

LEGEND

Proposed Water Line

Proposed Water Tank

Proposed Pump Station

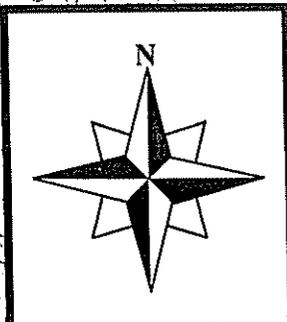
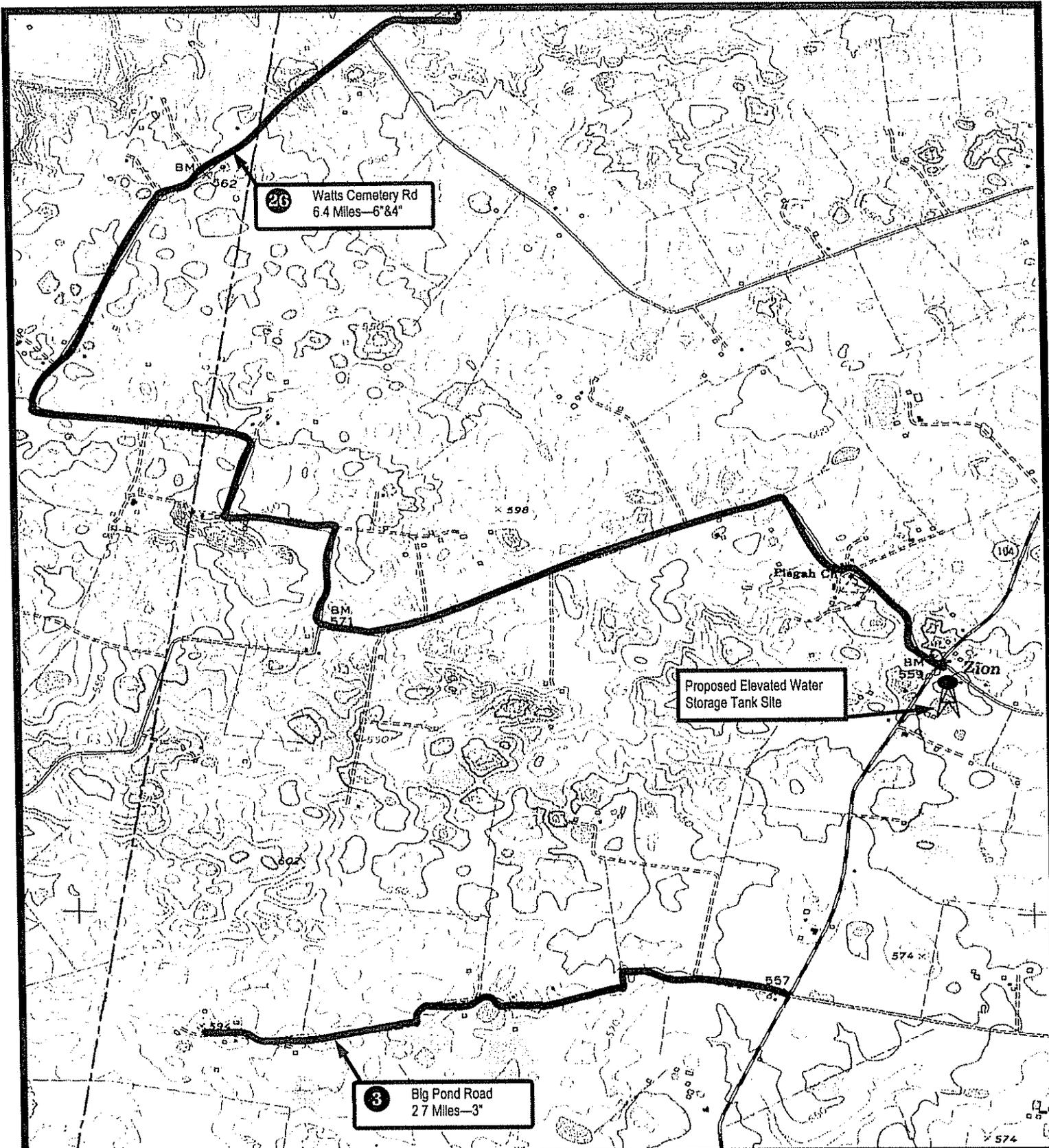
Source: USGS "Trenton" 7 1/2 Topographic Quadrangle

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Adams Road, Mimms Road & Watts Cemetery Road

MCGHEE ENGINEERING, INC.
 Guthrie, Kentucky

Scale 1"=2000'	Drawn By C Wilcutt	Date 07-26-06	Page E-2
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LEGEND

- Proposed Water Line
- Proposed Water Tank
- Proposed Pump Station

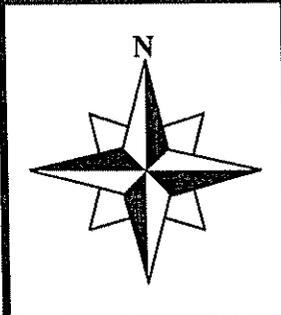
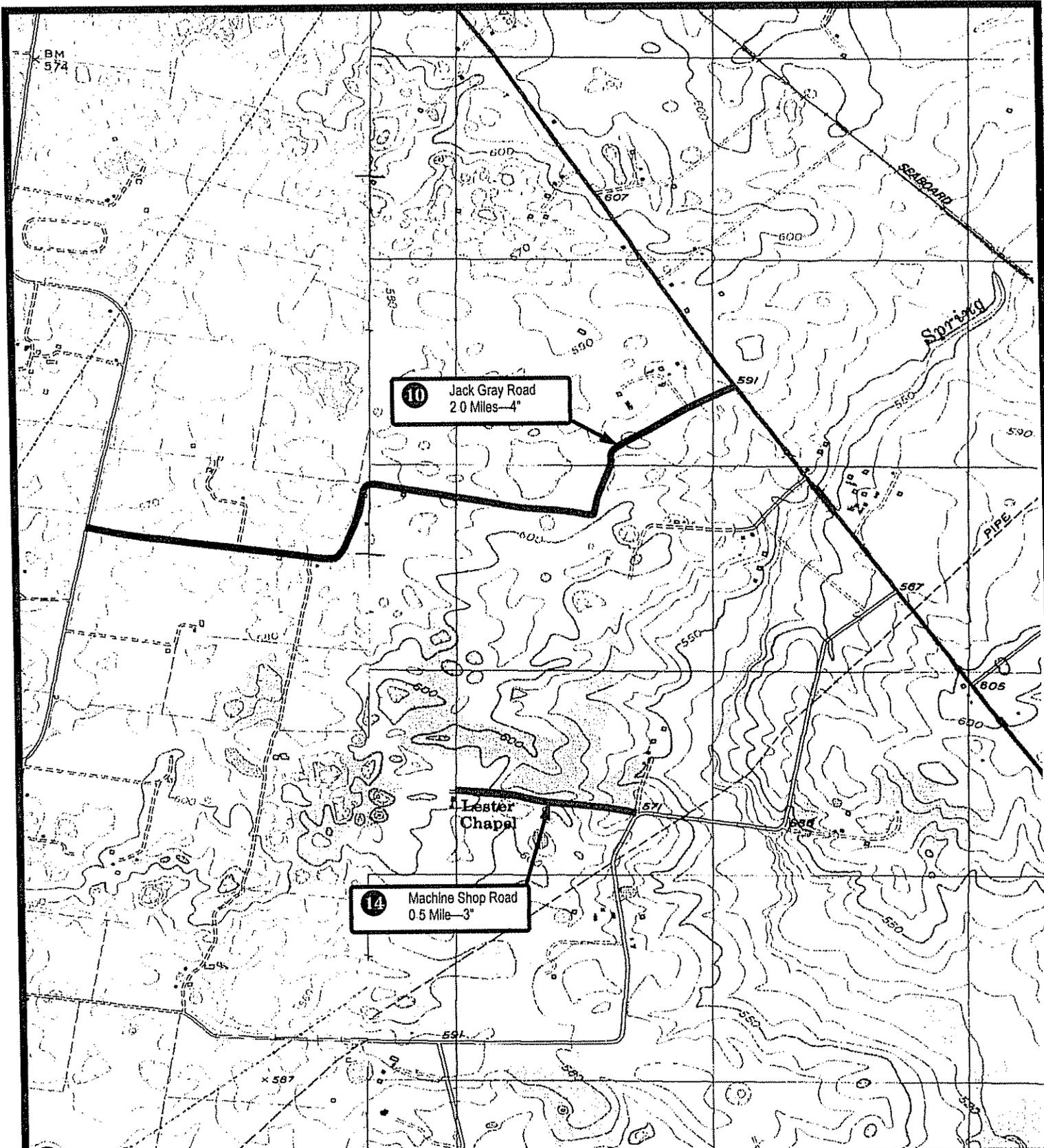
Source: USGS "Trenton" 7 1/2 Topographic Quadrangle.

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Big Pond Road & Watts Cemetery Road (cont.)

MCGHEE ENGINEERING, INC.
 Guthrie, Kentucky

Scale 1"=2000'	Drawn By C. Wilcutt	Date 07-26-06	Page E-3
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LEGEND

Proposed Water Line

Proposed Water Tank

Proposed Pump Station

Source: USGS "Trenton" & "Guthrie" 7 1/2" Topographic Quadrangles

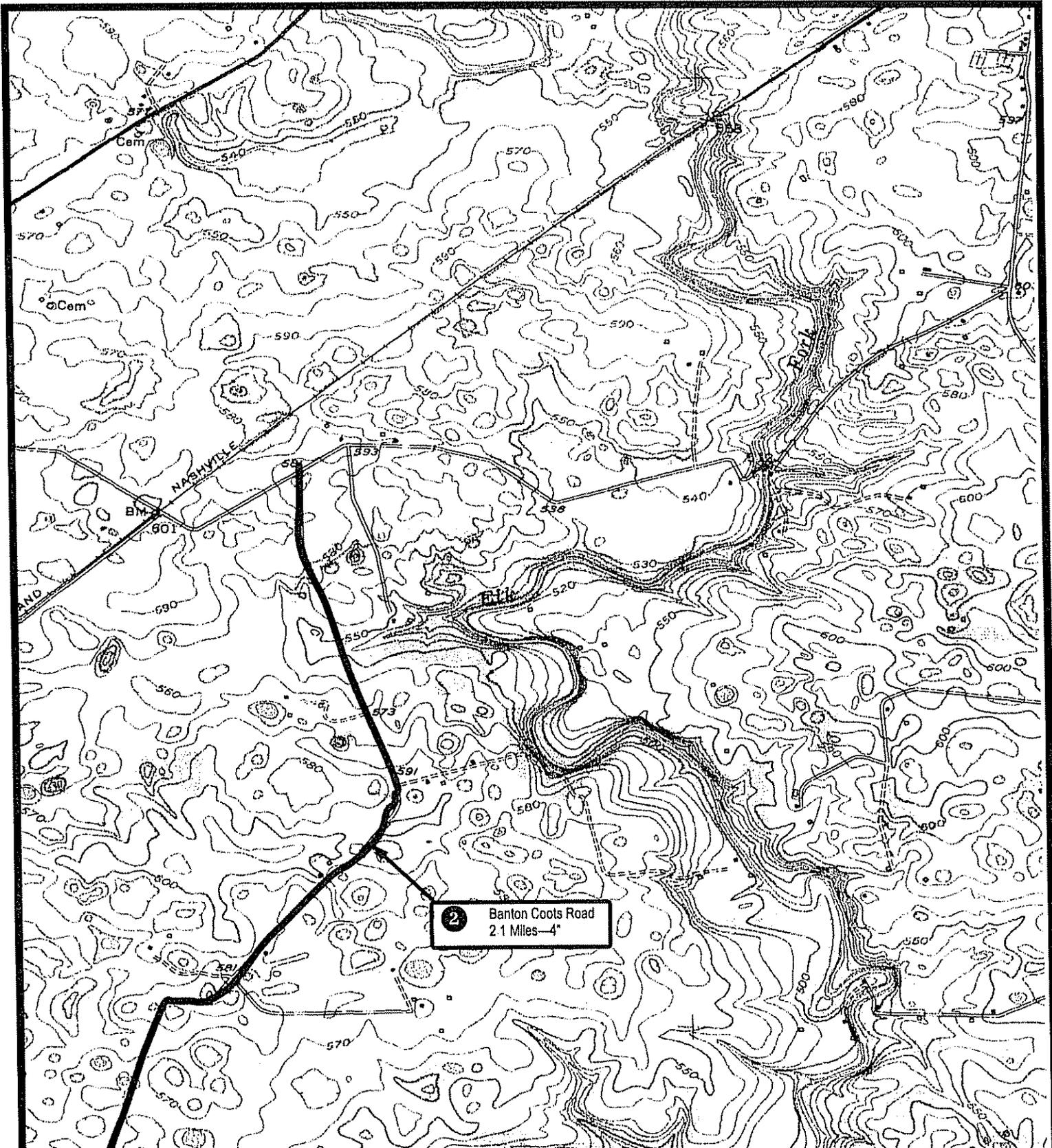
TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension

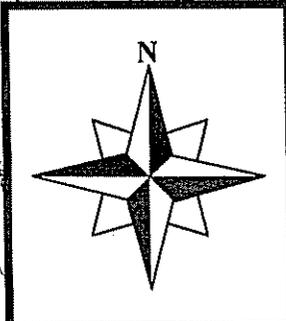
Jack Gray Road & Machine Shop Road

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2000'	Drawn By C Wilcutt	Date 07-26-06	Page E-4
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2 Banton Coots Road
2.1 Miles - 4"



LEGEND

- Proposed Water Line 
- Proposed Water Tank 
- Proposed Pump Station 

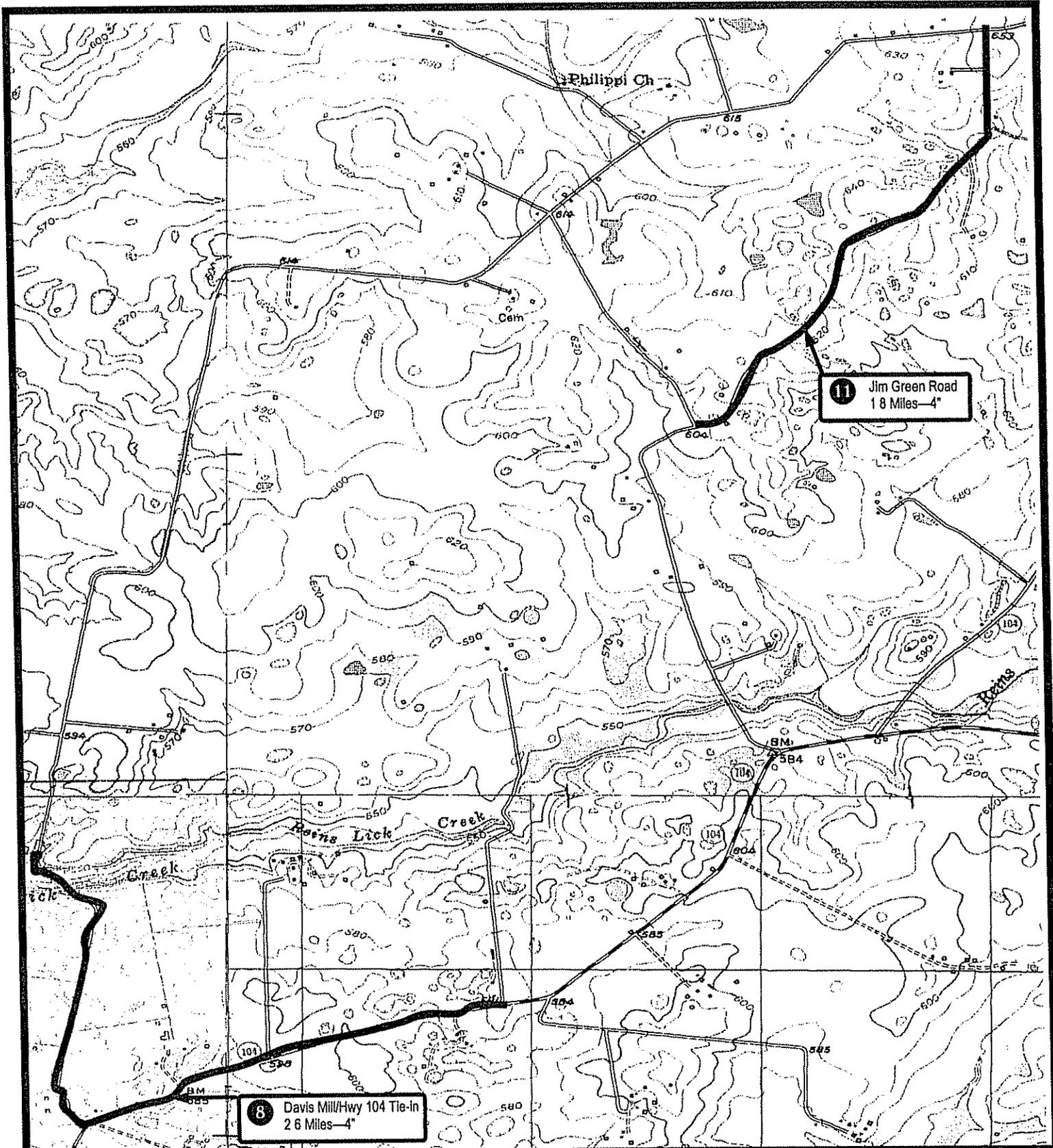
Source: USGS "Allensville" 7 1/2 Topographic Quadrangle.

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Banton Coots Road

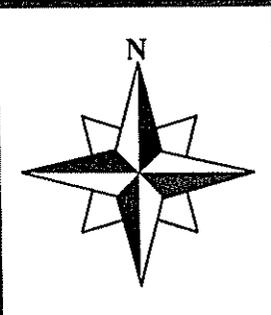
MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2000'	Drawn By C. Wilcutt	Date 07-26-06	Page E-5
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8 Davis Mill/Hwy 104 Tie-in
2.6 Miles - 4"

1 Jim Green Road
1.8 Miles - 4"



LEGEND

Proposed Water Line 

Proposed Water Tank 

Proposed Pump Station 

Source: USGS "Trenton", "Guthrie", "Elkton", & "Pembroke" 7 1/2
Topographic Quadrangles

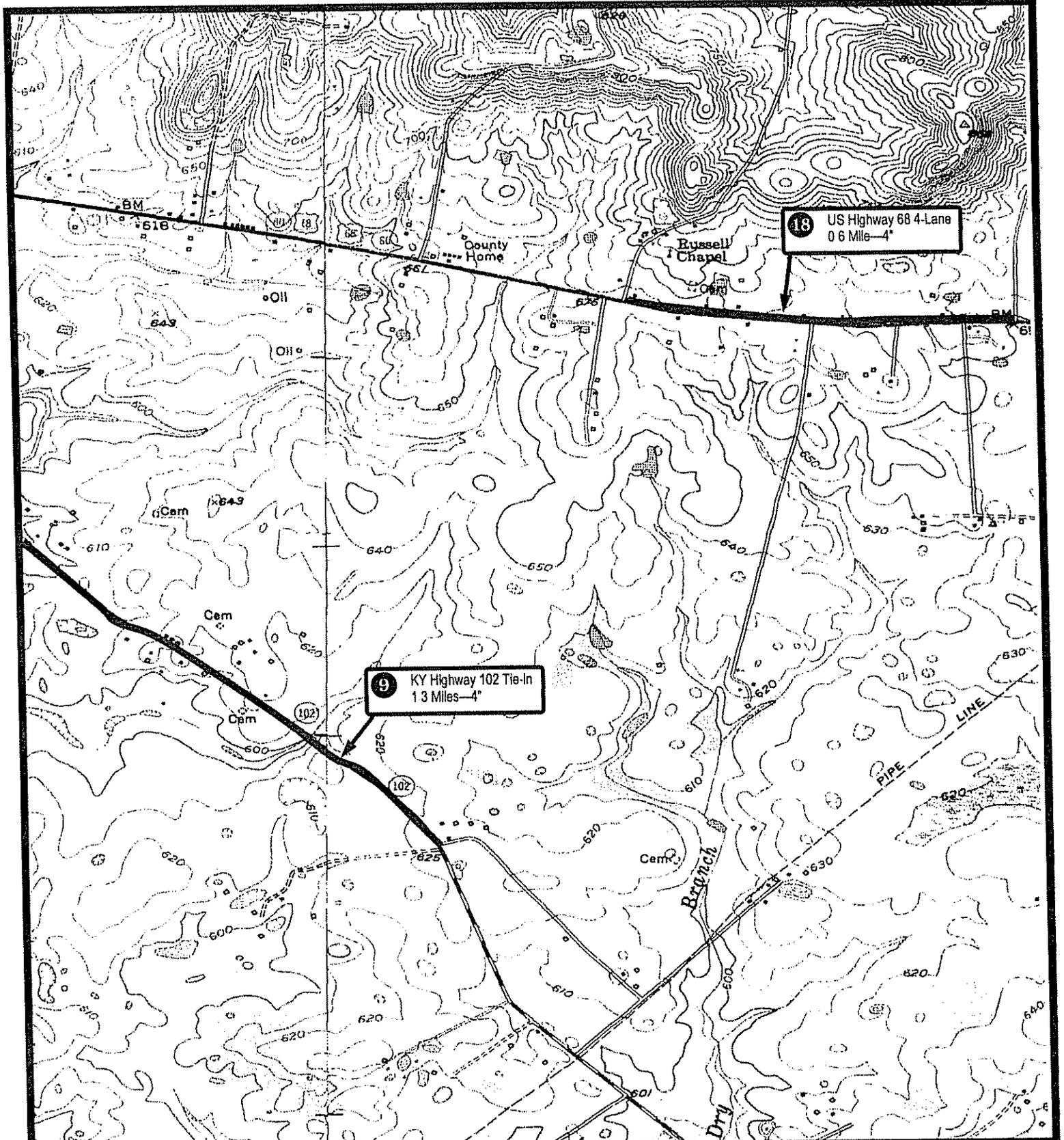
TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension

