

# MCGHEE ENGINEERING, INC.

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Guthrie, Kentucky 42234

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## MEMORANDUM

RECEIVED

JUN 17 2019

PUBLIC SERVICE  
COMMISSION

TO: Angela Goad  
FROM: Chris Wilcutt  
DATE: June 11, 2019  
SUBJECT: Todd County Water District  
Novelis Water Supply Project  
**PSC Case # 2019-00180**

Please find enclosed the following:

- 2 copies of the Final Engineering Report

These items are submitted for your approval. If you have any questions or need additional information, please do not hesitate to give me a call or email at [chris.wilcutt@mcgheeengineering.com](mailto:chris.wilcutt@mcgheeengineering.com).

RECEIVED

Chris Wilcutt

JUN 17 2019

**From:** Randy Jones [REDACTED]  
**Sent:** Tuesday, June 11, 2019 2:49 PM  
**To:** [REDACTED]  
**Cc:** Mike McGhee  
**Subject:** Fwd: Case No. 2019-00180

PUBLIC SERVICE  
COMMISSION

Chris - can you send in 2 more complete FERs. Make sure you reference the case number in your submittal and make sure they are signed sealed and dated.

Sent from my iPhone

Begin forwarded message:

**From:** "Goad, Angela M (PSC)" <[REDACTED]>  
**Date:** June 11, 2019 at 3:31:17 PM EDT  
**To:** [REDACTED]  
**Subject:** Case No. 2019-00180

Attorney Jones,

I received your voicemail and tried to return your call, but you had already left the office. I spoke to an attorney in your office and he advised that the best way to reach you would be through email. The Commission will be issuing a deficiency on the final engineering report for Case No. 2019-00180. The prior final engineering reports that I have seen are very similar to the preliminary engineering reports, and in this case the submitted final engineering report is merely an As-Bid Project Budget Comparison. Please let me know if you have any questions or concerns. Thank you.

Angela M. Goad  
Staff Attorney III  
Kentucky Public Service Commission  
211 Sower Blvd.  
Frankfort, KY 40602-0615  
Office: (502) 782-2562  
Fax: (502) 564-7279  
Email: [REDACTED]  
Website: <http://psc.ky.gov>

# FINAL ENGINEERING REPORT

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## TODD COUNTY WATER DISTRICT NOVELIS WATER SUPPLY PROJECT

March 2019



RECEIVED

JUN 17 2019

PUBLIC SERVICE  
COMMISSION

**MCGHEE ENGINEERING, INC.**

202 South Ewing Street  
Guthrie, Kentucky 42234

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# Final Engineering Report

prepared for the

**Todd  
County  
Water  
District**



## Novelis Water Supply Project

**Dr. George Brown**  
*Chairman*

**Edward Slack**  
*Treasurer*

**Lois Brown**  
*Secretary*

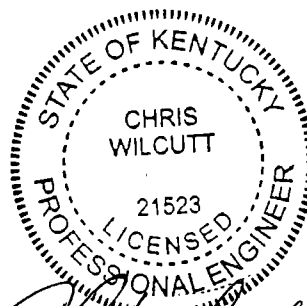
**Tony Adler**  
*Commissioner*

**William Lear**  
*Commissioner*

**John Haley**  
*Manager*

*prepared by*

**McGhee Engineering, Inc.**  
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*Chris Wilcutt*  
3-13-19

March 2019

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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 TCWD is a relatively large water system covering approximately 90% of the Todd County area. With the exception of a few isolated locations in the west and southwest parts 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 Todd County water system is comprised of nearly 450 miles of water distribution lines and four water storage tanks with an approximate total capacity of 1,378,000 gallons, all of which serves approximately 3,450 customers in rural Todd County and a small portion of northwestern Logan County and southeastern Christian County.

As of Spring 2003, the Todd County Water District began to purchase all of its treated water from 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. Per the Commission's 2017 records, the average daily wholesale water demand within the Todd County system was 572,500 gallons per day. Todd County has four meter stations with the Commission, two located in the southern parts of the county, one north of Elkton, and an inactive station in Allensville.

In January 2018, Novelis Inc. announced plan to build an approximately \$300 million automotive aluminum sheet manufacturing facility on a 153 acre parcel located just outside of Guthrie, Kentucky. The facility will include heat treatment and pre-treatment lines, which prepare aluminum for use in vehicle parts such as hoods, doors, lift gates, and fenders. The company, which plans to create approximately 125 new jobs through the expansion, officially broke ground in May with the facility slated to be in production in 2020.

Todd County Water District will require extension of its water system to serve the new Novelis facility, which is currently under construction north of the City of Guthrie. This portion of the work will be performed by two separate contracts: Contract 1) installation of over two miles of 12-inch waterline and appurtenances to supply approximately 115,000 gpd in new demand plus relocate approximately 1,000 LF of 6-inch waterline due to associated highway improvements near the site; and Contract 2) construction of a new 500,000 gallon elevated water tank to provide ample storage and pressure near the new facility for both supply and fire protection. Contract 1 is expected to take less than 6 months to construct, whereas the tank contract (#2) is expected to take over 12 months to construct. The tank and pipeline

system is being designed to accommodate what is projected to be an ultimate 1 MGD water demand when the Novelis facility is completely built out.

Also, the project will include construction of over 2 miles of small diameter waterlines to provide new service to rural customers in the water system. Also, the District wishes to install additional system-wide master meters with SCADA components, all in an effort to improve operation efficiency and monitoring. This portion of the project (Contract 3) is expected to take less than 3 months to construct.

Overall, the total cost of the proposed project is estimated to be \$3,600,000.

## 2.0 PROJECT PLANNING AREA

### 2.1 Location

The construction of the Todd County Water District's project will be split into three construction contracts. Contract 1 will be contained to one highway corridor, with approximately 2 miles of new waterline extension along US Highway 79, between KY Highway 848 and the CSX Railroad. The contract will consist of 12" piping plus the installation of a new metering point with the Logan Todd Regional Water Commission along with needed SCADA equipment to monitor and control flow to the new pressure zone. The contract will also include the relocation of a short section of 6-inch waterline due to the modification of the US Highway 79 and Old Railroad Lane intersection by the Kentucky Transportation Cabinet. Both PVC and ductile iron piping were considered for all waterline improvements.

The tank portion (Contract 2) of the project involves the construction of a 500,000-gallon elevated water storage tank. The tank's proposed location is within a 100'x100' tract on the Novelis site at the intersection of US Highway 79 and the CSX railroad. This tank site will provide the District with its second storage structure in the southern half of the county. The proposed overflow of the tank will be approximately 801', which would match the overflow of Logan Todd Regional Water Commission's Todd County tank. The aforementioned telemetry system and new metering station (or 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.

Contract 3 will consist of nearly 2 miles of short waterline extensions along 3 various roadways plus SCADA additions/improvements. Additionally, the District has identified other work that they wish to include in the project if extra funds are available, including extension of nearly 11 miles of varying sized waterlines along 17 other roadways.

The general location of these improvements, including alternates, are shown in Exhibit E-1 and listed in Table 1.



Table 1  
**Project Road List**

Map ID	Contract 1 Roadway Areas	Length (Miles)	Number of Houses	Line Size (Inches)
A	US Highway 79 Extension (CSX RR to KY Hwy 848)	2.10	10	12
B	Old Railroad Lane Relocation (US Highway 79 X-ion)	0.20	0	6
	<b>SUBTOTAL - New Line Extensions (Contract 1)</b>	<b>2.30</b>	<b>10</b>	
Map ID	Contract 3 Roadway Areas	Length (Miles)	Number of Houses	Line Size (Inches)
1	McKinney Road	0.20	1	3
2	Latham Road	0.25	2	3
3	Davenport Road	0.75	2	3
	<b>SUBTOTAL - New Line Extensions (Contract 3)</b>	<b>1.20</b>	<b>5</b>	
Map ID	Alternate Roadways	Length (Miles)	Number of Houses	Line Size (Inches)
4	Johnson Mill Road	0.74	5	3
5	Lack Road	0.84	5	3
6	Lawson-Poindexter Road	0.94	2	4
7	B. White Road	0.93	3	6
8	Clay Cole Road	0.83	0	4
9	Crawford Road	0.68	1	3
10	Hall-Latham Road	0.91	2	4
11	Hammacksville Road	1.06	1	4
12	Lyons Road	0.90	2	3
13	Maton Road	1.35	2	4
14	Morton Road	1.79	4	4
15	Mt. Sharon Road	0.53	2	4
16	Paul Hurt Road	0.54	2	3
17	Pogue Road	0.13	1	3
18	Squire Grove Loop	0.41	0	4
19	Starnes Road	0.50	1	3
20	Turner Road	0.19	1	3
	<b>SUBTOTAL - Alternate Line Extensions</b>	<b>10.75</b>	<b>22</b>	

## 2.2 Land Use and Environmental Resources Present

As stated earlier, the line portion of Contract 1 is contained almost entirely to a short corridor of US Highway 79, along approximately 2 miles of roadway in a southern rural area of Todd County. The line work and other appurtenances of this Contract is proposed to be constructed within utility easements previously acquired or to be acquired by the Todd County Water District. This portion of the project will affect six main resources during construction: residential, commercial, agriculture, grazing, transportation and industrial (under construction). The general construction effect to the resources is the disturbances associated with building the facilities. No long-term impact is expected to any environmental resource.

The tank portion (Contract 2) of the project will be located on the same industrial site, which is currently under construction. The general construction effect

to this resource is the disturbances associated with building the facilities. However, no long-term impact is expected.

Contract 3 will consist of nearly 2 miles of short waterline extensions along 3 various roadways spread out over the entire county plus SCADA improvements at miscellaneous sites. The line work of this Contract will be constructed in road right-of-ways and/or new utility easements, which the District will have to obtain. The SCADA upgrades will be performed on existing easements or District properties. Furthermore, this portion of the project will also 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. No long-term impact is expected to any environmental resource.

The Kentucky Heritage Council reviewed the Contract 1 and 2 portions of the project in late 2018, and the State Historical Preservation Officer (SHPO) issued a letter on October 18, 2018 recommending that the initial project would result in no effect to historical properties per an archaeological report submitted by Pennyriple Archaeological Services. An archeological investigation is not anticipated for the affected line routes of Contract 3 due to the close nature of the work to road right-of-ways. However, if such an investigation is required, Lee Foster of Pennyriple Archaeological Services will conduct any necessary reviews with a second report submitted to the SHPO. Regardless, it is expected that no historical resource will be affected by any portion of the proposed project.

