

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF NORTHEAST)	
WOODFORD COUNTY WATER DISTRICT)	
FOR AUTHORIZATION TO ENTER AN)	
ASSISTANCE AGREEMENT WITH THE)	
KENTUCKY INFRASTRUCTURE)	CASE NO. 2018-00351
AUTHORITY AND FOR A CERTIFICATE OF)	
PUBLIC CONVENIENCE TO CONSTRUCT)	
AND REPLACE WATER MAINS AND)	
REPLACE A PUMPING STATION)	

APPLICATION

Pursuant to KRS 278.020(1), KRS 278.300, and 807 KAR 5:001, Sections 15 and 18, Northeast Woodford County Water District (“Northeast Woodford District”) applies to the Public Service Commission for an Order authorizing Northeast Woodford District’s entry into an Assistance Agreement with the Kentucky Infrastructure Authority (“KIA”) to borrow an amount not to exceed \$400,000 and granting a certificate of public convenience and necessity for the construction of approximately 11,000 linear feet of water main and a replacement pumping station.

In support of its Application,¹ Northeast Woodford District provides the following:

A. General Information

1. The full name and post office address of Northeast Woodford District is: Northeast Woodford County Water District, 225A South Main Street, Versailles, Kentucky 40383. Its e-mail address is northeastwwd@aol.com.

¹ To facilitate the Public Service Commission’s initial review of this Application, Northeast Woodford District has attached to this Application a “Filings Requirements List” that consists of four pages, lists each statutory and regulatory requirement for an application for authorization to issue securities and for a certificate of public convenience and necessity, and identifies the exhibit or paragraph that satisfies the requirement.

2. Northeast Woodford District not a corporation, limited liability company or limited partnership. It has no articles of incorporation or partnership agreements.

3. Northeast Woodford District was created by an Order of Woodford County Court entered May 27, 1964. A copy of this Order is attached at **Tab 1** of this Application.

4. Northeast Woodford District is engaged in the distribution and sale of water to approximately 1,003 customers in Woodford County and Fayette County, Kentucky.² It does not produce water for sale, but purchases its total water requirements from the City of Versailles and Frankfort Electric and Water Plant Board.

5. A copy of the minutes of the meeting in which Northeast Woodford District's Board of Commissioners authorized the filing of this application is attached at **Tab 2** of this Application.

6. Copies of all orders, pleadings and other communications related to this proceeding should be directed to:³

John S. Davis
Chairman
225A South Main Street
Versailles, KY 40383
(859) 873-2190
northeastwwd@aol.com

Joseph M. Hoffman
Hoffman & Barnes
100 United Drive, Suite 4B
Versailles, Kentucky 40383
(859) 873-5427
jhoffman@hbkylaw.com

² *Annual Report of Northeast Woodford County Water District to the Public Service Commission of the Commonwealth of Kentucky for the Calendar Year Ended December 31, 2017* ("2017 Annual Report") at 27.

³ On October 12, 2018 Northeast Woodford District gave notice pursuant to 807 KAR 5:001, Section 8, of its intent to file this application and of its use of electronic filing procedures.

Gerald E. Wuetcher
Stoll Keenon Ogden PLLC
2100 West Vine Street, Ste 2100
Lexington, KY 40507-1801
(859) 231-3017
gerald.wuetcher@skofirm.com

B. Certificate of Public Convenience and Necessity

7. Northeast Woodford District proposes to construct approximately 3,343 linear feet of six-inch polyvinylchloride (“PVC”) water main and 7,633 linear feet of four-inch PVC water main. Approximately 4,800 linear feet of four-inch PVC water main will be constructed along Sugar Hill Road (County Road 1009) in Woodford County to extend water service to two customers. Northeast Woodford District will also replace approximately 3,343 linear feet of existing smaller-sized water main along Old Frankfort Pike (Kentucky Route 1681) with six-inch PVC water main and approximately 2,843 linear feet of existing three-inch main along Paynes Mill Road (County Road 1004) with four-inch PVC water main. The replacements are expected to improve the quality of service to approximately 50 current customers.

8. Northeast Woodford District proposes to install a 600 gallon per minute booster pumping station at the intersection of Big Sink Road (County Road 1028) and Fieldview Drive in Woodford County to replace an existing pumping station that is near the end of its 35-year useful life. This replacement station will have the latest supervisory control and data acquisition (“SCADA”) system and will better enable Northeast Woodford District to monitor the operation of its distribution system and to improve system efficiency.

9. The Kentucky Division of Water (“KDOW”) has reviewed the plans and specifications for the proposed water mains and has approved them with respect to sanitary features of design. A copy of the letter in which the KDOW stated its approval is set forth at **Tab 3** of this Application. As the proposed booster pumping station has the same characteristics

as the existing booster pumping station, is located at the same location, and will not constitute a modification to Northeast Woodford District's distribution system, KDOW approval of the proposed pumping station is not required.⁴

10. Northeast Woodford District has acquired all easements necessary for the proposed facilities.

11. Construction of the proposed water mains requires an encroachment permit from the Kentucky Transportation Cabinet to cross a portion of Old Frankfort Pike (Ky. Route 1681). Northeast Woodford District is making application to the Kentucky Transportation Cabinet for such permit and will supplement this Application with a copy of the final permit as soon as it is issued.

12. Aside from the encroachment permit discussed above, Northeast Woodford District has obtained all other regulatory approvals and permits for the proposed facilities.

13. A description of the proposed facilities' location and routes is attached as **Tab 4** to this Application. Maps depicting these locations and routes are attached at **Tab 5** of this Application.

14. A copy of the plans for the proposed water main extension is attached to this Application at **Tab 6**. A copy of its specifications is attached to this Application at **Tab 7A**. The specifications of the proposed pumping station replacement are contained in the winning bid submission at **Tab 7B**.

15. A copy of the Preliminary Engineering Report and Final Engineering Report for the proposed facilities are attached as **Tab 8** and **Tab 9** of this Application.

16. A copy of the hydraulic calculations upon which the proposed water mains are based is attached as **Tab 10** of this Application.

⁴ See KRS 224.10-110(4); 401 KAR 8:100.

17. The total estimated cost of the proposed facilities is \$440,600. A breakdown of this cost is found in **Tab 9** of this Application. Northeast Woodford District proposes to finance this cost with a loan of \$400,000 from KIA's Fund B Infrastructure Revolving Loan Program and \$40,600 of internal funds.

18. Northeast Woodford District requested bids on the construction of Proposed Facilities. The lowest responsive bidders were: (a) Twin States Utilities and Excavation, Inc., of Mount Hermon, Kentucky, with a bid of \$251,155 for the construction of the proposed water mains; (b) JRS Construction and Excavation, LLC, of Campbellsville, Kentucky, with a bid of \$56,500 for the installation of the replacement booster pumping station; and (c) Bluegrass Hydronics and Pump, LLC, of Lexington, Kentucky, with a bid of \$37,196 for the prefabricated pump package. A copy of the certified bid tabulations and the Project Engineer's recommendation is found at **Tab 11** and **Tab 9** of this Application respectively.

19. A copy of the minutes of the meeting at which Northeast Woodford District's Board of Commissioners selected the lowest bidders is found at **Tab 12**.

20. A statement of the annual cost of operation of the proposed facilities is found at **Tab 13**. Northeast Woodford District does not anticipate any annual cost for the operation of the proposed water mains and expects the annual costs to operate the replacement pumping station will be the same or slightly less than the current cost to operate the pumping station that will be replaced.

21. The proposed facilities will not compete with the facilities of any other public utility.

22. The proposed facilities' construction will not result in the wasteful duplication of utility facilities or inefficient investment.

C. Authorization to Enter Assistance Agreement

23. To finance the cost of constructing the Proposed Facilities, Northeast Woodford District proposes to enter an Assistance Agreement with KIA to borrow an amount not to exceed \$400,000. The proposed loan will bear interest at a rate of 1.75 percent per annum and must be repaid over a period not to exceed 20 years from the date on which the Proposed Facilities begin operation. Interest on the proposed loan will accrue from the time that Northeast Woodford District begins drawing funds from KIA. The proposed loan will be secured by a pledge of Northeast Woodford District's revenues.

24. A copy of the KIA's analysis of the proposed facilities and proposed assistance agreement is found at **Tab 14**.

25. A copy of the minutes of the meeting in which the KIA Board of Directors approved the proposed loan is found at **Tab 15** of this Application.

26. On November 3, 2016, KIA issued a Conditional Commitment Letter, a copy of which is found at **Tab 16** of this Application, that sets forth additional details regarding the proposed loan. Under the terms of this letter, Northeast Woodford District was required to meet the conditions for the proposed loan and enter an Assistance Agreement with KIA no later than November 3, 2017. On October 6, 2017, KIA extended the period for meeting these conditions to May 3, 2018. On October 10, 2018, KIA granted a second extension and permitted Northeast Woodford District until December 3, 2018 to meet these conditions. A copy of the letters in which KIA granted these extensions is found at **Tab 17** of this Application.

27. A description of Northeast Woodford District's water system and its property, stated at original cost by accounts, is contained in *Annual Report of Northeast Woodford County Water District to the Public Service Commission for the Year Ending December 31, 2017* ("2017

Annual Report”), a copy of which Northeast Woodford District has previously been filed with the Public Service Commission and which is incorporated by reference into this Application.

28. Northeast Woodford District does not propose to issue any stock or bonds.

29. No proceeds from the Assistance Agreement will be used to refund outstanding obligations.

30. A copy of Northeast Woodford District’s written notification to the State Local Debt Officer is attached as **Tab 18**.

31. Pursuant to 807 KAR 5:001, Section 18(2)(a), the following information is provided:

a. For the 12-month period ending December 31, 2017, Northeast Woodford District had less than \$5,000,000 in gross annual revenues.

b. Northeast Woodford District’s 2017 Annual Report is incorporated by reference into this Application. Northeast Woodford District also incorporates into this Application its audited financial statements for the years ending December 31, 2017 and December 31, 2016, which have previously been filed with the Commission.

c. No material changes have occurred in Northeast Woodford District’s financial condition since December 31, 2017.

32. There are no trust deeds or mortgages applicable.

33. Maps and plans of the proposed construction are found at **Tabs 5 and 6** of this Application.

34. A detailed estimate of the acquired property, arranged according to the Uniform System of Accounts for Class A/B Water Districts and Associations, is attached to this Application as **Tab 19** of this Application.

35. The proposed loan will not require Northeast Woodford District to seek an immediate adjustment of its rates for service. Northeast Woodford District has not requested a general adjustment in more than ten years⁵ and is considering applying for a general adjustment of rates pursuant to 807 KAR 5:076.

36. Northeast Woodford District's execution of an Assistance Agreement with KIA to borrow \$440,000 is for a lawful objective within Northeast Woodford District's corporate purposes, is necessary, appropriate for and consistent with Northeast Woodford District's proper performance of its service to the public and will not impair Northeast Woodford District's ability to perform that service, and is reasonably necessary and appropriate for such purpose.

37. Northeast Woodford District requests a final decision on its application no later than **November 15, 2018**. Northeast Woodford District must meet the conditions set forth in KIA's Conditional Commitment Letter, as amended, no later than **December 3, 2018**. Obtaining the necessary approvals from the Public Service Commission is the only condition that Northeast Woodford District has yet to meet. Northeast Woodford District has previously scheduled construction to begin on or about November 15, 2018.

D. Conclusion

WHEREFORE, Northeast Woodford County Water District requests that the Public Service Commission:

1. Place this Application at the head of its docket as KRS 278.300(2) requires;
2. Grant Northeast Woodford District a Certificate of Public Convenience and Necessity to construct the Proposed Facilities;
3. Authorize Northeast Woodford District to enter and execute an Assistance Agreement with KIA to borrow a sum no greater than \$400,000;

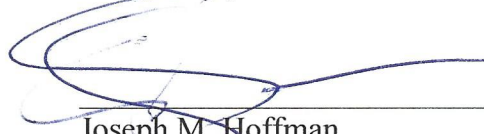
⁵ *An Application of Rates for Northeast Woodford District*, Case No. 2008-00061 (Ky. PSC Apr. 30, 2008).

4. Enter an Order granting the requested relief without holding an evidentiary hearing in this matter and no later **than November 15, 2018**; and,

5. Grant any and all such other relief to which Northeast Woodford District may be entitled.

Dated: October 15, 2018

Respectfully submitted,



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100 United Drive, Suite 4B
Versailles, Kentucky 40383
Telephone: (859) 873-5427
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Fax: (859) 259-3517
gerald.wuetcher@skofirm.com

*Counsel for Northeast Woodford County Water
District*

COMMONWEALTH OF KENTUCKY)
) SS
COUNTY OF WOODFORD)

The undersigned, John S. Davis, being duly sworn, deposes and states that he is the Chairman of the Board of Commissioners of Northeast Woodford County Water District, the Applicant in the above proceedings; that he has read this Application and has noted its contents; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.

IN TESTIMONY WHEREOF, witness the signature of the undersigned on this October 15th, 2018.


John S. Davis
Chairman, Board of Commissioners
Northeast Woodford County Water District

Subscribed and sworn to before me by John S. Davis, Chairman, Board of Commissioners of Northeast Woodford County Water District, on this October 15th, 2018.


Notary Public

Notary ID: 579303

My Commission Expires: 12 May 2021

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, I certify that Northeast Woodford County Water District's October 15, 2018 electronic filing of this Application is a true and accurate copy of the same document being filed in paper medium; that the electronic filing was transmitted to the Commission on October 15, 2018; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that an original paper medium of the Application will be delivered to the Commission on or before October 17, 2018.

A handwritten signature in black ink, appearing to read "Gerald E. Wuetcher", written over a horizontal line.

Gerald E. Wuetcher

FILING REQUIREMENTS

FILING REQUIREMENTS FOR AN APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

Source Authority	Requirement	Location
807 KAR 5:001, § 14(1)	Applicant's name, mailing address and e-mail address	Page 1, Para 1
807 KAR 5:001, § 14(1)	Statutory Reference – KRS 278.020	Page 1
807 KAR 5:001, § 4(3)	Signature of Applicant's Attorney	Page 9
807 KAR 5:001, § 4(3)	Name, Address, Telephone Number, Fax Number, and e-mail address of Applicant's Attorney	Page 9
807 KAR 5:001, § 14(2)	If Applicant is corporation: State and date of incorporation, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 2, Para 3 Not Applicable
807 KAR 5:001, § 14(3)	If Applicant is a limited liability company: State and date of organization, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 2, Para 3 Not Applicable
807 KAR 5:001, § 14(4)	If the Applicant is a limited partnership: a certified copy of limited partnership agreement and all amendments or statement identifying prior Commission proceedings in which limited partnership agreement and all amendments filed	Page 2, Para 3 Not Applicable
807 KAR 5:001, § 15(2)(a)	The facts relied upon to show that the public convenience and necessity requires the proposed construction	Page 3, Paras 7-8
807 KAR 5:001, § 15(2)(b)	Copies of franchises or permits for the proposed construction or extension	Page 3-4, Paras 9-12
807 KAR 5:001, § 15(2)(c)	A full description of the proposed location, route, or routes of the proposed construction or extension, including a description of the manner in which same will be constructed, and the names of all public utilities, corporations, or persons with whom the proposed construction or extension is likely to compete	Page 4, Para 13 Exhibit 4
807 KAR 5:001, § 15(2)(d)1	Maps to suitable scale showing the location or route of the proposed construction or extension, as well as the location to scale of like facilities owned by others located anywhere within the map area with adequate identification as to the ownership of the other facilities (Only one copy submitted pursuant to 807 KAR 5:001, Section 8)	Page 4, Para 14 Exhibit 5

FILING REQUIREMENTS

Source Authority	Requirement	Location
807 KAR 5:001, § 15(2)(d)2	Plans and specifications and drawings of the proposed plant, equipment, and facilities	Page 4, Para 14 Exhibits 6 and 7
807 KAR 5:001, § 15(2)(e)	The manner in detail in which the Applicant proposes to finance the proposed construction or extension.	Page 5, Para 17
807 KAR 5:001, § 15(2)(f)	An estimated annual cost of operation after the proposed facilities are placed into service	Page 5, Para 20 Exhibit 13
807 KAR 5:001, § 4(13)	Engineering plans, specifications, drawings, plats and reports for the proposed construction or extension prepared by a registered engineer, must be signed, sealed, and dated by an engineer registered in Kentucky	Exhibits 6 and 7

FILING REQUIREMENTS

FILING REQUIREMENTS FOR AN APPLICATION FOR A AUTHORITY TO ISSUE EVIDENCES OF INDEBTEDNESS

Source Authority	Requirement	Location
807 KAR 5:001, § 14(1)	Applicant's name, mailing address and e-mail address	Page 1, Para 1
807 KAR 5:001, § 14(1)	Statutory Reference – KRS 278.300	Page 1
807 KAR 5:001, § 4(3)	Signature of Applicant's Attorney	Page 9
807 KAR 5:001, § 4(3)	Name, Address, Telephone Number, Fax Number, and e-mail address of Applicant's Attorney	Page 9
807 KAR 5:001, § 14(2)	If Applicant is corporation: State and date of incorporation, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 2, Para 3 Not Applicable
807 KAR 5:001, § 14(3)	If Applicant is a limited liability company: State and date of organization, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 2, Para 3 Not Applicable
807 KAR 5:001, § 14(4)	If the Applicant is a limited partnership: a certified copy of limited partnership agreement and all amendments or statement identifying prior Commission proceedings in which limited partnership agreement and all amendments filed	Page 2, Para 3 Not Applicable
KRS 278.300(2)	Application is made under oath and signed on utility's behalf by its president, or by a vice president, auditor, comptroller or other executive officer having knowledge of the matters set forth and duly designated by the utility	Page 10
807 KAR 5:001, § 18(1)(a)	Information required by 807 KAR 5:001, § 14	See Above
807 KAR 5:001, § 18(1)(b)	Description of Applicant's property and the field of its operation	Page 2, Para 4 Page 6, Para 27
807 KAR 5:001, § 18(1)(c)	Description of amount and kinds of stock to be issued	Page 6, Para 28 Not Applicable
807 KAR 5:001, § 18(1)(c)	Description of amount, terms and interest rate of bond or note	Page 6, Para 23
807 KAR 5:001, § 18(1)(c)	Description of how bond or note will be secured	Page 6, Para 23
807 KAR 5:001, § 18(1)(d)	Statement of how proceeds are to be used	Page 5, Para 17
807 KAR 5:001, § 18(1)(e)	If proceeds will be used to acquire, construct, improve, or extend property: a detailed description of property and all contracts	Page 3, Paras 7-8 Page 5, Para 18
807 KAR 5:001, § 18(1)(f)	Requirements if proceeds are to refund outstanding obligations	Page 7, Para 29 Not Applicable
807 KAR 5:001, § 18(1)(g)	Applicant's written notification to state local debt officer regarding proposed issuance	Page 7, Para 30 Exhibit 18

FILING REQUIREMENTS

Source Authority	Requirement	Location
807 KAR 5:001, § 18(2)(a) 807 KAR 5:001, § 12(1)(b)	Financial Exhibit	Page 7, Para 31
807 KAR 5:001, § 18(2)(b)	Copies of trust deeds or mortgages	Page 7, Para 32 Not Applicable
807 KAR 5:001, § 12(2)(c)	If property acquired: maps and plans of property	Page 3, Para 9 Page 4, Para 13 Page 7, Para 33 Exhibits 5 and 6
807 KAR 5:001, § 12(2)(c)	If property acquired: detailed estimates by USOA account number	Page 7, Para 34 Exhibit 19

EXHIBITS

TABLE OF EXHIBITS

<u>Tab No.</u>	<u>Description</u>
1	Order Establishing Northeast Woodford County Water District
2	Minutes of the Meeting of 10/02/2018 of the Northeast Woodford County Water District's Board of Commissioners Authorizing the Filing of Application to the Public Service Commission
3	KDOW Approval of Proposed Water Mains with Respect to Sanitary Features of Design
4	Description of Proposed Facilities' Locations and Routes
5	Maps of Proposed Facilities' Location and Routes
5A	Map of All Proposed Facilities
5B	Map of Proposed Water Mains
5C	Map of Proposed Booster Pumping Station
6	Plans for Proposed Water Main Extensions
7	Specifications for Proposed Facilities
7A	Specifications for Proposed Water Main Extensions
7B	Specifications for Replacement Booster Pumping Station
8	Preliminary Engineering Report
9	Final Engineering Report
10	Hydraulic Calculations Re: Proposed Water Main Extensions
11	Certified Bid Tabulations
12	Minutes of the Meeting of 03/06/2018 of the Northeast Woodford County Water District's Board of Commissioners Awarding Contracts for the Construction and Installation of the Proposed Facilities
13	Statement of Annual Cost of Operations
14	Kentucky Infrastructure Authority's Analysis of Proposed Facilities and Applicant's Ability to Meet Terms of the Proposed Assistance Agreement

<u>Tab No.</u>	<u>Description</u>
15	Minutes of 10/26/2016 Meeting of the Board of Directors of the Kentucky Infrastructure Authority
16	Conditional Commitment Letter of 11/03/2016
17	Letters from the Kentucky Infrastructure Authority Granting an Extension of Time in which to meet Loan Conditions
17A	Letter of 10/06/2017
17B	Letter of 10/10/2018
18	Notice to State Local Debt Officer
19	Detailed Estimate of Acquired Property, Arranged According to the Uniform Systems of Accounts for Class A/B Water Districts and Associations

EXHIBIT 1

WOODFORD COUNTY COURT

MAY 27, 1964

IN THE MATTER OF
NORTH EAST WOODFORD COUNTY WATER DISTRICT

ORDER CREATING DISTRICT

It appearing to the Court upon hearing on this date in the above styled matter, that a petition in writing has been made to this Court for the establishment and creation of a Water District to include the premises more fully described hereinafter, said petition being signed by more than seventy-five freeholders thereof and setting out the reasons therefor, and it appearing that notice of the filing of said petition given by publication as required by law, and no objections having been filed with the Court, and it further appearing that the establishment of the Water is necessary to the public health, convenience, fire protection and comfort to the residents of the proposed Water District:

NOW, THEREFORE, it is ordered and adjudged that the establishment of the proposed Water District is necessary for the public health, convenience, fire protection and comfort of the residents of the proposed district, and it is further ordered that a Water District, known as North East Woodford County Water District, be, and is hereby created and established, consisting of the following property:

The boundaries of the North East Woodford County
Water District are as follows:

Beginning at a point where a creek known as
Town Branch or Elkhorn Creek crosses the
Fayette County line, thence with said creek
to a point 1 mile northeast of the Old Frankfort
Pike, thence in a northwestern direction and
parallel with said pike to a point one mile
northwest of Highway 62, thence southwest parallel
with Highway 62 and one mile west of same to the
North Woodford County Water District, thence
following said District line in a southeastern
direction to Highway 62, thence following U. S.
62 to the U. S. 60, then Southeastward along
same and the U. S. 60 By-pass to the Southern
Railway Right of Way main line, thence with same
in an eastern direction to the Pisgah Pike,
thence southward along said pike for 1500 feet,
then East to the Fayette County line and follow-
ing the Woodford and Fayette line northeastward
to the point of Beginning.

All the above area is in Woodford County, Kentucky.


JUDGE, WOODFORD COUNTY COURT

State of Kentucky

Woodford County Court, Sct.,

I, Albert E. Rose, Clerk of the Woodford County Court, certify that
the foregoing Order Creating District is a true and correct copy as it
appears in my office in Order Book 17 page 95A.

Given under my hand and seal this 20th day of April, 1966.

Attest: Albert E. Rose, Clerk
Cecilia C. Woodman, D. C.

EXHIBIT 2

Northeast Woodford Water District

October Meeting Minutes

October 2, 2018

I. Call to order

John Davis called to order the meeting of the Northeast Woodford Water District at district office @ 10:00 am

II. Attendees

John Davis, Chairman
Larry Moore, Treasurer
Ken Brothers, Secretary

Fred Faust, Biller
Dale Gatewood, Manager
Sandy Broughman, Engineer

III. Approval of minutes from last meeting

Northeast Woodford Water District read the minutes from the September's regular meeting. Larry Moore made a motion to accept the minutes and John Davis second. Minutes approved.

IV. Current Issues

Fred

- a) Check sign on October 9, 2018.
- b) Cut offs October 18, 2018.
- c) Received notice from the United Bank we still had \$0.47 in the construction account. Need to stop by and collect and officially close the account.
- d) Winstar contact the office in regards to the status of requested fire hydrant. Sandy will confirm and get certificate. John will contact Winstar and advise.
- e) City will begin flushing free chlorine on Oct. 8 and will be flushing thru Oct 26.
- f) Commission discussed the painting of the fire hydrants in the district. Dale will figure out the number of hydrants and cost to paint them.
- g) Larry Stone asked if his new water line was scheduled and to give him a two day notice so he can have his plumber ready.
- h) Kentucky Bank has requested signature on the Collateral statement. John and Larry signed and Fred returned.
- i) Commissioners approved a letter to be drafted and submitted to Kentucky Bank to allow Fred Faust and Mary Faust Shryock to have access to information on all accounts Northeast Woodford Water Districts accounts.

