

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

In the Matter of:

MAR 30 2012

PROPOSED REVISION OF RULES)
REGARDING THE PROVISION OF)
WHOLESALE WATER SERVICES BY THE)
CITY OF VERSAILLES TO NORTHEAST)
WOODFORD WATER DISTRICT)

PUBLIC SERVICE
COMMISSION

CASE NO. 2011-00419

NORTHEAST WOODFORD COUNTY WATER DISTRICT'S

RESPONSE TO STAFF'S REQUEST FOR INFORMATION

Now comes the Northeast Woodford County Water District, also known as Northeast Woodford Water District, by counsel, and submits its response to the Commission Staff's Request for Information

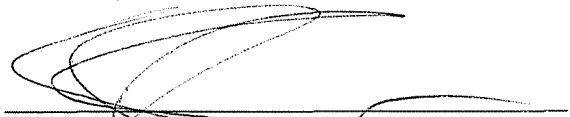
ATTORNEY FOR NORTHEAST WOODFORD
COUNTY WATER DISTRICT



JOSEPH M. HOFFMAN
Joseph M. Hoffman & Associates
100 United Drive, Suite 4B
Versailles, Kentucky 40383

CERTIFICATE OF SERVICE

It is hereby certified that true copies of the Northeast Woodford County Water District's Response to Staff's Request For Information has been served by hand delivery to: City of Versailles, 196 South Main St., Versailles, KY 40383 and to William K. Moore, City Attorney, 126 South Main Street, Versailles, KY 40383 on this 30th day of March, 2012.


JOSEPH M. HOFFMAN

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**


REQUEST NUMBER 1. Provide the minutes of each Northeast Woodford District Board of Commissioner's meeting held since January 1, 1999 in which Northeast Woodford District's water purchase contract with the city of Versailles is discussed.

RESPONSE: The meetings of the Northeast Woodford County Water District Board of Commissioners since January 1, 1999 at which the water purchase contract with the City of Versailles was discussed are as follows, copies of minutes of which are attached:

- a. Meeting held on March 23, 2004.
- b. Meeting held on October 5, 2010.
- c. Meeting held on November 2, 2010.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 1.a

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

March 23, 2004

Chairman Davis called a special meeting immediately following the annual meeting of the Northeast Woodford Water District to discuss the Frankfort connection status and the proposed take over of the District's operation by the City of Versailles. Chairman Davis, Secretary Shipp, Treasurer Moore, Manager Faust and Field Manager Gatewood attended the meeting.

There has been concern as to whether Versailles would be the sole provider of the District's water source. The Attorney for the District and the Public Service Commission advised Chairman Davis that the City did not have to be the sole provider of water for the District.

Chairman Davis told those present of the approval for the Frankfort Connection and that proceedings had been started to accomplish this task. Mr. Davis also stated that Frankfort would require a minimum purchase of 1,000,000 gallons of water per month. Chairman Davis will inform the City of Versailles of the board's decision to proceed with the Frankfort Connection.

The Public Service Commission informed Chairman Davis that customer approval is not required regarding the Versailles proposed take over of the Water District. The decision is to be made by the Commissioners. Attorney Hoffman stated that the Customers should be notified by the Commissioners of their decision to refuse the City's take over of the District's operations.

Chairman Davis announced that there would be no April meeting, and having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert W. Shipp,
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 1.b

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

October 5, 2010

The Northeast Woodford Water District met at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Field Director Gatewood, Engineer Broughman and Office Manager Faust attended the meeting.

Chairman Davis opened the meeting asking Mr. Faust to discuss the Stonewall account. Stonewall Farm has several meters in their name and all but one meter is involved in bankruptcy proceedings due to reorganization under bankruptcy. Stonewall Farm is still in operation and from the date of bankruptcy going forward the account will be treated as a normal account.

Mr. Faust also reported that a Lane's End Farm meter had been misread resulting in a \$491.59 refund.

Mr. Faust has received a letter from the City of Versailles requesting an amendment to the existing contract requiring a 12,000,000 gal monthly minimum purchase. After discussing the matter the Commissioners agreed to respond to the city's request by declining to enter into such an agreement. Chairman Davis will write the letter.

Mr. Broughman reported on the progress of the Woodlake Road extension. The water main has been completed across the Horn property and construction has started on the Jones property. The Project is on schedule.

Mr. Broughman has requested the first payment to Twin States Utilities, Inc. for \$53,843.28 for material for the Woodlake Road Project. The Commissioners approved.

Mr. Broughman announced a \$300,000.00 Grant from K.T.A. has been reprovved. Chairman Davis and Treasurer Moore will sign necessary paper work.

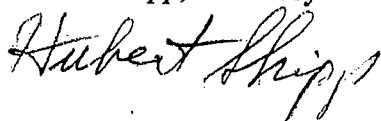
Mr. Gatewood discussed the method of operation and cost of the Census Meter Reading Apparatus. Treasurer Moore moved to approve the \$900.00 expenditure for the device and Secretary Shipp seconded and the motion passed.

Secretary Shipp advised those present that he would be out of town for the next 10 days.

Having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert Shipp, Secretary



NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 1.c

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

November 2, 2010

The Northeast Woodford Water District met at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Field Director Gatewood, Engineer Broughman, Office Manager Faust and customer Bryan Lister attended the meeting.

Chairman Davis introduced Mr. Lister who explained that water was coming out of the ground on the water line on his farm located on the Payne's Mill Road and he thought it was in the farm's plumbing system. When the leak was exposed by Mr. Lister it was in the District's main, not on the farm system property. The Commissioners unanimously agreed to cancel the \$608.16 repair bill sent to Mr. Lister and he was very appreciative and agreed to call the District first if future leaks occur.

Mr. Faust received a letter from the City of Versailles concerning the District's decision not to enter in a contract for minimum water purchase. Mr. Southworth advised Mr. Faust that he would pursue the matter further with the P.S.C.

Chairman Davis reminded those present that the Frankfort Water Board had indicated they wanted a 3,000,000 gal. minimum purchase. Secretary Shipp stated that initially Frankfort requested 1,000,000 gallons. After a lengthy discussion it was determined that the District should get the connection to Frankfort completed and operational before any firm action was taken.

The K.I.A. (Kentucky Infrastructure Administration) has approved a grant for \$65,286.90 to be applied to the Woodlake Road Project (Frankfort Connection). The funds will be requested by the District from the Woodford County Physical Court.

The Commissioners unanimously agreed not to allow Shelby Broadband to install an antenna on the Dogwood Drive tank.

The #1 pump station is having start-up problems on one pump. Mr. Gatewood has contacted Shafer Company and they will be on site 11/03/2010.

Engineer Broughman announced that the District's request for new meter connection fees has been approved and will be effective 10/2/10. He also presented two Grant Assistance Resolutions, one for \$300,000 for Radio Read Meters and one for \$60,000 for Spring Station Road extensions. Treasurer Moore moved to accept the Resolutions, Secretary Shipp seconded and the motion passed.

Mr. Faust announced November 9, 2010, as the date for Commissioners to review and approve bills.

Having no further business, the meeting was adjourned.

Hubert A. Shipp

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**


REQUEST NUMBER 2. Provide the minutes of each Northeast Woodford District Board of Commissioner's meeting in which Northeast Woodford District's water purchase contract with Frankfort Electric and Water Plant Board ("FEWPB") is discussed.

RESPONSE: The meetings of the Northeast Woodford County Water District Board of Commissioners at which the water purchase contract with FEWPB was discussed are as follows, copies of minutes of which are attached:

- a. Meeting held on June 10, 2003.
- b. Meeting held on August 5, 2003.
- c. Meeting held on September 2, 2003.
- d. Meeting held on March 23, 2004.
- e. Meeting held on August 3, 2004.
- f. Meeting held on September 7, 2004.
- g. Meeting held on November 2, 2004.
- h. Meeting held on December 7, 2004.
- i. Meeting held on January 5, 2005.
- j. Meeting held on February 1, 2005.
- k. Meeting held on January 4, 2011.
- l. Meeting held on February 1, 2011.
- m. Meeting held on March 1, 2011.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.a

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky 40383

June 10, 2003

The Northeast Woodford Water District met June 10, 2003, 10:00 A.M., at the District Office at 225 South Main Street, Versailles, Kentucky. Chairman John Davis, Treasurer Sam Hedden, Secretary Hubert Shipp, District Engineer Sandy Broughman and Office Manager Fred Faust attended the meeting.

Mr. Faust advised the members that construction, testing, and purification of the Redd Road Project was complete and that customers had started to be connected.

Mr. Faust also told the Commissioners that one new customer had an over payment of \$50.00 and the board unanimously agreed to refund the customer the excessive payment.

Mr. Broughman reported that the final cost of the Redd Road Extension Project would be under budget. He will finalize the actual cost of the project and figure refunds accordingly.

Mr. Broughman advised the Commissioners that the contractor had requested a payment of \$7,791.02 for work performed on the Redd Road Project. This request was inline with regular prior payments and approved by the Commissioners.

Mr. Gatewood reported an excessive amount of chlorine had been detected in the Paynes Mill Road line, resulting in several damage claims by customers due to clothes damage. The District agreed to reimburse customers claims and recoup the cost from the retained construction money.

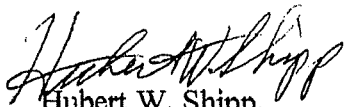
Mr. Davis told those present that the K.I.A. has agreed to \$150,000.00 for the Frankfort Connection. The District is waiting to hear from the Frankfort Water Board as to routes to be considered and potential cost. Any money remaining from this project can be used toward a Sugar Hill main installation.

Chairman Davis also advised the Board that the Vulnerability Assessment report will be due June 30, 2004, and the best method to compile the report will be determined.

According to Mr. Faust, the city of Versailles has requested the District to notify them (City) of all new connections to water mains that will effect the sewer facilities. Mr. Faust suggested supplying the City of new requests from our District that fall in this category on a monthly basis. The District will turn the water on for these new requests only after being notified by the City of their satisfaction.

With no further business to discuss, the meeting was adjourned.

Respectfully Submitted,


Hubert W. Shipp,
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.b

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

August 5, 2003

The Northeast Woodford Water District met August 5, 2003, at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Treasurer Hedden, Secretary Shipp, District Engineer Broughman, Field Manager Gatewood and Office Manager Faust attended the meeting.

Mr. Faust advised those present that he had received no acknowledgement of correspondence to a former customer regarding a \$64.00 final bill. The Commissioners unanimously agreed to allow the customer an additional 30 days, then file with the Small Claims Court if payment was not made.

Mr. Davis briefly reviewed the P.S.C.'s report on the Districts operation. One area in question was the lack of a file on P.S.C. written reports. Mr. Faust explained that there was a file on record but the senior office clerk was absent at the time of the P.S.C. review.

Mr. Faust reported an incident involving a customer that claimed to have paid her bill in cash but could not produce a cash receipt. No record of a cash payment was found. It was agreed by the Board to allow the customer until next bill's due date to make payment. Failure to comply would result in denying water service.

The Vulnerability Assessment Report was briefly discussed. There are two possible sources for compiling the report. The Bluegrass Area Development Association, (a fee will be charged for their service), and the Kentucky Rural Water Association, (no charge). The District decided to let the Kentucky Rural Water Association compile the report and Mr. Gatewood will coordinate.

Mr. Broughman presented the Commissioners with the Frankfort Water Board's proposal for furnishing the District a second water source. (See attachment to the minutes). Mr. Broughman will counter with a proposal with the District building the line or providing the material and Frankfort Water Board building the line. Follow up action is required.

Mr. Faust has had several customer complaints about nonlegible printing of bills. The Commissioners authorized Mr. Faust to purchase a new printer at a cost of approximately \$1500.00.

Having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert W. Shipp

Attachment of
8/5/03 minutes

FRANKFORT CONNECTION

KIA Grant Money--WX21239002--Tobacco Settlement \$150,000.

Frankfort Plant Board--PE Herbie Bannister 7/31/03

Plant Board wants to install 12 inch main

Preliminary cost estimate--Plant Board to pay 25% of labor

Total Cost \$513,831.00 for 10,270 LF of 12" includes meter (4 inch)

Less 112,113.00 upgrade 8" to 12"

401,718.00 + VAULT @ Backflow device

Frankfort Rates---PE Herbie Bannister 5/28/03

9% increase in next 2 yrs.

10% increase in next 4 years

Current wholesale rate \$1.40

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.c

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

September 2, 2003

The Northeast Woodford Water District met September 2, 2003, at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Treasurer Hedden, Secretary Shipp, District Engineer Broughman and Office Manager Faust attended.

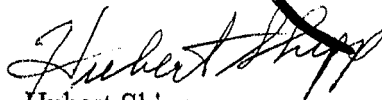
A brief discussion on changing regular meetings from the first Tuesday to the second Tuesday of each month resulted in Chairman Davis recommending the meeting continue on the first Tuesday of the month. The remaining two commissioners agreed. The regular monthly meeting will continue to be held at 10:00 A.M. on the first Tuesday of each month.

Mr. Broughman advised the Commissioners that he had tabulated a sample bid for the Frankfort Connection based on a similar project recently bid in Shelby County. The tabulation resulted in a 40% less cost

Mr. Broughman will inform the Frankfort Water Board of this tabulation in hopes of obtaining a more favorable bid from them. Mr. Broughman will also propose an alternate route for approval. The overall project will be discussed with the Frankfort Water Board for their consideration.

With no further business to discuss, the meeting was adjourned.

Respectfully Submitted,


Hubert Shipp,
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.d

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

March 23, 2004

Chairman Davis called a special meeting immediately following the annual meeting of the Northeast Woodford Water District to discuss the Frankfort connection status and the proposed take over of the District's operation by the City of Versailles. Chairman Davis, Secretary Shipp, Treasurer Moore, Manager Faust and Field Manager Gatewood attended the meeting.

There has been concern as to whether Versailles would be the sole provider of the District's water source. The Attorney for the District and the Public Service Commission advised Chairman Davis that the City did not have to be the sole provider of water for the District.

Chairman Davis told those present of the approval for the Frankfort Connection and that proceedings had been started to accomplish this task. Mr. Davis also stated that Frankfort would require a minimum purchase of 1,000,000 gallons of water per month. Chairman Davis will inform the City of Versailles of the board's decision to proceed with the Frankfort Connection.

The Public Service Commission informed Chairman Davis that customer approval is not required regarding the Versailles proposed take over of the Water District. The decision is to be made by the Commissioners. Attorney Hoffman stated that the Customers should be notified by the Commissioners of their decision to refuse the City's take over of the District's operations.

Chairman Davis announced that there would be no April meeting, and having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert W. Shipp,
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.e

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky 40383

August 3, 2004

A meeting of the Northeast Woodford Water District was held August 3, 2004, at 10:00 A.M. at the District Office at 225 South Main Street. In attendance was Chairman Davis, Secretary Shipp, Treasurer Moore, Engineer Broughman, Field Director Gatewood and Office Manager Faust.

Chairman Davis reported on the annual inspection of the District's operation by the P.S.C and no deficiencies were found.

The P.S.C. approved the pass through rate increase as a result of the City of Versailles request for increased water rates.

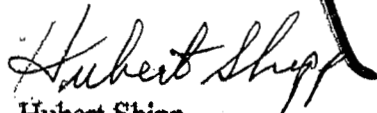
Mr. Gatewood discussed the use of Uninterrupted Power Source for protection from lightning strikes. After a brief discussion it was decided that Mr. Gatewood would investigate the situation further and advise the Commissioners at the next meeting.

Mr. Faust reported that 58 customers are using the Electronic Fund Transfer method.

Mr. Broughman has written the Frankfort Water Board formally requesting connection to the Frankfort System and a meter so that installation can start by the end of this year.

Having no further business, the meeting was adjourned.

Respectfully Submitted



Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.f

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky 40383

September 7, 2004

The Northeast Woodford Water District met September 7, 2004, 10:00 A.M., at the District Office located at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Field Director Gatewood, Engineer Broughman and Office Manager Faust attended.

Chairman Davis opened the meeting with an update on the Frankfort Connection Project.

The District wants the connection to be made at 421 and Woodlake intersection. The Frankfort Water Board wants the connection at Woodlake and I 64. Frankfort will advise if they will be willing to connect at 421 and Woodlake. If the connection with Frankfort is made at 421 and Woodlake or I64 and Woodlake, the District's service boundaries will need to be amended to include the additional area. Attorney Hoffman will prepare the presentation for submittal to the Woodford Fiscal Court for approval.

Another item to be rectified is minimum usage. Frankfort wants a 3,000,000 gal. minimum while the District wants a 1,000,000 gal. minimum. Chairman Davis and Mr. Broughman will schedule a meeting with Frankfort to discuss these topics.

Mr. Bruce Hundley notified the District of his desire to make a drive way entrance for his farm onto Old Frankfort Pike. Mr. Gatewood has met with Mr. Hundley and explained that the water main at the desired location for the driveway would have to be lowered and Mr. Hundley agreed to the estimated cost of \$4900.00. Mr. Gatewood will proceed with the project.

Mr. Broughman informed the Commissioners that any legal or engineering fees for the Frankfort Project should be paid from the Maintenance and Operations Account and that the account should be reimbursed when construction funds become available.

Chairman Davis announced that a Water Seminar would be conducted December 9th and 10th. The three Commissioners will attend.

The meeting was adjourned.

Respectfully Submitted,

Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.g

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

November 2, 2004

The Northeast Woodford Water District met November 2, 2004, at 225 South Main Street, at 10:00 A.M. Chairman Davis, Secretary Shipp, Treasurer Moore, Engineer Broughman and Field Director Gatewood attended.

Chairman Davis advised those present that Mr. Hoffman had not presented the request to extend the District's boundary along Woodlake Road to 421 as previously reported. Mr. Broughman will follow-up with Mr. Hoffman on the extension request.

Mr. Broughman has been in contact with the Frankfort Water Board and reported that Frankfort is working on a contract for the Northeast Woodford Water District.

Mr. Gatewood told the Commissioners that the cost for installing cutoff valves on the Hundley driveway project was \$2097.00 instead of \$2500 as previously projected.

The District continues to have a problem with Woodstock Farm regarding the location of the meter. The District will maintain its effort to locate the meter in an equally approved Area.

The District has received a bid from Liquid Engineering of \$2895.00 for cleaning both tanks. The cost includes removal of up to 3 yards of sledge from each tank. No immediate action has been scheduled at this time.

Having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.h

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

December 7, 2004

The Northeast Woodford Water District held a meeting December 7, 2004, at 10:00 A.M., at the regional office, 225 South Main Street, Versailles, Kentucky.

Chairman Davis, Secretary Shipp, Engineer Broughman, Field Director Gatewood and Office Manager Faust attended the meeting.

Chairman Davis opened the meeting with a discussion on the Frankfort Connection. The Frankfort Water Board insists on building the line to the I64 location on Woodlake Road instead of the 421 location. Therefore, the request to extend the District's boundary to 421 has been shelved pending a final solution on the connection point.

Mr. Broughman discussed the U.K. Farm and main residence situation. The U.K. Farm system has provided the main residence with water and a prior agreement between U.K. and the previous owner included water for two residences on U.S. 60. U.K. has asked if the District is interested in serving the three customers. No decision was reached since we are waiting for the final decision from U.K.

No final conclusion has been reached on the Woodstock Farm Meter location. The Farms owner has been unavailable. Mr. Gatewood will continue efforts to resolve the issue.

Having no further business, the meeting was adjourned.

Sincerely Submitted,

Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.i

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

January 4, 2005

The Northeast Woodford Water District met January 4, 2005, at 10:00 A.M, at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Engineer Broughman and Office Manager Faust attended the meeting.

Mr. Faust opened the meeting with a discussion concerning a customer complaint about a reconnect fee. The customer provided copies of the envelope post marked one day after cut off date. She requested refund of the \$75.00 reconnect fee. After some consideration, the Commissioners unanimously agreed to refund the reconnect charge. Mr. Faust also requested and received approval from the Commissioners to send a copy of the P.S.C. required annual report to the District's auditors.

Chairman Davis discussed the meeting that he and Mr. Broughman had with the Frankfort Water Board. Frankfort has decided to build the water line from 421 to I64 at a cost of \$13.00 a foot. Should the District receive a bid of less than \$13.00 a foot for building the line from Old Frankfort Pike to I64, then the District would credit Frankfort for the difference. Mr. Broughman and Mr. Hoffman will proceed with securing easements.

The District has received no additional information from U.K. concerning the three customers effected by the sale of the Mansion on the U.K. Experiment Farm.

Mr. Gatewood stated that he has been unable to contact the owner of the Woodstock Farm but will continue to secure an acceptable meter location.

Having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.j

Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

February 1, 2005

The Northeast Woodford Water District met February 1, 2005, at 10:00 A.M. at the District Office located at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Treasurer Moore, Secretary Shipp, Engineer Broughman and Field Director Gatewood attended the meeting.

Mr. Davis opened the meeting with a discussion of the Frankfort Project, addressing the letter he had written to the Frankfort Water Board (see attached letter.) The Commissioners agreed to proceed with the construction as outlined in the attached letter.

Mr. Gatewood requested a \$.15 increase per meter to offset higher gasoline cost and other business expense. The Commissioners unanimously agreed.

Mr. Gatewood reported that the meter location for Woodstock Farm seems to be in agreement by both parties.

Mr. Davis advised those present that an attempt to collect a final bill payment of \$62.20 had failed and the Commissioners agreed to absorb the cost and make no further collection effort.

The annual meeting was set for March 28, 2005, at 7:00 P.M. at the District's office. Since the annual meeting is so close to the date of the April meeting, the regular meeting for April has been waived.

Commissioner Shipp pointed out that there was no charge for a meter in the Preliminary Estimate for the Frankfort Project #3, for 2005. Mr. Broughman advised that the Frankfort Water Board would furnish the meter and installation, however, the District would furnish the meter box and this cost had not been included in the estimate. Mr. Broughman will amend the Preliminary Estimate to include the meter box.

Having no further business, the meeting was adjourned.

Respectfully Submitted,

Hubert Shipp
Secretary

NORTHEAST WOODFORD WATER DISTRICT
225A SOUTH MAIN STREET
VERSAILLES, KENTUCKY 40383

February 1, 2005

Warner Caines, Manager
Frankfort Electric and Water Plant Board
Frankfort, Kentucky 40601

Dear Mr. Caines:

The Northeast Woodford Water District has reviewed the proposed water project for connection to your system at Woodlake Road. The District wishes to proceed with the project within the budget previously discussed. We propose to divide the project into two separate phases. The first phase will consist of the construction of the water line from the end of our line along Spring Station and Woodlake road to the Interstate. The second phase of the project will consist of the construction of a pump station and connection to your system.

Please proceed with the planning of this vital connection so that we may complete the project when funds become available. Give me a call if you need additional information.

Yours truly,

John S. Davis
Chairman

cc: Broughman & Associates

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.k

1

The Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

January 4, 2011

The Northeast Woodford Water District met at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Field Director Gatewood, Engineer Broughman and Office Manager Faust attended the meeting.

Chairman Davis opened the meeting with a discussion on the progress and installation of the radio read meters. Mr. Gatewood also addressed the concerns of Commissioner Shipp of not having a paper copy of the meter readings for the first experience with the new method. Mr. Gatewood stated that a hard copy of readings would be available in 20 minutes after start of transferring reading data from field unit to the office computers. To insure no loss of data during the initial process, both meter books and auto read will be used.

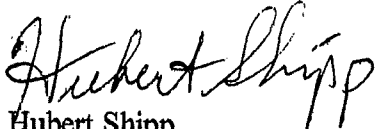
Mr. Gatewood is having a problem with a water control transducer at the #2 tank. He has been unable to identify the source but continues to monitor the situation. No major problem is anticipated. He also requested a \$.20 increase in base pay per meter because of higher cost of gasoline and other expenses. Commissioners unanimously approved.

Mr. Broughman reviewed the water supply agreement from the Electric and Water Plant Board of the City of Frankfort. A decision was made to send a copy of the agreement to the P.S.C. and Attorney Joe Hoffman for their opinion. The Commissioners will discuss the finding of the PSC and Atty. Hoffman at the February 2011 meeting and possibly accept the agreement.

Mr. Broughman reported that easements for the Spring Station water main have been signed, but the CSX Railroad has not sent approval for the bore.

Mr. Broughman also requested a check in the amount of \$1,950.00 be made to CSX Railroad for a second bore on Spring Station Road at the Blackburn Farm. Unanimous approval was made for payment.

Respectfully Submitted,



Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.1

The Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

February 1, 2011

The Northeast Woodford Water District met at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Field Director Gatewood, Engineer Broughman and Office Manager Faust attended the meeting.

The meeting was opened by Chairman Davis with a discussion on the new radio-read meters. According to Mr. Gatewood, 178 radio-read meters have been installed. However, the provider of the software to support the radio-read meters has not been installed, causing the Stonegate Subdivision customer's bills to be estimated. Mr. Faust anticipates higher than normal complaints regarding high bills.

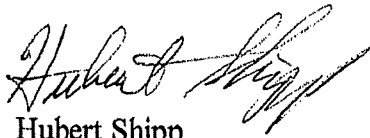
Chairman Davis discussed the status of the "Water Supply Agreement" submitted by the Electric and Water Plant Board of the City of Frankfort, Ky. Of concern to Atty. Hoffman and Mr. Gatewood is the 400 gal per minute flow rate proposed by the Water Plant Board. Mr. Gatewood would prefer a 500 gal. per minute flow rate. Another concern of the Districts is the 3,000,000 gal minimum per month. Even though the minimum usage is computed on an annual basis the District would rather have a 1,000,000 gal. minimum per month. Chairman Davis, Engineer Broughman and Atty. Hoffman will discuss changes in the Water Purchase Agreement before submitting to the Frankfort Water Plant Board.

Mr. Broughman announced that bids for painting storage tank #1 are set for March 1, 2011.

The C.P.A. firm of Ray, Foley, Hensley PLLC has submitted a bid of \$5,900 for the audit of the District for year ending 12/10/2010. Secretary Shipp moved to accept the bid, Treasurer Moore seconded and the motion passed.

Having no further business, the meeting was adjourned.

Respectfully Submitted,



Hubert Shipp
Secretary

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 2.m

The Northeast Woodford Water District
225 South Main Street
Versailles, Kentucky

March 1, 2011

The Northeast Woodford Water District met at 10:00 A.M. at 225 South Main Street, Versailles, Kentucky. Chairman Davis, Secretary Shipp, Treasurer Moore, Field Director Gatewood, Engineer Broughman, Office Manager Faust and Mr. Florentino Morlote attended the meeting.

Chairman Davis introduced Mr. Florentino Morlote with Blue Zoome Wi Fi, a high speed internet provider. Mr. Morlote made his proposal to install antenna equipment on top of the District's #2 storage tank. Mr. Morlote also presented a letter from the Lake Village Water Association along with a certificate of liability insurance and a claims record from the Kentucky Workers Compensation Fund with no claims reported.

After listening to Mr. Morlote's proposal and a brief discussion, the Commissioners of the Northeast Woodford Water District choose not to allow Blue Zoom Wi Fi access to its storage tank facility. Security, integrity of the water system, E.P.A. and Homeland Security requirements are reasons why the District has not permitted the installation of equipment on its storage facilities.

The Commissioners set March 29th as date for its annual meeting. Time and place will be 7:00 P.M. at the District's office at 225 South Main Street. Mr. Faust was granted approval to publish and pay for the information in the Woodford Sun as required by law.

The District had two months of estimated bills due to weather related causes. Heavy snow being cleared from streets in the subdivision caused meters to be covered. This happened at the same time the radio read software was being installed which meant the estimation was compiled using two different software packages. When customers started complaining about high water bills it was discovered that an error in estimation had taken place. The disgruntled customers were advised that their bills would be adjusted and late charges would be waived.

Mr. Broughman reviewed the Water Supply Agreement submitted by the Frankfort Water Plant Board. The agreement had previously been sent to the P.S.C. for their comments. The suggestions in Mr. Gerald Wuetcher, Executive Advisor to the General Counsel Division of the P.S.C., have been incorporated in the Water Purchase Agreement. (See attached letter to Mr. Warner A. Broughman III dated February 21, 2011)

Upon acceptance of the amended Water Purchase Agreement or subsequent amended agreement by the Frankfort Water Plant Board, Chairman John S. Davis is authorized by the Commissioners of the Northeast Woodford Water District to sign the Agreement.