The original 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.

The following exhibits indicate the environmental resources present within the project planning area:

- A highway map of all proposed water lines (Contract 1, Contract 3 & Alternates), indicating the areas to be affected and the surrounding area, is attached as Exhibit 1.
- Topographic map of the proposed waterlines in Contract 1 and tank addition of Contract 2 is illustrated in Exhibits E-2. The base map is a USGS 7.5' quadrangle image.
- Topographic map of the proposed waterlines in Contract 3 are illustrated in Exhibits E-3 thru E-5. The base map for each is a USGS 7.5' quadrangle image.
- County soil survey data from the Soil Conservation Service is shown in Exhibit 6.
- Waterlines (all contracts) that are near or traverse through defined FEMA floodplain zones are illustrated in Exhibits E-7 thru E-10.

### 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 70 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 averaged around 12,000 persons for the past eight census collections. 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					
	1 9 4 0	1 9 5 0	1 9 6 0	1 9 7 0	1 9 8 0	1 9 9 0	2 0 0 0	2 0 1 0	2 0 1 5	2 0 2 0	2 0 3 0	2 0 3 5		
<b>TODD</b>	Elkton	1,214	1,312	1,448	1,612	1,815	1,789	1,984	2,062	2,107	2,144	2,175	2,200	2,215
	Guthrie	1,272	1,253	1,211	1,200	1,361	1,504	1,469	1,419	1,450	1,476	1,497	1,514	1,525
	Trenton	572	577	542	496	465	378	419	384	392	399	405	410	413
	Rural Areas	11,176	9,748	8,163	7,515	8,233	7,269	8,099	8,595	8,781	8,939	9,067	9,168	9,234
	Todd County	14,234	12,890	11,364	10,823	11,874	10,940	11,971	12,460	12,730	12,958	13,144	13,292	13,387
	<b>% Change</b>		-9.4%	-11.8%	-4.8%	9.7%	-7.9%	9.4%	4.1%	2.2%	1.8%	1.4%	1.1%	0.7%
<b>Notes to Table 1:</b>		1. Shaded areas have been calculated based on census and projection data.												
<b>Sources to Table 1:</b>		1. Historical & Projections provided by the KY State Data Center and Census Bureau University of Louisville, State Data Center ( <a href="http://cbpa.louisville.edu/ksdc/">http://cbpa.louisville.edu/ksdc/</a> )												

Analyzing Table 2 from 1940 to 2010 shows that Elkton and Guthrie have grown overall with some fluctuations, but Trenton and the rural areas have declined in population since 1940. The rural areas of Todd County show a growing trend, evident by the greater customer base of the Todd County Water District. The past two censuses reveal growth in the county overall, and projections call for modest growth over the next 25 years.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. In recent years, the community has experienced the benefit of the US Highway 68 four-lane project among others, 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 is becoming more readily available to the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education. The District and other communities within the county have worked together to secure a reliable source of potable water for the foreseeable future as the county went online with the Logan Todd Regional Water Commission in 2003.

Further analysis of these projections indicates Todd County's population is projected to grow modestly every five years, adding about 927 persons by 2035. It should be noted that population would be impacted by job availability or the absence of an abundant water supply. An ample and readily available 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 447 miles of water line and a total water storage capacity of 1,378,000 gallons. The existing distribution system consists of 10", 8", 6", 4", and 3" PVC lines. The general service area is depicted in Exhibit 2, 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 Coal Bank elevated water tank and the Clifty tank provide 500,000 and 250,000 gallons of storage respectively to the northern pressure zone. The Hammacksville elevated tank has a storage capacity of 250,000 gallons and provides pressure to a small area in the southwestern part of the County. The fourth tank located on Allenders Hill acts as a pump tank or reservoir for the Logan Todd Regional Water Commission's booster pump station at that location. Currently, the majority of 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 three locations. The southern feed point is located at the base of the LTRWC tank described above, while the others are located at the Allender's Hill tank in northern Todd County and at Trenton for the Hammacksville tank area. Flow through each of these metering points is controlled by the LTRWC SCADA system. The northern pressure zone is controlled by water levels in the Clifty and Coal Bank Road tanks. The southern pressure zone is fed directly from the LTRWC tank, and the Trenton feed is controlled by the water level in the Hammacksville tank.

#### 3.2 Regulatory Compliance

According to the Division of Water's remarks within the Clearinghouse Comments, the Todd County water system is currently in compliance with

appropriate regulatory agencies. No other remarks were given to suggest that the water system was in or near a noncompliance status.

### 3.3 Existing Financial Charges and Status

#### 3.3.1 *Current Rate Schedule (Effective 7-14-17)*

All Meter Sizes: Residential & Commercial

First	<u>2,000</u>	Gallons @	<u>\$ 24.61</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 12.88</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 11.49</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 10.09</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 8.38</u>	per 1,000 Gallons

#### 3.3.2 *Former Rate Schedule (Rates effective 3-1-14; audit period)*

All Meter Sizes: Residential & Commercial

First	<u>2,000</u>	Gallons @	<u>\$ 21.60</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 11.30</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 10.09</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 8.87</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 7.39</u>	per 1,000 Gallons

#### 3.3.3 *O&M Costs (FYE 12/31/16)*

Item No.	Expense Item	Amount
1	Payroll Expenses & Benefits	\$ 483,491.00
2	Purchased Water	\$ 917,227.00
3	Distribution Expense	\$ 65,145.00
4	Contract & Professional Services	\$ 34,394.00
5	Utilities	\$ 30,049.00
6	Administrative Expense	\$ 36,733.00
7	Office Expenses	\$ 35,051.00
8	Depreciation	\$ 515,894.00
9	Insurance	\$ 31,634.00
10	Travel	\$ 14,722.00
11	Bad Debts	\$ 22,697.00
12	Miscellaneous	\$ 2,121.00
<b>Total Utility Expense</b>		<b>\$ 2,189,158.00</b>

#### 3.3.4 *Long Term Debts (as of 12/31/16)*

Date of Issue	Bond/Note Holder	Principal Balance	Maturity Date	Bond Type	Interest Rate
2005	Rural Dev	\$ 973,000	2045	Revenue	4.125%
2008	Rural Dev	\$ 1,664,500	2048	Revenue	4.125%
2010	Rural Dev	\$ 952,000	2050	Revenue	3.000%
2012	KY Rural Water	\$ 1,815,000	2033	Revenue	2.875%
Total		\$ 5,404,500			

## 4.0 NEED FOR PROJECT

### 4.1 Health and Safety

The primary purpose of this project is to provide a reliable supply of potable water to the new Novelis industrial complex. This facility is under construction, and it is expected to be in production by 2020, with utilities needed in place by Spring 2019. In early 2018, the Todd County Water District committed to local and state economic development officials that they would supply the required flow and pressure to the industrial site, if chosen. Based on initial operational expectations, the facility expects average water consumption in the neighborhood of 56,250 gpd.

Secondly, the District completed their last significant expansion project in 2013. Prior to then and since, the water system has received several requests for water service (extensions). Hence, all of the water lines, including alternates, slated for Contract 3 are proposed to bring water service to nearly 30 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.

### 4.2 System O&M

There are three primary reasons or benefits for the District's proposed project. The first of which is to fulfill their obligation to supply an ample flow of water to meet the demands of the new industrial client (Novelis). The construction of approximately 11,000 LF of 12-inch pipeline and a 500,000 gallon elevated tank will insure their ability to adequately serve the new customer while improving hydraulics in the immediate area of the project. Also, with the addition of a new water tank and resulting pressure zone, the District will be able to remove a portion of their South Todd customer base from the current, direct feed of Logan Todd's South Todd tank. Furthermore, the tank and pipeline system is being designed to accommodate what is projected to be an ultimate 1 MGD water demand when the Novelis facility is completely built out.

The second portion of the project will involve the relocation of a short section of an existing 6-inch waterline. The relocation is necessary due to the Kentucky Transportation Cabinet's proposed highway widening of US Highway 79 and relocation of an intersection (Old Railroad Lane and US Highway 79). The KYTC project does not include funds for the relocation of existing utilities.

The third benefit of the project is to provide a reliable and potable water source to as many as 27 potential residences as described in the preceding section. Many of these residences have been on a waiting list for some time with requests for service from the District. Also, if funds allow, the District plans to replace or install new SCADA equipment.

### 4.3 Growth

As mentioned earlier, the population of Todd County should grow by nearly 7.5% over the next 25 years based upon reliable census records and expected

growth. The proposed project is necessary to provide continued and reliable water service to all its nearly 3,466 current customers plus to properly serve the new industry. All of the new infrastructure will insure the District's ability to properly serve the existing customer base plus future growth in the US Highway 79 corridor near Guthrie.

## 5.0 ALTERNATIVES CONSIDERED

A resolution to the needs 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 be unable to comply with their obligations to provide adequate water service for the Novelis facility, and it would not address the new company's potable water needs. Therefore, the 'do nothing' alternative is not a viable option.

### 5.2 Alternative 2

The second alternative considered includes building a new water storage tank and connecting with the Logan Todd Regional Water Commission's transmission line, which runs along KY Highway 848. This connection point is approximately 2 miles from the LTRWC water treatment plant and just over 2 miles from LTRWC's South Todd water tank (Penick site), which is north of the Novelis site along Old Railroad Lane. The proximity to an abundant supply of potable water plus the District's ability to transition a significant portion of their Southern Todd County customers off the current direct feed at the Penick site and adequately serve the new industrial customer offered the most advantages to the current operation of the system while insuring enhanced abilities to serve future industrial growth of the Novelis facility. Also, the project offers the ability to provide an extension of service along at least 3 other roadways to serve 5 new customers.

#### 5.2.1 *Description*

The project will include the installation of a new metering station and SCADA equipment with LTRWC to control and monitor flow into a new 500,000 gallon elevated water tank, which will be built near the intersection of US Highway 79 and the CSX railroad. The project will include connecting the new meter station and tank with nearly 11,000 LF of 12" waterline that will run along US Highway 79.

Secondarily, the project provides the District the opportunity and funds to relocate approximately 1,000 LF of existing 6" waterline due to a proposed road widening project by the Kentucky Transportation Cabinet (KYTC). KYTC will not be funding utility relocations associated with the highway project, leaving the District the burden of performing the required improvements. The project also provides expansion of the water system along portions of 3 roadways by installing 3" PVC treated water lines.