John

- j) Reminder Training in December and all are signed up

Dale

- k) 404 Wells Lane, John Varner, had a whole appear beside his meter. Has filled it with dirt and kept clearing out. Have to clog before filling. Dale will call and tell him and advise that it is his responsibility.
- l) District needs to increase price of meters as we are loosing money on each meter sold. Currently cost for a 5/8' meter is \$844, actual cost is \$1400 to install. 1" meter currently is \$1035, cost to install is \$1700. Will be working on submitting a new tariff to increase cost of meters.
- m) We have been pumping out of Frankfort to stay in appropriate chlorine range.

Sandy

n) Discussion of filing an application to the PSC for Certificate of Public Convenience and Necessity to increase rates, which is required to finalize actions required for KIA Revolving Fund loan #B17-007. Larry Moore made a motion to submit the application and Ken Brothers seconded it. Motion was approved by the commissioners. Joe Hoffman will send the application to the PSC, as approved by October 5, 2018. If Joe needs assistance with the filing of the application, the commissioners agreed to employ Gerald Wuetcher to help.

o) The Purchase Water Agreement has been rounded to \$.04 for the Frankfort pass thru.

Commission approves to pay the bills.

Adjournment

John Davis called the meeting to adjourn. Ken Brothers made a motion and Larry Moore second the motion @11:15 am

Minutes submitted by: Fred Faust

Ken Brothers/Secretary

Ken Brothers

EXHIBIT 3



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

January 31, 2018

Dale Gatewood, Manager
Northeast Woodford Co Water District
225 South Main
Versailles, KY 40383

RE: System Upgrade
Woodford County, KY
Northeast Woodford Co Water District
AI #: 34143, APE20170001
PWSID #: 1200310-17-001

Dear Mr. Gatewood:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 3343 LF of 6-inch PVC and 7633 LF of 4-inch PVC waterline. 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.

If you have any questions concerning this project, please contact Mr. Mortaza Tabayeh at 502-782-7086.

Sincerely,

Terry Humphries, P.E.
Supervisor, Engineering Section
Water Infrastructure Branch
Division of Water

TH: MT

Enclosures

C: Warner Broughman, P.E.
Woodford County Health Department
Division of Plumbing



Distribution-Water Line Extension
Northeast Woodford Co Water District
Facility Requirements

Activity ID No.:APE20170001

Page 1 of 4

PORT000000002 (System Upgrade) 3343 LF of 6-inch PVC and 7633 LF of 4-inch PVC:

Narrative Requirements:

Condition No.	Condition
T-1	Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5]
T-2	The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)]
T-3	A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)]
T-4	During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)]
T-5	Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)]
T-6	Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)]
T-7	The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a]
T-8	Water lines should be hydraulically capable of a flow velocity of 2.5 ft/s while maintaining a pressure of at least 20 psi. [Drinking Water General Design Criteria IV.1.b]
T-9	The normal working pressure in the distribution system at the service connection shall not be less than 30 psi under peak demand flow conditions. Peak demand is defined as the maximum customer water usage rate, expressed in gallons per minute (gpm), in the pressure zone of interest during a 24 hour (diurnal) time period. [Drinking Water General Design Criteria IV.1.d]
T-10	When static pressure exceeds 150 psi, pressure reducing devices shall be provided on mains or as part of the meter setting on individual service lines in the distribution system. [Drinking Water General Design Criteria IV.1.c]
T-11	The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of three (3) inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances. [Recommended Standards for Water Works 8.2.2, Drinking Water General Design Criteria IV.2.b]

Distribution-Water Line Extension
Northeast Woodford Co Water District
Facility Requirements

Activity ID No.:APE20170001

Page 2 of 4

PORT000000002 (System Upgrade) 3343 LF of 6-inch PVC and 7633 LF of 4-inch PVC:

Narrative Requirements:

Condition No.	Condition
T-12	Water mains not designed to carry fire-flows shall not have fire hydrants connected to them. [Recommended Standards for Water Works 8.4.1.b]
T-13	Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-14	No flushing device shall be directly connected to any sewer. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-15	Pipe shall be constructed to a depth providing a minimum cover of 30 inches to top of pipe. [Drinking Water General Design Criteria IV.3.a]
T-16	Water mains shall be covered with sufficient earth or other insulation to prevent freezing. [Recommended Standards for Water Works 8.7]
T-17	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 of at least six inches below the bottom of the pipe. [Recommended Standards for Water Works 8.7]
T-18	Water line installation shall incorporate the provisions of the AWWA standards and/or manufacturer's recommended installation procedures. [Recommended Standards for Water Works 8.7]
T-19	All materials used for the rehabilitation of water mains shall meet ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-20	Packing and jointing materials used in the joints of pipe shall meet the standards of AWWA and the reviewing authority. [Recommended Standards for Water Works 8.1]
T-21	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 8.7]
T-22	All materials including pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the Division of Water. [Recommended Standards for Water Works 8.1]
T-23	Water mains which have been used previously for conveying potable water may be reused provided they meet the above standards and have been restored practically to their original condition. [Recommended Standards for Water Works 8.1]

Distribution-Water Line Extension
Northeast Woodford Co Water District
Facility Requirements

Activity ID No.:APE20170001

Page 3 of 4

PORT000000002 (System Upgrade) 3343 LF of 6-inch PVC and 7633 LF of 4-inch PVC:

Narrative Requirements:

Condition No.	Condition
T-24	Manufacturer approved transition joints shall be used between dissimilar piping materials. [Recommended Standards for Water Works 8.1]
T-25	The minimum size of water main which provides for fire protection and serving fire hydrants shall be six-inch diameter. [Recommended Standards for Water Works 8.2, Drinking Water General Design Criteria IV.2.a]
T-26	Pipes and pipe fittings containing more than 8% lead shall not be used. All products shall comply with ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-27	Gaskets containing lead shall not be used. Repairs to lead-joint pipe shall be made using alternative methods. [Recommended Standards for Water Works 8.1]
T-28	Pipe materials shall be selected to protect against both internal and external pipe corrosion. [Recommended Standards for Water Works 8.1]
T-29	Dead end mains shall be equipped with a means to provide adequate flushing. [Recommended Standards for Water Works 8.2]
T-30	The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads. [Recommended Standards for Water Works 8.4.3]
T-31	A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. [Recommended Standards for Water Works 8.3]
T-32	Wherever possible, chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances to a distribution system, shall not be located in areas subject to flooding or in areas of high groundwater. Such chambers or pits should drain to the ground surface, or to absorption pits underground. The chambers, pits and manholes shall not connect directly to any storm drain or sanitary sewer. Blow-offs shall not connect directly to any storm drain or sanitary sewer. [Recommended Standards for Water Works 8.6]
T-33	At high points in water mains where air can accumulate provisions shall be made to remove the air by means of air relief valves. [Recommended Standards for Water Works 8.5.1]
T-34	Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur. [Recommended Standards for Water Works 8.5.1]
T-35	The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward-facing elbow. [Recommended Standards for Water Works 8.5.2.c]

Distribution-Water Line Extension
Northeast Woodford Co Water District
Facility Requirements

Activity ID No.:APE20170001

PORT000000002 (System Upgrade) 3343 LF of 6-inch PVC and 7633 LF of 4-inch PVC:

Narrative Requirements:

Condition No.	Condition
T-36	Discharge piping from air relief valves shall not connect directly to any storm drain, storm sewer, or sanitary sewer. [Recommended Standards for Water Works 8.5.2.d]
T-37	Water pipe shall be constructed with a lateral separation of 10 feet or more from any gravity sanitary or combined sewer measured edge to edge where practical. If not practical a variance may be requested to allow the water pipe to be installed closer to the gravity sanitary or combined sewer provided the water pipe is laid in a separate trench or undisturbed shelf located on one side of the sewer with the bottom of the pipe at least 18 inches above the top of the gravity sanitary or combined sewer pipe. [Drinking Water General Design Criteria IV.3.b]
T-38	Water lines crossing sanitary, combined or storm sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sanitary, combined or storm sewer with preference to the water main located above the sanitary, combined or storm sewer. [Drinking Water General Design Criteria IV.3.c]
T-39	At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. [Recommended Standards for Water Works 8.8.3.b]
T-40	There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system. [Recommended Standards for Water Works 8.10.1]
T-41	Water utilities shall have a cross connection program conforming to 401 KAR 8. [Recommended Standards for Water Works 8.10.1]
T-42	Installed pipe shall be pressure tested and leakage tested in accordance with the appropriate AWWA Standards. [Recommended Standards for Water Works 8.7.6]
T-43	New, cleaned and repaired water mains shall be disinfected in accordance with AWWA Standard C651. The specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains. In an emergency or unusual situation, the disinfection procedure shall be discussed with the Division of Water. [Recommended Standards for Water Works 8.7.7]
T-44	A minimum cover of five feet shall be provided over pipe crossing underwater. [Recommended Standards for Water Works 8.9.2]
T-45	Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding for pipes crossing underwater. [Recommended Standards for Water Works 8.9.2.b]
T-46	Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source for pipes crossing. [Recommended Standards for Water Works 8.9.2.c]

EXHIBIT 4

**Northeast Woodford County Water District
Proposed Locations and Routes of Project**

The replacement pumping station will be located in Woodford County at the intersection of Big Sink Road (CR-1028) and Fieldview Drive.

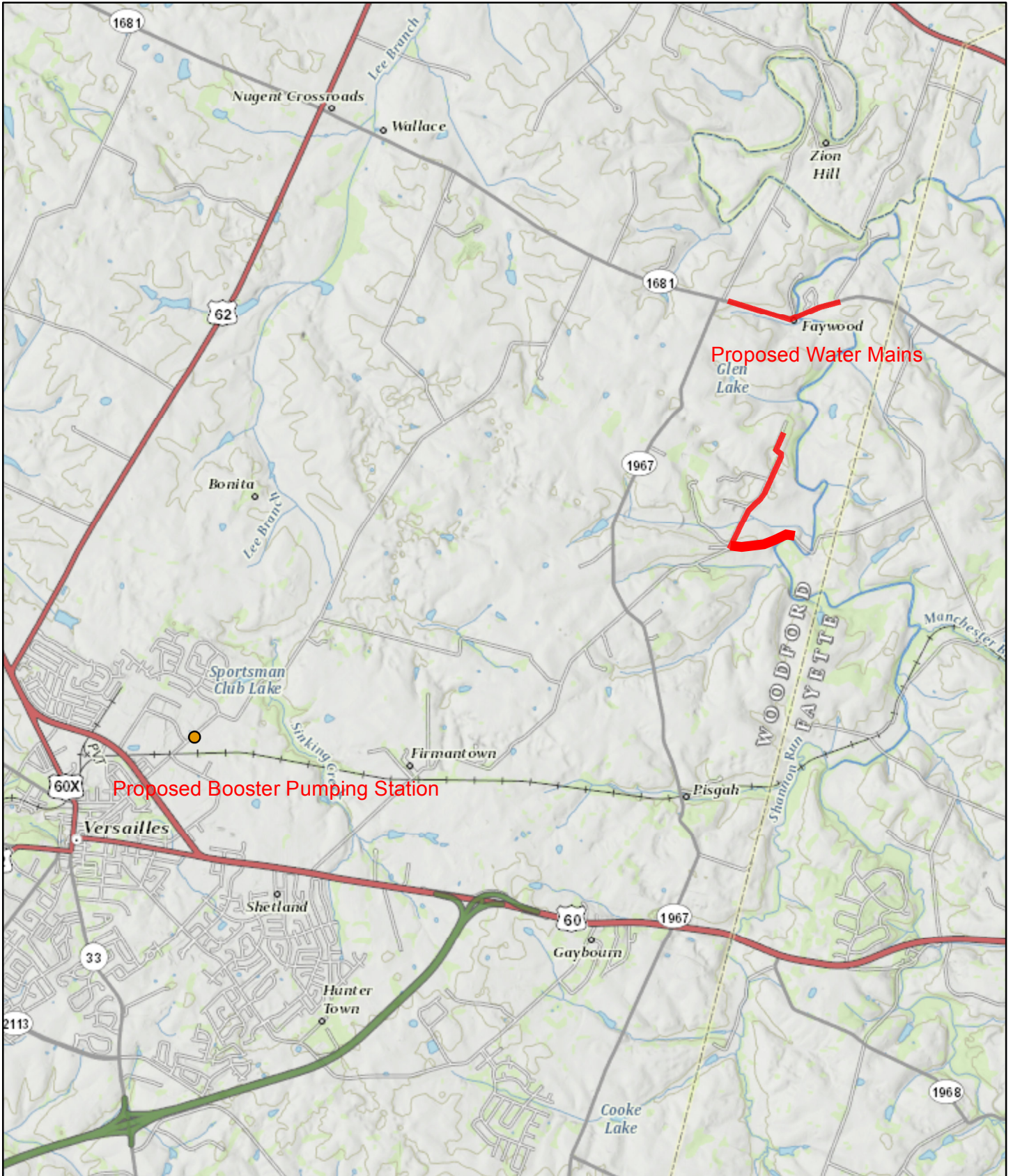
Approximately 4,800 linear feet of four-inch water main will be installed in Sugar Hill Road area of northeast Woodford County. The extension will begin at the intersection of Paynes Mill Road (CR-1004) and Sugar Run Road (CR-1009) and run northeast along Sugar Run Road. Approximately 2,800 linear feet of existing three-inch water main running east along Paynes Mill Road from the intersection of Paynes Mill Road and Sugar Run Road will be replaced with four-inch water main.

Approximate 3,330 linear feet of smaller sized water main along Old Frankfort Pike (Ky Route 1681) beginning at or about the intersection of Old Frankfort Pike and Browns Mill Road (CR-1010) and running west to the intersection of Old Frankfort Pike and Paynes Depot Road (CR-1013) will be replaced with six-inch water main.

EXHIBIT 5

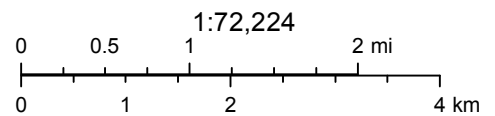
EXHIBIT 5A

Northeast Woodford County Water District Proposed Improvements



October 15, 2018

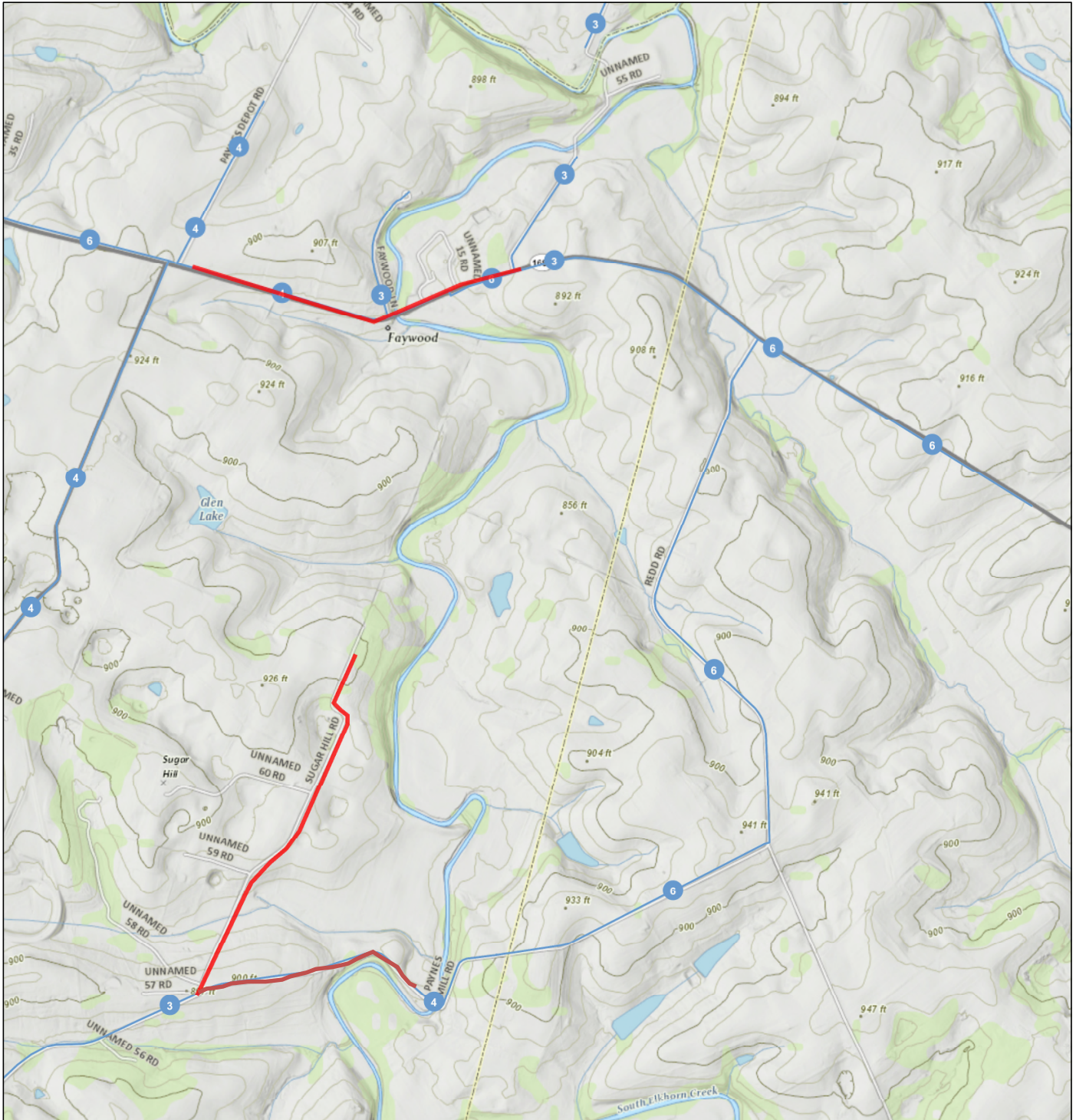
⊕ Proposed Water Improvements



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
 Kentucky Infrastructure Authority (KIA)

EXHIBIT 5B

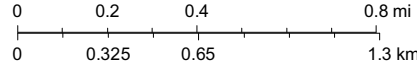
Northeast Woodford County Water District Proposed Water Mains



October 12, 2018

1:18,056

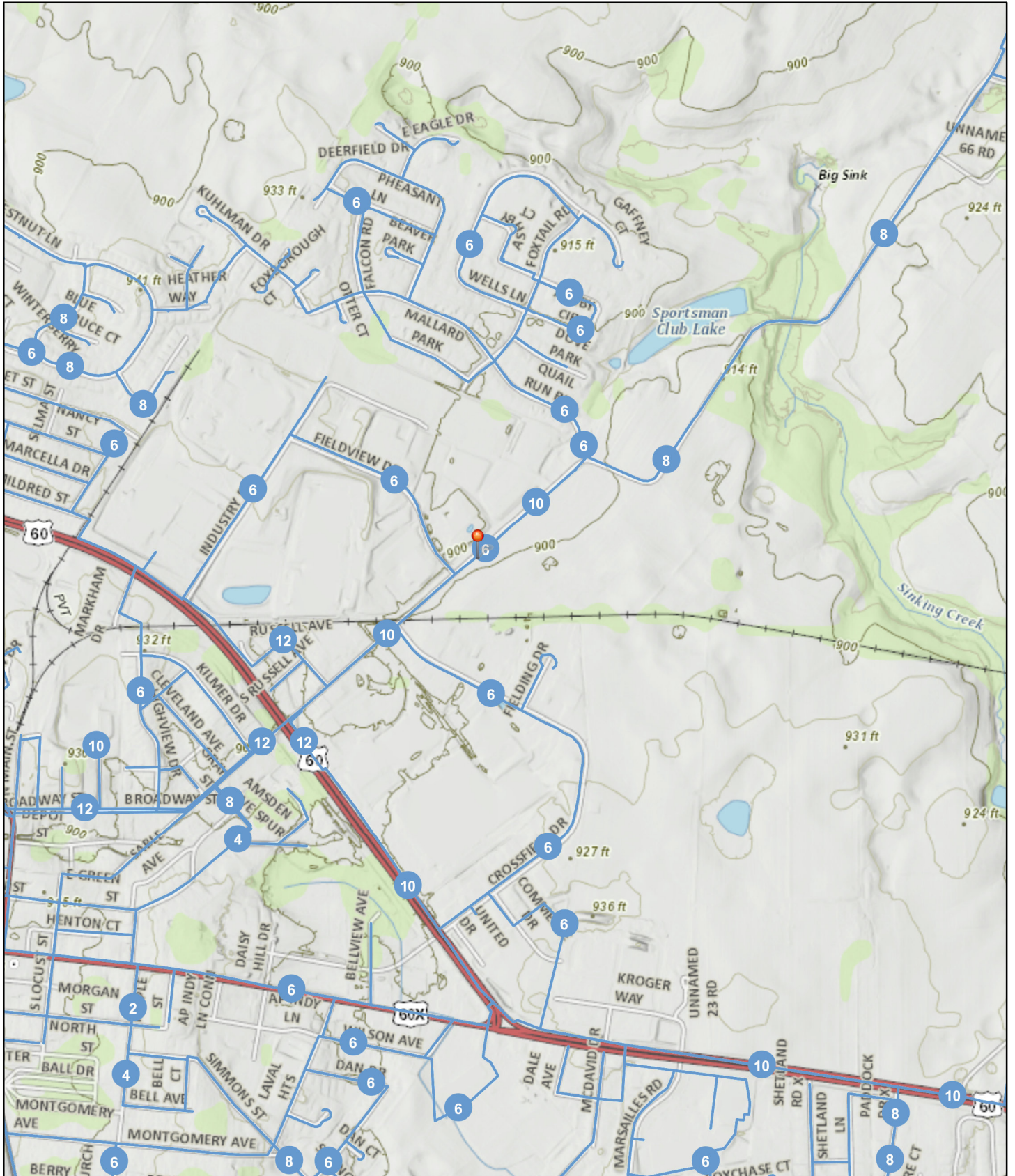
- Proposed Water Improvements
- Water Lines



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

EXHIBIT 5C

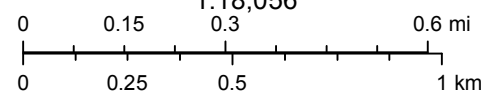
Northeast Woodford County Water District Proposed Pumping Station



October 15, 2018

1:18,056

- + Proposed Water Improvements
- Water Lines



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
 Kentucky Infrastructure Authority (KIA)

EXHIBIT 6

PROVIDED AS SEPARATE DOCUMENT

EXHIBIT 7

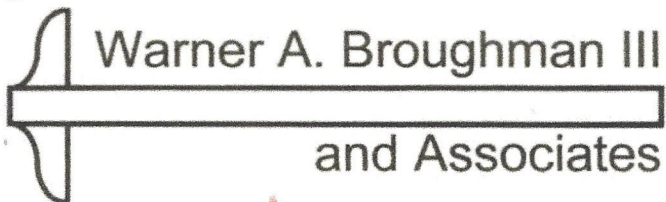
EXHIBIT 7A

**NORTHEAST
WOODFORD
WATER DISTRICT**

VERSAILLES, KENTUCKY

**SYSTEM
UPGRADES**

SEPTEMBER 2017

 Warner A. Broughman III
and Associates

**3161 Custer Drive, Suite 6
Lexington, Kentucky 40517
(606) 271-1778**

PROJECT NO. 15-14

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10/4/2018

S P E C I F I C A T I O N S
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C O N T R A C T D O C U M E N T S

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V E R S A I L L E S , K E N T U C K Y

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Warner A. Broughman III & Associates
3161 Custer Drive, Suite 6
Lexington, Kentucky 40517

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ADVERTISEMENT FOR BIDS

NORTHEAST WOODFORD WATER DISTRICT

225-A South Main Street

Versailles, KY 40383

Separate sealed BIDS for the construction of the **SYSTEM UPGRADES**, with all appurtenances thereof, will be received by **NORTHEAST WOODFORD WATER DISTRICT** at the **ENGINEER'S OFFICE, 3161 Custer Drive, Suite 6, Lexington, KY** until **11 A.M., February 20, 2018** and then at said office publicly opened and read aloud.

The **CONTRACT DOCUMENTS** consisting of **ADVERTISEMENT FOR BIDS, INFORMATION FOR BIDDERS, BID, BID BOND, AGREEMENT, PAYMENT & PERFORMANCE BOND, GENERAL CONDITIONS, NOTICE OF AWARD, DRAWINGS, SPECIFICATIONS AND ADDENDA** may be examined at the following locations:

WARNER A. BROUGHMAN III & ASSOCIATES
3161 CUSTER DRIVE, SUITE 6
LEXINGTON, KENTUCKY 40517

Copies of the **CONTRACT DOCUMENTS** may be obtained at the office of Warner A. Broughman III & Associates (859) 271-1778 upon payment of \$75.00 for each set.

INFORMATION FOR BIDDERS

BIDS will be received by **NORTHEAST WOODFORD WATER DISTRICT** (herein called the "OWNER"), at the **DISTRICT OFFICE at 225-A South Main Street, Versailles, KY 40383** and then at said office publicly opened and read aloud.

If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the **NORTHEAST WOODFORD WATER DISTRICT, 225-A SOUTH MAIN STREET, VERSAILLES, KY 40383**. Each sealed envelope containing a BID must be plainly marked on the outside as **BID FOR SYSTEM UPGRADES** and the envelope should bear on the outside the name of the BIDDER, his address, his license number, if applicable, and the name of the project for which the BID is submitted. All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within ninety (90) days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID SCHEDULE by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID BOND payable to the OWNER for **five percent** of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the BONDS of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the PAYMENT BOND and PERFORMANCE BOND have

been executed and approved, after which it will be returned. A certified check may be used in lieu of a BID BOND.