Mr. Broughtman advised that the bids for the #1 tank painting had not been completed but should be finished by March 29, 2011.

There has been no reply from C.S.X. regarding Rail Road Bore at Spring Station Crossing.

March 9, 2011 is the date to review bills.

Having no further business, the meeting was adjourned.

Respectfully Submitted


Hubert Shipp
Secretary



Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460
psc.ky.gov

David L. Armstrong
Chairman

James W. Gardner
Vice Chairman

Charles R. Borders
Commissioner

February 21, 2011

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

Re: Northeast Woodford Water District

Dear Mr. Broughman:

I acknowledge receipt of your letter of January 10, 2011, regarding Northeast Woodford Water District's proposed contract with the Frankfort Electric and Water Plant Board. I apologize for the delay in responding.

Based upon my review of the proposed agreement, I make the following comments:

- When submitting the contract to the Public Service Commission, Northeast Woodford Water District should describe how the minimum contract amount was determined and the effect, if any, on the water district's current purchases from the City of Versailles, and include any studies on water district usage.
- When the Disinfection Byproducts Stage 2 Rule becomes fully effective, Northeast Woodford Water District will be responsible complying with the Rule's requirements. While the proposed contract requires the Frankfort Electric and Water Plant Board to deliver water in compliance with Division of Water and U.S Environment Protection Agency requirements at the point-of-delivery, has Northeast Woodford Water District considered the need for more stringent requirements to ensure that the purchase water after entered the water district's system will remain within DOW and EPA standards until withdrawn by the water district's customers?

Mr. Warner A. Broughman III
February 21, 2011
Page 2

- The contract does not provide for testing of metering equipment upon Northeast Woodford Water District's request.
- Paragraph 4 refers to "historical usage." Do the parties have a definite time period that would serve as the basis for determining historical usage? As it presently exists, the term could lead to disputes.
- Are the AWWA standards for meter accuracy the same or greater than those of the Public Service Commission? If they are not, the provision may result in inquiries from the Commission when the proposed contract is submitted for Commission review.
- While the contract is presently subject to Public Service Commission review, judicial or legislative action could result in a return to the regulatory environment that existed before 1994. In such event, the contract's provisions may limit Northeast Woodford Water District's ability to challenge any proposed rate adjustment. Moreover, the reference to "operation and maintenance expenses" does not consider the reasonableness of those expenses. The water district may wish to consider tying any of the specified components to the actual cost of serving the water district (e.g., "depreciation expenses related to facilities that are necessary to provide wholesale service"). Paragraph 5 does not address the allocation of costs between retail and wholesale customers.
- The contract does not contain any provisions related to notice of a proposed adjustment in rates. The water district may wish to consider requesting such provision to ensure adequate time to adjust its retail rates to reflect such adjustments.
- The contract does not address access to Frankfort Electric and Water Plant Board records. The water district may wish to consider requesting such provision to enable it to verify proposed rate adjustments through its own efforts.

Please note that the above comments represent only my review of the proposed contract and do not necessarily represent the views of the Public Service Commission or any other official or employee of the Public Service Commission.

Mr. Warner A. Broughman III
February 21, 2011
Page 3

If you have any questions regarding this letter, I may be contacted at (502) 564-3940, Extension 259, or gerald.wuetcher@ky.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Gerald E. Wuetcher". The signature is stylized with a large, sweeping initial "G" and a long horizontal stroke at the end.

Gerald E. Wuetcher
Executive Advisor

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**


REQUEST NUMBER 3. State the cost of:

- a. "Regional Interconnection to Frankfort Water System" project;
- b. "Regional Interconnections with Frankfort (Phase II) With a Tap On fee, Booster Pump Station and Extension Along Spring Station Road."

RESPONSE: The above project titles were used for the purpose of obtaining grants through the Kentucky Infrastructure Authority (KIA). However the actual construction has been administered as a single project. Thus there is not a separate accounting for each of the projects as listed above but only a single accounting for one project combining both of the above. The total cost of the combined project to date is \$493,152. The pump station portion of the combined project has not been completed. It is anticipated that this will be completed in late spring or early summer of 2012.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 4. Describe how Northeast Woodford District financed the cost of each project listed in Item 3.

RESPONSE: Financing for the combined project has been accomplished, and will be completed, solely with grant funds through the Kentucky Infrastructure Authority (KIA). The total grant funds of \$517,135.00 are as follows:

- a. "Regional Interconnection to Frankfort Water System" - \$150,000.00;
- b. "Regional Interconnections with Frankfort (Phase II) With a Tap On fee, Booster Pump Station and Extension Along Spring Station Road" - \$300,000.00.
- c. In addition KIA approved the reassignment of a grant in the amount of \$67,135.00 previously awarded the Water District through KIA for a different project (the "Northeast Woodford Water District-Distribution System Extension" project, also known as the "Sugar Hill Road Extension" project) for use in the Regional Interconnection to Frankfort Water System project.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry. Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

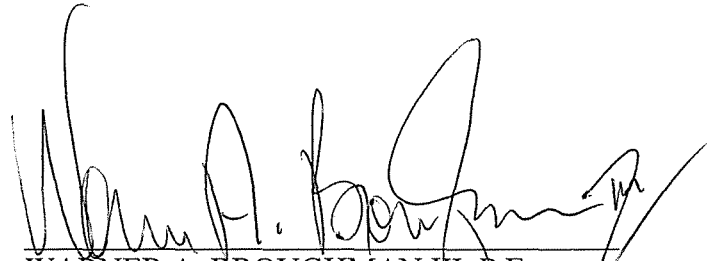
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 5. Provide the preliminary and final engineering reports, if any, on each project listed in Item 3.

RESPONSE: Preliminary and final engineering reports were not done on either project.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

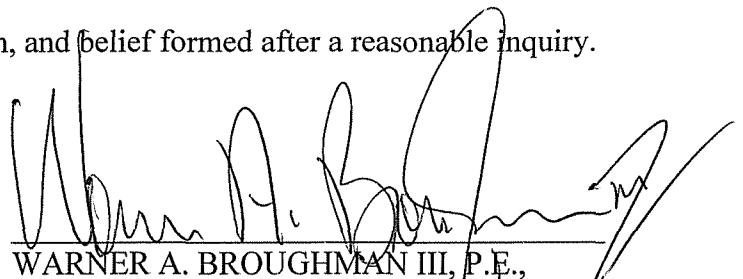
REQUEST NUMBER 6. Provide the plans and specifications for each project listed in Item 3.

RESPONSE: The following plans and specifications, copies of which are attached, are the plans and specifications for the projects listed in Item 3:

- a. Specifications and Contract Documents for Frankfort Connection, Northeast Woodford Water District, Versailles, Kentucky, May, 2010.
- b. Northeast Woodford Water District, Frankfort Connection, Pipelines & Appurtenances, October, 2006.
- c. Northeast Woodford Water District, Versailles, Kentucky, Woodlake Road Booster Pump Station, February, 2012.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 6.a

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

f o r

F R A N K F O R T
C O N N E C T I O N

N O R T H E A S T W O O D F O R D W A T E R D I S T R I C T
V E R S A I L L E S , K E N T U C K Y

M a y , 2 0 1 0

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

**NORTHEAST WOODFORD WATER DISTRICT
VERSAILLES, KENTUCKY**

COMMISSIONERS

John Steele Davis, Chairman

Hubert Shipp, Secretary

Larry Moore, Treasurer

ADMINISTRATIVE MANAGER

Fred Faust

FIELD MANAGER

Dale Gatewood

© by Warner A. Broughman III & Associates May 24, 2010

Warner A. Broughman III & Associates reserves all rights. No reproduction in whole or part of shall be made without the express written consent of Warner A. Broughman III & Associates.

TABLE OF CONTENTS

ADVERTISEMENT FOR BIDS ----- A - 1

INFORMATION FOR BIDDERS----- B - 1

GENERAL CONDITIONS ----- C - 1

GENERAL SPECIFICATIONS----- G - 1

DETAILED SPECIFICATIONS ----- M - 1

BASIS OF MEASUREMENT AND PAYMENT ----- N - 1

BID ----- P - 1

BID BOND ----- Q - 1

NOTICE OF AWARD----- R - 1

AGREEMENT ----- S - 1

PAYMENT BOND ----- T - 1

PERFORMANCE BOND ----- U - 1

NOTICE TO PROCEED ----- V - 1

CHANGE ORDER----- Z - 1

ADVERTISEMENT FOR BIDS

NORTHEAST WOODFORD WATER DISTRICT
225-A South Main Street
Versailles, KY 40383

Separate sealed BIDS for the construction of the **FRANKFORT CONNECTION** consisting of approximately **9,500** LINEAR FEET OF 8-INCH PVC WATER LINES, **2,600** LINEAR FEET OF 6-INCH PVC WATER LINES, GATE VALVES, TAPPING VALVES, **70** LF RAILROAD BORE (16" STEEL CASING), **50** LF STREAM CROSSING, FIRE HYDRANTS AND BORES, together with all appurtenances thereof, will be received by **NORTHEAST WOODFORD WATER DISTRICT** at the **ENGINEER'S OFFICE, 3161 Custer Drive, SUITE 6, Lexington, KY 40517** until **11 A.M., May 28, 2010** 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
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 \$50.00 for each set.

INFORMATION FOR BIDDERS

BIDS will be received by **NORTHEAST WOODFORD WATER DISTRICT** (herein called the "OWNER"), at the **ENGINEER'S OFFICE**, 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, 3161 Custer Dr. Ste. 6, Lexington, KY 40517**. Each sealed envelope containing a BID must be plainly marked on the outside as **BID FOR FRANKFORT CONNECTION** 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.

WAB III - Information for Bidders

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.

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.

WAB III - Information for Bidders

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 entities 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.

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:

WAB III - General Specifications

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

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.

WAB III - General Specifications

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

WAB III - General Specifications

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.

WAB III - General Specifications

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.

WAB III - General Specifications

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

WAB III - General Specifications

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.

Upon approval of the ENGINEER, the CONTRACTOR may backfill the lower portion of the trench with crushed stone, fine gravel, sand or dust. Material for backfill in lieu of tamping in this portion of the trench is not a separate pay item.

6.3.2 Middle Portion of Trench

The middle portion of the trench, from a point 12 inches above the top of the pipe to a point 6 inches below the grade line, shall be backfilled with material free from rock and/or acceptable to the ENGINEER. This material shall be placed and compacted in layers of approximately 6 inches. Water (puddling) may be used as required to obtain maximum compaction. Tamping or compaction of backfill in this portion of the trench is a separate pay item unless stated otherwise hereinafter.

Upon approval of the ENGINEER, the CONTRACTOR may backfill the middle portion of the trench with crushed stone, fine gravel, sand or dust in lieu of materials that require compaction.

6.3.3 Upper Portion of Trench

The upper portion of the trench shall be temporarily backfilled and maintained with crushed stone or gravel until such time as the sidewalk is constructed or the driveway surface is restored. Backfill for the upper portion of the trench is a separate pay item unless stated otherwise hereinafter.

6.4 STREETS, ROADS AND PAVED DRIVEWAYS

Backfilling of pipeline trenches under streets, roads and paved driveways shall be accomplished in the following manner:

6.4.1 Lower Portion of Trench

The lower portion of the trench, from the pipe bedding to a point ten (10) inches below the bottom of the pavement or concrete sub-slab, shall be backfilled with crushed stone, fine gravel, sand or dust. Backfill for the lower portion of the trench is a separate pay item unless stated otherwise hereinafter.

6.4.2 Upper Portion of Trench

The upper portion of trench, from a point ten (10) inches below the bottom of the pavement or concrete sub-slab up to grade, shall be backfilled with a base course of dense graded aggregate. At such time that pavement replacement is accomplished, the excess base course shall be removed as required. Material for backfilling the upper portion of the trench is a separate pay item unless stated otherwise hereinafter.

WAB III - General Specifications

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.

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

WAB III - General Specifications

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.

WAB III - General Specifications

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

WAB III - General Specifications

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.

DETAILED SPECIFICATIONS TABLE OF CONTENTS

1. SCOPE AND SPECIAL PROVISIONS	1
1.1 SCOPE OF WORK	1
1.1.1 <i>General Location</i>	1
1.1.1.1 <i>Specific Location</i>	1
1.2 DESIGNATION OF PARTIES	1
1.2.1 "OWNER"	1
1.2.2 "ENGINEER"	1
1.3 GOVERNING SPECIFICATIONS	1
1.4 CONTRACTOR'S DRAWINGS AND SPECIFICATIONS	1
1.4.1 <i>DRAWINGS On Site</i>	1
1.4.2 <i>DRAWINGS/SPECIFICATIONS Discrepancy</i>	1
1.4.3 <i>DRAWINGS/SPECIFICATIONS Omissions</i>	2
1.5 UTILITIES REQUIRED BY CONTRACTOR	2
1.6 TRAFFIC	2
1.7 FENCES	2
1.8 EXECUTION AND COORDINATION OF THE WORK	2
1.8.1 <i>Shutdowns</i>	2
1.9 SITE VIDEOTAPING	3
2. WATER MAINS AND APPURTENANCES	3
2.1 PIPE AND FITTINGS	3
2.2 TRACER WIRE	3
2.3 GATE VALVES AND BOXES	3
2.3.1 <i>Valve Operators</i>	3
2.3.2 <i>Gate Valve Installation</i>	3
2.4 BLOWOFF VALVE AND BOX	4
2.4.1 <i>Valve Boxes</i>	4
2.4.2 <i>Operating Key</i>	4
2.5 FIRE HYDRANT AND VALVE	4
2.5.1 <i>Fire Hydrant</i>	4
2.5.2 <i>Valve</i>	4
2.6 STREET CROSSINGS	4
2.6.1 <i>Steel Casing Pipe: Bored</i>	5
2.7 DRIVEWAY CROSSING: BORED	5
2.8 STREAM CROSSING	5
2.9 RAILROAD CROSSING	5
2.10 CONCRETE CRADLES, ANCHORS AND ENCASEMENT	5
2.11 BITUMINOUS REPLACEMENT (USE FOR DRIVEWAYS)	5
2.12 CRUSHED STONE	6
2.13 OBSTRUCTIONS	6
2.14 EXCAVATION CLASS	6

1. SCOPE AND SPECIAL PROVISIONS

1.1 SCOPE OF WORK

The WORK to be accomplished under these SPECIFICATIONS consists of approximately 2,600 linear feet of 6-inch water mains and 9,500 linear feet of 8-inch water mains, 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 Woodlake Road (Kentucky 1885).

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.

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, Lexington, Kentucky.

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.

1.4.2 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.

All personnel working within the right-of-way limits of state or federal highways shall wear high visibility Class 2 or Class 3 retroreflective safety apparel that meets ANSI/ISEA 107-2004 Standards. Class 3 apparel is required after dark.

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 the VHS videotape of the entire project. This videotape 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 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, 5% tin, 5% lead, 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.

2.4.2 Operating Key

One operating key shall be provided to the OWNER for the future operating of the valves. The key shall be of sufficient length to operate the deepest stationary rod installed on the PROJECT. The key and wrenches shall be delivered to the ENGINEER before the final inspection.

2.5 FIRE HYDRANT AND VALVE

The CONTRACTOR shall furnish and install the fire hydrant assemblies consisting of a hydrant, valve, box, tee, and all appurtenances thereof.

2.5.1 Fire Hydrant

Fire hydrants shall conform in all respects to the current standards of the AWWA. They shall have a 6-inch inlet and be equipped with two 2-1/2-inch hose nozzles; and one 4-1/2-inch steamer nozzle shall be standard to ASTM requirements. Inlet valve shall be at least 5-1/4-inches in diameter. The hydrants shall be set plumb with not less than two (2) cubic feet of crushed stone and backed with at least a cubic foot of class C concrete or equivalent. The hydrant shall be restrained with grip rings as manufactured by Romac Industries, Inc., or approved equal. Each hydrant shall be equipped with a hydrant wrench and a traffic damage repair kit. The hydrants shall be Mueller Improved type, Cat. No. A-24015; or approved equal.

2.5.2 Valve

The valves for the hydrants shall conform to the Detailed Specification "GATE VALVES AND BOXES" listed above.

2.6 STREET CROSSINGS

Steel cover pipe for street crossings shall conform to Paragraph 1.4 of the GENERAL SPECIFICATIONS.

2.6.1 Steel Casing Pipe: Bored

Where designated on the DRAWINGS the streets will be bored and the steel cover pipe and service line sleeves shall be installed 42-inches below the finished grade. The cover pipe shall be backfilled with granular material as shown on the DRAWINGS, inspected and tested and then the ends will be sealed in a manner acceptable to the ENGINEER. All work on State right-of-way shall be in accordance with State specifications and the KYDOT District Office shall be notified before beginning work.

2.7 DRIVEWAY CROSSING: Bored

Where designated on the DRAWINGS or directed by the ENGINEER the driveway 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.

2.8 STREAM CROSSING

Stream crossings shall be made where indicated on the DRAWINGS and shall be constructed in accordance with the details shown on the DRAWINGS.

2.9 RAILROAD CROSSING

The cover pipe for railroad crossings shall be bored or jacked into place a minimum of 5 feet 6 inches below the base of the railway rail. The thickness of the cover pipe shall be a minimum of 0.344-inch. The watermain carrier pipe shall be ductile iron class 50 for a minimum of 5 feet outside of the casing pipe. After the water main has been installed, inspected and tested, the ends of the cover pipe shall be sealed completely with concrete in a manner acceptable to the ENGINEER. All work on railroad property shall be in accordance with A.R.E.A. specifications and the area office of the Norfolk & Southern Railway will be notified before beginning work.

2.10 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.

2.11 BITUMINOUS REPLACEMENT (use for driveways)

Driveways shall be cut, removed and replaced without the installation of a concrete sub-slab. All other construction shall conform to the General Specifications and the Standard Details.

2.12 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.

2.13 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.

2.14 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.

BASIS OF MEASUREMENT AND PAYMENT TABLE OF CONTENTS

1. SCOPE	1
2. WATER MAINS AND APPURTENANCES	1
2.1 PIPE AND FITTINGS	1
2.2 TRACER WIRE	1
2.3 GATE VALVES AND BOXES	1
2.4 BLOWOFF VALVES AND BOXES	1
2.5 FIRE HYDRANT AND VALVES	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>Driveway Replacement</i>	2
2.8 STREAM CROSSING	2
2.9 RAILROAD CROSSING	2
2.9.1 <i>Bored Railroad</i>	2
2.10 CONCRETE FOR CRADLES, ANCHORS OR ENCASEMENT	2
2.11 CRUSHED STONE	2
2.12 ASPHALT	2
2.13 SITE VIDEOTAPING	3
3. 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 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.

2.5 FIRE HYDRANT AND VALVES

Payment for furnishing and installing fire hydrant assemblies which includes a hydrant, valve, box, tee, and all other appurtenances 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.

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 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.

2.8 STREAM CROSSING

Payment for furnishing and installing the water mains of the various sizes in stream crossings 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 (including furnishing and installing concrete encasement), laying, jointing, and backfilling all pipe and fittings in the stream crossings. The quantity of stream crossing to be paid for shall be the length of the completed stream crossing measured along the center line of the pipe.

2.9 RAILROAD CROSSING

2.9.1 Bored Railroad

The steel cover pipe required to be bored under railroad 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.

2.10 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.

2.11 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.

2.12 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.

2.13 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.

3. 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

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 **Frankfort Connection** 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 **one hundred twenty (120)** consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of **\$100.00** 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 WATER DISTRICT Frankfort Connection

Item No.	Description	Amount	Unit	Unit Price	Total Price
1.	6-inch PVC Pipe, Complete in Place	2,600	L.F.	\$ _____	\$ _____
2.	8-inch PVC Pipe, Complete in Place	9,500	L.F.	\$ _____	\$ _____
3.	6-inch Gate Valve & Box Complete in Place	2	EACH	\$ _____	\$ _____

BID SCHEDULE

**NORTHEAST WOODFORD WATER DISTRICT
Frankfort Connection**

Item No.	Description	Amount	Unit	Unit Price	Total Price
4.	8-inch Gate Valve & Box Complete in Place	6	EACH	\$_____	\$_____
5.	3" Blowoff and Box, Complete in Place	1	EACH	\$_____	\$_____
6.	4" Blowoff and Box, Complete in Place	1	EACH	\$_____	\$_____
7.	Fire Hydrant and Box, Complete in Place	2	EACH	\$_____	\$_____
8.	12" Steel Casing, Bored under Roadway, Complete in Place	30	L.F.	\$_____	\$_____
9.	16" Steel Casing, Bored under Roadway, Complete in Place	60	L.F.	\$_____	\$_____
10.	Driveway Freebore, Complete in Place	20	L.F.	\$_____	\$_____
11.	Railroad Bore, 16" Steel Casing Pipe, Complete in Place	70	L.F.	\$_____	\$_____
12.	Stream Crossing, Complete in Place	50	L.F.	\$_____	\$_____
13.	Bituminous Replacement for Driveways, Complete in Place	2	TN	\$_____	\$_____
14.	Class C Concrete, Complete in Place	15	C.Y.	\$_____	\$_____
15.	Crushed Stone, Complete in Place	300	TONS	\$_____	\$_____
16.	Site Videotaping, Delivered to Engineer Prior to Work	1	LUMP SUM	\$_____	\$_____

TOTAL BID \$_____

Respectfully submitted,

Type or Print Name and Title: _____

Signature: _____ Date: / /2010

Address: _____

ATTEST: _____

Employer ID Number: _____

Phone Number: _____

Fax Number: _____

Cellular Number: _____

E-Mail: _____

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 _____, 2010. The Conditions of the above obligation is such that whereas the Principal has submitted to _____ a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the **Frankfort Connection**.

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.

NOTICE OF AWARD

TO: _____

PROJECT Description: FRANKFORT CONNECTION

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for BIDS dated _____, 2010, 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 _____, 2010.

NORTHEAST WOODFORD WATER DISTRICT

By _____

Owner

Title **CHAIRMAN**

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this the ____ day of _____, 2010.

By _____

Contractor

Title _____

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2010, by and between **NORTHEAST WOODFORD WATER DISTRICT**, hereinafter called "OWNER" and _____ doing business as a _____ 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 **FRANKFORT CONNECTION**.
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 **120** 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
 - (P) DRAWINGS prepared by Warner A. Broughman III & Associates numbered Cover through W-2, and dated **OCTOBER, 2006**.
 - (Q) SPECIFICATIONS prepared or issued by Warner A. Broughman III & Associates dated **MAY, 2010**.
 - (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 (5) five 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: _____

AGREEMENT

THIS AGREEMENT, made this _____ day of AUGUST, 2010, by and between NORTHEAST WOODFORD WATER DISTRICT, hereinafter called "OWNER" and TWIN STATES UTILITIES & EXCAVATION, INC. doing business as a 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 FRANKFORT CONNECTION.
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 120 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 \$153,790.00, 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
 - (P) DRAWINGS prepared by Warner A. Broughman III & Associates numbered Cover through W-2, and dated OCTOBER, 2006.
 - (Q) SPECIFICATIONS prepared or issued by Warner A. Broughman III & Associates dated MAY, 2010.
 - (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 (5) five 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:

TWIN STATES UTILITIES & EXCAVATION, INC.

By: _____

Name: **JOE FINLEY**

Title: **PRESIDENT**

Address: **PO BOX 14**

MT. HERMON, KY 42157

(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 _____, 2010, a copy of which is hereto attached and made a part hereof for the construction of: **FRANKFORT CONNECTION**.

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 _____, 2010.

ATTEST:

(Principal) (Secretary if Corp.)

(SEAL)

By _____
(Principal)

(Address)

(Witness as to Principal)

(Address)

ATTEST:

(Surety)

By _____
(Attorney-in-Fact)

(Witness as to Surety)

(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 _____, 2010, a copy of which is hereto attached and made a part hereof for the construction of: **FRANKFORT CONNECTION**.

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 _____, 2010.

ATTEST:

(Principal) (Secretary if Corp.)

(SEAL)

(Witness as to Principal)

(Address)

(Principal)

By _____

(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: _____, 2010
Project: _____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2010, on or before _____, 2010, and you are to complete the WORK within 120 consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 2010.

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 _____, 2010.

By _____
Title _____

NOTICE TO PROCEED

To: TWIN STATES UTILITIES &
EXCAVATION, INC.

Date: AUGUST _____, 2010

PO BOX 14
MT.HERMON, KY 42157

Project: FRANKFORT CONNECTION

You are hereby notified to commence WORK in accordance with the Agreement dated August _____, 2010, on or before August _____, 2010, and you are to complete the WORK within 120 consecutive calendar days thereafter. The date of completion of all WORK is therefore December _____, 2010.

NORTHEAST WOODFORD WATER DISTRICT

Owner

By _____

Title **CHAIRMAN**

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by **JOE FINLEY**, this the _____ day of AUGUST, 2010.

