00 per acre with a \$15.00 minimum.
2. Maintenance assessment for non-platted residential tracts at \$1.00 per acre with a \$15.00 minimum.
3. Maintenance assessment for platted lots in subdivisions whose drainage systems will not be part of the regulated drain shall be set at \$35.00 per lot/minimum. Common areas within non-regulated drain subdivisions shall be assessed at \$5.00 per acre with a \$35.00 minimum.
4. Maintenance assessment for platted lots within subdivisions whose drainage system will be part of the regulated drain shall be set at \$65.00 per lot/minimum. Common areas within the regulated drain subdivision, at \$10.00 per acre with a \$65.00 minimum.
5. Maintenance assessment for commercial, institutional and multi-family residential tracts at \$10.00 per acre with a \$75.00 minimum
6. Maintenance assessment for roads and streets \$10.00 per acre.

The above rates result in an annual assessment of \$1,075.74. I recommend the rates be increased to the following:

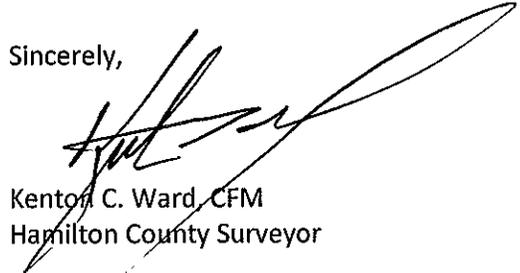
1. Maintenance assessment for agricultural tracts be set at \$3.00 per acre with a \$25.00 minimum.
2. Maintenance assessment for non-platted residential tracts be set at \$3.00 per acre with a \$25.00 minimum.
3. Maintenance assessment for platted lots in subdivision whose drainage system will not be part of the regulated drain shall be set at \$35.00 per lot/minimum. Common areas within non-regulated drain subdivisions shall be set at \$5.00 per acres with a \$35.00 minimum.
4. Maintenance assessment for platted lots within subdivisions whose drainage system will be part of the regulated drain shall be set at \$65.00 per lot/minimum. Common area within the regulated drain subdivision shall be set at \$10.00 per acre with a \$65.00 minimum.
5. Maintenance assessment for commercial, institutional and multi-family residential tracts to be set at \$5.00 per acre with a \$75.00 minimum.
6. Maintenance assessment for roads and streets be set at \$15.00 per acre.

This will result in an annual maintenance assessment of \$2,505.56.

I further recommend to the Board that the drain maintenance assessment collections be extended from four (4) times the annual collection to eight (8) times the annual collections as allowed in IC 36-9-27-43. This will allow an increase in the available balance in the fund in an amount of \$20,044.48 based on the proposed annual assessment. The Board will then be able to utilize maintenance fund monies to partially pay for future reconstruction projects. Under IC 36-9-27-45.5, the Board may transfer up to 75% of a maintenance fund to pay for reconstruction projects. This could reduce or eliminate the assessment for a future reconstruction.

I recommend the Board set a hearing for this proposed reconstruction project for November 24, 2014.

Sincerely,



Kenton C. Ward, CFM
Hamilton County Surveyor

KCW/pll

Lee Lambert Drain #93

Reconstruction petitioned 08/05/11 by 10 property owners.
 No new easements required. Filter strips to be established on 4 parcels.
 There will be a maintenance assessment rate increase. The period of collection for maintenance will be until the fund has 8 times its annual assessment.
 Hearing: 11/24/14

Current Maintenance Rate is \$1/Ac, \$15/Min for Res/Ag & \$10/Ac for Roads
 Revised Maintenance Rate is \$3/Ac, \$25/Min for Res/Ag & \$15/Ac for Roads
 Reconstruction assessment roll is stopping at the woods.
 Reconstruction Rate is \$245.29 per acre with a \$245.30 minimum assessment.