A performance BOND and a payment BOND each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the Property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within ten (10) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER AND CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.

WAB III - Information for Bidders

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

GENERAL CONDITIONS

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work
17. Subsurface Conditions
18. Suspension of Work, Termination and Delay
19. Payments to Contractor
20. Acceptance of Final Payment as Release
21. Insurance
22. Contract Security
23. Assignments
24. Indemnification
25. Separate Contracts
26. Subcontracting
27. Engineer's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Arbitration
31. Taxes

1. DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA—Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

1.3 BID—The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER—Any person, firm or corporation submitting a BID for the WORK.

1.5 BONDS—Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER—A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS—The contract, including Advertisement For Bids, Information For Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE—The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME—The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.10 CONTRACTOR—The person, firm or corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS—The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

1.12 ENGINEER—The person, firm or corporation named as such in the CONTRACT DOCUMENTS.

1.13 FIELD ORDER—A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

1.14 NOTICE OF AWARD—The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.

1.15 NOTICE TO PROCEED—Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.16 OWNER—A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the WORK is to be performed.

1.17 PROJECT—The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.18 RESIDENT PROJECT REPRESENTATIVE—The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

1.19 SHOP DRAWINGS—All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

1.20 SPECIFICATIONS—A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.21 SUBCONTRACTOR—An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22 SUBSTANTIAL COMPLETION—That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

1.23 SUPPLEMENTAL GENERAL CONDITIONS—

Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24 SUPPLIER—Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 WORK—All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26 WRITTEN NOTICE—Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. SCHEDULES, REPORTS AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and, as applicable:

3.2.1. The dates at which special detail drawings will be required; and

3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

4. DRAWINGS AND SPECIFICATIONS

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. SHOP DRAWINGS

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies or equipment to be incorporated into the WORK shall not be purchased by the

CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests or approvals by the engineer or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and his representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

8.1 Whenever a material, article or piece of equip-

ment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9. PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the ENGINEER.

10. SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR

observes that the CONTRACT DOCUMENTS are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. He will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

13.1 The OWNER may at any time, as the need arises,

order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME, or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14. CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

(a) Unit prices previously approved.

(b) An agreed lump sum.

(c) The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the WORK to cover the cost of general overhead and profit.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.4.1 To any preference, priority or allocation

order duly issued by the OWNER.

15.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR

will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK exe-

cuted and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. PAYMENTS TO CONTRACTOR

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER's title to the material and equipment and protect his interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within ten (10) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER shall retain ten (10) percent of the amount of each payment until final completion and acceptance of all work covered by the CONTRACT DOCUMENTS. The OWNER at any time, however, after fifty (50) percent of the WORK has been completed, if he finds that satisfactory progress is being made, shall reduce retainage to five (5%) percent on the current and remaining estimates. When the WORK is substantially complete (operational or beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the WORK on which the price is stated separately in the CONTRACT DOCUMENTS, payment may be made in full, including retained percentages, less authorized deductions.

19.2 The request for payment may also include an allowance for the cost of such major materials and

equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

21. INSURANCE

21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use, resulting therefrom.

21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

21.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified;

21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any

operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$200,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$200,000 aggregate for any such damage sustained by two or more persons in any one accident.

21.3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

21.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER, and the OWNER.

22. CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by

the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other con-

tracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

26. SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The

ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at his own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTY

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be

necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. ARBITRATION

30.1 All claims, disputes and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Section 20, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

30.2 Notice of the demand for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and with the American Arbitration Association, and a copy shall be filed with the ENGINEER. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

31. TAXES

31.1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

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GENERAL SPECIFICATIONS

It is the intention of the ENGINEER in the preparation of the General and Detailed Specifications to define properly the kind and quality of materials to be furnished. The standards and tentative standards of the American Society of Testing Materials (ASTM); the American National Standards Institute (ANSI); the Standards of the American Waterworks Association (AWWA); the American Public Works Association (APWA); the Federal Specification Board (Fed. Spec.); the American Association of State Highway Officials (AASHO); the Federal Aviation Agency (FAA); or other such agencies may be referred to in the specifications. Where such standards are referred to, said references shall be construed to mean the latest amended and/or revised versions of the said standard or tentative specifications. In the selection of samples and the routine testing of materials, the testing laboratory shall follow the standard procedure as outlined by the ASTM, unless otherwise set out.

1. MATERIALS FOR WATER PIPELINES

1.1 DUCTILE IRON PIPE AND FITTINGS

The ductile iron pipe shall be of the push-on or mechanical joint type. The pipe shall conform to the latest revision of ANSI A21.51 (AWWA C151). Push-on type and/or mechanical joints shall conform to ANSI A21.11 (AWWA C111).

1.1.1 Markings

Each piece of pipe shall bear the manufacturer's name or trademark, the year in which it was produced and the letters "DI," or word "DUCTILE."

1.1.2 Interior Lining

The interior of the pipe shall be cement-mortar lined in accordance with ANSI A21.4 (AWWA C104). Thickness of the lining shall be as set forth in Sec. 4-10.1 of the aforementioned specifications unless otherwise directed by the ENGINEER.

1.1.3 Exterior Coating

The exterior of all pipe, unless otherwise specified, shall receive either coal tar or asphalt base coating a minimum of 1 mil thick.

1.1.4 Fittings

Ductile iron fittings shall be in strict accordance with ANSI A21.10 (AWWA C110) or ANSI C153 (AWWA A21.53) *Ductile Iron Compact Fittings* and shall conform to the details and dimensions as shown therein. Ductile iron fittings shall be properly identified with the letters "DI" or word "DUCTILE" plainly marked on the body of the fittings. Mechanical joint ends shall meet the requirements of the Standard Specifications cited hereinbefore.

1.2 PLASTIC PIPE AND FITTINGS

Plastic pipe and fittings shall meet the following standards:

1.2.1 Material

Pipe shall be manufactured from clean, virgin, NSF approved Class 12454-A PVC compound conforming to ASTM D1784.

1.2.2 Dimensions

Pipe shall be of the dimensions specified in Standard Dimension Ratio (ASTM D2241)--SDR 21 (Class 200) or (AWWA C-900)--DR 25, with a maximum length of 20 feet.

1.2.3 Pressure Rating

Pressure ratings of the pipe shall not be less than:

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1.2.2 Dimensions

Pipe shall be of the dimensions specified in Standard Dimension Ratio (ASTM D2241)--SDR 21 (Class 200) or (AWWA C-900)--DR 25, with a maximum length of 20 feet.

1.2.3 Pressure Rating

Pressure ratings of the pipe shall not be less than:

200 psi @ 73.4 degrees F. (Class 200)

350 psi @ 73.4 degrees F. (Class 100)

1.2.4 Seal

The seal of the NSF Testing Laboratory must appear on each length of pipe.

1.2.5 Joints

Joints shall be of the integral wall-thickened bell end type in accordance with ASTM D2672.

1.2.6 Fittings

Ductile iron fittings shall be in strict accordance with ANSI A21.10 (AWWA C110) or ANSI C153 (AWWA A21.53) *Ductile Iron Compact Fittings* and shall conform to the details and dimensions as shown therein. Ductile iron fittings shall be properly identified with the letters "DI" or word "DUCTILE" plainly marked on the body of the fittings. Mechanical joint ends shall meet the requirements of the Standard Specifications cited hereinbefore.

1.3 COVER PIPE

Cover pipe shall be steel, plain end, uncoated and unwrapped. It shall have a yield point strength of 35,000 psi and conform to AWWA Specification C202. The steel pipe shall have welded joints and be in at least 18-foot lengths. The wall thickness of the pipe shall be a minimum of 0.250-inches for highway crossings and 0.188-inches for railroad crossings and the diameter shall be shown on the DRAWINGS or as directed by the ENGINEER.

1.3.1 Highway Crossing

The diameter shall be shown on the DRAWINGS or as directed by the ENGINEER. The wall thickness of the pipe shall be in accordance with the table below.

Cover Pipe Thickness for Highway Crossing:

<u>Nominal Pipe Diameter (inches)</u>	<u>Outside Pipe Diameter (inches)</u>	<u>Metal Thickness (0.25")</u>
6	6.000	0.250
8	8.000	0.250
10	10.000	0.250
12	12.000	0.375
16	16.000	0.375
20	20.000	0.375
24	24.000	0.500
30	30.000	0.500
36	36.000	0.500
42	42.000	0.625
48	48.000	0.625
54	54.000	0.625

1.3.2 Railroad Crossing

The diameter shall be shown on the DRAWINGS or as directed by the ENGINEER. The wall thickness of the pipe shall be in accordance with the table below.

Cover Pipe Thickness for Railroad Crossing:

<u>Nominal Pipe Diameter (inches)</u>	<u>Outside Pipe Diameter (inches)</u>	<u>Metal Thickness (0.25")</u>
12 and under	12.000	0.188
14	14.000	0.250
16	16.000	0.281
18	18.000	0.312
20	20.000	0.344
22	22.000	0.344
24	24.000	0.375
26	26.000	0.406

1.4 GRANULAR MATERIALS

Granular materials shall be as follows:

1.4.1 Fine Aggregate

Fine aggregate shall consist of natural sand having clean uncoated grains, free from injurious amounts of clay, flaky material, lignite, organic material and other such foreign substances and shall meet the requirements of ASTM C33.

1.4.2 Coarse Aggregate

Coarse aggregate shall be crushed stone, gravel or slag having clean, hard, uncoated particles. Crushed stone is preferred for coarse aggregate; gravel (either crushed or uncrushed) or slag shall not be used unless specified in the Detailed Specifications or approved in writing by the ENGINEER. Coarse aggregate shall be free from injurious amounts of soft, friable, thin elongated or laminated pieces and shall meet the requirements of ASTM C33.

1.5 CONCRETE

Classes of concrete as may be indicated in the Detailed Specifications or on the DRAWINGS shall conform to the following minimum design requirements.

<u>Class</u>	<u>Minimum Cement Factor</u>		<u>Minimum 28-Day Compressive Strength PSI</u>	<u>Slump in inches</u>
	<u>Bbls/Cu. Yd.</u>	<u>Bags/ Cu. Yd.</u>		
AA	1.55	6.2	4000	1-3
A	1.45	5.8	3500	1-3
BB	1.35	5.4	3000	2-4
B	1.25	5.0	2500	3-5
C	1.15	4.6	2000	3-6

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2. TESTING OF MATERIALS

2.1 GENERAL

2.1.1 Approval of Testing Agencies

Whenever inspection and/or testing of materials is required by the CONTRACT DOCUMENTS, bureaus, laboratories and/or agencies selected for such inspection and testing service shall be approved by the ENGINEER.

2.1.2 Selection of Testing Agencies

Subject to the approval of the ENGINEER, the CONTRACTOR may select the agency for testing materials furnished under the Contract. The ENGINEER will select the agency for testing materials furnished by the OWNER.

2.1.3 Cost of Tests

Cost of all tests herein required are to be borne as follows:

2.1.3.1 Contractor

Cost of all materials and equipment purchased by the CONTRACTOR shall be borne by the CONTRACTOR.

2.1.3.2 Owner

Cost of all materials and equipment purchased by the OWNER shall be borne by the OWNER.

2.1.4 Prior Inspection and Test Reports

Where prior inspection and testing of materials are required, documentary evidence, in the form of test reports, in the form and number required by the ENGINEER, shall be furnished prior to the time the material is incorporated into the work. All rejected material shall be promptly removed from the premises.

2.2 DUCTILE IRON PIPE AND FITTINGS

2.2.1 Where less than 200 tons are required:

Each piece of pipe shall bear the manufacturer's name or trademark and the date cast. Each piece of pipe shall also be certified by the manufacturer to have met the requirements of the governing specifications. Also, each piece shall be visually inspected in the field for specification conformance.

2.2.2 Where 200 or more tons are required:

Inspection and testing shall be as set forth in ASTM, AWWA, or other designated specifications by an independent laboratory for compliance with governing specifications.

2.3 PLASTIC PIPE AND FITTINGS

2.3.1 Where less than 5,000 feet are required:

Visual inspection at the site per ASTM or other designated specifications.

2.3.2 Where 5,000 or more feet are required:

Visual inspection and testing as set forth in ASTM, AWWA, or other designated specifications by an independent laboratory for compliance with governing specifications.

2.4 COVER PIPE

Inspection and testing as set forth in ASTM, AWWA, or other designated specifications, by an independent laboratory for compliance with governing specifications.

3. EQUIPMENT

The CONTRACTOR shall provide and utilize such equipment of the necessary type and quantity as is required to properly execute the WORK under the CONTRACT DOCUMENTS. Utilization of equipment of the wrong type, in poor state of repair, or improperly operated will not be allowed and as directed by the ENGINEER, the CONTRACTOR may be required to substitute the proper equipment or provide more qualified operators in order to proceed with the WORK.

4. EXCAVATION

4.1 GENERAL

This item shall include all clearing and grubbing, stripping, excavation of earth and other materials, filling, and other allied work necessary for the construction herein described.

4.1.1 Construction Methods

Excavation shall be accomplished at such places as are indicated on the DRAWINGS to the lines, grades and elevations shown, or as directed by the ENGINEER, and shall be made in such manner that the requirements for the pipelines as shown on the DRAWINGS may be followed. No excavation shall be started until the ENGINEER has taken, or caused to taken, the necessary profiles, cross sections and measurements of the existing ground surface, and the proposed work has been staked out. All materials encountered, or whatever nature, within the limits designated shall be removed and disposed of as directed. During the process of excavation, the grade and/or ditch shall be maintained in such condition that it will be well drained at all times. When directed, temporary drains and/or drainage ditches shall be installed at the CONTRACTOR'S expense to intercept or divert surface water which may affect the prosecution or condition of the work. If at any time it is not possible to place excavated material in its proper section of the permanent construction, it shall be stockpiled in approved areas for later use.

4.1.1.1 Rock, Shale, Clay, Hardpan, Etc.

Where rock, shale, clay, hardpan, or other unsatisfactory subgrade or foundation material is encountered, it shall be excavated to a depth of at least 12 inches below subgrade, or to such greater depth below subgrade as the ENGINEER may direct. The portion so excavated shall be refilled with suitable material compacted properly as directed by the ENGINEER.

4.1.1.2 Breakage and Undercutting

Breakage and undercutting, including slides, is that portion of any material displaced or loosened beyond the limits of the finished work as shown on the DRAWINGS. The ENGINEER shall determine if the displacement of such material was avoidable or unavoidable. All breakage shall be removed by the CONTRACTOR and disposed of as directed.

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4.2 CLASSIFICATIONS OF EXCAVATION

4.2.1 Earth Excavation

Earth excavation shall consist of all excavation of any or all materials of whatever name or character not defined as solid rock excavation.

4.2.2 Solid Rock Excavation

Solid rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses; also conglomerate deposits so firmly cemented as to present all the characteristics of solid rock and which cannot be removed without drilling, blasting, or mechanical removal with a machine. All boulders containing a volume of one (1) cubic yard or greater shall be classified as solid rock excavation.

4.2.3 Unclassified Excavation

Unclassified excavation shall include the excavation of both "Earth Excavation" and "Rock Excavation" combined as above classified.

4.3 LINES AND GRADES

The ENGINEER will mark the location of all water lines on the ground; however, any detailed layout, including that required for establishing the grade of the pipeline, shall be accomplished by the CONTRACTOR. If bench levels are required for reference, these will be established by the ENGINEER.

The CONTRACTOR shall furnish all materials, stakes and grade boards that are required for layout either by the ENGINEER or by the CONTRACTOR'S forces. In addition, the CONTRACTOR shall furnish any aides required by the ENGINEER in marking the location of the various facilities on the ground, establishing bench levels and determining as-built conditions after the work is completed. The CONTRACTOR'S personnel engaged in the layout work described herein and the aides furnished to the ENGINEER shall be capable of performing the duties set out herein and shall be fully qualified chiefs of party, instrumentperson, chainperson, rodperson and/or axperson, as required.

4.4 CLEARING AND GRUBBING

The CONTRACTOR shall accomplish all clearing and/or clearing and grubbing within the limits designated on the DRAWINGS, directed by the ENGINEER, or as required for the construction of the work involved, and shall satisfactorily dispose of all materials so removed.

4.4.1 Scope of Work

The work under this paragraph shall consist of the cutting and removing of all trees, stumps, brush, logs, removal of fences, or other loose or projecting material within the designated areas. Unless otherwise specified, it shall also include the grubbing of stumps, roots and other natural obstructions which, in the opinion of the ENGINEER, must be removed to properly prosecute the construction work and operate properly the facility upon completion of construction. Disposal shall be by methods satisfactory to the ENGINEER. Trees which are designated to remain shall be properly protected.

4.4.2 Timber

All merchantable timber shall be cut into logs of merchantable length and neatly piled as directed by the ENGINEER. Unless otherwise specified, merchantable timber shall remain the property of the OWNER.

4.4.3 Grubbing: Required

Unless grubbing is specifically not required, all bushes, hedge fences, trees and stumps within the designated areas, except those occurring under embankments of more than 24 inches in depth, shall be grubbed up so that no root more than three inches in diameter shall be within 18 inches of the finished grade, or within six inches of the surface operation, and in excavation areas less than two feet in depth, shall have the sides broken down or leveled if necessary to flatten the slopes, and refilled with acceptable material properly compacted.

4.4.4 Grubbing: Not Required

Where grubbing is specifically not required, trees and stumps six inches or larger in diameter when measured one foot above the ground shall be cut to within six inches of the ground line and the stumps left in place. All other trees, stumps, shrubs and bushes shall be cut even with the surface of the surrounding ground.

4.5 TRENCH EXCAVATION

4.5.1 Depth

Unless otherwise directed by the ENGINEER, trenches in which pipes are to be laid shall be excavated in open cut to the depths shown on the DRAWINGS or as specified by the ENGINEER. In general, this shall be interpreted to mean that machine excavation in earth shall not extend below an elevation permitting the lower quadrant of the pipe to be bedded in undisturbed ground and excavation in rock shall extend below the invert elevation a sufficient distance to accommodate a layer of granular bedding as specified hereinafter.

4.5.2 Earth

If the foundation is good firm earth and the machine excavation has been accomplished as set out hereinbefore, the remainder of the material shall be excavated by hand, then the earth pared or molded to give full support to the lower quadrant of the barrel of each pipe. Where bell- and-spigot is involved, bell holes shall be excavated during this latter operation to prevent the bells from being supported on undisturbed earth. If for any reason the machine excavation in earth is carried below an elevation that will permit the type of bedding specified above, then a layer of granular material shall be placed so that the lower quadrant of the pipe will be securely bedded in compacted granular fill.

As an alternative to the above method, excavation in earth may be undercut to a depth below the required invert elevation that will permit laying the pipe in a bed of granular material to provide continuous support for the bottom quadrant of the pipe.

4.5.2.1 Rock

If the foundation is rock and the excavation has been undercut as set out hereinbefore, a bed or crushed stone, fine gravel, sand, or other suitable granular material shall be placed to provide continuous support for the lower quadrant of the pipe.

4.5.3 Width

Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the ENGINEER, trenches shall in no case be excavated or permitted to become wider than 2 feet 6 inches plus the nominal diameter of the pipe as measured at the bottom of the trench. If the trench does become wider than specified above, special precautions may be necessary, such as providing compacted, granular fill up to the top of the pipe, or providing pipe with additional crushing strength. If the

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ENGINEER, after taking into account the actual trench loads that may result and the strength of the pipe being used, determines this to be case, the CONTRACTOR shall bear the cost of such special precautions.

4.5.4 Excavated Material

All excavated materials shall be placed a minimum of 2 feet back from the edge of the trench.

4.5.5 Opening

Before laying the pipe, the trench shall be opened far enough ahead to reveal obstructions that may necessitate changing the line or grade of the pipeline.

The trench shall be straight and uniform so as to permit laying pipe to lines and grades given by the ENGINEER. It shall be kept free of water during the laying of the pipe and until the pipeline has been backfilled.

4.6 BLASTING

All blasting operations shall be conducted in accordance with the municipal ordinances, state and Federal laws, and Section 9 of the Manual of Accident Prevention in Construction published by the Associated General Contractors of America, Inc. All explosives shall be stored in conformity with said ordinances, laws and safety regulations. No blasting shall be done within five feet of any water mains, except with light charges of explosives. Any damage done by blasting is the responsibility of the CONTRACTOR and shall be promptly and satisfactorily repaired by the CONTRACTOR.

4.6.1 Material Storage

To implement these requirements, and unless otherwise required by ordinance or law, each excavation crew shall be provided with two metal boxes with suitable locks. One of these boxes shall be for storing explosives and one for caps. The boxes shall always be locked except when in actual use. They shall be painted a bright color and stenciled with appropriate warning signs. At night, explosives and caps shall be stored in separate magazines.

4.6.2 Covering Shots

All shots shall covered with heavy timber or steel blasting mats to prevent flying material. Unless otherwise specified or directed, delay caps shall be used to reduce earth vibrations and noise. In sparsely populated areas, the ENGINEER may permit the CONTRACTOR to use regular type caps and/or Primacord.

4.6.3 Drilling

In specific cases authorized by the ENGINEER, the CONTRACTOR may elect to drill through overburden into rock to place explosives.

4.7 SHORING AND BRACING

Where unstable material in encountered, or where the depth of excavation in earth exceeds six feet, the sides of the trench or excavation shall be supported by substantial sheeting, bracing and shoring, or the sides sloped to the angle of repose. Sloping the sides of the ditch to the angle of repose will not be permitted in streets, roads, narrow rights-of-way or other constricted areas unless otherwise specified. The design and installation of all sheeting, sheet piling, bracing and shoring shall be based on computations of pressure exerted by the materials to be retained under existing conditions. Adequate and proper shoring of all excavations shall be the entire responsibility of the CONTRACTOR; however, the ENGINEER may require the submission of shoring plans

(accompanied by supporting computations) for approval prior to the CONTRACTOR undertaking any portion of the WORK.

4.7.1 Adjacent Buildings

Foundations, adjacent to where the excavation is to be made below the depth of the existing foundation, shall be supported by shoring, bracing or underpinning as long as the excavation shall remain open, or thereafter if required to insure the stability of the structure supported by the foundation, and the CONTRACTOR shall be held strictly responsible for any damage to said foundation.

4.7.2 Material

Even though computations shall determine the size of the various components, no timber sheeting less than two inches in thickness and no timber bracing, cross bracing or struts less than six inches by six inches will be acceptable.

4.7.3 Procedure

Solid sheeting will be required for wet or unstable material. It shall consist of continuous vertical sheet piling of timber or steel with suitable walls and braces.

Trench sheeting shall not be removed until sufficient backfill has been placed to protect the pipe.

All sheeting, planking, timbering, bracing and bridging shall be placed, renewed and maintained as long as is necessary. Shoring, sheeting and/or bracing is not a pay item unless the CONTRACTOR is required and/or instructed by the ENGINEER to leave same in place.

4.8 DISPOSITION OF EXCAVATED MATERIAL

Material excavated for water mains, vaults or other structures shall be disposed of as shown on the DRAWINGS or as directed by the ENGINEER. All excavated material not needed for backfilling purposes shall be disposed of in a manner satisfactory to the ENGINEER.

4.9 REMOVAL OF WATER

The CONTRACTOR, at his own expense, shall provide adequate facilities for promptly and continuously removing water from all excavations.

4.10 UNAUTHORIZED EXCAVATION

Whenever the excavation is carried beyond or below the required lines and grades, the CONTRACTOR, at his own expense, shall refill said excavated space with suitable material in a manner approved by the ENGINEER.

5. PIPE INSTALLATION

5.1 GENERAL

This section shall include all of the operations required for pipe installation, including placing of bedding, laying of pipe, jointing pipe, and installation of all fittings, valves and other appurtenances in the prepared trench. All other materials and labor associated with the installation shall be considered incidental to the work.

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5.2 PIPE BEDDING

In all cases, the foundation for pipes shall be prepared so that the entire load of the backfill on top of the pipe will be carried uniformly on the barrel of the pipe. The bells on cast iron pipe shall not carry any of the load of the backfill.

The CONTRACTOR may use either the "Paring Method" or "Undercutting Method" of bedding the pipe.

5.2.1 Paring Method

If the "Paring Method" is used, granular bedding of #9 crushed stone, fine gravel or sand shall be used to correct irregularities in the subgrade.

5.2.2 Undercutting Method

If the "Undercutting Method" is used, the granular bedding of #9 crushed stone, fine gravel or sand shall be of such depth that the bottom of the bells of the pipe will be at least three inches above the bottom of the trench as excavated.

5.2.3 Yielding and Mucky Subgrades

5.2.3.1 Securing Pipe

In wet, yielding mucky locations where pipe is in danger of sinking below grade or floating out of line or grade, or where backfill materials are of such a fluid nature that such movements of pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective.

5.2.3.2 Removing Subgrade

When ordered by the ENGINEER, yielding and mucky material in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe. If crushed stone or other such granular fill is necessary, it will be paid for per ton of "Special Pipe Bedding" used except in cases where instability is caused by neglect of the CONTRACTOR.