**TWIN STATES UTILITIES & EXCAVATION,
INC.**

By _____

Title **PRESIDENT**

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):

GENERAL SPECIFICATIONS TABLE OF CONTENTS

1. MATERIALS FOR WATER PIPELINES	1
1.1 DUCTILE IRON PIPE AND FITTINGS	1
1.2 PLASTIC PIPE AND FITTINGS	1
1.3 COVER PIPE	2
1.4 GRANULAR MATERIALS	3
1.5 CONCRETE	3
2. TESTING OF MATERIALS	4
2.1 GENERAL	4
2.2 DUCTILE IRON PIPE AND FITTINGS	4
2.3 PLASTIC PIPE AND FITTINGS	4
2.4 COVER PIPE	5
3. EQUIPMENT	5
4. EXCAVATION	5
4.1 GENERAL	5
4.2 CLASSIFICATIONS OF EXCAVATION	6
4.3 LINES AND GRADES	6
4.4 CLEARING AND GRUBBING	6
4.5 TRENCH EXCAVATION	7
4.6 BLASTING	8
4.7 SHORING AND BRACING	8
4.8 DISPOSITION OF EXCAVATED MATERIAL	9
4.9 REMOVAL OF WATER	9
4.10 UNAUTHORIZED EXCAVATION	9
5. PIPE INSTALLATION	9
5.1 GENERAL	9
5.2 PIPE BEDDING	10
5.3 LAYING PIPE	10
5.4 JOINTING PIPE	11
5.5 PLACING CONCRETE	11
5.6 BORED OR JACKED CROSSINGS	11
5.7 INSPECTION	12
6. BACKFILLING	12
6.1 GENERAL	12
6.2 OPEN TERRAIN	12
6.3 SIDEWALKS AND UNPAVED DRIVEWAYS	12
6.4 STREETS, ROADS AND PAVED DRIVEWAYS	13
6.5 STREAMS & WETLANDS	14
6.6 SETTLEMENT OF TRENCHES	14
7. TESTING AND DISINFECTION	14
7.1 TESTING WATER MAINS	14
7.2 DISINFECTION OF WATER LINES	15
8. RESTORATION OF SURFACE	15
8.1 OPEN TERRAIN	15
8.2 BITUMINOUS REPLACEMENT	16
8.3 CONCRETE REPLACEMENT	17
8.4 CLEAN-UP	18

NORTHEAST WOODFORD COUNTY WATER DISTRICT

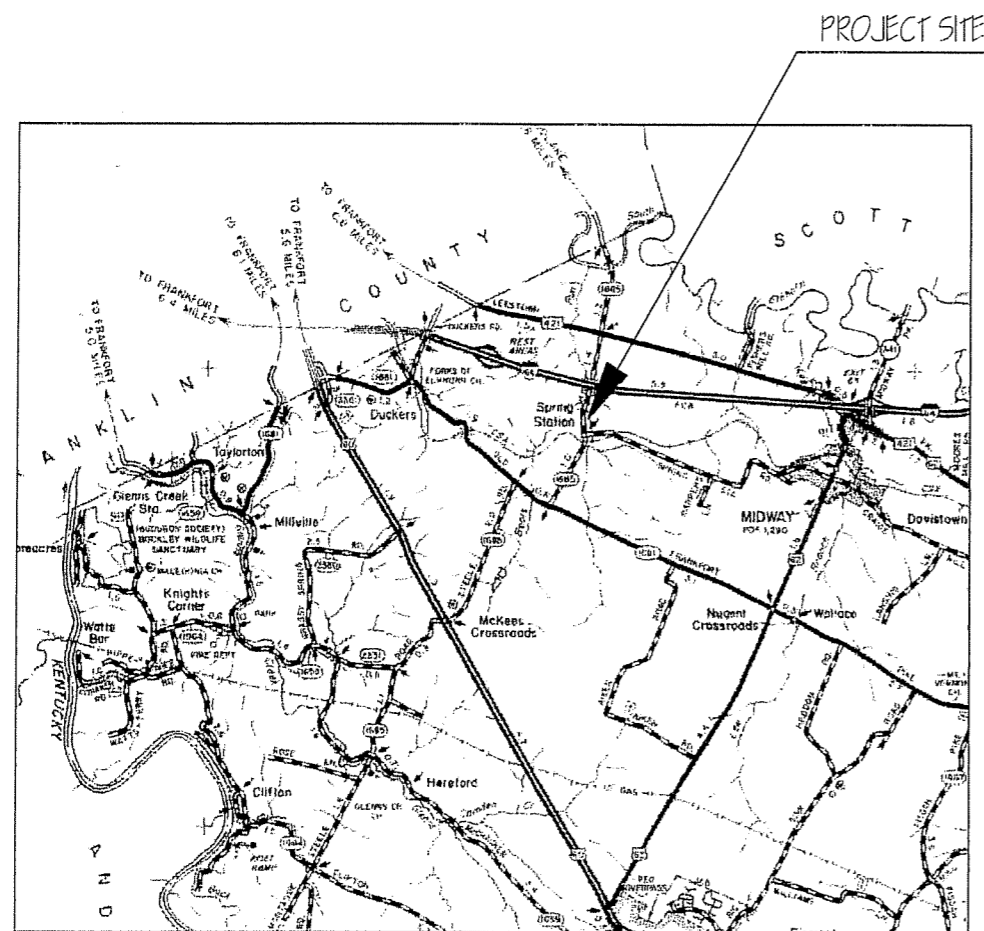
RESPONSE 6.b

INDEX OF SHEETS	
SHEET	DESCRIPTION
COVER	TITLE, INDEX, & VICINITY MAP
1	SPRING STATION ROAD
2	SPRING STATION ROAD
3	SPRING STATION ROAD
4	SPRING STATION ROAD @ WOOD LAKE ROAD
5	WOOD LAKE ROAD
6	WOOD LAKE ROAD @ INTERSTATE 64
W-1	DETAIL SHEET
W-2	DETAIL SHEET

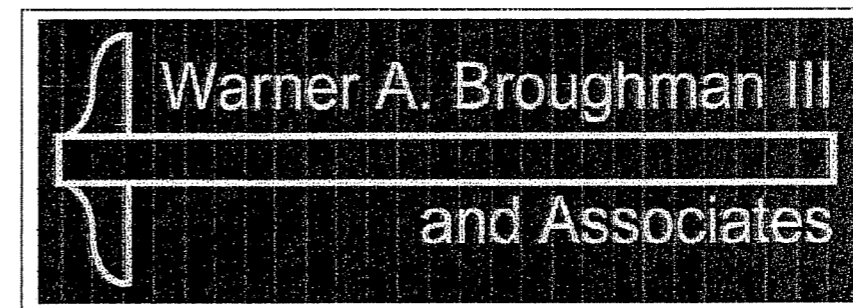
NORTHEAST WOODFORD WATER DISTRICT

FRANKFORT CONNECTION

PIPELINES & APPURTENCES
OCTOBER 2006



VICINITY MAP

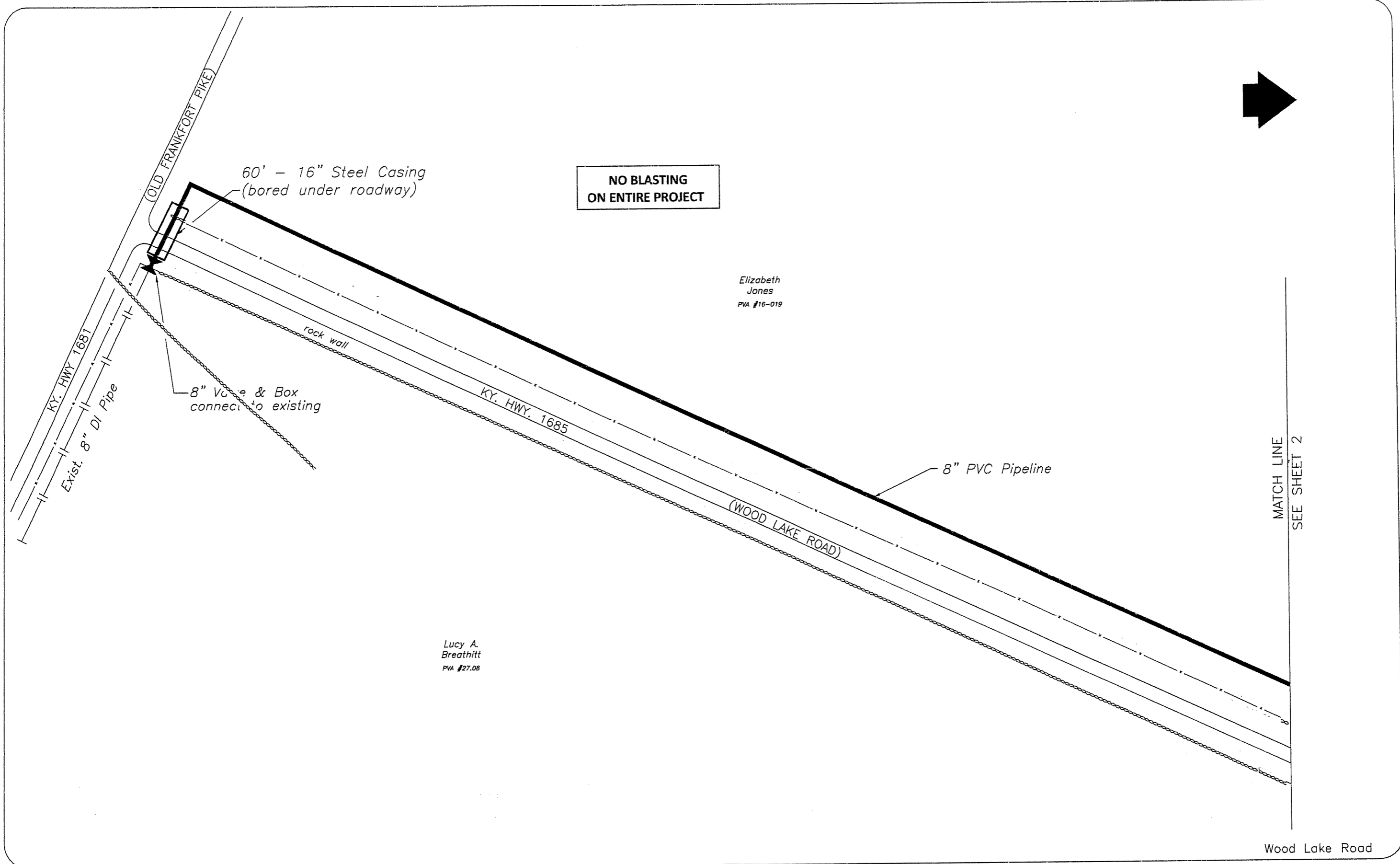


LEXINGTON

KENTUCKY

NO BLASTING
ON ENTIRE PROJECT

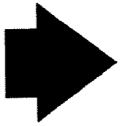
PROJECT NO. 03-05



**NO BLASTING
ON ENTIRE PROJECT**

Elizabeth
Jones
PVA #16-019

Lucy A.
Breathitt
PVA #27.08



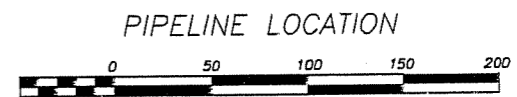
MATCH LINE
SEE SHEET 2

Wood Lake Road

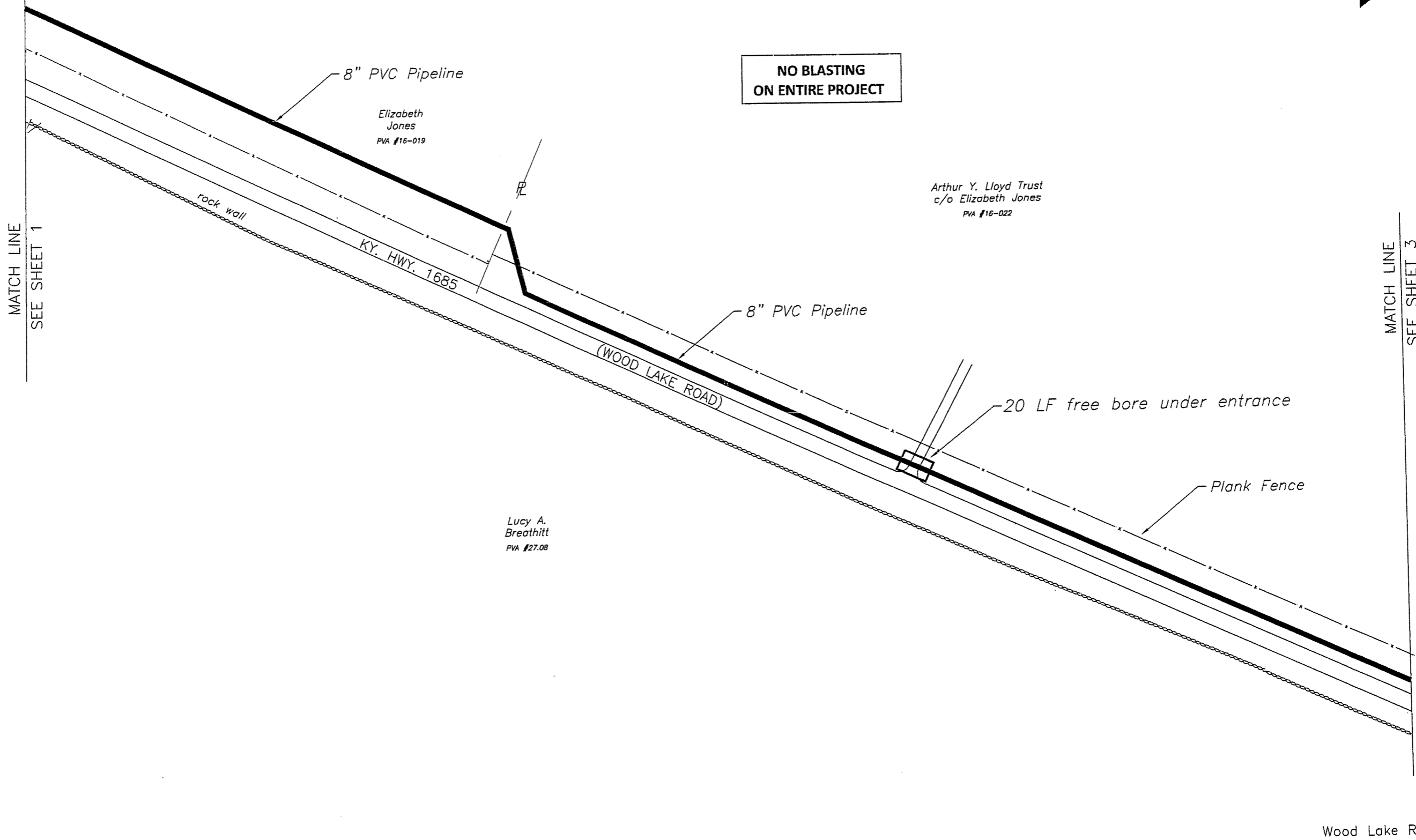
Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.
1



**NO BLASTING
ON ENTIRE PROJECT**

Elizabeth
Jones
PVA #16-019

Arthur Y. Lloyd Trust
c/o Elizabeth Jones
PVA #16-022

Lucy A.
Breathitt
PVA #27.08

MATCH LINE
SEE SHEET 1

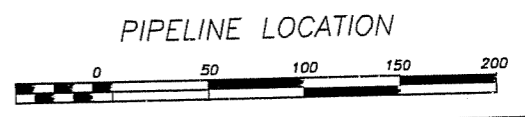
MATCH LINE
SEE SHEET 3

Wood Lake Road

Warner A. Broughman III
and Associates

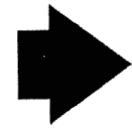
Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.

2



MATCH LINE
SEE SHEET 2

NO BLASTING
ON ENTIRE PROJECT

Arthur Y. Lloyd Trust
c/o Elizabeth Jones
PVA #16-022

rock wall

KY. HWY. 1685

8" PVC Pipeline

(WOOD LAKE ROAD)

Plank Fence

MATCH LINE SEE SHEET 4

Lucy A.
Breathitt
PVA #27.08

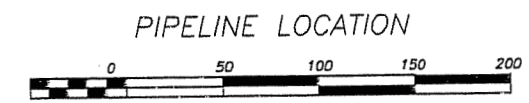
Wood Lake Road

Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT

Frankfort Connection

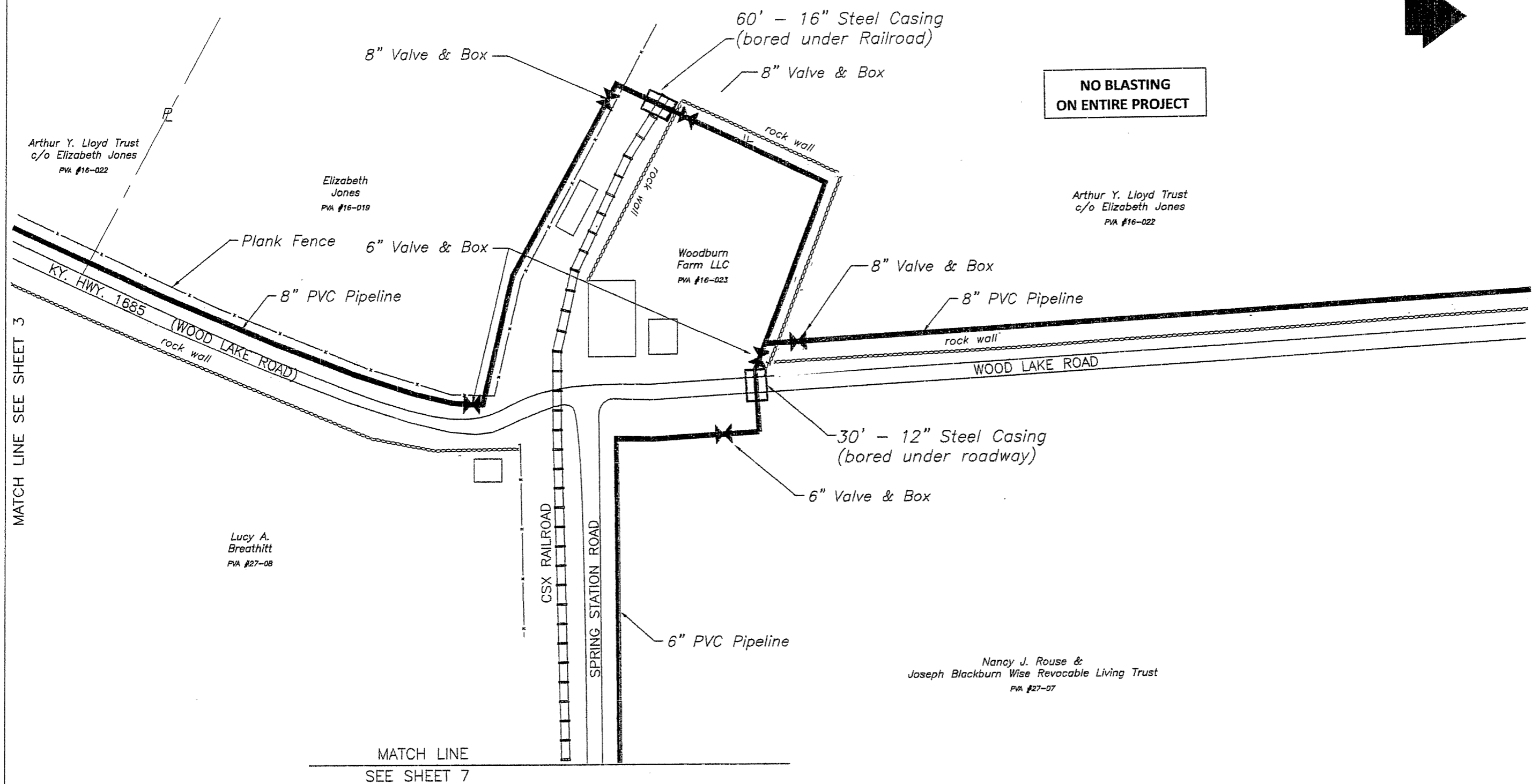


Sheet No.

3



**NO BLASTING
ON ENTIRE PROJECT**



MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 5

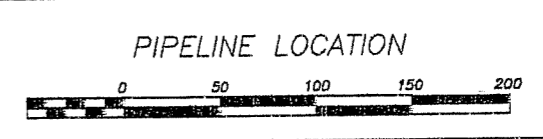
MATCH LINE
SEE SHEET 7

Wood Lake Road

Warner A. Broughman III
and Associates

Concept WAB
 Drawn BJC
 Checked _____
 File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.
4



NO BLASTING
ON ENTIRE PROJECT

BEALS RUN

SINK

50' Stream Crossing

Arthur Y. Lloyd Trust
c/o Elizabeth Jones
PVA #15-022

8" Valve & Box

Robert C. & Pamela Q.
Horn
PVA #16-024.01
P.O. Box 4465
Midway, KY 40347
Robin Horn
846-4200

8" PVC Pipeline

rock wall

WOOD LAKE ROAD

Dr. A.J. Alexander Estate
c/o Libby Jones
PVA #27-06

George F. & Grace Myers
Willmott
PVA #27-01

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 6

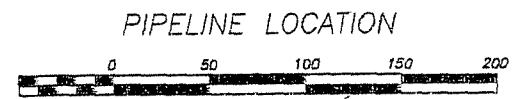
Wood Lake Road

Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT

Frankfort Connection



Sheet No.
5



Robert C. & Pamela Q.
Horn
PVA #16-024.01
P.O. Box 4465
Midway, KY 40347
Robin Horn
846-4200

Hornstead Farm, Inc.
c/o Cheryl Hippe
PVA #16-024

8" PVC Pipeline

4" Blowoff

FH

B

WOOD LAKE ROAD

INTERSTATE 64

WOOD LAKE ROAD

MATCH LINE SEE SHEET 5

George F. & Grace Myers
Willmott
PVA #27-01

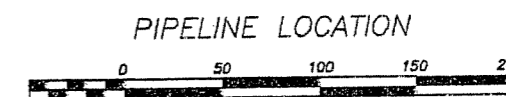
NO BLASTING
ON ENTIRE PROJECT

Wood Lake Road
@ Interstate 64

Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.

6



Nancy J. Rouse &
Joseph Blackburn Wise Revocable Living Trust
PVA #27-07

Michael t. & Gay N.
Barnett
PVA #27-07.01

PL

6" PVC Pipeline

SPRING STATION ROAD

CSX RAILROAD

MATCH LINE
SEE SHEET 4

MATCH LINE
SEE SHEET 8

Lucy A.
Breathitt
PVA #27-08

**NO BLASTING
ON ENTIRE PROJECT**

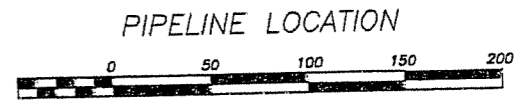
Spring Station Road

Warner A. Broughman III
and Associates

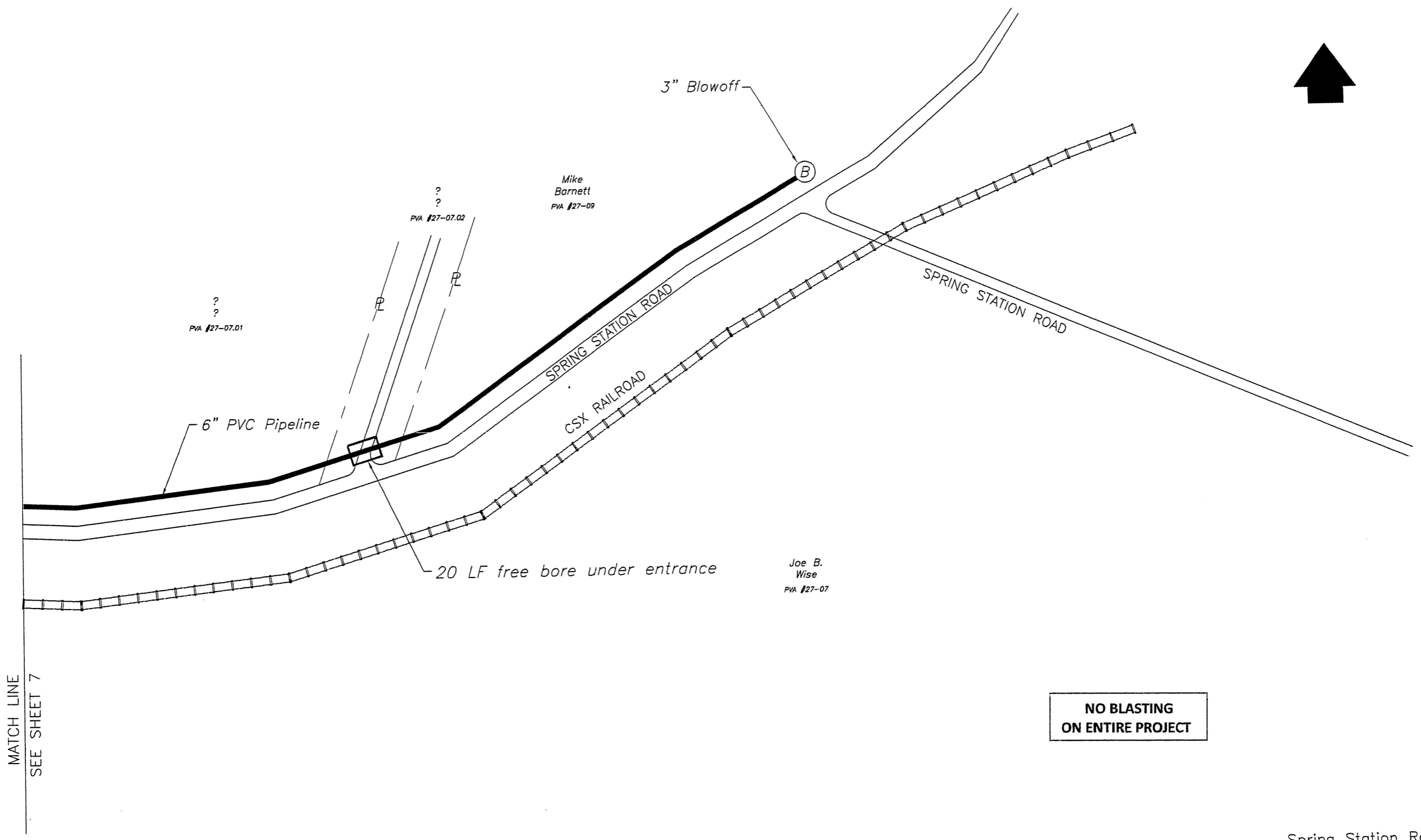
Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT

Frankfort Connection



Sheet No.
7



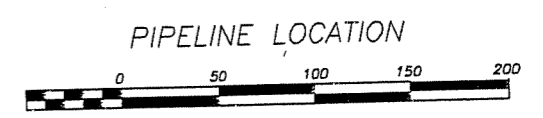
**NO BLASTING
ON ENTIRE PROJECT**

Spring Station Road

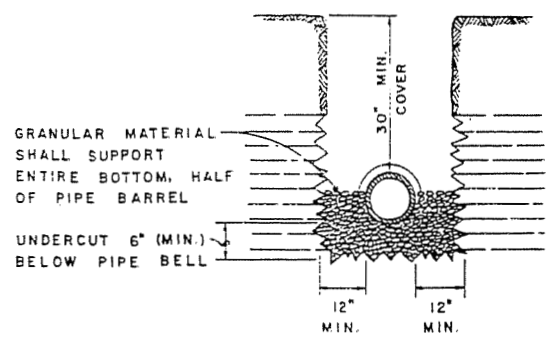
Warner A. Broughman III
and Associates

Concept WAB
 Drawn BJC
 Checked _____
 File 03-05

NE WOODFORD WATER DISTRICT
 Frankfort Connection



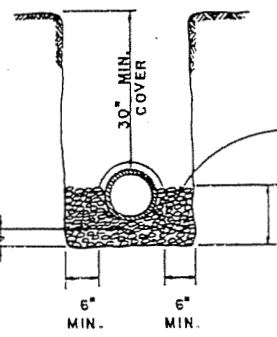
Sheet No.
8



ROCK CUT

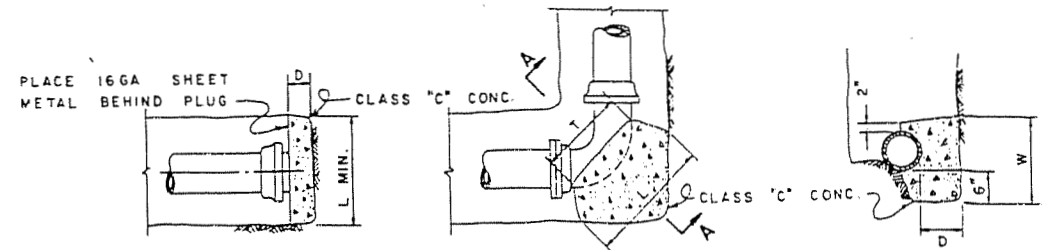
GRANULAR MATERIAL OF GRADED CRUSHED STONE, FINE GRAVEL OR SAND, APPROVED BY THE ENGINEER

UNDERCUT 4" (MIN.) BELOW BELLS



EARTH CUT

GRANULAR MATERIAL SHALL SUPPORT ENTIRE BOTTOM HALF OF PIPE BARREL



PLUGS PLAN VIEW

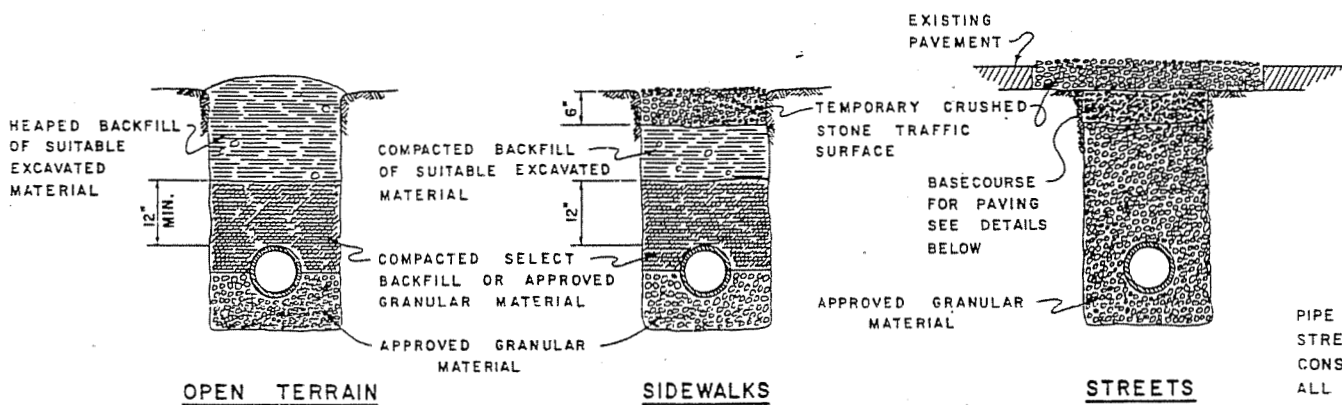
BENDS PLAN VIEW

SECTION A-A

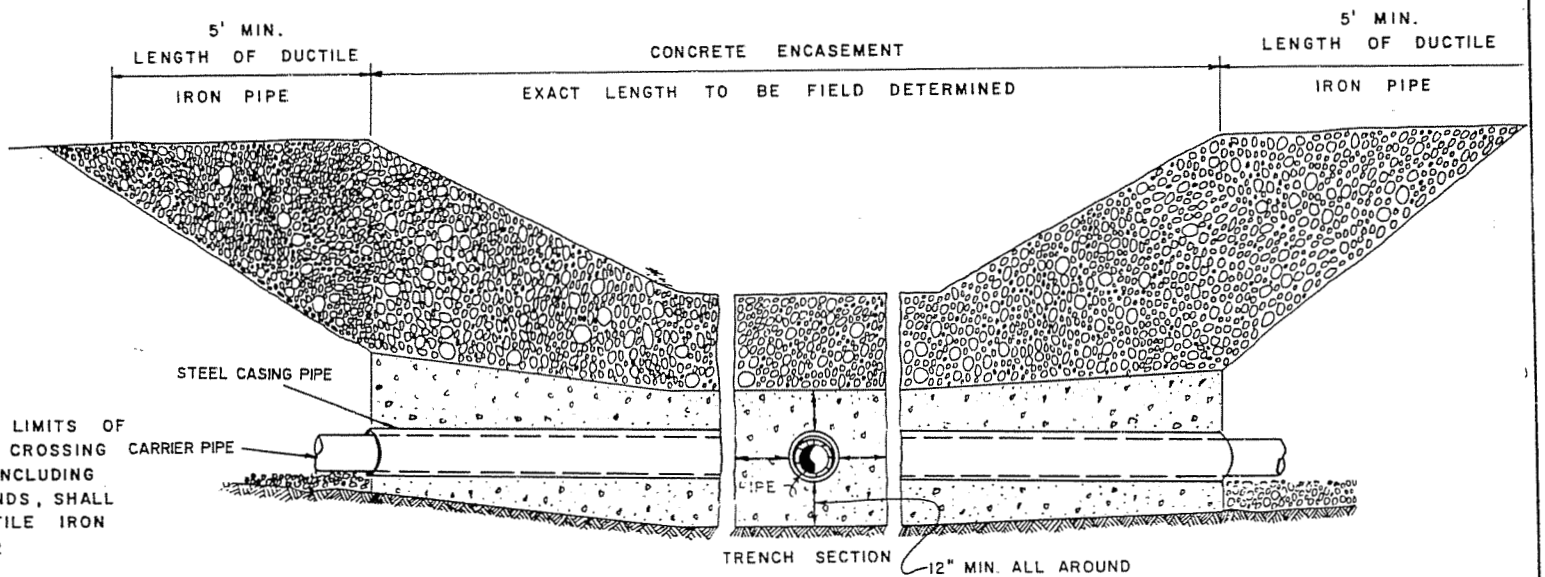
SIZE DIM.	PLUGS				45° BENDS				90° BENDS													
	6	8	10	12	6	8	10	12	6	8	10	12										
D	6	6	6	6	10	12	14	18	6	6	6	6	8	8	10	8	10	12	12	16	20	20
L	20	22	24	24	32	36	40	48	18	20	22	24	34	40	45	52	24	27	30	34	48	51
T									16	16	18	18	28	33	37	46	16	18	20	22	36	40
W	20	22	24	24	32	36	40	48	12	14	16	18	22	25	28	32	12	16	20	24	28	34

