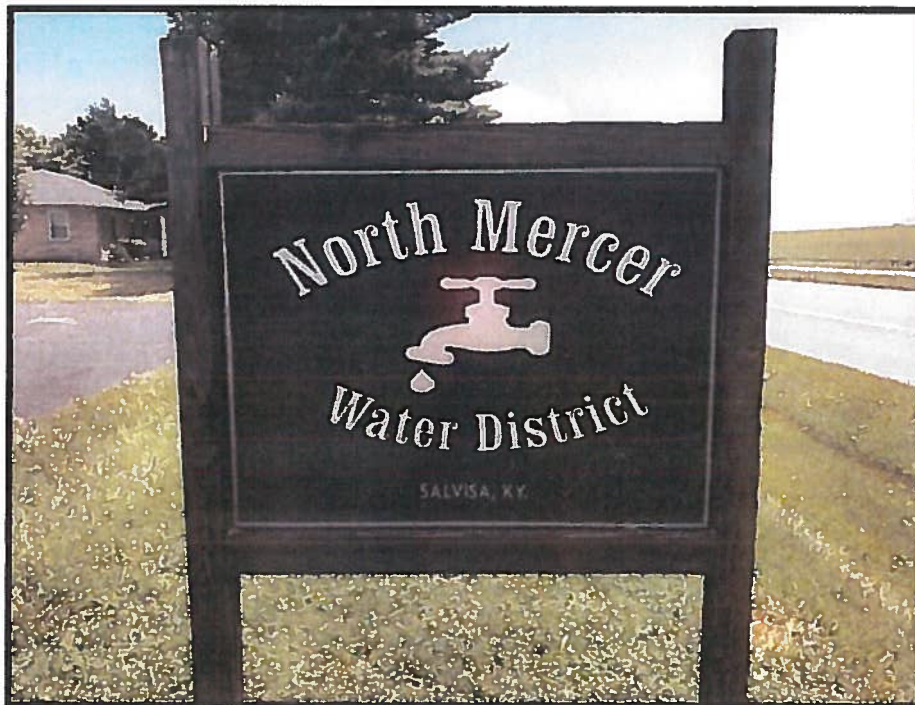


**NORTH MERCER WATER DISTRICT  
2019 WATER SYSTEM IMPROVEMENTS  
FINAL ENGINEERING REPORT**

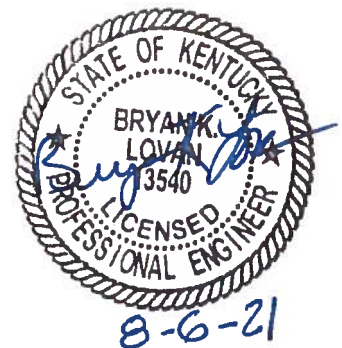


***NORTH MERCER WATER DISTRICT***

***4795 Louisville Road***

***Salvisa, KY 40372***

***August, 2021***



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## SECTION 1 PROJECT PLANNING

### 1.01 LOCATION

The North Mercer Water District (NMWD) was formed in 1964. The existing system consists of approximately 340 miles of water lines with five distribution water storage tanks and six booster pump stations that serve approximately 4,524 customers in Anderson, Boyle, Mercer and Washington Counties.

The NMWD is located in Central Kentucky in the City of Salvisa in Mercer County. The NMWD serves the majority of northern, western and southern Mercer County and parts of Anderson, Boyle and Washington Counties including the communities of Salvisa, Cornishville, Mackville, McAfee, Mayo and Bohon.

The topography of Mercer County is gently rolling to hilly, with the steepest slopes and greatest local relief being in the eastern edge of the county near the deeply incised valleys of the Dix and Kentucky Rivers. The area of lowest local relief is in the vicinity of Harrodsburg. Ridgetop elevations generally range between 900 and 950. The highest elevation in the county, 1,000 feet, is found on a ridge just south of Kentucky 152 about 2.5 miles east of the center of Harrodsburg. Elevations of communities within the NMWD service area include Bohon at 897 feet, Cornishville at 733 feet, Mayo at 900 feet and Salvisa at 785 feet.

### 1.02 ENVIRONMENTAL RESOURCES PRESENT

The major environmental features within the proposed area feature a variety of landforms and topographic changes from extremely steep to relatively flat terrain. The gradual undulating terrain allows for potable water to be transported with limited booster stations. Water pressures range from 30 psi to over 185 psi in sections of the system. Many of the hollows are in floodplains in particular along the Dix River and Kentucky River along the eastern boundary of the county. No known historic sites are noted in the planning area.

### 1.03 POPULATION TRENDS

The census information reviewed shows a slight decrease in the population projections over the next twenty years. Since the establishment of the NMWD the population of Mercer County has continued to grow. The growth of the North Mercer Water District's system can be attributed to numerous water distribution expansion projects. The population projections for Mercer County are shown below.

	<u>2020</u>	<u>2025</u>	<u>2030</u>	<u>2035</u>	<u>2040</u>
Population	21,260	21,255	20,831	20,407	19,907

#### **1.04 COMMUNITY ENGAGEMENT**

The NMWD will be holding a public meeting inviting all individuals affected by this project. This meeting will communicate the need for the project and the resulting system improvements that will be accomplished through the project.

---

## **SECTION 2 EXISTING FACILITIES**

### **2.01 LOCATION**

The NMWD is located in Central Kentucky in the City of Salvisa in Mercer County. The NMWD serves the majority of northern, western and southern Mercer County and parts of Anderson, Boyle and Washington Counties including the communities of Salvisa, Cornishville, Mackville, McAfee, Mayo and Bohon. Maps of the project showing the extent of the water system improvements is located at the end of this report (Appendix A).

### **2.02 HISTORY**

The NMWD system was originally built in the 1960's. The NMWD purchases its water from the City of Harrodsburg and the South Anderson Water District. Numerous water line extension projects have been developed over the past 60 years to establish the current NMWD customer base which serves approximately 97% of potential customers in the service area of Mercer County.

### **2.03 CONDITION OF EXISTING FACILITIES**

NMWD currently purchases an average of 800,000 gallons a day to serve its customers. The system is in good to fair condition and work continues to improve the older, undersized sections of the NMWD.

Several of the original transmission water mains that transport water to the NMWD customers are of asbestos cement material. Additional transmission mains transport water via older problematic PVC Class 160 water mains. Due to the age and condition of these mains the NMWD can experience underserved water supply/pressure to areas of the system due to failure of these water mains.

### **2.04 FINANCIAL STATUS OF ANY EXISTING FACILITIES**

Annual audits will be submitted to Rural Development as required by the RD bond issue. A customer breakdown will be provided in the Summary Addendum.

As with the majority of utilities across the country, the NMWD has seen its operating expenses rise over the past several years. Electric costs and health insurance are the expenses that have seen the largest increase.

---

## **SECTION 3 NEED FOR PROJECT**

### **3.01 HEALTH, SANITATION, AND SECURITY**

The proposed project will replace approximately 21.0 miles of distribution mains that are approximately 50% of asbestos cement material and 50% of older problematic PVC Class 160 water main. The project will also include replacing service line to approximately 500 customer service meters. Improving water turnover/water age by eliminating older, problematic distribution mains and removing dead ends by looping some of the existing water lines will improve the quality of water for residents in these particular areas and also provide alternatives for service during emergency outages.

Many of the families within the project areas currently receive their potable water via asbestos cement distribution water mains. Due to the age and material of these mains, breaks are more common and have led to issues with continuity of service. This exposes some families to poor quality water and limits the amount of water available to them.

The proposed project will help to improve the overall service from a water quality and reliability standpoint to the NMWD customers.

### **3.02 AGING INFRASTRUCTURE**

The existing water mains to be replaced with this project are anywhere from 35 to 55 years old. Due to the age of these water mains the District has experienced continued operational issues that only become worse as time goes on. These issues include breaks and leaks of the water mains which create financial strains on the District through the allocation of its resources. Additionally, this aging infrastructure adds to the District's burden of maintaining a low water loss rate in its distribution system.

### **3.03 REASONABLE GROWTH**

Growth has been considered a significant factor in the need for the proposed project. As the District's customer base has increased significantly in the last 35 to 55 years the need to replace these older water mains to offer sustained water service to its customer base is a priority.

---

## **SECTION 4 ALTERNATIVES CONSIDERED**

### **4.01 Description**

Alternatives considered included replacing asbestos cement distribution mains with smaller size distribution mains but this does not provide NMWD with any hydraulic improvements which in turn help to reduce operation and maintenance expenses. An additional alternative considered was to only replace the lines as they deteriorate to the point of failure. This is cost prohibitive for the NMWD and does not benefit the customers by providing a safe, dependable, high quality product.

### **4.02 Design Criteria**

The design criteria that will be used on the project include hydraulic analysis of the existing system to determine that adequate pressures are realized throughout the distribution system along with examining flushing velocities. By properly sizing the distribution mains to be installed the District will provide improved service to its customer base while also maintaining potable water of high quality.

### **4.03 Map**

Maps of the project showing the extent of the water system improvements are located at the end of this report (Appendix A).

### **4.04 Environmental Impacts**

An environmental report detailing the potential impacts of the project is being undertaken with this project. Once the report is finalized any potential impacts will be taken into consideration and any necessary remediation measures will be taken to avoid any negative impact to the environment.

### **4.05 Land Requirements**

Land requirements associated with this project will include the need for easements and encroachment permits, both public and private, for the installation of water main. Those easements and permits will be obtained prior to any construction beginning.

### **4.06 Potential Construction Problems**

With any water main replacement project one of the main potential construction problems occur with the existing infrastructure that is in place. It is imperative to

maintain existing water service to all customers during construction and avoid the existing water main during construction. This problem is considered during the design of the project and all precautions are taken to limit this potential risk.



## **SECTION 5 SELECTION OF AN ALTERNATIVE**

### **5.01 Life Cycle Cost Analysis**

In the selection of the preferred alternative for this project the life cycle cost of the materials to be utilized has been considered. The main material to be utilized is the water main. The water main will be of PVC material and recent studies estimate a service life of up to 100 years. This length of service life provides for lower operating and maintenance costs to be realized by the District.

### **5.02 Non-Monetary Factors**

The non-monetary factors considered are the ability to provide service to the existing customer base. With new water mains the existing customer base will have improved service and a higher quality product due to the elimination of existing asbestos cement water mains.



**SECTION 6 PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)**

**6.01 Preliminary Project Design**

The proposed project and recommended alternative will replace approximately 21.8 miles of distribution mains that are approximately 50% of asbestos cement material and 50% of older problematic PVC Class 160 water main. The project will also include replacing service line to approximately 500 customer service meters. Improving water turnover/water age by eliminating older, problematic distribution mains and removing dead ends by looping some of the existing water lines will improve the quality of water for residents in these particular areas and also provide alternatives for service during emergency outages.

Additionally, should project funds be available the project will include the installation of automatic flush hydrants, the replacement of a control valve in an existing pump station (US 127), additional chlorinators throughout the distribution system, well testing to examine the potential for additional sources of water, building improvements for the existing maintenance building, security equipment at the main office and equipment purchases, such as a dump truck.

A summary of the proposed project is as follows:

	Approximate Year in Service	Approximate Age (in years)	
Replacement of 21.8 miles of distribution main	Perryville Road	1962	55
	McCouns Ferry Road	1962	55
	Old Louisville Road	1962	55
	Cummins Ferry	1962	55
	Kirkwood/Bondville Road	1962	55
	Garriott Lane	1962	55
	McAfee Road	1982	37
	Mackville Road	1982	37
	Louisville Road	1982	37
	Rose Lane	1983	36
	Edgewood Drive	1983	36
	Catlett Lane	1983	36
	Oakland Lane	1983	36
	Rose Hill Lane	1983	36



## 6.02 Project Schedule

The proposed project schedule for Contract 1 is:

1. Secured Letter of Conditions from USDA RD – July 28, 2020
2. Secured Land/Easement/Encroachment Permits – May, 2021
3. Division of Water Approval – June 1, 2020
4. Advertise for Bids – May, 2021
5. Contract Award/Initiate Construction – September, 2021
6. Substantial Completion – March, 2022
7. Final Completion/Initiation of Operation – April 2022

The proposed project schedule for Contract 2A, 2B, 2C is:

1. Secured Letter of Conditions from USDA RD – July 28, 2020
2. Secured Land/Easement/Encroachment Permits – May, 2021
3. Division of Water Approval – June 1, 2020
4. Advertise for Bids – May, 2021
5. Contract Award/Initiate Construction – September, 2021
6. Substantial Completion – January, 2022
7. Final Completion/Initiation of Operation – February, 2022

## 6.03 Permit Requirements

The project has received Division of Water Approval, completed environmental, resolution from Mercer County Fiscal Court for county road encroachments, Norfolk/Southern Railroad permit, and Kentucky Department of Transportation for state road encroachments.