5.3 LAYING PIPE

5.3.1 Depth

In general, all water distribution piping shall be laid at the depths indicated for each of the water mains. Minimum cover for all lines shall be 30 inches; minimum cover at the location of 12-inch or larger valves shall be 36 inches.

5.3.2 Bell Placement

All pipes shall be laid with ends abutting and true to line and grade as given by the ENGINEER. Supporting of pipes shall be as set out hereinbefore under "Pipe Bedding" and in no case shall the supporting of pipes on blocks be permitted.

5.3.3 Fittings

Fittings for the water main shall be provided and laid as and where directed by the ENGINEER or shown on the DRAWINGS. All open ends of pipes and of branches shall be sealed and plugged.

5.3.4 Pipe Inspection

Before each piece of pipe is lowered into the trench, it shall be thoroughly inspected to insure that it is clean. Any piece of pipe or fitting which is known to be defective shall not be laid or placed in the lines. Any defective pipe or fitting discovered after the pipe is laid shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line, it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe.

5.3.5 Subgrade Irregularities

Irregularities in subgrade in an earth trench shall be corrected at the CONTRACTOR'S expense by use of granular material as specified hereinbefore. A supply of this material shall be available at trench site whenever pipe is being laid.

5.3.6 Pipe Interior

The interior of the pipe, as the work progresses, shall be cleaned of all dirt, jointing materials, superfluous materials of every description. When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a plywood plug fitted into the pipe bell, so as to exclude earth or other material, and precautions shall be taken to prevent flotation of pipe by runoff into the trench.

5.3.7 Backfilling

No backfilling (except for securing pipe in place) over pipe will be allowed until the ENGINEER has had an opportunity to make an inspection of the joints, alignment and grade, in the section laid, but such inspection shall not relieve the CONTRACTOR of further liability in case of defective joints, misalignment caused by backfilling and other such deficiencies that are noted later.

5.4 JOINTING PIPE

Jointing of pipe shall be accomplished in accordance with the recommendations of the manufacturer unless otherwise directed by the ENGINEER.

5.5 PLACING CONCRETE

Concrete cradle, anchors or encasement of water mains or fittings shall be placed where shown on the DRAWINGS, required by the SPECIFICATIONS, or as directed by the ENGINEER. Concrete shall be Class "C" and shall be mixed sufficiently wet to permit it to flow under the pipe to form a continuous bed. In tamping concrete, care shall be taken not to disturb the grade or line of the pipe or injure the joints. Concrete placed outside the specified limits or without authorization from the ENGINEER will not be subject to payment.

5.6 BORED OR JACKED CROSSINGS

5.6.1 Highway and Railroad

Steel cover pipe for highway and railroad crossing shall be bored and/or jacked in place to the elevations shown on the DRAWINGS. All joints between lengths shall be solidly welded with a smooth non-obstructing joint inside.

After the water main has been installed, inspected and tested, both ends of the cover pipe shall be sealed completely with concrete in a manner acceptable to the ENGINEER.

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5.6.2 Driveways

Where designated on the DRAWINGS or directed by the ENGINEER the driveways will be bored without a cover pipe and the water mains shall be installed 42-inches below the finished grade. The pipe shall be installed in such a manner that no joints will be under the finished driveway.

5.7 INSPECTION

Prior to any backfilling, all pipe, fittings and appurtenances shall be inspected by the ENGINEER. This inspection, however, does not relieve the CONTRACTOR of any of his responsibilities with regard to his compliance with the CONTRACT DOCUMENTS.

6. BACKFILLING

6.1 GENERAL

Backfilling of pipeline trenches shall be accomplished in accordance with the methods outlined hereinafter. In all cases, walking or working on the completed pipelines except as may be necessary in tamping or backfilling will not be permitted until the trench has been backfilled to a point one foot above the top of the pipe. The filling of the trench and the tamping of the backfill shall be carried on simultaneously on both sides of the pipe in such a manner that the completed pipeline will not be disturbed and injurious side pressures do not occur. The methods of backfilling shall be as follows:

6.2 OPEN TERRAIN

Backfilling of pipeline trenches in open terrain shall be accomplished in the following manner:

6.2.1 Lower Portion of Trench

The lower portion of the trench, from the pipe bedding to a point 12 inches above the top of the pipe, shall be backfilled with material free from rock and/or acceptable to the ENGINEER. This material shall be placed in a manner approved by the ENGINEER, and shall be carefully compacted to avoid displacement of the pipe. Compaction shall be accomplished by hand-tamping or by approved mechanical methods. Upon approval of the ENGINEER, crushed stone, fine gravel, sand or dust may be used as backfill in lieu of compacted earth. Tamping or compaction, or materials used in lieu of same, is not a separate pay item.

6.2.2 Upper Portion of Trench

The upper portion of the trench above the compacted portion shall be backfilled with material which is free from large rock. Incorporation of rock having a volume exceeding one-half cubic foot is prohibited. Backfilling this portion of the trench may be accomplished by any means approved by the ENGINEER. The trench backfill shall be heaped over or leveled as directed by the ENGINEER. Material for backfilling the upper portion of the trench is not a separate pay item.

6.3 SIDEWALKS AND UNPAVED DRIVEWAYS

Backfilling of pipeline trenches under sidewalks and unpaved driveways shall be accomplished in the following manner:

6.3.1 Lower Portion of Trench

The lower portion of the trench, from the pipe bedding to a point 12 inches above the top of the pipe, shall be backfilled with material free from rock and/or acceptable to the ENGINEER. This material shall be placed in a manner approved by the ENGINEER, and shall be carefully compacted to avoid displacement of the pipe. Compaction shall be accomplished by hand-tamping or by

6.5 STREAMS & WETLANDS

Utility line construction projects through wetlands of the Commonwealth shall not result in conversion of the area to non-wetlands status.

- Utility line installation in waters of the Commonwealth shall be minimized to the greatest possible extent.
- All excavations within a stream, necessary to complete a utility line construction project, shall be done in such a manner as to prevent degradation of Waters of the Commonwealth. Spoil material from utility line excavations shall not be allowed to enter the flowing portion of the stream.
- Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access.
- Effective erosion and sedimentation control measures must be employed at all times during the project to prevent degradation of waters of the Commonwealth.
- Site regrading and reseeding will be accomplished within 14 days after disturbance.

6.6 SETTLEMENT OF TRENCHES

The CONTRACTOR shall be responsible for any trench settlement which occurs within one year from the time of final acceptance of the work, and if any paving shall require replacement because of the trench settlement within this time, it shall be replaced by the CONTRACTOR at no extra cost to the OWNER. Repair of any damage caused by settlement shall meet the approval of the ENGINEER and/or the OWNER.

7. TESTING AND DISINFECTION

7.1 TESTING WATER MAINS

7.1.1 Hydrostatic Test

All water mains shall be given a hydrostatic test to the working pressure of the pipe in accordance with the requirements of the provisions of AWWA Specification C-600. This states that all sections shall be subjected to a hydrostatic pressure of at least 1.5 times the working pressure at the point of testing for a minimum of 2 hours.

7.1.2 Leakage

Allowable leakage for pipe with mechanical joints or push-on joints shall not exceed the limits set forth in Table 3, Section 13 of the AWWA Specification C-600.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE (GPH)

Avg. Test Pressure (psi)	Nominal Pipe Diameter (in.)						
	2	3	4	6	8	10	12
250	0.24	0.36	0.47	0.71	0.95	1.19	1.42
225	0.23	0.34	0.45	0.68	0.90	1.13	1.35
200	0.21	0.32	0.43	0.64	0.85	1.06	1.28
175	0.20	0.30	0.40	0.59	0.80	0.99	1.19
150	0.19	0.28	0.37	0.55	0.74	0.92	1.10
125	0.17	0.25	0.34	0.50	0.67	0.84	1.01
100	0.15	0.23	0.30	0.45	0.60	0.75	0.90

Where leaks are visible at exposed joints and/or evident on the surface where joints are covered, the joints shall be recaulked, repoured, bolts retightened or relaid, and the leakage minimized, regardless of total leakage as shown by test.

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7.1.3 Defective Pipes & Fittings

All pipe, fittings and other materials found to be defective under test shall be removed and replaced at the CONTRACTOR'S expense.

7.1.4 Pipe Failure

Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are met.

7.2 DISINFECTION OF WATER LINES

The new potable water lines shall not be placed in service - either temporarily or permanently until they have been thoroughly disinfected in accordance with the following requirements and to the satisfaction of the ENGINEER.

7.2.1 Chlorination Test

After testing, a solution of hypochlorite using HTH or equal shall be introduced into the section of the line being disinfected sufficient to insure a chlorine dosage of at least 50 ppm in the main. While the solution is being applied, the water should be allowed to escape at the ends of the line until tests indicate that a dosage of at least 50 ppm has been obtained throughout the pipe. Open and close all valves and cocks while chlorinating agent is in the piping system. The chlorinated water shall be allowed to remain in the pipe for 24 hours, after which a residual of at least 25 ppm shall be obtained. The disinfection shall be repeated until 25 ppm is obtained after which time the main shall be thoroughly flushed until the residual chlorine content is not greater than 1.0 ppm, and then may be connected to the system. Disinfection of lines is not a pay item.

7.2.2 Bacteriological Test

The new waterline shall be sampled in accordance with 401 KAR 8:150 Section 4 (2). A core zone, which includes up to the first one-half (1/2) mile, shall be established. Two (2) samples shall be taken from the core zone. Additionally, one (1) sample from each mile of new distribution line shall be taken and the samples shall be tested by a laboratory certified by the Commonwealth of Kentucky. The waterline shall not be put into service until the test is approved by said testing laboratory. Copies of the test results shall be forwarded to the ENGINEER before placing the line in service.

8. RESTORATION OF SURFACE

8.1 OPEN TERRAIN

8.1.1 Seeding

Unless otherwise specified or shown on the DRAWINGS, all graded areas shall be left smooth and thickly sown with a mixture of grasses as specified by the ENGINEER, at a rate of not less than one pound of seed per 1,000 square feet. Unless otherwise specified, the mixture shall consist of 60 percent Italian Rye Grass, 20 percent Kentucky Fescue #31 and 20 percent Kentucky Bluegrass by weight. When the final grading has been completed, the entire area to be seeded shall be fertilized with ammonium nitrate at the rate of five pounds per 1,000 square feet and approved commercial fertilizer at the rate of ten pounds per 1,000 square feet. The analysis of the commercial fertilizer shall be determined by soil tests. After the fertilizer has been distributed, the CONTRACTOR shall disc or harrow the ground to thoroughly work the fertilizer into the soil. The seed shall then be broadcast either by hand or by approved device. All seed shall be certified. The seeded area shall then be covered with straw to a depth of approximately 1-1/2 inches. Any necessary reseeding or repairing shall be accomplished by the CONTRACTOR prior to final acceptance. If the construction work is brought to completion when, in the opinion of the ENGINEER, the season is not favorable for the seeding of the grounds, then the CONTRACTOR shall delay this item of the work until the proper season for such seeding as directed by the ENGINEER. Seeding is not a pay item unless otherwise specified.

8.1.2 Sodding

Sodding will not be required unless specifically set forth in the Detailed Specifications or shown on the DRAWINGS. When sodding is required, it shall be at least 60 percent good quality Kentucky Bluegrass, strongly rooted, and free of pernicious weeds and shall be so laid that no voids occur between strips. Weed roots shall be removed as the sod is laid. Sod shall be tamped or rolled immediately after it is laid, and the finished surface shall be true to grade, even and equally firm at all points. Well-screened topsoil shall be lightly sprinkled over the sodded areas and shall be raked to insure sealing the sod joints. The sodded areas shall be thoroughly watered. When set out in the Detailed Specifications or shown on the DRAWINGS, sodding is a pay item. Replacement of sod for lawns on private property is not a pay item.

8.1.3 Landscaping

Landscaping, when specified or shown on the DRAWINGS, shall be a pay item and shall be accomplished as set out in the Detailed Specifications and shown on the DRAWINGS.

8.2 BITUMINOUS REPLACEMENT

8.2.1 Removal

Prior to trenching, the pavement shall be scored or cut to straight edges at least six (6) inches, but not more than twelve (12) inches outside each edge of the proposed trench to avoid unnecessary damage to the remainder of the paving.

8.2.2 Backfilling

After the pipeline has been installed, the entire trench shall be backfilled with granular material.

8.2.3 Base Course

If required, edges of the existing pavement shall be recut and trimmed to square, straight edges after the pipeline has been installed and prior to placing the new base and pavement.

Base course for the paving shall be dense graded, crushed limestone furnished and placed in accordance with the current requirements of Section 208, Part 2, Divisions II of the Standard Specifications of the Kentucky Bureau of Highways to a depth of ten (10) inches in streets.

For heavy duty bituminous pavement replacement, a concrete sub- slab shall be constructed. Concrete shall be Class A, placed in accordance with the requirements of the Standard Details.

8.2.4 Replacement

The wearing surface of streets shall be plant mix, bituminous concrete, Class I furnished and placed in accordance with the current Specifications of the Kentucky Bureau of Highways to a depth of two (2) inches in streets.

All bituminous street replacement shall be reconstructed to the original lines and grades and shall be left in such a manner that all surfaces shall be in fully as good or better condition than that which existed prior to the construction.

8.3 CONCRETE REPLACEMENT

8.3.1 Highways, Streets and Driveways

8.3.1.1 Removal

The existing concrete paving shall be sawed or cut to straight edges twelve (12) inches outside the edges of the trench or broken out to an existing joint, as directed by the ENGINEER.

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fertilizer at the rate of ten pounds per 1,000 square feet. The analysis of the commercial fertilizer shall be determined by soil tests. After the fertilizer has been distributed, the CONTRACTOR shall disc or harrow the ground to thoroughly work the fertilizer into the soil. The seed shall then be broadcast either by hand or by approved device. All seed shall be certified. The seeded area shall then be covered with straw to a depth of approximately 1-1/2 inches. Any necessary reseeding or repairing shall be accomplished by the CONTRACTOR prior to final acceptance. If the construction work is brought to completion when, in the opinion of the ENGINEER, the season is not favorable for the seeding of the grounds, then the CONTRACTOR shall delay this item of the work until the proper season for such seeding as directed by the ENGINEER. Seeding is not a pay item unless otherwise specified.

8.1.2 Sodding

Sodding will not be required unless specifically set forth in the Detailed Specifications or shown on the DRAWINGS. When sodding is required, it shall be at least 60 percent good quality Kentucky Bluegrass, strongly rooted, and free of pernicious weeds and shall be so laid that no voids occur between strips. Weed roots shall be removed as the sod is laid. Sod shall be tamped or rolled immediately after it is laid, and the finished surface shall be true to grade, even and equally firm at all points. Well-screened topsoil shall be lightly sprinkled over the sodded areas and shall be raked to insure sealing the sod joints. The sodded areas shall be thoroughly watered. When set out in the Detailed Specifications or shown on the DRAWINGS, sodding is a pay item. Replacement of sod for lawns on private property is not a pay item.

8.1.3 Landscaping

Landscaping, when specified or shown on the DRAWINGS, shall be a pay item and shall be accomplished as set out in the Detailed Specifications and shown on the DRAWINGS.

8.2 BITUMINOUS REPLACEMENT

8.2.1 Removal

Prior to trenching, the pavement shall be scored or cut to straight edges at least six (6) inches, but not more than twelve (12) inches outside each edge of the proposed trench to avoid unnecessary damage to the remainder of the paving.

8.2.2 Backfilling

After the pipeline has been installed, the entire trench shall be backfilled with granular material.

8.2.3 Base Course

If required, edges of the existing pavement shall be recut and trimmed to square, straight edges after the pipeline has been installed and prior to placing the new base and pavement.

Base course for the paving shall be dense graded, crushed limestone furnished and placed in accordance with the current requirements of Section 208, Part 2, Divisions II of the Standard Specifications of the Kentucky Bureau of Highways to a depth of ten (10) inches in streets.

For heavy duty bituminous pavement replacement, a concrete sub- slab shall be constructed. Concrete shall be Class A, placed in accordance with the requirements of the Standard Details.

8.2.4 Replacement

The wearing surface of streets shall be plant mix, bituminous concrete, Class I furnished and placed in accordance with the current Specifications of the Kentucky Bureau of Highways to a depth of two (2) inches in streets.

All bituminous street replacement shall be reconstructed to the original lines and grades and shall be left in such a manner that all surfaces shall be in fully as good or better condition than that which existed prior to the construction.

8.3 CONCRETE REPLACEMENT

8.3.1 Highways, Streets and Driveways

8.3.1.1 Removal

The existing concrete paving shall be sawed or cut to straight edges twelve (12) inches outside the edges of the trench or broken out to an existing joint, as directed by the ENGINEER.

8.3.1.2 Base Course

Base course for the paving shall be dense graded, crushed limestone furnished and placed in accordance with the current requirements of the Standard Specifications of the Kentucky Department of Highways to a depth of ten (10) inches.

8.3.1.3 Replacement

Pavement replacement shall be accomplished with Class A concrete in accordance with the Standard Details.

Where cement concrete streets and driveways are removed, they shall be reconstructed to the original lines and grades in such a manner as to leave all such surfaces in fully as good or better condition than existed prior to the operation.

8.3.2 Sidewalks

In general, concrete sidewalks shall be tunneled when encountered in trenching for water mains. When concrete sidewalks are tunneled, they shall be backfilled by mechanical tamping of earth under the portion undermined so as to prevent settlement.

8.3.3 Removal

In the event rock excavation is required, or for some other reason tunneling is not feasible, the ENGINEER may direct the CONTRACTOR to cut the sidewalk.

8.3.4 Base Course

After the trench has been backfilled, a base course of crushed stone, three (3) inches in thickness, shall be placed and tamped. Immediately prior to pouring the concrete, the crushed stone base shall be thoroughly wetted, or as an alternative, the concrete shall be poured on a layer of heavy building paper.

8.3.5 Replacement

When concrete sidewalks are cut or otherwise disturbed during the construction, they shall be replaced in fully as good or better condition than that which existed prior to the CONTRACTOR'S operation.

When replacing concrete sidewalks, the existing concrete edges shall be trimmed to straight six (6) inches back of the trench sides or broken out to an existing edge as directed by the ENGINEER. The existing edges shall be cleaned and kept moist during pouring to insure a good bond.

The paving shall consist of four and one-half (4-1/2) inches of Class A concrete, struck off to accurately placed screeds and worked with a wooden float until the mortar appears on the top. After the surface has been thoroughly floated, it shall be brushed to leave markings of a uniform type

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similar to the existing walk. All joints and edges shall be finished with an edging tool. The allowable variations shall be 1/8 inch to 10 feet transversely and longitudinally.

8.3.6 Curbs and Gutters

The CONTRACTOR shall remove the curb and gutter when encountered and required to lay the water line. Only that portion of the curb and gutter needed to lay the water main shall be removed. When concrete curb and gutter is cut or disturbed during the construction work, it shall be replaced, using Class A concrete, in fully as good or better condition than that which existed prior to the CONTRACTOR'S operation.

8.4 CLEAN-UP

Upon completion of the installation of the water mains and appurtenances, the CONTRACTOR shall remove all debris and surplus construction materials resulting from the work. The CONTRACTOR shall grade the ground along each side of the pipe trench in a uniform and neat manner, leaving the construction area in a shape as near as possible to the original ground line.

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DETAILED SPECIFICATIONS

1. SCOPE AND SPECIAL PROVISIONS

1.1 SCOPE OF WORK

The WORK to be accomplished under these SPECIFICATIONS consists of approximately 10,976 linear feet of 4 and 6-inch PVC water mains, 80 linear feet of 12-inch HIGHWAY CROSSING, together with all appurtenances, as shown on the DRAWINGS and as further specified herein.

1.1.1 General Location

Location of the WORK is in Woodford County, Kentucky.

1.1.1.1 Specific Location

Water mains and services are located along Sugar Hill Road, Paynes Mill Road, and Old Frankfort Pike, Versailles, Kentucky.

1.2 DESIGNATION OF PARTIES

1.2.1 "OWNER"

All reference in the SPECIFICATIONS, CONTRACT DOCUMENTS and DRAWINGS to "OWNER" shall mean the Northeast Woodford Water District, 225A S. Main Street, Versailles, KY 40383.

1.2.2 "ENGINEER"

All references in the CONTRACT DOCUMENTS to "ENGINEER" shall mean the firm of Warner A. Broughman III and Associates, 3161 Custer Drive, Suite 6, Lexington, Kentucky 40517.

1.3 GOVERNING SPECIFICATIONS

The detailed specifications set forth herein shall serve to apprise the CONTRACTOR of the specifics of the PROJECT. The CONTRACTOR is cautioned, however, that all applicable portions of the GENERAL SPECIFICATIONS are to be followed and strict compliance therewith will be required.

1.4 CONTRACTOR'S DRAWINGS AND SPECIFICATIONS

The ENGINEER, without charge, will furnish to the CONTRACTOR not more than three (3) sets of the DRAWINGS and SPECIFICATIONS. If additional sets of documents are required by the CONTRACTOR for the proper execution of the WORK, such documents will be furnished to the CONTRACTOR at cost.

1.4.1 DRAWINGS On Site

The CONTRACTOR shall keep one set of the DRAWINGS and SPECIFICATIONS on the site of the work. This set shall be kept current by the addition of all approved changes, addenda and amendments thereto.

1.4.2 DRAWINGS/SPECIFICATIONS Discrepancy

The DRAWINGS and SPECIFICATIONS are intended to be explanatory to each other, but should any discrepancy appear or any misunderstanding arise as to the import of anything contained in either, the ENGINEER shall make the necessary interpretation. Corrections or errors or omissions in the DRAWINGS and SPECIFICATIONS may be made by the ENGINEER when such corrections are necessary for the proper fulfillment of their intention as construed by him.

1.4.3 DRAWINGS/SPECIFICATIONS Omissions

All work or materials shown on the DRAWINGS and not mentioned in the SPECIFICATIONS, or any work specified and not shown on the DRAWINGS, shall be furnished, performed, and done by the CONTRACTOR as if the same were both mentioned in the SPECIFICATIONS and shown on the DRAWINGS.

1.5 UTILITIES REQUIRED BY CONTRACTOR

All electric current and utility services required by the CONTRACTOR in the construction of the PROJECT shall be furnished at the expense of the CONTRACTOR. The OWNER will furnish the water required for the leak testing and disinfection of the water mains.

1.6 TRAFFIC

Unless otherwise agreed by the ENGINEER, traffic shall be maintained on all roads and driveways during the construction of the water mains. Appropriate measures shall be taken by the CONTRACTOR to protect drivers, workers, and pedestrians. All traffic control shall be in accordance with Part VI of the Manual on Uniform Traffic Control Devices (MUTCD). Signs, marking, and flagging procedures shall be in accordance with MUTCD.

1.7 FENCES

All fences removed or disturbed during the construction shall be replaced in as good or better condition as found. Integrity of the property boundaries shall be maintained at all times and it is the responsibility of the CONTRACTOR to provide such temporary fencing as is required or directed by the ENGINEER.

1.8 EXECUTION AND COORDINATION OF THE WORK

It is intended that the work covered by the CONTRACT DOCUMENTS be done so as to cause the minimum work interference with the normal operation of the existing distribution system of the OWNER. The CONTRACTOR shall be required to organize and schedule his work so as to keep the distribution system in full operation during the construction period in so far as is consistent with the nature of the construction work to be performed.

1.8.1 Shutdowns

The manner in which shutdowns shall be made and the schedule of work shall be subject to the approval of the ENGINEER, and although every effort will be made to cause the minimum amount of interference with the CONTRACTOR'S work, the interest of the OWNER in regard to water service and fire protection must always take precedence over the construction work. Therefore, the right is reserved by the OWNER to put any lines or other facilities that may be shut down for the construction work back into service when an emergency arises.

1.9 SITE VIDEOTAPING

Prior to commencement of work, the CONTRACTOR shall provide the ENGINEER with a DVD or CD of the entire project. This DVD or CD needs to show the landscape and any obstructions that may be encountered during construction.

2. WATER MAINS AND APPURTENANCES

2.1 PIPE AND FITTINGS

All pipe and fittings shall conform to the general requirements as given in the GENERAL SPECIFICATIONS. All plastic pipe shall be classed and rated for 200 psi operating pressure. Fittings for plastic pipe shall be ductile iron as specified in Paragraph 1.3.3. of the GENERAL SPECIFICATIONS. The fittings shall be restrained with grip rings as manufactured by Romac Industries, P.O. Box 3212, Seattle, WA 98114, or approved equal.

2.2 TRACER WIRE

At all locations where PVC pipe is utilized, a detectable tracer wire shall be placed in the trench on top of the PVC pipelines. The tracer wire shall be a #10 solid copper wire. The tracer wire shall be brought to the surface at each valve box or other appurtenance.

2.3 GATE VALVES AND BOXES

All valves shall be gate valves manufactured specifically for direct buried service. All gate valves shall be of the resilient wedge type, iron body, non-rising stem, fully bronze mounted and suitable for water working pressures of 200 psi. Valves shall be of standard manufacture and of the highest quality both as to materials and workmanship and shall conform to the latest revision of AWWA Specification C500.

All gate valves shall have the name or monogram of the manufacturer, the year of the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve

2.3.1 Valve Operators

Valve operators shall be the non-rising stem type with the 2-inch operating nut. Valves shall open by turning the operating nut to the left (counterclockwise).

