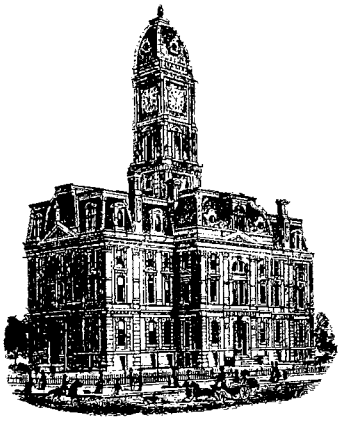


SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, CFM
Surveyor of Hamilton County
Phone (317) 776-8495
Fax (317) 776-9628

Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

September 5, 2018

TO: Hamilton County Drainage Board

RE: William Krause Drain, Krause Drain Reconstruction Phase 3

Attached are the petition, plans, schedule of assessments and drainage shed map, for the William Krause Drain Phase 3. This petition was filed by the Town of Sheridan on December 15, 2016. The petition was referred to the Surveyor for report by the Drainage Board December 21, 2016. (See Hamilton County Drainage Board Minutes Book 17, page 237.) I have reviewed the petition and found it to be in proper form.

I have made a personal inspection of the land described in the petition. 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 benefited.

The attached plans were prepared for the Hamilton County Drainage Board by Banning Engineering. The Phase 3 plans are dated September 12, 2018, Project Number 11194KRUS.

The proposed project will improve the drainage in the southeastern portion of Sheridan. The drainage facilities will be placed in either existing street right of way or the existing drainage easement of the William Krause Drain.

The William Krause Drain is an existing tiled drain on the south and southeast side of the Town of Sheridan consisting of the Main Arm, Arms 1, 2, 3 and 4 and the Jacob Boyer Arm.

The drain is located in Adams Township, Section 32, Township 20 North, Range 3 East and Section 5, Township 19 North, Range 3 East. The drain starts approximately 920-feet east of the intersection of Jarit Drive and East 2nd Street and runs generally south and west into the south and southeast portion of the Town of Sheridan.

History

The original drain petition was by Joseph Furnas and established as the West Cicero Ditch in 1877. [See Hamilton County Drainage Board Minutes Book 4, page 129]. In 1892, George Symonds petitioned for the drain consisting of a main drain and six arms. [See Hamilton County Drainage Board Minutes Book 4, page 129]

Many of the arms became other drains through the years including the Benton-Hinesley Drain, the William Krause Drain, and the George Beam Drain. In 1919-1920, approximately 2,215 of the George Symonds Drain was tiled as part of the William Krause Drain. [See Hamilton County Drainage Board Minutes Book 4, page 130].

The Jacob Boyer Drain was constructed and attached to the William Krause drain in 1923.

The first noted significant repair on the William Krause Drain occurred in 1945.

In 1952 work was completed on the downstream headwall outlet.

In 1952 the Town of Sheridan petitioned for a reconstruction/relocation of the drain along SR 47 near Park Avenue and Malott Street. 250-feet of the drain was relocated from the north side of SR47 to the south side of SR 47. This work added 100-feet to the drain. The work is described in a Viewers Report dated May 6, 1953. The matter was set for hearing on June 15, 1953 in the Circuit Court of Hamilton County under Cause No. A-9280.

The Jacob Boyer Drain and the William Krause Drain were officially separated from the George Symonds Drain and combined in to the William Krause Drain at the August 22, 1994 meeting of the Drainage Board. [See Hamilton County Drainage Board Minutes Book 3, pages 275-276] The William Krause Drain was placed on maintenance and classified as an Urban Drain at the August 22, 1994 meeting of the Drainage Board. [See Hamilton County Drainage Board Minutes Book 3, pages 275-276]

The Main Arm runs from where the tile discharges to the George Symonds Drain southwesterly crossing under SR 38 and then south to 8th Street to the Jacob Boyer Arm from the south/east. The Main Arm continues west along 8th Street to South Bailey Street where it then runs south along South Bailey Street to State 47 where it turns to the west.

At South Malott Avenue, the drain crosses to the south side of State Road 47 and then crosses back to the north side at South Park Avenue.

The drain then continues west to the alley between Main and Ohio Streets to the start of Arm 1.

The Main Arm consists of the following: 3,985-LF of 24" tile installed in 1920; 90-LF of 21" tile installed in 1953; 250-LF of 18" tile installed in 1953; 50-LF of 15" installed in 1953; 462-LF of 12-inch tile installed in 1920 and 478-LF of 8" tile installed in 1920. Portions of the Main Arm were recently

reconstructed as part of the OCRA Project and Phase 1 Project described later in this report. The final reports for these reconstruction projects have not yet been written.

Arm 1 stubs to the north from the Main Arm at the alley between Main and Ohio Streets a distance of 66-feet and is a 6-inch tile installed in 1920.

Arm 2 stubs to the north at the alley between Main and Georgia Streets a distance of 165-feet and is a 6-inch tile installed in 1920.

Arm 3 stubs to the south from the Main Arm on the west side of Georgia Street a distance of 660-feet and is an 8-inch tile installed in 1920.

Arm 4 stubs to the south a distance of 50-feet just east of Malott Avenue and is an 18-inch tile installed in 1920.

