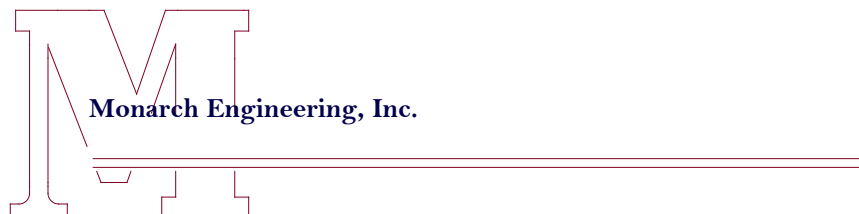


**PRELIMINARY ENGINEERING REPORT
FOR THE
WESTERN ROCKCASTLE WATER ASSOCIATION
CONTRACT 12 - WATER SYSTEM EXTENSION &
IMPROVEMENTS**

DECEMBER 2017



PRELIMINARY ENGINEERING REPORT

CONTRACT 12 - WATER SYSTEM EXTENSION & IMPROVEMENTS

WESTERN ROCKCASTLE WATER ASSOCIATION ROCKCASTLE, LINCOLN, & PULASKI COUNTIES, KENTUCKY

I. GENERAL

This Preliminary Engineering Report is intended to analyze the proposed water system extension and improvements that are being planned by the Western Rockcastle Water Association to install approximately 7,250 linear feet of new 3-inch PVC water main and appurtenances to serve approximately thirteen (13) new users; approximately 6,950 LF of 3-inch water line and appurtenances to replace existing 3/4-inch and 1-inch water lines to serve approximately 25 existing users. The project also entails the installation of two (2) new hydro pneumatic water booster pumps stations and two (2) pressure reducing station replacements. In addition, the rehabilitation of an existing elevated water storage tank which is known as the 150,000 Gallon Dog Walk Water Storage Tank. The elevated water storage tank has been in service for approximately 16 years and is in need of surface repairs consisting of welding of damaged areas and painting the interior and exterior.

The Western Rockcastle Water Association provides potable water service to nearly 4,000 customers in Rockcastle, Pulaski and Lincoln counties. The Association purchases all water for resale from the City of Mount Vernon.

Included in this report are maps of the proposed service area showing the intended routes of the water lines, and the location of major appurtenances. In addition, project cost estimates are included which outline the entire project costs along with the proposed financing scheme.

II. PROJECT PLANNING AREA

The areas to be served with potable water for the first time are located on Skyline Road and Flat Rock-Pine Hill Road both off of US Highway 25, and Claylick Branch Road in Rockcastle County. The project will consist of replacing 3/4-inch and 1-inch service lines with new 3-inch water lines that serve multiple users on Three Oaks Lane, Boone Gap Road, Honeysuckle Lane, Emerald Lane, Holman Lane, County Road 1515, and Gray Hawk Road in Rockcastle County. The pressure reducing stations to be replaced on located on US Highway 25 in the Greenfish Hill area. The two hydropneumatic water booster pump stations will be installed at Backbone Ridge Road and Flat Rock-Pine Hill Road. These areas are delineated on the attached maps. The topography in these areas

consists primarily of gently rolling hills throughout the valley areas and along the numerous creeks in this area with steep ridges encountered in the Daniel Boone National Forest. The land use in the valley areas is mainly agricultural with some light timber harvesting. Within the proposed area, there are no major industrial or commercial businesses.

The residents located along Skyline Road, Flat Rock-Pine Hill Road, and Claylick Branch Road have never been served by a public water system and most rely on community springs, family wells, or depend on water trucks to provide them with their potable water. Most individuals pay to have their water delivered and those who cannot afford to pay local water haulers, transport their water by means of barrels, bucket, or other containers. They often make daily trips to the nearest water source, none of which are monitored by an approved health agency. It is not anticipated that a significant growth pattern will emerge as a result of the implementation of a domestic water supply but rather that the standard of living for those residents will be greatly improved.

The seven (7) areas that are currently serving twenty-six (26) existing customers on undersized water lines will now be served by a 3-inch water line that will improve the quantity and quality of the water supply.

The rehabilitation of the existing 150,000 gallon elevated water storage tank is located in the Dog Walk area near the Kentucky Highway 39 and Kentucky Highway 618 intersection.

III. EXISTING FACILITIES

The Western Rockcastle Water Association executed a contract in 1994 with the City of Mount Vernon to purchase 10 million gallons of water per month for 45 years. The City has recently completed the constructing a new water treatment plant and the water purchase agreement has been amended to reflect a longer term and a larger allotment. The Association operates a distribution system that serves nearly 4,000 residential and nonresidential customers that reside throughout Rockcastle, Lincoln and Pulaski Counties.

The Western Rockcastle Water Association operates the water system through a Board of Directors, Office Manager, office personnel and field personnel.

Information regarding the current rate structure, annual operating and maintenance data and a tabulation of the users for an annual period by monthly usage categories and revenue, will be analyzed in the Summary Addendum which will be included in the Kentucky Guide 7A.

IV. NEED FOR THE PROJECT

This project is intended to serve first time users along Skyline Road, Flat Rock-Pine Hill Road, Claylick Branch Road. All of these water line extensions have been requested by the land owners for some time now.

Project entails construction of water main to provide water to current under-served users and system improvements to improve service to existing customers. Existing 3/4-inch and 1-inch water lines are aging and are undersized, causing breaks, leaks, and under-served users.

It is anticipated that thirteen (13) homes will be immediately affected by the water line extension portion of the project and twenty-six (26) homes will be immediately affected by the water line replacement portion of the project. The proposed service areas are shown on the attached maps, and is located in a geographic area where rock conditions are prevalent. The terrain is over laden with visible rock outcroppings and numerous creek crossings with limited access along the public roadway.

The need for two (2) new hydropneumatic booster pump stations will benefit two areas, one of which will alleviate a pressure problem in the Backbone Ridge Road area and the other to boost pressure in an area where a new water line will be extended to an area high in elevation in the Flat Rock-Pine Hill Road area.

The replacement of the two (2) existing pressure reducing stations along US Highway 25 in the Greenfish Hill Area are in desperate need of replacement due to age, and repairs have been exceeded at this point. The replacements will be site specific and includes measures to ensure that the pressure reducing stations are able to function properly during high water demands and low water demands.

The existing water storage tank is experiencing medium to large scale paint loss on both the interior and exterior surfaces. There are also certain structural and safety components which will require repair in order to ensure its continued operation. The storage tank is a critical component to the Association's potable water distribution system and therefore its continued use is vital to the community itself. It serves thousands of residential customers. The potable water supply to these customers is dependent on this structures continued use.

V. ALTERNATIVES CONSIDERED

Based on the fact that there are no other major potable water suppliers that exist in this area, the only practical potable water supplier that would consider serving these areas is the Western Rockcastle Water Association. There are no other practical alternatives that could be considered. The Western Rockcastle Water Association is supplied water by the City of Mount Vernon. Both of these entities are regulated by the Kentucky Division of Water and have a history of compliance with the Division's regulations and policies.

Therefore, it was determined that these areas would be best served by a water system built, owned, operated and served by the Western Rockcastle Water Association.

VI. PROPOSED PROJECT

Project entails the construction of approximately 7,250 linear feet of new 3-inch PVC water main and appurtenances to serve approximately thirteen (13) new users; approximately 6,950 LF of 3-inch water line and appurtenances to replace existing 3/4-inch and 1-inch water lines to serve approximately 25 existing users. The project also entails the installation of two (2) new hydro pneumatic water booster pumps stations and two (2) pressure reducing station replacements. The proposed tank renovation portion of the project will consist of the repair or replacement of all damage structural members, complete removal of all existing interior and exterior coatings, and the complete repainting of all interior and exterior surfaces. With today's advanced coatings and better application methods, the renovation will allow the tank to provide trouble free storage for a minimum of twenty years before any significant maintenance or restoration will be required. With proper coating maintenance the tank itself will remain in operation for hundreds of years.

The analysis of the Association's ability to finance and in turn own and operate the extension is itemized in the Summary Addendum, which will be submitted at a later date. This data will evaluate and compare the current and expected revenues as a result of the sale of water, operation and maintenance costs, other miscellaneous income and costs, and a summary of the long-term debts including their annual principle and interest payments.

An analysis of the customer monthly water usage and associated revenue generation will be included and will be based on actual water sales for a one-year period. The Western Rockcastle Water Association will supply this information.

The project cost has been estimated to be \$831,000 and it is to be financed by a \$582,000 loan from Rural Development and a \$249,500 grant from Rural Development.