Parcel	Owner	Desc	Rate	Mnt. Ben.	Current Asmt	Revised Asmt	Recnst Ben	Recnst Asmt	% of Total
01-01-10-00-00-001.001	Barrick, Matthew	S10 T20 R3	3.00Ac	0.15	\$15.00	\$25.00	0.15	\$245.30	0.16%
01-01-16-00-00-006.000	Billingsley, Anita M Trustee of	B S16 T20 R3	20.00Ac	18.00	\$18.00	\$54.00	18.00	\$4,415.22	2.86%
01-01-09-00-00-011.000	Billingsley, Dorothy May Pitts	S9 T20 R3	20.00Ac	4.00	\$15.00	\$25.00	4.00	\$981.16	0.64%
01-01-16-00-00-003.000	Billingsley, Dorothy May Pitts	S16 T20 R3	9.50Ac	2.00	\$15.00	\$25.00	2.00	\$490.58	0.32%
01-01-16-00-00-004.000	Billingsley, Dorothy May Pitts	S16 T20 R3	4.50Ac	3.00	\$15.00	\$25.00	3.00	\$735.88	0.48%
01-01-16-00-00-005.000	Billingsley, Dorothy May Pitts	S16 T20 R3	6.00Ac	6.00	\$15.00	\$25.00	6.00	\$1,471.74	0.95%
01-01-10-00-00-002.000	Carlisle, Kenneth W & M Evely	S10 T20 R3	77.53Ac	25.00	\$25.00	\$75.00	1.45	\$355.68	0.23%
01-01-16-00-00-007.001	Chobot, Kevin B & Jennifer R	S16 T20 R3	5.49Ac	5.49	\$15.00	\$25.00	5.49	\$1,346.64	0.87%
01-01-16-00-00-009.000	Crawford, Warren K Trustee of	S16 T20 R3	5.25Ac	5.25	\$15.00	\$25.00	5.25	\$1,287.78	0.83%
01-01-16-00-00-009.004	Crawford, Warren K Trustee of	S16 T20 R3	105.00Ac	8.25	\$15.00	\$25.00	8.25	\$2,023.64	1.31%
01-01-10-00-00-012.000	Delph, Dale G Trustee of Dale	(S10 T20 R3	74.01Ac	74.01	\$74.02	\$222.04	74.01	\$18,153.92	11.77%
01-01-10-00-00-012.102	Delph, R Derek	S10 T20 R3	3.00Ac	3.00	\$15.00	\$25.00	3.00	\$735.88	0.48%
01-01-10-00-00-012.003	Delph, Ronald Adam & Shelly K	S10 T20 R3	12.57Ac	12.57	\$15.00	\$37.72	12.57	\$3,083.30	2.00%
01-01-10-00-00-012.002	Delph, Ronald E	S10 T20 R3	68.01Ac	68.01	\$68.02	\$204.04	67.09	\$16,456.52	10.67%
01-01-10-00-00-012.001	Delph, Ronald E & Linda J	S10 T20 R3	3.00Ac	3.00	\$15.00	\$25.00	1.86	\$456.24	0.30%
01-01-16-00-00-009.001	Emery, Jerry W & Ann M	S16 T20 R3	3.75Ac	0.50	\$15.00	\$25.00	0.50	\$245.30	0.16%
01-01-16-00-00-009.002	Greeman, Steve Edwin & Delor	S16 T20 R3	3.00Ac	3.00	\$15.00	\$25.00	3.00	\$735.88	0.48%
99-99-99-99-99-999.001	Hamilton County Highway Depa	Ditch,6Pnts,281,276		12.00	\$120.00	\$180.00	12.00	\$2,943.48	1.91%
01-01-09-00-00-010.000	Hollingsworth, Kim A & Marna J	S9 T20 R3	19.00Ac	2.80	\$15.00	\$25.00	2.80	\$686.82	0.45%
01-01-15-00-00-003.000	King, Monty	S15 T20 R3	1.00Ac	1.00	\$15.00	\$25.00	1.00	\$245.30	0.16%