The Jacob Boyer Arm consists of 224-LF 12-inch, 26-LF 12-inch, 369-LF 10-inch, 162-LF 8-inch, 231-LF 8-inch, 48-LF 8-inch all installed in 1924. The total length of the arm is 1,060-feet.

The William Krause Drain – Krause Drain Reconstruction Phase 1 project, as described in a report dated May 5, 2017 and presented to the Drainage Board at the meeting of June 26, 2017 is presently under construction and will reconstruct the William Krause Drain downstream of Station 30+50. Please refer to this report for a detailed description of the project [See Hamilton County Drainage Board Minutes Book 17, Pages 384-391]. This project was approved by the Drainage Board at the October 23, 2017 meeting of the Drainage Board with the Contract being signed at the November 13, 2017 meeting of the Drainage Board [See Hamilton County Drainage Board Minutes Book 17, Page 517 and Page 537]. In this report, this project is referred to as the Phase 1 project. This project is substantially complete.

The William Krause Drain – Sheridan Stormwater Improvements project, as described in a report dated May 5, 2017 and presented to the Drainage Board at the meeting of June 26, 2017 is presently under construction and will reconstruct the William Krause Drain between Stations 23+38 and 30+50. Please refer to this report for a detailed description of the project. The project was approved at the June 26, 2017 meeting of the Drainage Board. [See Hamilton County Drainage Board Minutes Book 17, Pages 380-383). In this report, this project is referred to as the OCRA project. This project is substantially complete.

The William Krause Drain – Krause Drain Reconstruction Phase 2 project, as described in a report dated January 25, 2018 and presented to the Drainage Board at the meeting of February 26, 2018 is presently under construction. The project includes the construction of a stormwater detention facility between Station 6+00 and 0+68 of the Phase 1 project and other ancillary construction. Please refer to the January 25, 2018 report for a detailed description of the project [See Hamilton County Drainage Board Minutes Book 18, Pages 55-60]. The project was approved by the Drainage Board at the June 11, 2018 meeting of the Drainage Board [See Hamilton County Drainage Board Minutes Book 18, Pages 177-178]. In this report, this project is referred to as the Phase 2 project.

Existing Condition

A 2013 hydraulic study for the George Symonds and William Krause watershed by Banning Engineering identified that the hydraulic capacity of the 24" tile portion of the William Krause Drain is 10 cubic feet per second and is only adequate to convey the runoff from a 1% frequency storm event. The study identified that without significant upsizing or diversion, flooding in the area served by the Main Arm of the William Krause Drain generally between Fanning Street and Hudson Street and north of 8th Street to SR 38 would be expected to continue. This area experienced significant flooding on June 20, 2011 with water overtopping SR 38 near the Apostolic Faith Church.

Reconstruction Project Phase 3

Phase 3 of this project will provide a higher capacity outlet for the segment of the William Krause Drain upstream of Station 16+02 of the 1920 William Krause Drain Description. The project includes the installation of tiled system that consists of a main arm, two secondary arms that drain to the main arm and several lateral inlets. The main arm shall be known as the William Krause Arm 5. The secondary arms shall be known as the William Krause Arm 6 and William Krause Arm 7.

This project is consistent with the February 2013 study completed for the William Krause and George Symonds Drains by Banning Engineering.

The tiled drainage system to be installed is described in detail in following sections and is not listed in this section.

The project also includes the installation of granular backfill material between Stations 5+80 and 6+10 (approximately) on Arm 5 for equipment accessing the adjacent agricultural field.

The project also includes the installation of ten (10) trees along, but offset from, the top of bank of the stormwater detention facility being constructed with Phase 2.

The project also includes the grading of surface drainage swales that are parallel with and directly above the tile alignment to better facilitate drainage in to Structures 303, 304 and 305.

The project also includes three sanitary sewer lateral repairs.

The project will be bid with a Base Bid and three Alternate bids. Structuring the bid in this manner will allow the Drainage Board discretion to approve construction contracts based on available funding.

The Base Bid includes the following: Construction of Arm 5 between Stations 0+00 (Structure Ex-1) and 13+50 (Structure 307), setting Structure 318, Construction of Arm 7 between Stations 0+00 (Structure 307) and 0+73 (Structure 314), removal of the Jacob Boyer Arm between Stations 3+81 and 4+61 (1924 Stationing), and grouting the existing Jacob Boyer Arm between Stations 3+06 and 3+81 (1924 Stationing).

The construction of Arm 5 between Stations 13+50 (Structure 307) and 21+64, setting Structure 319, and installing the two laterals will be bid as Alternate No. 1.

Construction of Arm 6 between Stations 0+00 and 4+33 will be bid as Alternate No. 2.

Construction of Arm 7 between Stations 0+73 (being Station 3+06 of the 1924 Stationing) and 4+47 (being Station 0+00 of the 1924 Stationing) will be bid as Alternate No. 3.