Davis Mill/Hwy 104 Tie-in & Jim Green Road

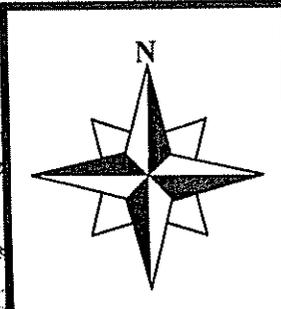
MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,250'	Drawn By C. Wilcutt	Date 07-26-06	Page E-6
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13 US Highway 68 4-Lane
0.6 Mile—4"

9 KY Highway 102 Tie-In
1.3 Miles—4"



LEGEND

- Proposed Water Line
- Proposed Water Tank
- Proposed Pump Station

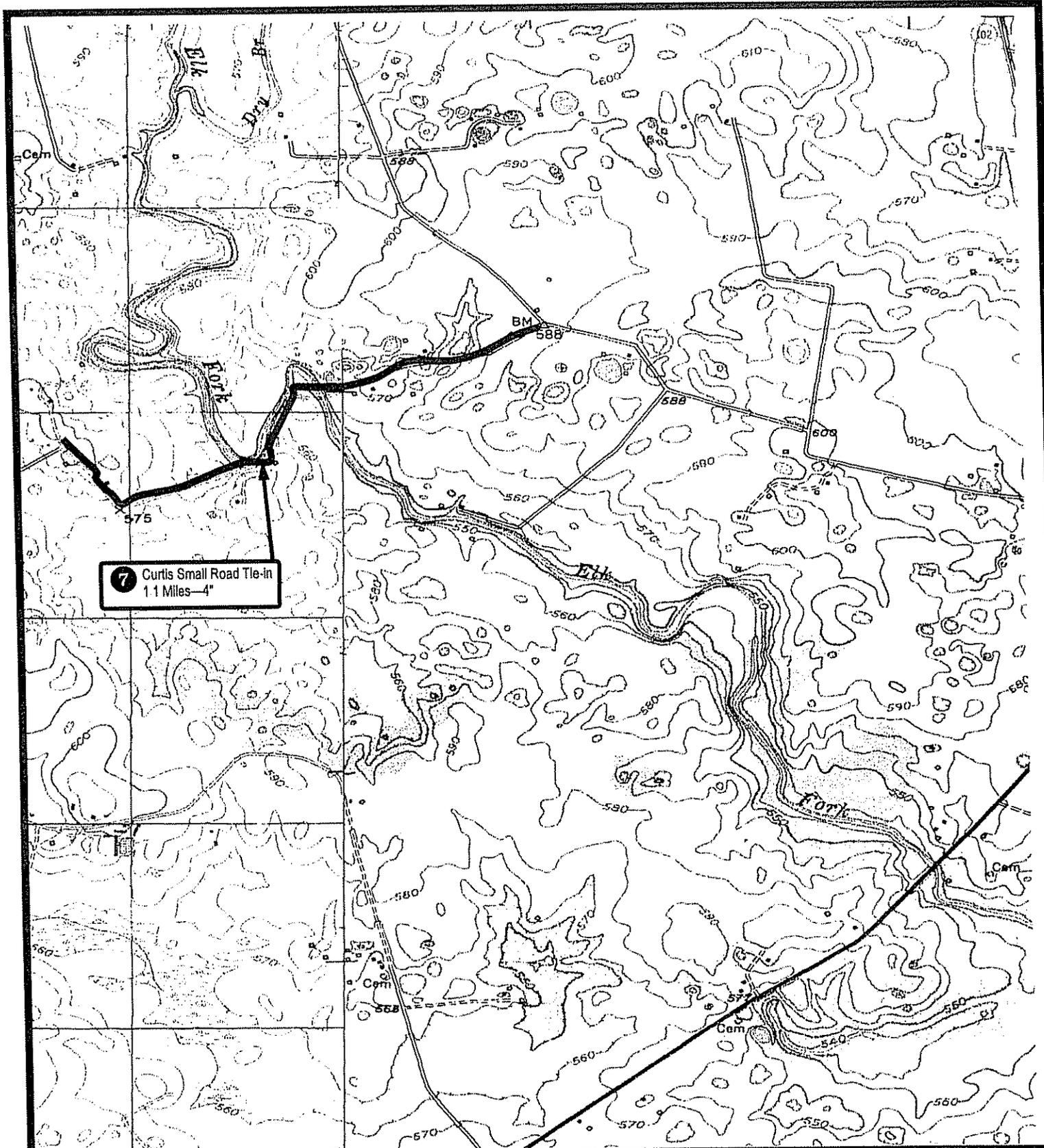
Source: USGS "Eikton" & "Olmstead" 7 1/2" Topographic Quadrangles

TODD COUNTY WATER DISTRICT

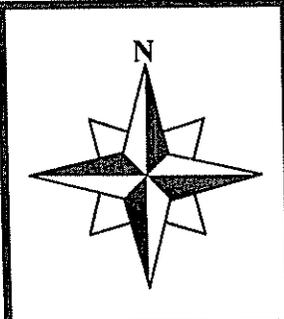
Hammacksville Tank & System Extension
**US Highway 68 &
KY Highway 102 Tie-in**

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C. Wilcullt	Date 07-26-06	Page E-7
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7 Curtis Small Road Tie-in
1.1 Miles - 4"



LEGEND

- Proposed Water Line
- Proposed Water Tank
- Proposed Pump Station

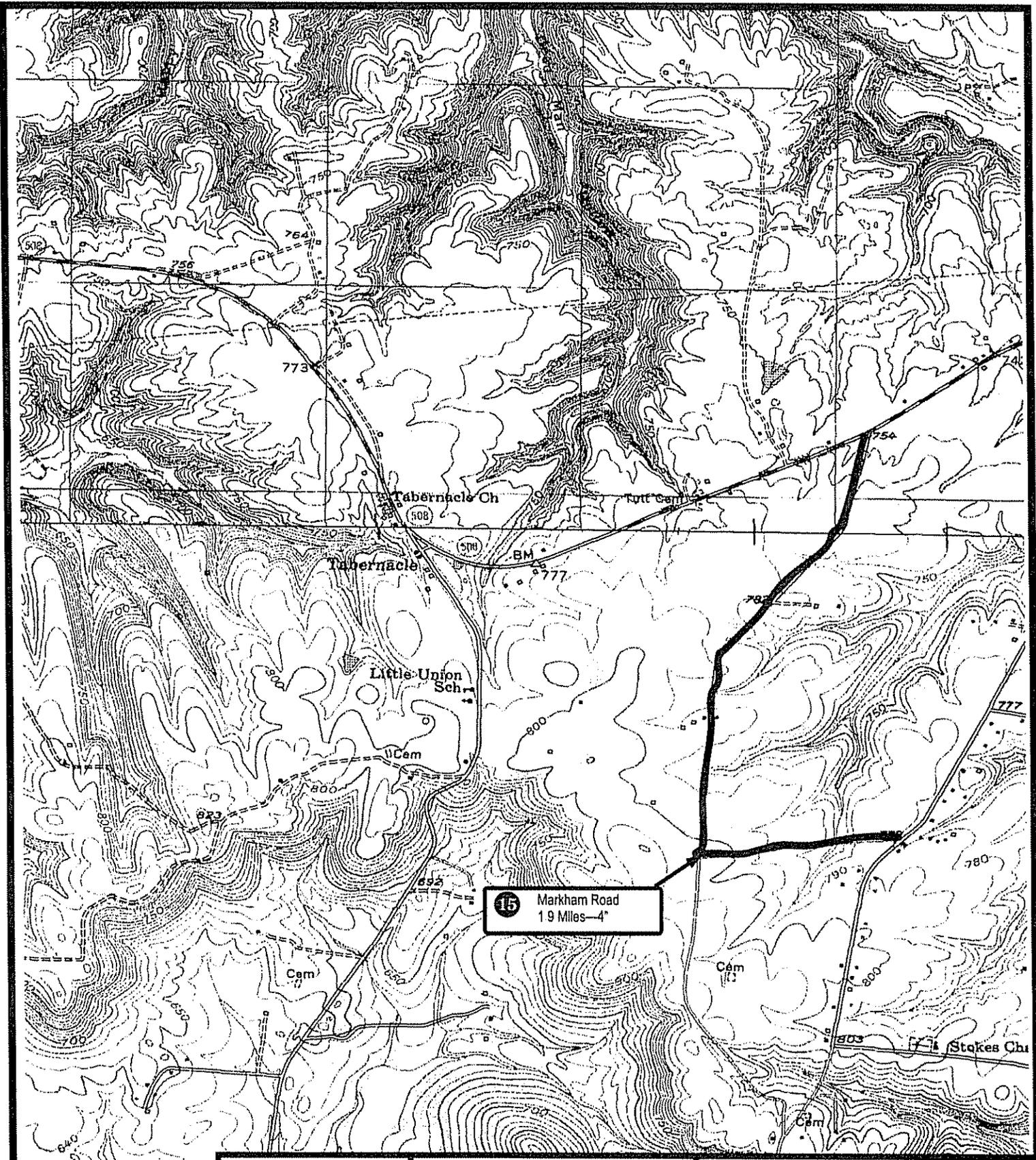
Source: USGS 'Allensville' & 'Guthrie' 7 1/2' Topographic
Quadrangles.

TODD COUNTY WATER DISTRICT

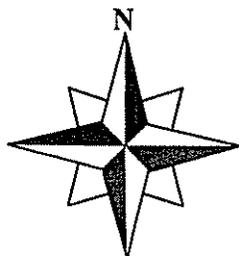
**Hammacksville Tank & System Extension
Curtis Small Road Tie-in**

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C. Wilcutt	Date 07-26-06	Page E-8
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15 Markham Road
1.9 Miles—4"



LEGEND

- Proposed Water Line
- Proposed Water Tank
- Proposed Pump Station

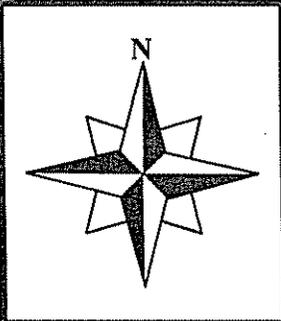
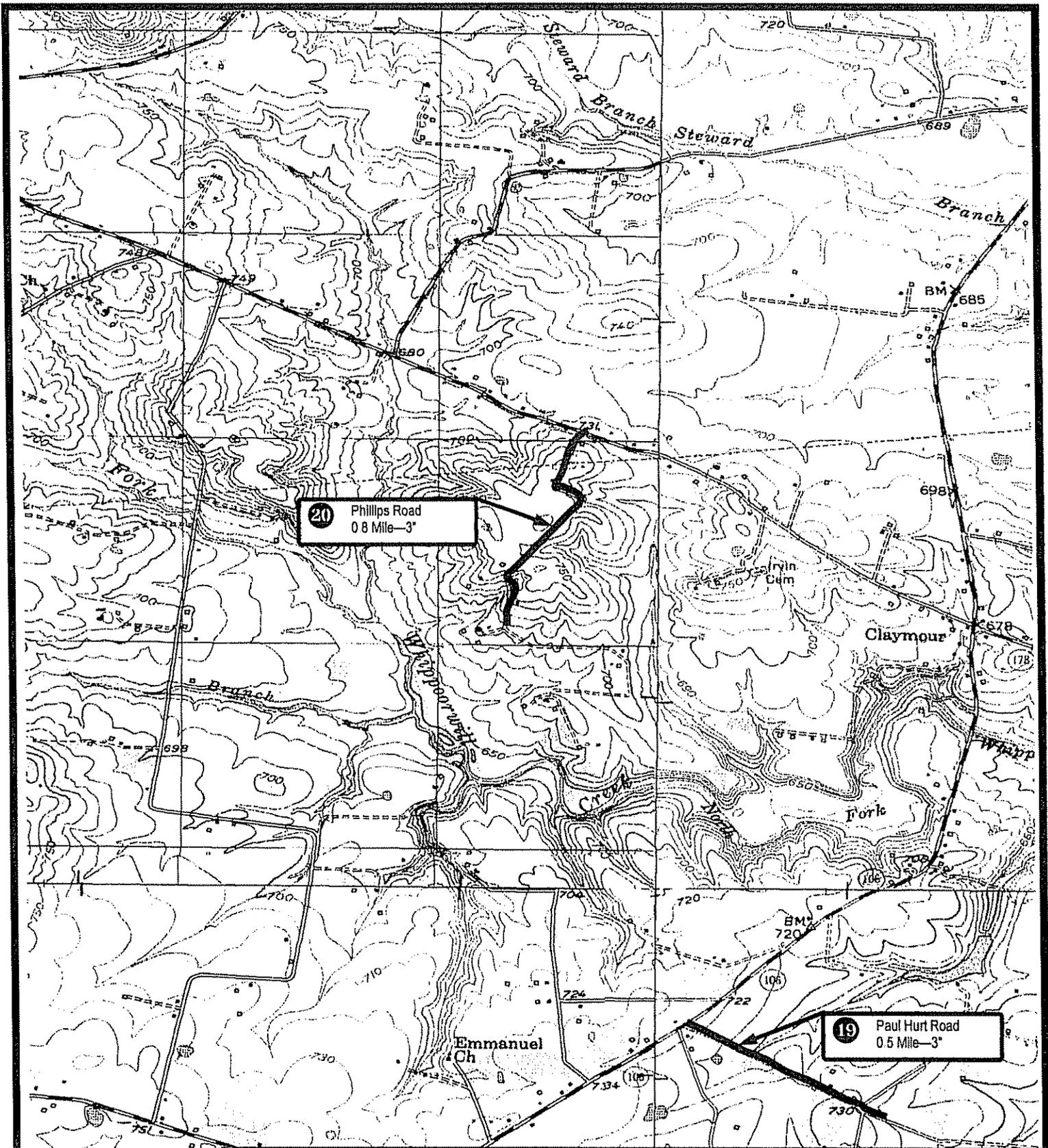
Source: USGS 'Elkton' & 'Alegre' 7 1/2 Topographic
Quadrangles

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Markham Road

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C. Wilcutt	Date 07-26-06	Page E-9
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LEGEND

Proposed Water Line

Proposed Water Tank

Proposed Pump Station

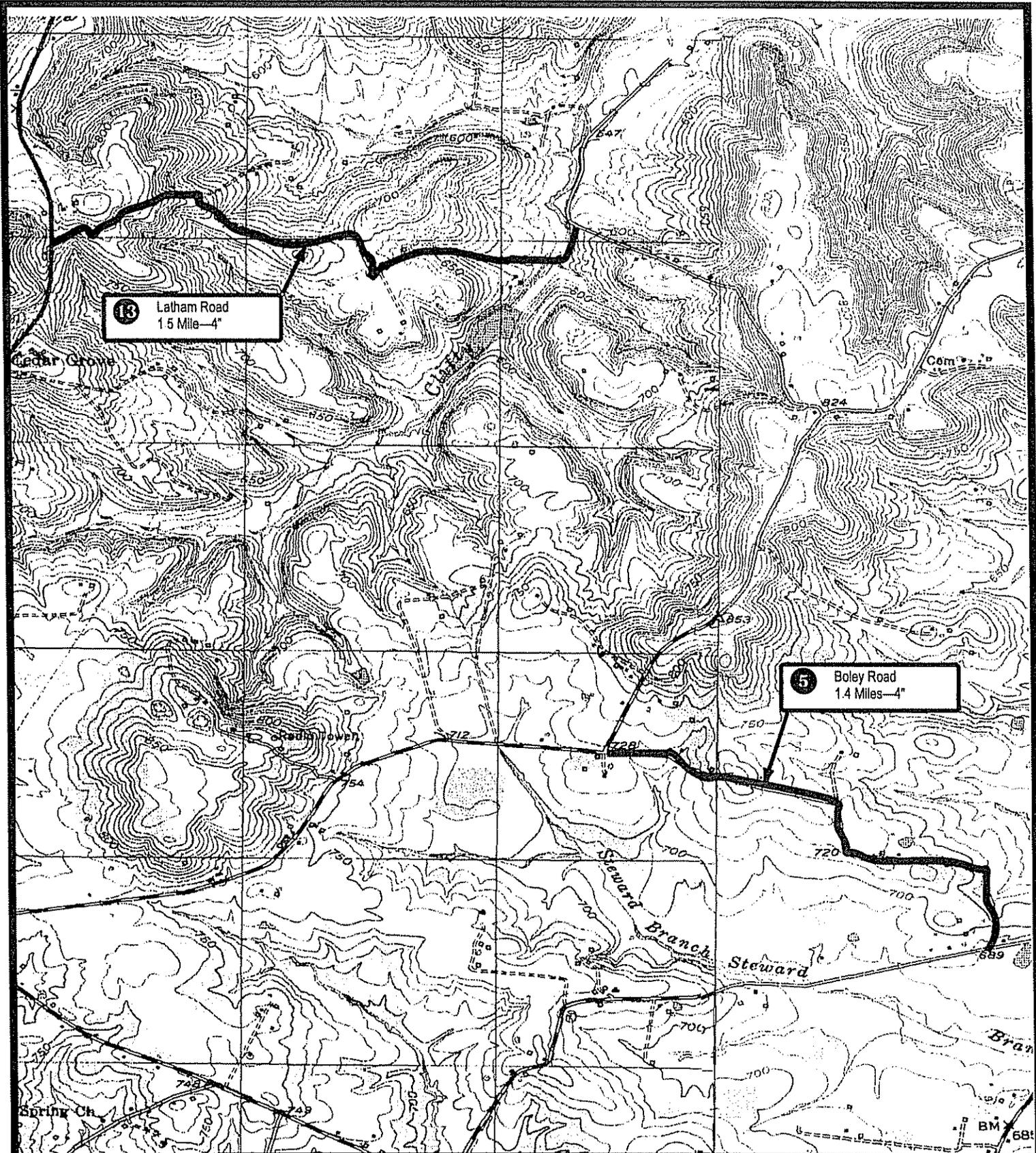
Source: USGS "Elkton", "Sharon Grove", "Allegra" & "Olmstead"
7 1/2 Topographic Quadrangles

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Paul Hurt Road & Phillips Road

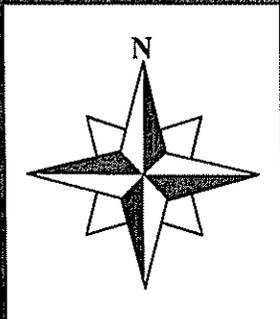
MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C Wilcutt	Date 07-26-06	Page E-10
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13 Latham Road
1.5 Mile-4"

5 Boley Road
1.4 Miles-4"



LEGEND

- Proposed Water Line
- Proposed Water Tank
- Proposed Pump Station

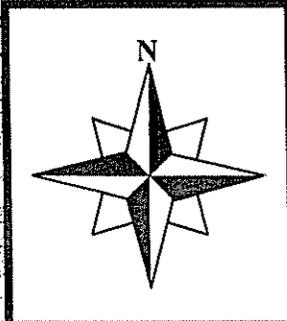
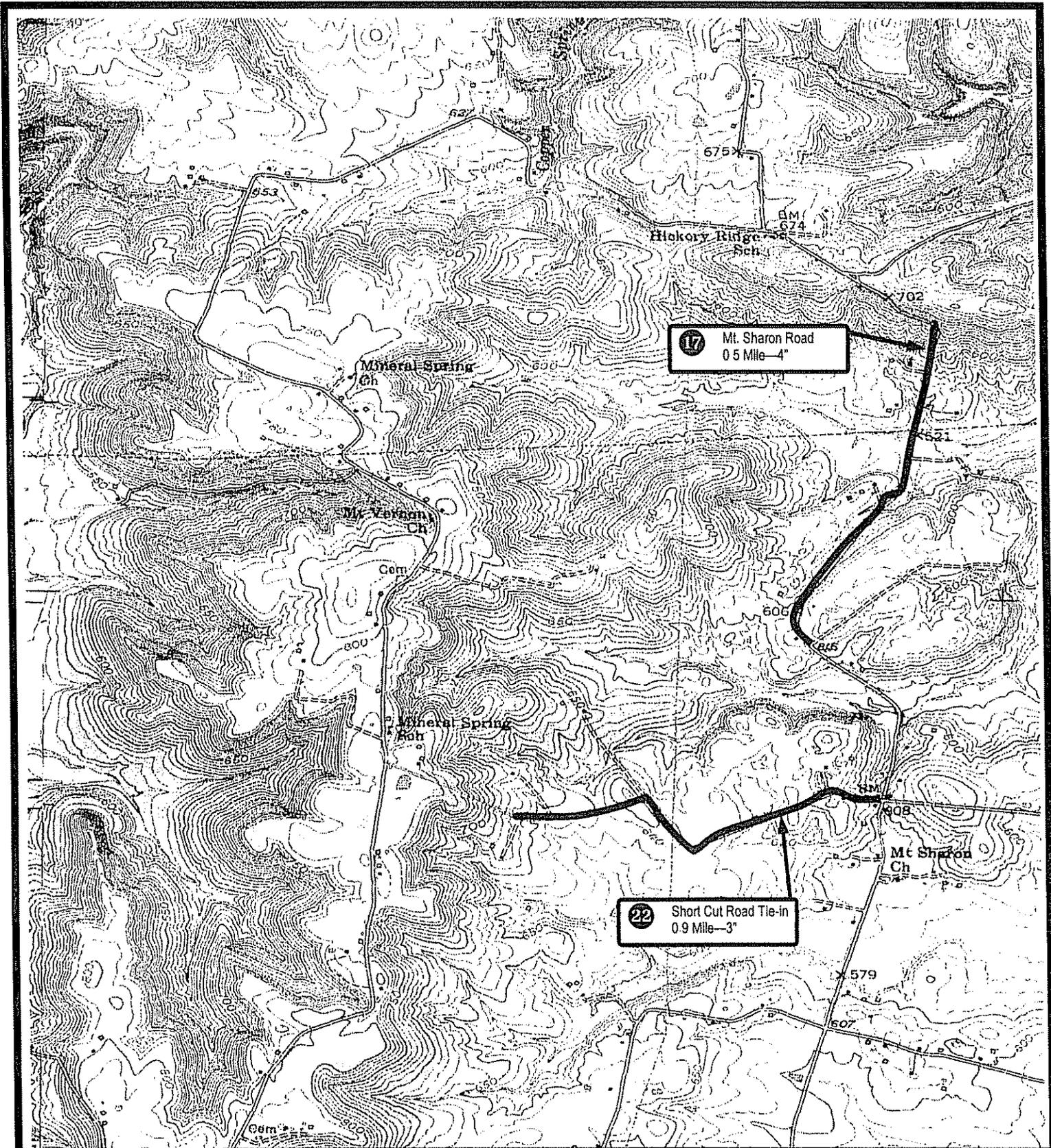
Source: USGS "Sharon Grove" & "Allegra"
7 1/2' Topographic Quadrangles