VII. CONCLUSIONS AND RECOMMENDATIONS

Based on the need for the Western Rockcastle Water Association to continue to supply their customers with a sufficient and dependable potable water supply along with the capability to transport water throughout the Association's water system, it is recommended that the Western Rockcastle Water Association pursue the financial assistance as outlined above in order that these improvements can be implemented. The Water Association is the only major supplier of potable water within the rural area of Western Rockcastle County and their system is situated such that these improvements could be made without adversely affecting service to their other customers.

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER SYSTEM EXTENSIONS & IMPROVEMENTS
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

PROJECT COSTS

WATER LINE DEVELOPMENT	\$426,890.00
TANK REHABILITATION DEVELOPMENT	<u>170,000.00</u>
SUBTOTAL	\$596,890.00
CONTINGENCY	60,110.00
ENGINEERING DESIGN	58,000.00
CONSTRUCTION INSPECTION	41,000.00
PRELIMINARY ENGINEERING REPORT	10,000.00
ENVIRONMENTAL	10,000.00
EASEMENT ACQUISITION	25,000.00
INTEREST	10,000.00
LEGAL & ADMINISTRATION	<u>20,000.00</u>
TOTAL PROJECT COSTS	\$831,000.00
PROJECT FUNDING :	
U.S.D.A. RURAL DEVELOPMENT LOAN	\$582,000.00
U.S.D.A. RURAL DEVELOPMENT GRANT	<u>249,000.00</u>
TOTAL PROJECT FUNDING :	\$831,000.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER SYSTEM EXTENSION
FLAT ROCK-PINE HILL ROAD
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	2,650 LF	\$12.00	\$31,800.00
2	3-Inch Gate Valve	1 EA	550.00	550.00
3	Blowoff Assembly	1 EA	1,500.00	1,500.00
4	Connection	1 EA	2,500.00	2,500.00
5	Meter Setting	7 EA	700.00	4,900.00
6	3/4-Inch PE Service Tubing	175 LF	8.00	1,400.00
7	Hydropneumatic Booster Pump Station	1 LS	60,000.00	60,000.00
	TOTAL			\$102,650.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER SYSTEM EXTENSION
GRAY HAWK ROAD
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	900 LF	\$12.00	\$10,800.00
2	Bore & Case for 3-Inch Water Line	30 LF	150.00	4,500.00
3	3-Inch Gate Valve	1 EA	550.00	550.00
4	Blowoff Assembly	1 EA	1,500.00	1,500.00
5	Connection	1 EA	2,500.00	2,500.00
6	Meter Setting	1 EA	700.00	700.00
7	3/4-Inch PE Service Tubing	25 LF	8.00	200.00
	TOTAL			\$20,750.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER SYSTEM EXTENSION
SKYLINE ROAD
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	1,000 LF	\$12.00	\$12,000.00
2	Creek Crossing for 3-Inch Water Line	50 EA	120.00	6,000.00
3	3-Inch Gate Valve	1 EA	550.00	550.00
4	Blowoff Assembly	1 EA	1,500.00	1,500.00
5	Connection	1 EA	2,500.00	2,500.00
6	Meter Setting	1 EA	700.00	700.00
7	3/4-Inch PE Service Tubing	25 LF	8.00	200.00
	TOTAL			\$23,450.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE EXTENSION
CLAYLICK BRANCH ROAD
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	2,700 LF	\$12.00	\$32,400.00
2	Bore & Case for 3-Inch Water Line	30 LF	150.00	4,500.00
4	Blow-off Assembly	1 EA	1,500.00	1,500.00
5	Connection	1 EA	2,500.00	2,500.00
6	Meter Setting	4 EA	700.00	2,800.00
8	3/4-Inch Service Line	80 LF	8.00	640.00
Subtotal				\$44,340.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE REPLACEMENT
HOLMAN LANE
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	1,150 LF	\$12.00	\$13,800.00
2	3-Inch Gate Valve	1 EA	550.00	550.00
3	Blowoff Assembly	1 EA	1,500.00	1,500.00
4	Connection	1 EA	2,500.00	2,500.00
5	Meter Reconnection	5 EA	700.00	3,500.00
6	3/4-Inch PE Service Tubing	125 LF	8.00	1,000.00
	TOTAL			\$22,850.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE REPLACEMENT
HONEYSUCKLE ROAD
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	1,450 LF	\$12.00	\$17,400.00
2	Bore & Case for 3-Inch Water Line	50 LF	150.00	7,500.00
3	3-Inch Gate Valve	1 EA	550.00	550.00
4	Blowoff Assembly	1 EA	1,500.00	1,500.00
5	Meter Reconnection	4 EA	700.00	2,800.00
6	3/4-Inch PE Service Tubing	100 LF	8.00	800.00
	TOTAL			\$30,550.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE REPLACEMENT
BOONE GAP ROAD
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	1,300 LF	\$12.00	\$15,600.00
2	3-Inch Gate Valve	1 EA	550.00	550.00
3	Blowoff Assembly	1 EA	1,500.00	1,500.00
5	Connection	1 EA	2,500.00	2,500.00
4	Meter Reconnection	8 EA	700.00	5,600.00
5	3/4-Inch PE Service Tubing	200 LF	8.00	1,600.00
	TOTAL			\$27,350.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE REPLACEMENT
THREE OAKS LANE
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	750 LF	\$12.00	\$9,000.00
2	Bore & Case for 3-Inch Water Line	50 LF	150.00	7,500.00
3	3-Inch Gate Valve	1 EA	550.00	550.00
4	Blowoff Assembly	1 EA	1,500.00	1,500.00
5	Connection	1 EA	2,500.00	2,500.00
6	Meter Reconnection	4 EA	700.00	2,800.00
7	3/4-Inch PE Service Tubing	100 LF	8.00	800.00
	TOTAL			\$24,650.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE REPLACEMENT
EMERALD LANE
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	650 LF	\$12.00	\$7,800.00
2	3-Inch Gate Valve	1 EA	550.00	550.00
3	Blowoff Assembly	1 EA	1,500.00	1,500.00
4	Connection	1 EA	2,500.00	2,500.00
5	Meter Reconnection	3 EA	700.00	2,100.00
6	3/4-Inch PE Service Tubing	75 LF	8.00	600.00
	TOTAL			\$15,050.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
WATER LINE REPLACEMENT
COUNTY ROAD 1515
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	3-Inch PVC SDR 17 Water Line	1,650 LF	\$12.00	\$19,800.00
2	3-Inch Gate Valve	1 EA	550.00	550.00
3	Blowoff Assembly	1 EA	1,500.00	1,500.00
4	Connection	1 EA	2,500.00	2,500.00
5	Meter Reconnection	1 EA	700.00	700.00
6	3/4-Inch PE Service Tubing	25 LF	8.00	200.00
	TOTAL			\$25,250.00

**PRELIMINARY COST ESTIMATE
 WESTERN ROCKCASTLE WATER ASSOCIATION
 BACKBONE RIDGE ROAD BOOSTER PUMP STATION
 ROCKCASTLE COUNTY, KENTUCKY
 AUGUST 2017**