William Krause Arm 5

Arm 5 will start at Structure EX1 identified on the Phase 3 Construction Plans (see Banning Construction Plans dated September 12, 2018). This is also Structure 101 identified on the Phase 1 Construction Plans (see Banning Construction Plans dated May 1, 2017). This structure is located at Station 23+85.01 of the Phase 1 Construction Plans. This project will connect to the 8-LF, 36" RCP stub pipe running south out of Structure 101 installed with the Phase 1 project. The 8-LF of 36-inch RCP installed with Phase 1 (between Station 0+00 to 0+08 of the Arm 5 stationing) shall be made part of Arm 5.

From Phase 3 Structure EX1 (Phase 1 Structure 101), the drain runs south from its terminus at Station 0+00 to Station 0+08 as 8-LF of 36" RCP (installed with the Phase 1 project) and then as 202-LF of 36" HDPE Tile to Structure 301 (a 60" diameter manhole) at Station 2+10. The drain then runs east as 353-LF of 36" HDPE Tile to Structure 302 (a 60" diameter manhole) at Station 5+63. The drain then runs south as 216-LF of 36" HDPE tile to Structure 303 (a 60" diameter manhole) at Station 7+79. The drain then runs southwest as 231-LF of 36" HDPE tile to Structure 304 (a 60" diameter manhole) at Station 10+10. The drain then runs southeast, parallel to State Road 38/South White Avenue as 87-LF of 36" HDPE tile to Structure 305 (a 60" diameter manhole) at Station 10+97. The drain then runs southwest under State Road 38/South White Avenue as 133-LF of 36" PVC SDR 25 plastic tile within 90-LF of 48" Steel Casing to Structure 306 (a 60" diameter manhole) at Station 12+30. The drain then runs south as 120-LF of 36" RCP tile to Structure 307 (a 60" diameter manhole) at Station 13+50.

The drain then runs west as 207-LF of 24" RCP tile to Structure 308 (a 48" diameter manhole) at Station 15+57. The drain then runs west as 209-LF of 24" RCP to Structure 309 (a 48" diameter manhole) at Station 17+66 on the east side of Hudson Street. The drain then runs northwesterly as 54-LF of 24" RCP to Structure 310 (a 48" diameter manhole) at Station 18+20. The drain then runs west along the north side of 9th Street as 308-LF of 24" RCP to Structure 311 (a 48" diameter manhole) at Station 21+28 (being Station 16+38 of the 1920 Stationing). The drain then runs south on the west side of South Bailey Street along the existing alignment of the William Krause Drain as 36-LF of 24" RCP to Structure 321 (a 48" diameter manhole) at Station 21+64 (being Station 16+02 of the 1920 Stationing).

A new 48" manhole (Structure 319) will be installed on the existing William Krause Drain at Station 16+49 (1920 Drain Stationing).

Two lateral inlets shall be installed and made part of Arm 5. 33-LF of 18" RCP shall be installed between Structure 309 (at Station 17+66) and Structure 320 (a 24"x36" box inlet) on the west side of Hudson Street. 27-LF of 15" RCP shall be installed between Structure 321 (at Station 21+64) and Structure 322 (a 24"x24" box inlet) on the east side of Bailey Street.

This project removes 36-lf of 24" tile of the William Krause Drain installed in 1920 between Stations 16+02 and 16+49 (1920 Drain Stationing) and replaces the tile with new 24" RCP. This 36-LF is also referenced to be between Stations 21+28 and 21+64 of the new Arm 5. The project also permanently removes 11-LF of 24" tile of the William Krause Drain installed in 1920 between Stations 16+38 and 16+49 (1920 Stationing).

William Krause Arm 6

Arm 6 is located on the east side of State Road 38/South White Avenue. Arm 6 Starts at Structure 305. The drain runs southeast from its terminus at Station 0+00 at Structure 305 (being Station 10+97 of Arm 5) parallel to State Road 28/South White Avenue as 215-LF of 15" HDPE Pipe to Structure 312 (a 48" diameter manhole) at Stations 2+15. The drain then continues southeast parallel to State Road 28/South White Avenue as 218-LF of 15" HDPE to Structure 313 (a 48" diameter manhole) at Station 4+33. This is a new arm and consists of all new construction.

William Krause Arm 7

Arm 7 is located on the west side of State Road 38/South White Avenue. Arm 7 will replace a portion of the existing Jacob Boyer Arm of the William Krause Drain and provide a higher capacity drainage outlet for the area of the William Krause watershed south of State Road 47/East 10th Street.

The stationing of Arm 7 is the opposite of the stationing of the existing Jacob Boyer Arm.

Arm 7 Starts at Structure 307. The drain runs south from its terminus at Station 0+00 at Structure 307 (being Station 13+50 of Arm 5) as 73-LF of 18" RCP Pipe to Structure 314 at Station 0+73 of the new Arm 7 (being Station 3+06 of the 1924 Stationing). The drain then runs southeast along the alignment of the Jacob Boyer Arm as 190-LF of 18" RCP to Structure 315 (a 48" diameter manhole) at Station 2+63 of the new Arm 7 (being Station 1+16 of the 1924 Stationing). The drain then runs south as 139-LF of 18" PVC SDR 25 plastic tile to Structure 316 (a 48" diameter manhole) at Station 4+02. A portion of this segment will be installed within 60-LF of 30" Steel Casing Pipe under State Road 47/East 10th Street. The drain then runs east as 45-LF of 18" RCP to Structure 317 (a 24"x24" box inlet) at Station 4+47 of the new Arm 7. Structure 317 will be installed at the current end of the Jacob Boyer Drain on the south side of State Road 47/East 10th Street negating the need for the 48-LF of 8" tile between Stations 0+00 and 0+48 (1924 Stationing) of the Jacob Boyer Arm under State Road 47/East 10th Street.