DIMENSIONS GIVEN IN INCHES

THRUST BLOCKS

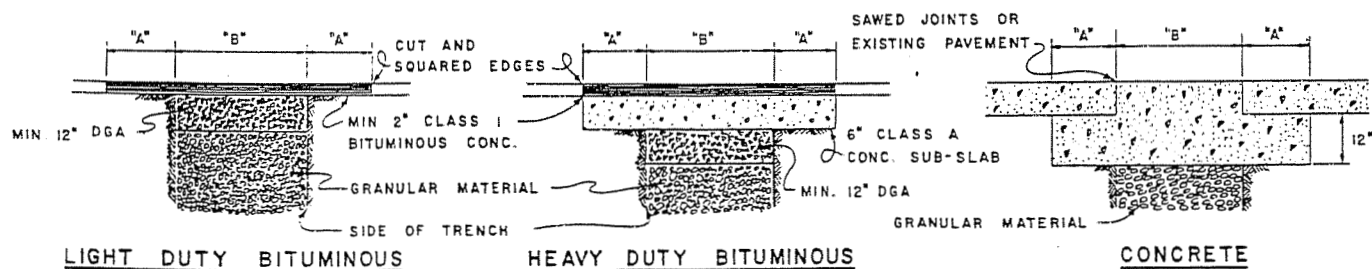


BACKFILLING



STREAM CROSSING DETAIL

NO SCALE

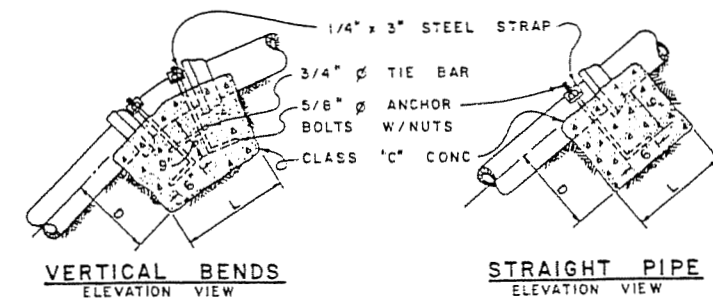


PAVEMENT RESTORATION

IF DISTANCE TO NEAREST JOINT OR BREAK IS LESS THAN 6 FEET, REMOVE EXISTING PAVEMENT TO THE JOINT OR BREAK AND RESTORE ENTIRE AREA. REPLACE WITH CONCRETE PAVEMENT THE SAME THICKNESS AS EXISTING PAVEMENT.

PIPE SIZE	MAX. PAY WIDTH SCHEDULE		WIDTH OF REPLACEMENT
	"A"	"B"	
4" THRU 12"	12"	30"	4'-6"
14" THRU 18"	12"	36"	5'-0"
20" THRU 24"	12"	42"	5'-6"
26" THRU 36"	12"	54"	6'-6"

PAY SCHEDULE



VERTICAL BENDS ELEVATION VIEW

STRAIGHT PIPE ELEVATION VIEW

NOTE! PIERS MUST BE PLACED AGAINST UNDISTURBED EARTH. ANCHORS TO BE FULL WIDTH OF TRENCH.

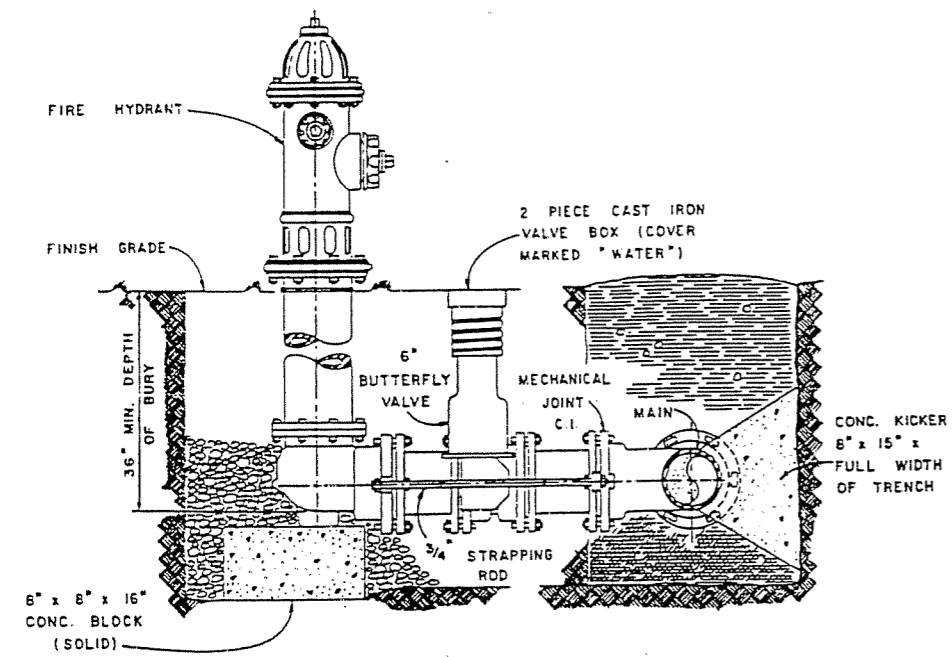
SIZE	VERTICAL BEND		STRAIGHT PIPE	
	6"	8"	10"	12"
D	15"	15"	18"	18"
L	24"	24"	30"	30"

ANCHOR BLOCKS

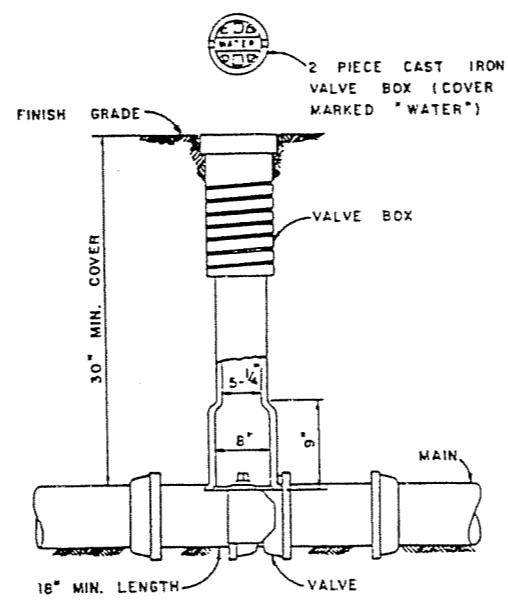
COVER SHALL BE TYPE C CAST IRON SINGLE LID COVER MANUFACTURED BY THE FORD METER BOX CO., WABASH, IND. - COVERS IN AREAS SUBJECT TO VEHICULAR TRAFFIC SHALL BE OF EXTRA HEAVY CONSTRUCTION.

METER SIZE	3/4"	1"	1 1/4"	1 1/2"
NOMINAL SIZE OF I.P. THREAD METER SPUD	3/4"	1"	1 1/4"	1 1/2"
A	1-1/16"	1-5/16"	1-9/16"	1-5/8"
B	7-7/8"	7-7/8"	9-3/8"	11-1/8"
C - PIPE SIZE INLET AND OUTLET	3/4"	3/4"	3/4"	1"
D	9-1/2"	9-1/2"	11"	12-3/4"
E	12"	12"	14-1/4"	17-1/4"
F - MINIMUM HEIGHT	7"	7"	8"	10"
G - BOX I.D.	18"	18"	20"	24"
FORD LID NO.	C 32	C 32	C 3	C 3*

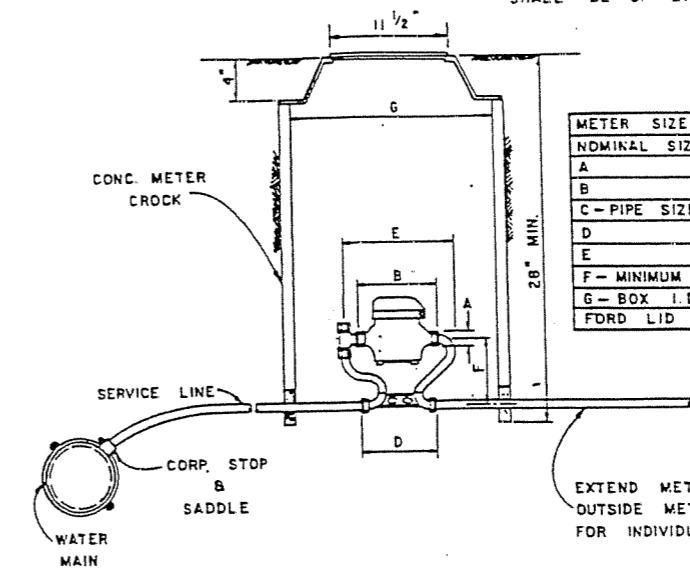
* REQUIRES FORD NO. 2 EXTENSION RING



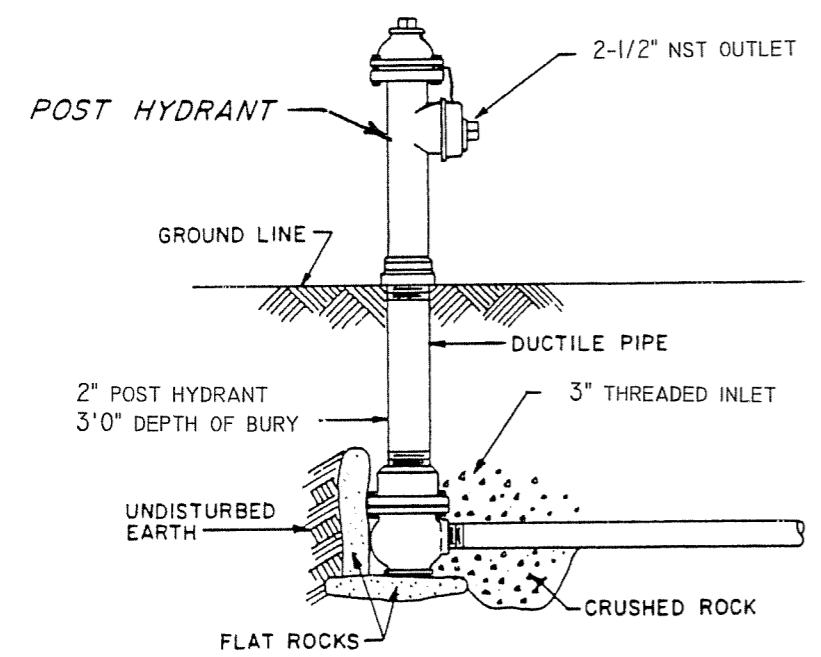
FIRE HYDRANT INSTALLATION
NO SCALE



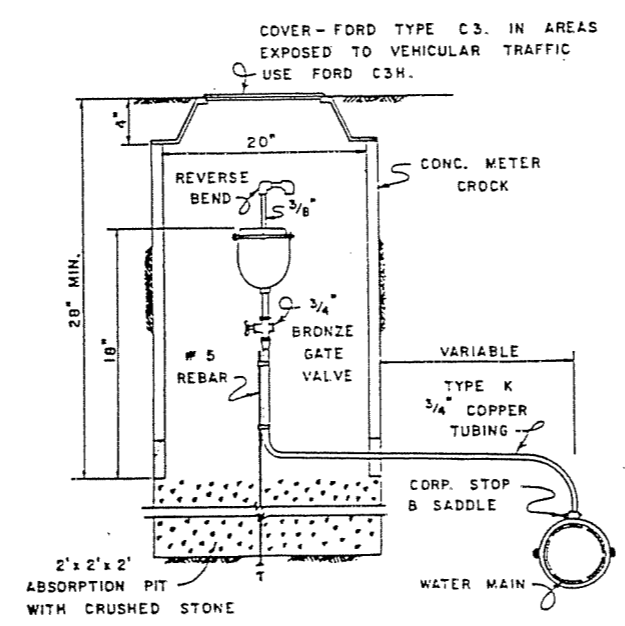
VALVE INSTALLATION
NO SCALE



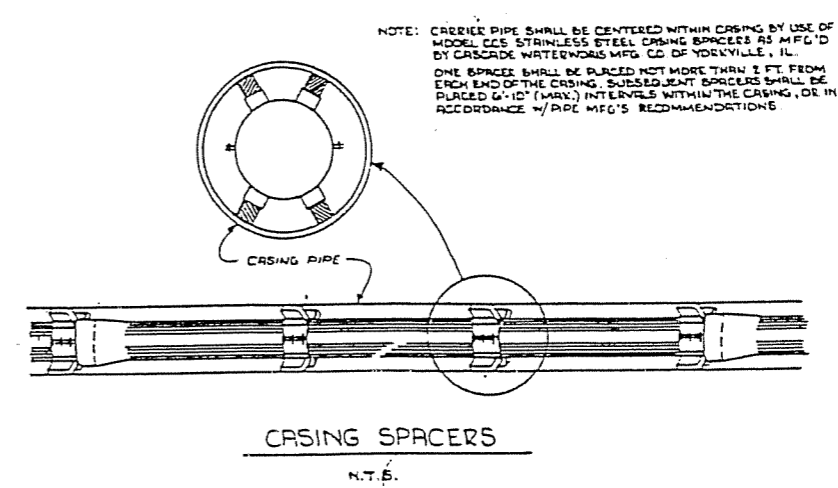
TYPICAL METER SETTING
NO SCALE



BLOWOFF INSTALLATION
NO SCALE



AIR RELEASE VALVE
NO SCALE



CASING SPACERS
N.T.S.

Warner A. Broughman III
and Associates
LEXINGTON KENTUCKY

Concept WAB III
Drawn CR 5/5/77
Checked _____
File _____

Northeast Woodford Water District
VERSAILLES, KENTUCKY

WATER SYSTEM DETAILS

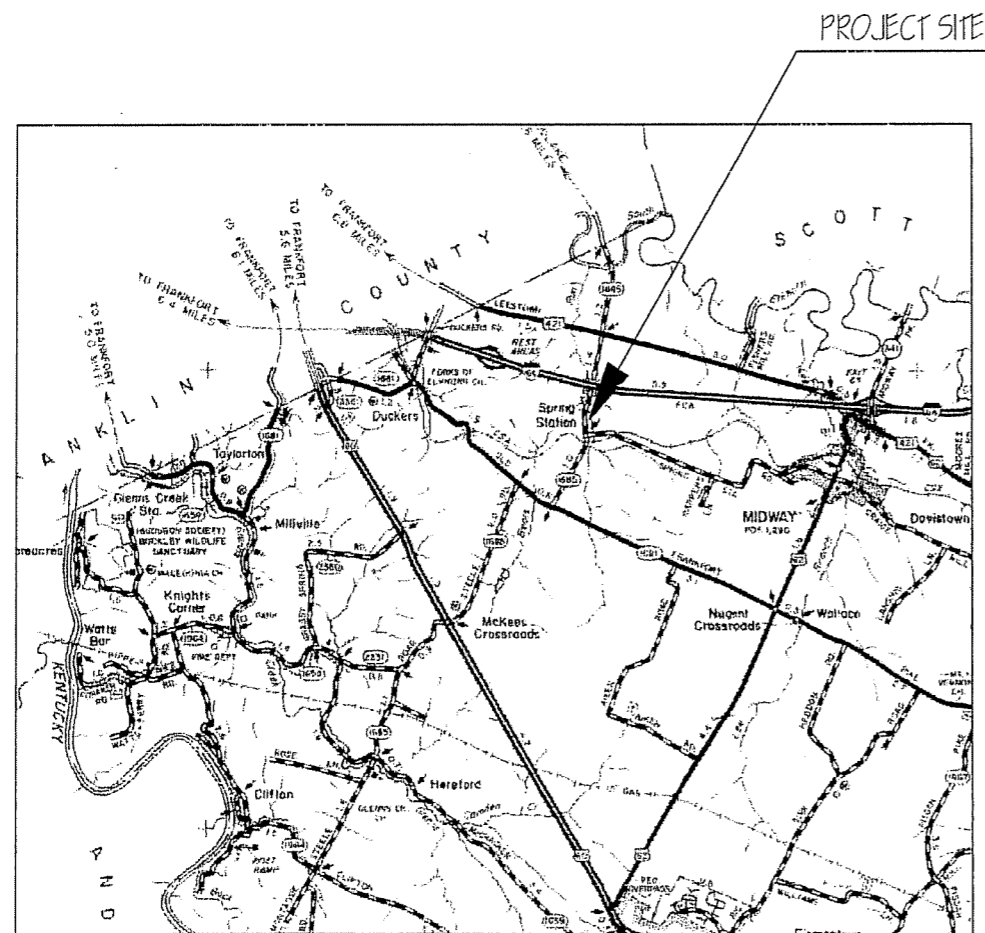
Sheet No.
W-2

INDEX OF SHEETS	
SHEET	DESCRIPTION
COVER	TITLE, INDEX, & VICINITY MAP
1	SPRING STATION ROAD
2	SPRING STATION ROAD
3	SPRING STATION ROAD
4	SPRING STATION ROAD @ WOOD LAKE ROAD
5	WOOD LAKE ROAD
6	WOOD LAKE ROAD @ INTERSTATE 64
W-1	DETAIL SHEET
W-2	DETAIL SHEET

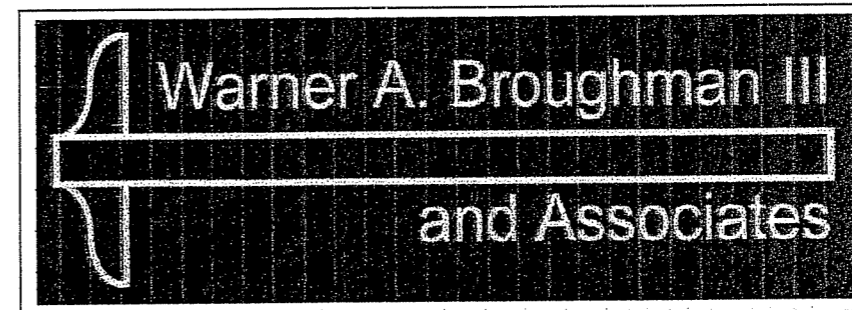
NORTHEAST WOODFORD WATER DISTRICT

FRANKFORT CONNECTION

PIPELINES & APPURTENCES
OCTOBER 2006



VICINITY MAP

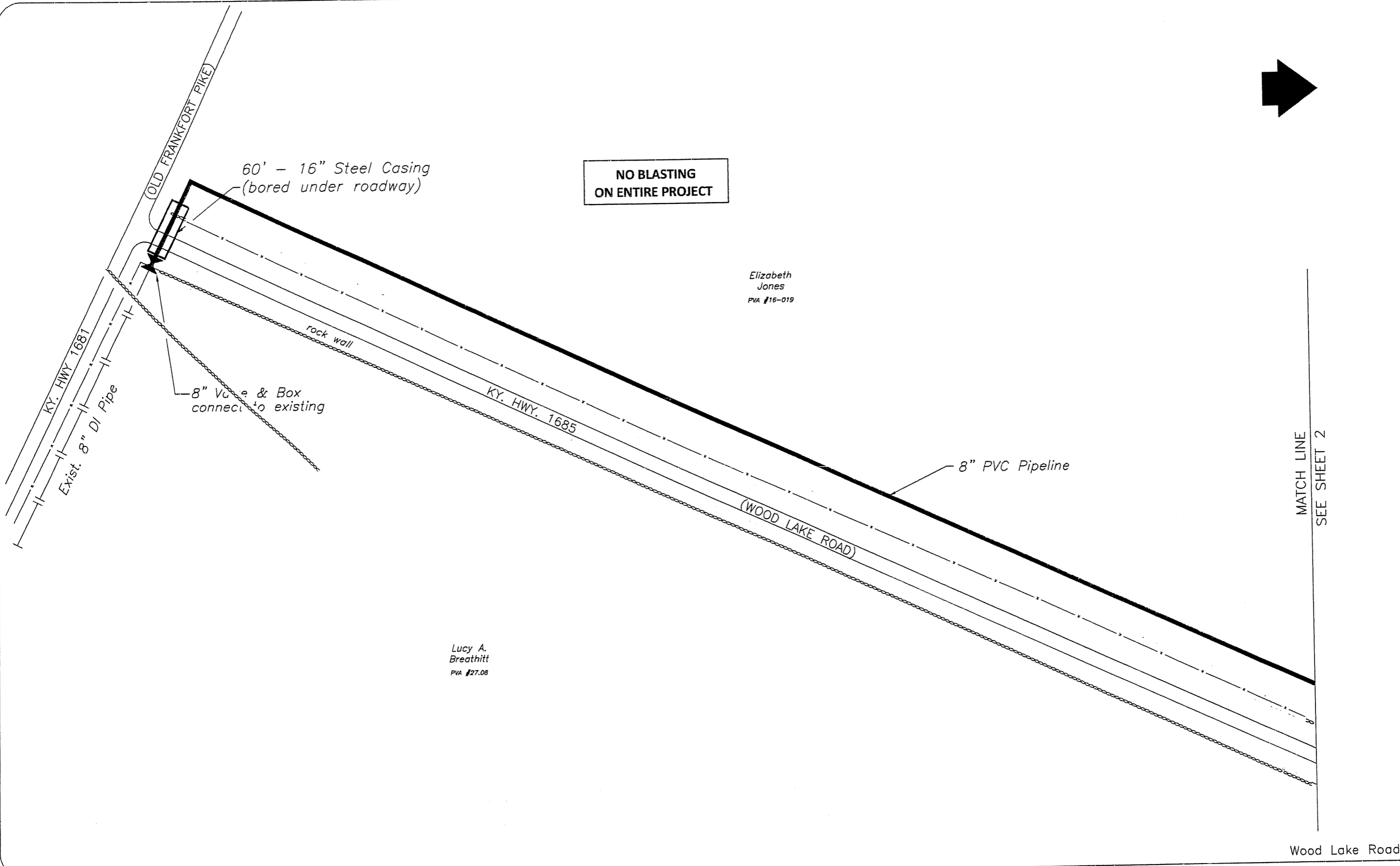
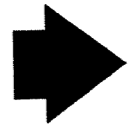


LEXINGTON

KENTUCKY

NO BLASTING
ON ENTIRE PROJECT

PROJECT NO. 03-05



**NO BLASTING
ON ENTIRE PROJECT**

Elizabeth
Jones
PVA #16-019

Lucy A.
Breathitt
PVA #27.08

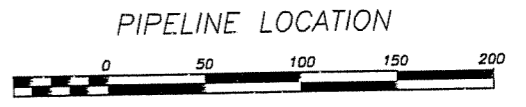
MATCH LINE
SEE SHEET 2

Wood Lake Road

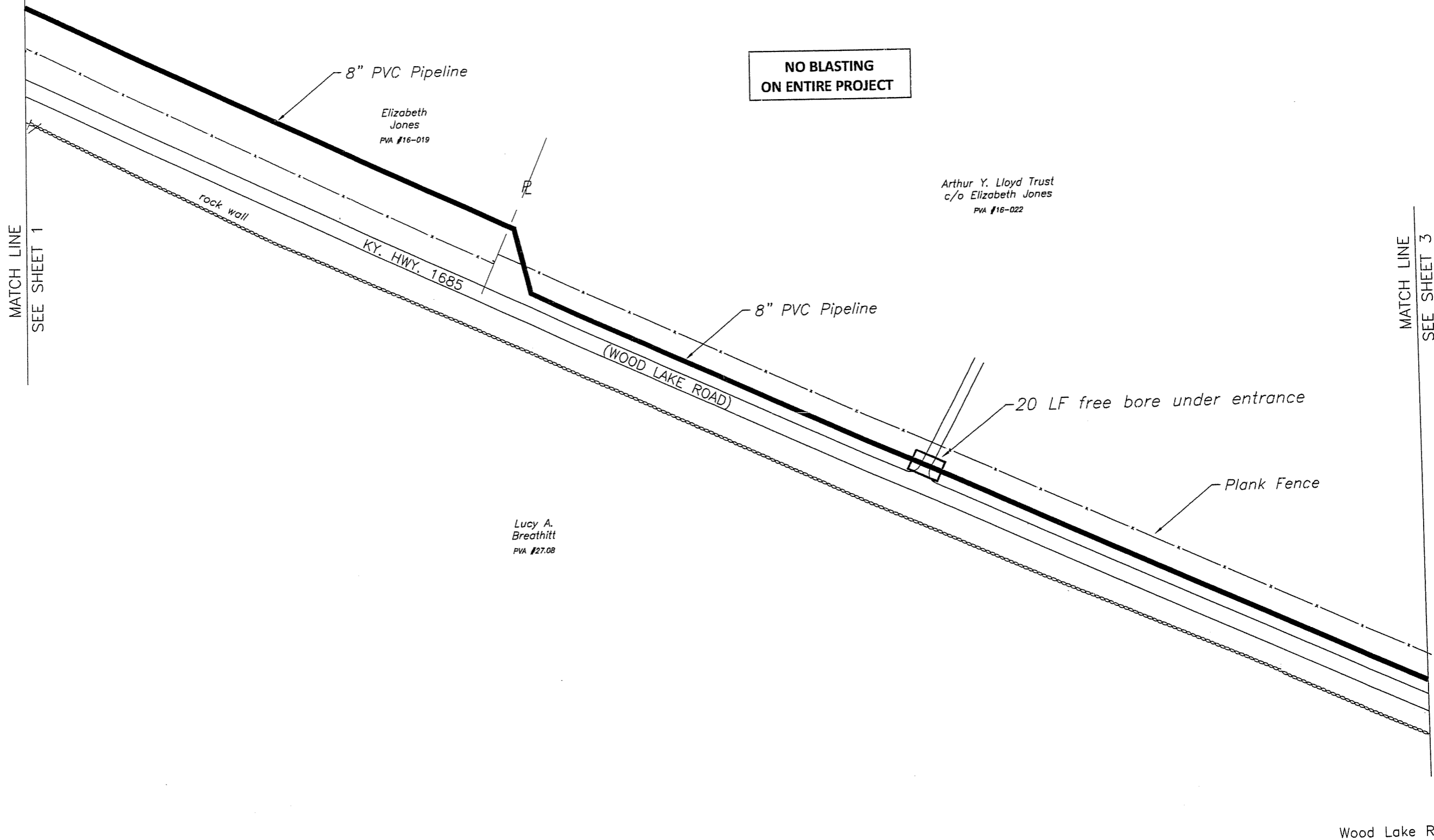
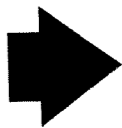
Warner A. Broughman III
and Associates