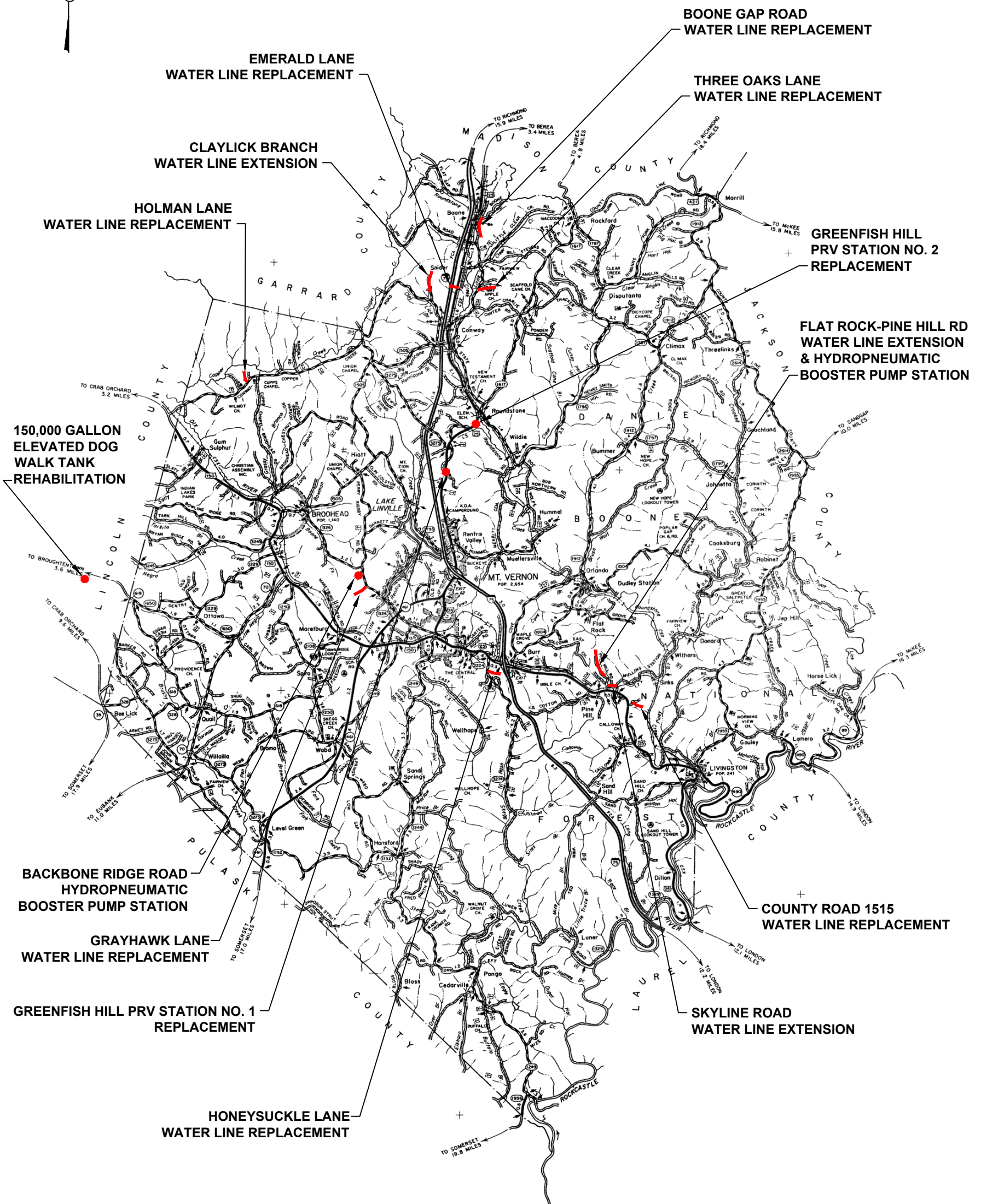
ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	Hydropneumatic Booster Pump Station	1 LS	\$60,000.00	\$60,000.00
	TOTAL			\$60,000.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
GREENFISH HILL PRESSURE REDUCING STATION (PRV) REPLACEMENT
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT COST	TOTAL COST
1	Greenfish Hill PRV No. 1 & No. 2 Replacemer	2 EA	\$15,000.00	\$30,000.00
TOTAL				\$30,000.00

**PRELIMINARY COST ESTIMATE
WESTERN ROCKCASTLE WATER ASSOCIATION
150,000 GALLON ELEVATED DOG WALK WATER STORAGE TANK
REHABILITATION
ROCKCASTLE COUNTY, KENTUCKY
AUGUST 2017**

Item No.	Item Description	Bid Quantity	Unit	Unit Price	Amount
1	Coating System for Exterior Steel	1	LS	\$86,600.00	\$86,600.00
2	Coating System for Interior Steel	1	LS	45,900.00	45,900.00
3	Repairs to Tank	1	LS	36,000.00	36,000.00
4	Hidden Repairs to Tank	1	LS	1,500.00	1,500.00
	TOTAL				\$170,000.00



**WATER SYSTEM IMPROVEMENTS
WESTERN ROCKCASTLE
WATER ASSOCIATION**

M Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY

MT VERNON
QUADRANGLE

LIVINGSTON
QUADRANGLE

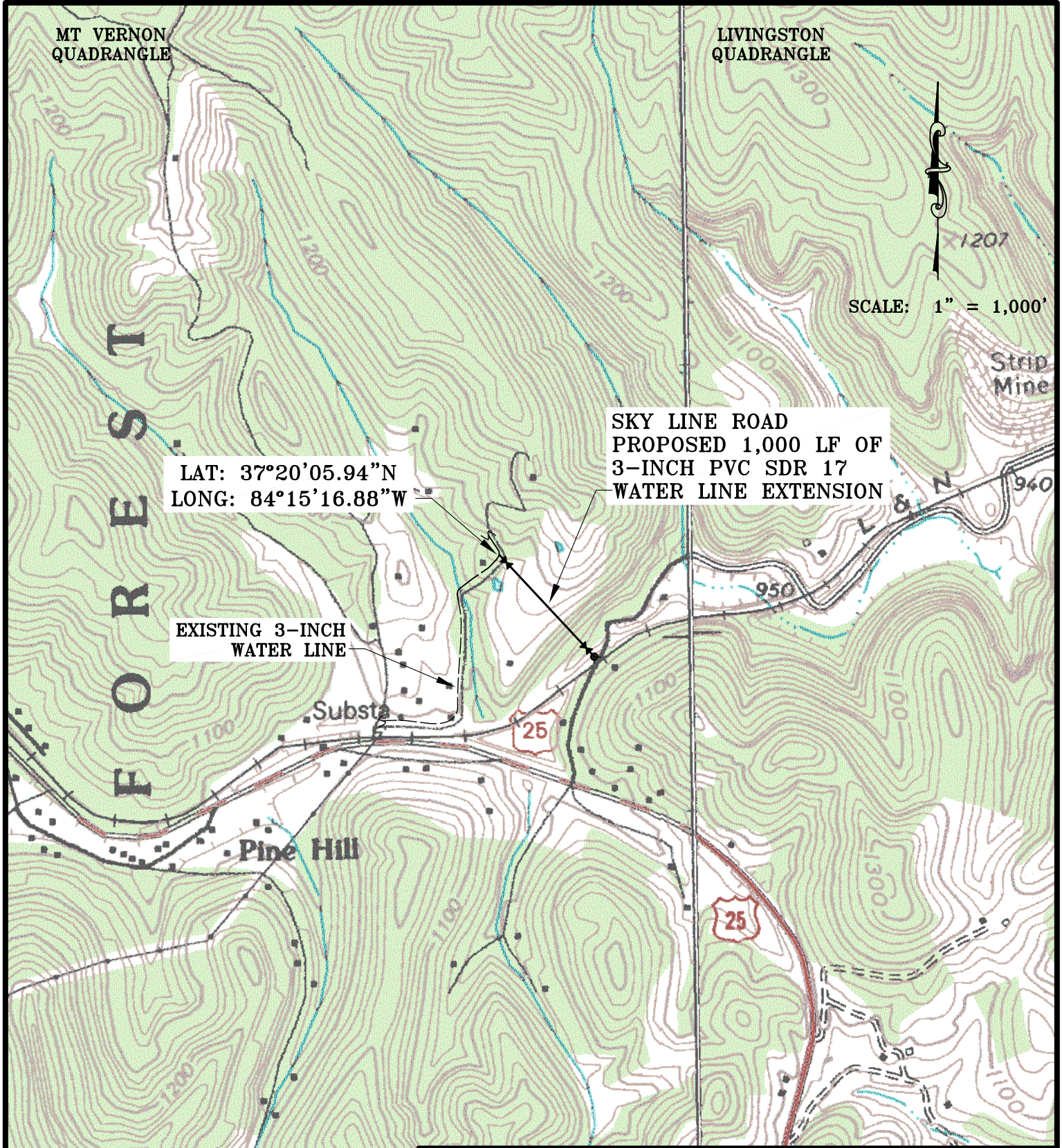


SCALE: 1" = 1,000'