## SECTION 7 PROJECT BUDGET AND FUNDING

### 7.01 Bidding and Recommendations

The project was advertised on May 6, 2021 in the Harrodsburg Herald, and construction bids were opened on May 19, 2021 at 9:00 a.m. at the North Mercer Water District office. The North Mercer Water District decided to break out Contract 2 into three separate contracts in an effort to encourage smaller, local contractors to bid the project and to condense the contract time in order meet CDBG's deadline for expenditure of the grant funds. Listed below is the pertinent information with regarding the bids for the various contracts:

<u>Contract No.</u>	<u>No. of Bidders</u>	<u>Low Bidder</u>	<u>Amount</u>
1	3	BOCA Construction	\$2,073,035.00
2A	2	BOCA Construction	\$1,174,250.00
2B	4	G&W Construction	\$687,650.00
2C	2	BOCA Construction	\$792,100.00

The engineer's estimate in 2019 for all contracts were as follows: Contract 1 - \$1,100,000; Contract 2A - \$660,000; Contract 2B - \$475,000; Contract 2C - \$420,000.

The low bid for all contracts came in over the engineer's estimate due to several factors, including the severe increase in pipe prices and other related materials the water industry over the past few months, price increases due to the lack of chemicals and resin that are part of the manufacturing process, and the COVID 19 pandemic. Additionally, the availability of PVC pipe will be another issue that will need to be addressed with the successful contractors going forward.

Initially, the project budget was for \$3.4 million in total project costs and approximately \$2.6 million in a construction loan from Rural Development. The District decided to pursue a grant from CDBG and required the District to complete an income survey in the southwest portion of the county. Once the income surveys had been completed, it was determined that Contract 2 would qualify for the CDBG grant and the District planned to de-obligate any loan funds that would not be required from Rural Development and use the \$1.0 million in grant from the CDBG grant.

Since the total bids were above the available funds for the project, not all of the project could be constructed and the District held a board meeting on Wednesday, June 2,

2021 to determine which contract(s) would proceed and which would be deleted from the project. The District made the following decisions:

1. Approved the Notice of Award for Contract 2A, 2B, and 2C.
2. Bluegrass ADD stated that additional monies could be made available to the District through the "Cares Act".
3. The amount of additional funds required to complete the entire project is \$1.3 million.
4. The project will move forward to construction with Contracts 1 and Contract 2 once the required reviews have been completed by Rural Development and PSC.
5. The amount of construction and/or scope of work for Contract 1 will be adjusted to remove certain roads from the contract in order to reduce the cost within the remaining funds.
6. The project will move forward, with the BGADD continuing to monitor any additional funding from the *American Rescue Plan Act*.

**See Appendix B (Bid Tabulations for Contracts 1 and 2A, 2B, 2C and Letter of Recommendations for all contracts)**

The funding for the project consists of the following:

Rural Development Loan	\$3,400,000
CDBG Grant	\$1,000,000
Cares Act Grant	<u>\$ 100,000</u>
Total	\$4,500,000

The revised budget for this project is as follows:

Legal and Administrative	\$ 55,000
Land	\$ 0
Additional Engineering Services PER	\$ 5,000
Rate Study	\$ 5,000
Environmental	\$ 10,000
Expanding Contract 2 to three Contracts	\$ 8,000
Engineering Design and CA	\$ 193,000
Resident Inspection	\$ 107,000
Interest	\$ 60,000
Construction	\$ 3,632,840
CDBG Administration	\$ 50,000
Contingencies (10.3%)	<u>\$ 374,160</u>
 Total	 \$ 4,500,000

It is the recommendation of Bluegrass Engineering, PLLC to proceed with the construction phase of the project, upon the completion of the remaining Rural Development submittals and construction conferences.

**7.02 Annual Operating Costs and Proposed Rates**

The proposed rates will allow North Mercer Water District to fully fund the debt service for this project. The project will allow NMWD to realize a reduction in annual operating costs over the course of the loan. The replacement of the problematic water main and aged service line will see a reduction in labor hours, fuel costs and vehicle expense required to monitor and repair the aged system, which should reduce their water loss rate.

The combination of the proposed rates along with the operational efficiencies that are gained with this project will allow NMWD to further strengthen their financial position over the course of the loan.

The proposed rates are as follows:

<u>5/8" Meters</u>		
First 1,000	\$20.00	Minimum
Over 1,000	\$9.40	Per 1,000 gallons



---

<u>1" Meters</u>		
First 2,500	\$35.50	Minimum
Over 2,500	\$9.40	Per 1,000 gallons
<u>2" Meters</u>		
First 10,000	\$105.00	Minimum
Over 10,000	\$9.40	Per 1,000 gallons
Bulk Sales	\$ .50	Per 80 gallons



## SECTION 8 CONCLUSIONS AND RECOMMENDATIONS

### 8.01 2019 Water System Improvements

As previously noted in Section 7, Bluegrass Engineering recommends that North Mercer Water District proceed with the following:

- Proceed with signing contracts and issuance of Notice to Proceed for Contracts 2A, 2B and 2C.
- North Mercer Water District will make a determination of the roads to delete from Contract 1 in order to be within project funds. A deductive change order will be issued at the contract signing and maintain a 10% contingency.
- Upon execution of Contract 1, issue the Notice to Proceed.
- Bluegrass ADD will continue to seek additional grant funds from the *American Rescue Plan Act* during the construction phase of the project.
- Any contingency funds remaining at the end of the construction period will be utilized to complete the previously deleted water mains from Contract 1.

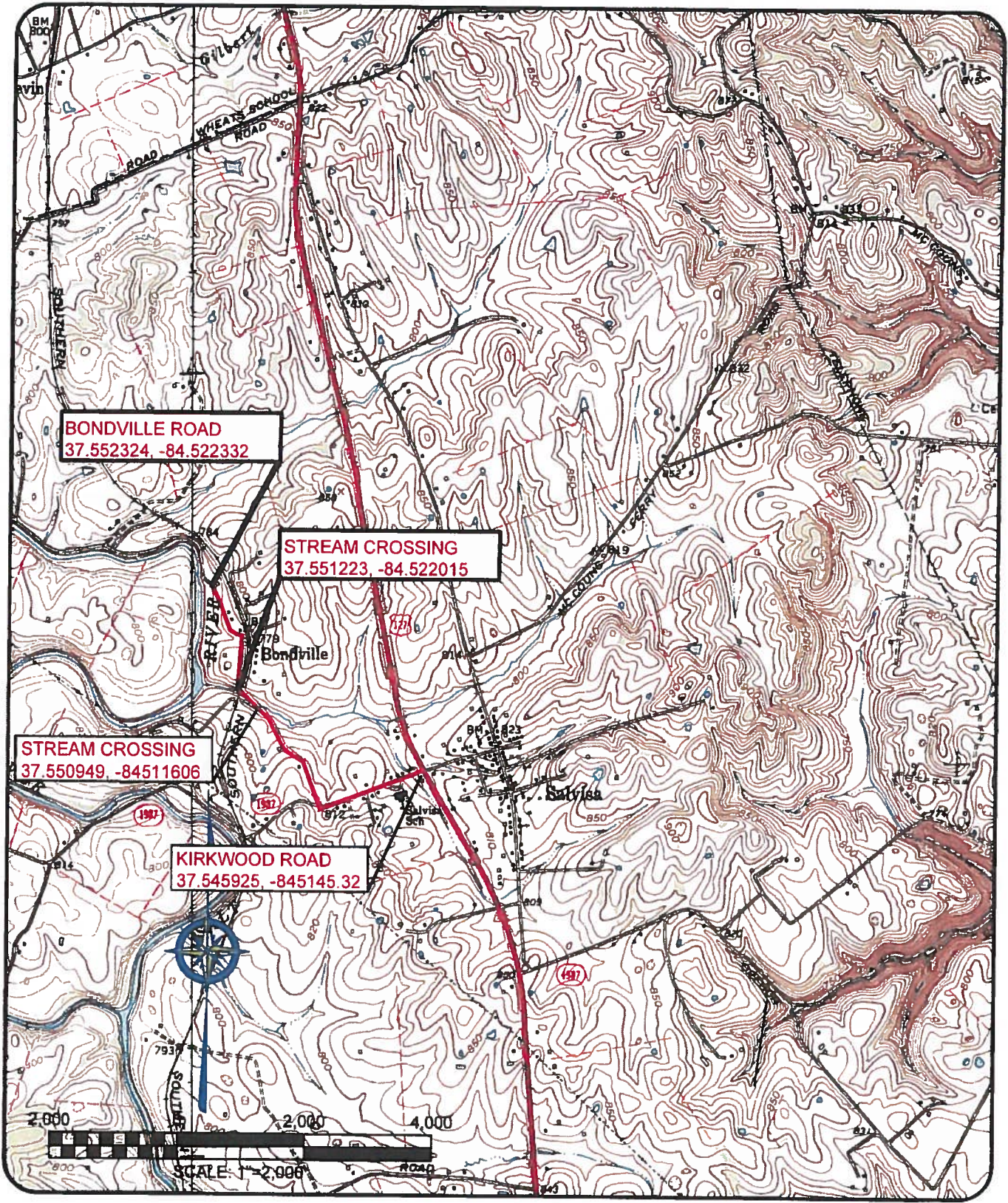
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**APPENDIX A      PROJECT MAPS**





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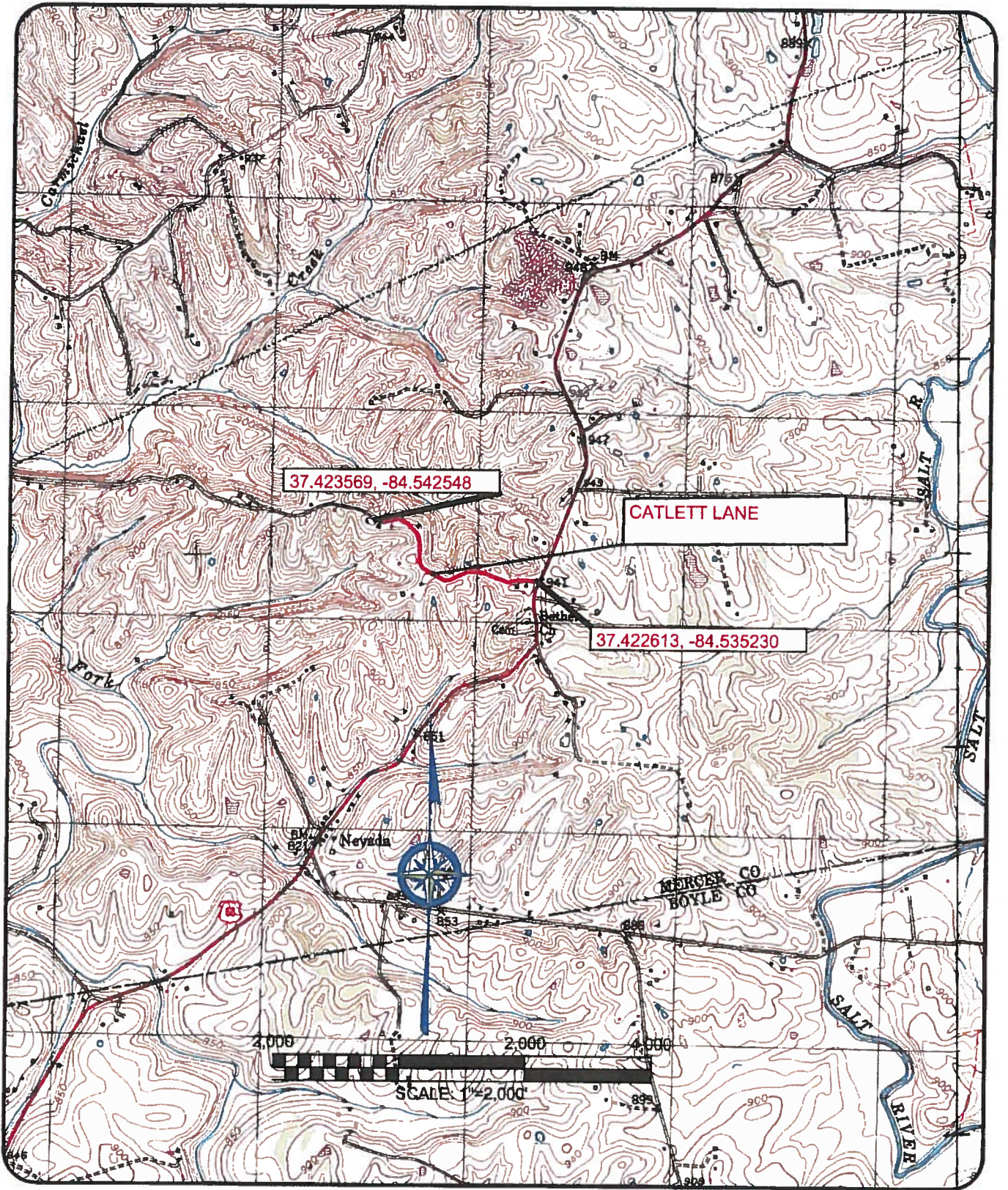