### 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 relocations and extension of Contract 1 are proposed for construction in pipeline easements where possible or in county/state right-of-way. The tank addition Contract 2 is proposed on a 100'x100' site reserved for the District on the Novelis site. As mentioned earlier, the project will affect six main resources during construction: residential, commercial, agriculture, grazing, transportation and industrial (under construction). The general construction effect to these resources is the disturbances associated with building the facilities. However, no long-term impact is expected to any environmental resource.

### 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. Mobilization issues should be minimal for Contract 1 since the work is contained along the same corridor throughout, but it will be more significant for Contract 3 as that work is more spread throughout the county.

### 5.2.4 *Cost Estimates*

The Todd County Water District's Novelis Water Supply Project is estimated to have a total cost of \$3,600,000. The project cost consists of construction, non-construction and contingency costs, which are approximately \$2,975,270, \$552,800 and \$71,930 respectively. The project is anticipated to be funded in part by a \$390,000 grant and \$3,210,000 loan, all from Rural Development.

## 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 2017 figures from LTRWC, the water treatment plant is producing nearly 4,000,000 gallons per day, which is approximately 40% of the design capacity. Therefore, sufficient capacity exists to serve the District since the average demand of the new industrial customer is estimated to be at 56,250 gallons per day, and the maximum number of potential residential



customers (27) from Contract 3 should only add an additional 9,450 gpd to the total demand, based on average usage.

### 6.1.2 *Storage*

The proposed project will involve the construction of a new 500,000-gallon elevated storage tank (OF = ~801'). This new tank will be constructed on the edge of the Novelis site, which is located just outside the northern city limits of Guthrie, Kentucky. The new tank will place a second sufficiently sized water storage supply in the southern half of the District's water system, which will lessen the direct demand from their Logan Todd feed at the South Todd Meter Station. Overall, the water system's total storage capacity will increase to 1,717,800 gallons. The proposed tank site is illustrated in Exhibit E-2.

### 6.1.3 *Distribution Layout*

The waterline construction of the Todd County Water District improvement project will be spread out over nearly 4 miles of rural roadways in two distinct contracts. In addition, nearly 11 miles of alternate extensions have been identified for project inclusion should extra funds be available after initial of all contracts. The affected roadways are not clustered together as typical in most system upgrades, but they are mostly "fill-in" lines to serve new customers and offer hydraulic improvements for water quality and flow.

For the waterline construction of Contract No. 1, the nearest available connection point with the Logan Todd Regional Water Commission's transmission line is nearly 2 miles northeast of the Novelis industrial site. The obvious route for a new distribution main in the District's water system is along US Highway 79 between the CSX railroad and KY Highway 848. There is minimal change in elevation along the route, and nearly all of the route is open agriculture ground. Both PVC and ductile iron pipe pricing will be solicited in the bidding.

The waterline construction of Contract No. 3 (System-wide Extensions & Improvements) will be contained along 3 roadways (base bid). The respective work will include the new installation of approximately 6,150 LF of 3" PVC treated water line.

Few challenges are expected along the routes of the project. There are no noticeable rock outcrops, and only one significant road bore is needed to cross US Highway 79 onto the Novelis site itself. The project will require a few stream crossings, but the streams are of the wet weather variety and crossings can likely be achieved during dry periods.

The project area is illustrated in Exhibit E-1 through E-10.

#### 6.1.4 *Regulatory Compliance*

A portion of the proposed project has been submitted to the Kentucky State Clearinghouse for their comments. The clearinghouse review of the original proposal indicated there were 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.

#### 6.1.5 *Hydraulic Calculations*

For preliminary planning purposes, the computer hydraulic simulator, KYPIPE 2000, has been used to construct a system wide model to determine the hydraulic characteristics of the Todd County Water District system as it currently exists. The model includes all of the existing lines from the water supply connection with Logan Todd, plus the proposed line upgrades and other features of the project. The modeling indicates that the waterlines may be constructed as proposed. Detailed model results are available upon request.

## 6.2 Cost Estimate

The proposed itemized cost estimate of Todd County Water District's Novelis Water Supply Project is shown in Table 3 and proposed funding package is shown in Table 4.

Table 3  
Project Cost Estimate

<b>CONSTRUCTION</b>		
<b>Contract/Roads</b>	<b>Original Budget</b>	<b>Revised Budget</b>
Contract 1 - Novelis Waterline Extensions & Meter Station (Horsley)	\$ 820,000	\$ 699,270
Contract 2 - Novelis Tank Addition (Caldwell Tanks)	\$ 1,980,000	\$ 1,976,000
Contract 3 - Miscellaneous Line Extensions (Future bidding)	\$ -	\$ 300,000
<b>Total Construction Cost</b>	<b>\$ 2,800,000</b>	<b>\$ 2,975,270</b>
<b>NON-CONSTRUCTION</b>		
Administrative	\$ 3,000	\$ 4,000
Land & Right-of-Way	\$ 20,000	\$ 20,000
Legal	\$ 24,000	\$ 24,000
Preliminary Engineering	\$ 22,000	\$ 22,000
Environmental, Surveys, Studies & Permitting	\$ 48,000	\$ 54,000
Design Engineering	\$ 142,000	\$ 153,300
Construction Phase Engineering Services	\$ 61,000	\$ 65,700
Construction Phase Testing	\$ 15,000	\$ 15,000
Construction Inspection	\$ 115,000	\$ 124,800
Construction Phase Interest & Financing	\$ 70,000	\$ 70,000
SUBTOTAL - Non-Construction	\$ 520,000	\$ 552,800
Contingency	\$ 280,000	\$ 71,930
<b>TOTAL PROJECT COST</b>	<b>\$ 3,600,000</b>	<b>\$ 3,600,000</b>

Table 4  
Proposed Funding Package

<b>FUNDING SOURCES</b>	
Rural Development Grant	\$390,000
Rural Development Loan	\$3,210,000
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$3,600,000</b>

Additionally, a detailed cost estimate of the alternative work items is shown in Table 5. These work items are included for review in the event extra funds, including contingency, are available after bidding the primary scope of work.

Table 5  
Alternative Work Items: Cost Estimate

<b>Construction</b>			
<b>Road</b>	<b>Quantity</b>	<b>Units</b>	<b>Estimated Cost</b>
Johnson Mill Road	1	LS	\$ 28,610
Lack Road	1	LS	\$ 40,302
Lawson-Poindexter Road	1	LS	\$ 33,225
B. White Road	1	LS	\$ 59,055
Clay Cole Road	1	LS	\$ 34,845
Crawford Road	1	LS	\$ 31,090
Hall-Latham Road	1	LS	\$ 32,655
Hammacksville Road	1	LS	\$ 38,245
Lyons Road	1	LS	\$ 32,065
Maton Road	1	LS	\$ 63,667
Morton Lane	1	LS	\$ 79,818
Mt. Sharon Road	1	LS	\$ 31,955
Paul Hurt Road	1	LS	\$ 20,538
Pogue Road	1	LS	\$ 9,500
Squire Grove Loop	1	LS	\$ 27,465
Starnes Road	1	LS	\$ 24,575
Turner Road	1	LS	\$ 10,938
<b>TOTAL - Construction (All Alternate Roads)</b>			<b>\$ 598,547</b>

### 6.3 Annual Operating Budget

The proposed annual operating budget for the Todd County Water District's Novelis Water Supply Project is shown in Table 6.

Table 6  
*Proposed Operating Budget*

<b>Operating Income</b>	<b>Existing <sup>(1)</sup></b>	<b>KY Hwy 181 Project</b>	<b>Novelis Project</b>	<b>Future</b>
Water Sales	\$2,007,944.00	\$15,715.44 <sup>(3)</sup>	\$254,883.00 <sup>(10)</sup>	\$2,629,923.00 <sup>(8)</sup>
Late Charges	\$29,162.00	\$0.00	\$0.00	\$29,162.00
Other Charges	\$43,574.00	\$0.00	\$0.00	\$43,574.00
<b>Total Operating Income</b>	<b>\$2,080,680.00</b>	<b>\$15,715.44</b>	<b>\$254,883.00</b>	<b>\$2,702,659.00</b>
<b>Operating and Maintenance Expense</b>				
Purchased Water	\$917,227.00	\$4,879.68 <sup>(3)</sup>	\$80,277.19 <sup>(10)</sup>	\$1,002,383.87
Payroll Expense & Benefits	\$483,491.00	\$14,500.00 <sup>(4)</sup>	\$0.00	\$497,991.00
Distribution Expense	\$65,145.00	\$1,950.00 <sup>(4)</sup>	\$0.00	\$67,095.00
Contract Services & Prof. Fees	\$34,394.00	\$1,030.00 <sup>(4)</sup>	\$0.00	\$35,424.00
Utilities & Telephone	\$30,049.00	\$900.00 <sup>(4)</sup>	\$0.00	\$30,949.00
Administrative Expense	\$36,733.00	\$1,100.00 <sup>(4)</sup>	\$0.00	\$37,833.00
Office Expenses	\$35,051.00	\$1,050.00 <sup>(4)</sup>	\$0.00	\$36,101.00
Insurance	\$31,634.00	\$950.00 <sup>(4)</sup>	\$0.00	\$32,584.00
Travel	\$14,722.00	\$440.00 <sup>(4)</sup>	\$0.00	\$15,162.00
Bad Debts	\$22,697.00	\$680.00 <sup>(4)</sup>	\$0.00	\$23,377.00
Miscellaneous	\$2,121.00	\$60.00 <sup>(4)</sup>	\$0.00	\$2,181.00
<b>Total Operating Expenses</b>	<b>\$1,673,264.00</b>	<b>\$27,539.68</b>	<b>\$80,277.19</b>	<b>\$1,781,080.87</b>
<b>Net Operating Income</b>	<b>\$407,416.00</b>	<b>(\$11,824.24)</b>	<b>\$174,605.81</b>	<b>\$921,578.13</b>
<b>Non-Operating Income (Expense)</b>				
Interest Income	\$3,782.00	\$0.00	\$0.00	\$3,782.00
RUS Interest (Bonds pre-2017)	(\$143,724.00)	\$0.00	\$0.00	(\$131,362.00) <sup>(6)</sup>
RUS Principal (Bonds pre-2017)	(\$56,500.00)	\$0.00	\$0.00	(\$63,000.00) <sup>(6)</sup>
RUS Interest (KY 181 Project)	\$0.00	(\$84,370.00) <sup>(5)</sup>	\$0.00	(\$84,370.00) <sup>(5)</sup>
RUS Principal (KY 181 Project)	\$0.00	(\$46,780.00) <sup>(5)</sup>	\$0.00	(\$46,780.00) <sup>(5)</sup>
RUS Interest (Novelis Issue)	\$0.00	\$0.00	(\$100,325.00) <sup>(9)</sup>	(\$100,325.00) <sup>(9)</sup>
RUS Principal (Novelis Issue)	\$0.00	\$0.00	(\$45,180.00) <sup>(9)</sup>	(\$45,180.00) <sup>(9)</sup>
Non-RUS Interest	(\$55,325.00)	\$0.00	\$0.00	(\$48,863.00) <sup>(6)</sup>
Non-RUS Principal	(\$100,000.00)	\$0.00	\$0.00	(\$110,000.00) <sup>(6)</sup>
<b>Total Non-Operating Income &amp; Debt</b>	<b>(\$351,767.00)</b>	<b>(\$131,150.00)</b>	<b>(\$145,505.00)</b>	<b>(\$626,098.00)</b>
<b>Net for Coverage &amp; Depreciation</b>	<b>\$55,649.00</b>	<b>(\$142,974.24)</b>	<b>\$29,100.81</b>	<b>\$295,480.13</b>
<b>10% Debt Service Coverage</b>	<b>(\$35,555.00)</b>	<b>(\$13,115.00)</b>	<b>(\$14,551.00)</b>	<b>(\$62,988.00)</b>
<b>Subtotal</b>	<b>\$20,094.00</b>	<b>(\$156,089.24)</b>	<b>\$14,549.81</b>	<b>\$232,492.13</b>
<b>Short Lived Assets <sup>(2)</sup></b>	<b>(\$65,349.00)</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>(\$60,000.00)</b>
<b>Net for Depreciation</b>	<b>(\$45,255.00) <sup>(7)</sup></b>	<b>(\$156,089.24)</b>	<b>\$14,549.81</b>	<b>\$172,492.13</b>