LAT: 37°20'05.94"N
LONG: 84°15'16.88"W

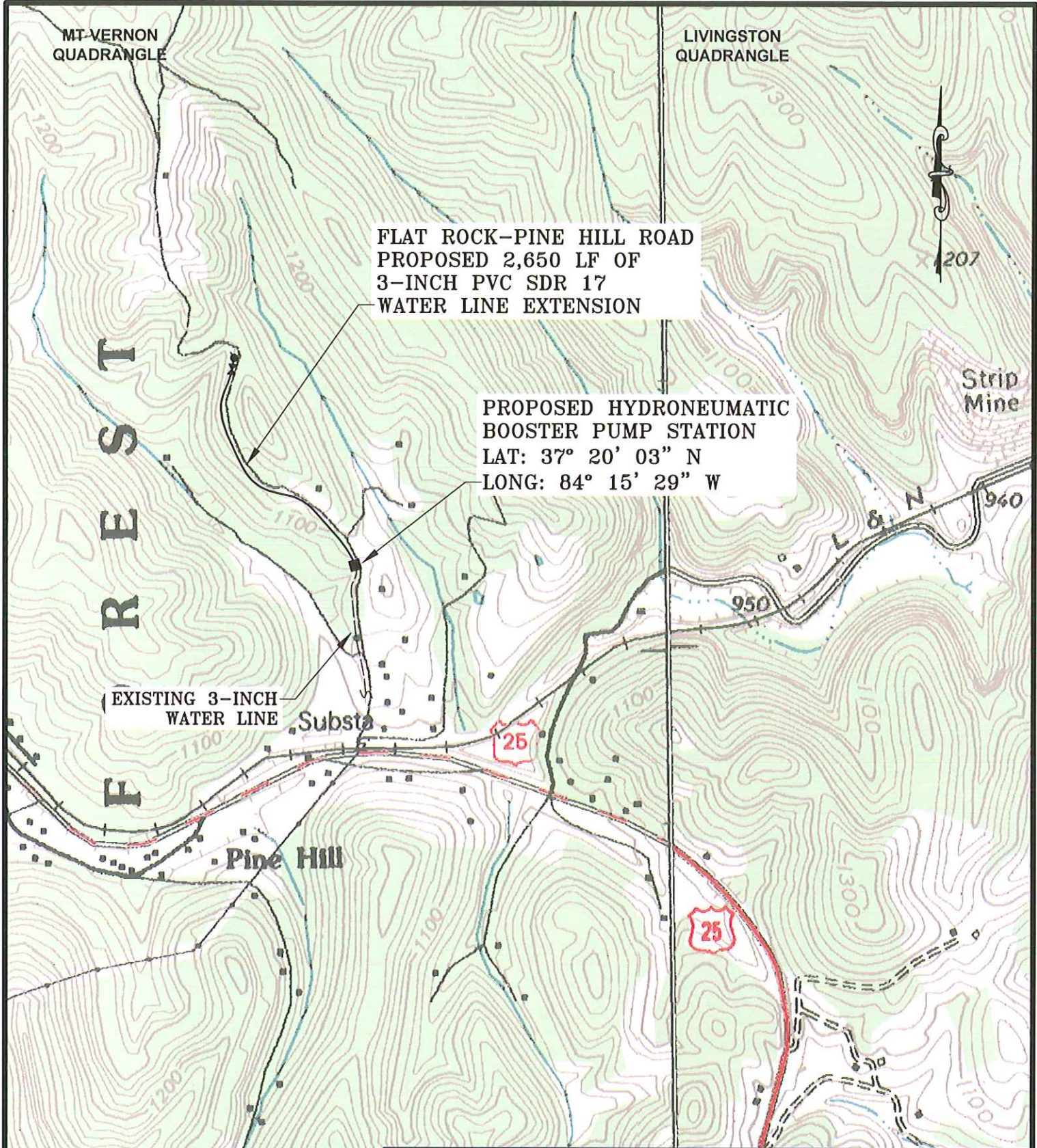
SKY LINE ROAD
PROPOSED 1,000 LF OF
3-INCH PVC SDR 17
WATER LINE EXTENSION

EXISTING 3-INCH
WATER LINE



SKY LINE ROAD
WATER LINE EXTENSION
WESTERN ROCKCASTLE WATER ASSOCIATION

Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY



FLAT ROCK-PINE HILL ROAD
 PROPOSED 2,650 LF OF
 3-INCH PVC SDR 17
 WATER LINE EXTENSION

PROPOSED HYDRONEUMATIC
 BOOSTER PUMP STATION
 LAT: 37° 20' 03" N
 LONG: 84° 15' 29" W

EXISTING 3-INCH
 WATER LINE

Substa

Pine Hill

Strip
 Mine

25

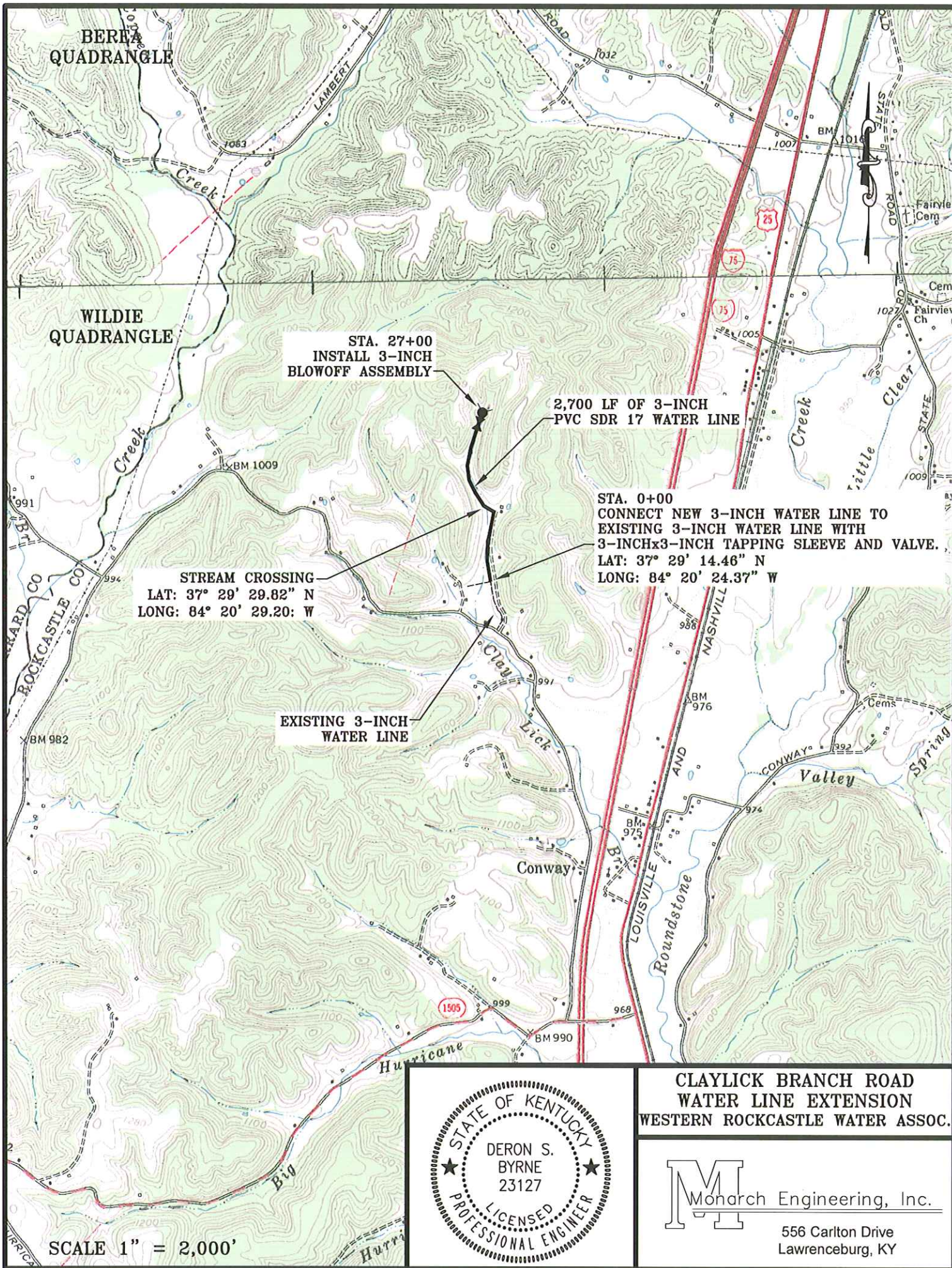
25



FLAT ROCK - PINE HILL ROAD
 WATER LINE EXTENSION
 WESTERN ROCKCASTLE WATER ASSOCIATION

Monarch Engineering, Inc.
 556 Carlton Drive
 Lawrenceburg, KY

SCALE: 1" = 2,000'