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
BONDVILLE ROAD

Project No 18029
Date 10/2019
Dwg No 1

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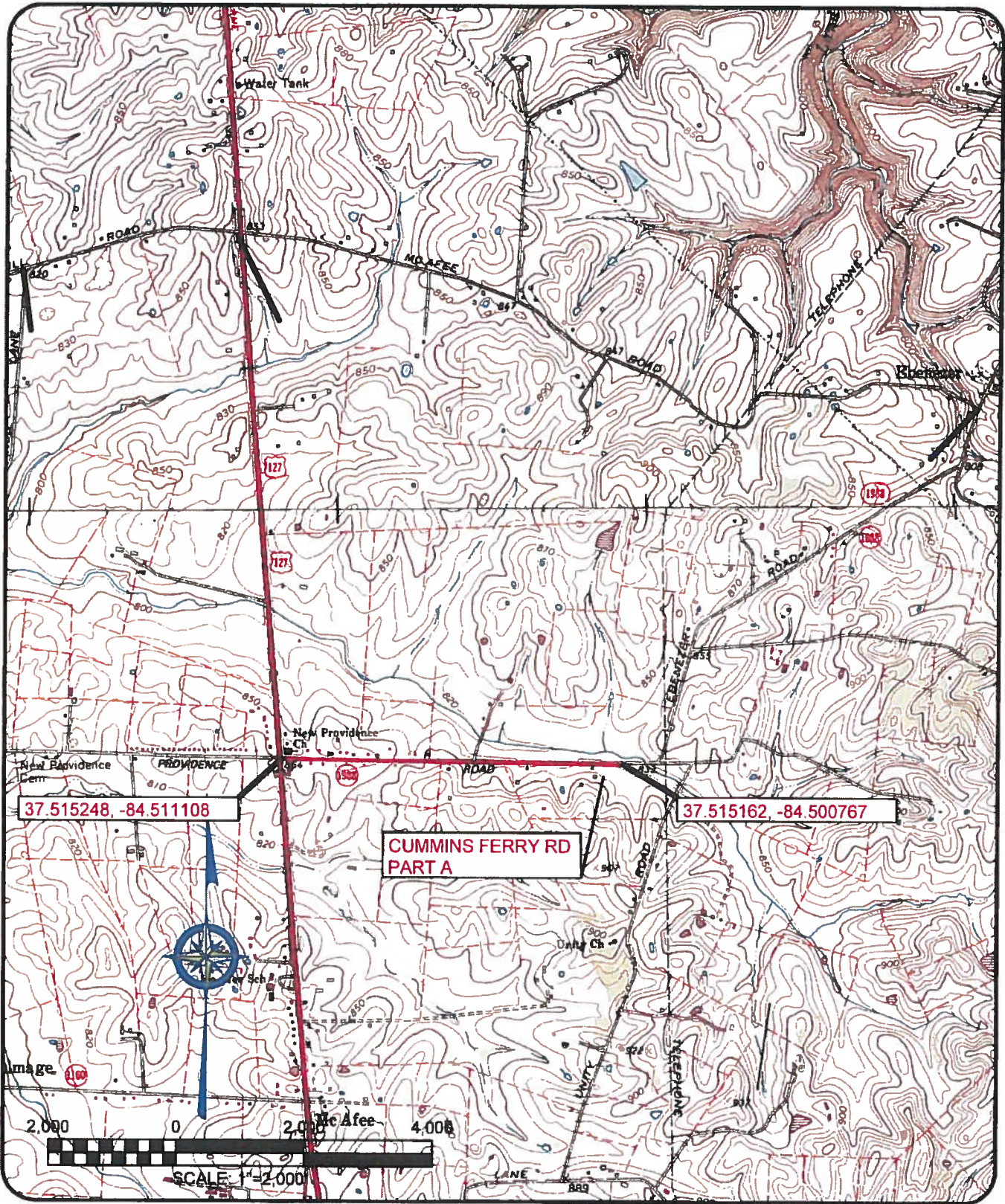


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
CATLETT LANE

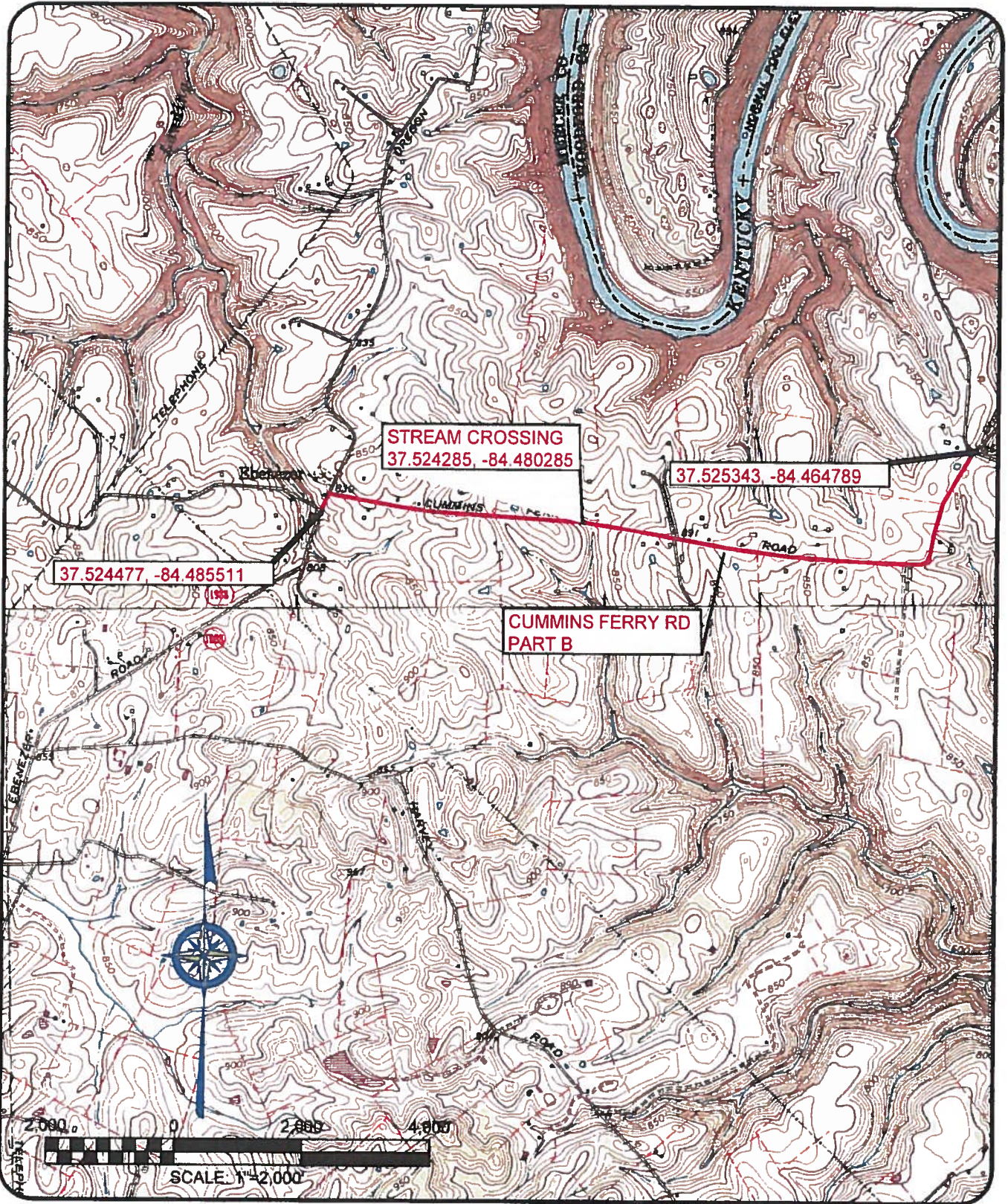
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2019 WATER SYSTEM  
IMPROVEMENTS PROJECT  
FOR  
NORTH MERCER WATER DISTRICT  
CUMMINS FERRY ROAD - PART A

Project No 18029
Date 10/2019
Dwg No 5



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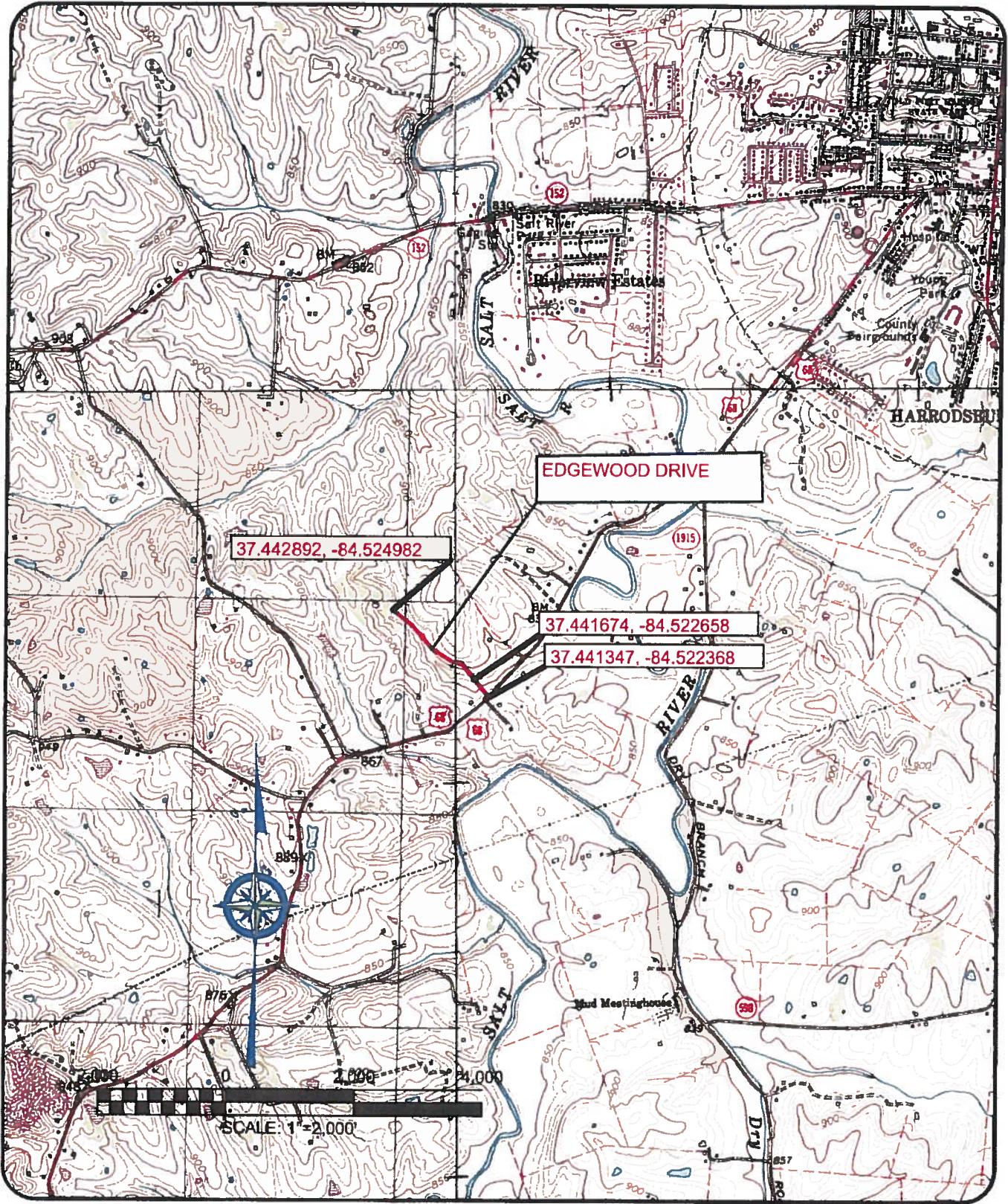
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IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
CUMMINS FERRY ROAD - PART B

