



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

January 25, 2018

TO: Hamilton County Drainage Board

RE: William Krause Drain, Krause Drain Reconstruction Phase 2

Attached are the petition, plans, schedule of assessments and drainage shed map, for the William Krause Drain Phase 2. 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 plans are dated January 25, 2018, Project Number 11194KRUS.

The proposed project will improve the drainage in the southeastern portion of Sheridan. The drainage facilities will be placed in 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 was 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 feet 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 SR 47 to the south side of SR 47. This work added 100-feet to the drain. [Clerk of Circuit Court Hearing June 15, 1953 Cause No. A9280].

The Jacob Boyer Drain and the William Krause Drain were officially separated from the George Symonds Drain and combined into 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" tile installed in 1953; 462-LF of 12-inch tile installed in 1920 and 478-LF of 8" tile installed in 1920.

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.

A project approved by the Drainage Board at the October 23, 2017 meeting of the Drainage Board (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] is presently under construction and will reconstruct the William Krause Drain downstream of Station 30+50 of the 1920 stationing. Please refer to the report dated May 5, 2017 presented to the Drainage Board at the meeting on June 26, 2017 [See Hamilton County Drainage Board Minutes Book 17, Pages 384-391] for a detailed description of this project. In this report, this project is referred to as the Phase 1 Project.

A project approved by the Drainage Board at the June 26, 2017 meeting of the Drainage Board is presently under construction and will reconstruct the William Krause Drain between Stations 23+38 and 30+50 of the 1920 stationing. Please refer to the report dated May 5, 2017 presented to the Drainage Board at the meeting on June 26, 2017 for a detailed description of this project. In this report, this project is referred to as the OCRA project. [See Hamilton County Drainage Board Minutes Book 17, Pages 380-383).

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 2

Phase 2 of this project will provide a detention facility between Stations 6+00 and 0+68 of the Phase 1 William Krause Drain Project. The area between Stations 0+68 and 0+00 of the Phase 1 Project will be a 30-foot wide spillway. This detention facility will store the runoff generated from the William Krause watershed and release the runoff at a rate that the George Symonds Drain can accept. The detention facility will be a wet bottom pond and will be an expansion of the open ditch being constructed with the Phase 1 Project. The normal pool for the pond is 926.70 and the 100-year elevation is 934.50. The emergency spillway will have an elevation of 932.50 and will be protected with an erosion control blanket as shown in the plans. The pond is controlled by an outlet control structure consisting of 150-LF of 36" RCP at a 0.1% slope. The volume of storage provided by the pond between normal pool and the spillway elevation is approximately 30 acre-feet. Soil from the excavation of the detention facility will be spread to the south and east of the open ditch constructed with the Phase 1 Project and the detention facility constructed with Phase 2. Two rock chutes are necessary for the runoff from the watershed from the Fox property south and east of the project area draining down the bank of the detention facility and the open ditch being constructed with the Phase 1 Project. One rock chute (per Detail 1 on Sheet C502) is located on the south side of the detention facility at approximately Station 3+50 of the Phase 1 Project. A second rock chute (per Detail 2 on Sheet C502) is located on the east side of the open ditch being constructed with the Phase 1 Project at approximately Station 17+00 of

the Phase 1 Project. A ford crossing will also be constructed across the open ditch being constructed with the Phase 1 Project. The ford crossing is located at approximately Station 6+25 of the Phase 1 Project which is approximately 130 feet upstream of the detention facility.

Changes to the William Krause Drain

This project will result in the following changes to the William Krause Drain. 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.

1. Eliminate 532-LF of the open ditch constructed with the Phase 1 Project between Stations 6+00 and 0+68.
2. Add detention facility between Stations 6+00 and 0+68 of the Phase 1 Project.
3. Add a spillway between Stations 0+68 and 0+00 of the Phase 1 Project.
4. Add 150-LF of 36" RCP with two End Sections as the primary outlet control structure for the pond. This pipe is parallel to the main alignment of the Phase 1 Project.

Easements

Regulated drain easement has been secured across the following parcels for this project.

1. Parcel # 01-01-32-00-00-021.000. Fox, Phyllis A, Cynthia L Ogle & Frederick L Fox Jr jt/rs
A temporary easement for the wasting of the spoil from the pond excavation was also obtained on the above mentioned tract.
2. Parcel 01-01-32-00-00-017.000. Pickett, Clifford D. & Dortha P. This easement is for the transfer or any excess spoil to the future Lamong Road right of way and for future drainage access for the future road.