A 20' filter strip will be established.
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Parcel	Owner	Desc	Rate	Mnt. Ben.	Current Asmt	Revised Asmt	Recnst Ben	Recnst Asmt	% of Total
01-01-10-00-00-006.000	Law Brothers Family Farms LLC	S10 T20 R3 75.00Ac	Residential/Ag	3.00	\$15.00	\$25.00	0.03	\$245.30	0.16%
01-01-10-00-00-010.000	Law Brothers Family Farms LLC	S10 T20 R3 39.18Ac	Residential/Ag	19.18	\$19.18	\$57.54	19.18	\$4,704.66	3.05%
01-01-10-00-00-011.000	Law Brothers Family Farms LLC	S10 T20 R3 40.00Ac	Residential/Ag	20.00	\$20.00	\$60.00	18.98	\$4,655.60	3.02%
01-01-15-00-00-012.000	Law Brothers Family Farms LLC	S15 T20 R3 98.00Ac	Residential/Ag	73.00	\$73.00	\$219.00	73.00	\$17,906.18	11.61%
01-01-15-00-00-011.000	Law Legacy Farms LLC	S15 T20 R3 39.60Ac	Residential/Ag	11.00	\$15.00	\$33.00	11.00	\$2,698.20	1.75%
01-01-15-00-00-011.001	Law Legacy Farms LLC	S15 T20 R3 37.90Ac	Residential/Ag	1.00	\$15.00	\$25.00	1.00	\$245.30	0.16%
01-01-15-00-00-012.001	Lyman, William H & Mary Ellen	S15 T20 R3 2.00Ac	Residential/Ag	2.00	\$15.00	\$25.00	2.00	\$490.58	0.32%
01-01-15-00-00-004.000	Majesty Inc An Ind Corp	S15 T20 R3 40.00Ac	Residential/Ag	20.00	\$20.00	\$60.00	20.00	\$4,905.80	3.18%
01-01-15-00-00-006.000	Majesty Inc An Ind Corp	S15 T20 R3 80.00Ac	Residential/Ag	4.00	\$15.00	\$25.00	4.00	\$981.16	0.64%
01-01-15-00-00-001.000	Mallery, Garrick E Trustee	S15 T20 R3 139.00Ac	Residential/Ag	127.00	\$127.00	\$381.00	127.00	\$31,151.84	20.19%
01-01-09-00-00-009.000	Mars, Harold W & Patricia L	S9 T20 R3 10.00Ac	Residential/Ag	8.00	\$15.00	\$25.00	8.00	\$1,962.32	1.27%
01-01-10-00-00-001.002	Martin, David V & Cassidy E	S10 T20 R3 15.84Ac	Residential/Ag	15.00	\$15.00	\$45.00	14.36	\$3,522.36	2.28%
01-01-09-00-00-007.001	Martin, David V Trustee of Davi	S9 T20 R3 20.00Ac	Residential/Ag	4.00	\$15.00	\$25.00	4.00	\$981.16	0.64%
01-01-10-00-00-001.000	McKinley Family Trust	S10 T20 R3 37.00Ac	Residential/Ag	0.45	\$15.00	\$25.00	0.45	\$245.30	0.16%
01-01-10-00-00-001.202	Miller, John G & Debra L Hickm	S10 T20 R3 14.16Ac	Residential/Ag	14.16	\$15.00	\$42.48	14.16	\$3,473.32	2.25%
01-01-09-00-00-010.001	Nedd, Charlene L	S9 T20 R3 1.00Ac	Residential/Ag	0.20	\$15.00	\$25.00	0.20	\$245.30	0.16%
01-01-16-00-00-002.000	Pearson, Morris Dale & Wilma	S16 T20 R3 37.00Ac	Residential/Ag	3.00	\$15.00	\$25.00	3.00	\$735.88	0.48%
01-01-10-00-00-010.001	Pugh, Robert L II & Carl L	S10 T20 R3 0.82Ac	Residential/Ag	0.82	\$15.00	\$25.00	0.82	\$245.30	0.16%
01-01-16-00-00-009.003	Shogren, Charles M & Marian E	S16 T20 R3 3.00Ac	Residential/Ag	3.00	\$15.00	\$25.00	3.00	\$735.88	0.48%
01-01-16-00-00-007.000	Webster Properties LLC	S16 T20 R3 74.51Ac	Residential/Ag	39.51	\$39.52	\$118.54	39.51	\$9,691.42	6.28%
01-01-16-00-00-008.000	Webster Properties LLC	S16 T20 R3 40.00Ac	Residential/Ag	22.00	\$22.00	\$66.00	22.00	\$5,396.38	3.50%
01-01-10-00-00-001.102	Went, Kennis R Jr & Jennifer S	S10 T20 R3 10.00Ac	Residential/Ag	8.40	\$15.00	\$25.20	7.94	\$1,947.60	1.26%
Parcels: 42				655.75	\$1,075.74	\$2,505.56	625.05	\$154,263.10	100.0%

A 20' filter strip will be established.