Project No  
18029

Date  
10/2019

Dwg No.  
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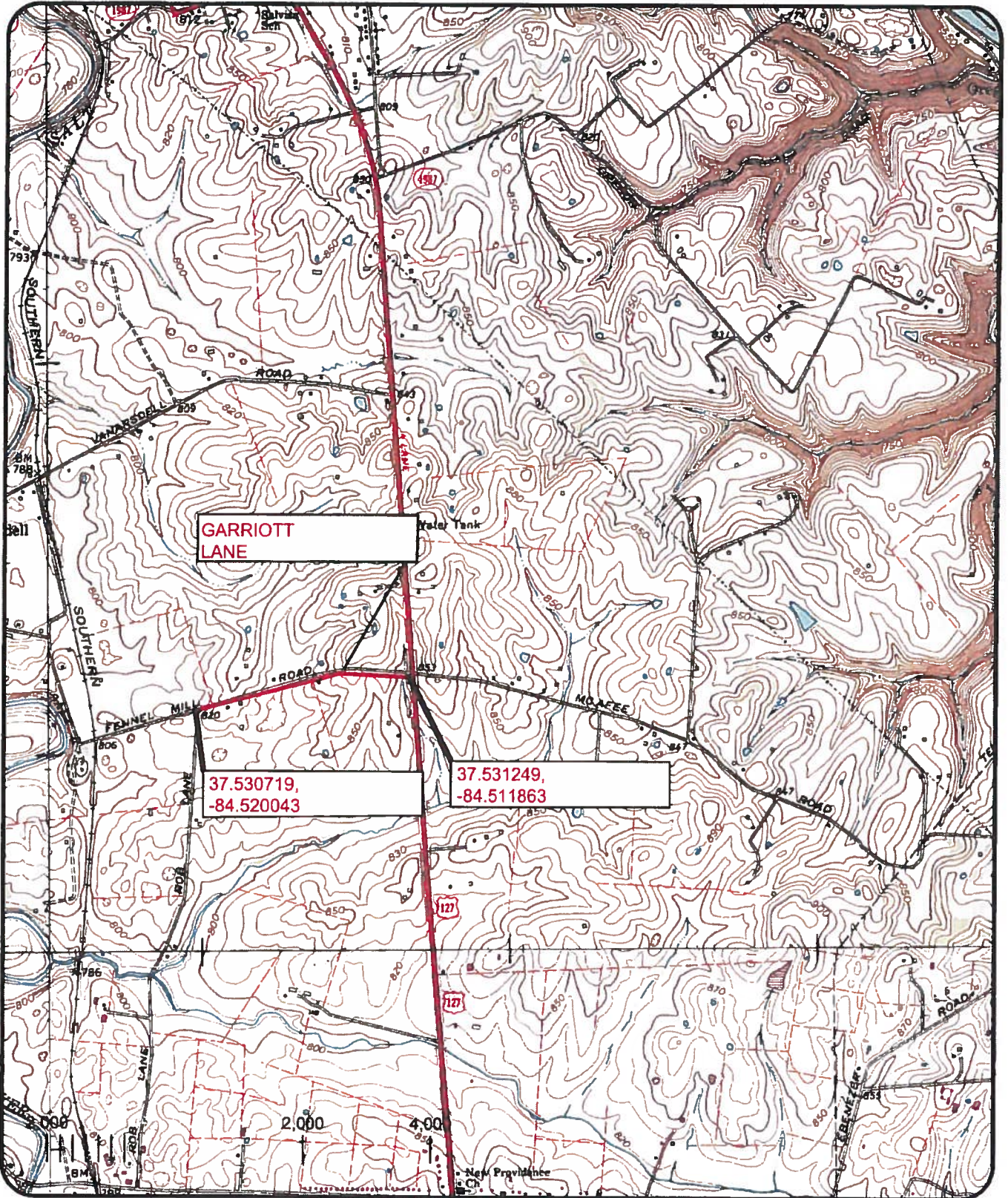
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**2019 WATER SYSTEM  
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FOR  
NORTH MERCER WATER DISTRICT  
EDGEWOOD DRIVE

Project No	18029
Date	10/2019
Dwg No	13

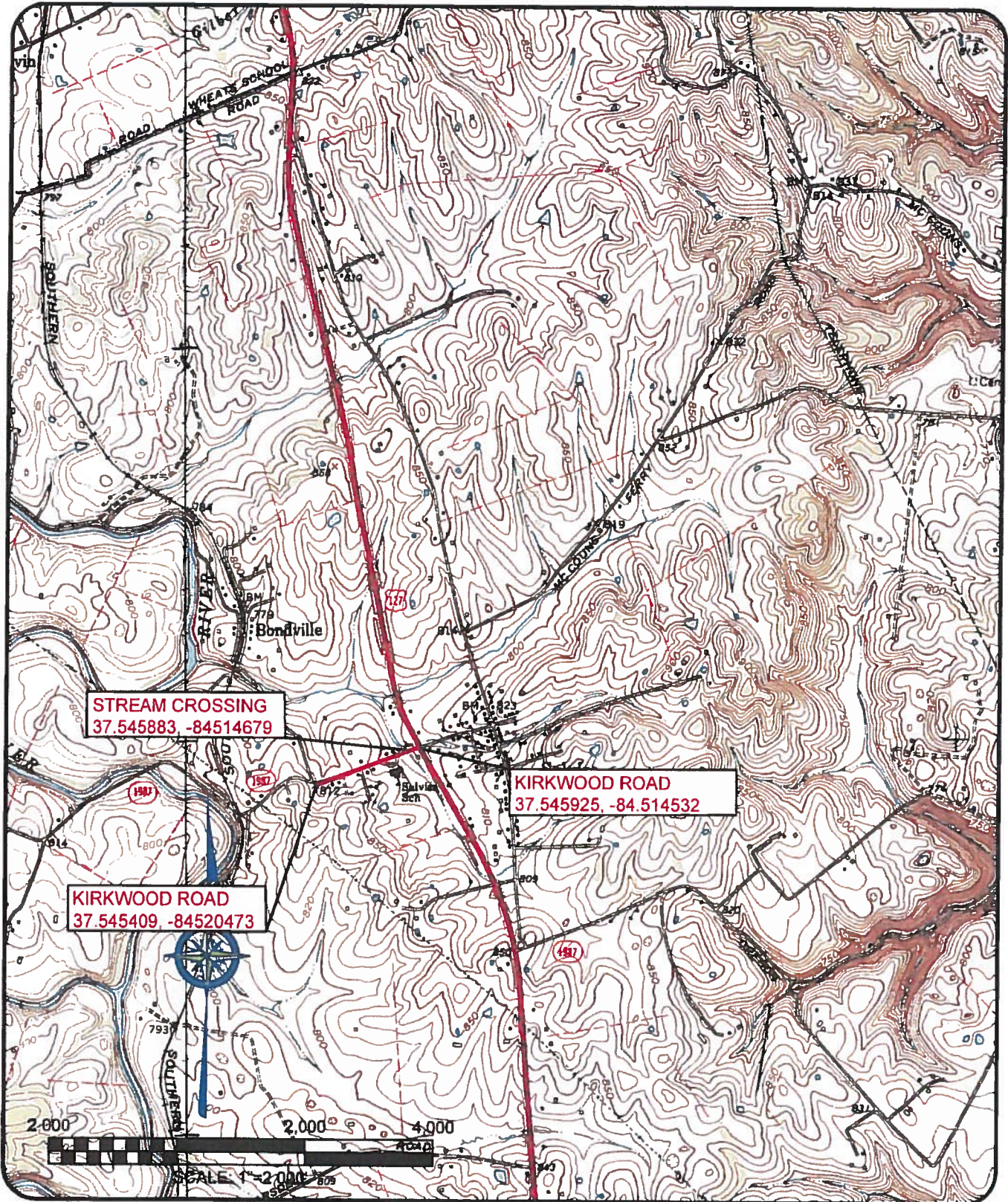
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2019 WATER SYSTEM  
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FOR  
NORTH MERCER WATER DISTRICT  
GARRIOTT LANE

Project No 18029
Date 10/2019
Dwg No 8

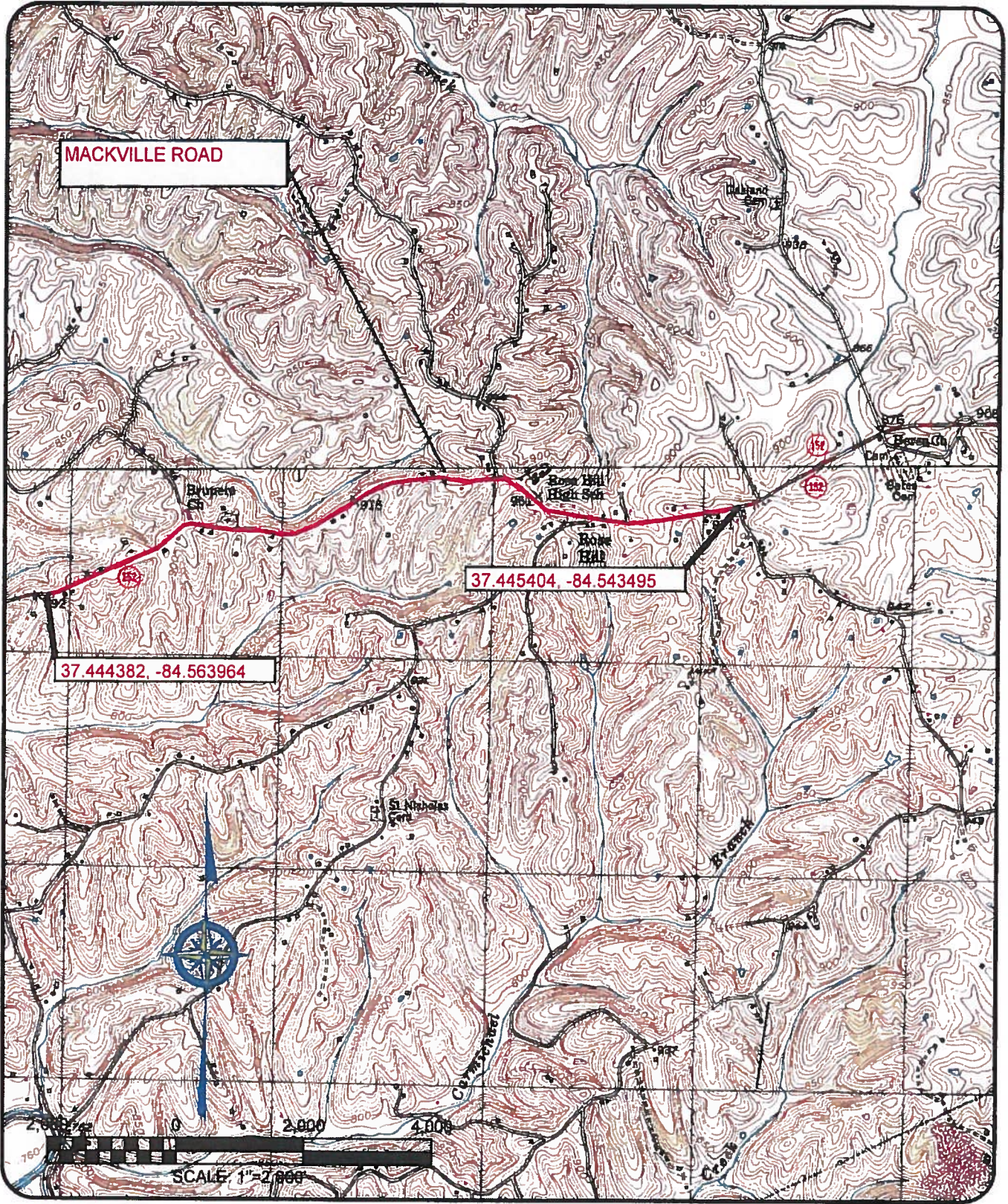
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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
**NORTH MERCER WATER DISTRICT**  
**KIRKWOOD ROAD**