A new 24"x24" inlet (Structure 318) will be installed on the existing Jacob Boyer Arm at Station 4+61 (1924 Stationing) of the Jacob Boyer Arm.

Changes to the William Krause Drain

The existing William Krause Drain upstream of Station 16+02 (1920 Stationing) will remain in place and discharge to Structure 321 at Station 21+64 of Arm 5.

The existing William Krause Drain downstream of Station 16+49 (1920 Stationing) shall remain in place. A new structure, identified as Structure 319 on the Phase 3 plans, will be installed on the existing William Krause Drain at Station 16+49 (1920 Stationing).

The final length of the William Krause Drain will not be able to be determined until all phases of this project are complete and the as-built drawings are submitted.

Changes to the William Krause Drain include:

1. Delete 8-LF of 36" RCP tile installed in 2018 as part of the Phase 1 project from the total length of the William Krause Main Drain.
2. Remove 47-LF of 24" Tile installed in 1920 between Stations 16+02 and 16+49 (1920 Stationing) of the existing Main Arm and vacate the William Krause Drain between these Stations.
3. Add a 48" Manhole on the William Krause Drain at Station 16+49 (1920 Stationing) of the existing Main Arm.
4. Add a 24"x24" inlet on the Jacob Boyer Arm at Station 4+61 (1924 Stationing) of the Jacob Boyer Arm.
5. Add the following as Arm 5. The total length of Arm 5 is 2,224-LF.
    a. 1,089-LF of 36" HDPE
    b. 128-LF of 36" RCP (8-LF installed with Phase 1 Project from Station 0+00 to 0+08 and 120-LF installed with Phase 3 between Structures 306 at Station 12+30 and 307 at Station 13+50)
    c. 133-LF of 36" PVC SDR 25; a portion of which is installed through 89-LF of 48" Steel Casing Pipe
    d. 814-LF of 24" RCP
    e. 33-LF of 18" RCP
    f. 27-LF of 15" RCP
    g. 7, 60" diameter manholes
    h. 6, 48" diameter manholes
    i. 1, 24"x24" box inlet
    j. 1, 24"x36" box inlet
6. Add the following as Arm 6. The total length of Arm 6 is 433-LF.
    a. 433-LF of 15" HDPE
    b. 2, 48" diameter manholes
7. Add the following as Arm 7. The total length of Arm 7 is 447-LF.
    a. 308-LF of 18" RCP.

b. 139-LF of 18" PVC SDR 25; a portion of which is installed through 60-LF of 30" Steel Casing Pipe.
c. 3, 48" diameter manholes
d. 1, 24"x24" box inlet.

Changes to the Jacob Boyer Arm

1. Remove 20-LF of 10" tile installed in 1924 between Stations 4+41 and 4+61 (1924 Stationing), 60-LF of 8" tile installed in 1924 between Stations 3+81 and 4+41 (1924 Stationing), and 190-LF of 8" tile installed in 1924 between Stations 1+16 and 3+06 (1924 Stationing) of the Jacob Boyer Arm and vacate the Jacob Boyer Drain between these Stations.
2. Grout 75-LF of 8" tile installed in 1924 between Stations 3+06 and 3+81 (1924 Stationing) and 48-LF of 8" tile between Stations 0+00 and 0+48 (1924 Stationing) of the Jacob Boyer Arm and vacate the Jacob Boyer Drain between these Stations.
3. The existing portion of the Jacob Boyer Arm between Stations 0+48 to 1+16 will remain in place and discharge to Structure 315 at Station 2+63 of Arm 7.
4. The final length of the Jacob Boyer Arm will be 599-LF between Stations 4+61 and 10+60 of the Jacob Boyer Arm and 68-LF between Stations 0+48 and 1+16 of the Jacob Boyer Arm for a total length of 667-LF.

Easements

Regulated drain easement has been secured across the following parcels:

1. Parcel # 02-01-32-04-03-004.000; Fidelity Lodge No 309 FSAM; recorded as Instrument No.: 2017053017.
2. Parcel # 02-05-05-00-00-013.000; Town of Sheridan; recorded as Instrument No.: 2018007414.

The Surveyor is of the opinion that these easements are adequate for future maintenance of Arms 5 and 7 of the William Krause Drain.