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Boley Road & Latham Road

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C Wilcutt	Date 07-26-06	Page E-11
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LEGEND

Proposed Water Line

Proposed Water Tank

Proposed Pump Station

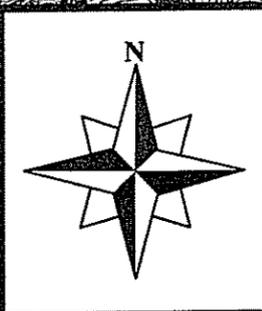
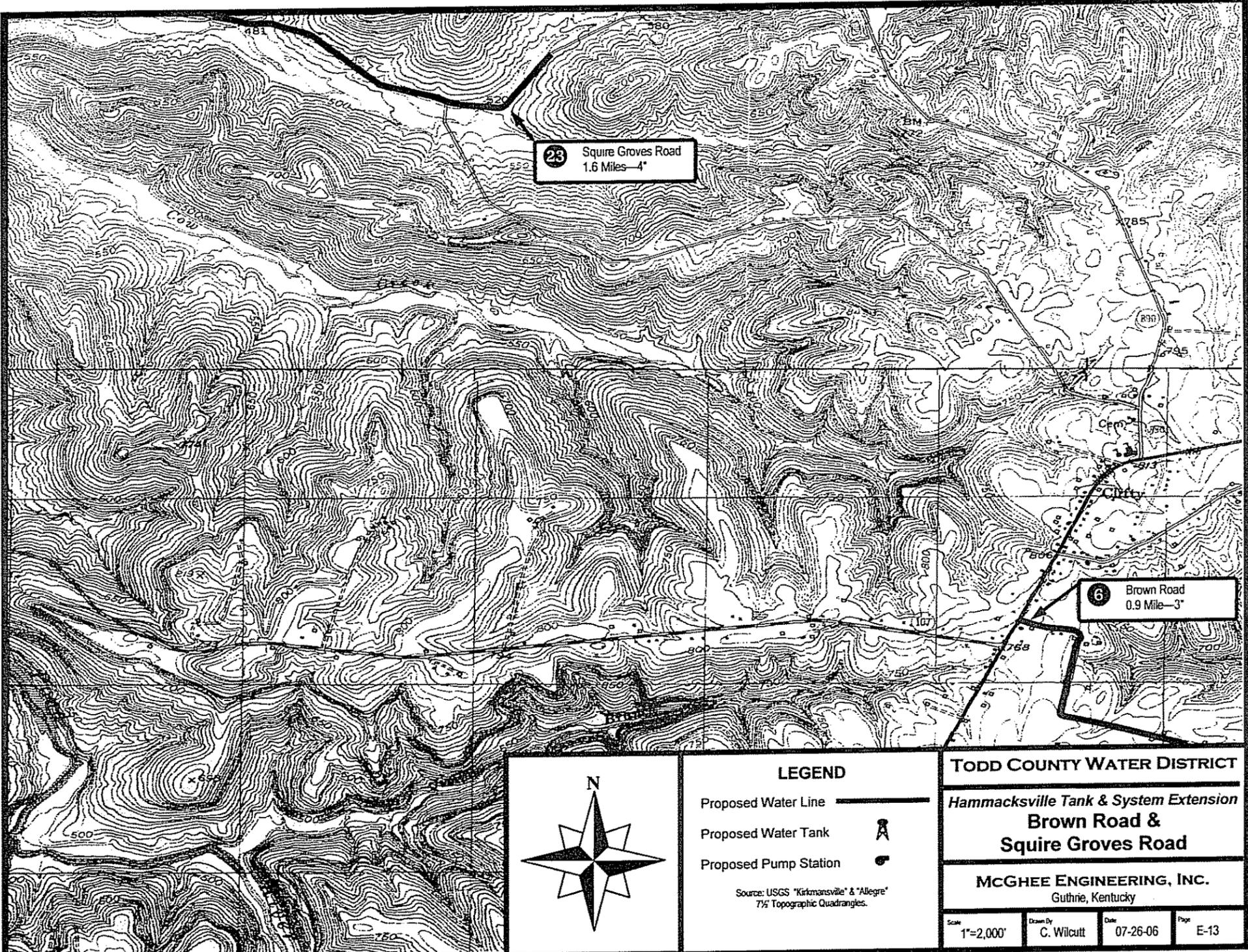
Source: USGS "Sharon Grove" & "Allegre"
7 1/2' Topographic Quadrangles

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Mt. Sharon Road & Short Cut Road Tie-in

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C Wilcutt	Date 07-26-06	Page E-12
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LEGEND

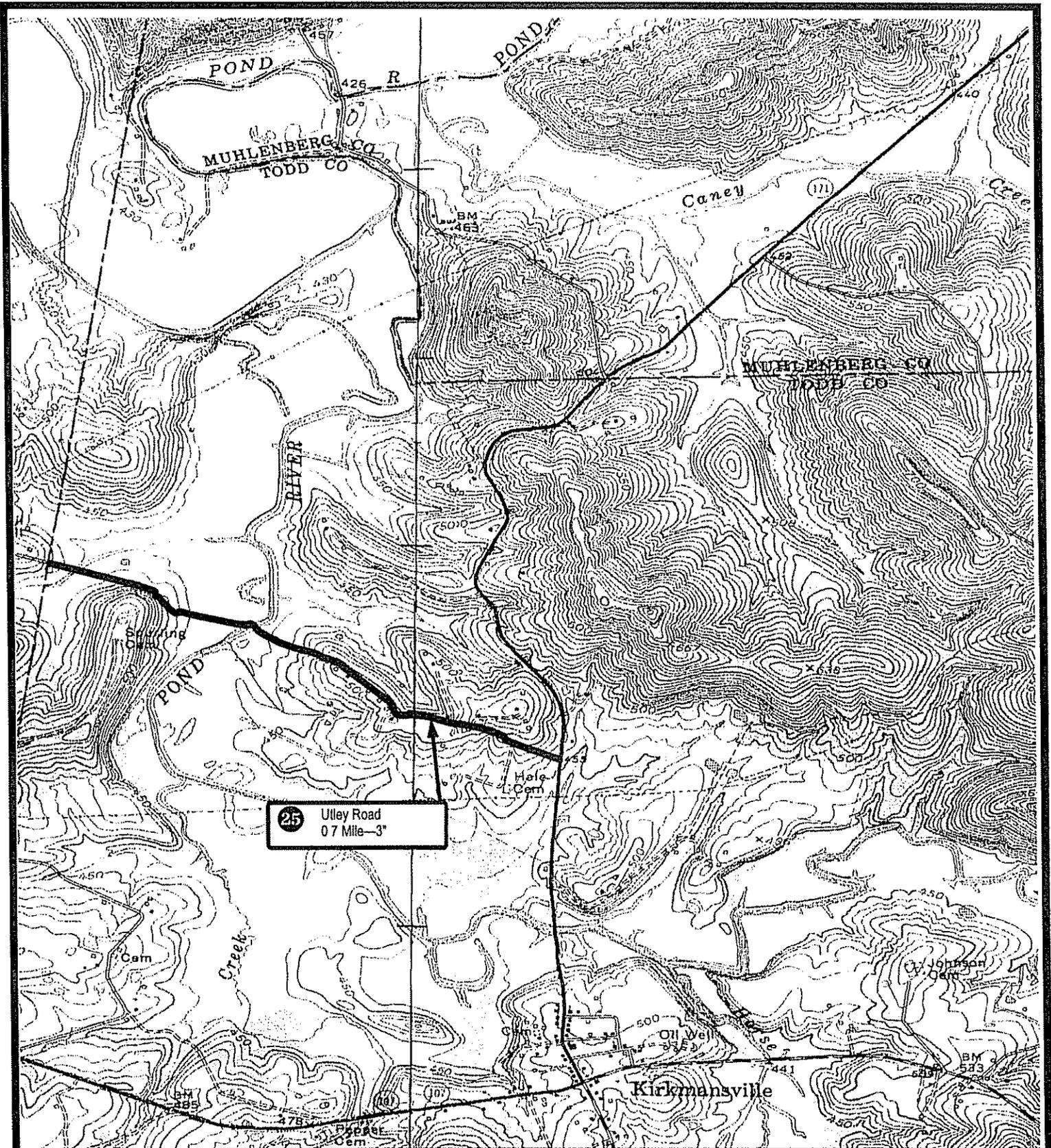
Proposed Water Line ———

Proposed Water Tank 

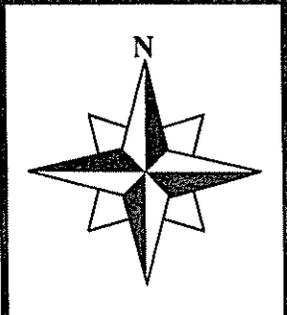
Proposed Pump Station 

Source: USGS "Kirkmansville" & "Allegre"
7 1/2 Topographic Quadrangles.

TODD COUNTY WATER DISTRICT			
<i>Hammacksville Tank & System Extension</i>			
Brown Road & Squire Groves Road			
MCGHEE ENGINEERING, INC. Guthrie, Kentucky			
Scale	Drawn By	Date	Page
1"=2,000'	C. Wilcutt	07-26-06	E-13



25 Ulley Road
0.7 Mile - 3"



LEGEND

Proposed Water Line

Proposed Water Tank

Proposed Pump Station

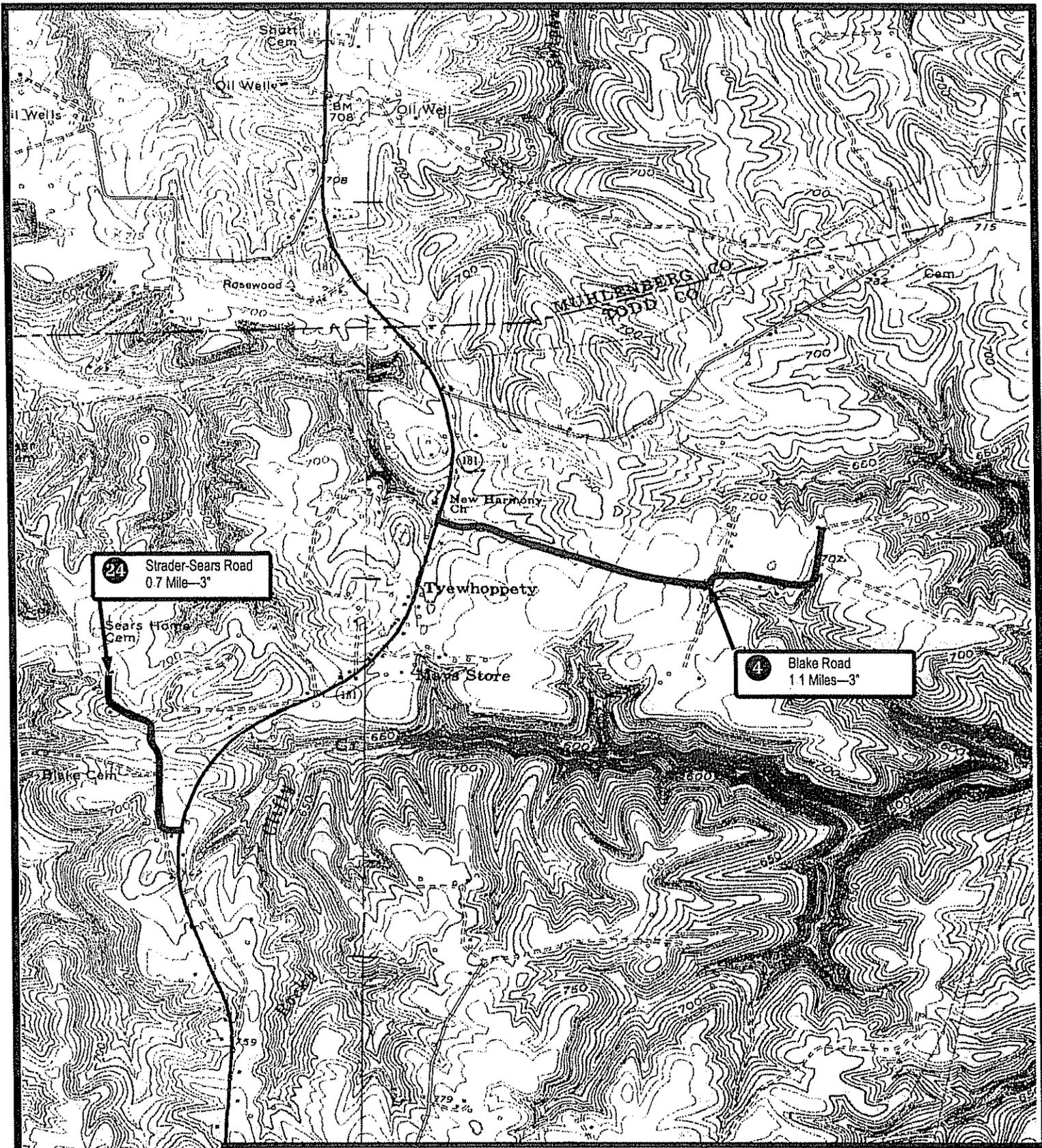
Source: USGS "Kirkmansville" & "Haley's Mill"
7 1/2 Topographic Quadrangles

TODD COUNTY WATER DISTRICT

Hammacksville Tank & System Extension
Ulley Road

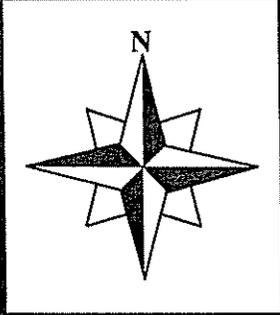
MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale	Drawn By	Date	Page
1"=2,000'	C. Wilcutt	07-26-06	E-14



24 Strader-Sears Road
0.7 Mile—3"

4 Blake Road
1.1 Miles—3"



LEGEND

Proposed Water Line

Proposed Water Tank

Proposed Pump Station

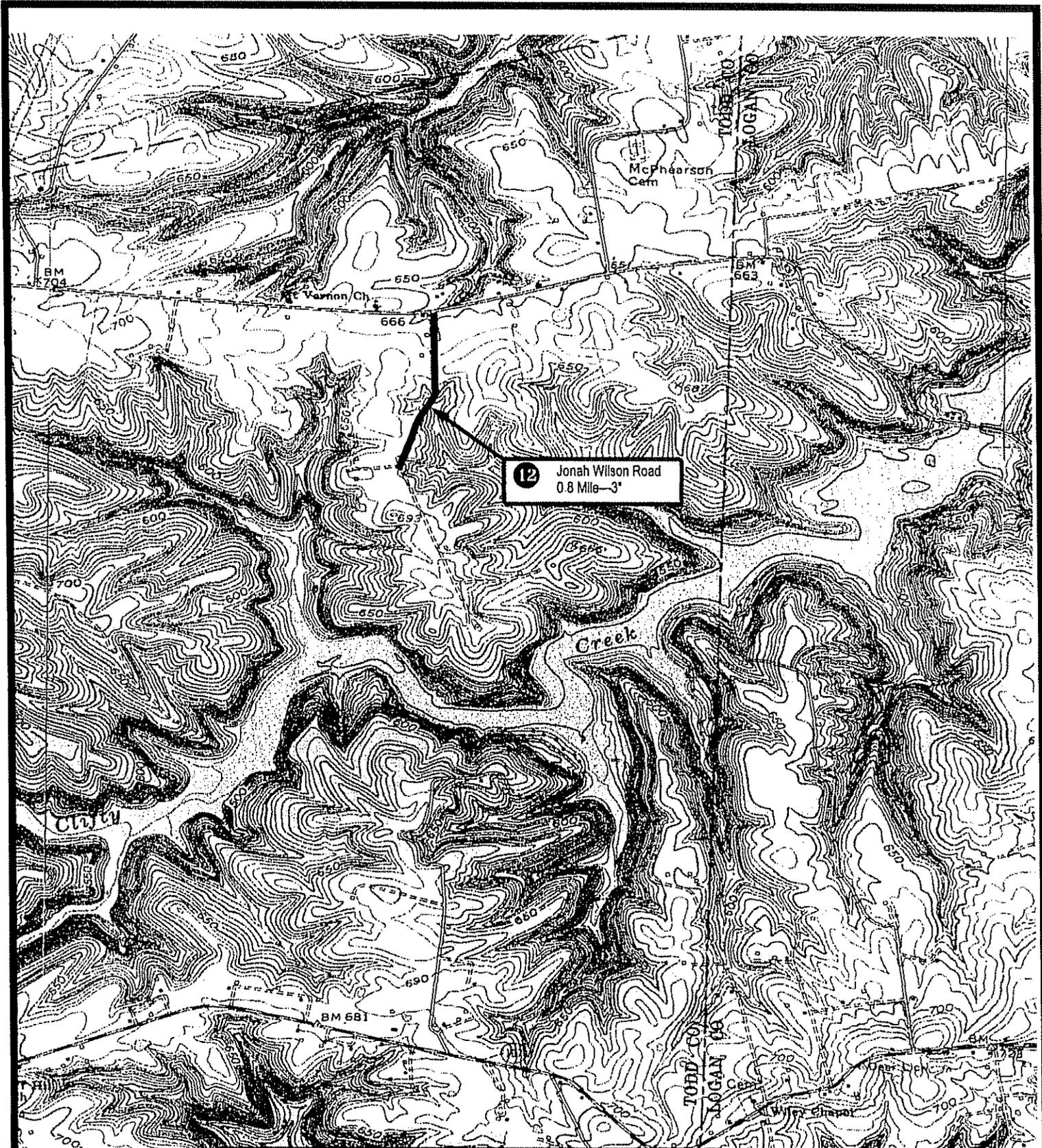
Source: USGS "Kirkmansville" & "Rosewood"
7 1/2" Topographic Quadrangles

TODD COUNTY WATER DISTRICT

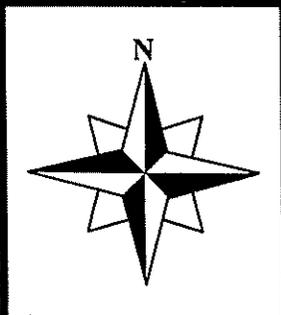
Hammacksville Tank & System Extension
**Strader-Sears Road &
Blake Road**

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale	Drawn By	Date	Page
1"=2,000'	C. Wilcutt	07-26-06	E-15



12 Jonah Wilson Road
0.8 Mile - 3"



LEGEND

- Proposed Water Line
- Proposed Water Tank
- Proposed Pump Station

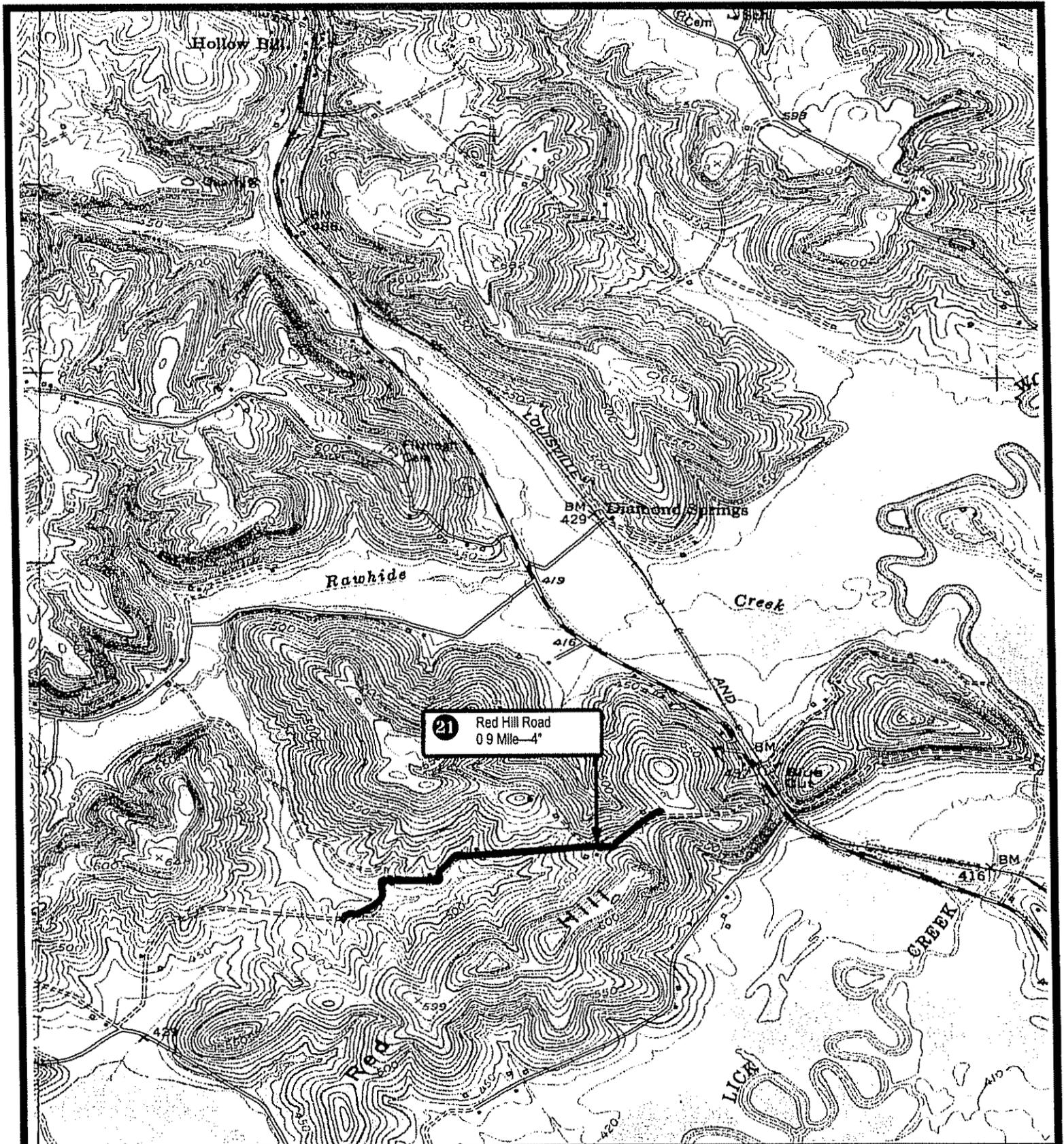
Source: USGS "Rosewood" 7 1/2 Topographic Quadrangle