Project No	18029
Date	10/2019
Dwg No	2

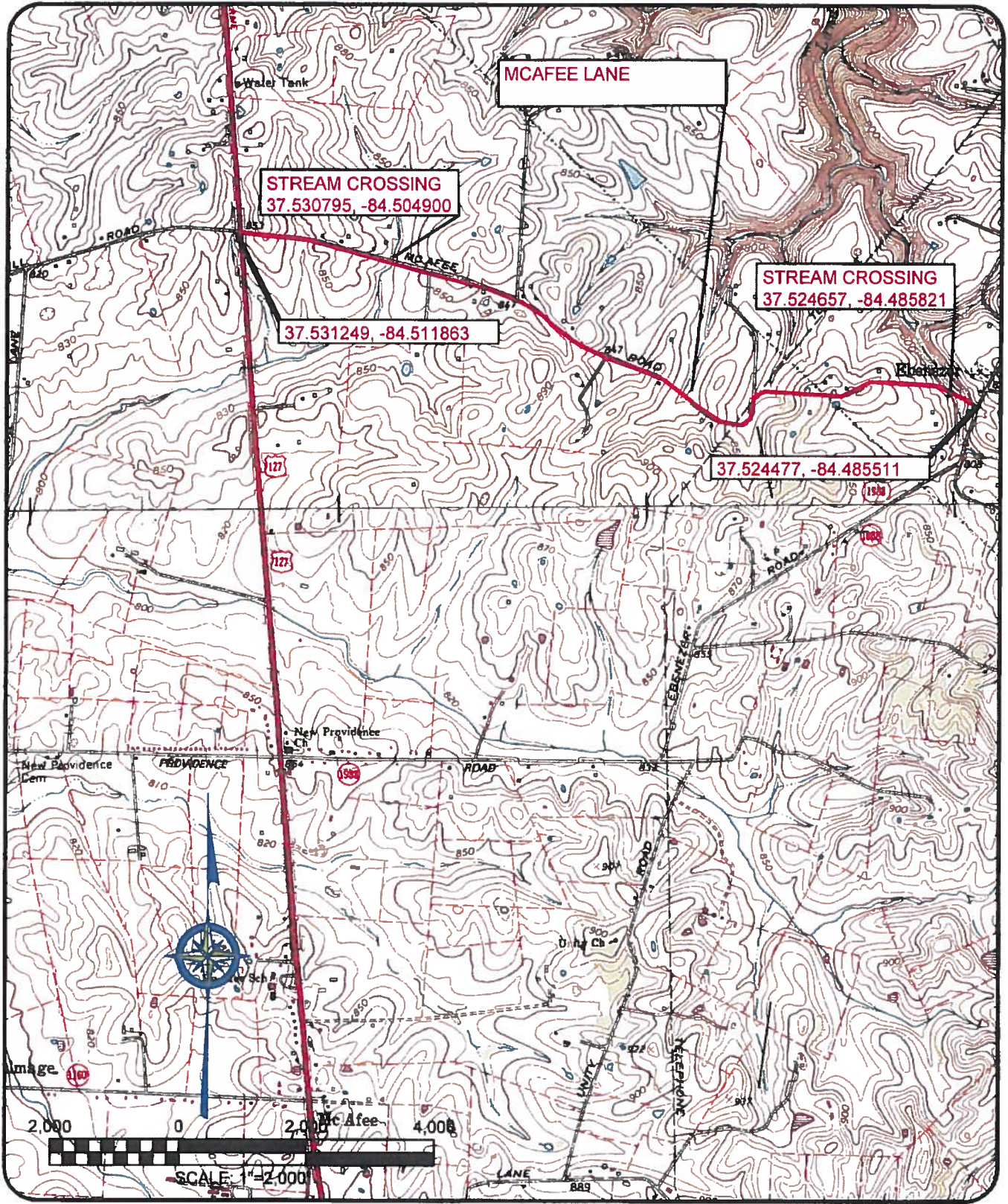


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
MACKVILLE ROAD

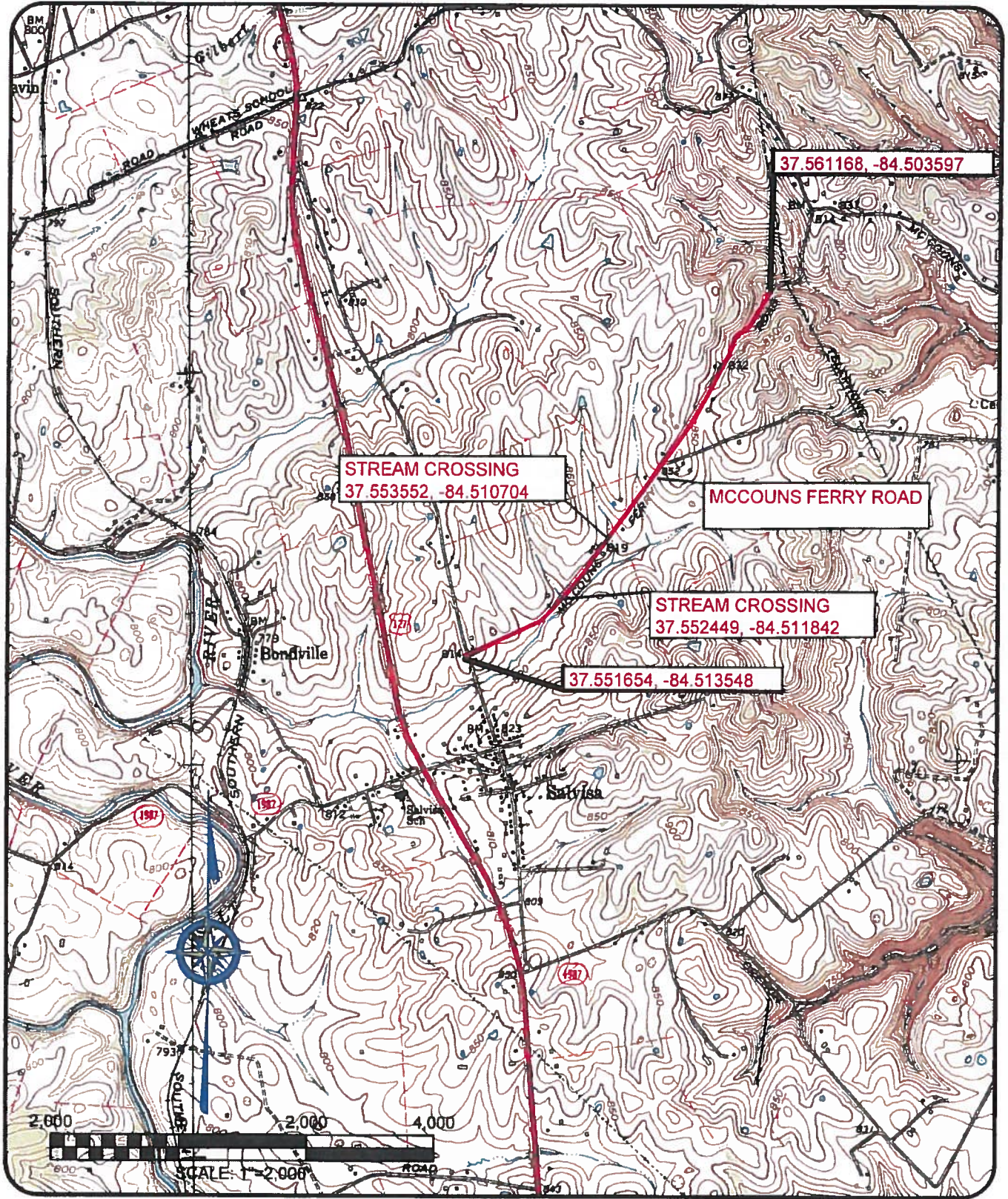
Project No 18029
Date 10/2019
Dwg No. 9





**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
MCAFEE LANE

Project No	18029
Date	10/2019
Dwg No	7

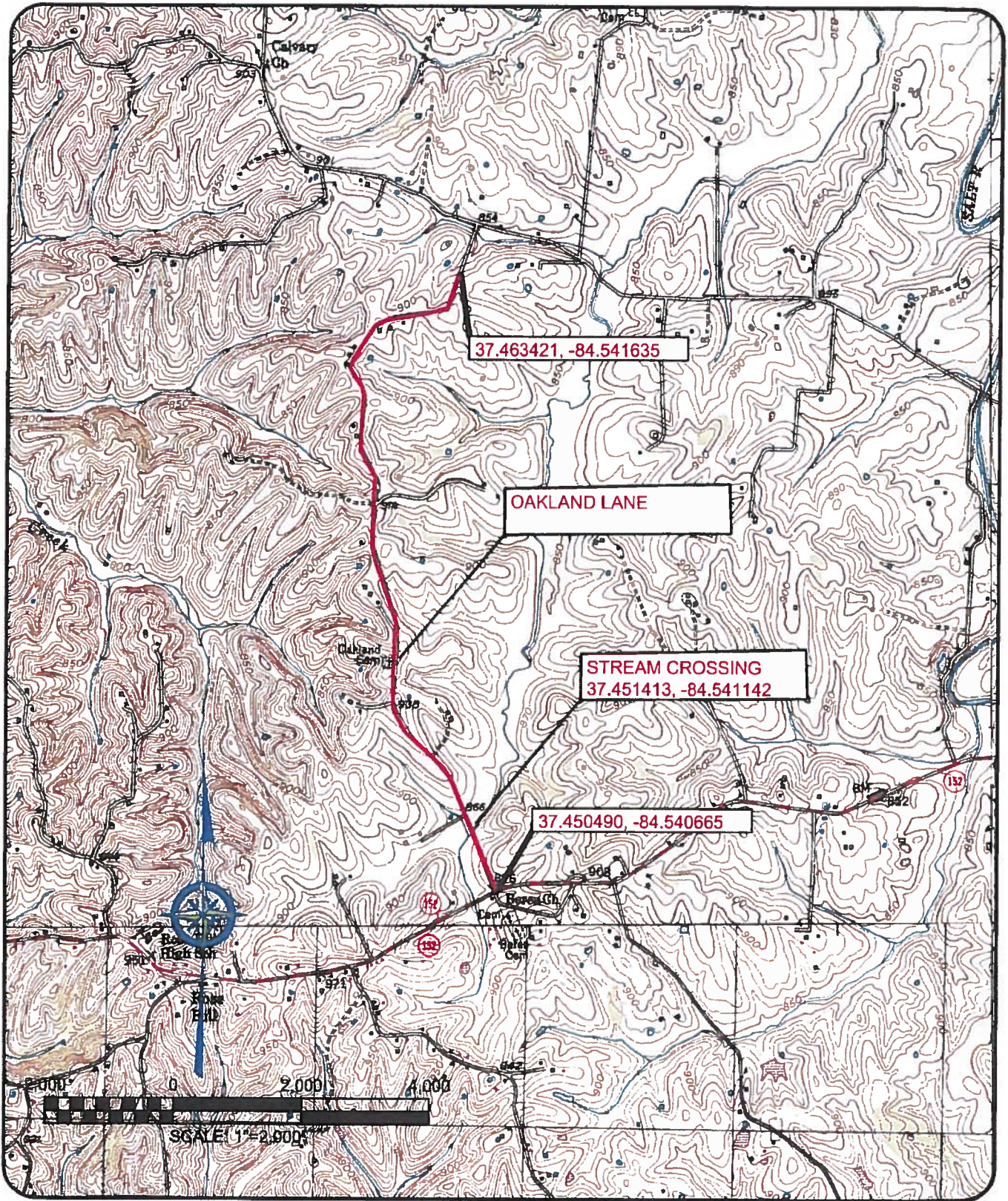


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
MCCOUNS FERRY ROAD

Project No 18029
Date 10/2019
Dwg No 4

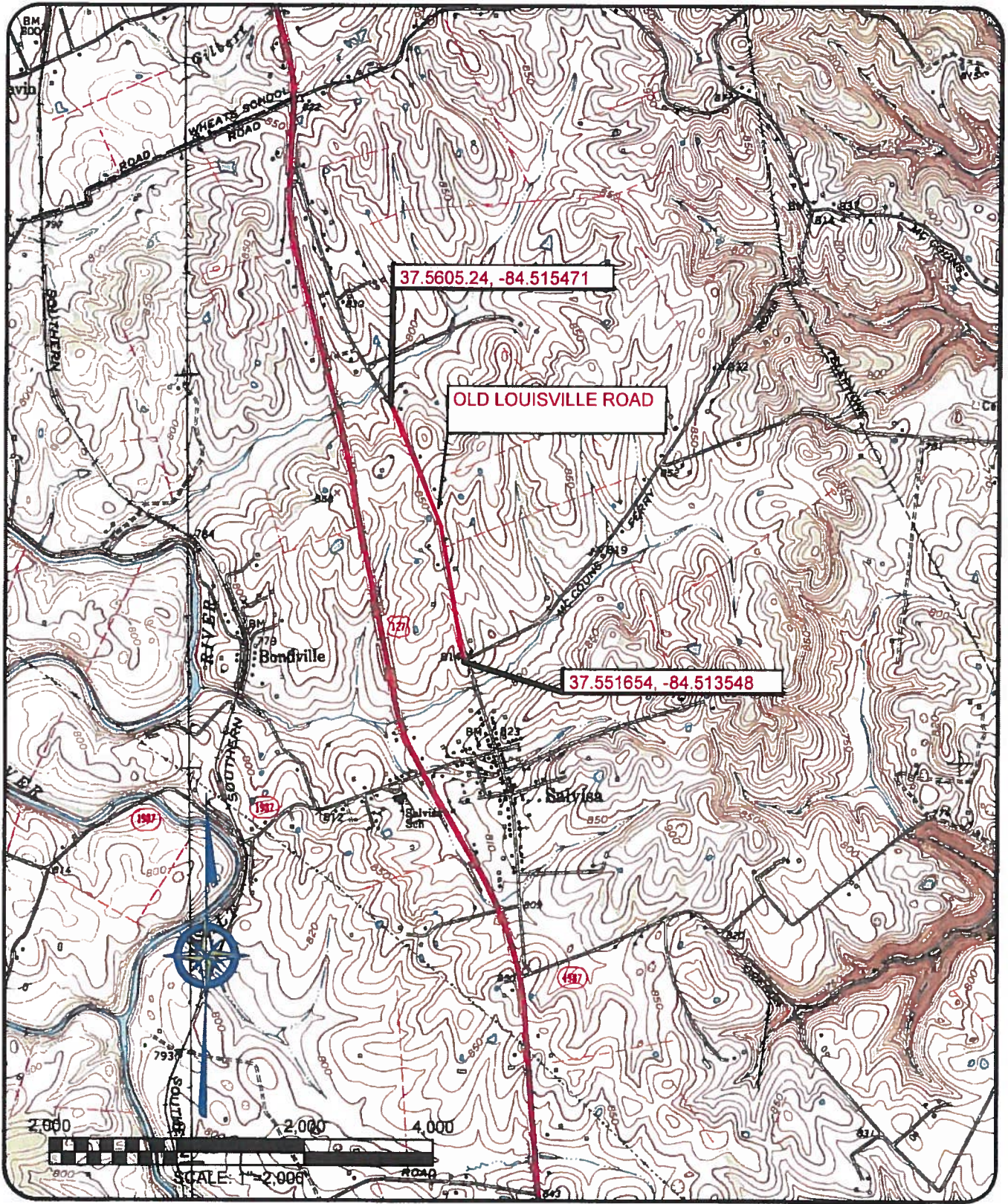
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**2019 WATER SYSTEM  
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FOR  
NORTH MERCER WATER DISTRICT  
OAKLAND LANE