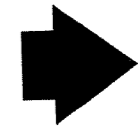
Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.
1





NO BLASTING
ON ENTIRE PROJECT

Arthur Y. Lloyd Trust
c/o Elizabeth Jones
PVA #16-022

MATCH LINE
SEE SHEET 2

MATCH LINE SEE SHEET 4

rock wall

KY. HWY. 1685

8" PVC Pipeline

(WOOD LAKE ROAD)

Plank Fence

Lucy A.
Breathitt
PVA #27.08

Wood Lake Road

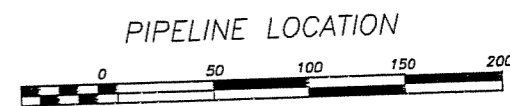


Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 03-05

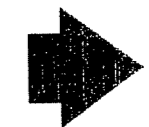
NE WOODFORD WATER DISTRICT

Frankfort Connection

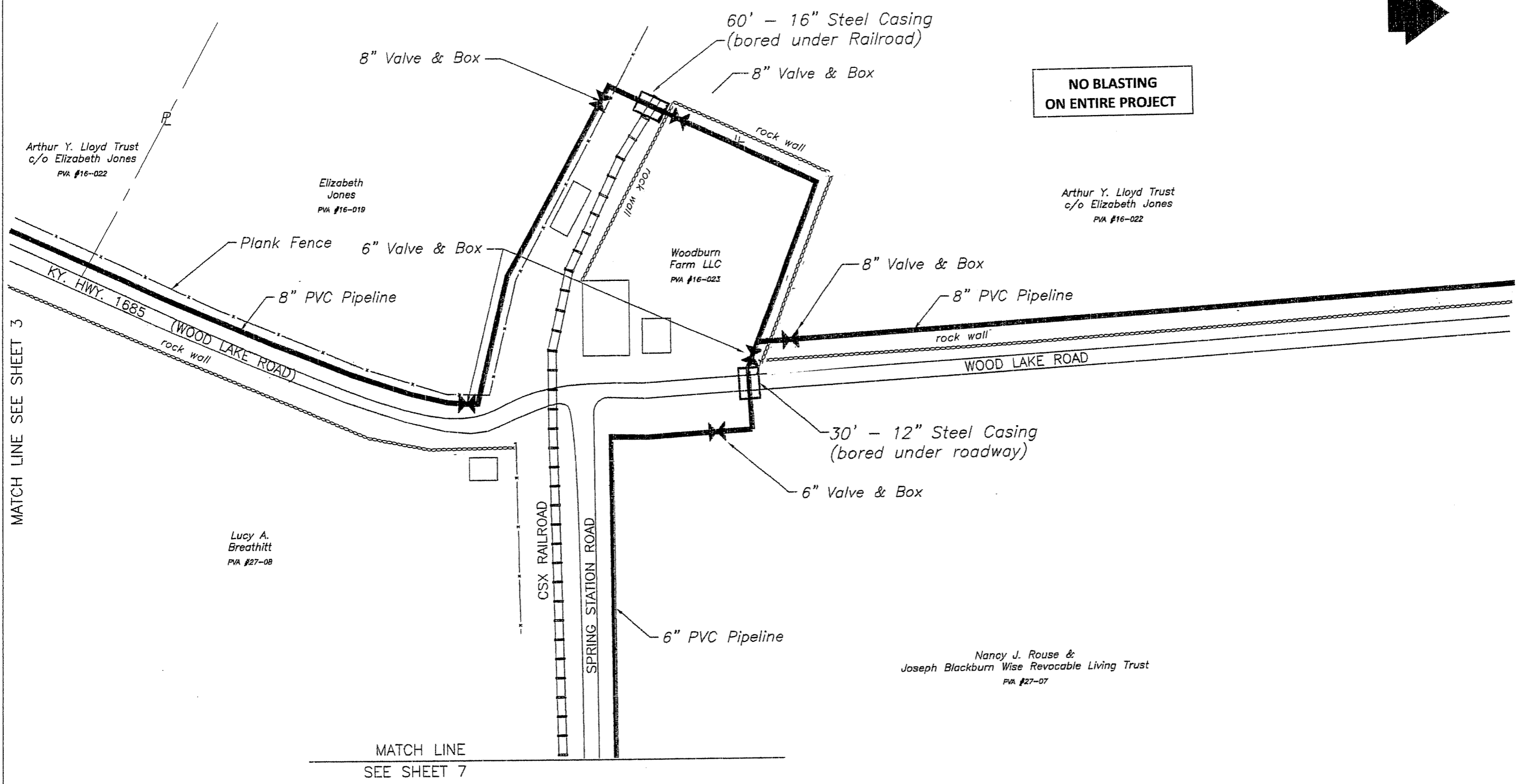


Sheet No.

3



**NO BLASTING
ON ENTIRE PROJECT**



MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 5

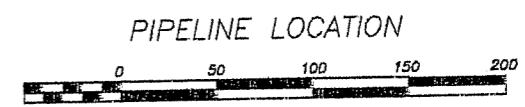
MATCH LINE
SEE SHEET 7

Wood Lake Road

Warner A. Broughman III
and Associates

Concept WAB
 Drawn BJC
 Checked _____
 File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.
4



**NO BLASTING
ON ENTIRE PROJECT**

Arthur Y. Lloyd Trust
c/o Elizabeth Jones
PVA #15-022

50' Stream Crossing

8" Valve & Box

Robert C. & Pamela Q.
Horn
PVA #16-024.01
P.O. Box 4465
Midway, KY 40347

Robin Horn
846-4200

8" PVC Pipeline

rock wall

WOOD LAKE ROAD

Dr. A.J. Alexander Estate
c/o Libby Jones
PVA #27-06

George F. & Grace Myers
Willmott
PVA #27-01

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 6

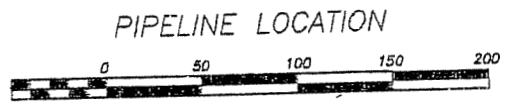
Wood Lake Road

Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT

Frankfort Connection



Sheet No.
5



Robert C. & Pamela Q.
Horn
PVA #16-024.01
P.O. Box 4465
Midway, KY 40347
Robin Horn
846-4200

Hornstead Farm, Inc.
c/o Cheryl Hippe
PVA #16-024

8" PVC Pipeline

4" Blowoff

FH

B

WOOD LAKE ROAD

INTERSTATE 64

WOOD LAKE ROAD

MATCH LINE SEE SHEET 5

George F. & Grace Myers
Willmott
PVA #27-01

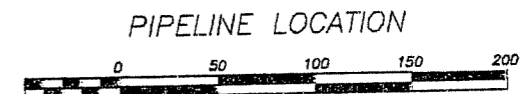
NO BLASTING
ON ENTIRE PROJECT

Wood Lake Road
@ Interstate 64

Warner A. Broughman III
and Associates

Concept: WAB
Drawn: BVC
Checked: _____
File: 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection



Sheet No.
6



Nancy J. Rouse &
Joseph Blackburn Wise Revocable Living Trust
PVA #27-07

Michael t. & Gay N.
Barnett
PVA #27-07.01

PL

6" PVC Pipeline

SPRING STATION ROAD

CSX RAILROAD

MATCH LINE
SEE SHEET 4

MATCH LINE
SEE SHEET 8

Lucy A.
Breathitt
PVA #27-08

**NO BLASTING
ON ENTIRE PROJECT**

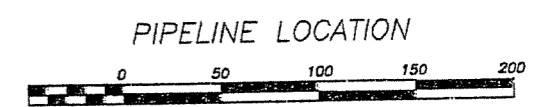
Spring Station Road

Warner A. Broughman III
and Associates

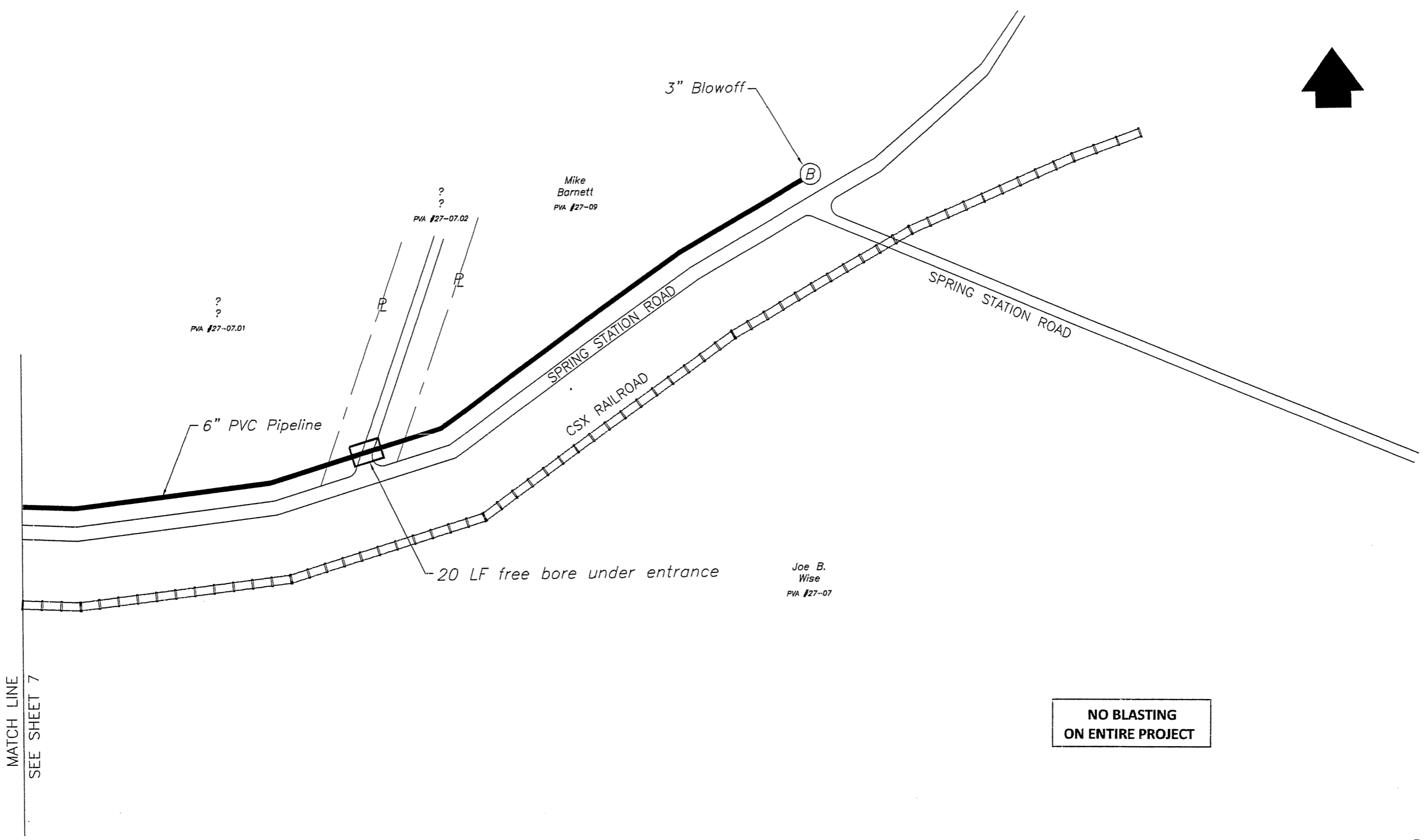
Concept WAB
Drawn BJC
Checked _____
File 03-05

NE WOODFORD WATER DISTRICT

Frankfort Connection



Sheet No.
7



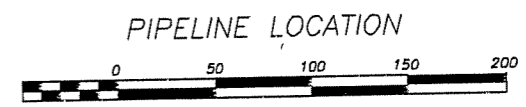
**NO BLASTING
ON ENTIRE PROJECT**

Spring Station Road

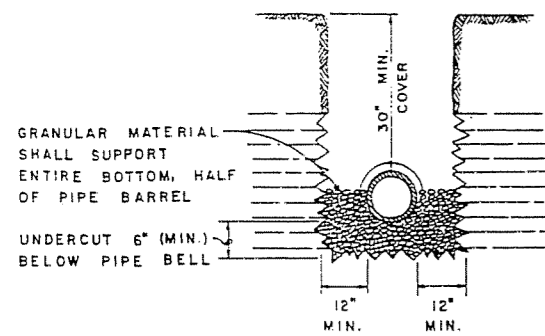
Warner A. Broughman III
and Associates

Concept WAB
 Drawn B/C
 Checked _____
 File 03-05

NE WOODFORD WATER DISTRICT
Frankfort Connection

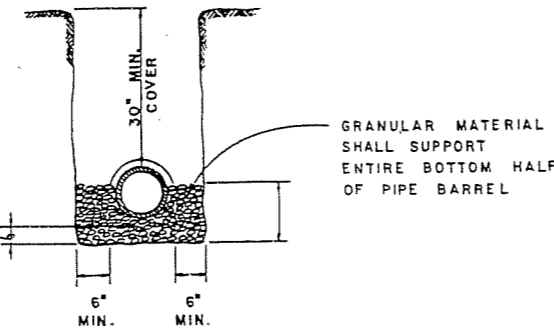


Sheet No.
8



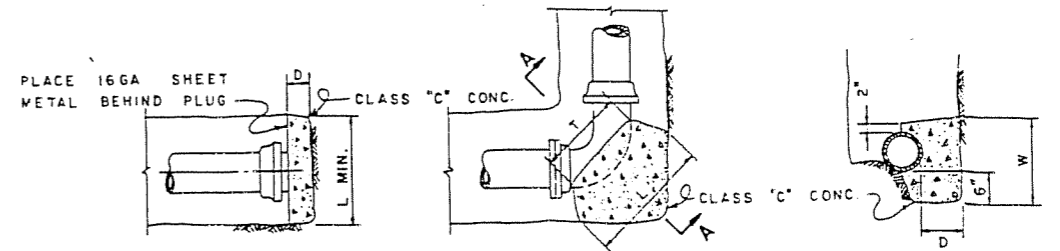
ROCK CUT

GRANULAR MATERIAL OF GRADED CRUSHED STONE, FINE GRAVEL OR SAND, APPROVED BY THE ENGINEER



EARTH CUT

PIPE BEDDING REQUIREMENTS



PLUGS
PLAN VIEW

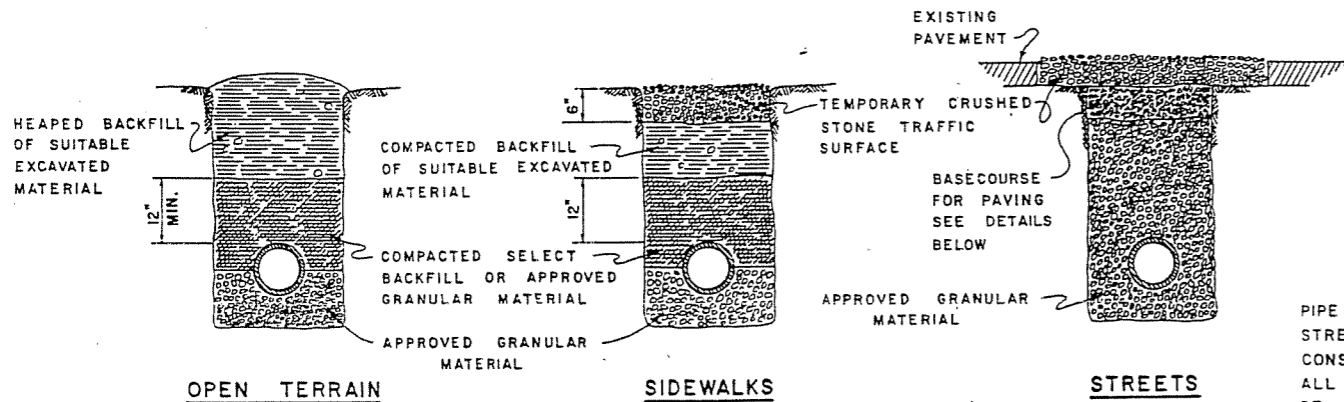
BENDS
PLAN VIEW

SECTION A-A

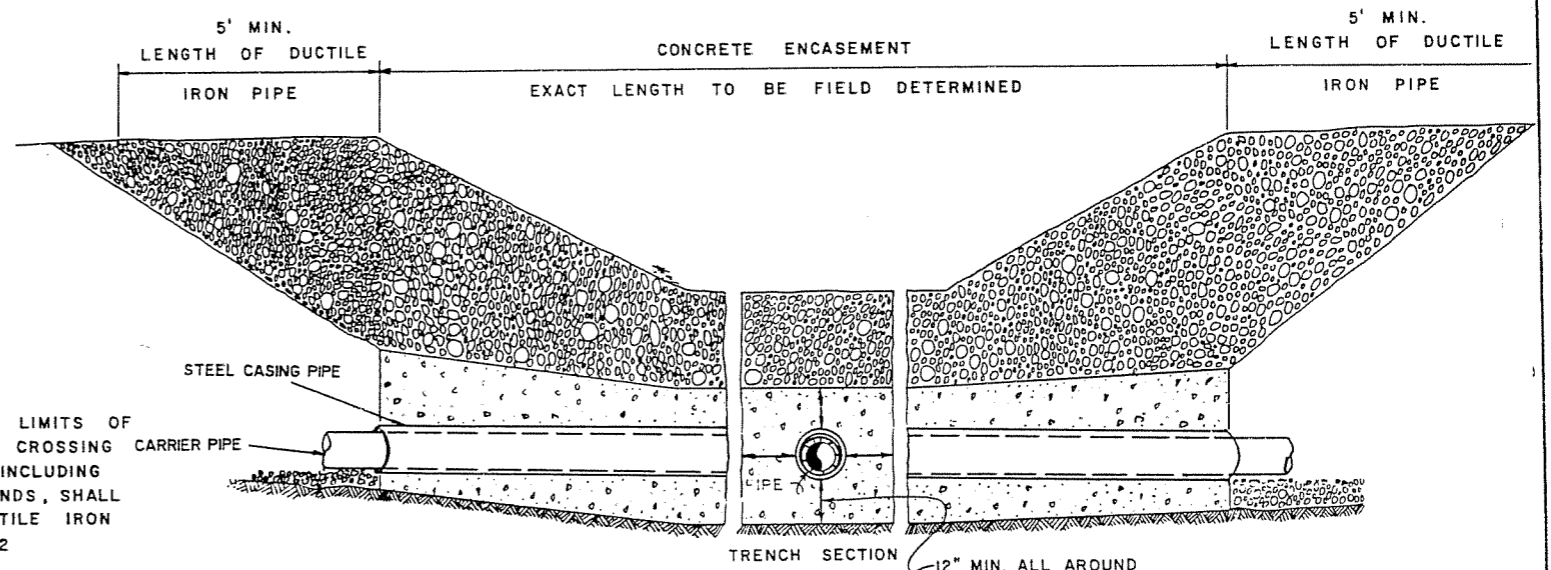
SIZE DIN.	PLUGS								45° BENDS								90° BENDS							
	6	8	10	12	16	18	20	24	6	8	10	12	16	18	20	24	6	8	10	12	16	18	20	24
D	6	6	6	6	10	12	14	18	6	6	6	6	6	8	8	10	8	10	12	12	16	20	20	
L	20	22	24	24	32	36	40	48	18	20	22	24	34	40	45	52	24	27	30	34	48	51	54	70
T									16	16	18	18	28	33	37	46	16	18	20	22	36	40	44	50
W	20	22	24	24	32	36	40	48	12	14	16	18	22	25	28	32	12	16	20	24	28	34	40	44

DIMENSIONS GIVEN IN INCHES

THRUST BLOCKS

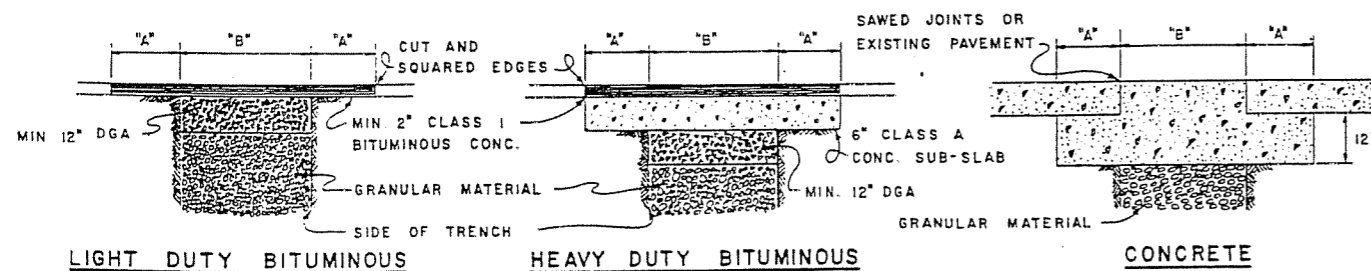


BACKFILLING



STREAM CROSSING DETAIL

NO SCALE

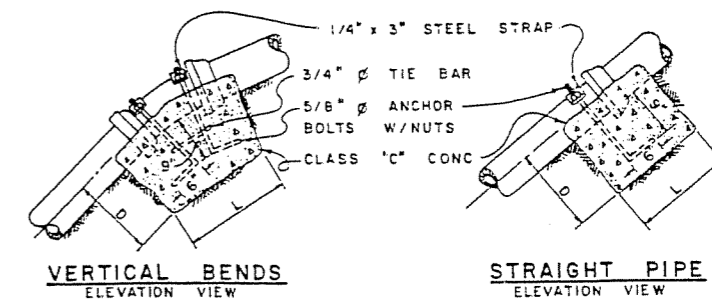


PAVEMENT RESTORATION

IF DISTANCE TO NEAREST JOINT OR BREAK IS LESS THAN 6 FEET, REMOVE EXISTING PAVEMENT TO THE JOINT OR BREAK AND RESTORE ENTIRE AREA. REPLACE WITH CONCRETE PAVEMENT THE SAME THICKNESS AS EXISTING PAVEMENT.

MAX. PAY WIDTH SCHEDULE			
PIPE SIZE	"A"	"B"	WIDTH OF REPLACEMENT
4" THRU 12"	12"	30"	4'-6"
14" THRU 18"	12"	36"	5'-0"
20" THRU 24"	12"	42"	5'-6"
26" THRU 36"	12"	54"	6'-6"

PAY SCHEDULE



NOTE ! PIERS MUST BE PLACED AGAINST UNDISTURBED EARTH. ANCHORS TO BE FULL WIDTH OF TRENCH.

VERTICAL BEND & STRAIGHT PIPE								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	15"	15"	16"	18"	21"	21"	24"	24"
L	24"	24"	30"	30"	36"	36"	36"	42"

ANCHOR BLOCKS

Warner A. Broughman III
and Associates
LEXINGTON KENTUCKY

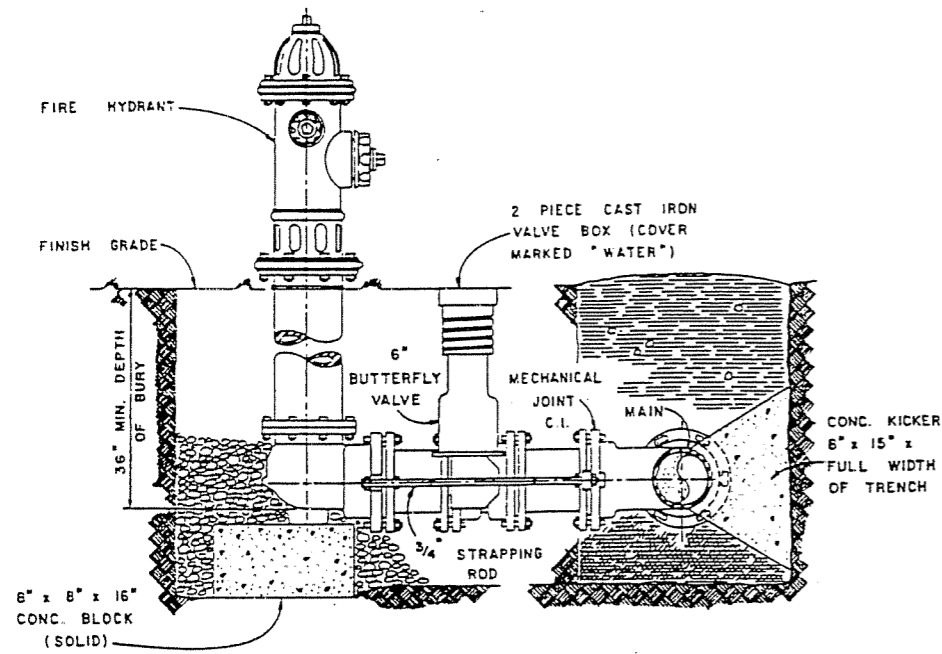
Concept WAB III
Drawn CR 5/5/77
Checked
File

Northeast Woodford Water District
VERSAILLES, KENTUCKY

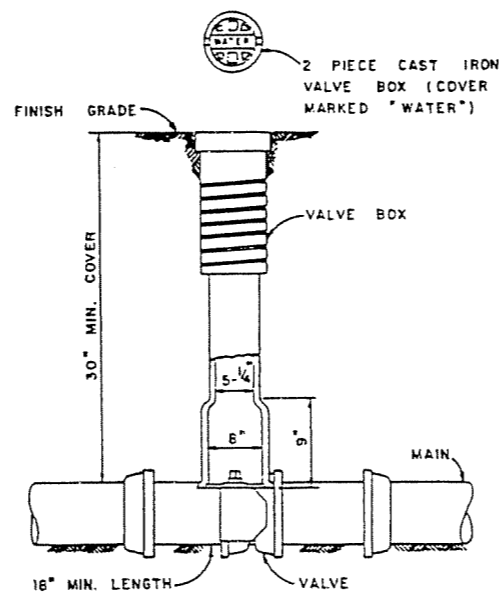
WATER SYSTEM DETAILS

Sheet No.
W-1

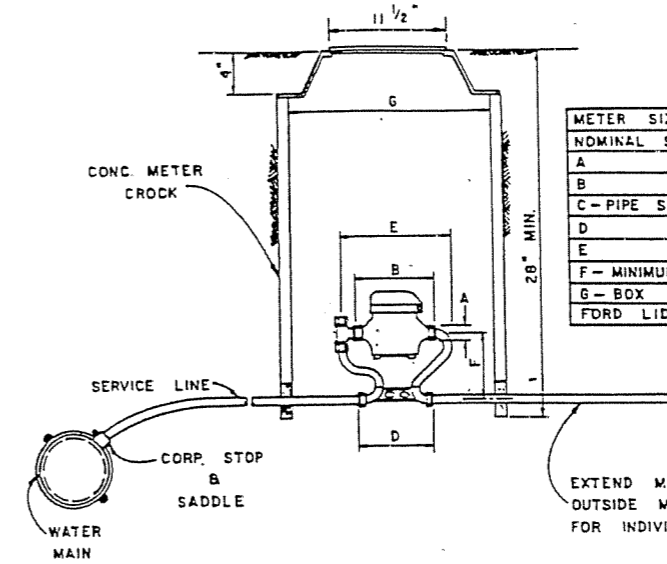
COVER SHALL BE TYPE C CAST IRON
SINGLE LID COVER MANUFACTURED
BY THE FORD METER BOX CO.,
WABASH, IND. - COVERS IN AREAS
SUBJECT TO VEHICULAR TRAFFIC
SHALL BE OF EXTRA HEAVY CONSTRUCTION.