Project Cost

The estimated construction cost of the project is as follows:

CONSTRUCTION COST ESTIMATE – Base Bid					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Traffic Control	1	LS	$ 2,600.00	$ 2,600.00

2	Erosion Control/Seeding	1	LS	$ 1,950.00	$ 1,950.00
3	Trees	10	EA	$ 975.00	$ 9,750.00
4	Swale	260	LFT	$ 7.80	$ 2,028.00
5	Camera and Grout Fill Existing Tile [Between Jacob Boyer Stations 3+06 to 3+81 (1924 Stationing)]	75	LFT	$ 18.75	$ 1,406.25
6	Remove Existing Tile [Between Jacob Boyer Stations 3+81 to 4+61 (1924 Stationing)]	80	LFT	$ 13.00	$ 1,040.00
7	#53 Stone [Backfill for field access]	42	TON	$ 32.50	$ 1,365.00
8	1" HMA Surface on 4" HMA Intermediate on 12" #53 Stone [Parking lot]	147	LFT	$ 58.50	$ 8,599.50
9	18" RCP with Granular Backfill [Arm 7 between Structures 307 and 314]	73	LFT	$ 143.00	$ 10,439.00
10	36" RCP with Granular Backfill	74	LFT	$ 218.40	$ 16,161.60
11	36" RCP with Standard Backfill	46	LFT	$ 169.00	$ 7,774.00
12	36" HDPE with Granular Backfill	30	LFT	$ 162.50	$ 4,875.00
13	36" HDPE with Standard Backfill	1,059	LFT	$ 117.00	$ 123,903.00
14	48" Manhole with Casting [Structure 314 on Arm 7]	1	EA	$ 5,850.00	$ 5,850.00
15	60" Manhole with Casting [Structures 301-304, 307]	5	EA	$ 7,800.00	$ 39,000.00
16	24"x24" Inlet with Casting [Structure 318 on Jacob Boyer Arm at Station 4+61 (1924 Stationing)]	1	EA	$ 3,250.00	$ 3,250.00
17	HDPE to RCP Concrete Encasement	1	EA	$ 936.00	$ 936.00
				Sub-total (Not including INDOT):	$ 240,927.35
				15% Contingency:	$ 36,139.10
				Total Base Bid (Not including INDOT):	**$ 277,066.45**

CONSTRUCTION COST ESTIMATE – Alternate Bid No. 1					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Traffic Control	1	LS	$ 2,600.00	$ 2,600.00

2	Erosion Control / Seeding	1	LS	$ 650.00	$ 650.00
3	6" #53 stone [Driveway Repair]	88	LFT	$ 32.50	$ 2,860.00
4	1" HMA Surface on 4" HMA Intermediate on 12" #53 Stone [Roadway Repair]	532	LFT	$ 52.00	$ 27,664.00
5	15" RCP w/Granular Backfill	27	LFT	$ 117.00	$ 3,159.00
6	18" RCP w/Granular Backfill	33	LFT	$ 143.00	$ 4,719.00
7	24" RCP w/Granular Backfill	481	LFT	$ 182.00	$ 87,542.00
8	24" RCP w/Standard Backfill	333	LFT	$ 149.50	$ 49,783.50
9	48" Manhole with Casting [Structures 308-311, 319, 321]	6	EA	$ 5,850.00	$ 35,100.00
10	24" x 24" Inlet with Casting [Structure 322]	1	EA	$ 3,250.00	$ 3,250.00
11	24" x 36" Inlet with Casting [Structure 320]	1	EA	$ 3,575.00	$ 3,575.00
12	Concrete Cradle	1	EA	$ 975.00	$ 975.00
13	Sanitary Sewer Lateral Repair	3	EA	$ 2,000.00	$ 6,000.00
				Sub-total:	$ 227,877.50
				15% Contingency:	$ 34,181.63
				Total Alternate Bid No. 1:	**$ 262,059.13**

CONSTRUCTION COST ESTIMATE – Alternate Bid No. 2					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Erosion Control / Seeding	1	LS	$ 2,600.00	$ 2,600.00
2	Swale	50	LFT	$ 7.80	$ 390.00
3	15" HDPE w/Granular Backfill	433	LFT	$ 97.50	$ 42,217.50
4	48" Manhole with Casting [Structures 312, 313]	2	EA	$ 5,850.00	$ 11,700.00
				Sub-total:	$ 56,907.50
				15% Contingency:	$ 8,536.13
				Total Alternate Bid No. 2:	**$ 65,443.63**

CONSTRUCTION COST ESTIMATE – Alternate Bid No. 3					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Traffic Control	1	LS	$ 1,300.00	$ 1,300.00
2	Tree & Brush Removal	1	LS	$ 6,500.00	$ 6,500.00
3	Erosion Control / Seeding	1	LS	$ 1,950.00	$ 1,950.00
4	Remove Existing Tile [Between Jacob Boyer Stations 1+16 and 3+06 (1924 Stationing)]	190	LFT	$ 13.00	$ 2,470.00
5	18" RCP w/Standard Backfill	235	LFT	$ 117.00	$ 27,495.00
6	24" x 24" Inlet with Casting [Structure 317]	1	EA	$ 3,250.00	$ 3,250.00
				Sub-total:	$ 42,965.00
				15% Contingency:	$ 6,444.75
				Total Alternate Bid No. 3:	**$ 49,409.75**

SR 38 INDOT-Arm 5					
1	48" Casing pipe w/grout & bulkheads	90	LFT	$ 812.50	$ 73,125.00
2	36" PVC SDR 25	133	LFT	$ 81.25	$ 10,806.25
3	60" Manhole with Casting [Structures 305, 306]	2	EA	$ 7,500.00	$ 15,000.00
4	Dewatering	1	LS	$ 12,500.00	$ 12,500.00
				Sub-Total:	$ 111,431.25
				15% Contingency:	$ 16,714.69
				Total SR 38 INDOT – Arm 5:	**$ 128,145.94**