Project Cost

The estimated cost of the project is as follows:

COST ESTIMATE - Phase 2					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Excavation - Cut/Fill	71,000	CY	\$ 5.00	\$ 355,000.00
2	INDOT Farm Field Fence	2,984	LFT	\$ 15.00	\$ 44,760.00
3	Gates for INDOT Fence	4	EA	\$ 1,000.00	\$ 4,000.00
4	Grout Existing Tiles	1	LS	\$ 5,000.00	\$ 5,000.00
5	Trees	10	EA	\$ 300.00	\$ 3,000.00
6	36" RCP	150	Lft	\$ 130.00	\$ 19,500.00
7	36"RCP End Section	2	EA	\$ 1,200.00	\$ 2,400.00

8	Channel Ford Crossing	1	EA	\$ 10,000.00	\$ 10,000.00
9	Riprap for End Sections	2	EA	\$ 1,000.00	\$ 2,000.00
10	Check Dams	3	EA	\$ 2,000.00	\$ 6,000.00
11	Rock Chutes	1	LS	\$ 14,000.00	\$ 14,000.00
12	Overflow Weir	1	EA	\$ 12,500.00	\$ 12,500.00
13	Remove old manholes	2	EA	\$ 800.00	\$ 1,600.00
14	15" Drain Outlet	2	EA	\$ 950.00	\$ 1,900.00
15	10" Drain Outlet	2	EA	\$ 700.00	\$ 1,400.00
16	24" Drain Outlet	2	EA	\$ 1,200.00	\$ 2,400.00
17	Erosion Control Blanket	2,638	SY	\$ 3.00	\$ 7,914.00
18	Seeding	27.5	AC	\$ 1,500.00	\$ 41,250.00
19	Dewatering	1	LS	\$ 25,000.00	\$ 25,000.00
				Sub-total:	\$ 559,624.00
				15% Contingency:	\$ 83,943.60
				Total Phase 2 Construction:	\$ 643,567.60
				Fox Property Easement	\$ 348,900.00
				Faith Apostolic Church Easement	\$ 3,500.00
				Faith Apostolic Church Appraisal	\$ 825.00
				Sheridan Geotech	\$ 5,100.00
				Fox-Search & Exam Fee	\$ 275.00
				(Burrell Appraisal Service) Fox Appraisal	\$ 1,100.00
				Pickett Easement	\$ 4,300.00
				(STS, Inc.) Pickett Appraisal	\$ 700.00
				(STS, Inc.) Fox Appraisal	\$ 2,200.00
				(Burrell Appraisal Service) Fox Appraisal	\$ 550.00
				Total Phase 2 Associated Expenses:	\$ 367,450.00

Total Phase 2:	\$ 1,011,017.60

The County incurred the following costs for professional services associated with the overall project. These costs are shown in the cost estimate above for Phase 2 and include the following:

1. Faith Apostolic Church Appraisal Services: \$825.00
2. Geotechnical and Utility Investigation: \$5,100.00
3. Fox Property Title Search and Exam Fee: \$ 275.00
4. Fox Property Appraisal: \$ 1,100.00
5. Fox Property Appraisal: \$2,200.00
6. Pickett Property Appraisal: \$700.00
7. Fox Property Appraisal: \$ 550.00

The County incurred the following property/easement acquisition costs associated with the overall project. These costs are shown in the cost estimate for Phase 2 above and include the following:

1. Fox Property Easement: \$348,900.00
2. Faith Apostolic Church Easement: \$3,500.00
3. Pickett Property Easement: \$ 4,300.00

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

The cost of this project, equal to \$1,011,017.60, will be paid by the Town of Sheridan through a Rural Development loan from the USDA. The loan will be paid by the town through the collection of stormwater fees. The mechanism for reimbursement from the USDA Grant for the cost of construction, property acquisition and for professional services is being finalized.

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 February 26, 2018.

Sincerely,



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

KCW/pll

Wm. Krause, USDA Grant - Phase 2

For detention facility between Sta. 6+00 to 0+68 of Phs I & spillway between 0+68 to 0+00 & outlet control structure consisting of 150' of 36" RCP with 2 end sections.

*Project to be funded by Town of Sheridan thru a grant from USDA. No change in current maintenance assessment.