TODD COUNTY WATER DISTRICT

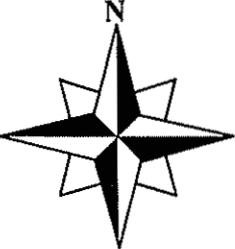
Hammacksville Tank & System Extension
Jonah Wilson Road

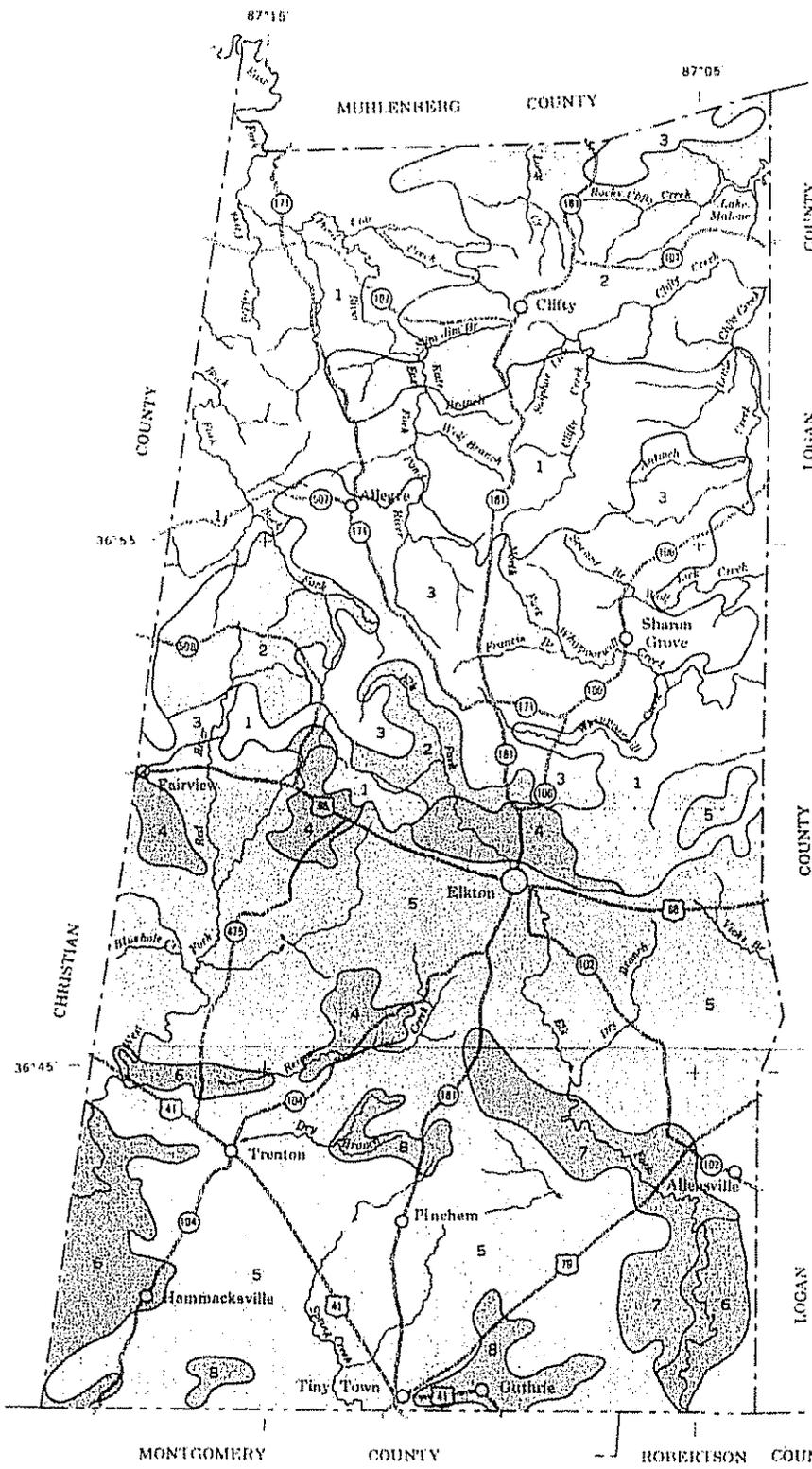
MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C. Wilcutt	Date 07-26-06	Page E-16
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21 Red Hill Road
0.9 Mile - 4"

	LEGEND		TODD COUNTY WATER DISTRICT	
	Proposed Water Line		Hammacksville Tank & System Extension Red Hill Road	
	Proposed Water Tank			
	Proposed Pump Station		MCGHEE ENGINEERING, INC. Guthrie, Kentucky	
Source: USGS "Dunmor" 7 1/2" Topographic Quadrangle		Scale	Drawn By	Date
		1"=2,000'	C. Wilcutt	07-26-06
				Page
				E-17



LEGEND

WELL DRAINED AND MODERATELY WELL DRAINED, VERY STEEP TO NEARLY LEVEL SOILS; UNDERLAIN BY SANDSTONE SILTSTONE SHALE OR LIMESTONE

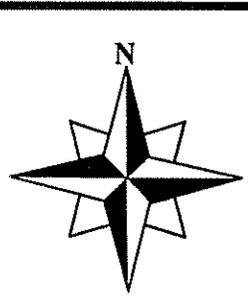
- 1 Caneyville-Frontdorf-Weikert: Well drained, steep to sloping, moderately deep and deep soils that are loamy and have a clayey or loamy subsoil; formed in residuum or in loess and residuum from limestone, sandstone, siltstone, or shale; on side slopes and ridges.
- 2 Frontdorf-Weikert-Zanesville: Well drained and moderately well drained, very steep to gently sloping, deep to shallow soils that are loamy and have a loamy subsoil; formed in loess and residuum or in residuum from sandstone, siltstone, or shale; on ridges and side slopes.
- 3 Sadler-Zanesville: Moderately well drained and well drained, nearly level to sloping, deep soils that are loamy and have a loamy subsoil; formed in loess and residuum from sandstone, siltstone, or shale; on ridges.

WELL DRAINED TO POORLY DRAINED, NEARLY LEVEL TO MODERATELY STEEP SOILS; UNDERLAIN BY LIMESTONE

- 4 Fredonia-Pembroke-Caneyville: Well drained, gently sloping and sloping, moderately deep and deep soils that are loamy and have a loamy or clayey subsoil; formed in residuum or in loess and residuum from limestone; on broad karst upland plains.
- 5 Pembroke-Nicholson-Crider: Well drained and moderately well drained; nearly level to sloping, deep soils that are loamy and have dominantly a loamy subsoil; formed in loess and residuum from limestone; on broad upland plains.
- 6 Hammack-Baxter-Crider: Well drained, gently sloping to moderately steep, deep soils that are loamy and have a loamy or clayey subsoil; formed in loess and residuum or in residuum from cherty limestone; on karst upland plains.
- 7 Pembroke-Vertrees: Well drained, nearly level to sloping, deep soils that are loamy and have a loamy or clayey subsoil; formed in loess and residuum or in residuum from limestone; on karst upland plains.
- 8 Robertsville-Lawrence: Poorly drained and somewhat poorly drained, nearly level, deep soils that are loamy and have a loamy subsoil; formed in alluvium or colluvium; on concave upland basins or stream terraces.

COMPILED 1986

Source: US Department of Agriculture, Soil Conservation Service, GENERAL SOIL MAP—Todd County, Kentucky—1986



TODD COUNTY WATER DISTRICT

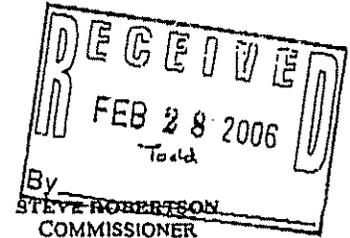
Hammacksville Tank & System Extension Soil Map

MCGHEE ENGINEERING, INC.
Guthrie, Kentucky

Scale 1"=4 miles	Drawn By C. Wilcutt	Date 07-26-06	Page E-18
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Appendix A

Kentucky State Clearinghouse Comments



ERNIE FLETCHER
GOVERNOR

GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT
OFFICE OF THE GOVERNOR
1024 CAPITAL CENTER DRIVE, SUITE 340
FRANKFORT, KENTUCKY 40601-8204
PHONE (502) 573-2382 FAX (502) 573-2939
TOLL FREE (800) 346-5606
www.kentucky.gov

February 21, 2006

John Haley
Todd County Water District
617 West Main Street
Elkton, KY 42220

RE: Todd County Water District - Waterline Extension & Tank

SAI# KY20060125-0061

Dear Mr. Haley:

The Kentucky State Clearinghouse, which has been officially designated as the Commonwealth's Single Point of Contact (SPOC) pursuant to Presidential Executive Order 12372, has completed its evaluation of your proposal. The clearinghouse review of this proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Therefore, the State Clearinghouse recommends this project be approved for assistance by the cognizant federal agency.

Although the primary function of the State Single Point of Contact is to coordinate the state and local evaluation of your proposal, the Kentucky State Clearinghouse also utilizes this process to apprise the applicant of statutory and regulatory requirements or other types of information which could prove to be useful in the event the project is approved for assistance. Information of this nature, if any, concerning this particular proposal will be attached to this correspondence.

You should now continue with the application process prescribed by the appropriate funding agency. This process may include a detailed review by state agencies that have authority over specific types of projects.

This letter signifies only that the project has been processed through the State Single Point of Contact. It is neither a commitment of funds from this agency or any other state or federal agency.



The results of this review are valid for one year from the date of this letter. Continuation or renewal applications must be submitted to the State Clearinghouse annually. An application not submitted to the funding agency or not approved within one year after completion of this review, must be re-submitted to receive a valid intergovernmental review.

If you have any questions regarding this letter, please feel free to contact my office at 502-573-2382.

Sincerely,



Ronald W. Cook
Kentucky State Clearinghouse

Attachments

Cc: Pennyrile ADD
KIA

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200601250061

The applicant must ensure compliance with the Advisory Council on Historic Preservation's Rules and regulations for the Protection of Historic and Cultural Properties (36CFR, Part 800) pursuant to the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, and Executive Order 11593.

The water lines do not require an archaeological survey, however, the 250,000 gallon water tank on Chester Stall Road between Trenton and Guthrie must be surveyed by a professional archaeologist to determine if sites eligible for listing in the National Register of Historic Places will be affected by the undertaking. Where a given project area or portions thereof have been disturbed by prior construction, the applicant may file documentation of that disturbance with the State Historic Preservation Officer and may request an opinion concerning the need of an archaeological survey. The State Historic Preservation Officer must review and approve the survey report.

The Pennyrille ADD has made the following advisory comment pertaining to State Application Identifier Number KY200601250061
no comment

The Health and Family Services has made the following advisory comment pertaining to State Application Identifier Number KY200601250061
no comment

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200601250061

Moore (D3), Jeff:
Please alert the applicants that if work is done for these projects on the right of way of state maintained roads that a permit will need to be secured from our District Permits Engineer (Daryl Price @ 270.746.7888).

Wilson, Jimmy: Division of Planning has no comments.

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200601250061

The proposed project is subject to Division of Water (DOW) Jurisdiction because the following are or appear to be involved; water lines and appurtenances and storage tanks. Prior approval must be obtained from the DOW before construction can begin. The applicant must cite the State Application Identifier (SAI #KY200601250061) when submitting plans and specifications.

This project is consistent with the Todd County Water Management Plan. It is approved for water management planning. It is approved for water withdrawal by the Water Quantity Management Section of DOW. From the application data, DOW ascertains that the proposed project is not located in a floodplain area. Therefore, a floodplain construction permit is not required for this project.

The proposed project consists of extending approximately 116,000 linear feet of 4-inch and 6-inch waterline to scattered sites in Todd and Logan Counties to provide service to approximately 35 unserved households. The project will also include a 250,000 gallon water tank on Chester Stall Road between Trenton and Guthrie. The Logan Todd Regional Water plant will supply the project area. There is adequate capacity to supply the project demand. There are no objections to the proposed project. However, final plans and specifications along with hydraulic analysis of the proposed project (including fill/drain cycles of the tank to justify adequate tank turn over) must be submitted to the Division of Water's Drinking Water Branch by a registered professional engineer in Kentucky. Must receive a written approval from the Division of Water prior to the beginning of the construction.

Appropriate engineering and construction practices should be utilized for tank installation in karst terrain.

If the construction area disturbed is equal to or greater than 1 acre, the applicant will need to apply for a Kentucky Pollutant Discharge Elimination System (KPDES) storm water discharge permit.

Utility line projects that cross a stream will require a Section 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from DOW.

This review was based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments.

The Labor Cabinet has made the following advisory comment pertaining to State Application Identifier Number KY200601250061

PW RATES WILL APPLY-CONTACT KY DEPT OF LABOR AT 502-564-3070

Appendix B

FmHA Summary/Addendum (KY Guide 7)

SUMMARY ADDENDUM

TO

PRELIMINARY ENGINEERING REPORT

Dated August 1, 2006

FOR

Todd County Water District

Hammacksville Tank & System Extension Project

(Name of Water Facility Project)

Applicant Contact Person Mike McGhee, P.E.

Applicant Phone Number (270) 483-9985

In order to avoid unnecessary delays in application processing the applicant and its consulting engineer should prepare a summary of the preliminary engineering report in accordance with this Guide. Feasibility review and grant determinations may be processed more accurately and more rapidly if the Summary/Addendum is submitted simultaneously with the *preliminary engineering report*, or as soon thereafter as possible.

i. General

Proposed Project: Provide a brief description of the proposed project. In addition to this summary, the Applicant/Engineer should submit a project map of the service area showing the following:

The Todd County Water District (TCWD) is comprised of just under 400 miles of water line and four water storage tanks, totaling 717,800 gallons, serving approximately 3,051 customers in all of Todd, and northwestern Logan Counties. As of the Spring of 2003, the Todd County Water District began to purchase all of their treated water from the recently completed water system of the Logan Todd Regional Water Commission (LTRWC). Since going online with the Commission and at the end of 2005, the average daily usage within the TCWD system been 587,300 gallons per day. The TCWD is a relatively large water system covering most of Todd County and the Lake Malone area of Logan County. The majority of roads within the TCWD boundary have water service. The southwestern part of Todd County is not well served, but in the remainder of the county, only short extensions are needed from time to time to accommodate new development. The main problems that have faced the TCWD are its long-term supply of treated water, low pressure in certain areas of the system, extending water service to unserved areas, and installing lines for improved hydraulic performance. The water supply issue has been resolved by their connection to the Logan Todd system. The remaining problems will be alleviated by a planned system extension project. The proposed project involves construction of over 36 miles of water line on twenty-six rural roadways. Most of these lines are being planned primarily to serve new customers in need of a safe supply of drinking water, while others are being built to improve hydraulic performance of the existing distribution system. As stated above, the southwestern area of the county is the largest unserved area, and the District has no large storage tank in the southern end of the county. Hence, this situation will be improved by the addition of a new 500,000-gallon elevated water tank. Other low-pressure areas will be assisted by building interconnecting lines to complete hydraulic circuits or "loops". The loops will also improve the water quality by cutting down on the stagnant water in dead-end lines. The total estimated cost of the proposed project is \$2,800,000.

ii. FACILITY CHARACTERISTICS OF EXISTING WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

As of the Spring of 2003, the Todd County Water District began to purchase all of their treated water under an agreement of \$2.91/1,000 gallons from the recently completed water system of the Logan Todd Regional Water Commission (LTRWC). The Commission's water treatment facility is rated at 10 million gallons per day, and their distribution system consists of nearly 85 miles of pipeline and three storage tanks totaling 3,500,000 gallons in capacity. TCWD has four meter stations with the Commission, one located at the base of the LTRWC Todd County elevated tank that serves the southern part of the county, one in the Allensville community that serves the southeastern part of the county, one in Trenton to serve the small southwestern portions of the county, and one at Allender's Hill that supplies water to northern Todd County. The Commission's plant is rated at 10.0 MGD, and raw water for the plant is obtained in Clarksville, Tennessee from the Cumberland River. The plant presently operates at or slightly above 40% capacity.

If the applicant purchases water:

Sellers: Logan Todd Regional Water Commission

Price/1,000 gallons: \$2.91

Present Estimated Market Value of Existing System *: \$6,843,461

(Based on Depreciated Value in 2005 Financial Statement)

B. Water Storage:

Type: Ground Storage Tank X, Elevated Tank X,

Standpipe X Other

Number of Storage Structures 1 ground, 2 elevated, 1 standpipe

Total Storage Volume Capacity 717,800 gallons

Date Storage Tank(s) Constructed 1980, 1989 & 2006

C. Water Distribution System:

Pipe Material PVC

Length of Pipe: 3" Diameter and less: 73 miles; 4": 206 miles; 6": 107 miles;

8": 8 miles; 10" 3 miles

Date(s) of Major Water Lines Construction 1980, '87, '90, '92, 2000 & 2006

Number, and Capacity of Pump Station(s): 1 - 320 gpm (North Todd); 2 - 50 gpm (Stringtown and Duncan Ridge)

D. Condition of Existing Water System:

Briefly describe the condition and suitability for continued use of facility now owned by the applicant.

Include any major renovation that will be needed within five to ten years

The water system is generally in good repair with only routine maintenance required. No major renovations, other than those proposed in this project are anticipated in the near future. However, as mentioned before, limited areas of the system suffer low pressure conditions and there are dead end lines creating low water flow which affects the water quality. Adding an elevated tank in the Hammacksville community and looping various hydraulic circuits will improve these deficiencies considerably.

E. Percentage of Unaccounted Water Loss in the Existing System: 31.28% (per 2005 PSC Audit)

III. EXISTING LONG-TERM INDEBTEDNESS

A. List of Bonds and Notes: *per 2005 Financial Statement*

Date of Issue	Bond/Note Holder	Principal Balance	Maturity Date	Bond Type	Interest Rate
1979	Rural Dev	\$ 896,000	2017	Revenue	5.000%
1987	Rural Dev	\$ 506,000	2027	Revenue	5.000%
1990	Rural Dev	\$ 539,000	2030	Revenue	5.000%
1992	Rural Dev	\$ 181,400	2032	Revenue	5.000%
1996	Rural Dev	\$ 490,000	2036	Revenue	4.875%
2000	Rural Dev	\$ 775,000	2040	Revenue	4.750%
2005	Rural Dev	\$ 1,100,000	2045	Revenue	4.125%
Total		\$ 4,487,400			

B. *Principal and Interest Payments: per 2005 Financial Statement*

Date of Issue	Principal Balance	2006 Principal	2006 Interest	2007 Principal	2007 Interest
1979	\$ 896,000	\$ 60,000	\$ 44,800	\$ 63,000	\$ 41,800
1987	\$ 506,000	\$ 13,000	\$ 25,300	\$ 14,000	\$ 24,650
1990	\$ 539,000	\$ 11,000	\$ 26,950	\$ 12,000	\$ 26,400
1992	\$ 181,400	\$ 3,300	\$ 9,070	\$ 3,500	\$ 8,905
1996	\$ 490,000	\$ 6,500	\$ 23,888	\$ 7,000	\$ 23,571
2000	\$ 775,000	\$ 9,000	\$ 36,813	\$ 10,000	\$ 36,385
2005	\$ 1,100,000	\$ -	\$ 45,375	\$ -	\$ 45,375
Total	\$ 4,487,400	\$ 102,800	\$ 212,195	\$ 109,500	\$ 207,086

IV. EXISTING SHORT-TERM INDEBTEDNESS

A. List of All Short Term Debts: None *per 2005 Financial Statement*

V. LAND AND RIGHTS - EXISTING SYSTEM:

Number of Treatment Plant Sites	1
Number of Storage Tank Sites	4
Number of Pump or Meter Stations	4
Total Acreage	~10 Ac.
Purchase Price*	\$58,542 *Land & ROW value per 2005 Audit

VI. NUMBER OF EXISTING USERS

A. Water Users: *per 2005 PSC Report's Year End Customer Numbers*

Residential Size Meters (In Town)*	-
Residential Size Meters/Farmers (Out of Town)*	3,007
Commercial Users & Resellers (In Town)	-
Commercial Users & Resellers (Out of Town)	44
Total	3,051
Number of Total potential Users in the Service Area	552 (Est.)

*NOTE: Residential/Farmers Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residence size meters and farmers.

VII. CURRENT CONNECTION FEES FOR EACH SIZE METER CONNECTION

Meter Size	Connection Fee	Minimum Water Usage for Each Size Meter	
5/8 x 3/4"	\$450.00	2,000	gallons
3/4 Inch & Up	At Cost	2,000	gallons

VIII. WATER RATES - EXISTING RATE SCHEDULE

Date this rate went into effect: August 1, 2003

Meter Size All :

First	<u>2,000</u>	Gallons @	<u>\$ 17.90</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 9.38</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 8.35</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 7.33</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 5.89</u>	per 1,000 Gallons

IX. ANALYSIS OF ACTUAL WATER USAGE - EXISTING SYSTEM - 12 MONTH PERIOD

For Period January 1, 2005 to December 31, 2005.