**Notes:**

1. Based on the December 31, 2016 Audit Report.
  2. The District presently places, & plans to continue with, approximately \$5,000 per month into a "Depreciation Reserve" account.
  3. Based on 26 new customers (Contract 2) using 4,000 gal/month at current TCWD rates & current LTRWC wholesale rate (\$3.91)
  4. Based on 3% nominal increase due to anticipated annual cost increases.
  5. Estimated Project Debt Service: Based on a **\$3,068,000 RUS loan** at 2.75% and 38 payments
  6. Debt Service per Amortization Schedules. 2019 Figures used for Future.
  7. The 2016 Depreciation Expense was **\$515,894** per the 2016 Audit.
  8. Combined Project Revenues: New Residential Customers (26) + New Industrial Customer (56,250 gpd); all with new rates
  9. Estimated Project Debt Service: Based on a **\$3,210,000 RUS loan** at 3.125% and 38 payments
  10. Based on new industrial customer using 56,250 gpd at proposed TCWD rate & current LTRWC wholesale rate (\$3.91).
- Usage values based on the lowest estimated demand, mentioned in Novelis memo (See Appendix C)

Table 7 illustrates the project's rate schedule with the requested RUS Grant, which was outlined in USDA's Letter of Conditions, issued to the District on September 28, 2018 and amended on May 10, 2019.

**Table 7**  
**Project Rate Schedule per USDA Letter of Conditions**

Residential & Commercial Customers: All Meter Sizes

First	<u>2,000</u>	Gallons @	<u>\$ 24.00</u>	Minimum
Next	<u>18,000</u>	Gallons @	<u>\$ 12.00</u>	per 1,000 Gallons
All Over	<u>20,000</u>	Gallons @	<u>\$ 8.25</u>	per 1,000 Gallons

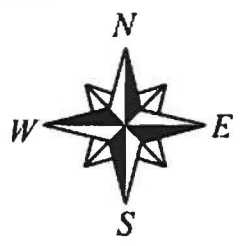
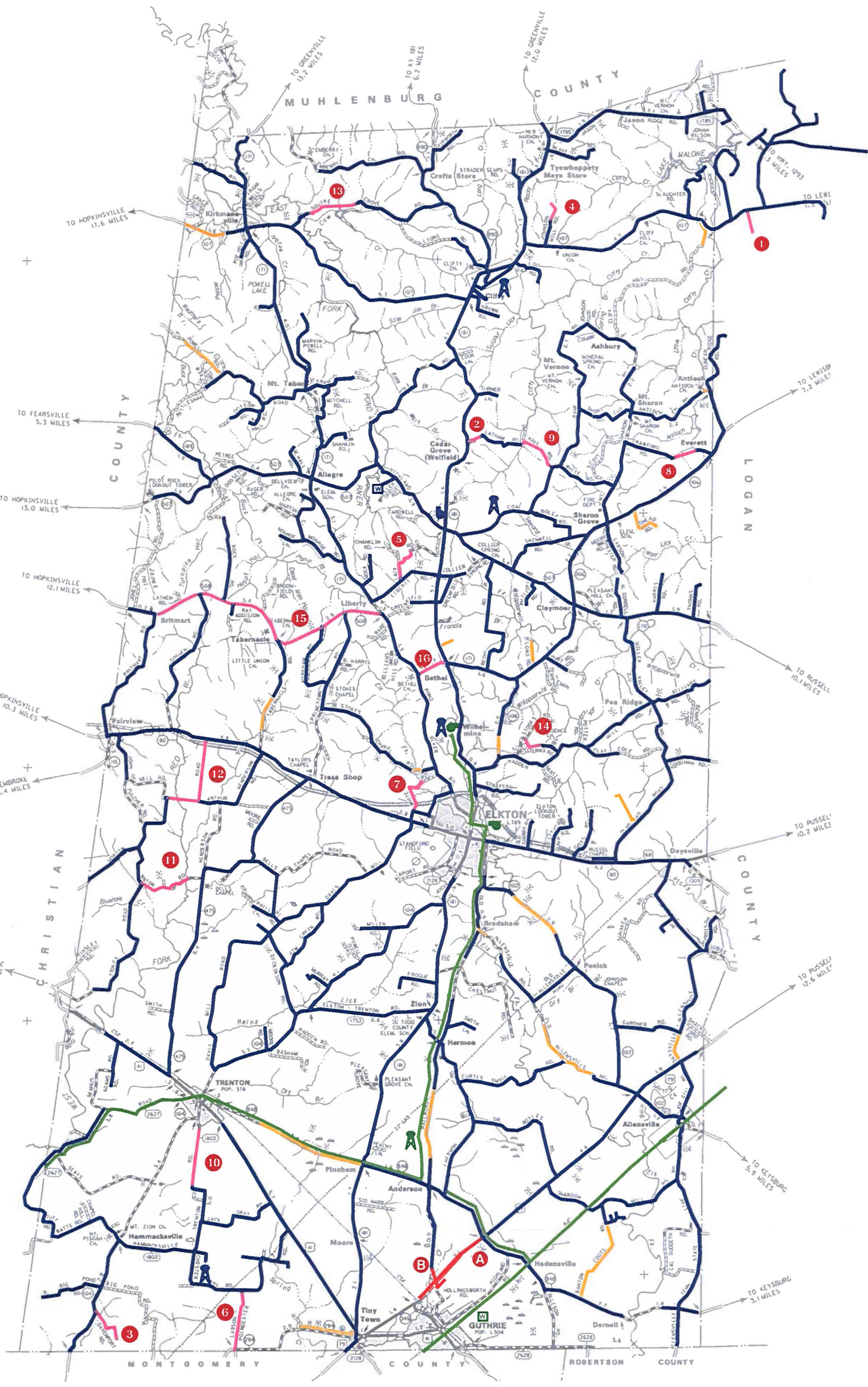
Industrial Customers: Large Meter

First	<u>1,500,000</u>	Gallons @	<u>\$19,500.00</u>	Minimum
Next	<u>1,500,000</u>	Gallons @	<u>\$ 8.25</u>	per 1,000 Gallons
Next	<u>1,500,000</u>	Gallons @	<u>\$ 6.50</u>	per 1,000 Gallons
Next	<u>1,500,000</u>	Gallons @	<u>\$ 6.30</u>	per 1,000 Gallons
Next	<u>1,500,000</u>	Gallons @	<u>\$ 6.15</u>	per 1,000 Gallons
Next	<u>1,500,000</u>	Gallons @	<u>\$ 6.05</u>	per 1,000 Gallons
All Over	<u>9,000,000</u>	Gallons @	<u>\$ 6.00</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 500,000-gallon elevated water storage tank (OF = ~801') in the Guthrie community to serve a significant portion of southern Todd County and the new Novelis industrial site.
- Construct approximately 2 miles of new 12" waterline to connect the new tank with the Logan Todd Regional Water Commission's transmission line at the intersection of US Highway 79 and KY Highway 848.
- Relocate approximately 0.2 miles of 6" waterline to accommodate highway improvements at the intersection of US Highway 79 and Old Railroad Lane.
- Construct a LTRWC metering station/vault with an electronic control valve to control the flow and filling of the proposed Novelis tank.
- Construct approximately 3 miles of new waterline along various roadways (Contract 3; future letting) to serve a potential of 5 residences plus improve the system's hydraulics and water quality.
- Conduct any required archaeological or other environmental investigations to insure the proposed line extensions (Contract 3) are compliant with federally funded project guidelines.