Project No	18029
Date	10/2019
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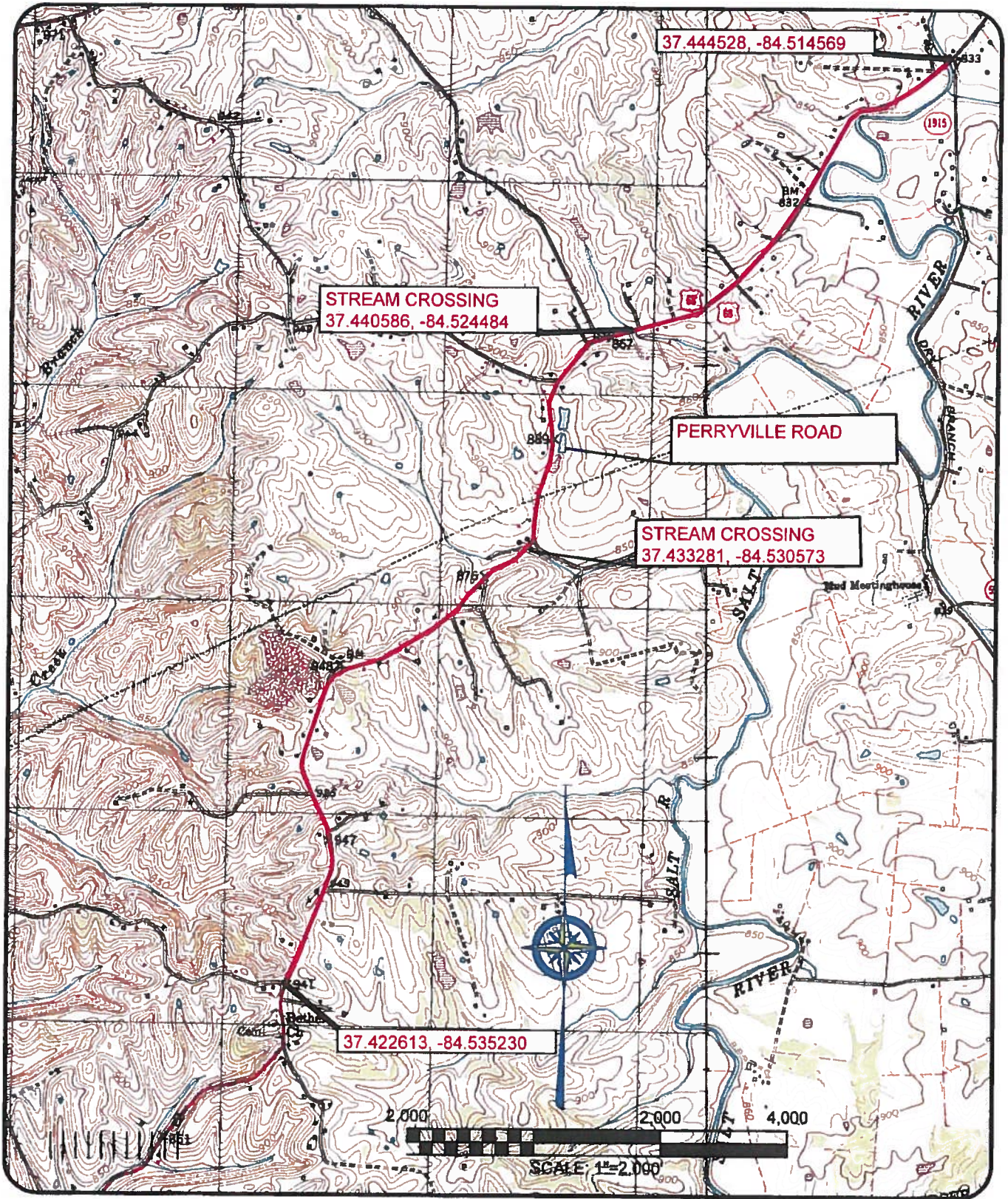
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FOR  
NORTH MERCER WATER DISTRICT  
OLD LOUISVILLE ROAD

Project No  
18029

Date  
10/2019

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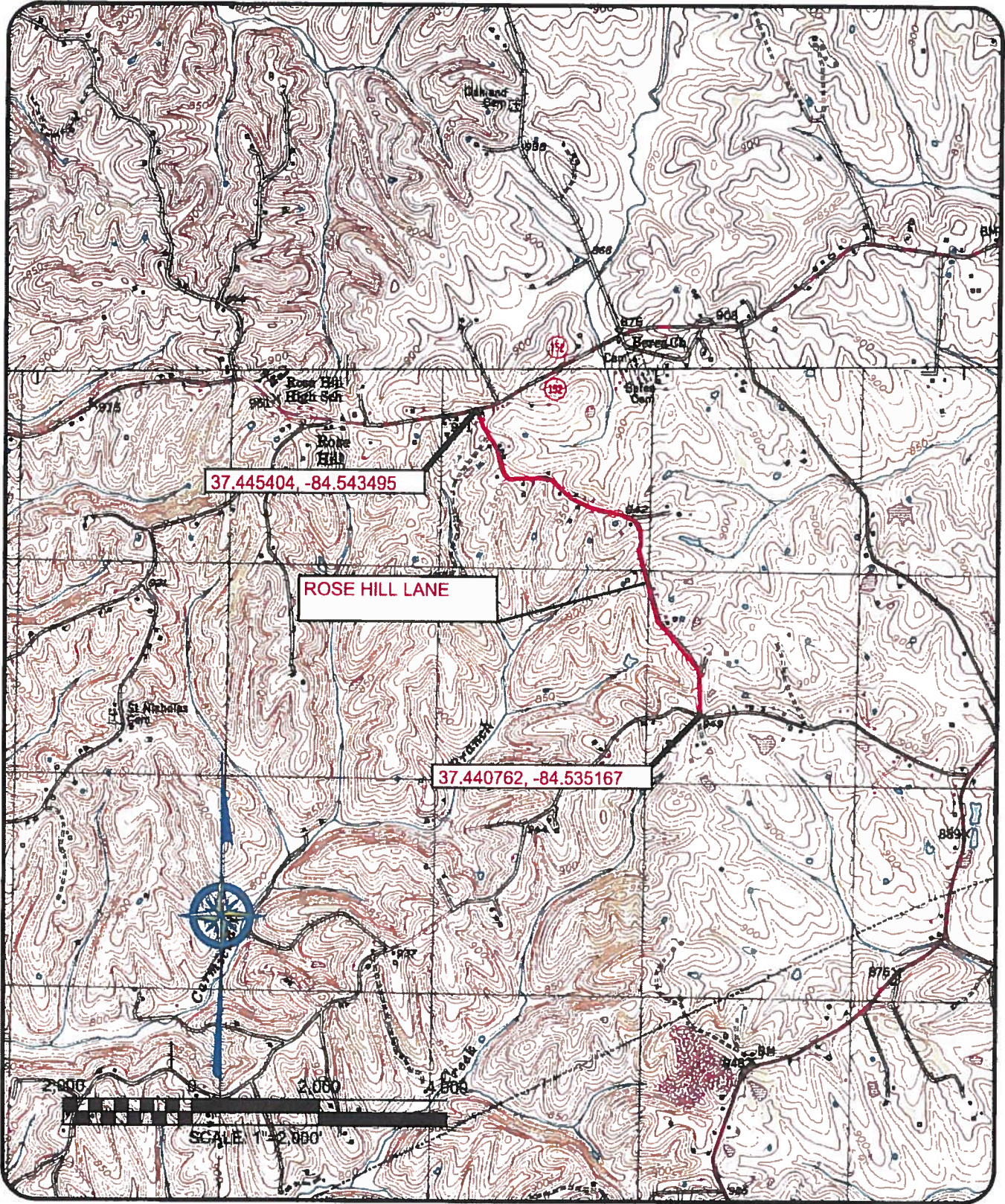


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
PERRYVILLE ROAD

Project No	18029
Date	10/2019
Dwg No	14

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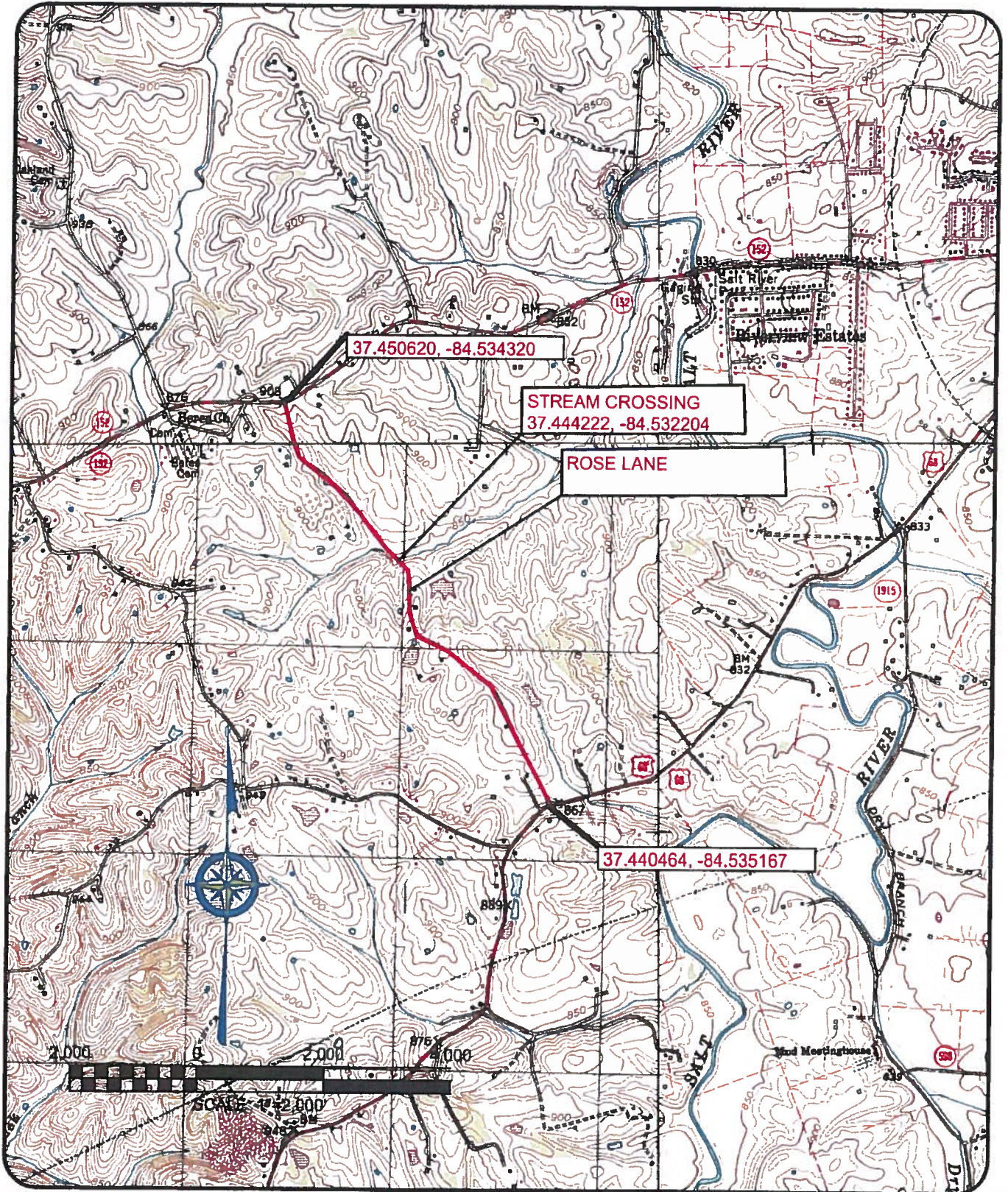