SR 47 INDOT-Arm 7					
1	30" Casing pipe w/grout & bulkheads	60	LFT	$ 687.50	$ 41,250.00
2	18" PVC SDR 25	139	LFT	$ 50.00	$ 6,950.00
3	48" Manhole with Casting [Structures 315, 316]	2	EA	$ 5,625.00	$ 11,250.00
4	Dewatering	1	LS	$ 12,500.00	$ 12,500.00

5	Camera and Grout Fill Existing Tile [Between Jacob Boyer Stations 0+00 to 0+48 (1924 Stationing)]	48	LFT	$ 18.75	$900.00
				Sub-Total:	$ 72,850.00
				15% Contingency:	$ 10,927.50
				Total SR 47 INDOT – Arm 7:	**$ 83,777.50**

The County has existing contracts for professional services associated with the overall project. These costs include the following:

1. A Contract with Banning Engineering for the Phase 3 Geotechnical And Utility Investigation within INDOT Right-of-Way in the amount of $18,100.00 awarded on 8/28/17.
2. A Contract with Banning Engineering for the final survey of the Fox Property in the amount of $7,750.00 awarded on 3/12/18.
3. A Contract with Banning Engineering for the Phase 2 Construction Staking and Construction Observation in the amount of $27,625.00 awarded on February 12, 2018.
4. A Contract with Banning Engineering for the Phase 3 Construction Staking in the amount of $7,500.00 awarded on 3/12/18.
5. A Contract with Banning Engineering for the Phase 3 Construction Observation in the amount of $33,400 awarded on 3/12/18

The County incurred the following property/easement acquisition costs associated with the overall project:

1. Purchase of 1.208-acres on the Fox Property in fee: $13,000.00. The 1.208-acres was included as part of the temporary construction easement for the Phase 2 project. The cost to obtain the temporary construction easement was $4,274.16 per the Report of the Appraisers filed April 20, 2017. The cost to purchase this 1.208-acres in fee was appraised at $16,645.02 based on information contained in the Report of the Appraisers filed April 20, 2017. The additional cost to be incurred is equal to $12,370.86. The Agreement of Settlement dated March 7, 2018 established the value of this acquisition to be $13,000.

The County will bid and administer the construction contract for the Phase 3 project.

The portion of the project that crosses State Road 38 and State Road 47 will be paid by INDOT as per IC-36-9-27-71. The work will occur between Structures 305 and 306 and between Structures 315 and 316. The cost for this work is estimated at $230,023.44 and includes $211,923.44 in construction and $18,100 in geotechnical and utility location services.

The balance of the project, equal to $743,253.96, will be paid by the Town of Sheridan through a Rural Development loan from the USDA. The loan will be repaid through the collection of Stormwater Fees by the Town of Sheridan. The mechanism for reimbursement from the USDA Grant for the cost of construction, property acquisition and for professional services is titled Stormwater Capacity Purchase Agreement that was approved on June 11, 2018 (See Hamilton County Drainage Board Minutes Book 18, pages 171, 172 and 181)

TOTAL COST SUMMARY	
Total Base Bid:	$ 277,066.45
Total Alternate Bid No. 1:	$ 262,059.13
Total Alternate Bid No. 2:	$ 65,443.63
Total Alternate Bid No. 3:	$ 49,409.75
Total Reimbursement from the INDOT:	$ 230,023.44
Professional Services:	$ 76,275.00
Acquisition Costs:	$ 13,000.00
Grand Total Phase 3	**$ 973,277.40**

A permit is required from the Indiana Department of Transportation to install the pipe under State Road 38 and State Road 47.

Parcels benefitted by this drain are currently assessed for the William Krause Drain. Therefore no changes in the current assessment shall be required.

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 November 26, 2018.

Sincerely,

Kenton C. Ward, CFM
Hamilton County Surveyor's Office

KCW/pll

Wm. Krause, USDA Grant - Phase 3
Damages are set at zero.
The County will bid & administer the construction contract.
*No change in current benefit & maintenance assessment.
*Project to be funded by Town of Sheridan thru a grant from USDA.
Total Cost Estimate Phase 3 is **$973,277.40**
Hearing: 11/26/18