Scale in Miles

Background Map: KyDOT Todd County General Highway Map—1998

**LEGEND**

- Existing Water Line—TCWD
- Novelis Project Contract 1 Proposed Waterline Upgrade—TCWD
- Existing Water Line—LTRWC
- KY Hwy 181 Project Contract 2 Waterline Upgrade or Alternate—TCWD
- Novelis Project Contract 3 Proposed Waterline Upgrade or Alternate—TCWD
- Existing Water Storage Tank
- Existing Pump Station
- Existing Pump Station
- Waterline ID

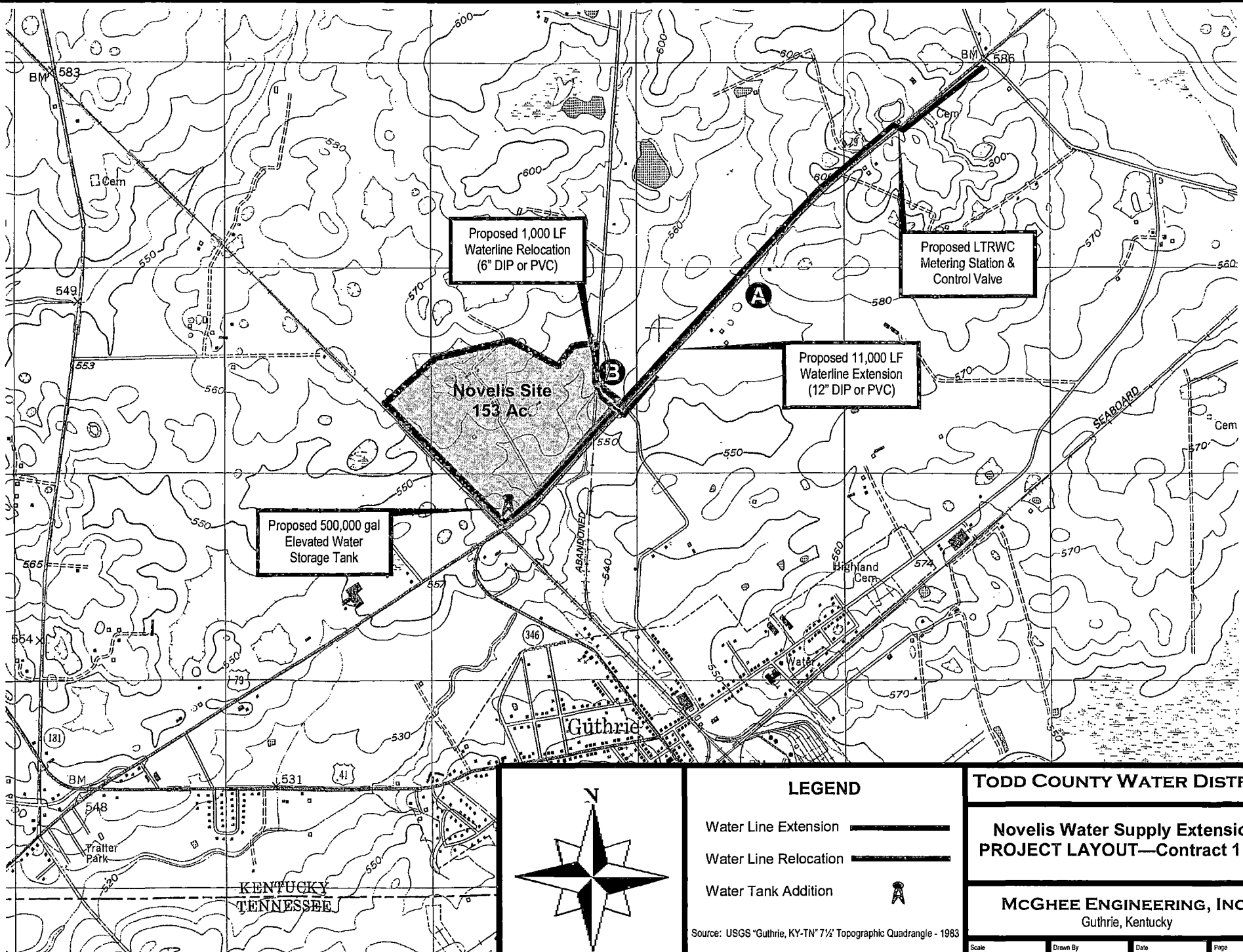


**MCGHEE ENGINEERING, INC.**

Guthrie, Kentucky

Todd County Water District  
**Novelis Water Supply Project**  
**OVERALL PROJECT LAYOUT**

By: Wilcutt	Scale: As Noted	Date: Feb. 2019	Page: E-1
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Proposed 1,000 LF  
Waterline Relocation  
(6" DIP or PVC)


Proposed LTRWC  
Metering Station &  
Control Valve


Proposed 11,000 LF  
Waterline Extension  
(12" DIP or PVC)


Proposed 500,000 gal  
Elevated Water  
Storage Tank

Novelis Site  
153 Ac

**LEGEND**

Water Line Extension 

Water Line Relocation 

Water Tank Addition 

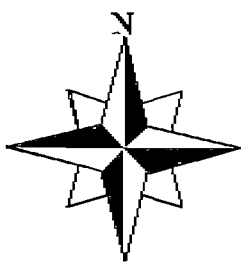
**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
PROJECT LAYOUT—Contract 1 & 2**

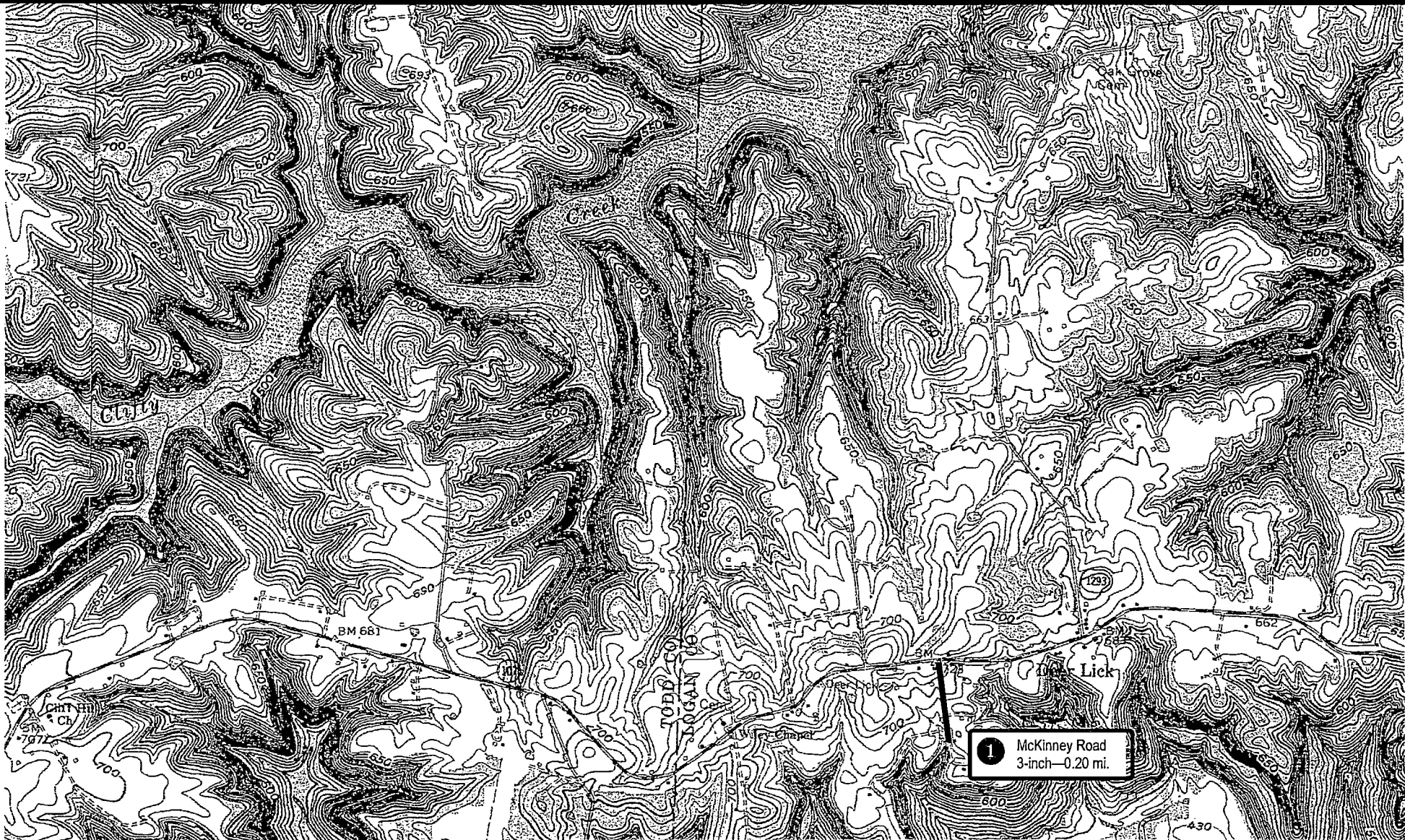
**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Source: USGS "Guthrie, KY-TN" 7 1/2' Topographic Quadrangle - 1963

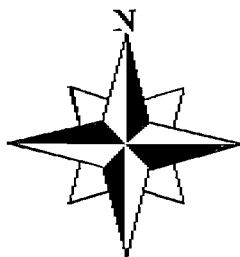
Scale 1"=2,000'	Drawn By C. Wilcutt	Date May 2018	Page E-2
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1 McKinney Road  
3-inch—0.20 mi.