Meter Size	MONTHLY WATER USAGE	Average	Residential/ Farmer		Non- Residential/ Commercial	
			No. of Users	Usage (1000)	No. of Users	Usage (1000)
All Sizes	0 - 1000 Gal.	500	7,013	2,227,700	185	66,800
	1,000 - 2,000 Gal.	1,500	6,695	11,396,700	104	185,200
	2,000 - 3,000 Gal.	2,500	5,509	14,143,000	42	107,000
	3,000 - 4,000 Gal.	3,500	4,973	17,625,000	20	70,200
	4,000 - 5,000 Gal.	4,500	3,648	16,498,800	28	125,400
	5,000 - 6,000 Gal.	5,500	2,419	13,384,500	20	108,800
	6,000 - 7,000 Gal.	6,500	1,390	9,079,200	15	100,200
	7,000 - 8,000 Gal.	7,500	929	6,998,200	17	126,600
	8,000 - 9,000 Gal.	8,500	603	5,148,000	8	67,900
	9,000 - 10,000 Gal.	9,500	420	4,017,700	4	38,300
	10,000 - 11,000 Gal.	10,500	367	3,871,100	7	73,800
	11,000 - 12,000 Gal.	11,500	230	2,656,200	6	69,300
	12,000 - 13,000 Gal.	12,500	168	2,105,000	3	38,000
	13,000 - 14,000 Gal.	13,500	112	1,515,300	3	40,600
	14,000 - 15,000 Gal.	14,500	107	1,557,900	3	42,800
	15,000 - 16,000 Gal.	15,500	74	1,146,500	4	63,000
	16,000 - 17,000 Gal.	16,500	64	1,057,900	2	33,000
	17,000 - 18,000 Gal.	17,500	64	1,125,400	6	104,300
	18,000 - 19,000 Gal.	18,500	46	851,700	1	18,700
	19,000 - 20,000 Gal.	19,500	46	902,200	2	38,900
	20,000 - 25,000 Gal.	22,500	159	3,523,400	6	133,100
	25,000 - 30,000 Gal.	27,500	99	2,695,600	4	111,600
	30,001 - 40,000 Gal.	35,000	90	3,094,300	5	185,200
	40,001 - 50,000 Gal.	45,000	58	2,617,900	13	582,200
	50,001 - 60,000 Gal.	55,000	43	2,380,800	2	109,100
	60,001 - 70,000 Gal.	65,000	40	2,597,300	0	0
	70,001 - 80,000 Gal.	75,000	34	2,557,600	1	77,200
80,001 - 90,000 Gal.	85,000	21	1,789,600	0	0	
90,001 - 100,000 Gal.	95,000	21	1,967,300	2	183,700	
over 100,000 Gal.	391,658	102	20,236,400	3	419,600	
	Sub-Total		<u>35,544</u>	<u>160,768,200</u>	<u>516</u>	<u>3,320,500</u>
	Average Monthly "Meter Setting" Count		<u>2,962</u>		<u>43</u>	
	Average Usage (Gallons Per Month)			<u>4,523</u>		<u>6,435</u>
	Total Water Purchased per '05 PSC Report			<u>221,771,000</u>		Gallons
	Total Water Sold per 12 Month Forecast			<u>164,088,700</u>		Gallons
	Total Water Sold per '05 PSC Report			<u>152,391,900</u>		Gallons

X. FACILITY CHARACTERISTICS OF PROPOSED WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable

The recommended project is one that offers several advantages and improves the three primary deficiencies in the water system: low pressure in certain areas of the system, extending water service to

XIII. PROPOSED CONNECTION FEES FOR EACH SIZE METER CONNECTION

* NOTE: No connection fee increase is expected as a result of this project

Meter Size	Connection Fee	Minimum Water Usage for Each Size Meter	
5/8 x 3/4"	\$450.00	2,000	gallons
3/4 Inch	At Cost	2,000	gallons
1 - Inch	At Cost	2,000	gallons
1-1/2" Inch	At Cost	2,000	gallons
2 - Inch	At Cost	2,000	gallons

XIV. WATER RATES - PROPOSED

A. Proposed Rates with RUS Grant:

First	<u>2,000</u>	Gallons @	<u>\$ 20.23</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 10.60</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 9.44</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 8.28</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 6.66</u>	per 1,000 Gallons

B. Proposed Rates without RUS Grant:

First	<u>2,000</u>	Gallons @	<u>\$ 20.94</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 10.97</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 9.77</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 8.58</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 6.89</u>	per 1,000 Gallons

XV FORECAST OF WATER USAGE - INCOME - EXISTING SYSTEM - EXISTING USERS - EXISTING RATES

For Period January 1, 2005 to December 31, 2005.

Meter Size	MONTHLY WATER USAGE	Residential/ Farmer				Non-Residential/ Commercial					
		No of Cust.	Total Usage	Average Usage	Average Bill	Annual Income	No of Cust.	Total Usage	Average Usage	Average Bill	Annual Income
All	0 - 1,000	7,013	2,227,700	318	\$ 17.90	\$ 125,533	185	66,800	361	\$ 17.90	\$ 3,312
	1,000 - 2,000	6,695	11,396,700	1,702	\$ 17.90	\$ 119,841	104	185,200	1,781	\$ 17.90	\$ 1,862
	2,000 - 3,000	5,509	14,143,000	2,567	\$ 23.22	\$ 127,924	42	107,000	2,548	\$ 23.04	\$ 968
	3,000 - 4,000	4,973	17,625,000	3,544	\$ 32.38	\$ 161,046	20	70,200	3,510	\$ 32.06	\$ 641
	4,000 - 5,000	3,648	16,498,800	4,523	\$ 41.56	\$ 151,621	28	125,400	4,479	\$ 41.15	\$ 1,152
	5,000 - 6,000	2,419	13,384,500	5,533	\$ 51.04	\$ 123,466	20	108,800	5,440	\$ 50.17	\$ 1,003
	6,000 - 7,000	1,390	9,079,200	6,532	\$ 60.41	\$ 83,967	16	100,200	6,680	\$ 61.80	\$ 927
	7,000 - 8,000	929	6,998,200	7,533	\$ 69.80	\$ 64,844	17	126,600	7,447	\$ 68.99	\$ 1,173
	8,000 - 9,000	603	5,148,000	8,537	\$ 79.22	\$ 47,770	8	67,900	8,488	\$ 78.75	\$ 630
	9,000 - 10,000	420	4,017,700	9,566	\$ 88.87	\$ 37,325	4	38,300	9,575	\$ 88.95	\$ 356
	10,000 - 11,000	367	3,871,100	10,548	\$ 97.52	\$ 35,788	7	73,800	10,543	\$ 97.47	\$ 682
	11,000 - 12,000	230	2,656,200	11,549	\$ 105.87	\$ 24,350	6	69,300	11,550	\$ 105.88	\$ 635
	12,000 - 13,000	168	2,105,000	12,530	\$ 114.06	\$ 19,163	3	38,000	12,667	\$ 115.21	\$ 346
	13,000 - 14,000	112	1,515,300	13,529	\$ 122.41	\$ 13,710	3	40,600	13,533	\$ 122.44	\$ 367
	14,000 - 15,000	107	1,557,900	14,560	\$ 131.01	\$ 14,019	3	42,800	14,267	\$ 128.57	\$ 386
	15,000 - 16,000	74	1,146,500	15,493	\$ 138.81	\$ 10,272	4	63,000	15,750	\$ 140.95	\$ 564
	16,000 - 17,000	64	1,057,900	16,530	\$ 147.46	\$ 9,438	2	33,000	16,500	\$ 147.22	\$ 294
	17,000 - 18,000	64	1,125,400	17,584	\$ 156.27	\$ 10,001	6	104,300	17,383	\$ 154.59	\$ 928
	18,000 - 19,000	46	851,700	18,515	\$ 164.04	\$ 7,546	1	18,700	18,700	\$ 165.59	\$ 166
	19,000 - 20,000	46	902,200	19,613	\$ 173.21	\$ 7,968	2	38,900	19,450	\$ 171.85	\$ 344
	20,000 - 25,000	159	3,523,400	22,160	\$ 192.27	\$ 30,571	6	133,100	22,183	\$ 192.44	\$ 1,155
	25,000 - 30,000	99	2,695,600	27,228	\$ 229.42	\$ 22,713	4	111,600	27,900	\$ 234.35	\$ 937
	30,001 - 40,000	90	3,094,300	34,381	\$ 281.85	\$ 25,367	5	185,200	37,040	\$ 301.34	\$ 15,288
	40,001 - 50,000	58	2,617,900	45,136	\$ 353.29	\$ 20,491	13	582,200	44,785	\$ 351.22	\$ 4,566
50,001 - 60,000	43	2,380,800	55,367	\$ 413.55	\$ 17,783	2	109,100	54,550	\$ 408.74	\$ 817	
60,001 - 70,000	40	2,597,300	64,933	\$ 469.89	\$ 18,796	0	0		\$ -	\$ -	
70,001 - 80,000	34	2,557,600	75,224	\$ 530.51	\$ 18,037	1	77,200	77,200	\$ 542.15	\$ 542	
80,001 - 90,000	21	1,789,600	85,219	\$ 589.38	\$ 12,377	0	0		\$ -	\$ -	
90,001 - 100,000	21	1,967,300	93,681	\$ 639.22	\$ 13,424	2	183,700	91,850	\$ 628.44	\$ 1,257	
over 100,000	102	20,236,400	198,396	\$ 1,255.99	\$ 128,111	3	419,600	139,867	\$ 911.25	\$ 15,288	
	Sub-totals	35,544	160,768,200			\$ 1,503,260	516	3,320,500			\$ 56,585

Total Projected Annual Revenue With Current Rates - per forecast \$ 1,559,845

Actual Water Sales FY2005 \$ 1,472,342

XVI. FORECAST OF WATER USAGE - INCOME - NEW USERS - EXTENSION ONLY - CURRENT RATES

Note: Approximately 69 new customers are expected to be served, that are typical 4,500 gallon users (5/8").

Meter Size	MONTHLY WATER USAGE	Residential/ Farmer					Non-Residential/ Commercial				
		No of Cust.	Total Usage	Average Usage	Average Bill	Annual Income	No of Cust.	Total Usage	Average Usage	Average Bill	Annual Income
All	0 - 1,000										
	1,000 - 2,000										
	2,000 - 3,000										
	3,000 - 4,000										
	4,000 - 5,000	828	3,726,000	4,500	\$ 41.35	\$ 34,238					
	5,000 - 6,000										
	6,000 - 7,000										
	7,000 - 8,000										
	8,000 - 9,000										
	9,000 - 10,000										
	10,000 - 11,000										
	11,000 - 12,000										
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	30,001 - 40,000										
	40,001 - 50,000										
	50,001 - 60,000										
	60,001 - 70,000										
70,001 - 80,000											
80,001 - 90,000											
90,001 - 100,000											
over 100,000											
Sub-totals		828	3,726,000			\$ 34,238	0	-			\$ -

Total Projected Additional Annual Revenue With Current Rates \$ 34,238

XVII. FORECAST OF WATER USAGE - INCOME - EXISTING & NEW USERS - RECOMMENDED GRANT RATES

Note: Approximately 69 new customers are expected to be served, that are typical 4,500 gallon users (5/8").

Meter Size	MONTHLY WATER USAGE	Residential/ Farmer					Non-Residential/ Commercial				
		No of Cust.	Total Usage	Average Usage	Average Bill	Annual Income	No of Cust.	Total Usage	Average Usage	Average Bill	Annual Income
All	0 - 1,000	7,013	2,227,700	318	\$ 20.23	\$ 141,873	185	66,800	361	\$ 20.23	\$ 3,743
	1,000 - 2,000	6,695	11,396,700	1,702	\$ 20.23	\$ 135,440	104	185,200	1,781	\$ 20.23	\$ 2,104
	2,000 - 3,000	5,509	14,143,000	2,567	\$ 26.24	\$ 144,572	42	107,000	2,548	\$ 26.03	\$ 1,093
	3,000 - 4,000	4,973	17,625,000	3,544	\$ 36.60	\$ 182,001	20	70,200	3,510	\$ 36.24	\$ 725
	4,000 - 5,000	4,476	20,224,800	4,518	\$ 46.93	\$ 210,041	28	125,400	4,479	\$ 46.50	\$ 1,302
	5,000 - 6,000	2,419	13,384,500	5,533	\$ 57.68	\$ 139,529	20	108,800	5,440	\$ 56.69	\$ 1,134
	6,000 - 7,000	1,390	9,079,200	6,532	\$ 68.27	\$ 94,891	15	100,200	6,680	\$ 69.84	\$ 1,048
	7,000 - 8,000	929	6,998,200	7,533	\$ 78.88	\$ 73,280	17	126,600	7,447	\$ 77.97	\$ 1,325
	8,000 - 9,000	603	5,148,000	8,537	\$ 89.53	\$ 53,984	8	67,900	8,488	\$ 89.00	\$ 712
	9,000 - 10,000	420	4,017,700	9,566	\$ 100.43	\$ 42,180	4	38,300	9,575	\$ 100.53	\$ 402
	10,000 - 11,000	367	3,871,100	10,548	\$ 110.20	\$ 40,444	7	73,800	10,543	\$ 110.15	\$ 771
	11,000 - 12,000	230	2,656,200	11,549	\$ 119.65	\$ 27,519	6	69,300	11,550	\$ 119.66	\$ 718
	12,000 - 13,000	168	2,105,000	12,530	\$ 128.91	\$ 21,657	3	38,000	12,667	\$ 130.20	\$ 391
	13,000 - 14,000	112	1,515,300	13,529	\$ 138.35	\$ 15,495	3	40,600	13,533	\$ 138.38	\$ 415
	14,000 - 15,000	107	1,557,900	14,560	\$ 148.07	\$ 15,844	3	42,800	14,267	\$ 145.31	\$ 436
	15,000 - 16,000	74	1,146,500	15,493	\$ 156.89	\$ 11,610	4	63,000	15,750	\$ 159.31	\$ 637
	16,000 - 17,000	64	1,057,900	16,530	\$ 166.67	\$ 10,667	2	33,000	16,500	\$ 166.39	\$ 333
	17,000 - 18,000	64	1,125,400	17,584	\$ 176.63	\$ 11,304	6	104,300	17,383	\$ 174.73	\$ 1,048
	18,000 - 19,000	46	851,700	18,515	\$ 185.41	\$ 8,529	1	18,700	18,700	\$ 187.16	\$ 187
	19,000 - 20,000	46	902,200	19,613	\$ 195.78	\$ 9,006	2	38,900	19,450	\$ 194.24	\$ 388
20,000 - 25,000	159	3,523,400	22,160	\$ 217.31	\$ 34,553	6	133,100	22,183	\$ 217.51	\$ 1,305	
25,000 - 30,000	99	2,695,600	27,228	\$ 259.28	\$ 25,669	4	111,600	27,900	\$ 264.84	\$ 1,059	
30,001 - 40,000	90	3,094,300	34,381	\$ 318.51	\$ 28,666	5	185,200	37,040	\$ 340.52	\$ 15,288	
40,001 - 50,000	58	2,617,900	45,136	\$ 399.24	\$ 23,156	13	582,200	44,785	\$ 396.90	\$ 5,160	
50,001 - 60,000	43	2,380,800	55,367	\$ 467.38	\$ 20,097	2	109,100	54,550	\$ 461.93	\$ 924	
60,001 - 70,000	40	2,597,300	64,933	\$ 531.08	\$ 21,243	0	0		\$ -	\$ -	
70,001 - 80,000	34	2,557,600	75,224	\$ 599.62	\$ 20,387	1	77,200	77,200	\$ 612.78	\$ 613	
80,001 - 90,000	21	1,789,600	85,219	\$ 666.19	\$ 13,990	0	0		\$ -	\$ -	
90,001 - 100,000	21	1,967,300	93,681	\$ 722.55	\$ 15,173	2	183,700	91,850	\$ 710.35	\$ 1,421	
over 100,000	102	20,236,400	198,396	\$ 1,419.95	\$ 144,835	3	419,600	139,867	\$ 1,030.14	\$ 15,288	
	Sub-totals	36,372	164,494,200			\$ 1,737,635	516	3,320,500			\$ 59,970

Total Projected Annual Revenue With Proposed Rates - *per forecast* \$ 1,797,605
 Actual Water Sales FY2005 \$ 1,472,342

Additional Revenue from Rate Increase \$ 325,263 (-13% Increase in Water Sales)

XVIII. CURRENT OPERATING BUDGET - (FYE December 31, 2005 – Based on 2005 Audit & PSC Report)

A.	Operating Income	
	Water Sales	\$ 1,472,342
	Reconnect/Late Charge Fees	\$ 28,347
	Other (Describe)	\$ 26,462
	Total Operating Income	<u>\$ 1,527,151</u>
B.	Operation and Maintenance Expenses:	
	Payroll Expense	\$300,888
	Purchased Water	\$645,354
	Distribution Expense	\$16,009
	Contract Services	\$30,622
	Utilities	\$21,329
	Administrative Expense	\$36,389
	Office Expenses	\$27,037
	Insurance	\$30,411
	Travel	\$17,072
	Bad Debts	\$20,356
	Miscellaneous	\$6,366
	Total Operating Expenses	<u>\$ 1,151,833</u>
	Net Operating Income	<u>\$ 375,318</u>
C.	Non-Operating Income:	
	Interests on Deposits	\$ 12,313
	Debt Service - City of Elkton	\$ 57,640
	Total Non-Operating Income	<u>\$ 69,953</u>
D.	Net Income	<u>\$ 445,271</u>
E.	Debt Repayment	
	RUS Interest (Bonds pre-2005)	\$ 169,242.00
	RUS Principal (Bonds pre-2005)	\$ 97,507.00
	Non-RUS Principal	\$ -
	Non-RUS Interest	\$ -
	Total Debt Repayment	<u>\$ 266,749.00</u>
F.	Balance Available for Coverage and Depreciation	<u>\$ 178,522.00</u>

XIX. PROPOSED OPERATING BUDGET – EXISTING & NEW USERS – RECOMMENDED RATE INCREASE

(1st Full Year of Operation) Year Ending 2007

A	Operating Income		
	Water Sales	\$	1,702,435 (1)
	Reconnect/Late Charge Fees	\$	28,347
	Other (Describe)	\$	26,462
	Total Operating Income	\$	1,757,244
B.	Operation and Maintenance Expenses:		
	Payroll Expense	\$	309,888 (3)
	Purchased Water	\$	735,121 (2)
	Distribution Expense	\$	16,509 (3)
	Contract Services	\$	31,522 (3)
	Utilities	\$	21,929 (3)
	Administrative Expense	\$	37,489 (3)
	Office Expenses	\$	27,837 (3)
	Insurance	\$	31,311 (3)
	Travel	\$	17,572 (3)
	Bad Debts	\$	20,956 (3)
	Miscellaneous	\$	6,566 (3)
	Total Operating Expenses	\$	1,256,700
	Net Operating Income	\$	500,544
C.	Non-Operating Income:		
	Interests on Deposits	\$	12,313
	Debt Service - City of Elkton	\$	57,640
	Total Non-Operating Income	\$	69,953
D.	Net Income	\$	570,497
E.	Debt Repayment		
	RUS Interest (Bonds pre-2005)	\$	161,711 (4)
	RUS Principal (Bonds pre-2005)	\$	109,500 (4)
	RUS Interest (2005 Issue)	\$	45,375 (4)
	RUS Principal (2005 Issue)	\$	12,475 (4)
	RUS Interest (2007 Issue)	\$	49,500 (4)
	RUS Principal (2007 Issue)	\$	13,600 (4)
	Non-RUS Interest	\$	- (4)
	Non-RUS Principal	\$	- (4)
	Total Debt Repayment	\$	392,161
F.	Balance Available for Coverage and Depreciation	\$	178,336

Notes:

1. Based on 13% flat rate increase (Note: Table XVII forecasted \$1,797,605).
2. Based on 12% nominal increase due to wholesale increase of \$2.91/1,000 gallons to \$3.26/1,000 gallons.
3. Based on 3% nominal increase due to anticipated annual cost increases
4. Estimated Debt Service for 2007.

XX. PROPOSED OPERATING BUDGET – NEW USERS – IMPROVEMENTS ONLY – EXISTING WATER RATES

(1 st Full Year of Operation)	Year Ending <u>2007</u>
A. Operating Income	
Water Sales	\$ 34,238 (1)
Reconnect/Late Charge Fees	\$ -
Other (Describe)	\$ -
Total Operating Income	\$ 34,238
B. Operation and Maintenance Expenses:	
Payroll Expense	\$ 9,000 (3)
Purchased Water	\$ 10,843 (2)
Distribution Expense	\$ 500 (3)
Contract Services	\$ 900 (3)
Utilities	\$ 600 (3)
Administrative Expense	\$ 1,100 (3)
Office Expenses	\$ 800 (3)
Insurance	\$ 900 (3)
Travel	\$ 500 (3)
Bad Debts	\$ 600 (3)
Miscellaneous	\$ 200 (3)
Total Operating Expenses	\$ 25,943
Net Operating Income	\$ 8,295
C. Non-Operating Income:	
Interests on Deposits	\$ -
Debt Service - City of Elkton	\$ -
Total Non-Operating Income	\$ -
D. Net Income	
Net Income	\$ 8,295
E. Debt Repayment	
RUS Interest (Bonds pre-2005)	\$ -
RUS Principal (Bonds pre-2005)	\$ -
RUS Interest (2005 Issue)	\$ -
RUS Principal (2005 Issue)	\$ -
RUS Interest (2007 Issue)	\$ 49,500 (4)
RUS Principal (2007 Issue)	\$ 13,600 (4)
Non-RUS Interest	\$ -
Non-RUS Principal	\$ -
Total Debt Repayment	\$ 63,100
F. Balance Available for Coverage and Depreciation	
Balance Available for Coverage and Depreciation	\$ (54,805)

Notes:

1. Based on 69 Customers; 4,500 gallons per month usage and current rates.
2. Based on increased water demand of 3,726,000 gallons per year at \$2.91 wholesale rate.
3. Based on 3% nominal increase due to anticipated annual cost increases.
4. Based on a \$1,200,000 RUS loan at 4.125% & 38 payments.

Final Engineering Report

prepared for the

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JUL 21 2008

PUBLIC SERVICE
COMMISSION

**Todd
County
Water
District**



**Hammacksville Tank Addition and System
Extension Project**

Dr. George Brown
Chairman

Edward Slack
Treasurer

Lois Brown
Secretary

Tony Adler
Commissioner

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John Haley
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7-808

July 2008

Final Engineering Report
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- A Bid Tabulation – June 27, 2008
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1.0 INTRODUCTION

The Todd County Water District (TCWD) was chartered in 1971 to supply potable water to rural residents of Todd County, Kentucky. The District is governed by five board members, and is regulated by the Kentucky Public Service Commission. The Board includes three members from Todd County and two from Logan County because of the significant number of customers served by the TCWD in the Lake Malone area of Logan County. Todd County has authority to plan, design, finance, construct, operate, replace and maintain the distribution facilities within its service area.

The Todd County water system is comprised of over 397 miles of water distribution lines and four water storage tanks with a total capacity of 717,800 gallons, all of which serves approximately 3,051 customers in rural Todd County and a small portion of northwestern Logan County. As of Spring 2003, the Todd County Water District began to purchase all of its treated water from the recently completed water system of the Logan Todd Regional Water Commission (LTRWC). The Commission's water treatment facility is rated at 10 million gallons per day, and its distribution system consists of nearly 85 miles of pipeline and three storage tanks totaling 3,500,000 gallons in capacity. Since going online with the Commission, the average daily wholesale water demand within the Todd County system has averaged 579,000 gallons per day. Todd County has four meter stations with the Commission, two located in the southern part of the county, one in the north and one at Allensville.