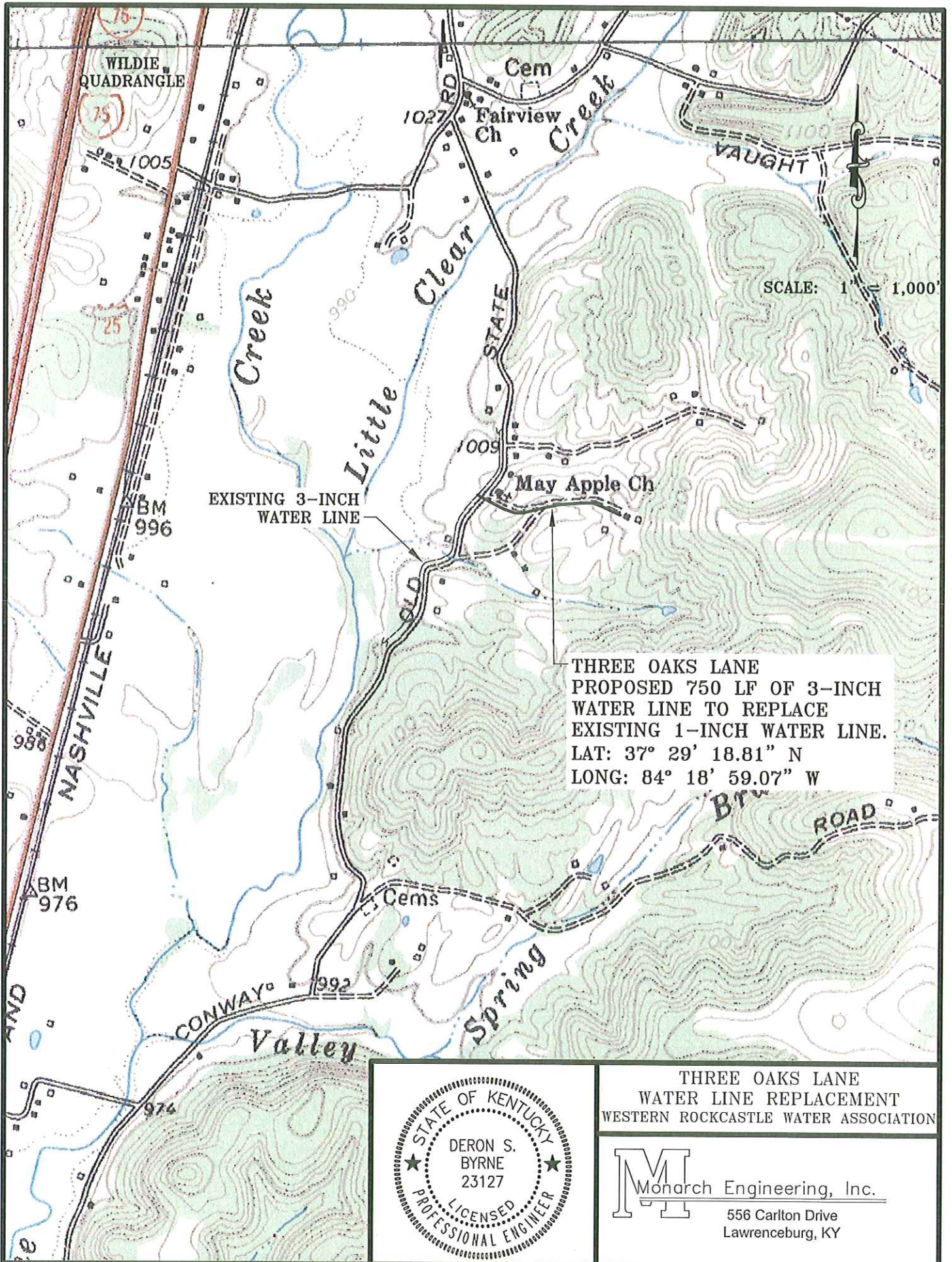
SCALE 1" = 2,000'



CLAYLICK BRANCH ROAD
 WATER LINE EXTENSION
 WESTERN ROCKCASTLE WATER ASSOC.

M Monarch Engineering, Inc.

556 Carlton Drive
 Lawrenceburg, KY



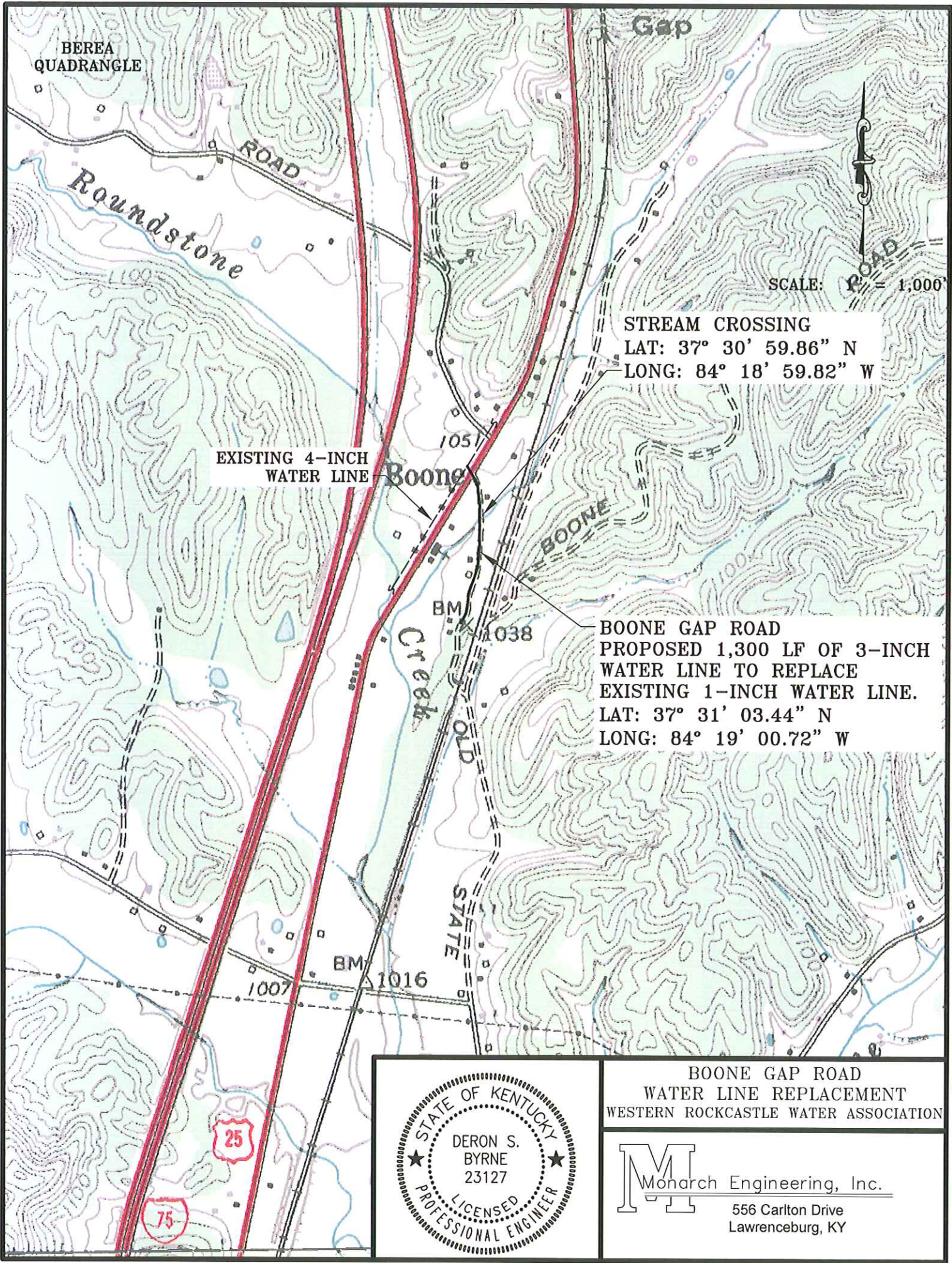
EXISTING 3-INCH
WATER LINE

THREE OAKS LANE
PROPOSED 750 LF OF 3-INCH
WATER LINE TO REPLACE
EXISTING 1-INCH WATER LINE.
LAT: 37° 29' 18.81" N
LONG: 84° 18' 59.07" W



THREE OAKS LANE
WATER LINE REPLACEMENT
WESTERN ROCKCASTLE WATER ASSOCIATION

M Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY



BEREA
QUADRANGLE

ROAD

Roundstone

Gap

SCALE: 1" = 1,000'

STREAM CROSSING
LAT: 37° 30' 59.86" N
LONG: 84° 18' 59.82" W

EXISTING 4-INCH
WATER LINE

Boone

BM 1038

BOONE GAP ROAD
PROPOSED 1,300 LF OF 3-INCH
WATER LINE TO REPLACE
EXISTING 1-INCH WATER LINE.
LAT: 37° 31' 03.44" N
LONG: 84° 19' 00.72" W