**LEGEND**

Water Line Extension 

Water Line Relocation 

Water Tank Addition 

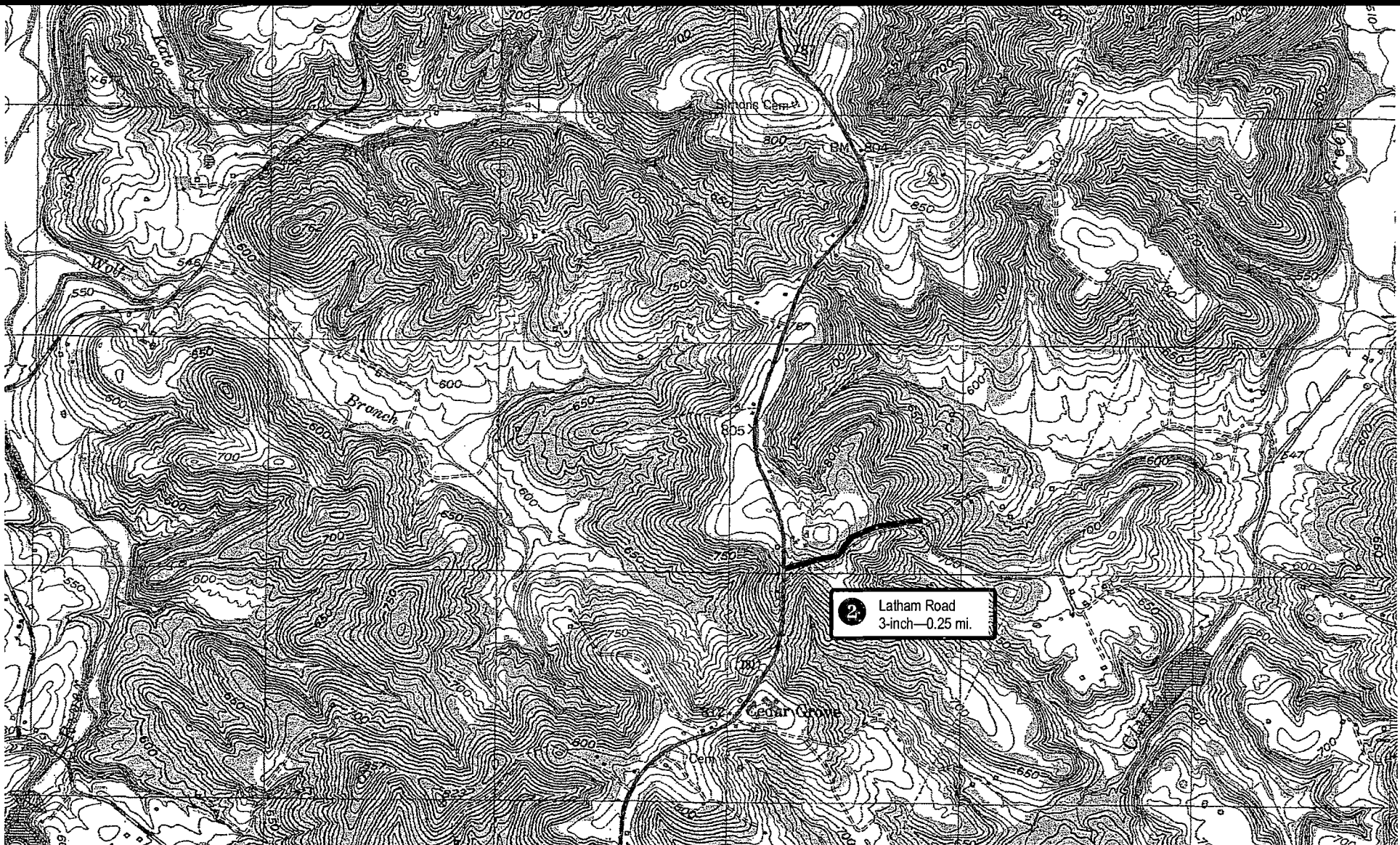
Source: USGS "Rosewood, KY-TN" 7 1/2 Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

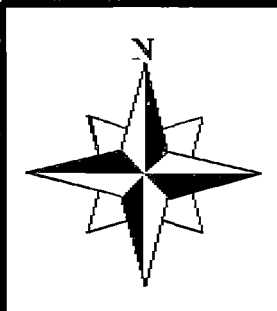
**Novelis Water Supply Extension  
McKinney Road—Contract 3**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C. Wilcutt	Date May 2018	Page E-3
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2 Latham Road  
3-inch—0.25 mi.



**LEGEND**

- Water Line Extension
- Water Line Relocation
- Water Tank Addition

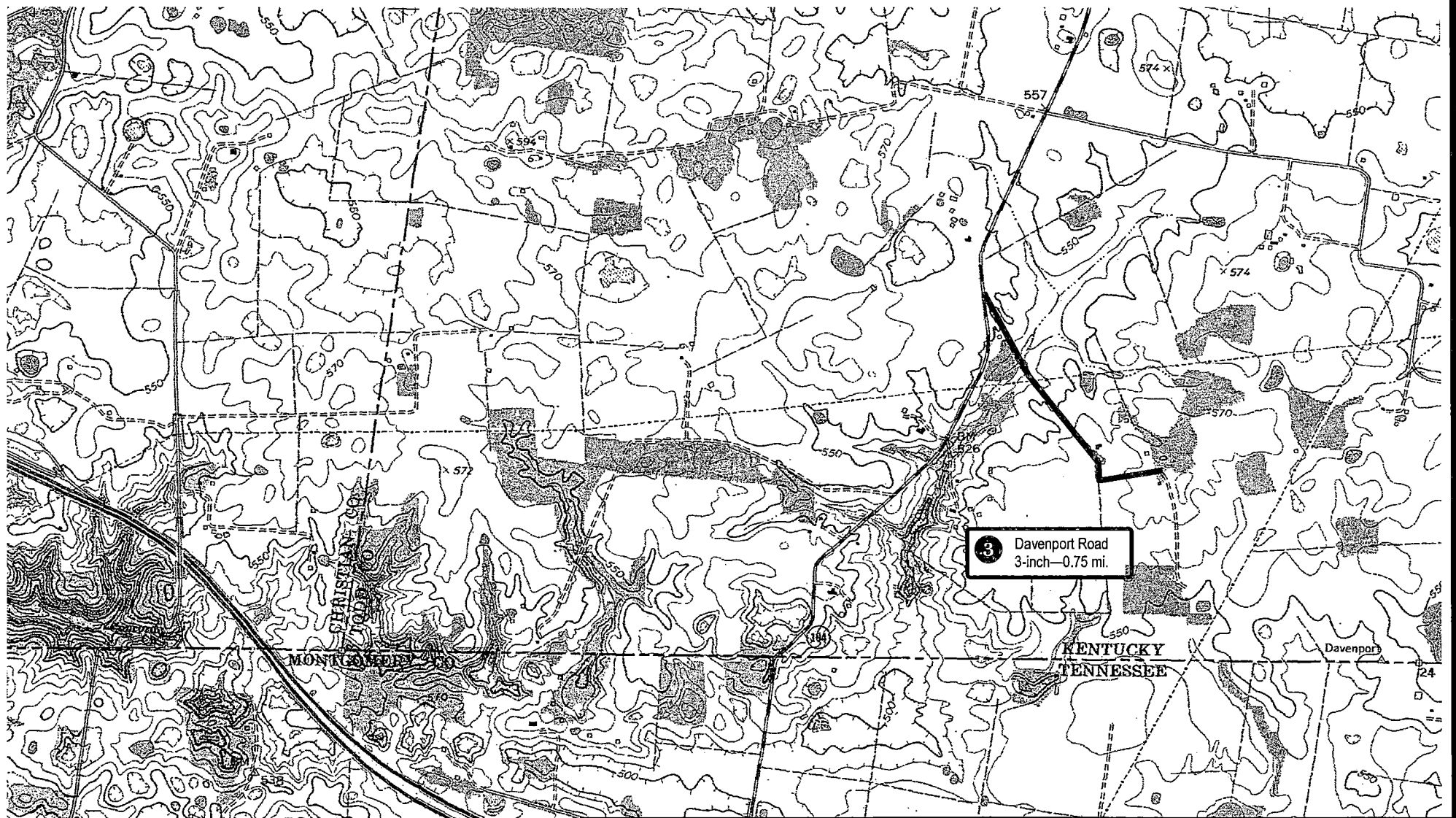
Source: USGS "Allegre, KY-TN" 7 1/2 Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

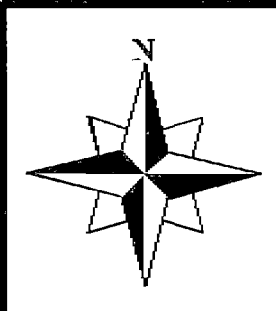
**Novelis Water Supply Extension  
Latham Road—Contract 3**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	Drawn By	Date	Page
1"=2,000'	C. Wilcutt	May 2018	E-4



**3** Davenport Road  
3-inch—0.75 mi.



**LEGEND**

Water Line Extension

Water Line Relocation

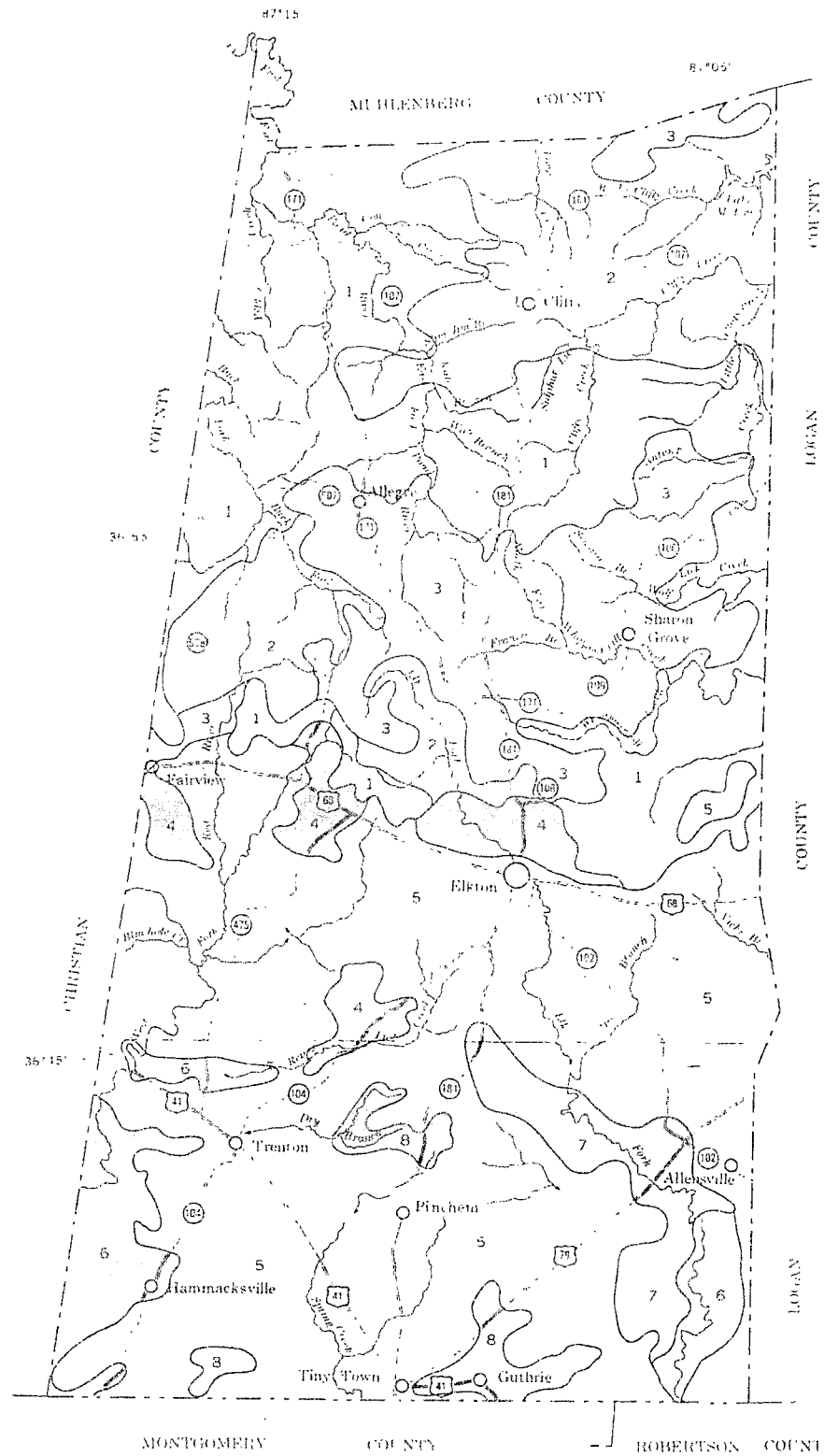
Water Tank Addition

Source: USGS "Trenton, KY-TN" 7 1/2' Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
Davenport Road—Contract 3**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky



**LEGEND**

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

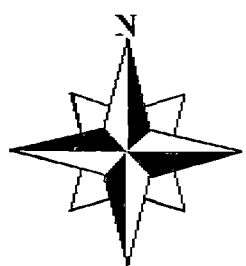
- 1 Caneyville-Frontport-Weikert: Well drained, steep to sloping, moderately deep and deep soils that are loamy and have a clayey or loamy subsoil, formed in residuum or in loess and residuum from sandstone, siltstone, or shale, on side slopes and ridges.
- 2 Frontport-Weikert-Zanesville: Well drained and moderately well drained, very steep to gently sloping, deep to shallow soils that are loamy and have a clayey 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-Vertices: 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-Lowrance: 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

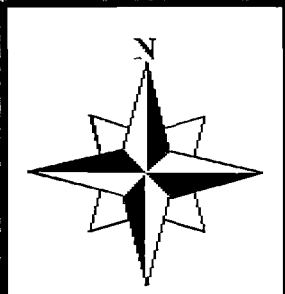
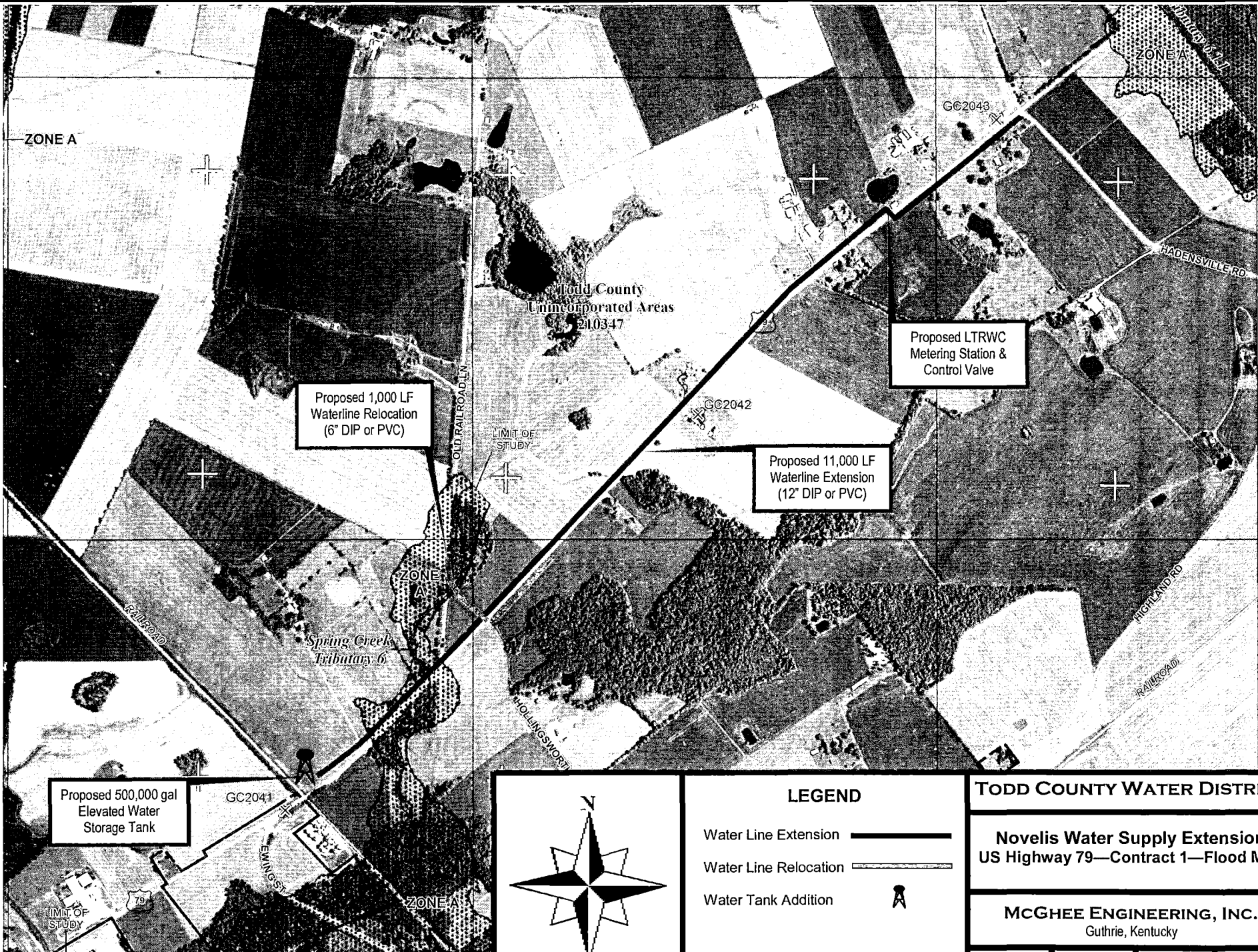


**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
SOIL MAP**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale 1"=4 miles	Drawn By C. Wilcutt	Date May 2018	Page E-6
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**LEGEND**

- Water Line Extension
- Water Line Relocation
- Water Tank Addition

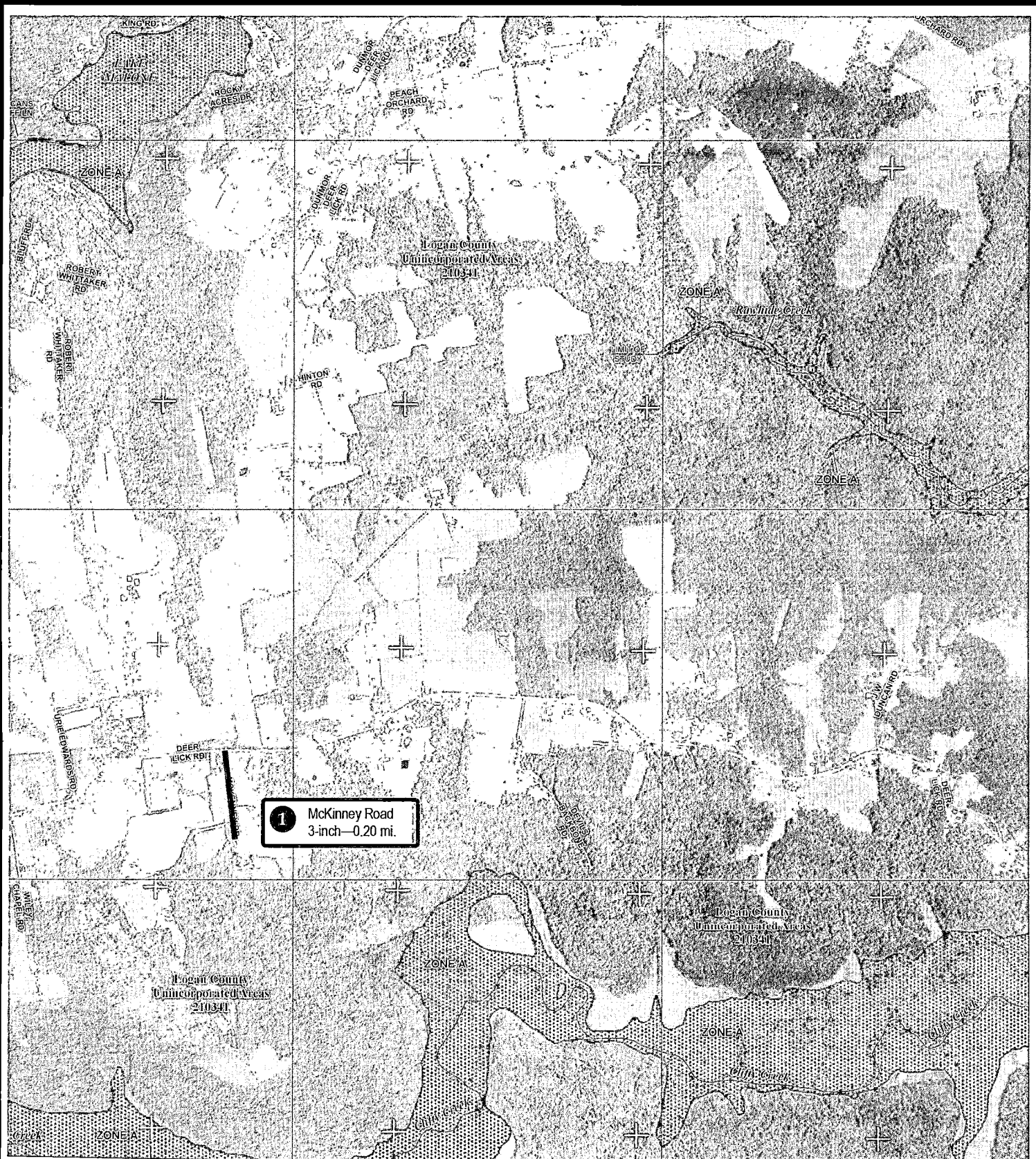
Source: FEMA-Flood Insurance Rate Map #21219C0270C

**TODD COUNTY WATER DISTRICT**

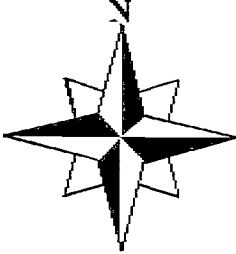
**Novelis Water Supply Extension**  
 US Highway 79—Contract 1—Flood Map

**MCGHEE ENGINEERING, INC.**  
 Guthrie, Kentucky





Scale	None	Drawn By	C. Wilcutt	Date	May 2018	Page	E-7
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**1** McKinney Road  
3-inch—0.20 mi.