The TCWD is a relatively large water system covering approximately 80% of the Todd County area. With the exception of the southwestern part of the county, most of the roads within the county have water service, with only short extensions needed from time to time to accommodate new development.

The main problems that faced the TCWD were its long-term supply of treated water, providing adequate water storage in the southern half of Todd County, extending water service to unserved areas, and installing lines for improved hydraulic performance. The water supply issue has been resolved with their transition to the Logan Todd Regional system. The remaining problems will be alleviated by the Hammacksville Tank Addition & System Extension Project.

The proposed project involves construction of over 28 miles of water line on 25 rural roadways. Most of these lines are being planned primarily to serve new customers in need of a safe supply of drinking water, while others are being built to improve hydraulic performance of the existing distribution system. Also, the project will add a new elevated water storage tank in the southern end of the County. The new tank will have a capacity of 250,000 gallons. Also included in the project is the planned radio read meter conversion for the entire inventory of water meters. The total estimated cost of the proposed project is \$2,800,000.

2.0 PROJECT PLANNING AREA

2.1 Location

The waterline construction of the Todd County Water District's project will be spread out along various rural roadways. Over 28 miles of new waterline construction or upgrade are proposed for 25 different roadways. The affected roadways are listed in Table 1.

Table 1
Waterline Information
 (See Exhibit E-1 for Locations)

Map I.D.	PRIMARY ROUTES ROAD NAME	Length (miles)	Line Size (inches)
①	Adams Road	0.3	3
②	Chestnut Road	2.0	3
③	Big Pond Road	0.3	3
④	Moore Road	0.3	3
⑤	Boley Road	1.0	4
⑥	Brown Road	0.4	3
⑦	Watts-Cemetery Road	1.9	6
⑧	Davis Mill Road	1.3	4
⑨	KY Highway 102 Tie-In	1.3	4
⑩	KY Highway 104 Tie-In	1.2	4
⑪	Jim Green Road	1.7	4
⑫	Jonah Wilson Road	0.4	3
⑬	Barker's Mill Road	4.5	6
⑭	Machine Shop Road	0.6	3
⑮	Markham Road	1.9	4
⑯	Mimms Road	2.3	4
⑰	Mt. Sharon Road	0.7	4
⑱	US Highway 68	0.9	4
⑲	Pleasant Grove Road	1.0	4
⑳	Phillips Road	0.7	3
㉑	Casey Lane	0.5	3
㉒	Short Cut Road Tie-In	0.8	3
㉓	Squire Groves Road	1.2	4
㉔	Strader-Sears Road	0.6	3
㉕	Utley Road	0.6	3
	TOTAL	28.3	

The tank portion of the project involves the construction of a 250,000-gallon elevated water storage tank. The tank's proposed location is within the small community of Hammacksville in southwestern Todd County. Todd County does not have a storage facility of significance in the southern half of the county other than a

small standpipe, which only serves the Allensville community. The proposed overflow of the tank will be 754', which would be just below the current overflow of the Logan Todd Regional Water Commission's elevated tank in South Todd. A telemetry system and control valve mechanism will be used to fill the new tank, and its operation and system pressure will be maintained by the tank's water level.

The proposed project is illustrated on the county highway map labeled as Exhibit E-1.

2.2 Land Use and Environmental Resources Present

As stated earlier, the line portion of the project is spread out along over 28 miles of roadway, all within Todd County's service area. The line work is proposed to be constructed within utility easements that will be acquired by the Todd County Water District. The project will affect four main resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. Industrial, commercial, residential and agriculture resources in the entire District will be affected upon completion of the project by providing improved pressure and abundant storage capacity.

The project has been reviewed by the Kentucky State Clearinghouse. The Clearinghouse review identified no conflicts with state or local planning, and recommended approval of the project. An archeological investigation was conducted for the tank sites to determine if the proposed tank site affected historical and archeological resources that may be eligible for listing in the National Register for Historical Places. The State Historical Preservation Officer has reviewed the tank site's investigative report, and he has concurred with the report's assessment.

2.3 Growth Areas and Population Trends

The population history of Todd County is an important element in determining the growth patterns over the last 50 years. Analysis of the population history will assist in forming a reliable estimate of the future water needs of the project area.

According to historical records, Todd County's population has hovered around 11,000 persons for the past 40 years. Table 2 provides the population history and projections of the county based on data obtained from the U.S. Bureau of the Census.

Table 2
Population History and Projections

	Historical							Projections						
	1940	1945	1950	1955	1960	1965	1970	2000	2005	2010	2015	2020	2025	2030
YEAR	1940	1945	1950	1955	1960	1965	1970	2000	2005	2010	2015	2020	2025	2030
TODD	Elkton	1,214	1,312	1,448	1,612	1,815	1,789	1,984	1,968	2,025	2,117	2,205	2,288	2,365
	Guthrie	1,272	1,253	1,211	1,200	1,361	1,504	1,469	1,457	1,500	1,567	1,633	1,694	1,751
	Trenton	572	577	542	496	465	378	419	416	428	448	466	484	500
	Rural Areas	11,176	9,748	8,163	7,515	8,233	7,269	8,099	8,031	8,267	8,639	9,001	9,336	9,652
	Todd County	14,234	12,890	11,364	10,823	11,874	10,940	11,971	11,872	12,220	12,771	13,305	13,802	14,268
	% Change		-9.4%	-11.8%	-4.8%	9.7%	-7.9%	9.4%	-0.8%	2.9%	4.5%	4.2%	3.7%	3.4%
Notes to Table 1:		1. Shaded areas have been calculated based on census and projection data.												
Sources to Table 1:		1. Historical & Projections provided by the KY State Data Center and Census Bureau University of Louisville, State Data Center (http://cbpa.louisville.edu/ksdc/)												

Analyzing Table 2 from 1940 to 2000 shows that Elkton and Guthrie have grown overall with some fluctuations, while Trenton and the rural areas have declined in population. Recent years have seen growth in all areas, and projections call for modest growth over the next 30 years.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. Over the past ten years, the community has experienced the benefit of a new four-lane highway, which has increased the areas access to larger Kentucky cities such as Hopkinsville and Bowling Green plus improved access to Interstates 24 and 65. High speed internet and wireless technology has gradually entered the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education. Over the last five years, the TCWD and other communities within the county have worked together to secure a reliable source of potable water for the next thirty years as the county goes online with the recently completed Logan Todd Regional Water Commission.

Further analysis of these projections indicates Todd County's population is projected to grow on average about 3.5% every five years, which adds about 2,300 persons by 2030. While this growth rate is higher than historical, the projections, when compared with estimates by area development districts, universities, etc., are sound. It should be noted that population would be impacted by the availability or

unavailability of water supply. An ample supply of water will promote growth while the lack thereof will limit growth. These factors must be considered when reviewing this report since many assumptions are dependent on these projections.

3.0 EXISTING FACILITIES

3.1 History and Assets

The Todd County Water District (TCWD) was formed by Todd County Court order in 1971 to supply potable water to rural residents of Todd County, Kentucky. There are four public water systems in Todd County, those being Elkton, Guthrie, Trenton and the TCWD. The Elkton and Guthrie systems serve the incorporated areas of those communities and only limited areas adjacent to town. The Trenton system serves the town's incorporated area, and a portion of the rural area south of town along Highway 104.

The TCWD water system is comprised of approximately 397 miles of water line and a total water storage capacity of 717,800 gallons. The existing distribution system consists of 10", 8", 6", 4", and 3" PVC lines. The general service area is depicted in Exhibit 1, which illustrates the general distribution layout. The existing transmission and distribution lines generally radiate from their decommissioned (2003) water treatment plant located near the Allegre community in northern Todd County. The system is well laid out with many loops. However, there are some dead end and low-flow lines within the system that require frequent flushing.

TCWD has four water storage structures to serve the water system and one primary pumping station that boosts water into the higher-pressure north zone. Only three of the four existing water storage tanks provide useful storage for the TCWD system. The newly constructed Clifty elevated water tank, and the Coal Bank Road tank provide 250,000 and 150,000 gallons of storage respectively to the northern pressure zone. The Allensville standpipe has a storage capacity of 67,800 gallons and provides pressure to a small area in the southeastern part of the County. The fourth tank located on Allenders Hill acts as a pump tank for the Logan Todd Regional Water Commission's booster pump station at that location. Currently, the southern part of the county is served directly from an existing 1,500,000 gallon elevated tank owned by the LTRWC.

The Logan Todd Regional system supplies water to the TCWD system in four locations. The two southern feed points are located at the base of the LTRWC tank described above and near the City of Trenton, while the others are located at the Allender's Hill tank in northern Todd County, and at Allensville. Flow through each of these metering points is controlled by the LTRWC SCADA system. The northern pressure zone is controlled by level in the Clifty and Coal Bank Road tanks, the southern pressure zone is fed directly from the LTRWC tank and the Allensville system is controlled by the level in the Allensville tank.

3.2 Existing Financial Charges and Status

3.2.1 Existing Rate Schedule (Rates effective 8-1-03)

All Meter Sizes

First	<u>2,000</u>	Gallons @	<u>\$ 17.90</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 9.38</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 8.35</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 7.33</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 5.89</u>	per 1,000 Gallons

3.2.2 O&M Costs (FYE 12/31/07)

Item No.	Expense Item	Amount
1	Payroll Expense	\$ 273,484.00
2	Purchased Water	\$ 720,354.00
3	Distribution Expense	\$ 48,606.00
4	Contract Services	\$ 32,815.00
5	Utilities	\$ 31,943.00
6	Administrative Expense	\$ 40,050.00
7	Office Expenses	\$ 31,522.00
8	Depreciation	\$ 360,690.00
9	Insurance	\$ 40,187.00
10	Travel	\$ 17,395.00
11	Bad Debts	\$ 18,454.00
12	Miscellaneous	\$ 4,159.00
Total Utility Expense		\$ 1,619,659.00

3.2.3 Long Term Debts (as of 12/31/07)

Date of Issue	Bond/Note Holder	Principal Balance	Maturity Date	Bond Type	Interest Rate
1979	Rural Dev	\$ 355,311	2012	Revenue	5.000%
1987	Rural Dev	\$ 479,000	2027	Revenue	5.000%
1990	Rural Dev	\$ 516,000	2030	Revenue	5.000%
1992	Rural Dev	\$ 174,600	2032	Revenue	5.000%
1996	Rural Dev	\$ 476,500	2036	Revenue	4.875%
2000	Rural Dev	\$ 756,000	2040	Revenue	4.750%
2005	Rural Dev	\$ 1,100,000	2045	Revenue	4.125%
Total		\$ 3,857,411			

4.0 NEED FOR PROJECT

4.1 Health and Safety

The majority of the water lines are proposed to bring water service to nearly 50 potential customers that currently rely on groundwater sources or hauled water. Providing water to these potential residences is consistent with Todd County's approved Water Supply Plan as well as the state's initiative to provide adequate and potable water to all homes by the year 2020.

The proposed elevated water storage tank will provide an ample storage facility in the District's southern half. Currently, the southern half of the county is solely dependant upon the Logan Todd Regional Water Commission's water tank, whose purpose is to maintain pressure for all water systems in Todd County as well as Oak Grove in Christian County. The new tank will have a capacity of 250,000 gallons, and the new tank will increase the total system storage volume to near 1,000,000 gallons.

4.2 System O&M

There are two primary reasons for the District's proposed project. The first is to provide a reliable and potable water source to approximately 50 potential residences as described in the preceding section. The second reason is to improve the operation and maintenance of the system by expanding the storage capacity and hydraulic capacity of the southern portion of the system. As previously stated, the water system includes several dead end or low flow lines. Some of the proposed line extensions will connect dead end lines to loop water flow, which reduces the need for frequent flushing to rid the line of stagnant water.

4.3 Growth

As mentioned earlier, the population of Todd County and the rural areas should grow by an average of 3.5% every five years over the next 30 years based upon census records and expected growth. The proposed project is necessary to provide water service to approximately 50 potential customers. Overall, the proposed project is being designed to ultimately improve water service to all 3,051 customers. The new infrastructure will ensure the District's ability to properly serve the existing customer base plus future growth in the area.

5.0 ALTERNATIVES CONSIDERED

A resolution to the problems faced by the Todd County Water District is a relatively simple project with two alternatives.

5.1 Alternative 1

The first obvious alternative is to do nothing or a smaller variation of the project. However, the District would continue their current endurance of operation, maintenance and water capacity problems plus approximately 50 residences would remain unserved. Therefore, the 'do nothing' alternative is not a viable option as it would only prolong the problems.

5.2 Alternative 2

The second alternative is one that offers several advantages and resolves the three critical deficiencies in the water system. This alternative provides water service to unserved residences; eliminates some dead end lines that suffer with water quality problems and require frequent flushing; and provides a water storage

structure in the southern half of the county eliminating the direct dependency of another utility's water tank. The project adheres with the Commonwealth's drive to provide a reliable and potable water source to all families by the year 2020. Also, the project provides the water storage facility in a high demand agriculture area, which will reduce seasonal pressure spikes and provide at least 30-psi pressure during all demand times.

5.2.1 *Description*

The project involves construction of 28.3 miles of water line on twenty-five rural roads in various parts of Todd County. Most of these lines are being built primarily to serve new customers in need of a safe supply of drinking water, while others are being built to improve the hydraulic performance of the existing distribution system. The District does not have any water storage facilities in the southern end of their system, requiring the use of another utility's water tank to maintain pressure. This will be corrected by the construction of a 250,000-gallon water storage tank (O.F. = 754'). Miscellaneous low-pressure and/or low-flow areas can be corrected by building interconnecting lines to complete hydraulic circuits or "loops". These loops will also improve the water quality by cutting down on the stagnant water in dead-end lines.

In a further attempt to improve service to customers, Todd County is also proposing to install additional telemetry components to allow the operators to monitor the performance of the system in greater detail, and to identify problems earlier. The layout of the proposed lines is illustrated in Exhibit 1.

5.2.2 *Environmental Impacts and Land Requirements*

The alternative has little to no impact upon the environment and land resources because the proposed construction will be done along existing easements and highways. The line extensions and upgrades are proposed for construction in existing pipeline easements where possible or in county/state right-of-way and easements as necessary. The District has acquired a one acre tract in the Hammacksville community for the proposed elevated water tank. As mentioned earlier, the project will affect four main land resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No other effect to the resources is expected after construction of the facilities is complete.

5.2.3 *Construction Problems*

There are no severe construction problems foreseen for the project. The Todd County service area has varying soil conditions ranging from near ideal in some of the southern parts of the county, to sporadic instances of rock outcrops in the north. All of the pipeline routes and the proposed tank sites are very accessible, and there is little evidence of a high water table. However, mobilization will be significant during the project since all of the

proposed water lines are spread out throughout the service area. Also, several of the waterline extensions will require creek crossings, but none of which should be unmanageable or exceptionally costly.

5.2.4 *Cost Estimates*

The Todd County Water District's Hammacksville Tank Addition & System Extension Project is estimated to have a total cost of \$2,800,000. The project cost consists of construction, non-construction and contingency costs, which are \$2,345,486, \$330,650 and \$123,864 respectively. The project is anticipated to be funded in part by a \$600,000 grant and \$1,800,000 loan from Rural Development, plus a \$400,000 grant from the Kentucky Infrastructure Authority.

6.0 PROPOSED PROJECT

6.1 Project Design

6.1.1 *Water Supply*

The Logan Todd Regional Water Commission's plant will serve the proposed project. Based upon figures from LTRWC, the newly completed plant is producing approximately 4,000,000 gallons per day, which is approximately 40% of the design capacity. Therefore, sufficient capacity exists to serve the Todd County project since the estimated 50 new customers should, based on average usage, only add an additional 7,500 gallon per day total demand.

6.1.2 *Storage*

The proposed project will involve the construction of a new 250,000-gallon elevated storage tank (OF = 754'). This new tank will be constructed in the Hammacksville community, which is located in the southern end of the county where there is presently no large water structure belonging to the District. The new tank will place a sufficient water storage supply in a high demand agriculture area producing a steady pressure environment of at least 40 psi in the higher elevations of the community. The proposed tank site is illustrated in Exhibit E-1.

6.1.3 *Distribution Layout*

The waterline construction of the Todd County Water District's system extension project will be spread out over 28 miles of rural roadways. The affected roadways are not clustered together as typical in most system upgrades, but they are rather "fill-in" lines to serve new customers and hydraulic improvements for water quality and flow. The line portion of the project involves the new construction of approximately 39,428 LF of 3" treated water line, 76,247 LF of 4" treated water line, and 33,730 LF of 6" treated water line. Also, in an

attempt to improve service to customers, Todd County is proposing to install additional telemetry system equipment to allow the operators to monitor the performance of the entire system in greater detail, and to identify problems earlier.

The proposed line extensions and possible tank site area are illustrated in Exhibits E-1.

6.1.4 *Regulatory Compliance*

The proposed project has been submitted to the Kentucky State Clearinghouse for their comments. The clearinghouse review of the proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Furthermore, no notices have been received and none are expected to suggest that the water system is in or near a noncompliance status. Overall, the project was designed in accordance with the Ten State Standards.

6.1.5 *Hydraulic Calculations*

The computer hydraulic simulator, KYPIPE 2000, was used to construct a system wide model to determine the hydraulic characteristics of the Todd County Water District, as it currently exists. The "existing conditions" model verified the existence of low pressure areas during high demand periods, and identified the county's south end in need of a water storage facility. The "future conditions" model verified that the new tank will correct the storage problem, and that the new areas can be successfully served with adequate pressure and flow. The requirement to provide a line flushing velocity of at least 2.5 feet per second has also been considered. The modeling indicated that the lines may be constructed as proposed.

6.2 Cost Estimate

The proposed itemized cost estimate of the Todd County Water District's Hammacksville Tank Addition and System Extension Project is shown in Table 3.

Table 3
Project Cost Estimate & Funding Sources

Construction			
No.	Item		Bid Price
1	Line Work Contract - <i>Stotts Construction</i>		\$958,685.95
2	Tank Work Contract - <i>Caldwell Tanks</i>		\$786,800.00
	Subtotal - Construction		\$1,745,485.95
Other System-Wide Construction Improvements			
No.	Item		Estimated Cost
3	Radio Read Meter Conversion Project		\$600,000.00
Total Construction Cost			
Total Construction Cost			\$2,345,485.95
Non-Construction			
1	Legal Costs		\$30,000.00
2	Administrative Expense		\$15,000.00
3	Land & Right-of-way		\$12,000.00
4	Preliminary Engineering, Geotechnical & Environmental		\$24,700.00
5	Engineering Design (7.96%) - <i>%Fee Based Construction Contracts</i>		\$97,250.00
6	Construction Phase Engineering		\$34,750.00
7	Project Closeout Engineering		\$6,950.00
8	Construction Inspection (4.85%) - <i>%Fee Based Construction Contracts</i>		\$85,000.00
9	Interest During Construction		\$25,000.00
	Subtotal - Nonconstruction		\$330,650.00
Total Project Cost			
	Contingency (7.10% Construction)		\$123,864.05
	Total Estimated Project Cost		\$2,800,000.00
Project Funding Sources			
	KIA Grant		\$400,000.00
	Rural Development Grant		\$600,000.00
	Rural Development Loan		\$1,800,000.00
	Total Estimated Project Cost		\$2,800,000.00

6.3 Annual Operating Budget

The proposed annual operating budget for the Todd County Water District's Hammacksville Tank Addition and System Extension Project is shown in Table 4.

Table 4
Proposed Operating Budget

Operating Income	Existing ⁽¹⁾	Extension	
		Only	Future
Water Sales	\$1,599,062.00	\$24,810.00 ⁽²⁾	\$1,780,738.04 ⁽⁷⁾
Other Revenues	\$53,693.00	\$0.00	\$53,693.00
Total Operating Income	\$1,652,755.00	\$24,810.00	\$1,834,431.04
Operating and Maintenance Expense			
Purchased Water	\$720,354.00	\$10,960.00 ⁽³⁾	\$731,314.00
Payroll Expense	\$273,484.00	\$8,205.00 ⁽⁴⁾	\$281,689.00
Distribution Expense	\$48,606.00	\$1,458.00 ⁽⁴⁾	\$50,064.00
Contract Services	\$32,815.00	\$984.00 ⁽⁴⁾	\$33,799.00
Utilities & Telephone	\$31,943.00	\$958.00 ⁽⁴⁾	\$32,901.00
Administrative Expense	\$40,050.00	\$1,202.00 ⁽⁴⁾	\$41,252.00
Office Expenses	\$31,522.00	\$946.00 ⁽⁴⁾	\$32,468.00
Insurance	\$40,187.00	\$1,206.00 ⁽⁴⁾	\$41,393.00
Travel	\$17,395.00	\$522.00 ⁽⁴⁾	\$17,917.00
Bad Debts	\$18,454.00	\$554.00 ⁽⁴⁾	\$19,008.00
Miscellaneous	\$4,159.00	\$125.00 ⁽⁴⁾	\$4,284.00
Total Operating Expenses	\$1,258,969.00	\$27,120.00	\$1,286,089.00
Net Operating Income	\$393,786.00	(\$2,310.00)	\$548,342.04
Non-Operating Income (Expense)			
Interest Income	\$29,551.00	\$0.00	\$29,551.00
Debt Service - City of Elkton	\$57,640.00	\$0.00	\$57,640.00
RUS Interest	(\$181,678.00)	(\$74,250.00) ⁽⁵⁾	(\$255,928.00) ⁽⁶⁾
RUS Principal	(\$109,500.00)	(\$18,390.00) ⁽⁵⁾	(\$127,890.00) ⁽⁶⁾
Non-RUS Interest	\$0.00	\$0.00	\$0.00
Non-RUS Principal	\$0.00	\$0.00	\$0.00
Total Non-Operating Income	(\$203,987.00)	(\$92,640.00)	(\$296,627.00)
Net for Coverage & Depreciation	\$189,799.00	(\$94,950.00)	\$251,715.04
Notes:			
1. Based on the FY2007 from the 2008 TCWD audit.			
2. Based on 50 new customers using 4,500 gallons per month at current rates.			
3. Based on 50 new customers. 4,500 gallons per month usage X 1.2264 water loss & LTRWC rate of \$3.31/1,000 gal			
4. Based on 3% nominal increase due to anticipated annual cost increases			
5. Based on a \$1,800,000 RUS loan at 4.125% and 40 years.			
6. Estimated Future Debt Service.			
7. Approximate 9.66% rate increase required to roughly maintain current Net for Coverage & Depreciation.			