Creek

OLD

STATE

BM 1016

1007

25

75

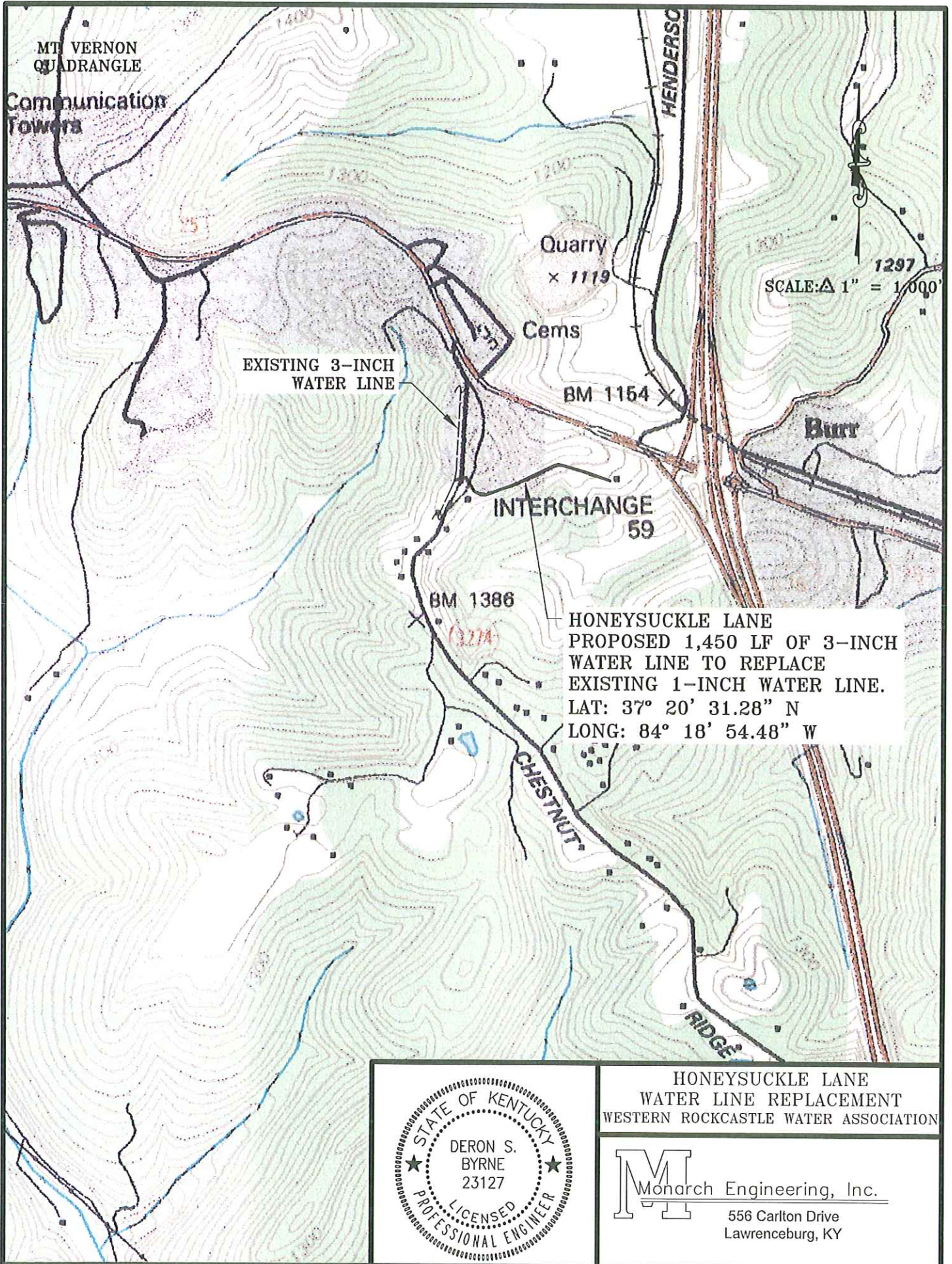


BOONE GAP ROAD
WATER LINE REPLACEMENT
WESTERN ROCKCASTLE WATER ASSOCIATION



Monarch Engineering, Inc.

556 Carlton Drive
Lawrenceburg, KY



STATE OF KENTUCKY
 DERON S. BYRNE
 23127
 LICENSED PROFESSIONAL ENGINEER

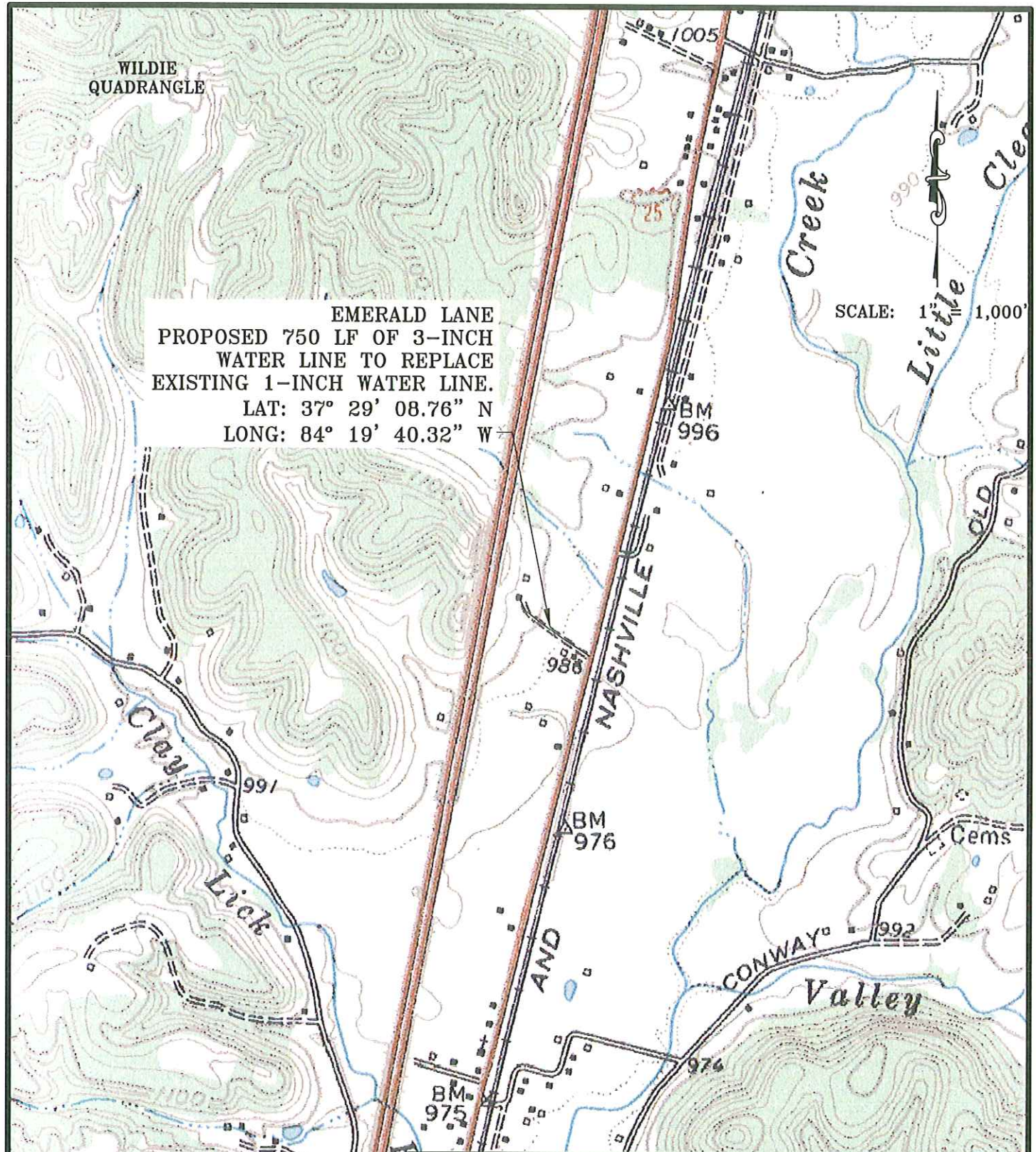
HONEYSUCKLE LANE
 WATER LINE REPLACEMENT
 WESTERN ROCKCASTLE WATER ASSOCIATION

Monarch Engineering, Inc.
 556 Carlton Drive
 Lawrenceburg, KY

WILDIE
QUADRANGLE

EMERALD LANE
PROPOSED 750 LF OF 3-INCH
WATER LINE TO REPLACE
EXISTING 1-INCH WATER LINE.
LAT: 37° 29' 08.76" N
LONG: 84° 19' 40.32" W

SCALE: 1" = 1,000'



EMERALD LANE
WATER LINE REPLACEMENT
WESTERN ROCKCASTLE WATER ASSOCIATION

M Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY

BRODHEAD
QUADRANGLE

Creek

SCALE: 1" = 1,000'

HOLMAN LANE
PROPOSED 1,150 LF OF 3-INCH
WATER LINE TO REPLACE
EXISTING 3/4-INCH WATER LINE.
LAT: 37° 27' 11.90" N
LONG: 84° 25' 47.32" W