**LEGEND**

Proposed Water Line	
Waterline Priority ID	
Existing Water Tank	
Existing Pump Station	

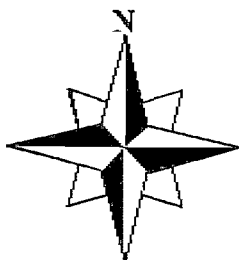
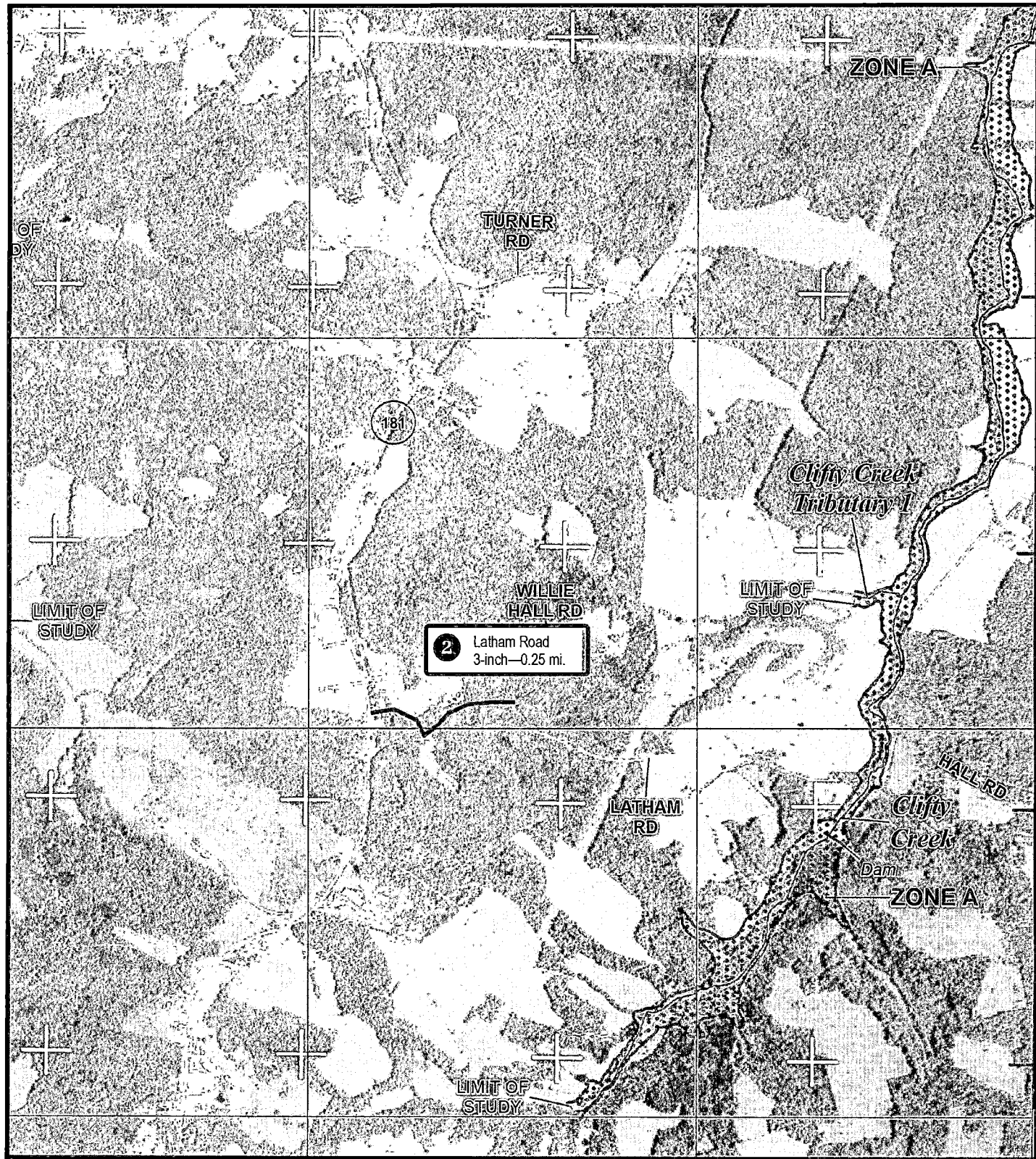
Source: FEMA-Flood Insurance Rate Map #FM2114C0020D  
Logan County-October 2, 2012

**TODD COUNTY WATER DISTRICT**





Novelis Water Supply Extension  
**McKinney Road—Contract 3—Flood Map**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	Drawn By	Date	Page
None	C. Wilcutt	Feb. 2019	E-8



**LEGEND**

- Proposed Water Line 
- Waterline Priority ID 
- Existing Water Tank 
- Existing Pump Station 

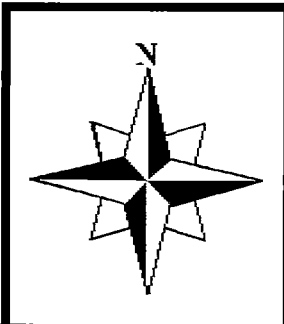
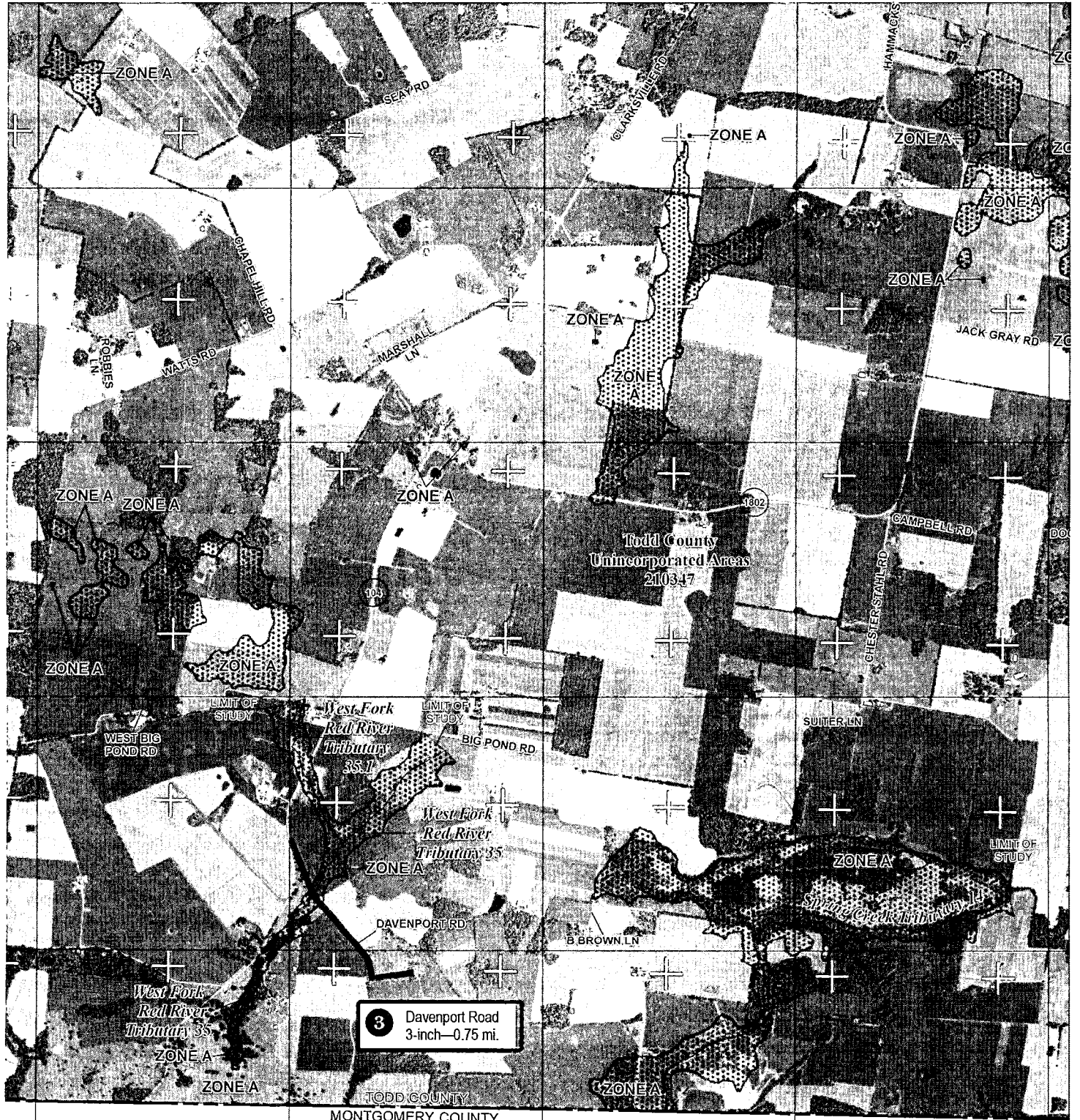
Source: FEMA-Flood Insurance Rate Map #FM21219C0125C  
Todd County-June 1, 2017

**TODD COUNTY WATER DISTRICT**

Novelis Water Supply Extension  
Latham Road—Contract 3—Flood Map

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	Drawn By	Date	Page
None	C. Wilcutt	Feb. 2019	E-9



**LEGEND**

- Proposed Water Line
- Waterline Priority ID
- Existing Water Tank
- Existing Pump Station

Source: FEMA-Flood Insurance Rate Map #FM21219C0250C  
Todd County-July 22, 2010

**TODD COUNTY WATER DISTRICT**

Novelis Water Supply Extension  
Davenport Rd—Contract 3—Flood Map

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	Drawn By	Date	Page
None	C. Wilcutt	Feb. 2019	E-10



**Appendix A**

*Bid Tabulation: Contract 1 & 2*



**Todd County Water District**  
**Novelis Water Supply Project - Contract 2 Tank Addition**

**TABULATION OF BIDS**

Bids Received: February 1, 2019 @ 3:30 p.m.

No. BASE BID ITEMS	<u>Caldwell Tanks, Inc.</u> <u>Louisville, KY</u>	<u>Phoenix Fabric. &amp; Erectors</u> <u>Avon, IN</u>	<u>Landmark Structures</u> <u>Fort Worth, TX</u>
01 Lump Sum Bid Amount	\$ 1,976,000.00	\$ 2,067,000.00	\$ 2,988,000.00
<b>No. Add/Deduct Alternate</b>			
A01 FAA Beason Light in lieu of Obstruct. Light	\$ 10,500.00	\$ 11,120.00	\$ 20,000.00
Lump Sum Bid w/ Altnerate	\$ 1,986,500.00	\$ 2,078,120.00	\$ 3,008,000.00

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

Owner:  
**Todd County Water District**  
PO Box 520  
Elkton, Kentucky 42220  
(270) 265-2229