FIRE HYDRANT INSTALLATION
NO SCALE



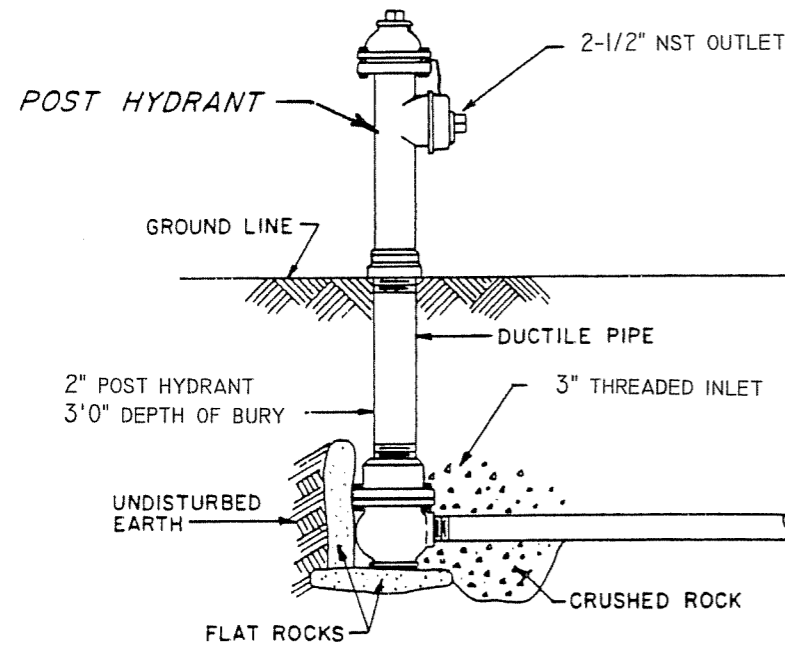
VALVE INSTALLATION
NO SCALE



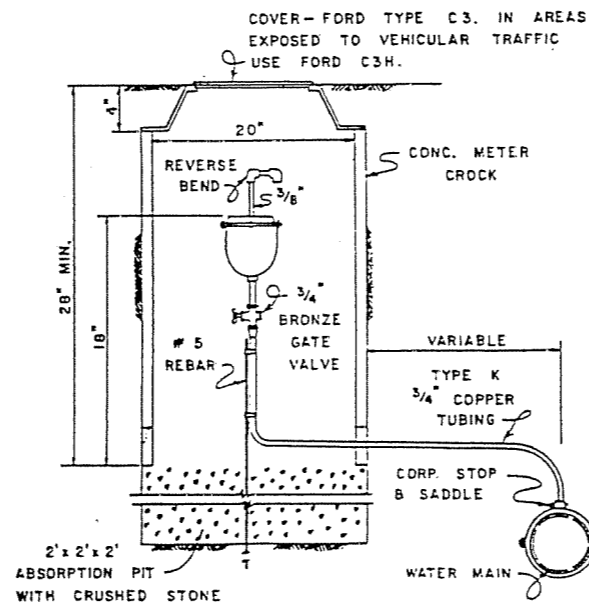
METER SIZE	3/4"	1"	1 1/4"	1 1/2"
NOMINAL SIZE OF I.P. THREAD METER SPUD	3/4"	1"	1 1/4"	1 1/2"
A	1-1/16"	1-5/16"	1-5/8"	1-5/8"
B	7-1/8"	7-1/8"	9-3/8"	11-1/8"
C - PIPE SIZE INLET AND OUTLET	3/4"	3/4"	3/4"	1"
D	9-1/2"	9-1/2"	11"	12-3/4"
E	12"	12"	14-1/4"	17-1/4"
F - MINIMUM HEIGHT	7"	7"	8"	10"
G - BOX I.D.	18"	18"	20"	24"
FORD LID NO.	C 32	C 32	C 3	C 3*

* REQUIRES FORD NO. 2
EXTENSION RING

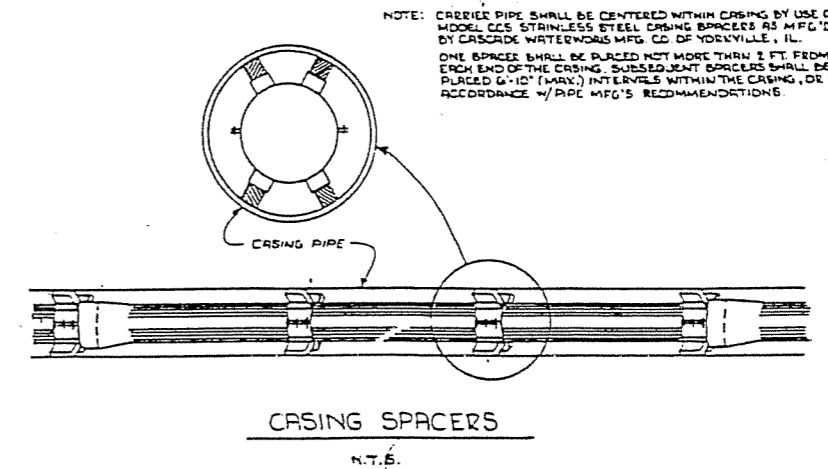
TYPICAL METER SETTING
NO SCALE



BLOWOFF INSTALLATION
NO SCALE



AIR RELEASE VALVE
NO SCALE



CASING SPACERS
N.T.S.

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 6.c

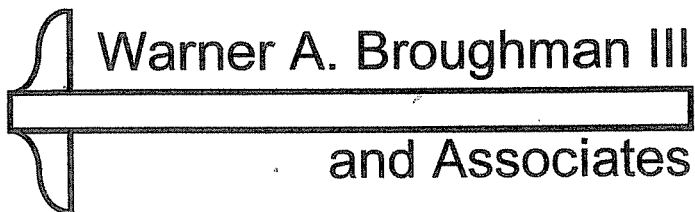
**NORTHEAST WOODFORD
WATER DISTRICT**

VERSAILLES, KENTUCKY

**WOODLAKE ROAD
BOOSTER PUMP
STATION**

FEBRUARY 2012

3161 Custer Drive

**Warner A. Broughman III
and Associates**

**Lexington, Kentucky 40517
(606) 271-1778**

PROJECT NO. 12-02

© by Warner A. Broughman III & Associates February 13, 2012

Warner A. Broughman III & Associates reserves all rights. No reproduction in whole or part of shall be made without the express written consent of Warner A. Broughman III & Associates.

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

f o r

W O O D L A K E R O A D
B O O S T E R P U M P S T A T I O N

N O R T H E A S T W O O D F O R D W A T E R D I S T R I C T
V E R S A I L L E S , K E N T U C K Y

F e b r u a r y 2 0 1 2

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

**NORTHEAST WOODFORD WATER DISTRICT
VERSAILLES, KENTUCKY**

COMMISIONERS

John Steele Davis, Chairman

Hubert Shipp, Secretary

Larry Moore, Treasurer

ADMINISTRATIVE MANAGER

Fred Faust

FIELD MANAGER

Dale Gatewood

TABLE OF CONTENTS

ADVERTISEMENT FOR BIDS	A - 1
INFORMATION FOR BIDDERS	B - 1
GENERAL CONDITIONS	C - 1
GENERAL SPECIFICATIONS	G - 1
DETAILED SPECIFICATIONS	M - 1
BASIS OF MEASUREMENT AND PAYMENT	N - 1
BID	P - 1
BID BOND	Q - 1
NOTICE OF AWARD	R - 1
AGREEMENT	S - 1
PAYMENT BOND	T - 1
PERFORMANCE BOND	U - 1
NOTICE TO PROCEED	V - 1
CHANGE ORDER	Z - 1

ADVERTISEMENT FOR BIDS

NORTHEAST WOODFORD WATER DISTRICT
225-A South Main Street
Versailles, KY 40383

Separate sealed BIDS for the construction of the **WOODLAKE ROAD BOOSTER PUMP STATION** consisting of approximately **ONE DUPLEX WATER BOOSTER PUMP STATION**, together with all appurtenances thereof, will be received by **NORTHEAST WOODFORD WATER DISTRICT** at the **ENGINEER'S OFFICE, 3161 Custer Drive, Lexington, KY** until **11:00 AM, February 17, 2012** 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
LEXINGTON, KENTUCKY 40517
wabiii@prodigy.net

Copies of the **CONTRACT DOCUMENTS** may be obtained at the office of Warner A. Broughman III & Associates (859) 271-1778 upon payment of \$50.00 for each set.

INFORMATION FOR BIDDERS

BIDS will be received by **NORTHEAST WOODFORD WATER DISTRICT** (herein called the "OWNER"), at the **ENGINEER'S OFFICE**, 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, c/o WARNER A. BROUGHMAN III & ASSOCIATES, 3161 CUSTER DRIVE, SUITE 6, LEXINGTON, KY 40517**. Each sealed envelope containing a BID must be plainly marked on the outside as **BID FOR WOOKLAKE ROAD BOOSTER PUMP STATION** 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—

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

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-

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

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.

GENERAL SPECIFICATIONS TABLE OF CONTENTS

1. MATERIALS FOR WATER PIPELINES	1
1.1 DUCTILE IRON PIPE AND FITTINGS	1
1.2 PLASTIC PIPE AND FITTINGS	1
1.3 COVER PIPE	2
1.4 GRANULAR MATERIALS	3
1.5 CONCRETE	3
2. TESTING OF MATERIALS	4
2.1 GENERAL	4
2.2 DUCTILE IRON PIPE AND FITTINGS	4
2.3 PLASTIC PIPE AND FITTINGS	4
2.4 COVER PIPE	5
3. EQUIPMENT	5
4. EXCAVATION	5
4.1 GENERAL	5
4.2 CLASSIFICATIONS OF EXCAVATION	6
4.3 LINES AND GRADES	6
4.4 CLEARING AND GRUBBING	6
4.5 TRENCH EXCAVATION	7
4.6 BLASTING	8
4.7 SHORING AND BRACING	8
4.8 DISPOSITION OF EXCAVATED MATERIAL	9
4.9 REMOVAL OF WATER	9
4.10 UNAUTHORIZED EXCAVATION	9
5. PIPE INSTALLATION	9
5.1 GENERAL	9
5.2 PIPE BEDDING	10
5.3 LAYING PIPE	10
5.4 JOINTING PIPE	11
5.5 PLACING CONCRETE	11
5.6 BORED OR JACKED CROSSINGS	11
5.7 INSPECTION	12
6. BACKFILLING	12
6.1 GENERAL	12
6.2 OPEN TERRAIN	12
6.3 SIDEWALKS AND UNPAVED DRIVEWAYS	12
6.4 STREETS, ROADS AND PAVED DRIVEWAYS	13
6.5 STREAMS & WETLANDS	14
6.6 SETTLEMENT OF TRENCHES	14
7. TESTING AND DISINFECTION	14
7.1 TESTING WATER MAINS	14
7.2 DISINFECTION OF WATER LINES	15
8. RESTORATION OF SURFACE	15
8.1 OPEN TERRAIN	15
8.2 BITUMINOUS REPLACEMENT	16
8.3 CONCRETE REPLACEMENT	17
8.4 CLEAN-UP	18

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:

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

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.

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

(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.

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.

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.

Upon approval of the ENGINEER, the CONTRACTOR may backfill the lower portion of the trench with crushed stone, fine gravel, sand or dust. Material for backfill in lieu of tamping in this portion of the trench is not a separate pay item.

6.3.2 Middle Portion of Trench

The middle portion of the trench, from a point 12 inches above the top of the pipe to a point 6 inches below the grade line, shall be backfilled with material free from rock and/or acceptable to the ENGINEER. This material shall be placed and compacted in layers of approximately 6 inches. Water (puddling) may be used as required to obtain maximum compaction. Tamping or compaction of backfill in this portion of the trench is a separate pay item unless stated otherwise hereinafter.

Upon approval of the ENGINEER, the CONTRACTOR may backfill the middle portion of the trench with crushed stone, fine gravel, sand or dust in lieu of materials that require compaction.

6.3.3 Upper Portion of Trench

The upper portion of the trench shall be temporarily backfilled and maintained with crushed stone or gravel until such time as the sidewalk is constructed or the driveway surface is restored. Backfill for the upper portion of the trench is a separate pay item unless stated otherwise hereinafter.

6.4 STREETS, ROADS AND PAVED DRIVEWAYS

Backfilling of pipeline trenches under streets, roads and paved driveways shall be accomplished in the following manner:

6.4.1 Lower Portion of Trench

The lower portion of the trench, from the pipe bedding to a point ten (10) inches below the bottom of the pavement or concrete sub-slab, shall be backfilled with crushed stone, fine gravel, sand or dust. Backfill for the lower portion of the trench is a separate pay item unless stated otherwise hereinafter.

6.4.2 Upper Portion of Trench

The upper portion of trench, from a point ten (10) inches below the bottom of the pavement or concrete sub-slab up to grade, shall be backfilled with a base course of dense graded aggregate. At such time that pavement replacement is accomplished, the excess base course shall be removed as required. Material for backfilling the upper portion of the trench is a separate pay item unless stated otherwise hereinafter.

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.

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

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

DETAILED SPECIFICATIONS

TABLE OF CONTENTS

1. SCOPE AND SPECIAL PROVISIONS	ERROR! BOOKMARK NOT DEFINED.
1.1 SCOPE OF WORK	ERROR! BOOKMARK NOT DEFINED.
1.1.1 General Location	Error! Bookmark not defined.
1.1.1.1 Specific Location	Error! Bookmark not defined.
1.2 QUALITY ASSURANCE	1
1.2.1 Equipment and Materials	1
1.2.1.1 Manufacturer	1
1.2.1.2 Manufacturer's Experience	1
1.2.1.3 UL Labeling	2
1.2.1.4 Warranty	2
1.2.1.5 Quality Management and Environmental Policies	2
1.3 SUBMITTALS	2
1.3.1 Mechanical Drawing	2
1.3.2 Submittals Requirements	2
1.3.2.1 Dimensions	2
1.3.2.2 Manufacturer's Warranty	2
1.3.2.3 Catalogue Cut Sheets	2
1.3.2.4 UL Label Copy	2
1.3.2.5 Detailed Sequence	2
1.3.2.6 Wiring Schematics	2
1.3.2.7 Control Panel Layout Drawing	2
1.4 BOOSTER PUMPING STATION DESIGN CRITERIA	2
1.5 DESIGNATION OF PARTIES	2
1.5.1 "OWNER"	2
1.5.2 "ENGINEER"	3
1.6 GOVERNING SPECIFICATIONS	3
1.7 CONTRACTOR'S DRAWINGS AND SPECIFICATIONS	3
1.7.1 DRAWINGS On Site	3
1.7.2 DRAWINGS/SPECIFICATIONS Discrepancy	3
1.7.3 DRAWINGS/SPECIFICATIONS Omissions	3
1.8 UTILITIES REQUIRED BY CONTRACTOR	3
1.9 TRAFFIC	3
1.10 FENCES	3
1.11 EXECUTION AND COORDINATION OF THE WORK	4
1.8.1 Shutdowns	4
1.9 SITE VIDEOTAPING	4
2. PRODUCTS	4
2.1 STRUCTURAL	4
2.1.1 Structural Support	4
2.1.1.1 PUMP STATION SUPPORT	4
2.1.1.2 CONCRETE & /STRUCTURAL STEEL BASE	4
2.1.2 PIPE SUPPORTS	4
2.1.2.1 Design & Sizing	4
2.1.2.1.1 Four inch Size	4
2.1.2.1.2 Six inch through Twelve inch Size	4
2.1.2.1.3 Fourteen through Twenty-Four Inch Size	4
2.1.2.1.4 Rectangular Tubing	4
2.1.2.1.5 Pipe Supports Welding	4
2.1.2.1.6 Unacceptable Pipe Stands	5
2.1.2.1.7 Floor Drains	5
3. ARCHITECTURAL	5
3.1 PUMP STATION ENCLOSURE	5
3.1.1 Code and Standards	5

WAB III - Detailed Specifications

- 3.1.1.1 Interior Dimensions -----5
- 3.1.1.2 Loading-----5
 - 3.1.1.2.1 Roof Load -----5
 - 3.1.1.2.2 Ceiling Dead Load -----5
 - 3.1.1.2.3 Wall Load -----5
 - 3.1.1.2.4 Seismic Zone -----5
- 3.1.1.3 Materials -----5
- 3.1.1.4 Perimeter Angle System -----5
- 3.1.1.5 Framework -----5
- 3.1.1.6 Insulation -----5
- 3.1.1.7 Roof -----6
- 3.1.1.8 Exterior Walls -----6
- 3.1.1.9 Exterior Trim -----6
- 3.1.1.10 Exterior Trim -----6
- 3.1.1.11 Fasteners, Adhesives, and Sealants -----6
- 3.1.1.12 Closures -----6
- 3.2 Doors and Hardware ----- 6**
 - 3.2.1 SDI-100 ----- 6
 - 3.2.2 Door Materials ----- 6
 - 3.2.3 Double Door Specifications ----- 6
 - 3.2.4 Door Hinges ----- 7
 - 3.2.5 Openers ----- 7
 - 3.2.6 Door Closer ----- 7
 - 3.2.8 Drip Cap ----- 7
 - 3.2.9 Gutters ----- 7
 - 3.2.10 Rain Canopy ----- 7
 - 3.2.11 One Ton Capacity Crane ----- 7
- 3.3 Enclosure Accessories ----- 7**
 - 3.3.1 Florescent Lights ----- 7
 - 3.3.2 Interior Convenience Outlets ----- 7
 - 3.3.3 Wall Mounted Exterior Convenience Outlet ----- 7
 - 3.3.4 Exterior Mounted Weatherproof HPS Lamp with Photocell ----- 7
 - 3.3.5 Interior Emergency Lighting Fixture ----- 7
 - 3.3.6 Twenty-Five Pint Dehumidifier ----- 7
 - 3.3.7 HVAC Unit ----- 7
- 4. MECHANICAL ----- 7**
 - 4.1 Close-Coupled End Suction, Centrifugal Pumps ----- 7**
 - 4.1.1 Pump Criteria ----- 7
 - 4.1.2 Design Conditions ----- 7
 - 4.1.3 Volute Case, Wear Rings and Bearings ----- 8
 - 4.1.4 Maximum Shaft Deflection ----- 8
 - 4.1.5 Impellers ----- 8
 - 4.1.6 Replaceable Shaft Sleeve and Covering of Liquid Area ----- 8
 - 4.1.7 Mechanical Seal ----- 8
 - 4.1.8 Pump Rating and Casing Specification ----- 8
 - 4.1.9 Pump Model ----- 8
 - 4.1.10 Motor Specification ----- 8
 - 4.2 Pipe, Valves and Fittings ----- 8**
 - 4.2.1 Piping ----- 8
 - 4.2.1.1 Piping Specification ----- 8
 - 4.2.1.2 Fitting Specification ----- 8
 - 4.2.1.3 Flange Specification ----- 8
 - 4.2.1.4 Welding Specification ----- 8
 - 4.2.1.5 Piping of Six Inches Diameter and Larger Welding Specification ----- 8
 - 4.2.1.6 Piping Sizes ----- 9

DETAILED SPECIFICATIONS

TABLE OF CONTENTS

4.2.1.6.1 Size Ten Inches and Below	9
4.2.1.6.2 Size Twelve Inches and Above	9
4.2.1.7 Piping Restraints	9
4.2.2 Flexible Couplings	9
4.2.2.1 Casing	9
4.2.2.2 Gaskets	9
4.2.2.3 Flexible Couplings	9
4.2.3 Elastomeric Connectors	9
4.2.3.1 Inlet Side	9
4.2.3.2 Elastomeric Connector Design	9
4.2.3.3 Elastomeric Connector Seals	9
4.2.3.4 Control Joints	9
4.2.3.5 Booster Station Piping Coupling	9
4.2.4 Suction Strainer/Diffuser	9
4.2.4.1 Cast Iron Suction Strainer/Diffuser	9
4.2.4.2 Bronze Start-up Strainer	9
4.2.4.3 Permanent Strainer	9
4.2.4.4 Strainer PSI Rating	9
4.2.5 Valves	9
4.2.5.1 Pump Isolation Butterfly Valves	
4.2.5.1.1 Valve Body	9
4.2.5.1.2 Valves-Resilient Seat Type	9
4.2.5.1.3 Stem, Disc, Stainless Steel Torque Plug, Positive Engagement	9
4.2.5.1.4 Valve Requirements	9
4.2.5.1.5 Valve Body Requirements	10
4.2.5.1.6 Valves Sized Six Inches and Smaller	10
4.2.5.1.7 Valves Sized Eight Inches and Larger	10
4.2.6 GATE VALVE	
4.2.6.1 AWWA Standards	10
4.2.6.2 Cast Iron Body, Bonnet and O-Ring Plate	10
4.2.6.3 Wedge Encapsulation	10
4.2.6.4 O-Ring Seals	10
4.2.6.5 Non-Rising Stem Design	10
4.2.6.6 Bronze AWWA Compliance	10
4.2.6.7 Waterway	10
4.2.6.8 Check Valves	10
4.2.6.9 Check Valves-Silent Operating Type	10
4.2.6.10 Globe Style Valves, Flanges	10
4.2.6.11 Wafer Style Valves	10
4.2.6.12 Threaded Style Valves	10
4.2.6.13 Valve Design	10
4.2.6.14 Valve Operation	10
4.2.6.15 Component Parts Replacement	11
4.2.6.16 Valve Disc	11
4.2.6.17 Valve Disc and Seat Standards	11
4.2.6.18 Valve Flow Way	11
4.2.6.19 Valve Body	11
4.2.6.20 Valve Seat and Disc	11
4.2.6.21 Compression Spring	11
4.2.6.22 Buna-N Seal	11
 5. ELECTRICAL	 11
 5.1 Electrical Design	 11
5.1.1 Electrical Service	11
5.1.2 Electrical Apparatus and Control Panel Design, Assembly, Installation and Integration of Parts	11
 5.2 Conformance to Basic Electrical Standards	 11
5.2.1 Electrical Control Panels	11
5.2.2 No Exceptions to the Requirements	11

5.3 U.L. Listing	11
5.3.1 U.L. Requirements	11
5.3.2 Photocopy of UL Labels	12
5.4 E.T.L. Listing	12
5.4.1 Control Panels	12
5.4.2 Station Manufacturer	12
5.5 Equipment Grounding	12
5.5.1 National Electrical Code	12
5.5.2 Ground Wires	12
5.6 Main Control Panel	12
5.6.1 Main Control Panel Enclosure	12
5.6.2 Power Distribution	12
5.6.2.1 Non-Fusible Main Disconnect	12
5.6.2.2 Branch Circuit Breakers	12
5.6.2.2.1 Pump Motor	12
5.6.2.2.2 Surge Protective Device	12
5.6.3 Surge Protection Device (SPD)	12
5.6.3.1 UL Listed	12
5.6.3.2 LED Health Indicators	12
5.6.3.3 Rating	12
5.6.3.3.1 Surge Current Rating Per Phase	12
5.6.3.3.2 Short Circuit Current Rating	12
5.6.4 Relays	12
5.6.4.1 Timing Relays	12
5.6.4.1.1 Low Suction Pressure Fault and Shut-Down	12
5.6.4.1.2 High Discharge Pressure Fault and Shut-Down	12
5.6.4.2 Interposing Relay	12
5.6.4.3 Low Suction and High Discharge Pressure Fault and Alarm Functions	12
5.6.5 Indicator Lights	12
5.6.5.1 Pump Run-Green	12
5.6.5.2 Pump Fail-Red	13
5.6.5.3 Low Suction Pressure-Red	13
5.6.5.4 High Discharge-Amber	13
5.6.6 Dry Alarm Contacts	13
5.6.6.1 Pump 1 Running	13
5.6.6.2 Pump 2 Running	13
5.6.6.3 Pump 1 Fail	13
5.6.6.4 Pump 2 Fail	13
5.6.6.5 Low Suction Pressure Alarm	13
5.6.6.6 High System Pressure Alarm	13
5.6.7 Alarm Contacts and Motor Control Wiring	13
5.6.8 H-O-A Per Pump	13
5.6.9 Time Meter Per Pump	13
5.7 Variable Frequency Drives	13
5.7.1 Variable Frequency Drive Mounts	13
5.7.2 Enclosure Rating-NEMA 1	13
5.7.3 Variable Frequency Drive Electrical Ratings	13
5.7.4 Keypad and Display	13
5.7.4.1 Keypad Requirements	13
5.7.4.2 Push Buttons	13
5.7.4.3 Display Terminal	13
5.7.4.3.1 Quick Start	13
5.7.4.3.2 Fault History	13
5.7.4.3.3 I/O Mapping	13
5.7.4.3.4 Last-Used Menus	13
5.7.4.3.5 Power On Time	13
5.7.4.3.6 Elapsed Time	13
5.7.4.3.7 Motor Run Time	13

DETAILED SPECIFICATIONS

TABLE OF CONTENTS

5.7.4.3.8	Line voltage	13
5.7.4.3.9	Motor Current	13
5.7.4.3.10	Motor Speed	13
5.7.4.3.11	Ready to run Notification	13
5.7.4.3.12	Running Notification	13
5.7.4.4	Input Power Section of the Variable Frequency Drive	13
5.7.4.5	Output Power Section of the Variable Frequency Drive	13
5.7.4.6	Drive Protection	14
5.7.4.6.1	Galvanic Isolation	14
5.7.4.6.2	Variable Frequency Drives Protection	14
5.7.4.6.3	Input Phase Loss Protection	14
5.7.4.6.4	Over-Heating and Over-Current Protection	14
5.7.4.6.5	Under-Voltage and Over-Voltage Protection	14
5.7.4.7	Motor Protection	14
5.7.4.7.1	Motor Phase Protection	14
5.7.4.7.2	Variable Frequency Drive Winding Temperature Fault or Alarm Condition	14
5.7.4.8	Drive Operation	14
5.7.4.8.1	Start Command	14
5.7.4.8.2	Pump Shut Down and Disable	14
5.8	Conduit	14
5.8.1	Wiring Requirements	14
5.8.2	Interior Conduit Requirements	14
5.8.3	Service Entrance Conduits, Utility Power Source to Pump Station	14
5.8.4	Conduit and Metallic Wire-Ways Sizing	14
5.8.5	Flexible Conduit	14
5.9	Wiring	14
5.9.1	Wiring	14
5.9.2	Control and Accessory Wiring	15
5.10	Utility Power Distribution	15
5.10.1	Utility Power Supply	15
5.10.2	Load Center—Indoor	15
5.10.3	Load Center Main Circuit Breaker	15
5.10.4	Load Center Circuit Breaker Requirements	15
5.11	Lighting	15
5.11.1	Interior Lighting	15
5.11.1.1	Light Fixtures	15
5.11.1.2	Light Switch	15
5.11.2	Emergency Lighting	15
5.11.2.1	120 Volt Emergency Lighting Fixture	15
5.11.2.2	Emergency Light Fixture—UL Listing	15
5.11.2.3	Emergency Light Fixture—Two Adjustable Heads	15
5.11.2.4	Emergency Light Fixture Further Requirements	15
5.11.2.5	Lamp Ratings	15
5.11.2.6	Emergency Light Fixture Test Switch and LED Charge/AC Voltage Indicator	15
5.11.2.7	Emergency Light Fixture Housing	15
5.11.3	Exterior Lighting	15
5.11.3.1	Ratings	15
5.11.3.2	Photo Cell Requirement	15
5.11.3.3	Housings	15
5.12	Receptacles	15
5.12.1.1	Receptacle Type	15
5.12.1.2	Weather Proof Enclosures	15
5.12.1.3	Listings Required	15
5.13	Dehumidifier	16
5.13.1	Capacity Per Twenty-Four Hours	16
5.13.2	Compressor Ratings	16
5.13.3	Condensate	16

5.13.4 Humidistat	16
5.13.5 Rubber Cord	16
5.14 Wall Mounted HVAC Unit	
5.14.1 General Requirements	16
5.14.2 Cooling Requirements	16
5.14.3 Supplemental Heater	16
5.14.4 Coils	16
5.14.5 Compressor	16
5.14.6 Cabinet	16
5.14.7 Design	16
5.14.8 Disconnect Switch	16
6. INSTRUMENTATION AND CONTROL	16
6.1 Pressure Gauges	16
6.1.1 Mounting	16
6.1.2 Glycerin Filled with Built-In Pressure Snubber	16
6.1.3 Four-Inch Face	16
6.1.4 Turret Style	16
6.1.5 Range and Scale Graduations	16
6.1.6 Trim Tubing and Mounting	16
6.2 Pressure Switches	16
6.2.1 NEMA 4 Rating Switch	16
6.2.2 Mounting	17
6.2.3 Bellows	17
6.2.4 Independent Differential and Range	17
6.2.5 Flow Meter	17
6.2.5.1 Four-Inch Magnetic Flow Meter	17
7. CORROSION PROTECTION	17
7.1 Exposed Steel Structure	17
7.2 Protective Coating	17
7.3 Protective Coating Chemical Requirements	17
7.4 Epoxy System	17
8. DESIGN, ASSEMBLY AND TESTING	17
8.1 CERTIFIED FACTORY PUMP PERFORMANCE TESTING	17
8.1.1 Certified Performance Test	17
8.1.2 Hydraulic Institute Test Standards	17
8.1.3 Test Points and Preliminary Test Data Submittal Date	17
8.1.4 Notice of Testing Dates	17
8.2 HYDRO-STATIC TESTING	17
8.2.1 Standards	17
8.2.2 Test Length and Leaking Requirements	17
8.2.3 Deficiencies	17
8.3 ELECTRICAL SEQUENCE TESTING	17
9. INSTALLATION AND START-UP	18
9.1 INSTALLATION	18
9.1.1 Unloading of Package Requirements	18
9.1.2 Perimeter Footing or Concrete Slab	18
9.1.3 Skid Leveling	18

DETAILED SPECIFICATIONS

TABLE OF CONTENTS

9.1.4	System Connections	18
9.1.5	Floor Drain	18
9.1.6	Back-Fill	18
9.1.7	Electrical Connections	18
9.1.8	Items Shipped Loose	18
9.1.8.1	Floor Drain	18
9.1.8.2	Gutters and Downspouts	18
9.2	START-UP SERVICES	18
9.2.1	Start-up Service Technician	18
9.2.2	Start-up Service Technician Time Required	18
9.2.3	O & M Manuals Required	18
9.2.4	Service Report	18
9.2.4.1	Manufacturer's File	18
9.2.4.2	Engineer's File	18
9.2.4.3	Contractor's File	18
9.2.4.4	Owner's File	18
10.	TELEMETRY	18
10.1	FURNISHING, INSTALLATION AND LOCATION OF TELEMETRY	18
10.2	TELEMETRY SYSTEM	18
10.3	FACTORY TEST	19
10.4	WARRANTY	20
10.5	START-UP SERVICE	21

1. SCOPE AND SPECIAL PROVISIONS

1.1 SCOPE OF WORK

The WORK to be accomplished under these SPECIFICATIONS consists of the furnishing and installation of a factory built, above grade, water booster pumping station. The pump station shall be complete with all the necessary internal piping, pumps, motors, valves, control, and other necessary appurtenances installed on a fabricated steel base and enclosed in a structure as shown on the plans and specified herein.