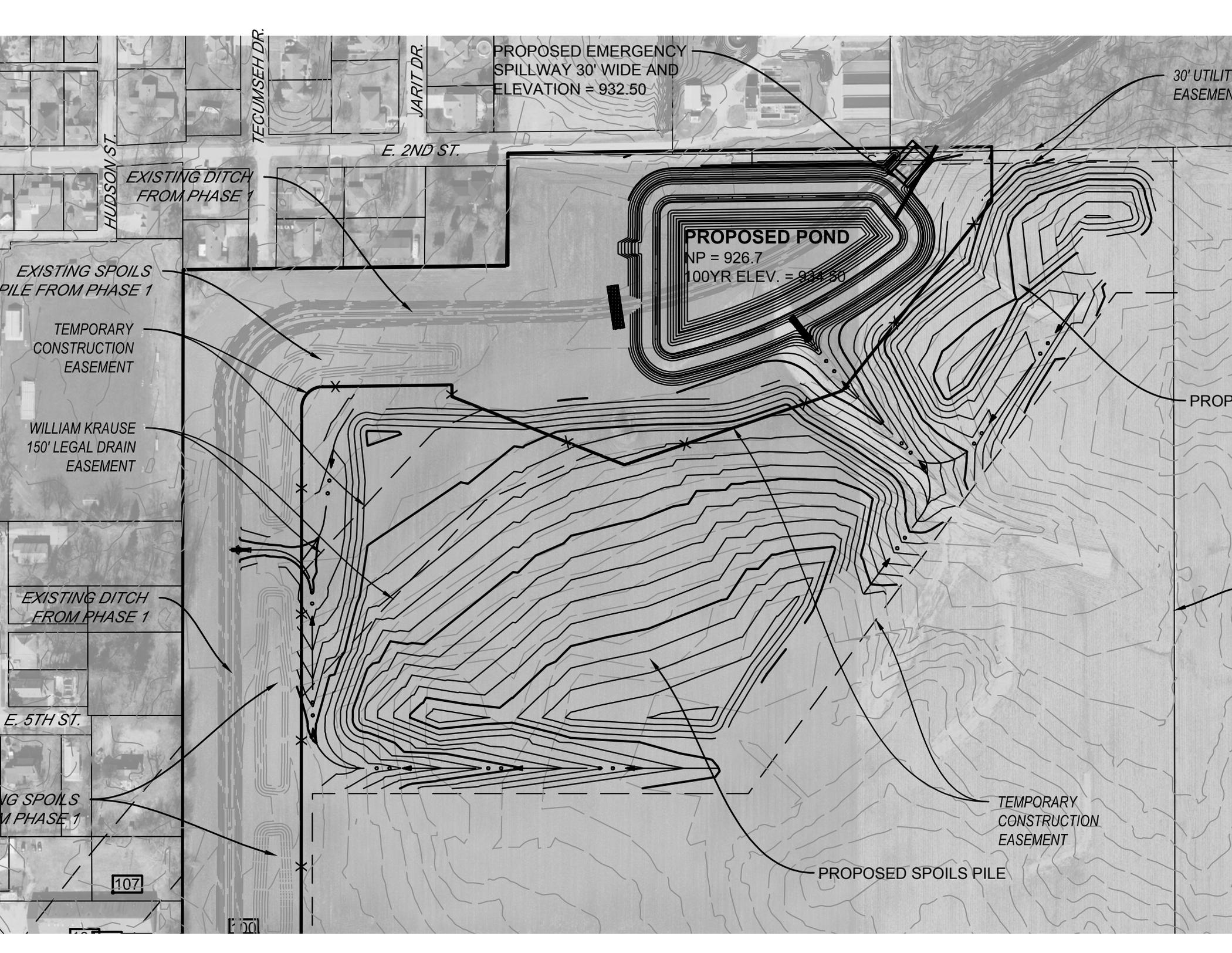
Damages are set at zero. The County will bid & administer the construction contract.

Construction Cost estimate is \$643,567.60. Church, Fox & Pickett Esmt & Sheridan Geotech is \$367,450.00.

Total Cost Estimate Phase 2 is **\$1,011,017.60**.

Hearing: 02/26/18

Parcel	Owner	Description	Benefit	MntAsmt	Reconst	Percent of Total
02-01-32-00-00-004.003	Sheridan Board of Trustees	S32 T20 R3 16.12 Ac	*	*	*	*
02-01-32-00-00-013.000	Sheridan Sewage Disposal	S32 T20 R3 3.00 Ac	*	*	*	*
01-01-32-00-00-017.000	Pickett, Clifford D & Dortha P	S32 T20 R3 32.87 Ac	*	*	*	*
01-01-32-00-00-021.000	Fox, Phyllis A, Cynthia Ogle & Frederick Fox jr/rs	S32 T20 R3 72.15 Ac	*	*	*	*
01-01-32-00-00-021.001	Board of Commissioners of Hamilton County	S32 T20 R3 17.41 Ac	*	*	*	*
02-01-32-03-05-017.000	Apostolic Faith Church Inc.	S32 T20 R3 0.22 Ac	*	*	*	*
99-99-99-99-99-999.009	Town Of Sheridan	S32 T20 R3 USDA Funds	*	*	*	100%



PROPOSED EMERGENCY
SPILLWAY 30' WIDE AND
ELEVATION = 932.50

30' UTILIT
EASEMEN

HUDSON ST.

TECUMSEH DR.

JARIT DR.

E. 2ND ST.

EXISTING DITCH
FROM PHASE 1

PROPOSED POND

NP = 926.7
100YR ELEV. = 934.50

EXISTING SPOILS
PILE FROM PHASE 1

TEMPORARY
CONSTRUCTION
EASEMENT

WILLIAM KRAUSE
150' LEGAL DRAIN
EASEMENT

PROP

EXISTING DITCH
FROM PHASE 1

E. 5TH ST.

EXISTING SPOILS
PILE FROM PHASE 1

TEMPORARY
CONSTRUCTION
EASEMENT

PROPOSED SPOILS PILE

107