2.3.2 Gate Valve Installation

Gate valves shall be installed in the ground with the operating nut in a vertical position for use in a valve box. Valve boxes shall be 5-1/4 inch, standard 3-piece cast iron valve box with drop cover marked "WATER".

They shall be set vertically and properly cut or adjusted so that the cover will be in the same plane as the finished ground or street surface.

2.4 BLOWOFF VALVE AND BOX

Blowoff valves shall be installed at the location as shown on the DRAWINGS or as directed by the ENGINEER. Pipe shall be zinc-coated galvanized iron. Fittings shall be galvanized malleable iron. Curb stops shall be water works ground-key type, oval flow way, tee handle, without drain. Pipe connections shall be suitable for the type of pipe used. All parts shall be of cast red brass having a nominal composition of 85% copper, 10% tin, and 5% zinc, with female I.P.S. connections and shall be designed for a maximum hydraulic test pressure of 200 pounds per square inch.

2.4.1 Valve Boxes

Valve boxes shall be cast iron curb boxes with lid marked "WATER" as shown on the DRAWINGS. They shall be set vertically and properly cut or adjusted so that the cover will be in the same plane as the finished ground or street surface.

2.5 TAPPING VALVES AND SLEEVES

All tapping valves shall be valves manufactured specifically for direct buried service. All valves shall be of the resilient wedge type, iron body, non-rising stem, fully bronze mounted and suitable for water working pressures of 200 psi. Valves shall be of standard manufacture and of the highest quality both as to materials and workmanship and shall conform to the latest revision of AWWA Specification C500. The outlet of the tapping valve shall have a large flange suitable for connection to a drilling machine.

All valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve.

2.5.1 Valve Operators

Valve operators shall be the non-rising stem type with the 2-inch operating nut. Valves shall open by turning the operating nut to the left (counterclockwise).

2.5.2 Tapping Sleeve

The tapping sleeves shall be 18-8 Type 304 Stainless Steel of the full circle type, with an 18-8 Stainless Steel flange with a recess to accept standard tapping valve. The sleeve shall be full gasketed with gridded virgin SBR compounded for water service. Bolts and nuts shall be 18-8 stainless steel NC threads.

2.5.3 Valve Installation

Valves shall be installed in the ground with the operating nut in a vertical position for use in a valve box. Valve boxes shall be 5-1/4 inch, standard 3-piece cast iron valve box with drop cover marked "WATER".

They shall be set vertically and properly cut or adjusted so that the cover will be in the same plane as the finished ground or street surface.

2.6 CRUSHED STONE

All crushed limestone shall consist of angular fragments of broken limestone of uniform quality throughout, free from soft or disintegrated stone, dirt or other objectionable matter. All crushed stone shall conform with Paragraph 1.6.2 of the General Specifications.

2.7 CONCRETE CRADLES, ANCHORS AND ENCASEMENT

Concrete cradles, anchors or encasement of water lines shall be placed where shown on the plans, required by the specifications, or as directed by the ENGINEER. Concrete shall be Class C and shall be mixed sufficiently wet to permit it to flow under the pipe to form a continuous bed. In tamping concrete, care shall be taken not to disturb the grade or line of

the pipe or injure the joints. Concrete placed outside the specified limits or without authorization from the ENGINEER will not be subject to payment. Dry bagged concrete mix shall not be used.

2.8 OBSTRUCTIONS

In cases where sewers, utilities or other underground obstructions are encountered, they shall not be displaced or molested unless necessary, in which case they shall be replaced in as good a condition as found as quickly as possible. All such lines or underground structures damaged or molested in the construction for the work under this Contract shall be replaced at the CONTRACTOR'S expense, unless in the opinion of the ENGINEER such damage was caused through no fault of the CONTRACTOR.

2.9 EXCAVATION CLASS

All excavation on this PROJECT shall be UNCLASSIFIED as defined by Paragraph 4.2 of the GENERAL SPECIFICATIONS. Although only a limited number of soundings were conducted, the CONTRACTOR is expected to encounter rock-like materials during excavation for the PROJECT. The CONTRACTOR must investigate the PROJECT site and satisfy himself as to the actual conditions.

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2.2	TRACER WIRE.....	1
2.3	GATE VALVES AND BOXES	1
2.4	TAPPING VALVES AND SLEEVES	1
2.5	BLOWOFF VALVES AND BOXES	1
2.6	STREET CROSSINGS	1
2.6.1	<i>Steel Cover Pipe: Bored</i>	1
2.7	DRIVEWAY CROSSING	2
2.7.1	<i>FreeBore Driveway</i>	2
2.7.2	<i>Opencut Driveway</i>	2
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8.	PAY ITEMS.....	3

BASIS OF MEASUREMENT AND PAYMENT

1. SCOPE

The CONTRACTOR shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, service and other necessary supplies and perform all work shown on the DRAWINGS and or described in the SPECIFICATIONS at the lump sum or unit prices for items in the following paragraphs.

2. WATER MAINS AND APPURTENANCES

2.1 PIPE AND FITTINGS

Payment for furnishing and installing the water mains of the various sizes will be made at the CONTRACT unit price per linear foot, complete in place, which shall include compensation for furnishing, hauling, trenching (including rock excavation), bedding, laying, jointing, and backfilling all pipe and fittings. The quantity of watermain to be paid for shall be the length of the completed water main measured along its center line without any deduction for lengths of fittings, valves or other appurtenances.

2.2 TRACER WIRE

Payment for furnishing and installing the tracer wire will be included as part of the CONTRACT unit price per linear foot, complete in place, for the installation of the pipe and fittings as outlined above.

2.3 GATE VALVES AND BOXES

Payment for furnishing and installing gate valves and boxes of the various sizes will be made at the CONTRACT unit price per each, complete in place, which shall include compensation for furnishing, hauling, trenching (including rock excavation), bedding, installing, and backfilling. The quantity of gate valves and boxes to be paid for shall be the number of completed installations.

2.4 TAPPING VALVES AND SLEEVES

Payment for furnishing and installing tapping valves and sleeves of the various sizes will be made at the CONTRACT unit price per each, complete in place, which shall include compensation for furnishing, hauling, trenching (including rock excavation), bedding, installing, and backfilling. The quantity of tapping valves and sleeves to be paid for shall be the number of completed installations.

2.5 BLOWOFF VALVES AND BOXES

Payment for furnishing and installing blowoff valves and boxes of the various sizes will be made at the CONTRACT unit price per each, complete in place, which shall include compensation for furnishing, hauling, trenching (including rock excavation), bedding, installing, and backfilling. The quantity of blowoff valves and boxes to be paid for shall be the number of completed installations.

2.6 STREET CROSSINGS

2.6.1 Steel Cover Pipe: Bored

The steel cover pipe required to be bored under street crossings will be measured from end to end of the completed cover pipe in place, and paid for at the CONTRACT unit price per linear foot,

complete in place, including the water main and tracer wire inside the cover pipe and all other items necessary for its construction as shown on the DRAWINGS.

2.7 DRIVEWAY CROSSING

2.7.1 FreeBore Driveway

The pipe required to be bored under driveway crossings will be measured from end to end of the bored or jacked section of water pipe, and paid for at the CONTRACT unit price per linear foot, complete in place, including the water main and tracer wire and all other items necessary for its construction as shown on the DRAWINGS.

2.7.2 Opencut Driveway

The pipe required to be opencut across driveway crossings will be measured from end to end of the section of water pipe under the driveway, and paid for at the CONTRACT unit price per linear foot, complete in place, including the water main and tracer wire and all other items necessary for its construction as shown on the DRAWINGS.

2.7.3 Driveway Replacement

Asphalt for driveway replacement will be paid for at the CONTRACT unit price per ton, complete in place, furnished and placed as specified. The CONTRACTOR shall furnish the ENGINEER with duplicate weight slips for all such material delivered and incorporated into the PROJECT.

3. 3. CONCRETE FOR CRADLES, ANCHORS OR ENCASEMENT

Concrete for cradles, anchors or encasement for water mains and fittings will be paid for at the CONTRACT unit price per cubic yard, complete in place. The CONTRACTOR shall furnish the ENGINEER with duplicate weigh slips for all such material delivered and incorporated into the PROJECT.

5. CRUSHED STONE

Crushed stone for special pipe bedding and driveway replacement will be paid for at the CONTRACT unit price per ton, complete in place, furnished and placed as specified. The CONTRACTOR shall furnish the ENGINEER with duplicate weigh slips for all such material delivered and incorporated into the PROJECT.

6. ASPHALT

Asphalt will be paid for at the CONTRACT unit price per ton, complete in place, furnished and placed as specified. The CONTRACTOR shall furnish the ENGINEER with duplicate weight slips for all such material delivered and incorporated into the PROJECT.

7. SITE VIDEOTAPING

Site videotaping will be paid for at the CONTRACT lump sum price, which shall include compensation for furnishing videotape, camera operator and labor, in accordance with the SPECIFICATIONS. This CONTRACT does not provide for the purchase of any video equipment by the CONTRACTOR. The CONTRACTOR shall furnish the ENGINEER with one complete set of videotapes covering the length of the job.

8. PAY ITEMS

The items listed in above paragraphs refer to and are the same items listed in the BID SCHEDULE hereinafter, and constitute all of the pay items in this CONTRACT. Any other items of work listed in the SPECIFICATIONS or shown on the DRAWINGS shall be considered incidental to the above items.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto **Northeast Woodford Water District** as OWNER in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20____. The Conditions of the above obligation is such that whereas the Principal has submitted to **Northeast Woodford Water District** a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the **System Upgrades**.

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attachment hereto (Properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and affect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

Surety

By: _____

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and authorized to transact business in the State where project is located.

BID

Proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____ doing business as _____ to the Northeast Woodford Water District (hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of the System Upgrades in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date specified in the NOTICE TO PROCEED and to fully complete the PROJECT within ninety (90) consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of \$150.00 for each consecutive calendar day thereafter as provided in Section 15 of the GENERAL CONDITIONS.

BIDDER acknowledges receipt of the following ADDENDUM:

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sum:

NOTE: BIDS shall include sales tax and all other applicable taxes and fees.

BID SCHEDULE

**Northeast Woodford
System Upgrades**

Item No.	Description	Amount	Unit	Unit Price	Total Price
1.	4-inch PVC Pipe, Complete in Place	7633	L.F.	\$_____	\$_____
2.	4-inch Gate Valve, Complete in Place	2	EACH	\$_____	\$_____
3.	4-inch Blowoff, Complete in Place	1	EACH	\$_____	\$_____
4.	6-inch PVC Pipe, Complete in Place	3343	L.F.	\$_____	\$_____
5.	6-inch Gate Valve & Box Complete in Place	4	EACH	\$_____	\$_____
6.	12-inch Highway Crossing, Bored, Complete in Place	80	L.F.	\$_____	\$_____
7.	Stream Crossing, Complete in Place	130	L.F.	\$_____	\$_____
8.	Class C Concrete, Complete in Place	15	C.Y.	\$_____	\$_____
9.	Crushed Stone, Complete in Place	30	TONS	\$_____	\$_____
10.	Site Videotaping, Delivered to Engineer Prior to Work	1	EACH	\$_____	\$_____

TOTAL BID \$_____

Respectfully submitted,

Type or Print Name and Title: _____

Signature: _____ Date: ___ / ___ / 2018

Address: _____

ATTEST: _____

Employer ID Number: _____

Phone Number: _____

Fax Number: _____

Cellular Number: _____

E-Mail: _____

NOTICE OF AWARD

TO: _____

PROJECT Description: SYSTEM UPGRADES

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for BIDS dated _____, 2018, and Information for Bidders.

You are hereby notified that your Bid has been accepted for items in the amount of \$_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within **ten (10)** calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within **ten (10)** days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this ____ day of _____, 2018.

NORTHEAST WOODFORD WATER DISTRICT

By _____
Owner
Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this the ____ day of _____, 2018.

By _____
Contractor
Title _____

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2018, by and between **NORTHEAST WOODFORD WATER DISTRICT**, hereinafter called "OWNER" and _____ doing business as a **KENTUCKY CORPORATION** hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of **SYSTEM UPGRADES**.

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within **10** calendar days after the date of the NOTICE TO PROCEED and will complete the same within **90** calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of _____, or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

- (A) Advertisement For BIDS
- (B) Information For BIDDERS
- (C) BID
- (D) BID BOND
- (E) Agreement
- (F) General Conditions
- (G) SUPPLEMENTAL GENERAL CONDITIONS
- (H) General Specifications
- (I) Detailed Specifications
- (J) Basis of Measurement and Payment
- (K) Payment BOND
- (L) Performance BOND
- (M) NOTICE OF AWARD
- (N) NOTICE TO PROCEED
- (O) CHANGE ORDER
- (Q) SPECIFICATIONS prepared or issued by Warner A. Broughman III & Associates

dated **SEPTEMBER, 2017**.

(R) ADDENDA:

No. _____, dated _____, 20 _____

No. _____, dated _____, 20 _____

No. _____, dated _____, 20 _____

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (4) four copies each of which shall be deemed on original on the date first above written.

OWNER:

NORTHEAST WOODFORD WATER DISTRICT

By: _____

Name: **JOHN S. DAVIS**

Title: **CHAIRMAN**

(SEAL)

ATTEST:

Name: _____

Title: _____

CONTRACTOR:

By: _____

Name: _____

Title: _____

Address: _____

(SEAL)

ATTEST:

Name: _____

Title: _____

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that _____ a _____, hereinafter called PRINCIPAL, and _____, hereinafter called SURETY, are held and firmly bound unto **NORTHEAST WOODFORD WATER DISTRICT**, hereinafter called OWNER, in penal sum of _____ Dollars, \$(_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the _____ day of _____, 2018, a copy of which is hereto attached and made a part hereof for the construction of: **SYSTEM UPGRADES**.

NOW, THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the ____ day of _____, 2018.

ATTEST:

(Principal)

By _____

(Principal) (Secretary if Corp.)

(SEAL)

(Address)

(Witness as to Principal)

(Address)

ATTEST:

(Surety)

By _____

(Witness as to Surety)

(Attorney-in-Fact)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that _____ a _____, hereinafter called PRINCIPAL, and _____ hereinafter called SURETY, are held and firmly bound unto **NORTHEAST WOODFORD WATER DISTRICT**, hereinafter called OWNER, in penal sum of _____ Dollars, \$(_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the _____ day of _____, 2018, a copy of which is hereto attached and made a part hereof for the construction of: **SYSTEM UPGRADES**.

NOW, THEREFORE, if the PRINCIPAL shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void: otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

WAB III - Performance Bond

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2018.

ATTEST:

(Principal) (Secretary if Corp.)

(SEAL)

(Address)

(Principal)
By _____

(Address)

(Witness as to Principal)

(Address)

ATTEST:

(Witness as to Surety)

(Address)

(Surety)
By _____
(Attorney-in-Fact)

(Address)

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

NOTICE TO PROCEED

To: _____

Date: _____
Project: _____
SYSTEM UPGRADES

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2018, on or before _____, 2018, and you are to complete the WORK within 90 consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 2018.

NORTHEAST WOODFORD WATER DISTRICT

Owner

By _____

Title **CHAIRMAN**

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____, this the _____ day of _____, 2018.

By _____
Title _____

CHANGE ORDER

Order No. _____
Date _____
Agreement Date _____

NAME OF PROJECT: _____

OWNER: _____

CONTRACTOR: _____

THE FOLLOWING CHANGES ARE HEREBY MADE TO THE CONTRACT DOCUMENTS:

Justification: _____

CHANGE TO CONTRACT PRICE

Original Contract Price: \$ _____

Current Contract Price adjusted by previous Change Order \$ _____

The Contract Price due to this Change Order will be **increased/decreased** by
\$ _____.

THE NEW CONTRACT PRICE INCLUDING THIS CHANGE ORDER WILL BE

\$ _____.

CHANGE TO CONTRACT TIME

The Contract Time will be (increased) (decreased) by ____ calendar days.

The date for completion of all work will be _____ (Date).

APPROVALS REQUIRED

To be effective this Order must be approved by the Federal agency if it changes the scope or objective of the PROJECT, or as may other wise be required by the GENERAL CONDITIONS.

Requested by: _____

Recommended by: _____

Ordered by: _____

Accepted by: _____

Federal Agency Approval (where applicable):

EXHIBIT 7B

Bluegrass Hydronics and Pumps

4207 Produce Road
Louisville, KY 40218
Tel (502)451-6100
Fax (502)810-5656

Email – mark@bluegrasshydronics.com

TO: Warner A. Broughman III & Associates

ATTN: Sandy Broughman

FROM: Mark Stutzenberger

March 12, 2018

SUBJECT: New Booster Station - Northeast Woodford Co. Water District

Sandy,

We are pleased to offer the following system for your consideration. We quote as follows:

- (1) **TIGERFLOW** series ES-3000-VFD, Model DESH-50PT-C-S6-VM-M-VFD, UL/C-UL listed engineered packaged duplex variable speed municipal water booster system consisting of:

Condition point: 600 gpm @ 220 feet TDH
Suction pressure: 55# min. - 70# max

- (2) Patterson, model E2.5F9A-CC, cast iron, bronze fitted, mechanical seal, end suction pumps each close-coupled to a **50 hp, 3600 rpm, 460/3/60**, odp premium efficient motor (EISA Chart 12-12) with Aegis Ground Ring.

*condition point: 600 gpm @ 220' tdh (each)

- (2) 6" Val-matic model 1406A.1 wafer style non-slam check valves
(4) 6" Bray model 31H isolation lug style butterfly valves with lever handles
(1) UL Listed, NEMA 4, single point power connection (**Unless otherwise specified herein, the system will have a short circuit rating of 10 kA RMS at 600 VAC.**):
(-) UL 508 Label

- (2) **Danfoss series VLT, NEMA I, Variable speed drives with 5% line reactors, thru the door circuit breaker disconnect**

(-) **Controls by others**

- (1 set) 6" Type 304 schedule 40 stainless steel suction and discharge headers – grooved system connections – **horizontally mounted pumps**

(1) Steel system skid with all necessary pipe supports, tubing and wiring for complete package.

(-) Unit to be factory painted with machine grade **blue** finish coat

System to be completely, electrically, hydrostatically and run tested before shipment.

(-) All structural welders certified to AWS D1.1

(-) All pipe welding to be done by ASME Code Section 9 certified welders

Each **TIGERFLOW** package system is UL/C-UL listed as a system, so meeting OSHA and Federal Regulations 29CFR1910.303 and .399, as well as NFPA Pamphlet #70 (National Electric Code) Article 90-7; City of Los Angeles Approval Code #M-980006; CMR 248 Massachusetts State Plumbing Code Approval #P3-0910-108.

PRICE:@ \$37,196.00 Net Lot / FFA

Estimated weight: lbs.

ERRORS & OMISSIONS: THIS QUOTATION IS FOR THE ITEMS LISTED OR STATED ABOVE. NO OTHER ITEMS SHOULD BE ASSUMED OR IMPLIED AS BEING PROVIDED."

1. Submittals: Standard TIGERFLOW (2-3) weeks after order "Hold for Approval."

2. Shipment: (6-8) weeks after full approval and full "Release for Fabrication" after receipt of **All** rep supplied equipment.
3. Lead times may vary based on plant capacity and component availability at the time of release.
4. Prices quoted are firm for ninety (90) days.
5. Prices do not include any: Federal, state, local or use taxes.
6. Payment terms shall be net 30, subject to credit approval.
7. Rigging and off loading at the site is not included and will be coordinated with the contractor at the time of shipment.
8. Terms: Subject to credit approval. Terms inconsistent with TIGERFLOW standard terms and conditions which may appear on purchaser's formal order will not be binding on Tigerflow.
9. Warranty: Standard TIGERFLOW warranty applies; 18 months after shipment or 12 months after startup, whichever comes first. Extended warranty will need to be quoted at an additional cost.
10. Risk of Damage: All sales are FOB factory plus freight. Title transfers at factory, at the time of notice of ready to ship, thereafter Buyer takes responsibility for risk of loss or damage.
11. Change Orders: There shall be a charge for any changes in scope after a job has been booked. Please consult Tigerflow for change order fees.
12. Cancellation: Cancellation fees apply if a job is cancelled after an order acknowledgement has been sent to the buyer. Tigerflow will determine cancellation fees at the time of cancellation.
13. Returned goods: No product shall be returned, whether for inspection, repair, replacement or any other reason, without prior consent from Tigerflow.
14. Job Storage: If the customer fails to take delivery of any product on the scheduled delivery date, Tigerflow shall store the product and the customer shall be invoiced reasonable storage costs.
15. TIGERFLOW Systems, LLC. is not responsible for liquidated damages.

EXHIBIT 8

NORTHEAST WOODFORD WATER DISTRICT

System upgrades

Preliminary Engineering Report

August, 2015

The project proposed by the Northeast Woodford Water District is the construction of a new 4" waterline along Sugar Hill Road to serve two unserved residents and several underserved customers. The water line is approximately 4,800 linear feet of 4-inch PVC pipe. In addition the District will rebuild nearly 6,000 linear feet of degraded 4 & 6" pipelines along Old Frankfort Pike and Paynes Mill Road. A new 600 GPM Booster Pumping Station will replace a 35 year old existing, aging pump station on Big Sink Pike at Fieldview Drive. The new pump station will be constructed beside the existing station which will be removed upon completion of the new station. Two new customers will be served from this construction. Several existing customers will increase their usage along the new line to serve existing farms.

The Water District currently serves more than 980 homes in Woodford and Fayette counties. The District purchases more than 120,000,000 gallons of water from Versailles and Frankfort each year.

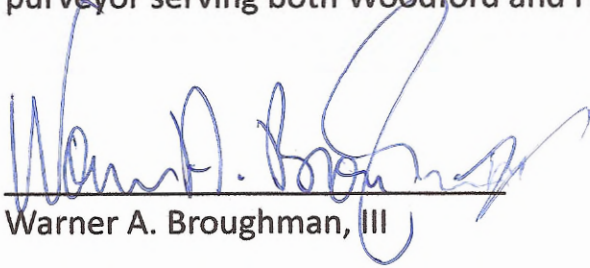
The project will be financed by a loan from KIA in the amount of \$400,000. The estimate for the project is as follows:

Construction	\$300,000
Administration	2,500
Local Counsel	5,000
Planning	5,000
Engineering Design/Construction	33,750
Construction Inspection	26,400
Contingency (5%)	<u>27,350</u>
Total Project Cost	\$400,000

The District will need to borrow \$400,000 from the KY Infrastructure Authority (KIA). The debt service will be \$24,590 per year. Depreciation will amount to

\$6400/year. The District will need to increase rates by 5% to finance this project. The customer using 4,000 gallons per month will see approximately a \$1.00 increase in the water bill.

It is recommended that the District apply to the Kentucky Infrastructure Authority for a loan from KIA Loan Fund B with an interest rate of 1.75% for a 20 year term. The lower interest rate can be applied because the District is a regional water purveyor serving both Woodford and Fayette counties.



Warner A. Broughman, III

9/1/15
Date

EXHIBIT 9

NORTHEAST WOODFORD WATER DISTRICT

System upgrades

Final Engineering Report

March 9, 2018

Revised October 4, 2018

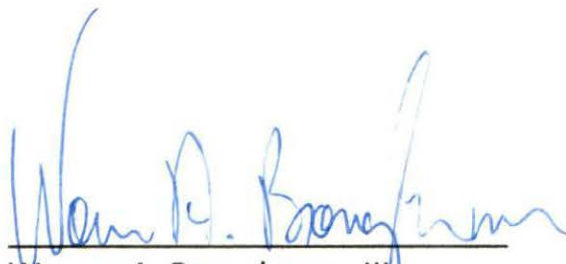
The project proposed by the Northeast Woodford Water District is the construction of a new 4" waterline along Sugar Hill Road to serve two unserved residents and several underserved customers. The water line is approximately 4,800 linear feet of 4-inch PVC pipe. In addition the District will rebuild nearly 6,000 linear feet of degraded 4 & 6" pipelines along Old Frankfort Pike and Paynes Mill Road. A new 600 GPM Booster Pumping Station will replace the existing pump station on Big Sink Pike. The new station will be constructed beside the existing station which will be removed upon completion of the new station. Two new customers are resulting from this construction. Twin States Utilities and Excavation Inc. was the low bidder on the pipelines at \$251,155. JRS Construction, Inc. was the low bidder on the BPS building and installation at \$56,500. Bluegrass Hydronics and Pump, LLC is the low bidder on the prefabricated pump package at \$37,196.

The project will be financed by a loan from KIA in the amount of \$400,000 and \$40,600 from Water District funds. The as bid estimate for the project is as follows:

Construction	\$344,851
Administration	2,500
Local Counsel	5,000
Planning	5,000
Engineering Design	31,910
Construction Admin	5,631
Construction Inspection	28,682
Contingency (5%)	<u>17,026</u>
Total Project Cost	\$440,600

The District will need to borrow \$400,000 from the KY Infrastructure Authority (KIA). The District will also need to provide funds in the amount of \$40,600 from local sources. The debt service will be \$24,590 per year. Depreciation will amount to \$6400/year. The District will need to increase rates by 5% to finance this project.