The contractor shall furnish and install the water booster station, together with all appurtenances, as shown on the DRAWINGS and as further specified herein.

The water booster station shall be complete to the extent specified herein and shall not require field assembly other than those items listed in paragraph 9.1.8.

The water booster pumping station shall be manufactured by Flo-Pak, A Business Unit of Patterson Pump Company, located in Toccoa, Georgia, or approved equal.

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 within the service area of Northeast Woodford Water District.

1.2 QUALITY ASSURANCE

1.2.1 The equipment and materials covered by these specifications are intended to be standard equipment of proven reliability and as manufactured by reputable manufacturers having experience in the production of such equipment. The equipment furnished shall be designed, constructed and installed in accordance with the best practices and methods and shall operate satisfactorily when installed as shown on the contract drawings and operated in accordance with the manufacturer's recommendations.

1.2.1.1 The manufacturer of the selected equipment shall be regularly engaged in the manufacture, assembly, construction, start-up and maintenance of water distribution equipment of the type required for this project.

1.2.1.2 The manufacturer shall have at least ten years of successful experience in providing stations of the type, design, function and quality as required for this project.

1.2.1.3 The pump station manufacturer shall be required to affix an Underwriters Laboratories (UL) label attesting to its compliance with the UL-QCZJ standard for packaged pumping systems.

1.2.1.4 The station manufacturer shall provide warrant the station against defects in quality and workmanship for a period of at least one year from the date of owner acceptance, but not to exceed eighteen months from the original ship date.

1.2.1.5 The station manufacturer shall have quality management and environmental policies in place and they shall be ISO 9000:2000 and ISO 14001:2004 certified.

1.3 SUBMITTALS

The equipment submittal shall be bound with the name of the project and the equipment manufacturer's representative listed on the front cover. The station manufacturer shall submit seven copies for approval.

1.3.1 Each copy of the submittal shall contain a full size 11" x 17" mechanical drawing. The mechanical drawing shall be specific to this project and provide at least three different views. The drawing shall illustrate the National Electrical Code (NEC) clearances per Section 110-26 of the code. The submittal booklets will be complete with data sheets covering all individual components that make pump the booster pump station and the UL file number under which the manufacturer is listed.

1.3.2 Submittals shall include the following:

1.3.2.1 Full size 11" x 17" mechanical drawing

1.3.2.2 Booster pump station manufacturer's warranty

1.3.2.3 Catalogue cut sheets on each individual component that comprise the booster pump station.

1.3.2.4 Copy of the manufacturer's UL label.

1.3.2.5 Detailed sequence of operation.

1.3.2.6 Complete set of wiring schematics.

1.3.2.7 Drawing of Control Panel Layout

1.4 BOOSTER PUMPING STATION DESIGN CRITERIA

Total Station Design Flow	250 GPM
Maximum Suction Pressure	88 PSI
Minimum Suction Pressure	54 PSI
Pressure Boost Required @ Design Flow	66 PSI

1.5 DESIGNATION OF PARTIES

1.5.1 "OWNER"

All reference in the SPECIFICATIONS, CONTRACT DOCUMENTS and DRAWINGS to "OWNER" shall mean the Northeast Woodford Water District.

1.5.2 "ENGINEER"

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

1.6 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.

1.7 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.

1.7.1 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.

1.7.2 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.

1.7.3 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.

1.8 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.

1.9 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.

All personnel working within the right-of-way limits of state or federal highways shall wear high visibility Class 2 or Class 3 retroreflective safety apparel that meets ANSI/ISEA 107-2004 Standards. Class 3 apparel is required after dark.

1.10 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.

1.11 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.

1.11.1 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

ENGINEER 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.

2. PRODUCTS

2.1 STRUCTURAL

2.1.1 Structural Support for Above Ground Water Booster Pumping Stations

2.1.2.1 The pump station shall be built on a concrete filled, structural steel base. The base shall provide adequate structural supports for the pumps, motors, piping and all other internal components of the station.

2.1.2.2 The concrete shall be furnished with a slip resistant, broom swept finish. Where suction and discharge piping pass through the structural steel base, removable panels that provide access to pipe flanges and flange bolts shall be provided.

2.1.2 Pipe Supports

2.1.2.1 Pipe supports shall be designed and sized as follows:

2.1.2.1.1 4" and small piping shall be 2" x 2" x 3/16" wall rectangular tubing;

2.1.2.1.2 6" Through 12" piping shall be 3" x 3" x 1/4" wall rectangular tubing;

2.1.2.1.3 14" Through 24" piping shall be 4" x 4" x 1/4" wall rectangular tubing;

2.1.2.1.4 All rectangular tubing shall have capped ends;

2.1.2.1.5 Pipe supports are to be fully welded at the base and at the pipe.

2.1.2.1.6 Simple pipe stands made of pipe welded only at the floor and upholding a bracket with or without a threaded jack bolt or a U-bolt are not acceptable.

2.2.2.1.7 The base shall be provided with one floor drain opening per partitioned room within the pumping station.

3. ARCHITECTURAL

3.1 Pump Station Enclosure

3.1.1 Codes and Standards - The structure design and manufacture shall, as a minimum, conform to ASCE (American Society of Civil Engineers) current edition of "Minimum Design Loads for Buildings and Other Structures" and to the MBMA (Metal Building Manufacturers Association) "Recommended Design Practices Manual." Building shall be manufactured and built to satisfy current editions of the International Building Code (IBC), and the National Electrical Code (NEC). The building manufacturer shall supply plans and calculations which shall be stamped by a Registered Professional Engineer for the State of Kentucky, The building manufacturer shall be responsible for obtaining any State Industrial Building Commission Approvals and Third Party Inspections if required by the State of Kentucky.

3.1.1.1 The interior building dimensions shall be 10' wide by 15'- 4" long with an 8' ceiling height.

3.1.1.2 Loading - The building shall be designed to support the following loads:

3.1.1.2.1 Roof Load - 50 PSF (40# live and 10# dead)

3.1.1.2.2 Ceiling Dead Load - 10 PSF

3.1.1.2.3 Wall Load - 110 mph wind, plus wall mounted equipment.

3.1.1.2.4 Seismic Zone: Per UBC for site location.

3.1.1.3 Materials - The materials shall be new, unused, and fabricated in a workmanlike manner in a factory environment. Only non-combustible materials shall be used in the construction of the building. Hot rolled steel to meet as a minimum standard ASTM -A36, and all galvanized steel to meet as a minimum standard ASTM A -653.

3.1.1.4 Perimeter Angle System - Building base shall have a hot rolled steel angle framework, welded, primed and painted, with minimum deflection of L/240. Base shall be pre-drilled for anchoring to the structural steel base..

3.1.1.5 Framework - The building shall have a complete, internal, self-supporting, structural steel frame which does not rely on the exterior panels or roof cover panels for its structural strength or framing. The building framework shall include 8 to 16 gauge, cold-formed, galvanized steel structural members. Building framework to have a flush wall, post and beam format with girts and purlins, and full trusses on both end walls which easily allows for future expansion and/or modifications. Wall and ceiling structural support system are to be designed to provide load carrying capability for anticipated equipment loads using 16 gauge galvanized steel hat channels behind liner panel for reinforcement as needed, with locations shown on approval drawings. Roof to have 8 to 14 gauge solid web hot rolled steel trusses. Building systems which are self-framing or utilized pre-manufactured, cam-locking panels are not acceptable.

3.1.1.6 Insulation - Exterior walls shall have a minimum of 3.5", fiberglass bat insulation and a vapor barrier. The ceiling shall have a minimum of 6" insulation and a vapor barrier. In addition to the insulation in the walls and ceiling, an additional 1" fiberglass insulation blanket shall be installed over the entire building framework and under

the exterior wall and roof panels, as a thermal break. The insulation system shall provide a minimum of R-19 in the walls, R-21 above the ceiling.

3.1.1.7 Roof - A roof pitched 1 inch in 12 or greater shall have a covering of overlapping, 26 gauge, "Multi-Rib" ribbed steel panels with a baked-on Kynar 500, PVDF resin-based finish over a galvalume substrate, in manufacturer's standard colors. Overlapping roof panels shall be installed with appropriate self-tapping fasteners with integral gaskets. A roof with a pitch of less than 1 inch in 12 shall have a roof covering of mechanically-seamed, 24 gauge, Standing-Seam Roofing, with a minimum seam height of 2". Standing seam roof panels shall be of Galvalume steel, with a baked-on Kynar 500, PVDF resin-based coating and shall have no visible fasteners on main run. Roof to include a matching, die-formed ridge cap, and a fully supported 3" overhang. Properly sized attic space ventilation shall be provided. Roof to be either a gable or one way slope with pitch as indicated on drawings.

3.1.1.8 Exterior Walls - The exterior walls shall be 26 gauge "Multi-Rib" ribbed steel panels with a PVDF resin-based finish over a galvalume substrate in manufacturer's standard colors. Exterior siding panels to be overlapped and installed with appropriate self-tapping fasteners with integral gaskets, and shall be removable without any disturbance to interior panels. Butted seams are not allowed. All openings in walls are to be structurally framed, sleeved, trimmed, and provided with external drip caps. Repair or replacement of exterior panels must be able to be done entirely from outside.

3.1.1.9 Exterior Trim - The exterior trim package shall include stepped or boxed eave, rake, fascia, base, corner, jamb, and header trim in, 26 gauge Galvalume material with owner's choice of standard KYNAR colors.

3.1.1.10 Interior Finish - The building's interior walls and ceiling shall be lined with flush-fit 22 gauge, roll-formed liner panels, with concealed fasteners and a baked-on White polyester finish over G-90 galvanized substrate. The building interior shall feature a complete matching trim system including base, jamb, header, and ceiling trim. Liner to be reinforced with 14 gauge hat channels mounted vertically as needed for heavy wall mounted items. No wood shall be used in the construction of the interior wall.

3.1.1.11 Fasteners, Adhesives, and Sealants - The fasteners, adhesives, and sealants utilized shall be of types approved for use on this type of structure as required by the appropriate agency or governing body, as covered in section 2.01.C.1 of these specifications.

3.1.1.12 Closures - Matching, pre-molded, closed cell elastomeric closures provided by the siding and roof panel manufacturer shall be installed according to the manufacturer's recommendations at the eave line, beneath the roof panels, and where the trim meets the wall panels.

3.2 Doors and Hardware

3.2.1 Doors shall at a minimum comply with Steel Door Institute directive SDI-100.

3.2.2 Doors to be constructed of no less than 18-gauge steel faced leafs with stiffeners and 16 gauge door frames. Doors and frames to be hot-dipped galvanized to ASTM designations A924 and A653, then factory primed and painted with epoxy enamel to match the building or the trim. Door to have insulated core.

3.2.3 There shall be a 72" X 84" double door provided at a minimum or as indicated on the wings.

- 3.2.4** Door hinges shall be NRP stainless steel ball bearing hinges, minimum of three (3) per door.
- 3.2.5** Keyed, low profile rim device type panic interior openers, with cylinder lock entry and thumb latch exterior trim, by Von Duprin or equal shall be provided.
- 3.2.6** A door closer with hold open arm shall be provided.
- 3.2.7** A threshold, weather-stripping and sweeps shall be provided for each door as manufactured by Reese or equal.
- 3.2.8** A drip cap shall be provided for each door, extending 3" past door edge.
- 3.2.9** Gutters shall be provided of 26ga galvanized steel. They shall be mounted over eave trim on each side of the building. Both eave walls shall be provided with 1 down spout with necessary elbows.
- 3.2.10** A rain canopy shall be supplied and mounted by the installing contractor above the door. Minimum dimensions shall be 8' x 4' and shall be made from 14 ga. Galvannealed metal.
- 3.2.11** A one ton capacity crane entirely supported by the ceiling trusses and building frame with trim matching interior liner panel shall be provided. Bridge cranes requiring additional supports will be considered unacceptable.
- 3.3 Enclosure Accessories** – The following items shall be provided by the station manufacturer:
 - 3.3.1** Four (4) 2 tube enclosed fluorescent lights in accordance with article 5.11.
 - 3.3.2** Three (3) wall mounted, interior convenience outlets in accordance with article 5.12.
 - 3.3.3** One (1) wall mounted, exterior convenience outlet in accordance with article 5.11 located adjacent to the HVAC unit.
 - 3.3.4** One (1) exterior mounted weatherproof, HPS, lamp with photocell in accordance with article 5.11.
 - 3.3.5** One (1) interior emergency lighting fixture in accordance with article 5.11.
 - 3.3.6** One (1) 25 pint dehumidifier in accordance with article 5.13.
 - 3.3.7** One (1) wall mounted, HVAC unit in accordance with article 5.14.
- 3.4 Pump Station Enclosure** shall be manufactured by Trachte of Oregon, WI (608) 835-5707, or approved equal.

4. MECHANICAL

4.1 Close-Coupled End Suction, Centrifugal Pumps

4.1.1 Pumps shall be high efficiency end-suction close coupled design. The pumps shall be of the back pullout design, single stage, and capable of being serviced without disturbing piping connections.

4.1.2 Design Conditions

Number Pumps Required	2
Present Design Flow (GPM)	250 GPM
Design TDH (Ft.)	164 ft.
Shut-off Head	200 ft.

Maximum Operating RPM	3500
Efficiency @ Present Design (%)	70%
Minimum Motor HP	20

4.1.3 The pump volute case shall be class 30 cast iron. The pumps shall have bronze case wear rings and grease lubricated bearings.

4.1.4 Pumps shall be designed for a maximum shaft deflection of .002" at the seal face.

4.1.5 Impellers shall be precision cast and dynamically balanced and shall be of the enclosed type, non-leaking brass and keyed to the shaft. The impellers shall have annular pressure reducing clearance with impeller balance holes to reduce axial thrust.

4.1.6 The pumps shall have a replaceable bronze or stainless steel shaft sleeve and shall cover the liquid area under the seal.

4.1.7 The pump shall have a mechanical seal of carbon vs. silicon carbide construction with seal water flush line.

4.1.8 The pumps shall be rated for a minimum of 175 PSI working pressure. Casing shall have taped holes on the suction and discharge to accommodate gauges, fittings, and drain ports.

4.1.9 Pumps shall be Patterson Pump model 2 ½ x 2 x 8A HES, or approved equal.

4.1.10 Motors shall be rated for 230 volt, 3 phase electrical service, open drip-proof, NEMA premium, inverter rated design. Motor horsepower shall be as indicated in article 2.03.A.2. Motor shall be non-overloading throughout the entirety of the pump performance curve.

4.2 Pipe, Valves and Fittings

4.2.1 Piping

4.2.1.1 Piping shall be steel and conform to material specification ASTM A-53 (CW) for nominal pipe size four (4) inches and smaller, and ASTM A-53 (ERW) Grade B for nominal pipe size five (5) inches and larger.

4.2.1.2 Steel butt-welding fittings shall conform to material specification ASTM A-234 Grade WPB and to the dimensions and tolerances of ANSI Standards B16.9 and B16.28 respectively.

4.2.1.3 Forged steel flanges shall conform to material specification ASTM A-105 Class 60 and/or ASTM A-181 for carbon steel forgings and to the dimensions and tolerances of ANSI Standards B16.5 as amended in 1992 for Class 150 and Class 300 flanges.

4.2.1.4 Certified welders employed by the pump station manufacturer shall perform all pipe welds. As part of the equipment submittal, the pump station manufacturer shall provide copies of the welding certificates of the employees who are to perform the pipe welds.

4.2.1.5 Piping of six (6) inches diameter and larger shall require a minimum of two (2) weld passes to complete each weld. The first pass, or root pass, shall be applied at the bottom of the bevel cut using the short circuit transfer-welding mode. The second pass, or cap pass, shall be applied over the root pass using the spray or pulse arc transfer welding modes to insure that at a minimum the total weld thickness shall be equal to thinnest of the two pieces being welded together.

4.2.1.6 The piping sizes shall be as shown on the drawings.

4.2.1.6.1 Size 10" and below – Schedule 40

4.2.1.6.2 Size 12" and above – Standard weight (.375" wall)

4.2.1.7 Piping Restraints - The main inlet and outlet piping to the station shall each be provided with two (2) or four (4) restraining points as welded on “eyes” or similar device welded to the framing to facilitate the attachment of joint restraint tie rods or other device to be used in retarding any pipe movement at the connections.

4.2.2 Flexible Couplings

4.2.2.1 Flexible couplings shall have a casing made from ASTM A536, Grade 65-45-12 ductile iron.

4.2.2.2 Gaskets shall be NSF certified, Grade “E” EPDM.

4.2.2.3 Flexible couplings shall be rated for a minimum working pressure of 300 PSI or greater.

4.2.3 Elastomeric Connectors

4.2.3.1 The inlet side of each booster pump shall include an elastomeric connector to help isolate vibration and noise in the piping system.

4.2.3.2 The elastomeric connector shall be of single sphere design, constructed of neoprene and nylon with bias-ply tire reinforcing cord to provide a 225 PSI working pressure rating for sizes up to and including 12” and 125 PSI working pressure rating for sizes above 12”.

4.2.3.3 The elastomeric connector shall pass through the plate steel flanges designed to grip the connector so the connector seals without gaskets when the flange bolts are drawn up.

4.2.3.4 A control joint limiting pipe connector movement shall be supplied with each pipe connector.

4.2.3.5 The booster station piping shall include a compression type, flexible coupling to prevent binding and facilitate removal of associated equipment where shown on the plans for this item. In lieu of a compression coupling, a grooved, flexible coupling may be used.

4.2.4 Suction Strainer / diffuser

4.2.4.1 A cast iron, suction strainer / diffuser shall be provided in the suction manifold – upstream of the flow meter in the pump station.

4.2.4.2 The strainer shall include a bronze, start-up strainer that is to be removed after initial start-up.

4.2.4.3 The strainer shall include a permanent strainer made from stainless-steel that can be removed for cleaning and or replacement.

4.2.4.4 The strainer shall be rated for 175 PSI.

4.2.5 Valves

4.2.5.1 Pump Isolation Butterfly Valves

4.2.5.1.1 Valve body shall be lug style.

4.2.5.1.2 Valves shall be of the resilient seat type.

4.2.5.1.3 The stem shall be one piece. The disc and stem shall be connected by a stainless steel torque plug that shall provide positive engagement.

4.2.5.1.4 The valve shall have upper and lower RTFE inboard stem bearings, isolated from the line media, and a heavy-duty upper stem bushing.

4.2.5.1.5 The body shall be ductile iron, with a stainless steel disc, stainless steel stem, EPDM seat, acetyl upper stem bushing, and BUNA-NV-cup stem seal.

4.2.5.1.6 Valve sized six (6) “and smaller shall be equipped with lever operator and 10 degree increment throttling plate.

4.2.5.1.7 Valve sized eight (8) “and larger shall be equipped with a weatherproof, heavy-duty, gear operator complete with a position indicator.

4.2.6 Gate Valve

4.2.6.1 A gate valve in compliance with the latest revision of AWWA Standard C-590 covering resilient seated gate valves for all water supply service shall be supplied to isolate the pump station at the suction manifold.

4.2.6.2 The gate valve shall have a cast iron body, bonnet and o-ring plate.

4.2.6.3 The wedge shall be totally encapsulated with rubber. The sealing rubber shall be permanently bonded to the wedge to meet the requirements of ASTM D429.

4.2.6.4 The gate valve shall be supplied with o-ring seals at all pressure retaining joints. No flat gaskets shall be allowed.

4.2.6.5 The gate valve shall be of the non-rising stem design, opening by turning left and provided with a handwheel with the word “open” and an arrow to indicate the direction to open.

4.2.6.6 The valve stem shall be cast bronze with integral collars in full compliance with AWWA. Valve stem shall operate with bronze stem nuts independent of wedge and of stem. Valve stem shall have two o-rings located above the thrust collar and one o-ring located below the thrust collar. Stem o-rings shall be replaceable with the valve fully opened and subjected to full pressure. The valve stem shall have two low torque thrust bearings located above and below the stem collar to reduce friction during operation.

4.2.6.7 The waterway shall be smooth, unobstructed and free of all pockets, cavities and depressions in the seat area.

4.2.6.8 Check Valves shall be the silent type as specified below.

4.2.6.9 Check valves shall be of the silent operating type that begins to close as the forward flow diminishes and is fully closed at zero velocity preventing flow reversal and resultant water hammer or shock.

4.2.6.10 Globe style valves shall be provided in sizes 12 in (300 mm) through 48 in. (1200 mm) and have flanges in accordance with ANSI B16.1 for Class 125 or Class 250 iron flanges and ANSI B16.5 for Class 150 or Class 300 steel flanges. Iron flanges shall be flat faced. Sizes 10 in (250 mm) and smaller shall be capable of mating directly to a wafer butterfly valve without disc interference.

4.2.6.11 Wafer style valves shall be provided in sizes 3 in (75 mm) through 10 in. (250 mm) for installation between ANSI B16.1 Class 125 or Class 250 iron flanges or ANSI B16.5 Class 150 or Class 300 steel flanges.

4.2.6.12 Threaded style valves shall be provided in sizes 2 in and smaller.

4.2.6.13 The valve design shall incorporate a center guided, spring loaded disc, guided at opposite ends and having a short linear stroke that generates a flow area equal to the pipe size.

4.2.6.14 The operation of the valve shall not be affected by the position of installation. The valve shall be capable of operating in the horizontal or vertical positions with the flow up or down. Heavy duty springs for vertical flow down installations shall be provided when specified on 14 in. and larger valves.

- 4.2.6.15** All component parts shall be field replaceable without the need of special tools. A replaceable guide bushing shall be provided and held in position by the spring. The spring shall be designed to withstand 100,000 cycles without failure and provide a cracking pressure of 0.5 psi and to fully open at a flow velocity of 4 ft/sec. (1.22 M/sec).
- 4.2.6.16** The valve disc shall be concave to the flow direction providing for disc stabilization, maximum strength, and a minimum flow velocity to open the valve.
- 4.2.6.17** The valve disc and seat shall have a seating surface finish of 32 micro-inches or better to ensure positive seating at all pressures. The leakage rate shall not exceed one-half of the allowable rate for metal seated valves allowed by AWWA Standard C508 or 0.5 oz (15 ml) per hour per inch (mm) of valve diameter.
- 4.2.6.18** The valve flow way shall be contoured and unrestricted to provide full flow areas at all locations within the valve.
- 4.2.6.19** The valve body shall be constructed of ASTM A126 Class B cast iron for Class 125 and Class 250 valves.
- 4.2.6.20** The seat and disc shall be ASTM B584 Alloy C83600 cast bronze or ASTM B148 Alloy C95200 aluminum bronze.
- 4.2.6.21** The compression spring shall be ASTM A313 Type 302 stainless steel with ground ends.
- 4.2.6.22** A Buna-N seal shall be provided on the seat to provide zero leakage at both high and low pressures without overloading or damaging the seal. The seal design shall provide both a metal to metal and a metal to Buna-N seal.

5. ELECTRICAL

5.1 Electrical Design

5.1.1 Electrical service provided to the pump station will be 240 volt, 3 phase, 60 hertz, three-wire.

5.1.2 The electrical apparatus and control panel design, assembly, and installation, and the integration of component parts will be the responsibility of the manufacturer of record for this booster pumping equipment. That manufacturer shall maintain at his regular place of business a complete electrical design, assembly and test facility to assure continuity of electrical design with equipment application.

5.2 Conformance To Basic Electrical Standards

5.2.1 The electrical control panels including mounting and installation shall be done in strict accordance with the requirements of UL Standard 508 and the National Electrical Code (NEC) latest revision.

5.2.2 No exceptions to the requirements of these codes and standards will be allowed; failure to meet these requirements will be cause to remove the equipment and correct the violation.

5.3 U.L. Listing

5.3.1 All service entrance, power distribution, control and starting equipment panels shall be constructed and installed in strict accordance with Underwriters Laboratories (UL) Standard 508 "Industrial Control Equipment." The UL label shall also include an SE "Service Entrance" rating stating that the main distribution panel is suitable for use as service entrance equipment. The panels shall be shop inspected by UL, or constructed in a UL recognized facility. All panels shall bear a serialized UL label indicating acceptance under Standard 508 and under Enclosed Industrial Control Panel or Service Equipment Panel.

5.3.2 A photocopy of the UL labels for this specific project shall be transmitted to both the project engineer and the contractor for installation within their permanent project files, prior to shipment of the equipment covered under these specifications.

5.4 E.T.L Listing

5.4.1 All control panels shall be E.T.L. Listed by Interek Testing Services (ITS) under Category 4 – Industrial Control Equipment. Each completed panel shall bear an E.T.L. listing label. The listing label shall include the station manufacturer’s name, address, and telephone number.

5.4.2 The station manufacturer shall have quarterly inspections performed by ITS at the manufacturer’s facilities to ensure that the products being listed comply with the report and procedural guide for the product.

5.5 Equipment Grounding

5.5.1 Each electrical equipment item in the station shall be properly grounded per Section 250 of the National Electrical Code. Items to be grounded include, but are not limited to, pump motor frames, control panel, transformer, convenience receptacles, dedicated receptacle for heater, air conditioner, dehumidifier, lights, light switch, exhaust fans and pressure switches.

5.5.2 All ground wires from installed equipment shall be in conduit and shall lead back to a ground buss located in the Main Control Panel specifically for grounding purposes and so labeled. The ground buss shall be complete with a lug large enough to accept the installing electrician's bare copper earth ground wire. The bus shall serve as a bond between the earth ground and the equipment ground wires.

5.6 Main Control Panel

5.6.1 The **ENCLOSURE** for the Main Control Panel shall be NEMA 12 rated.

5.6.2 Power Distribution

5.6.2.1 A non-fusible main disconnect with through-the-door operator shall be provided.

5.6.2.2 Branch circuit breakers shall be provided for the following:

5.6.2.2.1 Each pump motor

5.6.2.2.2 Surge Protective Device

5.6.3 Surge Protection Device (SPD)

5.6.3.1 A UL listed, type 1, surge protection device shall be provided.

5.6.3.2 The surge protective device shall feature LED health indicators.

5.6.3.3 The surge protective device shall be rated for:

5.6.3.3.1 Surge Current Rating Per Phase – 40 kA

5.6.3.3.2 Short Circuit Current Rating – 200 kA

5.6.4 Relays

5.6.4.1 Timing relays shall be provided for each of the following functions:

5.6.4.1.1 Low suction pressure fault and shut-down

5.6.4.1.2 High discharge pressure fault and shut-down

5.6.4.2 An interposing relay shall be provided for each pump.

5.6.4.3 Low suction and high discharge pressure fault and alarm functions shall be accomplished using relays which are external to the booster pump controller or RTU.