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
ROSE HILL LANE

Project No	18029
Date	10/2019
Dwg No	10

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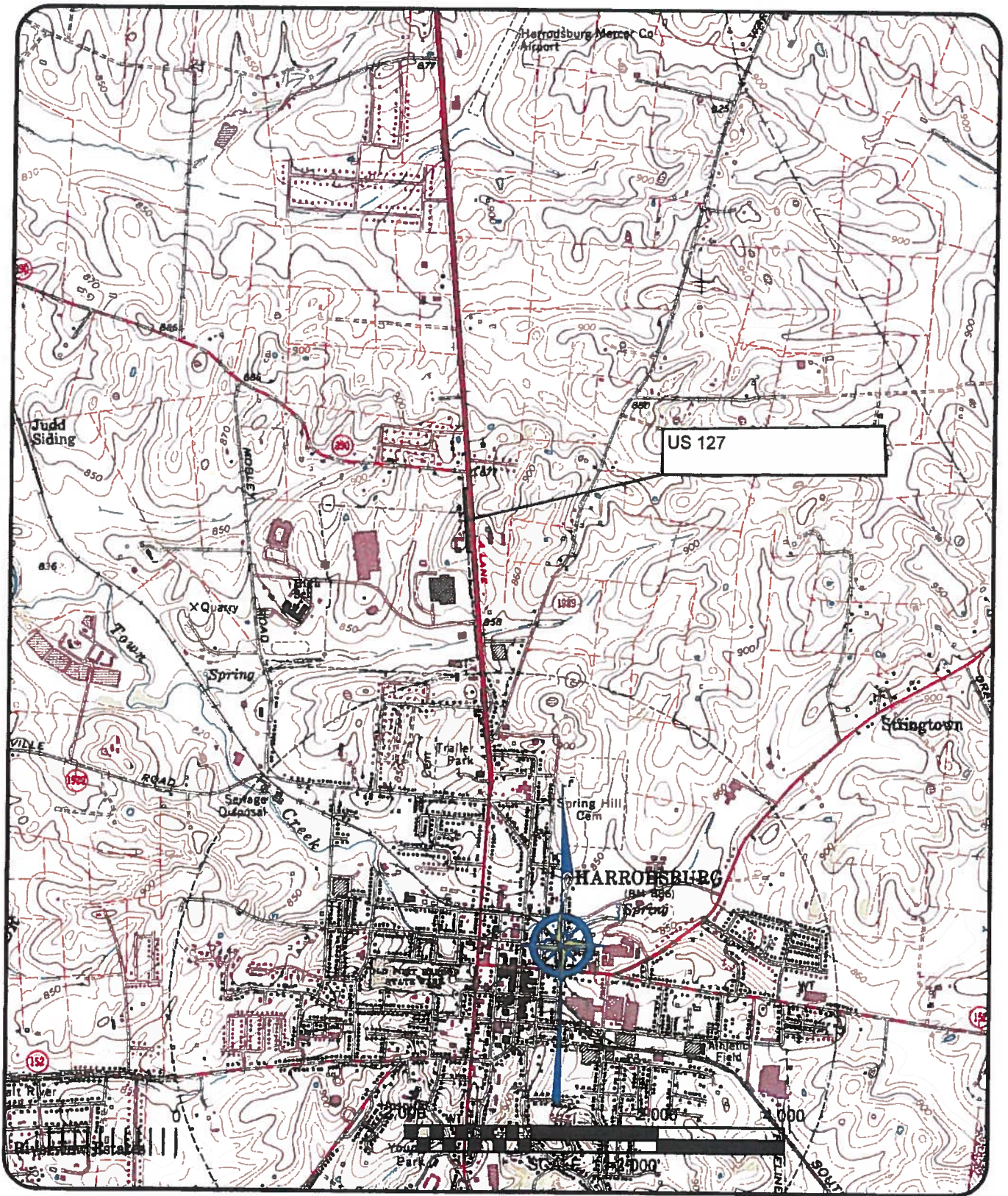


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**2019 WATER SYSTEM  
IMPROVEMENTS PROJECT**  
FOR  
NORTH MERCER WATER DISTRICT  
ROSE LANE

Project No 18029
Date 10/2019
Dwg No 12

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2019 WATER SYSTEM  
IMPROVEMENTS PROJECT  
FOR  
NORTH MERCER WATER DISTRICT

Project No  
18029

Date  
4/2019

Dwg. No.  
7



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**APPENDIX B      BID TABULATIONS AND LETTERS OF RECOMMENDATION**





**BID TABULATION**

NORTH MERCER WATER DISTRICT  
 2019 - WATER SYSTEM IMPROVEMENTS - CONTRACT 1  
 SALVISA, KENTUCKY  
 BE PROJECT NO. 18029  
 BID OPENING: Wednesday, May 19, 2021 - 9:00 am

BASE BID: Contract No. 1 - 2019 Water System Improvements Project				BOCA Enterprises, Inc. Hager Hill, Kentucky		Cleary Construction, Inc. Terreplainsville, Kentucky		Turk States Utility & Excavation Mt. Vernon, Kentucky	
Item No.	Description	Quantity	Unit	Unit	Bid Amount	Unit	Bid Amount	Unit	Bid Amount
1	2" PVC Class 200 Water Main	40	LF	\$ 19.00	\$ 760.00	\$ 34.70	\$ 1,388.00	\$ 42.00	\$ 1,680.00
2	3" PVC Class 200 Water Main	2,700	LF	\$ 20.50	\$ 55,350.00	\$ 35.50	\$ 95,850.00	\$ 45.00	\$ 121,500.00
3	4" PVC Class 200 Water Main	28,200	LF	\$ 23.00	\$ 648,600.00	\$ 38.30	\$ 981,060.00	\$ 47.00	\$ 1,331,400.00
4	6" PVC Class 200 Water Main	17,300	LF	\$ 27.00	\$ 467,100.00	\$ 45.90	\$ 787,870.00	\$ 55.00	\$ 951,500.00
5	6" DI Class 350, w/Wetite Gaskets	400	LF	\$ 43.00	\$ 17,200.00	\$ 61.70	\$ 24,680.00	\$ 75.00	\$ 30,000.00
6	7" Gate Valve and Box	1	EA	\$ 950.00	\$ 950.00	\$ 1,071.00	\$ 1,071.00	\$ 1,297.00	\$ 1,297.00
7	3" Gate Valve and Box	4	EA	\$ 1,200.00	\$ 4,800.00	\$ 1,178.00	\$ 4,712.00	\$ 1,451.00	\$ 5,824.00
8	4" Gate Valve and Box	5	EA	\$ 1,200.00	\$ 7,200.00	\$ 1,255.00	\$ 7,710.00	\$ 1,553.00	\$ 9,318.00
9	6" Gate Valve and Box	5	EA	\$ 1,400.00	\$ 7,000.00	\$ 1,459.00	\$ 7,455.00	\$ 1,905.00	\$ 9,540.00
10	Tapping Steels and Valves	14	EA	\$ 4,500.00	\$ 63,000.00	\$ 4,281.50	\$ 59,941.00	\$ 4,275.00	\$ 59,850.00
11	Cut and Plug Existing Water Main	14	EA	\$ 3,000.00	\$ 42,000.00	\$ 2,141.00	\$ 29,974.00	\$ 2,108.00	\$ 29,512.00
12	Blow Off Assembly	5	EA	\$ 3,600.00	\$ 21,000.00	\$ 2,675.00	\$ 16,065.00	\$ 3,307.00	\$ 16,535.00
13	Flushing Hydrant Assembly	4	EA	\$ 5,600.00	\$ 28,000.00	\$ 5,775.00	\$ 23,110.00	\$ 6,120.00	\$ 24,612.00
14	Connect to Existing Water Main	7	EA	\$ 3,700.00	\$ 25,900.00	\$ 3,211.00	\$ 22,477.00	\$ 2,781.00	\$ 19,267.00
15	PVC Casing-Open Cut	60	LF	\$ 100.00	\$ 6,000.00	\$ 92.10	\$ 5,526.00	\$ 170.00	\$ 10,200.00
16	Driveway/County RD Bore w/PVC Casing	500	LF	\$ 138.00	\$ 69,000.00	\$ 218.00	\$ 109,000.00	\$ 212.00	\$ 106,000.00
17	8" Steel Casing Bore and Jack - Highway	25	LF	\$ 175.00	\$ 4,375.00	\$ 248.00	\$ 6,200.00	\$ 255.00	\$ 6,375.00
18	18" Steel Casing Bore and Jack - Highway	70	LF	\$ 250.00	\$ 17,500.00	\$ 255.00	\$ 17,850.00	\$ 305.00	\$ 21,350.00
19	12" Steel Casing Bore and Jack - Highway	170	LF	\$ 250.00	\$ 42,500.00	\$ 300.00	\$ 51,000.00	\$ 310.00	\$ 52,700.00
20	18" Steel Casing Bore and Jack - Railroad, including 100 LF of 4" Ductile Iron Class 350	60	LF	\$ 380.00	\$ 22,800.00	\$ 322.00	\$ 19,320.00	\$ 473.00	\$ 28,380.00
21	HDPE DR 9 Directional Drill Creek Crossing	675	LF	\$ 200.00	\$ 135,000.00	\$ 204.00	\$ 137,700.00	\$ 275.00	\$ 186,375.00
22	3/4" Air Release Valve	1	EA	\$ 1,800.00	\$ 1,800.00	\$ 2,355.00	\$ 2,355.00	\$ 2,744.00	\$ 2,744.00
23	Replace Existing Service Line w/Class 200 Service Line and Reconnect to Existing Water	175	EA	\$ 1,900.00	\$ 332,500.00	\$ 536.00	\$ 93,800.00	\$ 1,093.00	\$ 331,375.00
24	1 1/4" PVC Casing Under Roadway for 3/4" Service Line	1,500	LF	\$ 19.00	\$ 28,500.00	\$ 95.50	\$ 143,250.00	\$ 75.00	\$ 112,500.00
25	2" PVC Water Main Under Roadway	300	LF	\$ 19.00	\$ 5,700.00	\$ 108.00	\$ 32,400.00	\$ 80.00	\$ 24,000.00
26	Replace Existing Service Line and Existing Meter Assembly With New Meter, Box and Lid	11	EA	\$ 1,800.00	\$ 19,800.00	\$ 2,141.00	\$ 23,551.00	\$ 2,548.00	\$ 27,998.00
27	Additional 3" and 3/4" Service Line	1,000	LF	\$ 18.00	\$ 18,000.00	\$ 12.90	\$ 12,900.00	\$ 16.00	\$ 16,000.00
28	3/4" Bypass Meters	2	EA	\$ 5,000.00	\$ 10,000.00	\$ 2,753.00	\$ 5,506.00	\$ 2,405.00	\$ 4,810.00
29	Ground Penetrating Radar Utility Locator	1	EA	\$ 17,500.00	\$ 17,500.00	\$ 17,000.00	\$ 17,000.00	\$ 17,500.00	\$ 17,500.00
				\$		\$		\$	
<b>TOTAL BASE BID AMOUNT - (ITEMS No. 1 - 29)</b>					<b>\$2,073,935.00</b>		<b>\$2,556,150.00</b>		<b>\$3,494,140.00</b>

\*Numbers in Red Indicate errors in Contractor's Bid Amount Calculation

The above is a true and complete tabulation of the bids received on Wednesday, May 19, 2021 9:00 am.  
 certify that this is true and accurate tabulation of the bids

Bluegrass Engineering, PLLC  
 By:   
 Billy Smith  
 Project Manager



**BID TABULATION**

NORTH MERCER WATER DISTRICT  
 2019 - WATER SYSTEM IMPROVEMENTS - CONTRACT 2A  
 SALVISA, KENTUCKY  
 BE PROJECT NO. 18029  
 BID OPENING: Wednesday, May 19, 2021 -- 9:00 am

BASE BID: Contract No. 2A - 2019 Water System Improvements Project				BOCA Enterprises, Inc. Hager Hill, Kentucky		Twin States Utility & Excavation, Inc Mount Hermon, Kentucky	
Item No.	Description	Quantity	Unit	\$/unit	Bid Amount	\$/unit	Bid Amount
1	6" PVC Class 200 Water Main,	28,500	LF	\$ 25.00	\$ 662,500.00	\$ 40.00	\$ 1,080,000.00
2	3" Gate Valve and Box	2	EA	\$ 1,200.00	\$ 2,400.00	\$ 1,481.00	\$ 2,962.00
3	6" Gate Valve and Box	12	EA	\$ 1,400.00	\$ 16,800.00	\$ 1,808.00	\$ 21,696.00
4	Tapping Sleeve and Valve	2	EA	\$ 4,500.00	\$ 9,000.00	\$ 4,287.00	\$ 8,574.00
5	Cut and Plug Existing Water Main	4	EA	\$ 3,000.00	\$ 12,000.00	\$ 2,112.00	\$ 8,448.00
6	Blow Off Assembly	2	EA	\$ 3,500.00	\$ 7,000.00	\$ 3,522.00	\$ 7,044.00
7	Flushing Hydrant Assembly	5	EA	\$ 6,500.00	\$ 32,500.00	\$ 6,128.00	\$ 30,640.00
8	Connect to Existing Water Main	5	EA	\$ 3,700.00	\$ 18,500.00	\$ 2,734.00	\$ 13,670.00
9	PVC Casing-Open Cut	90	LF	\$ 100.00	\$ 9,000.00	\$ 176.00	\$ 15,760.00
10	Driveway/County RD Bore w/PVC Casing	550	LF	\$ 130.00	\$ 71,500.00	\$ 213.00	\$ 117,160.00
11	12" Steel Casing Bore and Jack - Highway	215	LF	\$ 250.00	\$ 53,750.00	\$ 287.00	\$ 61,705.00
12	HDPE DR 9 Directional Drill Creek Crossing	365	LF	\$ 200.00	\$ 73,000.00	\$ 279.00	\$ 101,835.00
13	Replace Existing Service Line w/class 250 Service Line and Reconnect to Existing Meter	117	EA	\$ 1,400.00	\$ 163,800.00	\$ 1,893.00	\$ 198,081.00
14	1/4" PVC Casing Under Roadway for 3/4" Service Line	1,500	LF	\$ 19.00	\$ 28,500.00	\$ 77.00	\$ 115,500.00
15	Replace Existing Service Line and Existing Meter Assembly with new setter, box and lid	5	EA	\$ 1,800.00	\$ 9,000.00	\$ 2,581.00	\$ 12,905.00
16	Additional 1" Service Line	500	LF	\$ 10.00	\$ 5,000.00	\$ 15.00	\$ 7,500.00
<b>TOTAL BASE BID AMOUNT - (ITEMS No. 1 - 16):</b>					<b>\$1,174,250.00</b>		<b>\$1,783,460.00</b>