	Existing Rates	Proposed Rates
1st 2000 gallons	\$13.14	\$13.80
Next 2000 gallons	\$4.36	\$4.58
Next 6000 gallons	\$4.07	\$4.28
Over 10,000 gallons	\$3.85	\$4.05
<u>2-inch meter</u>		
First 20,000 gallons	\$84.78	\$89.02
Over 20,000 gallons	\$3.85	\$4.05


 Warner A. Broughman, III

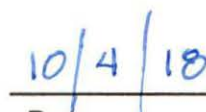

 Date

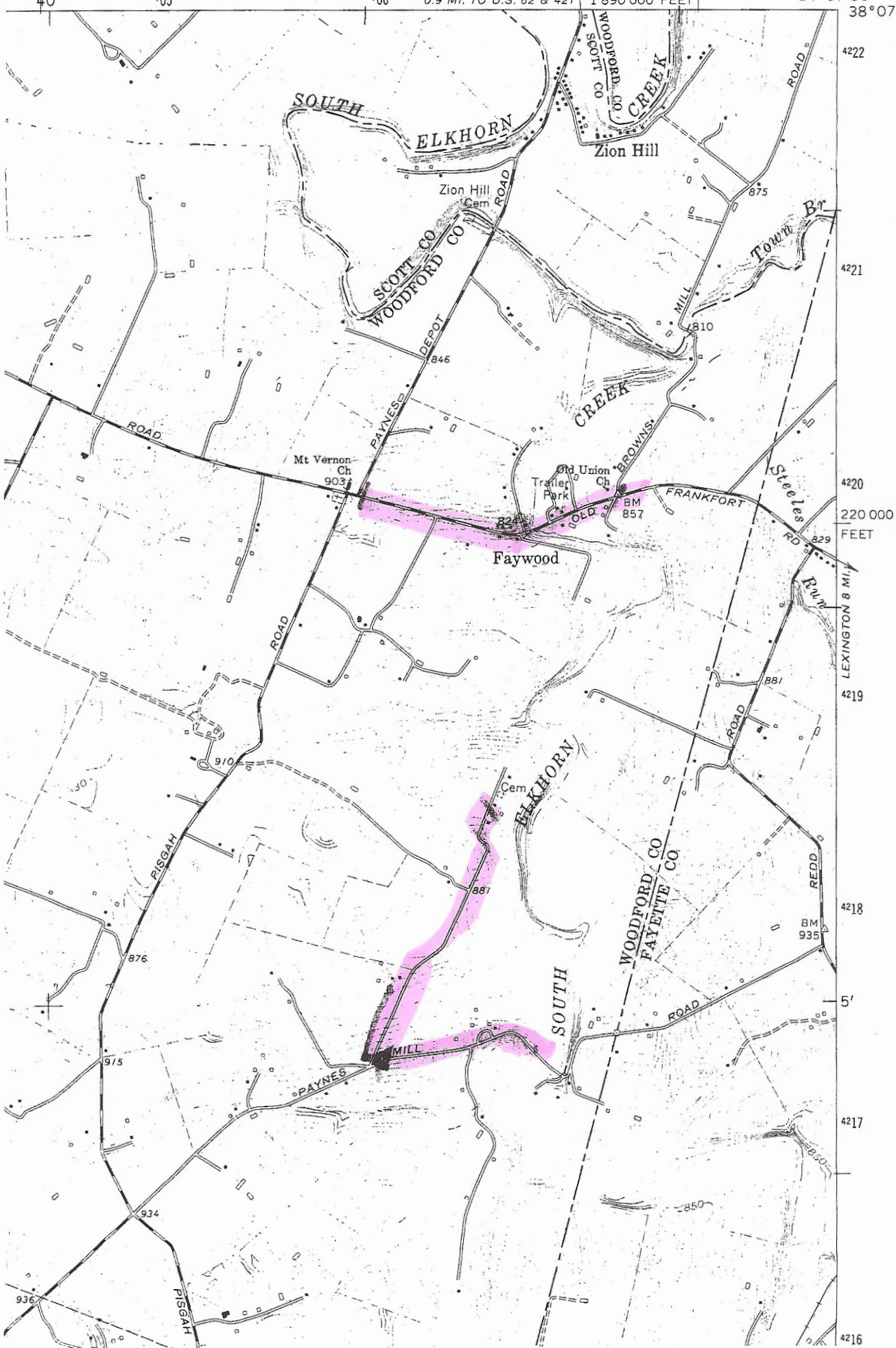


EXHIBIT 10

7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 GEORGETOWN 15' QUADRANGLE

700
1600

40' 705 706 0.9 MI. TO U.S. 62 & 421 1 890 000 FEET 84° 37' 30" 38° 07' 30"



Pressure Pipe Analysis & Design
Circular Pipe

Worksheet Name: Snow Hill Road

Comment: Minimum flow calculation

Solve For Pressure @ 2

Given Input Data:

Elevation @ 1.....	890.00	ft
Pressure @ 1.....	60.85	psi
Elevation @ 2.....	910.00	ft
Discharge.....	98.00	gpm
Diameter.....	4.00	in
Length.....	7334.00	ft
Hazen-Williams C..	140.00	

Computed Results:

Pressure @ 2.....	32.11	psi
Velocity.....	2.50	fps
Headloss.....	46.30	ft
Energy Grade @ 1..	1030.48	ft
Energy Grade @ 2..	984.18	ft
Friction Slope....	6.313	ft/1000 ft

Pressure Pipe Analysis & Design
Circular Pipe

Worksheet Name: Snow Hill Road

Comment: Pressure at Paynes Mill and Snow Hill

Solve For Pressure @ 2

Given Input Data:

Elevation @ 1.....	1052.00	ft
Pressure @ 1.....	0.00	psi
Elevation @ 2.....	890.00	ft
Discharge.....	98.00	gpm
Diameter.....	6.00	in
Length.....	24666.00	ft
Hazen-Williams C..	140.00	

Computed Results:

Pressure @ 2.....	60.85	psi
Velocity.....	1.11	fps
Headloss.....	21.61	ft
Energy Grade @ 1..	1052.02	ft
Energy Grade @ 2..	1030.41	ft
Friction Slope....	0.876	ft/1000 ft

Pressure Pipe Analysis & Design
Circular Pipe

Worksheet Name: Snow Hill Road

Comment: Pressure at flushing flow

Solve For Pressure @ 2

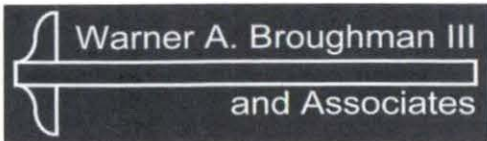
Given Input Data:

Elevation @ 1.....	890.00	ft
Pressure @ 1.....	60.85	psi
Elevation @ 2.....	910.00	ft
Discharge.....	98.00	gpm
Diameter.....	4.00	in
Length.....	7334.00	ft
Hazen-Williams C..	140.00	

Computed Results:

Pressure @ 2.....	32.11	psi
Velocity.....	2.50	fps
Headloss.....	46.30	ft
Energy Grade @ 1..	1030.48	ft
Energy Grade @ 2..	984.18	ft
Friction Slope....	6.313	ft/1000 ft

EXHIBIT 11



3161 CUSTER DRIVE, SUITE 6
 LEXINGTON, KY 40517
 859-271-1778 ° wabiii@prodigy.net
 Fax: 859-272-1020

BID TABULATION
NORTHEAST WOODFORD WATER DISTRICT
2/20/2018

CONTRACT 1 PIPELINE UPGRADES

Item No.	ITEM	AMOUNT	TWIN STATES UTILITIES, INC.	JRS CONST	GUARDIAN RETENTION SYSTEMS	SIDVILLE CONTRACTING, LLC
1	4-inch Pipe		15			
2	4-inch Gate Valve		800			
3	4-inch Blowoff		1750			
4	6-inch Pipe		20			
5	6-inch Gate Valve		1000			
6	12-inch HWY Bore		240			
7	Stream Crossing		300			
8	Class C Concrete		200			
9	Crushed Stone		25			
10	Site Video		500			
TOTAL BID			251,155	NO BID	NO BID	NO BID

CONTRACT 2 PUMP STATION BUILDING

	New Building			44,000		
	Remove Existing			8000		
	Fill Site			3000		
	Site Video			1500	NO BID	NO BID
TOTAL BID			NO BID	56500		

CONTRACT 3 BOOSTER PUMP & CONTROLS

	Skid Mounted Booster Pump Station			NO BID	NO BID	Bluegrass Hydronics & Pumps
						37,196

EXHIBIT 12

Northeast Woodford Water District

March Meeting Minutes

March 6, 2018

I. Call to order

John Davis called to order the meeting of the Northeast Woodford Water District at district office @ 10:07 am

II. Attendees

John Davis, Chairman
Larry Moore, Treasurer
Ken Brothers, Secretary

Mary Shryock, Biller
Dale Gatewood, Manager

III. Approval of minutes from last meeting

Northeast Woodford Water District read the minutes from the March's regular meeting. Larry Moore made a motion to accept the minutes and John Davis second. Minutes approved.

IV. Current Issues

Fred

- a) Check sign on March 9, 2018.
- b) Cut offs March 19, 2018.
- c) CPA's suggest we start depositing a monthly payment into Bond and Interest of \$2900. Commission approved this to start this month.
- d) It was discovered that when we returned deposits in September of 2017, there was some credit that went to a few sewer accounts, equaling \$103.23. Commission approved to pay this to the city as it is their money.

John

- e) Discussion was had regarding the line extension project. John was going to meet with Sandy the following day to get this moving along and finished.
- f) Discussion of Pete Swisher and his plumbing bill. District stand that we are not responsible for the bill. John was going to call PSC to discuss.
- g) Final bids have been received for construction concerning KIA Revolving Fund Loan #B17-007. The low bidders are: Pipelines-Twin States Utilities and Excavation Inc. (\$251,155) and BPS Building and Installation – JRS Construction, INC. (\$56,500) and Prefabricated Pump Package-Bluegrass Hydronics and Pump, LLC. (\$37,196). Larry Moore made a motion to accept and approve the three low bidders. Ken Brothers second motion. Motion approved.

Dale

- h) Requested an increase in pay from commissions. Commission decided to wait to hear our audit and decide at next meeting.

Commission approves to pay the bills.

Adjournment

John Davis called the meeting to adjourn. Ken Brothers made a motion and Larry Moore second the motion @ 10:45 am

Minutes submitted by: Fred Faust

Ken Brothers
Ken Brothers/Secretary

EXHIBIT 13

**STATEMENT OF ANNUAL COST OF OPERATION
OF THE PROPOSED FACILITIES**

Northeast Woodford County Water District does not anticipate any costs associated with the operation of the proposed water mains. The annual cost of operating the existing booster pumping station, which will be replaced by the proposed booster pumping station, is \$6,858.99 (October 2017- September 2018). Northeast Woodford County Water District expects no change in the level of these costs of operation.

EXHIBIT 14

EXECUTIVE SUMMARY		Reviewer	Brandi Norton	
KENTUCKY INFRASTRUCTURE AUTHORITY		Date	October 27, 2016	
FUND B, INFRASTRUCTURE		KIA Loan Number	B17-007	
REVOLVING LOAN FUND		WRIS Number	WX21239032	
BORROWER	NORTHEAST WOODFORD COUNTY WATER DISTRICT WOODFORD COUNTY			
BRIEF DESCRIPTION				
This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.				
PROJECT FINANCING		PROJECT BUDGET		
Fund B Loan	\$400,000	RD Fee %	Actual %	
		Administrative Expenses		\$2,500
		Legal Expenses		5,000
		Planning		5,000
		Eng - Design / Const	11.1% 10.3%	33,750
		Eng - Insp	8.6% 8.1%	26,400
		Construction		300,000
		Contingency		27,350
TOTAL	\$400,000	TOTAL		\$400,000
REPAYMENT	Rate	1.75%	Est. Annual Payment	\$24,590
	Term	20 Years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	Warner Broughman & Associates		
	Bond Counsel	Dinsmore & Shohl, LLP		
PROJECT SCHEDULE	Bid Opening	Feb-17		
	Construction Start	Mar-17		
	Construction Stop	Sep-17		
DEBT PER CUSTOMER	Existing	\$371		
	Proposed	\$759		
OTHER DEBT	See Attached			
OTHER STATE-FUNDED PROJECTS LAST 5 YRS	See Attached			
RESIDENTIAL RATES		<u>Users</u>	<u>Avg. Bill</u>	
	Current	990	\$20.90	(for 4,000 gallons)
	Additional	2		
REGIONAL COORDINATION	This project is consistent with regional planning recommendations.			
CASHFLOW	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2013	37,175	34,115	3,060	1.1
Audited 2014	65,986	34,483	31,503	1.9
Audited 2015	64,965	33,793	31,172	1.9
Projected 2016	61,584	22,551	39,033	2.7
Projected 2017	58,135	34,700	23,435	1.7
Projected 2018	73,617	58,485	15,132	1.3
Projected 2019	70,029	58,651	11,378	1.2
Projected 2020	66,369	58,760	7,609	1.1

Reviewer: Brandi Norton
Date: October 27,2016
Loan Number: B17-007

**KENTUCKY INFRASTRUCTURE AUTHORITY
INFRASTRUCTURE REVOLVING LOAN FUND (FUND "B")
NORTHEAST WOODFORD COUNTY WATER DISTRICT, WOODFORD COUNTY
PROJECT REVIEW
WX21239032**

I. PROJECT DESCRIPTION

The Northeast Woodford County Water District is requesting a Fund "B" loan in the amount of \$400,000 for the Northeast Woodford County Improvement project. This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.

The Northeast Woodford County Water District serves approximately 983 homes within Woodford and Fayette counties. The District purchases approximately 124 million gallons of water annually from Versailles Municipal Water System and is subject to the Public Service Commission jurisdiction.

II. PROJECT BUDGET

	<u>Total</u>
Administrative Expenses	\$ 2,500
Legal Expenses	5,000
Planning	5,000
Engineering Fees - Design / Const	33,750
Engineering Fees - Inspection	26,400
Construction	300,000
Contingency	27,350
Total	\$ 400,000

III. PROJECT FUNDING

	<u>Amount</u>	<u>%</u>
Fund B Loan	\$ 400,000	100%
Total	\$ 400,000	100%

IV. KIA DEBT SERVICE

Construction Loan	\$	400,000
Interest Rate		1.75%
Loan Term (Years)		20
Estimated Annual Debt Service	\$	23,790
Administrative Fee (0.20%)		800
Total Estimated Annual Debt Service	\$	24,590

V. PROJECT SCHEDULE

Bid Opening	February 2017
Construction Start	March 2017
Construction Stop	September 2017

VI. RATE STRUCTURE

A. Customers

Customers	Current	Proposed	Total
Residential	985	2	987
Commercial	5	0	5
Industrial	0	0	0
Total	990	2	992

B. Rates

	Current	Prior
Date of Last Rate Increase	07/01/13	05/30/08
Minimum (2,000 Gallons)	\$12.66	\$12.50
Next 2,000 Gallons	4.12	4.04
Next 6,000 Gallons	3.83	3.75
Cost for 4,000 gallons	\$20.90	\$20.58
Increase %	1.6%	
Affordability Index (Rate/MHI)	0.5%	

VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2009-2013, the District's service area population was 2,277 with a Median Household Income (MHI) of \$53,315. The median household income for the Commonwealth is \$43,342. The project will qualify for a 1.75% interest rate as the district is a regional provider to customers within Fayette County.

Year	Population		Unemployment	
	County	% Change	Date	
1980	17,778		June 2004	4.1%
1990	19,955	12.2%	June 2009	8.8%
2000	23,208	16.3%	June 2015	6.0%
2010	24,939	7.5%	June 2016	3.6%
Current	25,151	0.9%		

VIII. FINANCIAL ANALYSIS

Financial information was obtained from the audited financial statements for the years ended December 31, 2013 through 2015. Amounts for 2016 are estimated. Percentage references in the History section below are based on whole dollar amounts and not the rounded amounts presented.

HISTORICAL

Revenues increased 17% from \$523,118 in 2013 to \$614,253 in 2015 due to a previously approved rate increase. Operating expenses increased 4% from \$162,324 to \$169,048 while purchased water costs increased 17% from \$327,714 to \$383,396 during the same period. The debt coverage ratio was 1.1, 1.9, and 1.9, respectively from 2013 through 2015. Debt service averaged of \$34,000 for same time period.

The balance sheet reflects a current ratio of 11.6, a debt to equity ratio of 0.2, and unrestricted cash equals 6.2 months of operating expenses.

PROJECTED

Projections are based on the following assumptions:

- 1) Water revenues reflect a \$20,000 or 3% rate increase in 2018 and will remain flat thereafter.
- 2) Expenses will increase 2% for inflation.
- 3) Debt service coverage is 1.3 in 2018 when full year principal and interest repayments begin.

Based on the proforma assumptions, the utility shows adequate cash flow to repay the KIA Fund B loan.

REPLACEMENT RESERVE

The annual replacement cost is \$1,000. This amount should be added to the replacement account each December 1 until the balance reaches \$20,000 and maintained for the life of the loan.

IX. DEBT OBLIGATIONS

	<u>Outstanding</u>	<u>Maturity</u>
Water Revenue Bonds 1995	\$ 367,000	2034
Total	\$ 367,000	

X. OTHER STATE OR FEDERAL FUNDING IN PAST FIVE YEARS

None.

XI. CONTACTS

Legal Applicant	
Entity Name	Northeast Woodford County Water District
Authorized Official	John Davis (Chairman)
County	Woodford
Email	n/a
Phone	(859) 873-7334
Address	225 South Main Street Versailles, KY 40383

Project Contact – Applicant & Administrator	
Name	Warner Broughman
Organization	Warner Broughman & Associates
Email	wabiii@prodigy.net
Phone	(859) 271-1778
Address	3161 Coster Dr Lexington, KY 40517

Consulting Engineer	
PE Name	Warner Broughman
Firm Name	Warner Broughman & Associates
Email	wabiii@prodigy.net
Phone	(859) 271-1778
Address	3161 Coster Dr Lexington, KY 40517

XII. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

NORTHEAST WOODFORD COUNTY WATER DISTRICT (WATER)
FINANCIAL SUMMARY (DECEMBER YEAR END)

	Audited	Audited	Audited	Projected	Projected	Projected	Projected	Projected
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Balance Sheet								
Assets								
Current Assets	730,620	772,986	848,757	872,740	896,175	912,807	924,185	931,794
Other Assets	1,830,289	1,752,424	1,642,965	1,584,567	1,901,950	1,820,333	1,727,716	1,635,099
Total	2,560,909	2,525,410	2,491,722	2,457,307	2,798,125	2,733,140	2,651,901	2,566,893
Liabilities & Equity								
Current Liabilities	69,224	60,461	73,911	75,272	76,661	78,077	79,521	80,995
Long Term Liabilities	391,000	379,000	367,000	367,000	1,153,000	1,139,000	1,124,000	1,108,000
Total Liabilities	460,224	439,461	440,911	442,272	1,229,661	1,217,077	1,203,521	1,188,995
Net Assets	2,100,685	2,085,949	2,050,811	2,015,035	1,568,464	1,516,063	1,448,380	1,377,898
Cash Flow								
Revenues	523,118	602,756	614,253	614,253	614,253	634,253	634,253	634,253
Operating Expenses	490,038	541,173	552,444	555,825	559,274	563,792	567,380	571,040
Other Income	4,095	4,403	3,156	3,156	3,156	3,156	3,156	3,156
Cash Flow Before Debt Service	37,175	65,986	64,965	61,584	58,135	73,617	70,029	66,369
Debt Service								
Existing Debt Service	34,115	34,483	33,793	22,551	34,700	33,895	34,061	34,170
Proposed KIA Loan	0	0	0	0	0	24,590	24,590	24,590
Total Debt Service	34,115	34,483	33,793	22,551	34,700	58,485	58,651	58,760
Cash Flow After Debt Service	3,060	31,503	31,172	39,033	23,435	15,132	11,378	7,609
Ratios								
Current Ratio	10.6	12.8	11.5	11.6	11.7	11.7	11.6	11.5
Debt to Equity	0.2	0.2	0.2	0.2	0.8	0.8	0.8	0.9
Days Sales in Accounts Receivable	32.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0
Months Operating Expenses in Unrestricted Cash	3.9	4.5	5.4	6.2	6.6	6.9	7.1	7.2
Debt Coverage Ratio	1.1	1.9	1.9	2.7	1.7	1.3	1.2	1.1

EXHIBIT 15

KENTUCKY INFRASTRUCTURE AUTHORITY
Minutes of the Full Board

Meeting Date/Location: October 27, 2016 – 1:00 p.m.
Kentucky Infrastructure Authority
1024 Capital Center Drive, Suite 340, Frankfort

Members present:

Mr. Mark Bunning, Finance and Administration Cabinet
(proxy for Secretary William Landrum, FAC)
Mr. John Fischer, (proxy for Acting Secretary Erik Dunnigan), Cabinet for Economic Development
Ms. Talina Mathews, Executive Director, Public Service Commission
Mr. Paul Lashbrooke, representing the Kentucky Rural Water Association
Ms. Linda C. Bridwell, representing for-profit private water companies
Mr. Bruce Scott, Energy and Environment Cabinet
(proxy for Secretary Charles Snaveley, EEC)
Mr. C. Ronald Lovan, representing the American Water Works Association
Mr. David A. Voegelé, representing Kentucky Association of Counties
Mr. Claude Christensen, representing Kentucky League of Cities
Mr. Robert A. Amato, representing Kentucky Municipal Utilities Association

Members absent:

Ms. Sandra Dunahoo, Commissioner, Department for Local Government

Guests:

Mr. Matt Baker, Cann-Tech, LLC
Mr. Jory Becker, Division of Water
Mr. Larry Cann, Cann-Tech, LLC
Mr. David Cartmell, Mayor, City of Maysville
Mr. Mike Flynn, Winchester Municipal Utilities
Mr. Darren Garrison, City of Maysville
Ms. Laura Jefferson, Buffalo Trace Area Development District
Mr. Bryan Kirby, Community Economic Development Associates, Inc.
Mr. Patrick Kirby, Community Economic Development Associates, Inc.
Mr. Gary Larimore, Kentucky Rural Water
Mr. Phil Meador, Kenvirons, Inc.
Mr. Paul Nesbitt, Nesbitt Engineering, Inc.
Mr. Joe Pfeffer, Mason County Judge Executive
Ms. Denise Pitts, Office of Financial Management
Mr. Roy Sawyers, Mountain Water District
Mr. Andrew Schachtner, Department for Local Government

Ms. Jennifer Sparks, Winchester Municipal Utilities
Ms. Penny Stanfield, City of Maysville
Mr. Matt Wallingford, City of Maysville
Ms. Rose Wolfe, Mayor, City of Jackson

PROCEEDINGS

Vice Chair Linda Bridwell called the meeting of the Kentucky Infrastructure Authority (KIA) Board to order. Ms. Bridwell asked board members and guests to introduce themselves. A quorum was confirmed. It was also noted that the press had been notified regarding the meeting.

I. BUSINESS (Board Action Required)

A. 1. APPROVAL OF MINUTES

For: KIA Regular Board Meeting of September 1, 2016

Mr. Paul Lashbrooke moved to approve the minutes of the September 1, 2016, regular board meeting. Mr. Bruce Scott seconded, and the motion carried unanimously.

B. NEW PROJECTS/ACTION ITEMS

1. A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING AN AMENDMENT TO THE CONDITIONAL COMMITMENT FOR A FEDERALLY ASSISTED CLEAN WATER REVOLVING FUND A LOAN (A15-077) INCREASING THE AMOUNT TO \$3,472,921 TO THE MOUNTAIN WATER DISTRICT, PIKE COUNTY, KENTUCKY

Mr. Jory Becker, DOW, and Ms. Jami Johnson, KIA, discussed the Mountain Water District's (District) request for an increase to a Fund A loan in the amount of \$370,000 to make the total loan requested \$3,472,921 for the Douglas Wastewater Treatment Plant Project. The District initially opened bids June 2016 which resulted in a rejection of all bids due to them coming in excessively higher than estimated. The excessive increase is believed to be attributed to the new membrane technology being the first installed in the Commonwealth.

The District re-bid the project in August 2016 with modifications to the grading and odor control roof which resulted in lower bids. The District decided to add three alternates including Penny Road Lift Station Renovation, Lick Branch Lift Station Renovation and a 400 KW Diesel

Stationary Standby Generator. The original loan amount of \$3,102,921 and project scope, which was approved by the KIA board on April 2, 2015, is as follows:

The project will construct a new wastewater treatment plant to replace its existing plant using membrane technology. The plant will increase capacity from 200,000 gallons per day (GPD) to 300,000 GPD and add headwork designed to expand capacity to 400,000 GPD. The plant is currently at maximum capacity and the expansion will allow more customers to be added to the service.

Another component to this project is rehabilitation to the lift stations to efficiently serve customers and increase reliability of the sewer collection system. The District will install high efficiency pumps and motors in conjunction with advanced electrical controllers for best optimization of the station. Odor and corrosion control systems will be installed at the lift stations upstream of the new treatment plant that will assist in minimizing hydrogen sulfide issues to the more developed area.

The District serves the area of Pike County and has approximately 17,200 water and 2,400 sewer customers. Elkhorn City purchases approximately six million gallons of water annually from the District.