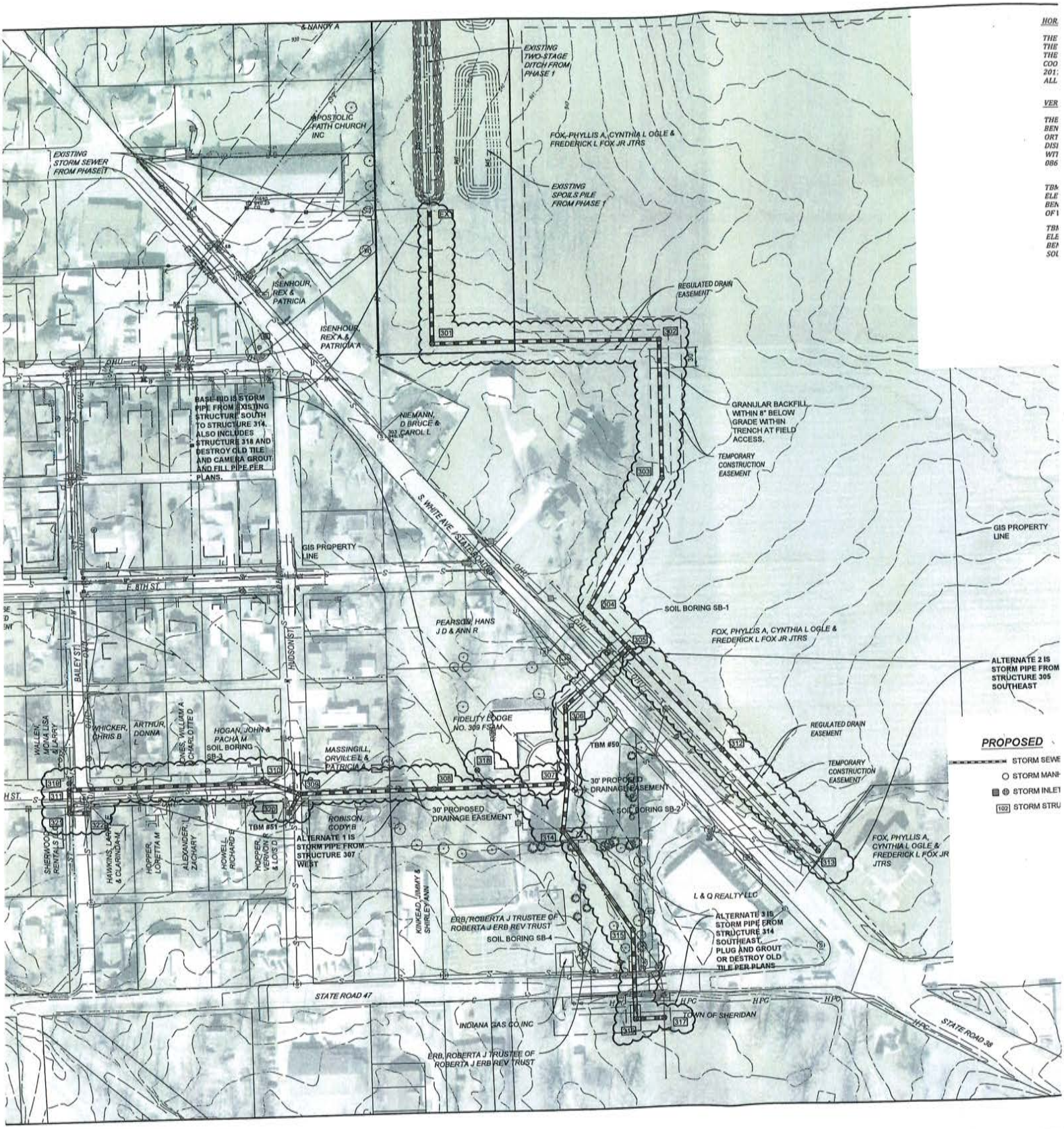
INDOT Construction SR 38 Cost:	$128,145.94
INDOT Construction SR 47 Cost:	$83,777.50
Geotechnical & utility location services:	$18,100.00
Total INDOT:	$230,023.44

Base Bid	$277,066.45
Alternate 1	$262,059.13
Alternate 2	$65,443.63
Alternate 3	$49,409.75
Acquistion Cost	$13,000.00
Professional Services	$76,275.00
Total Grant:	$743,253.96

Phs 3 proposed to add 2,731' of length.	Add	Delete
Arm 5	2,224	47
Arm 6	433	
(*Replaces a portion of Boyer Arm) Arm 7	447	*326