Based on the projections and assumptions outlined above, the commitment of a \$600,000 Rural Development Grant, a \$400,000 state grant, local contributions and added revenues from the increased water rates (9.66%) are all expected to produce an adequate fund for coverage and depreciation.

Table 5 illustrates the project's proposed rate schedule.

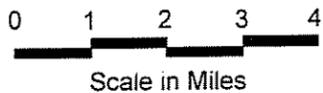
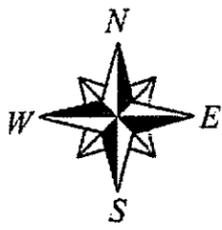
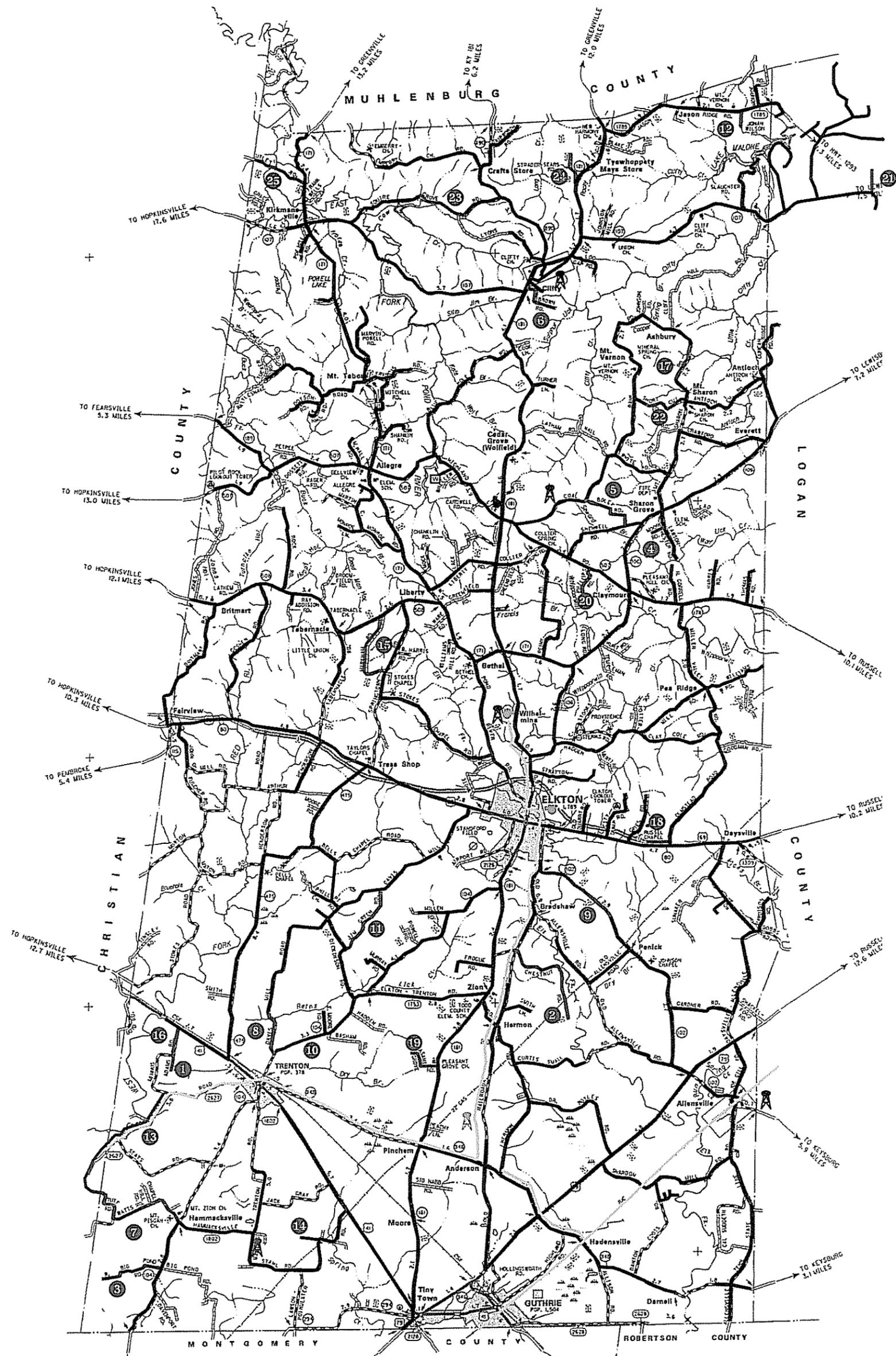
Table 5
Proposed Rate Schedule

First	<u>2,000</u>	Gallons @	<u>\$ 19.63</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 10.28</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 9.16</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 8.03</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 6.66</u>	per 1,000 Gallons

7.0 RECOMMENDED SOLUTION

In order to address the problems and needs of the water system, the Todd County Water District should do the following:

- Construct a 250,000-gallon elevated water storage tank (OF = 754') in the Hammacksville community to serve the northern part of Todd County.
- Construct approximately 28.3 miles of new waterline to serve a potential of 50 residences plus improve the system's hydraulics and water quality.
- Initiate discussion among the District's Board of Directors concerning public awareness and implementation of raising water rates to fund the project if grant funds are unavailable.
- Continue pursuing different means of financing through other available agencies and methods.



Scale in Miles

Background Map: KyDOT Todd County General Highway Map—1998

LEGEND

- Existing Water Line—TCWD
- - - Proposed Water Line—TCWD
- · - Existing Water Line—LTRWC
- ⑪ Line Reference Number
- ⊕ Existing Water Storage Tank
- ⊕ Proposed Water Storage Tank
- ⊕ Existing Pump Station



MCGHEE ENGINEERING, INC.

Guthrie, Kentucky

Todd County Water District
Hammacksville Tank & System Extension
OVERALL PROJECT LAYOUT

By: McGhee

Scale: As Noted

Date: July 7, 2008

Page: E-1

Appendix A

Bid Tabulation – June 27, 2008

Todd County Water District
Hammacksville Tank & Extension Project Contract #1 - Extensions

TABULATION OF BIDS

Bids Received: June 27, 2008 @ 11:00 a.m.

No.	BASE BID ITEMS	QUANTITY	Stotts Construction Columbia, KY		Cleary Construction Tompkinsville, KY		Garrison Construction Greensburg, KY		Moore Construction Clarksville, TN		Ernie Davis & Sons Owensboro, KY		Twin States Utilities Mt. Herman, KY	
			UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
01	6" Class 200 PVC Waterline	33,730 LF	\$ 6.30	\$ 212,499.00	\$ 7.60	\$ 256,348.00	\$ 7.10	\$ 239,483.00	\$ 6.29	\$ 212,161.70	\$ 8.12	\$ 273,887.60	\$ 8.30	\$ 279,959.00
02	4" Class 350 DIP Waterline	500 LF	\$ 17.50	\$ 8,750.00	\$ 21.40	\$ 10,700.00	\$ 20.60	\$ 10,300.00	\$ 149.77	\$ 74,885.00	\$ 28.30	\$ 14,150.00	\$ 23.50	\$ 11,750.00
03	4" Class 200 PVC Waterline	75,747 LF	\$ 4.65	\$ 352,223.55	\$ 4.90	\$ 371,160.30	\$ 4.95	\$ 374,947.65	\$ 5.64	\$ 427,213.08	\$ 5.40	\$ 409,033.80	\$ 6.30	\$ 477,206.10
04	3" Class 250 PVC Waterline	2,615 LF	\$ 4.50	\$ 11,767.50	\$ 4.50	\$ 11,767.50	\$ 4.55	\$ 11,898.25	\$ 3.86	\$ 10,093.90	\$ 5.75	\$ 15,036.25	\$ 5.70	\$ 14,905.50
05	3" Class 200 PVC Waterline	36,813 LF	\$ 4.30	\$ 158,295.90	\$ 4.30	\$ 158,295.90	\$ 4.30	\$ 158,295.90	\$ 3.61	\$ 132,894.93	\$ 4.50	\$ 165,658.50	\$ 5.50	\$ 202,471.50
06	Steel Cased Highway Bore (10"cs/6" cr)	110 LF	\$ 65.00	\$ 7,150.00	\$ 90.00	\$ 9,900.00	\$ 105.00	\$ 11,550.00	\$ 199.00	\$ 21,890.00	\$ 100.00	\$ 11,000.00	\$ 90.00	\$ 9,900.00
07	Steel Cased Highway Bore (8"cs/4" cr)	335 LF	\$ 60.00	\$ 20,100.00	\$ 75.00	\$ 25,125.00	\$ 95.00	\$ 31,825.00	\$ 66.00	\$ 22,110.00	\$ 98.00	\$ 32,830.00	\$ 80.00	\$ 26,800.00
08	Steel Cased Open Cut (8"cs/4"cr)	25 LF	\$ 35.00	\$ 875.00	\$ 55.00	\$ 1,375.00	\$ 62.00	\$ 1,550.00	\$ 44.00	\$ 1,100.00	\$ 100.00	\$ 2,500.00	\$ 35.00	\$ 875.00
09	Steel Cased Highway Bore (8"cs/3" cr)	265 LF	\$ 60.00	\$ 15,900.00	\$ 75.00	\$ 19,875.00	\$ 92.00	\$ 24,380.00	\$ 66.00	\$ 17,490.00	\$ 98.00	\$ 25,970.00	\$ 80.00	\$ 21,200.00
10	Uncased Driveway Bore	90 LF	\$ 30.00	\$ 2,700.00	\$ 35.00	\$ 3,150.00	\$ 35.00	\$ 3,150.00	\$ 44.00	\$ 3,960.00	\$ 25.00	\$ 2,250.00	\$ 45.00	\$ 4,050.00
11	Wide Stream Crossing	135 LF	\$ 140.00	\$ 18,900.00	\$ 90.00	\$ 12,150.00	\$ 92.00	\$ 12,420.00	\$ 198.00	\$ 26,730.00	\$ 200.00	\$ 27,000.00	\$ 200.00	\$ 27,000.00
12	Creek Crossing	50 LF	\$ 30.00	\$ 1,500.00	\$ 50.00	\$ 2,500.00	\$ 45.00	\$ 2,250.00	\$ 154.00	\$ 7,700.00	\$ 68.00	\$ 3,400.00	\$ 120.00	\$ 6,000.00
13	Large Flush Hydrant & Valve	1 EA	\$ 2,300.00	\$ 2,300.00	\$ 3,000.00	\$ 3,000.00	\$ 3,110.00	\$ 3,110.00	\$ 2,700.00	\$ 2,700.00	\$ 1,870.00	\$ 1,870.00	\$ 3,275.00	\$ 3,275.00
14	Small Flush Hydrant & Valve	20 EA	\$ 1,300.00	\$ 26,000.00	\$ 1,450.00	\$ 29,000.00	\$ 1,385.00	\$ 27,700.00	\$ 1,775.00	\$ 35,500.00	\$ 1,600.00	\$ 32,000.00	\$ 1,500.00	\$ 30,000.00
15	6"x6" Tapping Sleeve & Valve	1 EA	\$ 1,250.00	\$ 1,250.00	\$ 2,000.00	\$ 2,000.00	\$ 2,001.00	\$ 2,001.00	\$ 1,900.00	\$ 1,900.00	\$ 1,930.00	\$ 1,930.00	\$ 1,700.00	\$ 1,700.00
16	6"x4" Tapping Sleeve & Valve	4 EA	\$ 1,030.00	\$ 4,120.00	\$ 1,700.00	\$ 6,800.00	\$ 1,735.00	\$ 6,940.00	\$ 1,700.00	\$ 6,800.00	\$ 1,630.00	\$ 6,520.00	\$ 1,500.00	\$ 6,000.00
17	6"x3" Tapping Sleeve & Valve	4 EA	\$ 1,130.00	\$ 4,520.00	\$ 1,700.00	\$ 6,800.00	\$ 1,700.00	\$ 6,800.00	\$ 1,654.00	\$ 6,616.00	\$ 1,660.00	\$ 6,640.00	\$ 1,450.00	\$ 5,800.00
18	4"x4" Tapping Sleeve & Valve	5 EA	\$ 1,000.00	\$ 5,000.00	\$ 1,700.00	\$ 8,500.00	\$ 1,655.00	\$ 8,275.00	\$ 1,470.00	\$ 7,350.00	\$ 1,655.00	\$ 8,275.00	\$ 1,475.00	\$ 7,375.00
19	4"x3" Tapping Sleeve & Valve	3 EA	\$ 1,100.00	\$ 3,300.00	\$ 1,650.00	\$ 4,950.00	\$ 1,620.00	\$ 4,860.00	\$ 1,450.00	\$ 4,350.00	\$ 1,630.00	\$ 4,890.00	\$ 1,420.00	\$ 4,260.00
20	3"x3" Tapping Sleeve & Valve	4 EA	\$ 1,100.00	\$ 4,400.00	\$ 1,600.00	\$ 6,400.00	\$ 1,595.00	\$ 6,380.00	\$ 1,500.00	\$ 6,000.00	\$ 1,530.00	\$ 6,120.00	\$ 1,420.00	\$ 5,680.00
21	Remove Flush Connect With 6"	1 EA	\$ 250.00	\$ 250.00	\$ 600.00	\$ 600.00	\$ 550.00	\$ 550.00	\$ 590.00	\$ 590.00	\$ 525.00	\$ 525.00	\$ 1,000.00	\$ 1,000.00
22	Remove Flush Connect With 4"	6 EA	\$ 250.00	\$ 1,500.00	\$ 600.00	\$ 3,600.00	\$ 500.00	\$ 3,000.00	\$ 900.00	\$ 5,400.00	\$ 455.00	\$ 2,730.00	\$ 1,000.00	\$ 6,000.00
23	Remove Flush Connect With 3"	2 EA	\$ 200.00	\$ 400.00	\$ 500.00	\$ 1,000.00	\$ 450.00	\$ 900.00	\$ 570.00	\$ 1,140.00	\$ 455.00	\$ 910.00	\$ 1,000.00	\$ 2,000.00
24	6" Gate Valve & Box	8 EA	\$ 650.00	\$ 5,200.00	\$ 730.00	\$ 5,840.00	\$ 775.00	\$ 6,200.00	\$ 849.00	\$ 6,792.00	\$ 775.00	\$ 6,200.00	\$ 675.00	\$ 5,400.00
25	4" Gate Valve & Box	10 EA	\$ 550.00	\$ 5,500.00	\$ 610.00	\$ 6,100.00	\$ 635.00	\$ 6,350.00	\$ 754.00	\$ 7,540.00	\$ 650.00	\$ 6,500.00	\$ 560.00	\$ 5,600.00
26	3" Gate Valve & Box	1 EA	\$ 500.00	\$ 500.00	\$ 533.00	\$ 533.00	\$ 560.00	\$ 560.00	\$ 690.00	\$ 690.00	\$ 565.00	\$ 565.00	\$ 500.00	\$ 500.00
27	Main Line PRV Vault	2 EA	\$ 15,000.00	\$ 30,000.00	\$ 13,500.00	\$ 27,000.00	\$ 16,020.00	\$ 32,040.00	\$ 9,000.00	\$ 18,000.00	\$ 12,915.00	\$ 25,830.00	\$ 16,500.00	\$ 33,000.00
28	New Meter 3/4" Near Side	43 EA	\$ 420.00	\$ 18,060.00	\$ 500.00	\$ 21,500.00	\$ 570.00	\$ 24,510.00	\$ 424.00	\$ 18,232.00	\$ 490.00	\$ 21,070.00	\$ 565.00	\$ 24,295.00
29	New Meter 3/4" Far Side	52 EA	\$ 520.00	\$ 27,040.00	\$ 700.00	\$ 36,400.00	\$ 695.00	\$ 36,140.00	\$ 528.00	\$ 27,456.00	\$ 900.00	\$ 46,800.00	\$ 680.00	\$ 35,360.00
30	Reconnect Meter 3/4" Near Side	1 EA	\$ 100.00	\$ 100.00	\$ 220.00	\$ 220.00	\$ 460.00	\$ 460.00	\$ 215.00	\$ 215.00	\$ 235.00	\$ 235.00	\$ 470.00	\$ 470.00
31	Reconnect Meter 3/4" Far Side	4 EA	\$ 230.00	\$ 920.00	\$ 440.00	\$ 1,760.00	\$ 580.00	\$ 2,320.00	\$ 420.00	\$ 1,680.00	\$ 570.00	\$ 2,280.00	\$ 525.00	\$ 2,100.00
32	Air Release Valve	1 EA	\$ 465.00	\$ 465.00	\$ 900.00	\$ 900.00	\$ 850.00	\$ 850.00	\$ 590.00	\$ 590.00	\$ 950.00	\$ 950.00	\$ 870.00	\$ 870.00
33	3" Class 350 DIP Waterline	400 LF	\$ 18.00	\$ 7,200.00	\$ 25.00	\$ 10,000.00	\$ 24.25	\$ 9,700.00	\$ 142.00	\$ 56,800.00	\$ 27.45	\$ 10,980.00	\$ 27.50	\$ 11,000.00
Total Amount of Bid				\$ 958,685.95		\$ 1,065,249.70		\$ 1,071,695.80		\$ 1,174,569.61 *		\$ 1,176,536.15		\$ 1,273,802.10

No.	ALTERNATE BID ITEMS	QUANTITY	UNIT \$	TOTAL										
A01	Unclassified Undercut	1 CY	\$ 20.00	\$ 20.00	\$ 10.00	\$ 10.00	\$ 35.00	\$ 35.00	\$ 2.40	\$ 2.40	\$ 15.00	\$ 15.00	\$ 200.00	\$ 200.00
A02	No. 57 Aggregate Refill	1 Ton	\$ 18.00	\$ 18.00	\$ 25.00	\$ 25.00	\$ 22.50	\$ 22.50	\$ 18.00	\$ 18.00	\$ 25.00	\$ 25.00	\$ 35.00	\$ 35.00
A03	Class 'B' Concrete Refill	1 CY	\$ 100.00	\$ 100.00	\$ 125.00	\$ 125.00	\$ 135.00	\$ 135.00	\$ 140.00	\$ 140.00	\$ 130.00	\$ 130.00	\$ 200.00	\$ 200.00

* Denotes calculation error

Engineer:
McGhee Engineering, Inc.
P. O. Box 267
Guthrie, Kentucky 42234
(270) 483-9985

Owner:
Todd County Water District
617 West Main Street
Elkton, Kentucky 42220
(270) 265-2229

Todd County Water District
Hammacksville Tank & Extension Project Contract #2 - Tank

TABULATION OF BIDS

Bids Received: June 27, 2008 @ 11:00 a.m.

No.	BASE BID ITEMS	QUANTITY	Caldwell Tanks Louisville, KY		Phoenix Fabricators Avon, IN	
			UNIT \$	TOTAL	UNIT \$	TOTAL
01	250,000 Gallon Elevated Water Tank	1 LS	\$ 786,800.00	\$ 786,800.00	\$ 885,412.00	\$ 885,412.00
Total Amount of Bid				\$ 786,800.00	\$ 885,412.00	

Engineer:
McGhee Engineering, Inc.
P. O. Box 267
Guthrie, Kentucky 42234
(270) 483-9985

Owner:
Todd County Water District
617 West Main Street
Elkton, Kentucky 42220
(270) 265-2229

Appendix B

Engineer's Recommendation Letter to the District – July 1, 2008

MCGHEE ENGINEERING, INC.

202 Ewing Street, P. O. Box 267
Guthrie, Kentucky 42234

www.mcgeeengineering.com

Phone: (270) 483-9985
Fax: (270) 483-9986

July 1, 2008

Dr. George Brown
Todd County Water District
P.O. Box 520
Elkton, Kentucky 42220

RE: Hammacksville Tank and Extension Project
Contracts No. 1 & 2
Recommendation of Award

Dear Dr. Brown:

Bids for the referenced project were received June 27, 2008 at the office of the Todd County Water District, opened and read aloud. At such time that the bids were read aloud, the apparent low bidders were Stotts Construction Co., Inc. for Contract No. 1 (Line Extensions) and Caldwell Tanks for Contract No. 2 (Tank Addition). The bids were tabulated and reviewed for the referenced project, and a tabulation of the bids is enclosed.

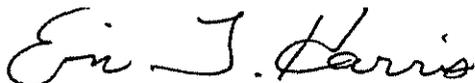
Shortly after the bids were received, a listing of experience and references as well as a list of subcontractors were evaluated for both contracts. Based on our assessment of the bids, review of supporting references, and our past work experience with the bidders, we recommend award of the construction contracts as follows:

Line Contract (#1):	Stotts Construction Co. 203 Burkesville St. Suite 17 Columbia, Kentucky 42728 (270) 384-2677	\$958,685.95
Tank Contract (#2):	Caldwell Tanks 4000 Tower Street Louisville, Kentucky 40219 (502) 964-3361	\$786,800.00

Upon your approval, we will proceed with preparation of contract documents. Please contact me if you have any questions.

Sincerely,

MCGHEE ENGINEERING, INC.



Eric T. Harris, PE
Design Engineer

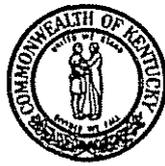
Enclosures

cc: Jerry Cloyd – Rural Development

Appendix C

Drinking Water Branch – DOW's Approval of Plans & Specs

STEVEN L. BESHEAR
GOVERNOR



ROBERT D. VANCE
SECRETARY

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

DEPARTMENT FOR ENVIRONMENTAL PROTECTION

DIVISION OF WATER

14 REILLY ROAD

FRANKFORT, KENTUCKY 40601

www.kentucky.gov

May 22, 2008

Mr. John Haley,
Todd Co Water District
PO Box 520
Elkton, KY 42220

RE: Todd Co Water District
AI # 34111, APE20080003
PWSID # 1100944-08-003
Hammacksville Tank Addition & System
Upgrade Project
Todd County, KY

Dear Mr. Haley:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 33,730 feet of 6-inch PVC waterline, 75,642 feet of 4-inch PVC waterline, 500 feet of 4-inch DI waterline, 39,028 feet of 3-inch PVC waterline and 400 feet of 3-inch DI waterline. Plans also include the construction of a 250,000 gallon elevated water storage tank. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit and the following stipulation:

1. The Hammacksville Elevated Water Tank will initially be operated with a high water level of 735 feet due to the limited demand in the area.