EXISTING 4-INCH
WATER LINE

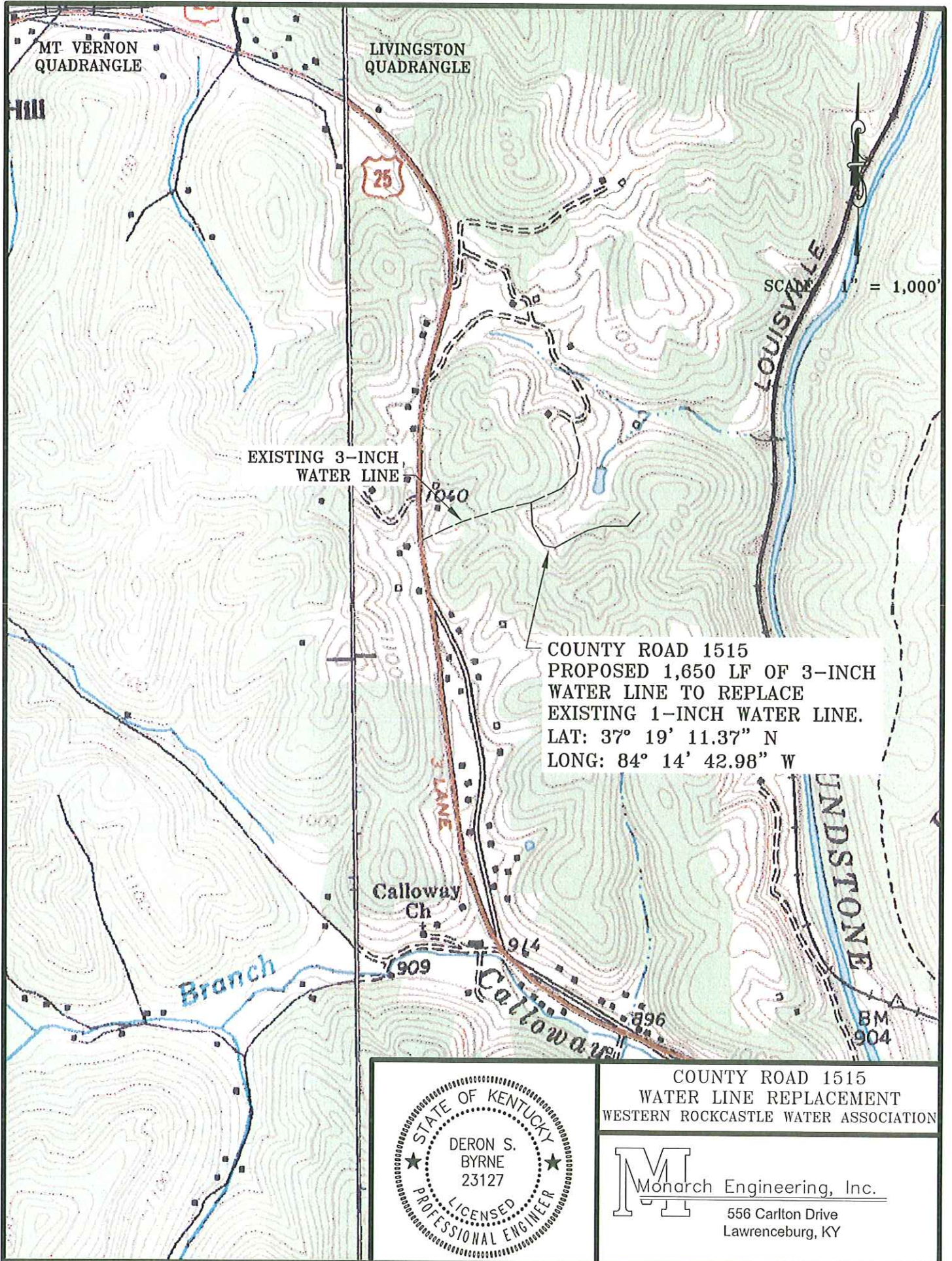
Cupps Chapel

Wilmot Ch



HOLMAN LANE
WATER LINE REPLACEMENT
WESTERN ROCKCASTLE WATER ASSOCIATION

M Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY



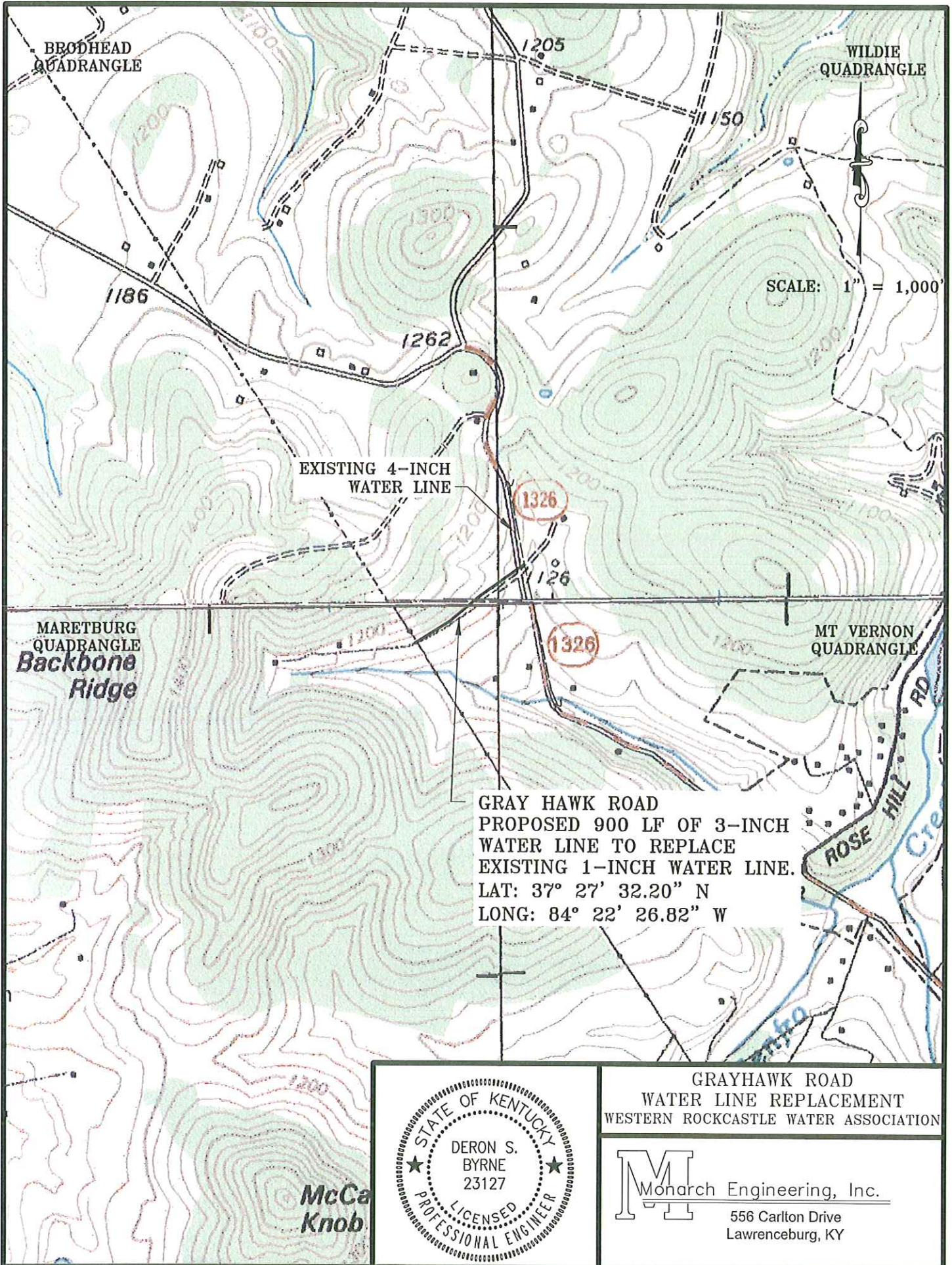
EXISTING 3-INCH
WATER LINE

COUNTY ROAD 1515
PROPOSED 1,650 LF OF 3-INCH
WATER LINE TO REPLACE
EXISTING 1-INCH WATER LINE.
LAT: 37° 19' 11.37" N
LONG: 84° 14' 42.98" W