Parcel	Owner	Description	Benefit	MntAsmt	Reconst	% of Total
02-01-32-03-10-039.000	Alexander, Zachary	S32 T20 R3 J H Cox 8th Lot 3	*	*	*	*
02-01-32-03-10-023.000	Arthur, Donna L	S32 T20 R3 J H Cox 5th Lot 7	*	*	*	*
01-01-32-00-00-021.001	Board of Commissioners of Hamilton County	S32 T20 R3 17.41Ac	*	*	*	*
02-01-32-04-03-007.000	Erb, Roberta J. Trustee	S32 T20 R3 1.04 Ac	*	*	*	*
02-01-32-04-03-009.000	Erb, Roberta J. Trustee	S32 T20 R3 0.46 Ac	*	*	*	*
02-01-32-04-03-004.000	Fidelity Lodge No. 309 FSAM	S32 T20 R3 2.20 Ac	*	*	*	*
01-01-32-00-00-021.000	Fox, Phyllis A, Cynthia Ogle & Frederick Fox jt/rs	S32 T20 R3 53.54Ac	*	*	*	*
02-01-32-03-10-037.000	Hawkins, Larry E & Clarinda M	S32 T20 R3 J H Cox 8th Lot 5	*	*	*	*
02-01-32-03-10-020.000	Hogan, John & Pacha M	S32 T20 R3 J H Cox 5th Lot 10,9	*	*	*	*
02-01-32-03-10-038.000	Hopper, Loretta M	S32 T20 R3 J H Cox 8th Lot 4	*	*	*	*
02-01-32-03-10-041.000	Hopper, Vernon R & Lois D	S32 T20 R3 J H Cox 8th Lot 1	*	*	*	*
02-01-32-03-10-040.000	Howell, Richard E	S32 T20 R3 J H Cox 8th Lot 2	*	*	*	*
99-99-99-99-99-999.002	Indiana Department Of Transportation	S32 T20 R3 & S5 T19 R3, SR38, SR47	*	*	***	*
***The portion of the project for SR38 & SR47 right-of-way will be paid by INDOT per IC 35-9-27-71. Cost estimate is $230,023.44.						
02-01-32-03-10-022.000	Jones, William A & Charlotte D	S32 T20 R3 J H Cox 5th Lot 8	*	*	*	*
02-01-32-04-03-010.000	L & Q Realty LLC	S32 T20 R3 1.01 Ac	*	*	*	*
02-01-32-03-10-019.000	Massingill, Orville L & Patricia A	S32 T20 R3 J H Cox Lot 4	*	*	*	*
02-01-32-03-10-042.000	Robison, Cody B	S32 T20 R3 J H Cox 7th Lot 1	*	*	*	*
02-01-32-03-10-036.000	Sherwood Rentals LLC	S32 T20 R3 J H Cox 9th Lot 1	*	*	*	*
02-05-05-00-00-013.000	Town Of Sheridan	S5 T19 R3 21.87 Ac	*	*	*	*
99-99-99-99-99-999.009	Town Of Sheridan	S32 T20 R3 **USDA Funds	*	*	**	*
**The mechanism for reimbursement from the USDA grant is titled Stormwater Capacity Purchase Agreement approved on 06/11/18. Phs 3 Estimate is $743,253.96.						
02-01-32-03-10-025.000	Wallen, Mona Lisa & Larry	S32 T20 R3 J H Cox 4th Lot 10	*	*	*	*
02-01-32-03-10-024.000	Whicker, Chris B	S32 T20 R3 J H Cox Lot 6	*	*	*	*

Parcels: 22



EXISTING TWO-STAGE DITCH FROM PHASE 1
APOSTOLIC FAITH CHURCH INC
EXISTING STORM SEWER FROM PHASE 1
FOX, PHYLLIS A, CYNTHIA L OGLE & FREDERICK L FOX JR JTRS
EXISTING SPOILS PILE FROM PHASE 1
ISENHOUR, REX & PATRICIA
ISENHOUR, REX A & PATRICIA A
REGULATED DRAIN EASEMENT
BASE BID IS STORM PIPE FROM EXISTING STRUCTURE SOUTH TO STRUCTURE 314. ALSO INCLUDES STRUCTURE 318 AND DESTROY OLD TILE AND CAMERA GROUT AND FILL PIPE PER PLANS.
NIEMANN, D BRUCE & CAROL L
GRANULAR BACKFILL WITHIN 8" BELOW GRADE WITHIN TRENCH AT FIELD ACCESS.
TEMPORARY CONSTRUCTION EASEMENT
S. WHITE AVE / STATE ROAD 38
GIS PROPERTY LINE
E. 8TH ST.
SOIL BORING SB-1
PEARSON, HANS J D & ANN R
FOX, PHYLLIS A, CYNTHIA L OGLE & FREDERICK L FOX JR JTRS
ALTERNATE 2 IS STORM PIPE FROM STRUCTURE 305 SOUTHEAST
BAILEY ST.
HUDSON ST.
FIDELITY LODGE NO. 309 FSAM
WALLEN, MONA LISA & LARRY
WHICKER, CHRIS B
ARTHUR, DONNA L
JONES, WILLIAM A & CHARLOTTE D
HOGAN, JOHN & PACHA M
SOIL BORING SB-3
MASSINGILL, ORVILLE L & PATRICIA A
TBM #50
REGULATED DRAIN EASEMENT
TEMPORARY CONSTRUCTION EASEMENT
30' PROPOSED DRAINAGE EASEMENT
SOIL BORING SB-2
30' PROPOSED DRAINAGE EASEMENT
TBM #51
ROBISON, CODY B
ALTERNATE 1 IS STORM PIPE FROM STRUCTURE 307 WEST
SHERWOOD RENTALS
HAWKINS, LARRY E & CLARINDA M
HOPPER, LORETTA M
ALEXANDER, ZACHARY
HOWELL, RICHARD E
HOPPER, VERNON R & LOIS D
KINKEAD, JIMMY & SHIRLEY ANN
FOX, PHYLLIS A, CYNTHIA L OGLE & FREDERICK L FOX JR JTRS
L & Q REALTY LLC
ERB, ROBERTA J TRUSTEE OF ROBERTA J ERB REV TRUST
SOIL BORING SB-4
ALTERNATE 3 IS STORM PIPE FROM STRUCTURE 314 SOUTHEAST. PLUG AND GROUT OR DESTROY OLD TILE PER PLANS
STATE ROAD 47
TOWN OF SHERIDAN
INDIANA GAS CO INC
ERB, ROBERTA J TRUSTEE OF ROBERTA J ERB REV TRUST
STATE ROAD 38
PROPOSED
STORM SEWE
STORM MANH
STORM INLET
STORM STRU