Ms. Talina Mathews abstained from voting. Mr. Mark Bunning moved to approve the Fund "A" Loan, (A15-077) in the amount of \$3,472,921 to the Mountain Water District with the standard conditions. Mr. Ron Lovan seconded, and the motion was unanimously approved.

2. A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING ISSUANCE OF A CONDITIONAL COMMITMENT FOR A FEDERALLY ASSISTED CLEAN WATER REVOLVING FUND A LOAN (A17-010) IN THE AMOUNT OF \$1,404,000 TO THE CITY OF WINCHESTER, CLARK COUNTY, KENTUCKY

Mr. Jory Becker, DOW, and Mr. Brandi Norton, KIA, discussed the City of Winchester's request for a fund "A" loan in the amount of \$1,404,000 for the Hampton Manor Outfall Sewer project. This project will eliminate two sanitary sewer overflows and will include improvements to the sanitary sewer collection system in the upper reaches of the Lower Howards Creek sewer shed. The proposed project scope includes replacement of approximately 3,200 LF of 24-inch aged gravity sanitary sewer, 14 manholes, 300 ft of road bore and other appurtenant structures.

This project is needed to comply with a Consent Decree issued by the US Environmental Protection Agency (EPA Consent Decree #06-102-KSF).

Mr. Mark Bunning moved to approve the Fund “A” Loan, (A17-010) in the amount of \$1,404,000 to the City of Winchester with the standard conditions. Mr. Bruce Scott seconded, and the motion was unanimously approved.

3. A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING ISSUANCE OF A CONDITIONAL COMMITMENT FOR A FEDERALLY ASSISTED CLEAN WATER REVOLVING FUND A LOAN (A17-011) IN THE AMOUNT OF \$4,000,000 TO THE CITY OF MAYSVILLE, MASON COUNTY, KENTUCKY

Mr. Jory Becker, DOW, and Ms. Debbie Landrum, KIA, discussed the City of Maysville’s request for a fund “A” loan in the amount of \$4,000,000 for the Wastewater Treatment Plant Upgrade project. This project consists of modifications at the wastewater treatment plant including improvements to the grit chamber, screens, clarifier and influent pumps. These improvements will allow the wastewater treatment facility to better accommodate additional flows generated due to the elimination of sewer overflows throughout the system. The system is currently under federal consent judgment with the EPA to eliminate combined sewer overflows.

Mr. Paul Lashbrooke moved to approve the Fund “A” Loan, (A17-011) in the amount of \$4,000,000 to the City of Maysville with the standard conditions. Ms. Talina Mathews seconded, and the motion was unanimously approved.

4. A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING ISSUANCE OF A CONDITIONAL COMMITMENT FOR A FEDERALLY ASSISTED CLEAN WATER REVOLVING FUND LOAN (A17-015) IN THE AMOUNT OF \$593,000 TO THE CITY OF JACKSON, BREATHITT COUNTY, KENTUCKY

Mr. Jory Becker, DOW, and Ms. Ashley Adams, KIA, discussed the City of Jackson’s request for a Fund “A” loan in the amount of \$593,000 for the Lift Station Rehabilitation Project Phase II. This project will rehabilitate seven duplex lift stations, replace four residential grinder stations, and replace three influent pumps at the wastewater treatment plant that are in frequent need of repair due to age. In addition, approximately 2,500 linear feet of 4 inch force main will be upsized and replaced with 6 inch in order

to reduce friction loss and increase flow in the area. The project will reduce the likelihood that wastewater contaminants are released directly into the raw water source for the City's Water Treatment plant.

The system serves approximately 1,456 households in Breathitt County.

Mr. Claude Christensen moved to approve the Fund "A" Loan, (A17-015) in the amount of \$593,000 to the City of Jackson with the standard conditions. Mr. Paul Lashbrooke seconded, and the motion was unanimously approved.

5. A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING ISSUANCE OF A CONDITIONAL COMMITMENT FOR AN INFRASTRUCTURE REVOLVING FUND LOAN (B17-007) OF \$400,000 TO THE NORTHEAST WOODFORD COUNTY WATER DISTRICT, WOODFORD COUNTY, KENTUCKY

Ms. Brandi Norton, KIA, discussed the Northeast Woodford County Water District's request a Fund "B" loan in the amount of \$400,000 for the Northeast Woodford County Improvement project. This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.

The Northeast Woodford County Water District serves approximately 983 homes within Woodford and Fayette counties. The District purchases approximately 124 million gallons of water annually from Versailles Municipal Water System and is subject to the Public Service Commission jurisdiction.

Ms. Talina Mathews abstained from voting. Mr. Ron Lovan moved to approve the Fund "B" Loan, (B17-007) in the amount of \$400,000 to the Northeast Woodford County Water District with the standard conditions. Mr. John Fischer seconded, and the motion was unanimously approved.

6. A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING ISSUANCE OF A CONDITIONAL COMMITMENT FOR A FEDERALLY ASSISTED DRINKING WATER REVOLVING FUND LOAN (F17-007) IN

THE AMOUNT OF \$883,000 TO THE CITY OF OLIVE HILL, CARTER COUNTY, KENTUCKY

Mr. Jory Becker, DOW, and Ms. Ashley Adams, KIA, discussed the City of Olive Hill’s request for a Fund “F” loan in the amount of \$883,000 for the Olive Hill Downtown Area Waterline Replacement Project. This project will replace approximately 5,900 linear feet of failing cast iron water lines in the downtown area of Olive Hill with new PVC lines. The area covered in this project has been determined by water loss studies to have an estimated 50% loss and is also the oldest part of the system. In addition to the line replacement, the project will replace twelve hydrants as well as facilitate the inspection, rehabilitation, and recommission of the Tick Ridge standpipe water tank. The recommission of the existing tank will add 250,000 gallons to the current storage capacity of the City’s water system as well as stabilize the available volume and pressure for the downtown area.

The system serves approximately 2,338 households in Carter County.

Mr. Mark Bunning moved to approve the Fund “F” Loan, (F17-007) in the amount of \$883,000 to the City of Olive Hill with the standard conditions and the following special condition: The City of Olive Hill will increase rates 2.5% effective July 1, 2018 and another 2.5% by July 1, 2019. The City must pass the rate ordinance by January 31, 2017. Mr. Claude Christensen seconded, and the motion was unanimously approved.

7. A RESOLUTION OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING AND APPROVING THE ISSUANCE OF OBLIGATIONS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY TO REIMBURSE CAPITAL EXPENDITURES MADE BY GOVERNMENTAL AGENCIES PURSUANT TO LOANS MADE BY THE KENTUCKY INFRASTRUCTURE AUTHORITY TO SUCH GOVERNMENTAL AGENCIES

This is a routine resolution allowing KIA to reimburse expenses that are paid out of the Authority’s funds with bond proceeds. The projects listed below are covered under this resolution:

APPLICANT	FUND	AMOUNT
Mountain Water District (Increase)	A15-077	\$ 3,472,921
City of Winchester	A17-010	\$ 1,404,000
City of Maysville	A17-011	\$ 4,000,000
City of Jackson	A17-015	\$ 593,000

Northeast Woodford County Water District	B17-007	\$ 400,000
City of Olive Hill	F17-007	\$ 883,000

Mr. John Fischer moved to approve the resolution. Mr. Bruce Scott seconded, and the motion carried unanimously.

III. STATUS REPORT FOR FUNDS A, A2, B, B1, C, F, F2

I. DISCUSSION

DLG Staff Attorney, Bill Pauley had no updates to provide.


Mark Bunning inquired about staff providing a periodic update on loans and their draw down amounts. Jeff Abshire confirmed that would be no problem and could be provided on a monthly basis.

IV. ANNOUNCEMENTS/NOTIFICATIONS

- Next scheduled KIA board meeting:
Thursday, December 1, 2016, 1:00 p.m.
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky

There being no further business, Ms. Talina Mathews moved to adjourn. Mr. Paul Lashbrooke seconded and the motion carried unanimously. The October 27 2016, regular meeting of the Board of the Kentucky Infrastructure Authority was adjourned.

Submitted by:



Brandi Norton, Secretary
Kentucky Infrastructure Authority

November 21, 2016
Date

EXHIBIT 16



KENTUCKY INFRASTRUCTURE AUTHORITY

Matthew G. Bevin
Governor

Capital Center Complex
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
(502) 573-0260
(502) 573-0157 (fax)
kia.ky.gov

November 3, 2016

Honorable John Davis, Chairman
Northeast Woodford County Water District
225 South Main Street
Versailles, KY 40383



KENTUCKY INFRASTRUCTURE AUTHORITY INFRASTRUCTURE REVOLVING LOAN FUND CONDITIONAL COMMITMENT LETTER (B17-007)

Dear Chairman Davis:

The Kentucky Infrastructure Authority ("the Authority") commends your efforts to improve public service facilities in your community. On October 27, 2016, the Authority approved your loan for the Northeast Woodford County Improvement Project, subject to the conditions stated below. The total cost of the project shall not exceed \$400,000 of which the Authority loan is the sole source of the funding. The final loan amount will be equal to the Authority's portion of estimated project cost applied to the actual project cost. Attachment A incorporated herein by reference fully describes the project.

An Assistance Agreement will be executed between the Authority and the Northeast Woodford County Water District upon satisfactory performance of the conditions set forth in this letter. You must meet the conditions set forth in this letter and enter into an Assistance Agreement by November 3, 2017 (twelve months from the date of this letter). A one-time extension of up to six months may be granted for applicants that experience extenuating circumstances. Funds will be available for disbursement only after execution of the Assistance Agreement.

The Assistance Agreement and this commitment shall be subject, but not limited to, the following terms:

1. The Authority project loan shall not exceed \$400,000.
2. The loan shall bear interest at the rate of 1.75 percent per annum commencing

with the first draw of funds.

3. The loan shall be repaid over a period not to exceed 20 years from the date of the last draw of funds.
4. Interest shall be payable on the amount of actual funds received. The first payment shall be due on June 1, or December 1, immediately succeeding the date of the initial draw of funds, provided that if such June 1, or December 1, shall be less than three months since the date of the initial draw of funds, then the first interest payment date shall be the June 1, or December 1, which is at least six months from the date of the initial draw of funds. Interest payments will be due each six months thereafter until the loan is repaid.
5. Full principal payments will commence on June 1, or December 1, immediately succeeding the date of the last draw of funds, provided that if such June 1, or December 1, shall be less than three months since the date of the last draw of funds, then the first principal payment date shall be the June 1, or December 1, which is at least six months from the date of the last draw of funds. Full payments will be due each six months thereafter until the loan is repaid.
6. A loan servicing fee of 0.20% of the outstanding loan balance shall be payable to the Authority as a part of each interest payment.
7. Loan funds will only be disbursed after execution of the Assistance Agreement as project costs are incurred.
8. The Authority requires that an annual financial audit be provided for the life of the loan.
9. The final Assistance Agreement must be approved by ordinance or resolution, as applicable, of the city council or appropriate governing board.

The following is a list of the standard conditions to be satisfied prior to execution of the Assistance Agreement or incorporated in the Assistance Agreement. Any required documentation must be submitted to the party designated.

1. Upon completion of final design of the facilities in the attached project description, favorable approval shall be obtained of such design by all appropriate parties as required by Kentucky statute or administrative regulation.
2. Applicant must provide certification from their legal counsel stating that they have prepared construction specifications in accordance with all applicable state wage rate laws, and that the procurement procedures, including those for construction, land, equipment and professional services that are a part of the project, are in compliance with applicable state and local procurement laws.
3. Documentation of final funding commitments from all parties other than the

Authority as reflected in the Attachment A description shall be provided prior to preparation of the Assistance Agreement and disbursement of the loan monies. Rejections of any anticipated project funding, or any new funding sources not reflected in Attachment A shall be immediately reported and may cause this loan to be subject to further consideration.

4. Upon receipt of construction bids a tabulation of such bids and engineer's recommendations on compliance with bid specifications and recommendation for award, shall be forwarded to the Authority for final approval and sizing of this loan and the project.
5. The loan must undergo review by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the state's execution of the Assistance Agreement. The Committee meets monthly on the third Tuesday. Any special conditions listed in Attachment A must be satisfied before the project is presented before the Committee.
6. Any required adjustment in utility service rates shall be adopted by ordinance, municipal order or resolution by the appropriate governing body of the Borrower. Public hearings as required by law shall be held prior to the adoption of the service rate ordinance, order, or resolution. Any required approvals by the Kentucky Public Service Commission shall be obtained.
7. Based on the final "as bid" project budget, the borrower must provide satisfactory proof, based on then existing conditions, that the revenue projections in the attached descriptions are still obtainable and that the projections of operating expenses have not materially changed. The "as bid" project budget shall be reviewed and approved by your consultant engineer.
8. All easements or purchases of land shall be completed prior to commencement of construction. Certification of all land or easement acquisitions shall be provided to the Authority.
9. Documentation of Clearinghouse Endorsement and Clearinghouse Comments.
10. The Borrower must complete and return the attached "Authorization for Electronic Deposit of Vendor Payment" form to the Authority.
11. Implement the Kentucky Uniform System of Accounting (KUSoA), or an alternative approved by the Authority and assure that rates and charges for services are based upon the cost of providing such service.
12. Final Design Plans in an AutoCAD Drawing File Format (DWG), referenced to the appropriate (North, South or Single) Kentucky State Plane Coordinate System (NAD83-Survey Feet) on a Compact Disc (CD). The recipient shall provide the Authority a digital copy (pdf) of the record drawings from the project

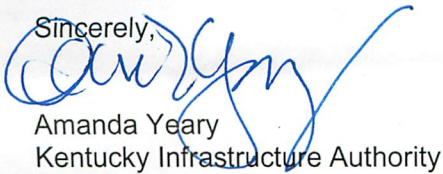
Chairman Davis
November 3, 2016
Page 4

within three months of construction completion.

Any special conditions listed below and/or stated in Attachment A must be resolved.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project which will benefit both your community and the Commonwealth as a whole.

Sincerely,

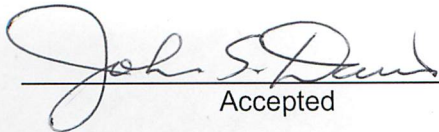


Amanda Yeary
Kentucky Infrastructure Authority

Attachments

cc: Warner Broughman, Warner Broughman & Associates

Please sign and return a copy of this letter indicating your acceptance of this commitment and its terms. Also attach the completed "Authorization for Electronic Deposit of Vendor Payment" Form.



Accepted

November 3, 2016
Date

ATTACHMENT A

**Northeast Woodford County Water District
B17-007**

EXECUTIVE SUMMARY		Reviewer	Brandi Norton	
KENTUCKY INFRASTRUCTURE AUTHORITY		Date	October 27, 2016	
FUND B, INFRASTRUCTURE		KIA Loan Number	B17-007	
REVOLVING LOAN FUND		WRIS Number	WX21239032	
BORROWER	NORTHEAST WOODFORD COUNTY WATER DISTRICT WOODFORD COUNTY			
BRIEF DESCRIPTION				
This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.				
PROJECT FINANCING		PROJECT BUDGET		
Fund B Loan	\$400,000	RD Fee %	Actual %	
				Administrative Expenses \$2,500
				Legal Expenses 5,000
				Planning 5,000
		Eng - Design / Const 11.1%	10.3%	33,750
		Eng - Insp 8.6%	8.1%	26,400
		Construction		300,000
		Contingency		27,350
TOTAL	\$400,000	TOTAL		\$400,000
REPAYMENT	Rate	1.75%	Est. Annual Payment	\$24,590
	Term	20 Years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	Warner Broughman & Associates		
	Bond Counsel	Dinsmore & Shohl, LLP		
PROJECT SCHEDULE	Bid Opening	Feb-17		
	Construction Start	Mar-17		
	Construction Stop	Sep-17		
DEBT PER CUSTOMER	Existing	\$371		
	Proposed	\$759		
OTHER DEBT	See Attached			
OTHER STATE-FUNDED PROJECTS LAST 5 YRS	See Attached			
RESIDENTIAL RATES		<u>Users</u>	<u>Avg. Bill</u>	
	Current	990	\$20.90	(for 4,000 gallons)
	Additional	2		
REGIONAL COORDINATION	This project is consistent with regional planning recommendations.			
CASHFLOW	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2013	37,175	34,115	3,060	1.1
Audited 2014	65,986	34,483	31,503	1.9
Audited 2015	64,965	33,793	31,172	1.9
Projected 2016	61,584	22,551	39,033	2.7
Projected 2017	58,135	34,700	23,435	1.7
Projected 2018	73,617	58,485	15,132	1.3
Projected 2019	70,029	58,651	11,378	1.2
Projected 2020	66,369	58,760	7,609	1.1

Reviewer: Brandi Norton
Date: October 27,2016
Loan Number: B17-007

**KENTUCKY INFRASTRUCTURE AUTHORITY
INFRASTRUCTURE REVOLVING LOAN FUND (FUND "B")
NORTHEAST WOODFORD COUNTY WATER DISTRICT, WOODFORD COUNTY
PROJECT REVIEW
WX21239032**

I. PROJECT DESCRIPTION

The Northeast Woodford County Water District is requesting a Fund "B" loan in the amount of \$400,000 for the Northeast Woodford County Improvement project. This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.

The Northeast Woodford County Water District serves approximately 983 homes within Woodford and Fayette counties. The District purchases approximately 124 million gallons of water annually from Versailles Municipal Water System and is subject to the Public Service Commission jurisdiction.

II. PROJECT BUDGET

	<u>Total</u>
Administrative Expenses	\$ 2,500
Legal Expenses	5,000
Planning	5,000
Engineering Fees - Design / Const	33,750
Engineering Fees - Inspection	26,400
Construction	300,000
Contingency	27,350
Total	\$ 400,000

III. PROJECT FUNDING

	<u>Amount</u>	<u>%</u>
Fund B Loan	\$ 400,000	100%
Total	\$ 400,000	100%

IV. KIA DEBT SERVICE

Construction Loan	\$	400,000
Interest Rate		1.75%
Loan Term (Years)		20
Estimated Annual Debt Service	\$	23,790
Administrative Fee (0.20%)		800
Total Estimated Annual Debt Service	\$	24,590

V. PROJECT SCHEDULE

Bid Opening	February 2017
Construction Start	March 2017
Construction Stop	September 2017

VI. RATE STRUCTURE

A. Customers

Customers	Current	Proposed	Total
Residential	985	2	987
Commercial	5	0	5
Industrial	0	0	0
Total	990	2	992

B. Rates

	Current	Prior
Date of Last Rate Increase	07/01/13	05/30/08
Minimum (2,000 Gallons)	\$12.66	\$12.50
Next 2,000 Gallons	4.12	4.04
Next 6,000 Gallons	3.83	3.75
Cost for 4,000 gallons	\$20.90	\$20.58
Increase %	1.6%	
Affordability Index (Rate/MHI)	0.5%	

VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2009-2013, the District's service area population was 2,277 with a Median Household Income (MHI) of \$53,315. The median household income for the Commonwealth is \$43,342. The project will qualify for a 1.75% interest rate as the district is a regional provider to customers within Fayette County.

Year	Population		Unemployment	
	County	% Change	Date	
1980	17,778		June 2004	4.1%
1990	19,955	12.2%	June 2009	8.8%
2000	23,208	16.3%	June 2015	6.0%
2010	24,939	7.5%	June 2016	3.6%
Current	25,151	0.9%		

VIII. FINANCIAL ANALYSIS

Financial information was obtained from the audited financial statements for the years ended December 31, 2013 through 2015. Amounts for 2016 are estimated. Percentage references in the History section below are based on whole dollar amounts and not the rounded amounts presented.

HISTORICAL

Revenues increased 17% from \$523,118 in 2013 to \$614,253 in 2015 due to a previously approved rate increase. Operating expenses increased 4% from \$162,324 to \$169,048 while purchased water costs increased 17% from \$327,714 to \$383,396 during the same period. The debt coverage ratio was 1.1, 1.9, and 1.9, respectively from 2013 through 2015. Debt service averaged of \$34,000 for same time period.

The balance sheet reflects a current ratio of 11.6, a debt to equity ratio of 0.2, and unrestricted cash equals 6.2 months of operating expenses.

PROJECTED

Projections are based on the following assumptions:

- 1) Water revenues reflect a \$20,000 or 3% rate increase in 2018 and will remain flat thereafter.
- 2) Expenses will increase 2% for inflation.
- 3) Debt service coverage is 1.3 in 2018 when full year principal and interest repayments begin.

Based on the proforma assumptions, the utility shows adequate cash flow to repay the KIA Fund B loan.

REPLACEMENT RESERVE

The annual replacement cost is \$1,000. This amount should be added to the replacement account each December 1 until the balance reaches \$20,000 and maintained for the life of the loan.

IX. DEBT OBLIGATIONS

	<u>Outstanding</u>	<u>Maturity</u>
Water Revenue Bonds 1995	\$ 367,000	2034
Total	\$ 367,000	

X. OTHER STATE OR FEDERAL FUNDING IN PAST FIVE YEARS

None.

XI. CONTACTS

Legal Applicant	
Entity Name	Northeast Woodford County Water District
Authorized Official	John Davis (Chairman)
County	Woodford
Email	n/a
Phone	(859) 873-7334
Address	225 South Main Street Versailles, KY 40383

Project Contact – Applicant & Administrator	
Name	Warner Broughman
Organization	Warner Broughman & Associates
Email	wabiii@prodigy.net
Phone	(859) 271-1778
Address	3161 Coster Dr Lexington, KY 40517

Consulting Engineer	
PE Name	Warner Broughman
Firm Name	Warner Broughman & Associates
Email	wabiii@prodigy.net
Phone	(859) 271-1778
Address	3161 Coster Dr Lexington, KY 40517

XII. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

NORTHEAST WOODFORD COUNTY WATER DISTRICT (WATER)
FINANCIAL SUMMARY (DECEMBER YEAR END)

	Audited	Audited	Audited	Projected	Projected	Projected	Projected	Projected
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Balance Sheet								
Assets								
Current Assets	730,620	772,986	848,757	872,740	896,175	912,807	924,185	931,794
Other Assets	1,830,289	1,752,424	1,642,965	1,584,567	1,901,950	1,820,333	1,727,716	1,635,099
Total	2,560,909	2,525,410	2,491,722	2,457,307	2,798,125	2,733,140	2,651,901	2,566,893
Liabilities & Equity								
Current Liabilities	69,224	60,461	73,911	75,272	76,661	78,077	79,521	80,995
Long Term Liabilities	391,000	379,000	367,000	367,000	1,153,000	1,139,000	1,124,000	1,108,000
Total Liabilities	460,224	439,461	440,911	442,272	1,229,661	1,217,077	1,203,521	1,188,995
Net Assets	2,100,685	2,085,949	2,050,811	2,015,035	1,568,464	1,516,063	1,448,380	1,377,898
Cash Flow								
Revenues	523,118	602,756	614,253	614,253	614,253	634,253	634,253	634,253
Operating Expenses	490,038	541,173	552,444	555,825	559,274	563,792	567,380	571,040
Other Income	4,095	4,403	3,156	3,156	3,156	3,156	3,156	3,156
Cash Flow Before Debt Service	37,175	65,986	64,965	61,584	58,135	73,617	70,029	66,369
Debt Service								
Existing Debt Service	34,115	34,483	33,793	22,551	34,700	33,895	34,061	34,170
Proposed KIA Loan	0	0	0	0	0	24,590	24,590	24,590
Total Debt Service	34,115	34,483	33,793	22,551	34,700	58,485	58,651	58,760
Cash Flow After Debt Service	3,060	31,503	31,172	39,033	23,435	15,132	11,378	7,609
Ratios								
Current Ratio	10.6	12.8	11.5	11.6	11.7	11.7	11.6	11.5
Debt to Equity	0.2	0.2	0.2	0.2	0.8	0.8	0.8	0.9
Days Sales in Accounts Receivable	32.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0
Months Operating Expenses in Unrestricted Cash	3.9	4.5	5.4	6.2	6.6	6.9	7.1	7.2
Debt Coverage Ratio	1.1	1.9	1.9	2.7	1.7	1.3	1.2	1.1

EXHIBIT 17

EXHIBIT 17A



KENTUCKY INFRASTRUCTURE AUTHORITY

Matthew G. Bevin
Governor

Capital Center Complex
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
(502) 573-0260
(502) 573-0157 (fax)
kia.ky.gov

Donna McNeil
Executive Director

October 6, 2017

Northeast Woodford Water District
John Davis, Chairman
225 South Main St.
Versailles, KY 40383

KENTUCKY INFRASTRUCTURE AUTHORITY INFRASTRUCTURE REVOLVING LOAN FUND CONDITIONAL COMMITMENT LETTER (B17-007) EXTENSION

Dear Mr. Davis:

The Kentucky Infrastructure Authority ("the Authority") has approved an extension of the Infrastructure Revolving Fund (Fund B) loan B17-007 for the Water District Improvements Project. The Authority has extended the deadline for the Northeast Woodford Water District to meet the conditions set forth in the conditional commitment letter for a period of six (6) months. The original expiration date was November 3, 2017. The new expiration date will be May 3, 2018. If the project does not meet the conditions by the new expiration date, the commitment may be rescinded.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project which will benefit both your community and the Commonwealth as a whole.

Sincerely,

A handwritten signature in blue ink that reads "Donna McNeil".