COUNTY ROAD 1515
WATER LINE REPLACEMENT
WESTERN ROCKCASTLE WATER ASSOCIATION

M Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY

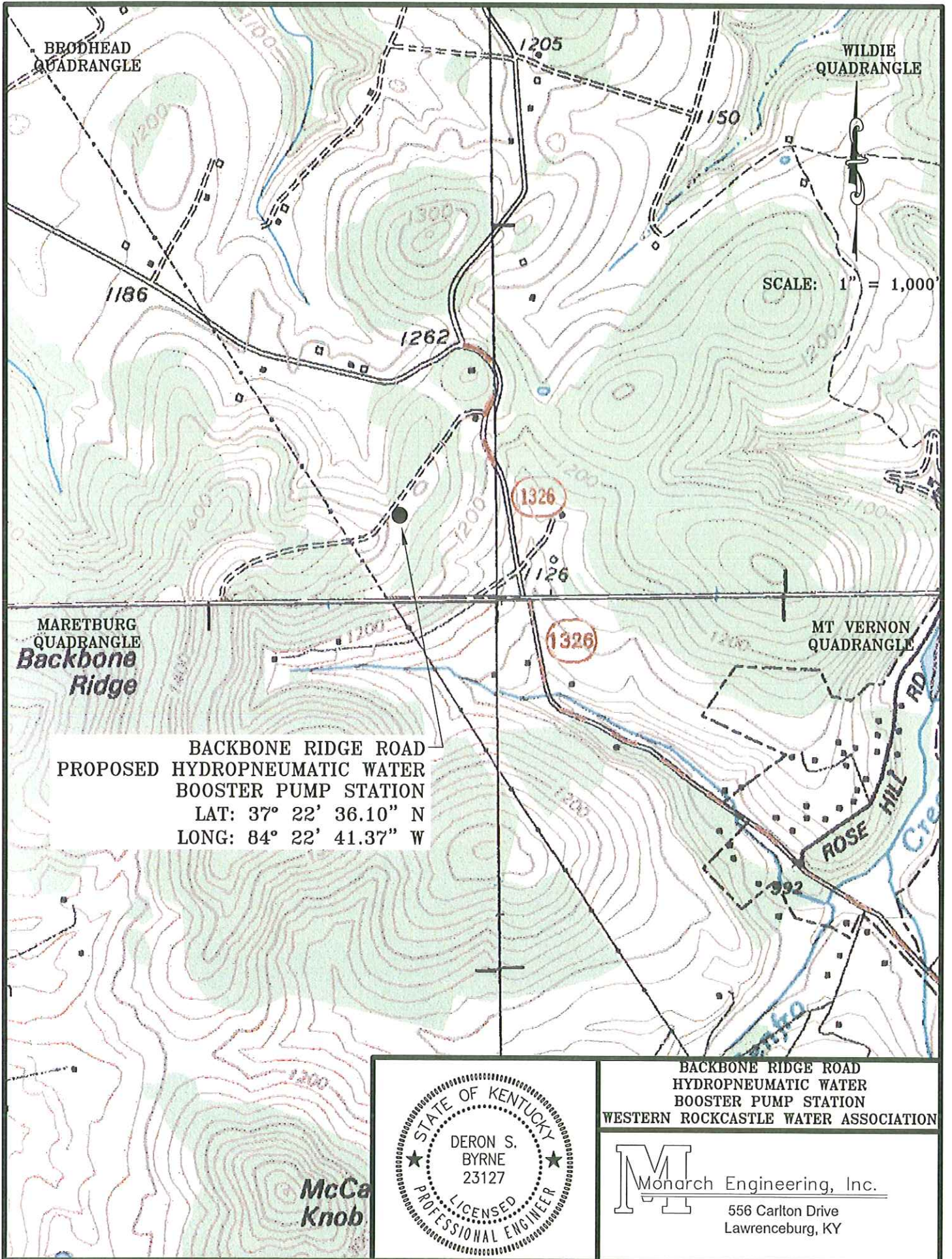


GRAY HAWK ROAD
 PROPOSED 900 LF OF 3-INCH
 WATER LINE TO REPLACE
 EXISTING 1-INCH WATER LINE.
 LAT: 37° 27' 32.20" N
 LONG: 84° 22' 26.82" W



GRAYHAWK ROAD
 WATER LINE REPLACEMENT
 WESTERN ROCKCASTLE WATER ASSOCIATION


 Monarch Engineering, Inc.
 556 Carlton Drive
 Lawrenceburg, KY



BRODHEAD
QUADRANGLE

WILDIE
QUADRANGLE

SCALE: 1" = 1,000'

MARETBURG
QUADRANGLE
**Backbone
Ridge**

MT VERNON
QUADRANGLE

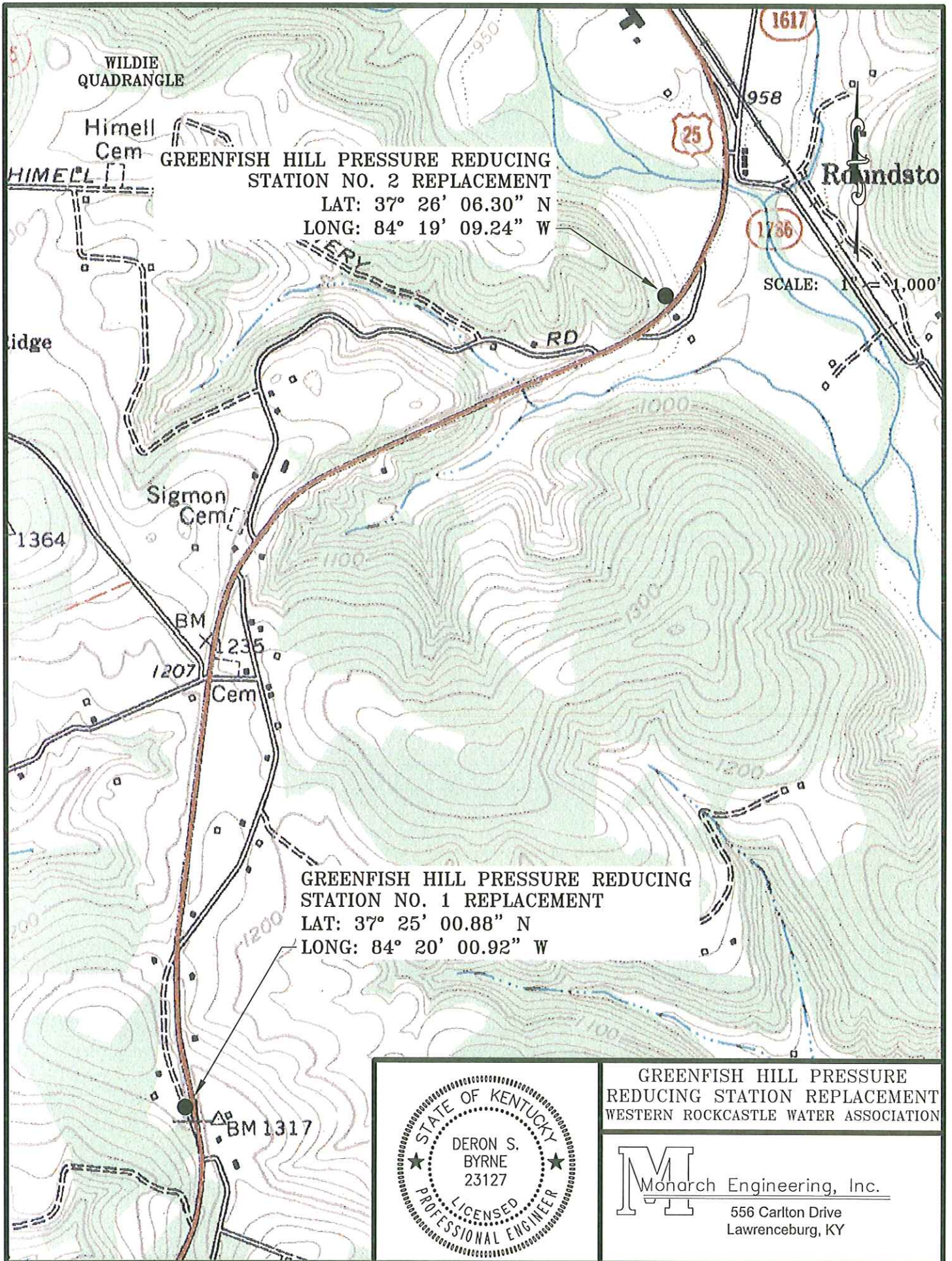
BACKBONE RIDGE ROAD
PROPOSED HYDROPNEUMATIC WATER
BOOSTER PUMP STATION
LAT: 37° 22' 36.10" N
LONG: 84° 22' 41.37" W

**McCa
Knob**



BACKBONE RIDGE ROAD
HYDROPNEUMATIC WATER
BOOSTER PUMP STATION
WESTERN ROCKCASTLE WATER ASSOCIATION

Monarch Engineering, Inc.
556 Carlton Drive
Lawrenceburg, KY



GREENFISH HILL PRESSURE REDUCING STATION REPLACEMENT
 WESTERN ROCKCASTLE WATER ASSOCIATION

M Monarch Engineering, Inc.
 556 Carlton Drive
 Lawrenceburg, KY

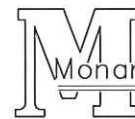
CRAB ORCHARD
QUADRANGLE

SCALE: 1" = 1,000'

150,000 GALLON ELEVATED
DOG WALK TANK REHABILITATION
LAT: 37° 22' 49.30" N
LONG: 84° 30' 36.60" W



150,000 GALLON
DOG WALK TANK REHABILITATION
WESTERN ROCKCASTLE WATER ASSOCIATION



Monarch Engineering, Inc.

556 Carlton Drive
Lawrenceburg, KY