\*Numbers in Red indicate errors in Contractor's Bid Amount Calculation

The above is a true and complete tabulation of the bids received on Wednesday, May 19, 2021, 9:00 am  
 I certify that this is true and accurate tabulation of the bids

Bluegrass Engineering, PLLC

By:   
 Riley Sumner  
 Project Manager

# BE BLUEGRASS ENGINEERING PLLC

**BID TABULATION**  
 NORTH MERCER WATER DISTRICT  
 2019 - WATER SYSTEM IMPROVEMENTS - CONTRACT 2B  
 SALVISA, KENTUCKY  
 BE PROJECT NO. 18029  
 BID OPENING: Wednesday, May 19, 2021 - 9:00 am

Item No.	Description	Quantity	Unit	G & W Construction Co., Inc. Morehead, Kentucky		BOCA Enterprises, Inc. Hager Hill, Kentucky		Twin States Utilities & Excavation, Inc. Mount Hermon, Kentucky		Revivity Service Company Winchester, Kentucky	
				Bid Amount	\$/unit	Bid Amount	\$/unit	Bid Amount	\$/unit	Bid Amount	\$/unit
1	8" PVC Class 200 Water Main	19,000	LF	\$ 20.25	\$ 384,750.00	\$ 25.00	\$ 475,000.00	\$ 32.00	\$ 608,000.00	\$ 42.00	\$ 798,000.00
2	4" Gate Valve and Box	1	EA	\$ 1,200.00	\$ 1,200.00	\$ 1,200.00	\$ 1,200.00	\$ 1,400.00	\$ 1,400.00	\$ 3,500.00	\$ 3,500.00
3	8" Gate Valve and Box	5	EA	\$ 1,400.00	\$ 7,000.00	\$ 1,400.00	\$ 7,000.00	\$ 1,700.00	\$ 8,500.00	\$ 4,150.00	\$ 20,750.00
4	Tapping Sleeve and Valve	4	EA	\$ 4,000.00	\$ 16,000.00	\$ 4,500.00	\$ 18,000.00	\$ 4,000.00	\$ 16,000.00	\$ 7,836.00	\$ 31,344.00
5	Cut and Plug Existing Water Main	8	EA	\$ 1,200.00	\$ 9,600.00	\$ 3,000.00	\$ 24,000.00	\$ 2,000.00	\$ 16,000.00	\$ 838.87	\$ 6,710.96
6	Flushing Hydrant Assembly	2	EA	\$ 6,200.00	\$ 12,400.00	\$ 6,500.00	\$ 13,000.00	\$ 6,000.00	\$ 12,000.00	\$ 17,737.25	\$ 35,474.50
7	Connect to Existing Water Main	3	EA	\$ 4,000.00	\$ 12,000.00	\$ 3,700.00	\$ 11,100.00	\$ 2,700.00	\$ 8,100.00	\$ 1,223.10	\$ 3,669.30
8	PVC Casing-Open Cut	80	LF	\$ 50.00	\$ 4,000.00	\$ 100.00	\$ 8,000.00	\$ 175.00	\$ 14,000.00	\$ 90.00	\$ 7,200.00
9	Driveway/County RD Bore w/PVC Casing	190	LF	\$ 60.00	\$ 11,400.00	\$ 130.00	\$ 24,700.00	\$ 216.00	\$ 41,040.00	\$ 140.00	\$ 26,600.00
10	12" Steel Casing Bore and Jack - Highway	80	LF	\$ 150.00	\$ 12,000.00	\$ 250.00	\$ 20,000.00	\$ 280.00	\$ 23,200.00	\$ 336.00	\$ 26,880.00
11	HDPE DR 9 Directional Drill Creek Crossing	300	LF	\$ 120.00	\$ 36,000.00	\$ 200.00	\$ 60,000.00	\$ 186.00	\$ 55,800.00	\$ 335.00	\$ 100,500.00
12	3/4" Air Release Valve	1	EA	\$ 800.00	\$ 800.00	\$ 1,800.00	\$ 1,800.00	\$ 2,200.00	\$ 2,200.00	\$ 2,426.50	\$ 2,426.50
13	Replace Existing Service Line w/class 250 Service Line and Reconnect to Existing Meter	77	EA	\$ 1,500.00	\$ 115,500.00	\$ 1,400.00	\$ 107,800.00	\$ 1,200.00	\$ 92,400.00	\$ 666.94	\$ 51,508.38
14	1/4" PVC Casing Under Roadway for 3/4" Service Line	1,000	LF	\$ 30.00	\$ 30,000.00	\$ 19.00	\$ 19,000.00	\$ 60.00	\$ 60,000.00	\$ 6.50	\$ 6,500.00
15	Replace Existing Service Line and Existing Meter Assembly with new setter, box and lid	10	LF	\$ 2,500.00	\$ 25,000.00	\$ 1,800.00	\$ 18,000.00	\$ 2,300.00	\$ 23,000.00	\$ 2,707.80	\$ 27,078.00
16	Additional 1" Service Line	1,000	LF	\$ 10.00	\$ 10,000.00	\$ 10.00	\$ 10,000.00	\$ 15.00	\$ 15,000.00	\$ 1.40	\$ 1,400.00
<b>TOTAL BASE BID AMOUNT - (ITEMS No. 1 - 16):</b>					<b>\$887,650.00</b>		<b>\$618,600.00</b>		<b>\$896,640.00</b>		<b>\$1,149,464.50</b>

\*Numbers in Red indicate errors in Contractor's Bid Amount Calculation

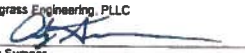
The above is a true and complete tabulation of the bids received on Wednesday, May 19, 2021, 9:00 am  
 I certify that this is true and accurate tabulation of the bids.

Bluegrass Engineering, PLLC  
 By:   
 Riley Sumner  
 Project Manager



**BID TABULATION**

NORTH MERCER WATER DISTRICT  
 2019 - WATER SYSTEM IMPROVEMENTS - CONTRACT 2C  
 SALVISA, KENTUCKY  
 BE PROJECT NO. 1802B  
 BID OPENING: Wednesday, May 19, 2021 - 9:00 am

BASE BID: Contract No. 2C - 2019 Water System Improvements Project				BOCA Enterprises, Inc. Hager Hill, Kentucky		Twin States Utilities & Excavation, Inc. Mount Hermon, Kentucky	
Item No.	Description	Quantity	Unit	\$/unit	Bid Amount	\$/unit	Bid Amount
1	2" PVC Class 200 Water Main	200	LF	\$ 19.00	\$ 3,800.00	\$ 42.00	\$ 8,400.00
2	4" PVC Class 200 Water Main	8,000	LF	\$ 23.00	\$ 184,000.00	\$ 47.00	\$ 376,000.00
3	6" PVC Class 200 Water Main	9,500	LF	\$ 25.00	\$ 237,500.00	\$ 66.00	\$ 622,500.00
4	8" PVC Class 200 Water Main	1,000	LF	\$ 33.50	\$ 33,500.00	\$ 70.00	\$ 70,000.00
5	2" Gate Valve and Box	1	EA	\$ 950.00	\$ 950.00	\$ 1,250.00	\$ 1,250.00
6	4" Gate Valve and Box	5	EA	\$ 1,200.00	\$ 6,000.00	\$ 1,550.00	\$ 7,750.00
7	6" Gate Valve and Box	3	EA	\$ 1,400.00	\$ 4,200.00	\$ 1,800.00	\$ 5,400.00
8	Tapping Sleeve and Valve	6	EA	\$ 4,500.00	\$ 27,000.00	\$ 4,300.00	\$ 25,800.00
9	Cut and Plug Existing Water Main	8	EA	\$ 3,000.00	\$ 24,000.00	\$ 2,200.00	\$ 17,600.00
10	Blow Off Assembly	3	EA	\$ 3,500.00	\$ 10,500.00	\$ 3,300.00	\$ 9,900.00
11	Flushing Hydrant Assembly	2	EA	\$ 6,500.00	\$ 13,000.00	\$ 6,200.00	\$ 12,400.00
12	Connect to Existing Water Main	4	EA	\$ 3,700.00	\$ 14,800.00	\$ 2,700.00	\$ 10,800.00
13	PVC Casing Open Cut	115	LF	\$ 100.00	\$ 11,500.00	\$ 178.00	\$ 20,470.00
14	Driveway/County RD Bore w/PVC Casing	135	LF	\$ 130.00	\$ 17,550.00	\$ 212.00	\$ 28,620.00
15	10" Steel Casing Bore and Jack - Highway	60	LF	\$ 250.00	\$ 15,000.00	\$ 300.00	\$ 18,000.00
16	12" Steel Casing Bore and Jack - Highway	35	LF	\$ 250.00	\$ 8,750.00	\$ 310.00	\$ 10,850.00
17	2" Blow Off Hydrant	1	EA	\$ 2,500.00	\$ 2,500.00	\$ 3,100.00	\$ 3,100.00
18	Replace Existing Service Line w/class 250 Service Line and Reconnect to Existing Meter	74	EA	\$ 1,900.00	\$ 140,600.00	\$ 1,893.00	\$ 140,082.00
19	1 1/4" PVC Casing Under Roadway for 3/4" Service Line	1,200	LF	\$ 19.00	\$ 22,800.00	\$ 79.00	\$ 94,800.00
20	2" PVC Water Main Under Roadway	50	LF	\$ 19.00	\$ 950.00	\$ 80.00	\$ 4,000.00
21	Replace Existing Service Line and Existing Meter Assembly with New Setter, Box and Lid	4	LF	\$ 1,800.00	\$ 7,200.00	\$ 2,545.00	\$ 10,180.00
22	Additional 1" Service Line	600	LF	\$ 10.00	\$ 6,000.00	\$ 15.00	\$ 9,000.00
<b>TOTAL BASE BID AMOUNT - (ITEMS No. 1 - 13):</b>					<b>\$782,100.00</b>		<b>\$1,406,902.00</b>
<p><i>*Numbers in Red Indicate errors in Contractor's Bid Amount Calculation</i></p> <p>The above is a true and complete tabulation of the bids received on Wednesday, May 19, 2021 9:00 am          I certify that this is true and accurate tabulation of the bids</p> <p>Bluegrass Engineering, PLLC          By:           Riley Sumner          Project Manager</p>							



May 21, 2021

Mr. Gerald Shepenson  
North Mercer Water District  
P.O. Box 79  
Salvisa, Kentucky 40372

Re: 2019 Water System Improvements – Contract 1, 2A, 2C  
Recommendation of Award

Dear Mr. Shepenson:

Bids for the above referenced project were opened on Wednesday, May 19, 2021 at 9 am EST at the North Mercer Water District office. There were three (3) bidders on Contract 1: BOCA Construction, Cleary Construction and Twin States Utility & Excavation. The low bidder was BOCA Construction, Hager Hill, Kentucky with a bid of \$2,073,035.

There were two (2) bidders on Contract 2A: BOCA Construction, and Twin States Utility & Excavation. The low bidder was BOCA Construction with a bid of \$1,174,250.

There were also two (2) bidders on Contract 2C: BOCA Construction and Twin States Utility & Excavation. The low bidder was BOCA Construction with a bid of \$792,100.

BOCA currently has a bond aggregate of ten million and has been in business for several years specializing in this type of work, therefore Bluegrass Engineering does not have any reason not to recommend BOCA construction for your project.

If you have any questions, please contact me at your convenience.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Riley Sumner', is written over a light blue horizontal line.

Riley Sumner  
Project Manager

C: Greg Pridemore, RD  
File

502.370.6551 • 222 East Main Street, Suite 1 • Georgetown, KY 40324

[www.bluegrassengineering.net](http://www.bluegrassengineering.net)



May 21, 2021

Mr. Gerald Shepenson  
North Mercer Water District  
P.O. Box 79  
Salvisa, Kentucky 40372

Re: 2019 Water System Improvements – Contract 2B  
Recommendation of Award

Dear Mr. Shepenson:

Bids for the above referenced project were opened on Wednesday, May 19, 2021 at 9 am EST at the North Mercer Water District office. There were four (4) bidders: G and W Construction, BOCA Construction, Twin States Utilities & Excavation, and Revivity Service Co. The low bidder was G & W Construction, Morehead, Kentucky with a bid of \$887,650.

Since G & W Construction has completed several successful projects over the years with myself and Bluegrass Engineering, I would recommend the North Mercer Water District, accept the low bid of G and W Construction.

If you have any questions, please contact me at your convenience.

Sincerely,

  
Riley Sumner  
Project Manager

C Greg Prdemore, RD  
File

502.370.6551 • 222 East Main Street, Suite 1 • Georgetown, KY 40324

[www.bluegrassengineering.net](http://www.bluegrassengineering.net)