Based on the hydraulic analysis/data submitted, the areas served by the Highway 102, Watts Road and Barkers Mill Road waterline extensions are considered to be underserved. This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied. The underserved designation may be used to help prioritize areas under the Governor's 2020 plan for funding future infrastructure improvements.

Additionally, prior to connecting potable water to existing structures in areas served by the above referenced new waterlines, provide the names and addresses of the described customers to the Division of Plumbing, Department of Housing, Bldg. 127, US 127 South, Frankfort, KY 40601.

If you have any questions concerning this project, please contact Mr. Terry Humphries at 502-564-8158 extension 518.

Sincerely,

A handwritten signature in black ink, appearing to read "DMarlin". The signature is fluid and cursive, written in a professional style.

for Donna S. Marlin, Manager
Drinking Water Branch
Division of Water

MR:TH

Enclosures

C: McGhee Engineering Inc
Todd County Health Department
Christian County Health Department
Public Service Commission
Division of Plumbing

Distribution-Major Construction

Todd Co Water District

Subject Item Inventory

Activity ID No.: APE20080003

Subject Item Inventory:

ID	Designation	Description
AIOO34111		
PORT23	Water Lines	33,730 feet of 6-inch PVC waterline, 75,642 feet of 4-inch PVC waterline, 500 feet of 4-inch DI waterline, 39,028 feet of 3-inch PVC waterline and 400 feet of 3-inch DI waterline
STOR2	Elevated Storage Tank	250,000 gallon elevated water storage tank

Subject Item Groups:

ID	Description	Components
GACT20	33,730 feet of 6-inch PVC waterline, 75,642 feet of 4-inch PVC waterline, 500 feet of 4-inch DI waterline, 39,028 feet of 3-inch PVC waterline and 400 feet of 3-inch DI waterline. Also a 250,000 gallon elevated water storage tank.	STOR2 250,000 gallon elevated water storage tank
		PORT23 33,730 feet of 6-inch PVC waterline, 75,642 feet of 4-inch PVC waterline, 500 feet of 4-inch DI waterline, 39,028 feet of 3-inch PVC waterline and 400 feet of 3-inch DI waterline

KEY

ACTV = Activity

AREA = Area

EQPT = Equipment

PERS = Personnel

STOR = Storage

AIOO = Agency Interest

COMB = Combustion

MNPT = Monitoring Point

PORT = Transport

STRC = Structure

Distribution-Major Construction

Todd Co Water District
Subject Item Inventory

Activity ID No.: APE20080003

<p>KEY TRMT = Treatment</p>
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Distribution-Major Construction

Todd Co Water District

Facility Requirements

Activity ID No.: APE20080003

Page 1 of 15

GACT20 (Tank & System Upgrade) 33,730 feet of 6-inch PVC waterline, 75,642 feet of 4-inch PVC waterline, 500 feet of 4-inch DI waterline, 39,028 feet of 3-inch PVC waterline and 400 feet of 3-inch DI waterline. Also a 250,000 gallon elevated water storage tank.:

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new or relocated water line(s). Take samples at connection points to existing lines, at 1 mile intervals, and at dead ends without omitting any branch of the new or relocated water line. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7), 401 KAR 8:150 Section 4, Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-2	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new storage structure(s). With at least 1 sample taken at least 24 hours after the first construction complete sample(s), take 2 or more samples from the yard hydrant, the outlet piping from the storage structure, or a sample tap directly connected to the storage structure. Sample bottles shall be clearly identified as "special" construction tests. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:150 Section 4] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

Submittal/Action Requirements:

Coliform:

Condition No.	Condition
S-1	Coliform For new construction projects, the distribution system, using the most expedient method, shall submit Coliform test results to the Cabinet: Due immediately following disinfection and flushing. [401 KAR 8:150 Section 4(2)]

Condition No.	Condition
S-2	For proposed changes to the approved plan, submit information: Due prior to any modification to the Cabinet for approval. Changes to the approved plan shall not be implemented without the prior written approval of the Cabinet. [401 KAR 8:100 Section 1(8)]

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20080003

Page 2 of 15

GACT20 (continued):

Submittal/Action Requirements:

Condition No.	Condition
S-3	The person who presented the plans shall submit the professional engineer's certification: Due when construction is complete to the Division of Water. The certification shall be signed by a registered professional engineer and state that the water project has been constructed and tested in accordance with the approved plans, specifications, and requirements. [401 KAR 8:100 Section 1(8)]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	Additional Limitations: Chlorinated water resulting from disinfection of project components shall be disposed in a manner which will not violate 401 KAR 5:031. [401 KAR 8:020 Section 2(20)]

Condition No.	Condition
T-2	This project has been permitted under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the applicant from the responsibility of obtaining any other approvals, permits or licenses required by this Cabinet and other state, federal and local agencies. Further, this permit does not address the authority of the permittee to provide service to the area to be served. [401 KAR 8:100 Section 1(7)]
T-3	Unless construction of this project is begun within 1 year from the issuance date of this permit, the permit shall expire. If requested prior to the permit expiration, an official extension from the Division of Water may be granted. If this permit expires, the original plans and specifications may be resubmitted for a new comprehensive review. If you have any questions concerning this project, please contact the Drinking Water Branch at 502/564-3410. [401 KAR 8:100 Section 1(9)]
T-4	During construction, a set of approved plans and specification shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 1(7)(a)]

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PORT23 (Water Lines) 33,730 feet of 6-inch PVC waterline, 75,642 feet of 4-inch PVC waterline, 500 feet of 4-inch DI waterline, 39,028 feet of 3-inch PVC waterline and 400 feet of 3-inch DI waterline:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a Depth \geq 6 in below the bottom of the pipe. [Recommended Standards for Water Works 8.5.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-2	Depth	All water lines shall be covered to a Depth \geq 30 in to prevent freezing. [Recommended Standards for Water Works 8.5.3, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Diameter	All water lines shall have Diameter \geq 3 in. [Recommended Standards for Water Works 8.1.4] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Diameter	Water lines with Diameter $<$ 6 in shall not have fire hydrants. [Recommended Standards for Water Works 8.1.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Diameter	All new and existing water lines serving fire hydrants or where fire protection is provided shall have Diameter \geq 6 in. [Recommended Standards for Water Works 8.1.2] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-6	Distance	Water lines shall have a sufficient quantity of valves so that inconvenience and sanitary hazards will be minimized during repairs. A valve spacing Distance \leq 1.0 mi should be utilized. [Recommended Standards for Water Works 8.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-7	Distance	Hydrant drains shall not be connected to sanitary sewers or storm drains and shall be located a Distance $>$ 10 ft from sanitary sewers and storm drains. [Recommended Standards for Water Works 8.3.4] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-8	Distance	Except when not practical, water lines shall be laid a horizontal Distance \geq 10 ft from any existing or proposed sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, water lines may be installed closer to a sewer provided that the water lines shall be laid in a separate trench or on an undisturbed shelf located on one side of the sewer at such an elevation that the bottom of the water line is at least 18 inches above the top of the sewer. [Recommended Standards for Water Works 8.6.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

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Limitation Requirements:

Condition No.	Parameter	Condition
L-9	Distance	<p>When water lines and sewers cross,</p> <ol style="list-style-type: none">1) water lines shall be laid such that either<ol style="list-style-type: none">a) the the top of the water line is a vertical Distance ≥ 18 in below the bottom of the sewer line orb) the bottom of the water line is a vertical Distance ≥ 18 in above the top of the sewer line,2) 1 full length of the water pipe shall be located so that both joints of the water pipe will be as far from the sewer as possible, and3) special structural support for the water and sewer pipes may be required. [Recommended Standards for Water Works 8.6.3] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-10	Distance	<p>The open end of an air relief pipe from automatic valves shall be extended a Distance ≥ 1.0 ft above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve shall be extended to the top of the pit. Use of manual air relief valves is recommended wherever possible. [Recommended Standards for Water Works 8.4.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-11	Pressure	<p>Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure ≥ 20 psi under all conditions of flow. [Recommended Standards for Water Works 8.1.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>
L-12	Pressure	<p>Pressure ≥ 30 psi must be available on the discharge side of all meters. [401 KAR 8:100 Section 4(2)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.</p>
L-13	Residual Disinfection	<p>New or relocated water lines shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect the new or relocated lines use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection ≥ 25 ppm at the end of 24 hours. Follow the line disinfection with thorough flushing and place the lines into service if, and only if, Coliform monitoring applicable to the line does not show the presence of Coliform. If Coliform is detected, repeat flushing of the line and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:150 Section 4(1), Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>

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PORT23 (continued):

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Limitation Requirements:

Condition No.	Parameter	Condition
L-14	Velocity	<p>Except in underserved areas, each blow-off, fire hydrant, or flush hydrant shall be sized so that Velocity ≥ 2.5 ft/sec can be achieved in the water main served by the blow-off or hydrant during flushing.</p> <p>Based on the hydraulic analysis/data submitted, the areas served by the following extension(s) are considered to be underserved:</p> <ul style="list-style-type: none">a) Highway 102 Tie in,b) Watts Road,c) Barkers Mill Road. <p>This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied. The underserved designation may be used to help prioritize areas under the Governor's 2020 plan for funding future infrastructure improvements. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	leaks	<p>The presence or absence of leaks monitored by physical testing as needed shall be determined in all types of installed pipe. Pressure testing and leakage testing shall be in accordance with the latest edition of AWWA Standard C600. [Recommended Standards for Water Works 8.5.5] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.</p>

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PORT23 (continued):

Narrative Requirements:

Asbestos (Friable):

Condition No.	Condition
T-1	Asbestos (Friable): If the existing water line to be tapped is asbestos concrete, then the contractor shall conform to OSHA regulations governing the handling of hazardous waste during the process of tapping the asbestos concrete line. Pieces of asbestos concrete resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill. [401 KAR 8:100 Section 1(7)]

Additional Limitations:

Condition No.	Condition
T-2	Additional Limitations: Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1]
T-3	Additional Limitations: Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]
T-4	Additional Limitations: At high points in water lines, where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. [Recommended Standards for Water Works 8.4.1]
T-5	Additional Limitations: All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.5.4]
T-6	Additional Limitations: A flush hydrant or blow-off shall be required at the end of each dead end line that is less than 6 inches in diameter. [Recommended Standards for Water Works 8.1.6]
T-7	Additional Limitations: For each fire or flush hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]

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PORT23 (continued):

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-8	<p>Additional Limitations: No flushing device, blow-off, or air relief valve shall be directly connected to any sewer. Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any storm drain or sanitary sewer. Such chambers, pits or manholes shall be drained to absorptions pits underground or to the surface of the ground where they are not subject to flooding by surface water. [Recommended Standards for Water Works 8.1.6, Recommended Standards for Water Works 8.4.3]</p>
T-9	<p>Additional Limitations: If water lines are installed or replaced in areas of organic contamination or in areas within 200 ft of underground or petroleum storage tanks, ductile iron or other nonpermeable materials shall be used in all portions of the water line installation or replacement. [401 KAR 8:100 Section 1(5)(d)6, Recommended Standards for Water Works 8.0.2]</p>
T-10	<p>Additional Limitations: No water pipe shall pass through or come in contact with any part of a sewer manhole. [Recommended Standards for Water Works 8.6.6]</p>
T-11	<p>Additional Limitations: If a fire sprinkler system is to be installed, a double check detector assembly approved for backflow prevention shall be utilized. The double check detector assembly of the system shall be accessible for testing. [401 KAR 8:100 Section 1(7)]</p>
T-12	<p>Additional Limitations: If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact the Water Quality Certification Supervisor of the Water Quality Branch at (502) 564-2225. [401 KAR 8:100 Section 1(7)]</p>

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PORT23 (continued):

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Narrative Requirements:

Subfluvial Pipe Crossings:

Condition No.	Condition
T-13	<p>Subfluvial Pipe Crossings: For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met.</p> <ol style="list-style-type: none">1) No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings.2) Crossing trenches shall be backfilled as closely as possible to the original contour.3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing.5) For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least 6 inches of concrete with all pipe or conduit points in the crossing at least 6 inches below the original contour of the channel. [401 KAR 8:100 Section 1(7)]
T-14	<p>Subfluvial Pipe Crossings: For subfluvial pipe crossings greater than 15 feet in width,</p> <ol style="list-style-type: none">1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair. <p>Valves shall</p> <ol style="list-style-type: none">a) be easily accessible,b) not be subject to flooding, andc) if closest to the supply source, be in a manhole with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes. [Recommended Standards for Water Works 8.7.2]

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STOR2 (Elevated Storage Tank) 250,000 gallon elevated water storage tank:

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Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	High and low level Depth ≥ 30 ft apart should not be allowed in storage structures providing pressure to a distribution system. [Recommended Standards for Water Works 7.3.2] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.
L-2	Distance	To prevent excessive erosion of storage structure foundations, the overflow and main drain shall either a) discharge to concrete or other stable surfaces (splash pads) which extend a Distance ≥ 10 ft away from the base of the storage structure or b) discharge directly into a crushed stone pit that is at least 2' x 2' x 2' which is a Distance ≥ 10 ft away from the base of the storage structure. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Height	Tanks shall have an overflow which is a) brought down to a Height ≥ 12 and ≤ 24 in above the ground surface, b) of sufficient diameter to permit waste of water in excess of the filling rate, c) open downward, d) screened with twenty-four mesh noncorrodible screen installed within the pipe at a location least susceptible to damage by vandalism, and e) when not internal, e) i) located on the outside of the tank so that any discharge is visible, when internal, e) ii) located in the access tube. [Recommended Standards for Water Works 7.0.7] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-4	Height	Tanks shall have manholes that are a) framed a Height ≥ 4 in above the surface of the roof at the opening and b) fitted with a solid watertight cover which overlaps the framed opening and extends down around the frame at least 2 inches. Manholes should be hinged at one side and shall have a locking device. [Recommended Standards for Water Works 7.0.8] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

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STOR2 (continued):

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	<p>Additional Limitations: The materials and designs used for storage structures shall provide stability and durability as well as protection for the quality of the stored water. Steel structures shall follow the AWWA standards wherever they are applicable. Other materials of construction are acceptable when properly designed to meet the requirements in this permit. [Recommended Standards for Water Works 7.0]</p>
T-2	<p>Additional Limitations: The safety of employees must be considered in the design of any tank. The design of tanks shall</p> <ol style="list-style-type: none">meet or exceed the minimum requirements of pertinent safety laws and regulations in the areas where the tanks are constructed,include ladders, ladder guards and balcony railings (where applicable),locate entrance hatches in safe places,provide railings or handholds where persons must transfer from an access tube to the water compartment, andconsider confined space entry requirements. <p>Additionally, if tanks have riser pipes over 8 inches in diameter, the tanks shall have protective bars over the riser openings inside of the tank. [Recommended Standards for Water Works 7.0.12]</p>
T-3	<p>Additional Limitations: Storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance. Where space permits, at least 2 manholes shall be provided above the waterline at each water compartment. [Recommended Standards for Water Works 7.0.8]</p>
T-4	<p>Additional Limitations: Fencing, locks on access manholes, and other necessary precautions shall be provided to prevent trespassing, vandalism, and sabotage. [Recommended Standards for Water Works 7.0.4]</p>
T-5	<p>Additional Limitations: All storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing. [Recommended Standards for Water Works 7.0.13]</p>
T-6	<p>Additional Limitations: Tanks shall be constructed with no openings except properly constructed vents, manholes, overflows, risers, drains, control ports, and piping for inflow and outflow. Any pipes running through the roof or sidewall must be welded or properly gasketed. [Recommended Standards for Water Works 7.0.10]</p>

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STOR2 (continued):

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-7	<p>Additional Limitations: All finished water storage structures shall have suitable watertight roofs and sidewalls which exclude birds, animals, insects, and excessive dust. [Recommended Standards for Water Works 7.0.3, Recommended Standards for Water Works 7.0.10]</p>
T-8	<p>Additional Limitations: The roof of each storage structure shall be well drained. Downspout pipes shall not enter or pass through storage structures. Parapets or similar structures which would tend to hold water and snow on a storage structure roof shall not be approved unless adequate waterproofing and drainage are provided. [Recommended Standards for Water Works 7.0.11]</p>
T-9	<p>Additional Limitations: Storage structures shall be designed so they can be isolated from the distribution system and drained for cleaning or maintenance without necessitating loss of pressure in the distribution system. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.5]</p>
T-10	<p>Additional Limitations: Storage structure drains shall discharge to the ground surface at a drainage structure inlet or splash plate. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.7]</p>
T-11	<p>Additional Limitations: No drain on a storage structure may have a direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.0.5, Recommended Standards for Water Works 7.0.7, Recommended Standards for Water Works 7.3.2]</p>
T-12	<p>Additional Limitations: Main drains from storage structures shall have a twenty-four mesh noncorrodible screen installed within the drain pipe at a location least susceptible to damage by vandalism. [401 KAR 8:100 Section 1(7)]</p>
T-13	<p>Additional Limitations: Storage structures shall be designed to facilitate turn over of water. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.6]</p>
T-14	<p>Additional Limitations: Storage structures shall have sufficient capacity, as determined from engineering studies, to meet domestic demands. Additionally, if fire protection is provided, capacity shall also be sufficient to meet fire flow demands. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.1]</p>

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STOR2 (continued):

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-15	<p>Additional Limitations: Storage structure discharge pipes shall be located in a manner that will prevent the flow of sediment into the distribution system. Additionally, removable silt stops should be provided. [Recommended Standards for Water Works 7.0.15]</p>
T-16	<p>Additional Limitations: Appropriate sampling tap(s) shall be provided to facilitate collection of water samples for both bacteriologic and chemical analyses. [Recommended Standards for Water Works 7.0.19]</p>
T-17	<p>Additional Limitations: Storage structures shall be vented. Overflows shall not be considered as vents. Open construction between the sidewall and roof is not permitted. Vents shall</p> <ol style="list-style-type: none">prevent the entrance of rainwater,exclude birds and animals, andexclude insects and dust (as much as compatible with effective venting). <p>Vents may use four-mesh noncorrodible screen. [Recommended Standards for Water Works 7.0.9]</p>
T-18	<p>Additional Limitations: Adequate controls shall be provided to maintain levels in storage structures. The level controls shall be acceptable to the Division of Water. Level indicating devices should be provided at a central location. Overflow and low-level warnings or alarms should be located at places in the community where they will be under responsible surveillance 24 hrs a day. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.3.3]</p>
T-19	<p>Additional Limitations: If storage structures have a catwalk over the water, the catwalk floor shall be solid with raised edges so that shoe scrapings and dirt will not fall into the water. [Recommended Standards for Water Works 7.0.14]</p>
T-20	<p>Additional Limitations: Proper protection shall be given to metal surfaces by</p> <ol style="list-style-type: none">paints or other protective coatings and/orcathodic protective devices. [Recommended Standards for Water Works 7.0.17]

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-21	<p>Additional Limitations: If cathodic protection is utilized,</p> <ul style="list-style-type: none">a) competent technical personnel should design and install the protection andb) a maintenance contract should be provided. [Recommended Standards for Water Works 7.0.17]
T-22	<p>Additional Limitations: If the interior of the storage structure is coated or lined, the coating or lining shall be of a type approved by the Division of Water for use in contact with potable water. [401 KAR 8:020 Section 2(19)]</p>
T-23	<p>Additional Limitations: Paints and coatings</p> <ul style="list-style-type: none">a) shall meet NSF standard 61,b) shall be acceptable to the Division of Water,c) shall be properly applied and cured, andd) shall not transfer any substance to the water which will be toxic or cause tastes or odors (following curing). <p>Wax coatings shall not be used in any storage structure and must be completely removed before using other paints or coatings in an existing storage structure. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.17]</p>

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STOR2 (continued):

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-24	<p>Additional Limitations: New water storage structures shall be thoroughly disinfected (in accordance with AWWA Standard C652) upon completion of construction and before being placed into service. To disinfect new storage structures</p> <ol style="list-style-type: none">1) remove all scaffolding, planks, tools, rags, and other items that are not part of the structural or operational facilities of the storage structure,2) clean thoroughly by sweeping, scrubbing, using high-pressure water jets, or some equivalently effective means, and3) use chlorine or chlorine compounds as subsequently described. <p>Finalize disinfection by</p> <ol style="list-style-type: none">a) chlorination method 1, described in detail at AWWA Standard C652 Section 4.3.1,b) chlorination method 2, described in detail at AWWA Standard C652 Section 4.3.2, orc) chlorination method 3, described in detail at AWWA Standard C652 Section 4.3.3. <p>See the following conditions for abbreviated descriptions of the methods. Following the finalization of disinfection, place storage structures into service if, and only if, Coliform monitoring applicable to the storage structure does not show the presence of Coliform. If Coliform is detected, flush the tank and repeat Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the tank has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [Recommended Standards for Water Works 7.0.18]</p>
T-25	<p>If applicable, chlorination method 1 generally requires</p> <ol style="list-style-type: none">a) filling a storage structure to the overflow level with water providing a free chlorine Residual Disinfection ≥ 10 ppm andb) i) completely draining the storage facility and refilling orb) ii) otherwise reducing (in accordance with method 1) the free chlorine residual to a level appropriate for distribution. [Recommended Standards for Water Works 7.0.18]
T-26	<p>If applicable, chlorination method 2 generally requires</p> <ol style="list-style-type: none">a) scrubbing or spraying the water-contact surfaces of a storage structure with a water solution having an available chlorine concentration = 200 ppm andb) purging of the strong chlorine solution and filling to the overflow level. [Recommended Standards for Water Works 7.0.18]

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Narrative Requirements:

Condition	Condition
T-27	If applicable, chlorination method 3 generally requires a) filling a storage structure to approximately 5% of the total storage volume with water having an available chlorine concentration of 50 ppm, b) continued filling of the storage structure to the overflow level with normal potable water, and c) purging the storage structure so that various disinfection by-products do not reach water consumers. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:100 Section 1(7)]