Donna McNeil, Executive Director
Kentucky Infrastructure Authority

EXHIBIT 17B



KENTUCKY INFRASTRUCTURE AUTHORITY

Matthew G. Bevin
Governor

Capital Center Complex
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
(502) 573-0260
(502) 573-0157 (fax)
kia.ky.gov

Donna McNeil
Executive Director

October 10, 2018

Northeast Woodford Water District
John Davis, Chairman
225 South Main St.
Versailles, KY 40383

KENTUCKY INFRASTRUCTURE AUTHORITY INFRASTRUCTURE REVOLVING LOAN FUND CONDITIONAL COMMITMENT LETTER (B17-007) EXTENSION

Dear Mr. Davis:

The Kentucky Infrastructure Authority ("the Authority") has approved an extension of the Infrastructure Revolving Fund (Fund B) loan B17-007 for the Water District Improvements Project. The Authority has extended the deadline for the Northeast Woodford Water District to meet the conditions set forth in the conditional commitment letter. The original expiration date was November 3, 2017, with an extension to May 3, 2018. The new expiration date will be December 3, 2018. If the project does not meet the conditions by the new expiration date, the commitment may be rescinded.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project which will benefit both your community and the Commonwealth as a whole.

Sincerely,

A handwritten signature in blue ink that reads "Donna McNeil".

Donna McNeil, Executive Director
Kentucky Infrastructure Authority

EXHIBIT 18

Page 1

NOTIFICATION OF INTENT TO FINANCE AND APPLICATION FOR DEBT APPROVAL

Form # SLDO-1
Revised 1/1/2011

For DLG staff use only:

File # _____
Received _____

Completion and delivery of this form to the address below shall satisfy the requirements of KRS 65.117, which prohibits any city, county, urban-county, consolidated local government, charter county, special district, or taxing district from entering into any financing obligation of any nature, except leases under \$200,000, without first notifying the state local debt officer in writing. This form shall also serve as application for approval of debt issuance when applicable. An electronic version of the form is available at www.dlg.ky.gov.

✓ **Type of debt to be issued (must check one):** **SLDO Approval Required** **Complete Sections**

<input type="checkbox"/> Short Term Borrowing - KRS 65.7701 et seq.	No	A, B, C
<input type="checkbox"/> Lease from \$200,000 - \$500,000 - KRS 65.940 et seq.	No	A, B, D
<input type="checkbox"/> Lease exceeding \$500,000 - KRS 65.940 et seq.	Yes (Counties only)	A, B, D
<input type="checkbox"/> General Obligation Bond - KRS Chapter 66	Yes (Counties only)	A, B, E
<input type="checkbox"/> Public Project Rev. Bond - KRS Chapter 58	No	A, B, E
<input type="checkbox"/> Public Project Rev. Bond w/Lease - KRS 66.310(2)	Yes (Counties only)	A, B, D, E
<input type="checkbox"/> Industrial Revenue Bond - KRS Chapter 103	Yes (All Borrowers)	A, B, F
<input type="checkbox"/> Other Bonds (True Revenue, Utility Assessment, TIF)	No	A, B, E

X Assistance Agreement with Kentucky Infrastructure Authority

Section A - Borrower Information

Agency Name	Northeast Woodford County Water District		
Governing Body	Northeast Woodford County Water District Board of Commissioners		
Street Address	225A South Main Street		
P.O. Box #	City	Versailles	
County	Woodford	Zip	40383
Authorized Official	Chairman, Board of Commissioners		

Section B - Terms of Financial Obligation

Please provide all relevant information. Fields in **bold** are mandatory.

Principle Amount:	\$400,000.00	Date of Issue:	12/03/2018
Maturity Date(s):	12/02/2038	Payment Schedule:	(must attach schedule)
Term:	20 years	Number of Renewal Periods:	0
Interest Rate(s):	1.75	Type of Interest (fixed or variable):	Fixed
Retirement Method:	Annual Payments		
Lender's Name:	Kentucky Infrastructure Authority		
Lender's Address:	1024 Capital Center Drive, Suite 340, Frankfort, Kentucky 40601		
Right of Termination:	None		
Termination Penalties:	None		
Prepayment Provisions:	None		
Trustee or Paying Agent:	None		
AOC Funded Percentage:	0.00		

Page 2

**NOTIFICATION OF INTENT TO FINANCE
AND APPLICATION FOR DEBT APPROVAL**

Form # SLDO-1
Revised 1/1/2011

Section C - Note (Loan) Information/Documentation

Purpose - Briefly explain the documented need that necessitates this note (loan) and the public purpose it is intended to address. (Attach additional information if necessary):

Proceeds of proposed loan will be used to finance the construction of approximately 10,400 feet of water main and the replacement of an antiquated pumping station. A more detailed description is contained in the attachment.

Pledge of Taxes/Description:

None

Pledge of Revenue/Description:

Water District revenues from sales of water have been pledged.

Pledge of Project Revenues (Attach documentation which substantiates the revenue projections):

See Attachment.

Have bids been sought by the local governments to determine the financial and programmatic competitiveness of the note (loan) proposal? Yes No

If No, explain what steps were taken to ensure adequate competition.

Kentucky Infrastructure Authority is an agency of the Commonwealth of Kentucky. Its purposed is to provide low interest loans to governmental entities to make infrastructure improvements. Interest rates on proposed loan are lower than those from private entities.

Required Attachments

1. Certification from local government attesting to the ability to meet additional financial commitments necessitated by the note and statement as to taxes and revenues to be collected during the term of the note.

Section D - Lease Information/Documentation

Describe the real or personal property to be acquired or constructed:

Not applicable

Type of Lease : General Obligation Revenue

Is Lease Annually Renewable? Yes No

Does Agency seek approval without a hearing? Yes No Justification: Revenue Refunding

If yes, must attach certification from counsel regarding county obligation.

Does this lease refund a prior lease? Yes No

If yes, please state the name, date and principal amount of original issue(s) being refunded:

Required Attachments (If lease requires SLDO approval)

1. Minutes from the local public hearing
2. Affidavit of publication of SLDO hearing (if hearing is required) and newspaper advertisement tear sheet
3. Copy of lease
4. Executed copy of ordinance/resolution of fiscal court authorizing the lease
5. Certification from local government attesting to the ability to meet additional financial commitments necessitated by the lease and statement as to taxes and revenues to be collected during the term of the lease.

Page 3

**NOTIFICATION OF INTENT TO FINANCE
AND APPLICATION FOR DEBT APPROVAL**

Form # SLDO-1
Revised 1/1/2011

Section E - Bond Information/Documentation

Please provide all relevant information. Fields in **bold** are mandatory

Describe the purpose of the bond:

Not applicable.

Bond Counsel:

Counsel Address:

Financial Advisor:

Advisor Address:

Bond Series:

Call Date:

Does this bond refund a prior bond? Yes No

If yes, please state the name, date and principal amount of original issue(s) being refunded:


Required Attachments (If SLDO Approval is Required)

1. Minutes from the local public hearing
2. Affidavit of publication of SLDO hearing and newspaper advertisement tear sheet
3. Executed copy of ordinance/resolution of fiscal court authorizing financial plan for the issuance of the bonds
4. Proposed plan of financing
5. Preliminary official statement (if applicable)
6. Sources and uses table

Additional Required Attachments for KRS Chapter 103 Bonds

1. Documentation in an appropriate form substantiating the project's eligibility under KRS 103.2101(1)(a)-(e).
2. If the project requires approval of the reduction in property taxes, attach any documentation provided to agency responsible for approval.

By signing below, the Authorized Official certifies that the foregoing is true and accurate to the best of his or her knowledge.

Name (please print) ^{JOHN} James S. Davis	Date: 10/15/2018
Title: Chairman, Board of Commissioners	Signature: 

Mail to:
Department for Local Government
Attn: State Local Debt Officer
1024 Capital Center Drive, Suite 340
Frankfort, KY 40601

Fax to: 502-573-3712



Board Meeting Booklet
for
October 27, 2016

Kentucky Infrastructure Authority
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601-3646
502-573-0260
502-573-0157 fax
<http://kia.ky.gov>



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AGENDA

KENTUCKY INFRASTRUCTURE AUTHORITY
FULL BOARD MEETING
1024 CAPITAL CENTER DRIVE, SUITE 340
October 27, 2016 – 1:00 p.m.

Call to Order:

Chair Sandra Dunahoo

- Confirmation of Press Notice
- Confirmation of Quorum
- Recognition of Members/Guests

I. BUSINESS (Board Action Required)

A. Minutes

- | | | |
|---|----------------------|---|
| 1. Consideration of Approval of the Minutes of the Kentucky Infrastructure Authority Regular Board Meeting of September 1, 2016
<i>(Attachment I.A.1.)</i> | Chair Sandra Dunahoo | 7 |
|---|----------------------|---|

B. New Projects / Action Items

- | | | |
|--|---|----|
| 1. Resolution and Order of the Board of Directors Authorizing an Amendment to a Fund A loan (A15-077) increasing the amount to \$3,472,921 to the Mountain Water District, Pike County, Kentucky (SX21195699)
<i>(Attachment I.B.1.)</i> | Mr. Jory Becker, DOW
Ms. Jami Johnson, KIA | 17 |
| 2. Resolution and Order of the Board of Directors for Approval of a Fund A loan (A17-010) in the amount of \$1,404,000 to the City of Winchester, Clark County, Kentucky (SX21049028)
<i>(Attachment I.B.2.)</i> | Mr. Jory Becker, DOW
Ms. Brandi Norton, KIA | 33 |
| 3. Resolution and Order of the Board of Directors for Approval of a Fund A loan (A17-011) in the amount of \$4,000,000 to the City of Maysville, Mason County, Kentucky (SX21161025)
<i>(Attachment I.B.3.)</i> | Mr. Jory Becker, DOW
Ms. Debbie Landrum, KIA | 45 |
| 4. Resolution and Order of the Board of Directors for Approval of a Fund A loan (A17-015) in the amount of \$593,000 to the City of Jackson, Breathitt County, Kentucky (SX21025008)
<i>(Attachment I.B.4.)</i> | Mr. Jory Becker, DOW
Ms. Ashley Adams, KIA | 57 |
| 5. Resolution and Order of the Board of Directors for Approval of a Fund B loan (B17-007) in the amount of \$400,000 to the Northeast Woodford County Water District, Woodford County, Kentucky (WX21239032)
<i>(Attachment I.B.5.)</i> | Ms. Brandi Norton, KIA | 71 |
| 6. Resolution and Order of the Board of Directors for Approval of a Fund F loan (F17-007) in the amount of \$883,000 to the City of Olive Hill, Carter County, Kentucky (WX21043041)
<i>(Attachment I.B.6.)</i> | Mr. Jory Becker, DOW
Ms. Ashley Adams, KIA | 81 |

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7. Resolution and Order of the Board of Directors Authorizing and Approving the Issuance of Obligations of the Kentucky Infrastructure Authority to **Reimburse Capital Expenditures** made by Governmental Agencies Pursuant to Loans made by the Kentucky Infrastructure Authority to such Governmental Agencies
(Attachment I.B.7.)

Ms. Ashley Adams, KIA

95

II. STATUS REPORTS FOR FUNDS A, A2, B, B1, C, F, F2

101

III. ANNOUNCEMENTS/NOTIFICATIONS

1. Next KIA Board Meeting:
Tentatively set for Thursday, December 1, 2016
Kentucky Infrastructure Authority
1024 Capital Center Drive, Suite 340, Frankfort

IV. ADJOURN

Chair Sandra Dunahoo

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I.B.5.

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A RESOLUTION AND ORDER OF THE BOARD OF DIRECTORS OF THE KENTUCKY INFRASTRUCTURE AUTHORITY AUTHORIZING ISSUANCE OF A CONDITIONAL COMMITMENT FOR AN INFRASTRUCTURE REVOLVING FUND LOAN (B17-007) OF \$400,000 TO THE NORTHEAST WOODFORD COUNTY WATER DISTRICT, WOODFORD COUNTY, KENTUCKY

WHEREAS, the Kentucky Infrastructure Authority (the "Authority") has been duly created as a body corporate and politic constituting a public corporation and a governmental agency of the Commonwealth of Kentucky pursuant to Chapter 224A of the Kentucky Revised Statutes (the "Act"); and

WHEREAS, pursuant to the Act, the Authority is duly and legally authorized to make loans to Governmental Agencies for the purpose of providing funds for the construction and acquisition of sanitary sewer facilities, water facilities or other types of infrastructure, and in that regard, to enter into Assistance Agreements with such Governmental Agencies governing the provisions in respect of which such loans are to be made, the amounts thereof and the repayment provisions in respect thereto; and

WHEREAS, the Authority anticipates entering into an Assistance Agreement for a loan from the Authority's Infrastructure Revolving Loan Program with the Northeast Woodford County Water District, subject to final determination of amount when the factors involving such financing have been determined; and

WHEREAS, the Authority intends to utilize money in the Infrastructure Revolving Fund to make the loan to the governmental agency for the aforementioned purposes; and

WHEREAS, the Authority wishes to establish terms and conditions on said Infrastructure Revolving Fund loans.

NOW, THEREFORE, THE KENTUCKY INFRASTRUCTURE AUTHORITY, ACTING BY AND THROUGH ITS BOARD OF DIRECTORS AS ITS DULY AUTHORIZED AND EMPOWERED GOVERNING BODY, DOES HEREBY RESOLVE AND ORDER, AS FOLLOWS:

Section 1. All statements of fact set forth in the preambles to this Resolution and Order are incorporated herein by reference, the same as if set forth verbatim. All such statements of fact are hereby declared to be true and accurate in all material respects.

Section 2. The Authority hereby authorizes the issuance of a conditional Infrastructure Revolving Fund loan commitment for \$400,000 of project expense, to the Northeast Woodford County Water District for the Northeast Woodford County Improvement project. Such amounts are subject to adjustment by further action of the Authority or may be adjusted by action of the Authority staff based on adjustment in project costs of not more than (10%) ten percent of the project cost authorized by this

resolution. Upon satisfaction of all conditions of the commitment, execution of an assistance agreement for this loan is authorized.

Section 3. The loan shall be repayable in 20 years at an annual interest rate of 1.75%. In addition to debt service, a 0.2% annual administration fee on the unpaid, principal balance will be charged. From annual revenues, \$1,000 must be set aside in a borrower held replacement reserve each December 1 until the balance reaches \$20,000 and maintained for the life of the loan. These terms are subject to adjustment upon execution of the loan agreement, upon changes in the project conditions or determination that the project will require authority financing to be done on a taxable basis.

Section 4. This Resolution and Order shall be in full force and effect from and after its adoption at a properly held meeting of the Kentucky Infrastructure Authority this 27th day of October, 2016.

SANDRA K. DUNAHOO, CHAIR
KENTUCKY INFRASTRUCTURE AUTHORITY

ATTEST:

BRANDI M. NORTON, SECRETARY
KENTUCKY INFRASTRUCTURE AUTHORITY

REVIEWED BY:

DINSMORE & SHOHL, LLP, LEGAL COUNSEL TO THE
KENTUCKY INFRASTRUCTURE AUTHORITY

EXECUTIVE SUMMARY		Reviewer	Brandi Norton	
KENTUCKY INFRASTRUCTURE AUTHORITY		Date	October 27, 2016	
FUND B, INFRASTRUCTURE		KIA Loan Number	B17-007	
REVOLVING LOAN FUND		WRIS Number	WX21239032	
BORROWER	NORTHEAST WOODFORD COUNTY WATER DISTRICT WOODFORD COUNTY			
BRIEF DESCRIPTION				
This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.				
PROJECT FINANCING		PROJECT BUDGET		
Fund B Loan	\$400,000	RD Fee %	Actual %	
		Administrative Expenses		\$2,500
		Legal Expenses		5,000
		Planning		5,000
		Eng - Design / Const	11.1% 10.3%	33,750
		Eng - Insp	8.6% 8.1%	26,400
		Construction		300,000
		Contingency		27,350
TOTAL	\$400,000	TOTAL		\$400,000
REPAYMENT	Rate	1.75%	Est. Annual Payment	\$24,590
	Term	20 Years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	Warner Broughman & Associates		
	Bond Counsel	Dinsmore & Shohl, LLP		
PROJECT SCHEDULE	Bid Opening	Feb-17		
	Construction Start	Mar-17		
	Construction Stop	Sep-17		
DEBT PER CUSTOMER	Existing	\$371		
	Proposed	\$759		
OTHER DEBT	See Attached			
OTHER STATE-FUNDED PROJECTS LAST 5 YRS	See Attached			
RESIDENTIAL RATES		Users	Avg. Bill	
	Current	990	\$20.90 (for 4,000 gallons)	
	Additional	2		
REGIONAL COORDINATION	This project is consistent with regional planning recommendations.			
CASHFLOW	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2013	37,175	34,115	3,060	1.1
Audited 2014	65,986	34,483	31,503	1.9
Audited 2015	64,965	33,793	31,172	1.9
Projected 2016	61,584	22,551	39,033	2.7
Projected 2017	58,135	34,700	23,435	1.7
Projected 2018	73,617	58,485	15,132	1.3
Projected 2019	70,029	58,651	11,378	1.2
Projected 2020	66,369	58,760	7,609	1.1

Reviewer: Brandi Norton
 Date: October 27, 2016
 Loan Number: B17-007

**KENTUCKY INFRASTRUCTURE AUTHORITY
 INFRASTRUCTURE REVOLVING LOAN FUND (FUND "B")
 NORTHEAST WOODFORD COUNTY WATER DISTRICT, WOODFORD COUNTY
 PROJECT REVIEW
 WX21239032**

I. PROJECT DESCRIPTION

The Northeast Woodford County Water District is requesting a Fund “B” loan in the amount of \$400,000 for the Northeast Woodford County Improvement project. This project will replace a 35 year old aging booster pump station with a new booster pump station containing SCADA. This project also consists of a one mile waterline extension along Sugar Hill Road that will add an additional 2 customers as well as the replacement of 5,000 linear feet of water main along Old Frankfort Pike. This improvement will affect 50 underserved customers.

The Northeast Woodford County Water District serves approximately 983 homes within Woodford and Fayette counties. The District purchases approximately 124 million gallons of water annually from Versailles Municipal Water System and is subject to the Public Service Commission jurisdiction.

II. PROJECT BUDGET

	<u>Total</u>
Administrative Expenses	\$ 2,500
Legal Expenses	5,000
Planning	5,000
Engineering Fees - Design / Const	33,750
Engineering Fees - Inspection	26,400
Construction	300,000
Contingency	<u>27,350</u>
Total	\$ 400,000

III. PROJECT FUNDING

	<u>Amount</u>	<u>%</u>
Fund B Loan	\$ 400,000	100%
Total	\$ 400,000	100%

IV. KIA DEBT SERVICE

Construction Loan	\$	400,000
Interest Rate		1.75%
Loan Term (Years)		20
Estimated Annual Debt Service	\$	23,790
Administrative Fee (0.20%)		800
Total Estimated Annual Debt Service	\$	24,590

V. PROJECT SCHEDULE

Bid Opening	February 2017
Construction Start	March 2017
Construction Stop	September 2017

VI. RATE STRUCTURE

A. Customers

Customers	Current	Proposed	Total
Residential	985	2	987
Commercial	5	0	5
Industrial	0	0	0
Total	990	2	992

B. Rates

	Current	Prior
Date of Last Rate Increase	07/01/13	05/30/08
Minimum (2,000 Gallons)	\$12.66	\$12.50
Next 2,000 Gallons	4.12	4.04
Next 6,000 Gallons	3.83	3.75
Cost for 4,000 gallons	\$20.90	\$20.58
Increase %	1.6%	
Affordability Index (Rate/MHI)	0.5%	

VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2009-2013, the District's service area population was 2,277 with a Median Household Income (MHI) of \$53,315. The median household income for the Commonwealth is \$43,342. The project will qualify for a 1.75% interest rate as the district is a regional provider to customers within Fayette County.

Year	Population		Unemployment	
	County	% Change	Date	
1980	17,778		June 2004	4.1%
1990	19,955	12.2%	June 2009	8.8%
2000	23,208	16.3%	June 2015	6.0%
2010	24,939	7.5%	June 2016	3.6%
Current	25,151	0.9%		

VIII. FINANCIAL ANALYSIS

Financial information was obtained from the audited financial statements for the years ended December 31, 2013 through 2015. Amounts for 2016 are estimated. Percentage references in the History section below are based on whole dollar amounts and not the rounded amounts presented.

HISTORICAL

Revenues increased 17% from \$523,118 in 2013 to \$614,253 in 2015 due to a previously approved rate increase. Operating expenses increased 4% from \$162,324 to \$169,048 while purchased water costs increased 17% from \$327,714 to \$383,396 during the same period. The debt coverage ratio was 1.1, 1.9, and 1.9, respectively from 2013 through 2015. Debt service averaged of \$34,000 for same time period.

The balance sheet reflects a current ratio of 11.6, a debt to equity ratio of 0.2, and unrestricted cash equals 6.2 months of operating expenses.

PROJECTED

Projections are based on the following assumptions:

- 1) Water revenues reflect a \$20,000 or 3% rate increase in 2018 and will remain flat thereafter.
- 2) Expenses will increase 2% for inflation.
- 3) Debt service coverage is 1.3 in 2018 when full year principal and interest repayments begin.

Based on the proforma assumptions, the utility shows adequate cash flow to repay the KIA Fund B loan.

REPLACEMENT RESERVE

The annual replacement cost is \$1,000. This amount should be added to the replacement account each December 1 until the balance reaches \$20,000 and maintained for the life of the loan.

IX. DEBT OBLIGATIONS

	<u>Outstanding</u>	<u>Maturity</u>
Water Revenue Bonds 1995	\$ 367,000	2034
Total	\$ 367,000	

X. OTHER STATE OR FEDERAL FUNDING IN PAST FIVE YEARS

None.

XI. CONTACTS

Legal Applicant	
Entity Name	Northeast Woodford County Water District
Authorized Official	John Davis (Chairman)
County	Woodford
Email	n/a
Phone	(859) 873-7334
Address	225 South Main Street Versailles, KY 40383

Project Contact – Applicant & Administrator	
Name	Warner Broughman
Organization	Warner Broughman & Associates
Email	wabiii@prodigy.net
Phone	(859) 271-1778
Address	3161 Coster Dr Lexington, KY 40517

Consulting Engineer	
PE Name	Warner Broughman
Firm Name	Warner Broughman & Associates
Email	wabiii@prodigy.net
Phone	(859) 271-1778
Address	3161 Coster Dr Lexington, KY 40517

XII. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

**NORTHEAST WOODFORD COUNTY WATER DISTRICT (WATER)
FINANCIAL SUMMARY (DECEMBER YEAR END)**

	Audited	Audited	Audited	Projected	Projected	Projected	Projected	Projected
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Balance Sheet								
Assets								
Current Assets	730,620	772,986	848,757	872,740	896,175	912,807	924,185	931,794
Other Assets	1,830,289	1,752,424	1,642,965	1,584,567	1,901,950	1,820,333	1,727,716	1,635,099
Total	2,560,909	2,525,410	2,491,722	2,457,307	2,798,125	2,733,140	2,651,901	2,566,893
Liabilities & Equity								
Current Liabilities	69,224	60,461	73,911	75,272	76,661	78,077	79,521	80,995
Long Term Liabilities	391,000	379,000	367,000	367,000	1,153,000	1,139,000	1,124,000	1,108,000
Total Liabilities	460,224	439,461	440,911	442,272	1,229,661	1,217,077	1,203,521	1,188,995
Net Assets	2,100,685	2,085,949	2,050,811	2,015,035	1,568,464	1,516,063	1,448,380	1,377,898
Cash Flow								
Revenues	523,118	602,756	614,253	614,253	614,253	634,253	634,253	634,253
Operating Expenses	490,038	541,173	552,444	555,825	559,274	563,792	567,380	571,040
Other Income	4,095	4,403	3,156	3,156	3,156	3,156	3,156	3,156
Cash Flow Before Debt Service	37,175	65,986	64,965	61,584	58,135	73,617	70,029	66,369
Debt Service								
Existing Debt Service	34,115	34,483	33,793	22,551	34,700	33,895	34,061	34,170
Proposed KIA Loan	0	0	0	0	0	24,590	24,590	24,590
Total Debt Service	34,115	34,483	33,793	22,551	34,700	58,485	58,651	58,760
Cash Flow After Debt Service	3,060	31,503	31,172	39,033	23,435	15,132	11,378	7,609
Ratios								
Current Ratio	10.6	12.8	11.5	11.6	11.7	11.7	11.6	11.5
Debt to Equity	0.2	0.2	0.2	0.2	0.8	0.8	0.8	0.9
Days Sales in Accounts Receivable	32.0	25.0	28.0	28.0	28.0	28.0	28.0	28.0
Months Operating Expenses in Unrestricted Cash	3.9	4.5	5.4	6.2	6.6	6.9	7.1	7.2
Debt Coverage Ratio	1.1	1.9	1.9	2.7	1.7	1.3	1.2	1.1

EXHIBIT 19

**Detailed Estimate of Acquired Property Classified According
To The Uniform System of Accounts For
Class A/B Water Districts and Associations**

Account No.	Account Description	Estimate
304	Structures and Improvements	\$ 72,184
311	Pumping Equipment	\$ 47,527
331	Transmission and Distribution Mains	\$320,889
	TOTAL	\$440,600