5.6.5 Indicator Lights

5.6.5.1 Pump Run – Green

5.6.5.2 Pump Fail – Red

5.6.5.3 Low Suction Pressure – Red

5.6.5.4 High Discharge Pressure – Amber

5.6.6 Dry alarm contacts shall be provided for the following:

5.6.6.1 Pump 1 Running

5.6.6.2 Pump 2 Running

5.6.6.3 Pump 1 Fail

5.6.6.4 Pump 2 Fail

5.6.6.5 Low Suction Pressure Alarm

5.6.6.6 High System Pressure Alarm

5.6.7 Alarm contacts and motor control wiring shall be wired to a terminal strip for ease of pump controller / RTU integration.

5.6.8 An H-O-A shall be provided for each pump. When the pump's HOA switch is placed in the "Hand" position, and the suction supply is within limits, the pumps shall start and run.

5.6.9 An electro-mechanical, elapsed time meter shall be provided for each pump.

5.7 Variable Frequency Drives

5.7.1 Variable frequency drives shall be mounted adjacent to the pump control panel.

5.7.2 The enclosure rating for the variable frequency drive shall be NEMA 1.

5.7.3 Variable frequency drives shall be rated for 230 volt, 1 phase input and 230 volt, 3 phase output.

5.7.4 Keypad and Display

5.7.4.1 The variable frequency drive shall have a four segment on-board keypad and LED display terminal that provides LED indication for Run/Stop and Local/Remote.

5.7.4.2 Push buttons for Local/Remote selection, Run/Stop Selection and programming shall be provided.

5.7.4.3 The following shall be available on the display terminal.

5.7.4.3.1 Quick Start

5.7.4.3.2 Fault History

5.7.4.3.3 I/O Mapping

5.7.4.3.4 Last-Used Menus

5.7.4.3.5 Elapsed Time

5.7.4.3.6 Power On Time

5.7.4.3.7 Motor Run Time

5.7.4.3.8 Line Voltage

5.7.4.3.9 Motor Current

5.7.4.3.10 Motor Speed

5.7.4.3.11 Ready to Run Notification

5.7.4.3.12 Running Notification

5.7.4.4 The input power section of the variable frequency drive shall utilize a 6-Pulse bridge rectifier design incorporating diode rectifiers. The diode rectifiers shall convert fixed voltage and frequency, AC line power to fixed DC voltage. This power section shall be insensitive to phase rotation of the AC line.

5.7.4.5 The output power section shall change fixed DC voltage to adjustable frequency AC voltage. This section shall utilize insulated gate bipolar transistors (IGBTs) or intelligent power modules (IPMs) as required by the current rating of the motor.

5.7.4.6 Drive protection

5.7.4.6.1 Galvanic isolation between power and control components shall be provided.

5.7.4.6.2 The variable frequency drives shall be protected against short circuits within the power supplies, between output phases, and between output phases and ground.

5.7.4.6.3 The variable frequency drives shall be protected against input phase loss.

5.7.4.6.4 The variable frequency drives shall be protected against over-heating and over-currents

5.7.4.6.5 The variable frequency drives shall be protected against under-voltage and over-voltage conditions.

5.7.4.7 Motor Protection

5.7.4.7.1 The variable frequency drives shall protect pump motors against motor phase loss.

5.7.4.7.2 The variable frequency drives shall monitor the winding temperature of its respective motor. Drive shall allow the user to define this as a fault or alarm condition.

5.7.4.8 Drive Operation

5.7.4.8.1 The variable frequency drive's start command will come from its digital input terminals which shall be wired to its respective H-O-A switch located in the main control panel. In "Hand" operation the AFD's speed reference will come from its keypad.

5.7.4.8.2 If the H-O-A switch is placed in the "Off" position, or its variable frequency drive is in a fault condition, the pump shall be shut down and disabled until the condition is corrected.

5.8 Conduit

5.8.1 All wiring within the equipment enclosure and outside of the control panel or panels shall be run in conduit or metallic wire-ways, except for the watertight flexible conduit and fittings properly used to connect pump drivers, fan motors, solenoid valves, limit switches, etc., where flexible connections are best utilized.

5.8.2 Interior conduit shall be electrical metallic tubing (EMT) or metallic wire-ways.

5.8.3 Service entrance conduits shall be intermediate metal conduit (IMC) and shall be sized to accept the inbound service conductors in accordance with the National Electric Code. Conduit shall be provided from the utility power source to the pump station, through an opening in the skid and shall terminate at the pump station control center. Service conduit and wiring shall be provided by the installing contractor.

5.8.4 Conduit and metallic wire-ways shall be sized for the type, number and size of equipment conductors to be carried, in compliance with Article 358, Article 376 or Article 344 of the National Electrical Code as applicable and NEMA TC-2, Federal WC-1094A and UL-651 – Underwriter's Laboratory Specifications.

5.8.5 Where flexible conduit is necessary, the conduit shall be liquid-tight, flexible, metal, corrosion resistant, non-conductive, UL listed flexible conduit. Flexible conduit shall be sized for the type, number and size of equipment conductors to be carried, in compliance with Article 350 of the National Electrical Code.

5.9 Wiring

5.9.1 Motor circuit wiring shall be sized for load. All branch circuit conductors which supply a single motor shall have an ampacity of not less than 125 percent of the motor full load current based upon NEC table 430.250. Wiring shall be dual rated type THHN/THWN, as set forth in Article 310 and 430 Part II of the National Electrical Code.

5.9.2 Control and accessory wiring shall be sized for load, type MTW/AWM (Machine Tool Wire/Appliance Wiring Material) as set forth in Article 310 and 670 of the National Electrical Code, except where accessories are furnished with a manufacturer supplied UL approved rubber cord and plug.

5.10 Utility Power Distribution

5.10.1 The utility power supply shall consist of a 150 Amp rated load center.

5.10.2 The load center shall be designed for indoor environments.

5.10.3 The load center shall be complete with a main circuit breaker.

5.10.4 The load center shall accept up to 30 single pole circuit breakers or up to 10 two pole circuit breakers.

5.11 Lighting

5.11.1 Interior Lighting

5.11.1.1 Light fixtures shall be two-tube, 32 watt per tube, electronic start, enclosed and gasketed forty-eight (48) "minimum length fluorescent type that is UL listed for wet locations.

5.11.1.2A UL listed, CSA certified light switch shall be located conveniently adjacent to the personnel entrance.

5.11.2 Emergency Lighting

5.11.2.1 A 120 volt emergency lighting fixture shall be provided on the interior of the pumping station.

5.11.2.2 Emergency light fixtures shall be UL listed for damp location use.

5.11.2.3 Emergency light fixtures shall provide two adjustable heads that allow the operator to direct light where it will be most useful.

5.11.2.4 Emergency light fixtures shall have a maintenance free, sealed lead calcium, 6.0 volt, battery backup with a maximum full recharge time of twenty four hours and provide one and a half hour emergency operation.

5.11.2.5 Lamps shall be rated for 5.4 watts each.

5.11.2.6 Emergency light fixtures shall be provided with a test switch and LED charge /AC voltage indicator.

5.11.2.7 Emergency light fixture housings shall be made from impact resistant, injection molded thermoplastic.

5.11.3 Exterior Lighting

5.11.3.1 Exterior light fixtures shall be UL listed 120 volt, 70 watt, weather-proof HPS type.

5.11.3.2 Exterior light fixtures shall be equipped with a photo cell to allow for automatic dusk till dawn operation.

5.11.3.3 Exterior light fixture housings shall be one piece, injection molded, bronze polycarbonate.

5.12 Receptacles

5.12.1.1 Receptacles shall be duplex, ground fault circuit interrupter type receptacles with fault indicator light.

5.12.1.2 All receptacles shall be mounted in weather-proof enclosures.

5.12.1.3 All receptacles shall be UL and CSA listed and conform to NEMA WD-1 and WD-6.

5.13 Dehumidifier

5.13.1 Capacity of 25 pints per 24 hours.

5.13.2 Compressor shall be rated for 1/5 horsepower, 4.1 amps, 400 watts

5.13.3 Condensate shall be piped to nearest floor drain.

5.13.4 120 Volt A.C. operation by dial controlled, adjustable humidistat.

5.13.5 U.L. listed rubber cord.

5.14 Wall Mounted HVAC Unit

5.14.1 HVAC unit must be a one piece, factory assembled; pre-charged, prewired and tested air conditioning unit approved and listed by Underwriters Laboratories with built in heater.

5.14.2 The total cooling capacity of the unit shall be 30,000 BTUH and the sensible cooling capacity shall be 24,100 BTUH when handling 1000 CFM of indoor air at entering conditions of 80° F DB and 67° F WB and 95° DB outdoor ambient.

5.14.3 The unit shall be provided with a supplemental heater rated 5 KW, 1 phase, 230 volts. Each heater is to be equipped with an automatic reset limit switch and a one time high temperature thermal cut out for additional safety back up protection.

5.14.4 Coils shall be of copper tube construction with mechanically bonded aluminum plate fins.

5.14.5 The compressor shall be a welded hermetic type with internal vibration isolators and built in thermal and over current protection devices.

5.14.6 The cabinet shall be a single, enclosed weatherproof casing constructed of 20 gauge galvanized steel. Each exterior casing panel to be bonded and finished with baked-on exterior polyester enamel paint prior to assembly.

5.14.7 The unit shall be designed so that it pulls air from the outside when ambient temperatures are cool enough to satisfy cooling requirements without running the compressor.

5.14.8 The HVAC unit shall be provided with a separate, exterior mounted disconnect switch mounted in a NEMA 3R enclosure adjacent to the HVAC unit.

6. INSTRUMENTATION AND CONTROL

6.1 Pressure Gauges

6.1.1 System suction and discharge pressure gauges shall be panel mounted and located as shown on the drawings.

6.1.1 Pressure gauges shall be glycerin filled with a built-in pressure snubber.

6.1.2 Pressure gauges shall have a 4" face.

6.1.3 Pressure gauges shall be turret style. Case material shall be stainless steel with clear acrylic faces. The gauge shall be bottom connected and accept a 1/4" NPT female thread.

6.1.4 Combination pressure gauge range and scale graduations shall be in PSI and feet of water. All gauges will be panel mounted off the pipeline and be connected to their respective sensing point via copper tubing.

6.1.5 The gauge trim tubing shall be complete with both isolating and vent valves, and the tubing shall be so arranged as to easily vent air and facilitate gauge removal. Gauges mounted directly to the pipeline or at the sensing point will not be accepted.

6.2 Pressure Switches

6.2.1 An external bellows type, NEMA 4 rated pressure switch shall be provided in order to detect low suction and high discharge pressure..

6.2.2 The pressure switch shall be panel mounted with the suction and discharge pressure gauges.

6.2.3 The bellows shall be of stainless steel construction.

6.2.4 The pressure switch shall have independently adjustable differential and range.

6.2.5 Flow Meter

6.2.5.1 A 4" magnetic flow meter shall be provided by the owner for installation in the pump station by the pump station manufacturer.

7. CORROSION PROTECTION

7.1 All surfaces of the exposed steel structure, interior and exterior, shall be grit blasted equal to commercial base cleaning (SSPC-SP6).

7.2 The protective coating shall take place immediately after surface preparation.

7.3 The protective coating shall be Delft Blue Potapox FC20 consisting of two-component, high solids, and amide-cured epoxy system formulated for high build application having excellent chemical and corrosion resistant properties.

7.4 The epoxy system shall be self-priming and require no intermediate coatings. The protective coating shall provide in two (2) applications a total dry mil thickness of 8.0 mils.

8. DESIGN, ASSEMBLY AND TESTING

8.1 CERTIFIED FACTORY PUMP PERFORMANCE TESTING

8.1.1 A certified performance test shall be performed on each pump utilizing its specified electric motor.

8.1.2 All tests shall be performed in accordance with the Hydraulic Institute Test Standards for Centrifugal Pumps - 1.6 (1988).

8.1.3 Six evenly spaced test points shall be taken and shall include conditions at shut-off (zero flow) and the operating points specified herein. Preliminary test data must be submitted to the owner seven days prior to the actual test date.

8.1.4 The engineer and/or a representative of the owner shall be given sufficient notice of the testing dates and shall have the opportunity to witness these test.

8.2 HYDRO-STATIC TESTING

8.2.1 When the station plumbing is completed, the pressure piping within the station (including valves, pumps, control valves, and fittings) connections make up, the entire system shall be hydro-statically tested at a pressure not less than 150% of max system design pressure.

8.2.2 The test pressure shall be applied for a minimum of 60 minutes, during which time all joints, connections, and seams shall be checked for leaking.

8.2.3 Any deficiencies found shall be repaired and the system shall be re-tested at no expense to the contractor.

8.3 ELECTRICAL SEQUENCE TESTING

8.3.1 Prior to shipment, the electrical system and controls shall be tested at the manufacturer's facility to insure the specified sequence of operation is met.

8.3.2 Copies of the test report shall be provided as a part of the systems operation and maintenance manual.

9 INSTALLATION AND START-UP

9.1 INSTALLATION

9.1.1 Unloading of the package should be done using a spreader bar to insure the lifting cables/slings do not damage piping, control panels, etc. Spreader bar to be six feet longer than the width of the enclosure.

9.1.2 The pump system should be set on a perimeter footing or concrete slab of adequate design to suit site conditions.

9.1.3 Level the skid using metal wedges or shims if necessary, and as required.

9.1.4 Make system connections. If through-the-floor connections are specified, the final turn-up cut shall not be made until the system is set in place.

9.1.5 Position the floor drain shipped loose with the skid and pipe the outlet to a drain or as indicated on the contract drawings.

9.1.6 After making the piping connections, back fill as required.

9.1.7 Electrical connections should be completed to the pump station control center (as required).

9.1.8 Items shipped loose for installation by the contractor:

9.1.8.1 Floor drain

9.1.8.2 Gutters & downspouts

9.2 START-UP SERVICES

9.2.1 Start-up service technician shall be a certified booster station technician by the system manufacturer or authorized service representative.

9.2.2 The manufacturer of the pump station shall provide a start-up service technician for two – eight hour days for the purpose of start-up supervision and operator training.

9.2.3 The manufacturer of the pump station shall provide three bound O & M manuals.

9.2.4 The start-up service technician shall prepare a service report following start-up and distributed as follows:

9.2.4.1 Manufacturer's File

9.2.4.2 Engineer's File

9.2.4.3 Contractor's File

9.2.4.4 Owner's File

10. TELEMETRY

10.1 FURNISHING, INSTALLATION, AND LOCATION OF TELEMETRY

The CONTRACTOR shall furnish and install complete supervisory pump sensing controls utilizing one (1) pump station remote and monitoring equipment to be installed in existing central control panel.

The central control panel shall be located at Gatewood Water Services, 2126 Lucas Lane, Frankfort, Kentucky and shall be the basis of control and shall interrogate the remote units to send control data and receive level, status and alarm data from each remote.

10.2 TELEMETRY SYSTEM

The system shall be a digital control system as manufactured by EIC Equipment Co., Inc., Jackson, Missouri. The engineer shall be the sole judge as whether alternate equipment is considered an approved equal.

The new remote site in the system shall be assigned a unique digital address. The "central" shall address the new remote site in sequence to send command data and receive status, alarm, and level data as required by the site. The "central" panel shall indicate, display, and alarm all

information received and compare the data to thumbwell setpoints and hand-off-auto switches for control commands and outputs. Should the existing "central" unit fail, the pump station remote shall interrogate its respective pump station remote with pump/stop/start commands to maintain its water level. Should the pump station fail to be interrogated or experience an internal failure, it shall turn off its "system normal" output relay causing the pump station controls to automatically shift to any existing backup controls.

The new pump station site in the system shall have a "System Normal" lamp to indicate that the site is functioning normally and in communication with the other sites.

The control system shall operate in a half-duplex mode over a single VHF radio frequency. The control system shall test the radio squelch gate for clear channel to allow co-channel operation with other radio-systems. To facilitate system layout and future expansion, the new site shall, under the direction of the central unit, be able to relay to and from any other remote site. Should the assigned relay site for a distance remote be inoperative, the "central" shall choose another remote site to access the distant remote.

All data transmitted shall be in digital word from using FSK (Frequency Shift Keying) transmission. Data shall be sent in standard ASCII format at a rate of 110 baud. The control system shall be designed specifically for radio communication and capable of operation on the narrow band splinter frequencies of the power radio service requiring that the sum of the highest FSK frequency and the amount of deviation shall not exceed 1.7 kHz (or 2.8 kHz) as required by the FCC for the specific frequency assigned.

All transmissions shall include the address of the sender and receiver. All data shall be subject to double scan, parity, and framing error checks to insure a minimum accuracy of .000000001. The new location shall use crystal clocking for system timing and to generate FSK tones.

All items in the control system (electronic cards, power supplies, radios, time delays, relays, transducers, etc.) shall be of plug-in construction and interchangeable without re-calibration. The discrete input-output cards shall have 110 VAC optically isolated couplers with 7500 volts of isolation. The analog input/output shall be 0-5 volt DC with 3% accuracy. Conversion to and from other analog signals shall be by means of a signal-conditioning card constructed so that zero and span adjustments are a part of the card rack of remote site enclosure allowing the card to be interchangeable. Central and remote site addresses assignments shall be part of the plug-in connectors and unaffected by changing cards. The existing central unit is equipped with a Bell 104-phone modem to provide long distance factory de-bugging over dial-up lines. This de-bug system allows the factory technician to monitor data transmissions to and from all sites and to interrupt the system to send interrogations, and to test all inputs and outputs (analog and discrete), digital displays, and thumbwheel assemblies. The de-bug service provides sufficient detail to pinpoint the defective module for operator replacement without expensive service calls. The central panel and remote display panel use plug-in card rack construction using no more than eight different card types (DPU, MODEM, DISCRETE I/O, ANALOG I/O, SIGNAL CONDITIONING, THUMBWHEEL/DISPLAY, AND PLUG-IN POWER SUPPLIES). The thumbwheel assembly shall have two 3-digit setpoints for high/low alarm or stop/start control. The display and thumbwheel shall communicate directly with the card rack with BCD (Binary Coded Decimal) data.

The remote unit shall contain three components: VHF radio transceiver, a one/card remote, and a single (common 12 VDC power supply. The one/card remote shall be capable of controlling analog data (with zero and span adjustments to part of the remote enclosure), and have 110 VAC inputs and outputs with 7500 volts of optical isolation. The one/card remote shall be housed in a 4" x 8" plastic module with all connections via a plug-in connector. The common 12 VDC power supply shall provide + or - 10% input variations. The power supply shall be equipped with short circuit and over-voltage protection.

WAB III - Detailed Specifications

The system manufacturer shall supply a 25-watt VHF radio transceiver (adjustable to 5 watts) to insure a high level of quality and reliability. All connections to the radio shall be plug-in. The VHF radio transceiver shall have the following specifications:

Transmitters:

RF output power	20 watts
Spurious & Harmonic Emission	- 65 DB
Frequency Stability	+ or -.0005% (-30 to +60 DEG C)
Modulation	6F2 (2.5 kHz Dev Max) Or 3F2 (1.2 kHz Dev Max)
FM Hum and Noise	- 60 DB

Receiver:

Sensitivity (20 DB Quieting)	.35 UV (.5UV)
Selectivity	-80 DB
Spurious Image Rej.	-90 DB
Intermodulation	-75 DB
Frequency Stability	(-30 to +60 Deg C)

The radio equipment shall be FCC type approved and the system capable of operation on the narrow band splinter frequencies (154-173MHZ) in the power radio service. The sum of the highest transmitted tone and deviation shall be less than 2800 HZ for a 6F2 emission and 1700 Hz for a 3F2 emission. The receiver band width shall match that of the transmitter. The control system manufacturer shall do all the paper work necessary to obtain a license for the owner.

Radio antenna at the new pump station site shall be a five element "Yagi" as manufactured by Phelps-Dodge. The antenna shall have 8.0 DB forward gain with a 20.0 DB front to back ratio. The antenna shall be of all aluminum construction with a boom of 1-1/16" diameter aluminum pipe and elements of 3/8" aluminum rod. The antenna shall be wind rated for 100-MPH wind speed. The antenna shall be connected to the transmitter enclosure via RG8/U coaxial cable. The enclosure connection shall be by means of a bulkhead type lightning arrestor rated at 1 kilowatt. The central shall use multiple antennas as specified above the automatic coaxial switching.

Pressure transducers shall be an all solid-state two-wire transmitter with a 4-20MA output. The transducer shall be loop powered from the common 12VDC-power supply. The transducers shall have a combined error (linearity and hysteresis) of + or -.25% full scale and be temperature compensated to 1% per 100 degrees Fahrenheit. The transducers shall be mounted at the sensing point and wired to the enclosure.

The remote unit as indicated shall be supplied with battery back up operation. The rechargeable batteries shall be the sealed solid jelled electrolyte type for float or standby service. Batteries shall be sized to maintain 3 hour service at the remote. Each site shall have a plug-in charging module to recharge the battery at a constant rate when power is resumed and maintain the charge between outages. The pressure input shall continue to function on battery back-up.

Remote site installation requires equipment to be mounted on an equipment rack and housed in a 16" x 14" "JIC" enclosure mounted inside a vented lockable NEMA 3R enclosure to control vandalism and prolong life of the equipment. The NEMA 3R enclosure shall be painted a light color to reduce the heating effects of the sun.

The pump station remote shall send and receive the following information:

- Pump #1 Run
- Pump #2 Run
- Pump #1 off/on
- Pump #2 off/on

Door Ajar
Low Suction
High Pressure
Power Fail
Chlorine Residual; flow from meter

The existing central control panel is located at the water company office in Switzer, KY. The panel monitors and displays local inputs and data from the remote sites. Level data is compared to thumbwheel and H-O-A switches to generate local and remote pump commands and alarms. The system provides a complete data update at least once every two minutes with some functions updating faster as required by local conditions. The control panel has all electronic components (except radio, radio power supply, time delays, and relays) housed in a plug-in card rack. The card rack components are plug-in and interchangeable without calibration and are front panel mounted for operator access without opening the main enclosure doors. The control panel is equipped with a Bell 103 type phone modem for dial-up phone line de-bug and monitoring as specified earlier.

The central panel includes the following front mounted display and control components:

Each Pump Station:

#1 Pump Run
#2 Pump Run
Power Failure Alarm Lamp
Loss of Signal Alarm Lamp

10.3 FACTORY TEST

The booster system shall be hydrostatically tested and shall undergo a complete electric and hydraulic test from 0 to 100% design flow at the factory. All control devices including remote transmitters and all safety features shall be factory calibrated and tested. The owner's representative may witness the test.

10.4 WARRANTY

The booster system shall be warranted in writing against defects in materials or workmanship under normal use and service for a period of one year after date of original operation.

10.5 START-UP SERVICE

The service of a factory-trained representative shall be made available on the job site for start-up and instructing operating personnel.

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. 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.

3. BOOSTER PUMP STATION

Payment for furnishing and installing the Booster Pump Station will be made at the CONTRACT Lump Sum Price, complete in place.

4. 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. 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.

7. 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

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 Woodlake Road Booster Pump Station 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 thirty (30) consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of \$100.00 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 WATER DISTRICT
Woodlake Road Booster Pump Station**

Item No.	Description	Amount	Unit	Unit Price	Total Price
1.	Pre-manufactured Booster Pump Station	1	L.S.	\$_____	\$_____
2.	8-inch Gate Valve & Box Complete in Place	2	EACH	\$_____	\$_____
3.	Class C Concrete, Complete in Place	5	C.Y.	\$_____	\$_____
6.	Crushed Stone, Complete in Place	25	TONS	\$_____	\$_____
6.	Site Videotaping, Delivered to Engineer Prior to Work	1	EACH	\$_____	\$_____

TOTAL BID \$_____

Respectfully submitted,

Type or Print Name and Title: _____

Signature: _____ Date: ___/___/___

Address: _____

ATTEST: _____

Employer ID Number: _____

Phone Number: _____

Fax Number: _____

Cellular Number: _____

E-Mail: _____

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 _____, 2012. 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
Woodlake Road Booster Pump Station.

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.

NOTICE OF AWARD

TO: _____

PROJECT Description: WOODLAKE ROAD BOOSTER PUMP STATION

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

**NORTHEAST WOODFORD
WATER DISTRICT**

By _____
Owner
Title **CHAIRMAN**

ACCEPTANCE OF NOTICE

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

By _____
Contractor
Title _____

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2012, by and between **NORTHEAST WOODFORD WATER DISTRICT**, hereinafter called "OWNER" and _____ doing business as a _____ 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 **WOODLAKE ROAD BOOSTER PUMP STATION**.
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 **FEBRUARY, 2012**.
 - (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 () _____ 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 _____, 2012, a copy of which is hereto attached and made a part hereof for the construction of: **WOODLAKE ROAD BOOSTER PUMP STATION**.

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 _____, 2012.

ATTEST:

(Principal) (Secretary if Corp.)

(SEAL)

(Witness as to Principal)

(Address)

(Principal)

By _____

(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.

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 _____, 2012, a copy of which is hereto attached and made a part hereof for the construction of: **WOODLAKE ROAD BOOSTER PUMP STATION**.

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 _____, 2012.

ATTEST:

(Principal) (Secretary if Corp.)
By _____
(Principal)

(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.

NOTICE TO PROCEED

To: _____

Date: _____,

Project: NORTHEAST WOODFORD W.D.
WOODLAKE ROAD BOOSTER
PUMP STATION

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2012, on or before _____, 2012, and you are to complete the WORK within 60 consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 2012.

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 _____, 20____.

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.

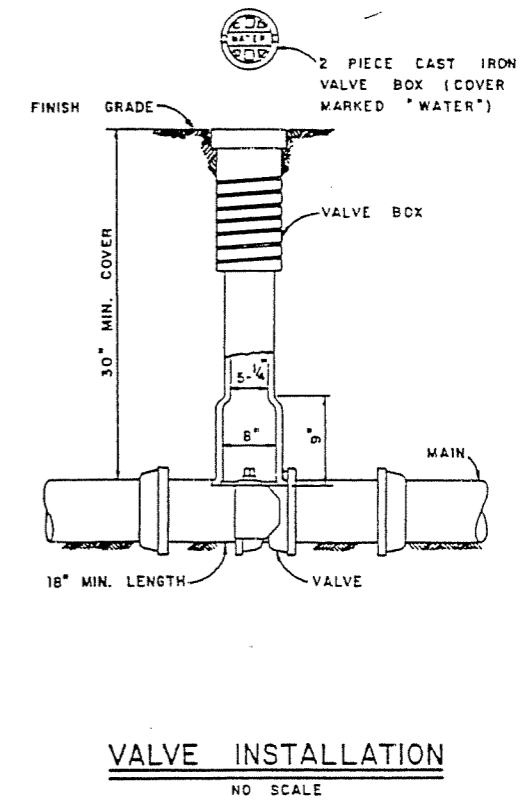
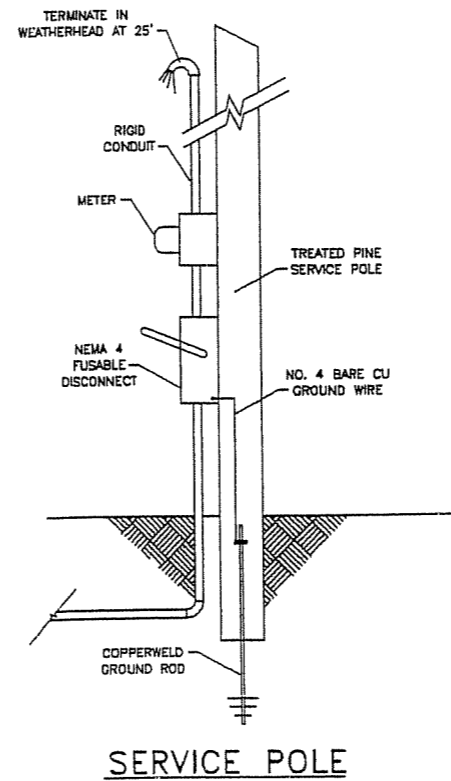
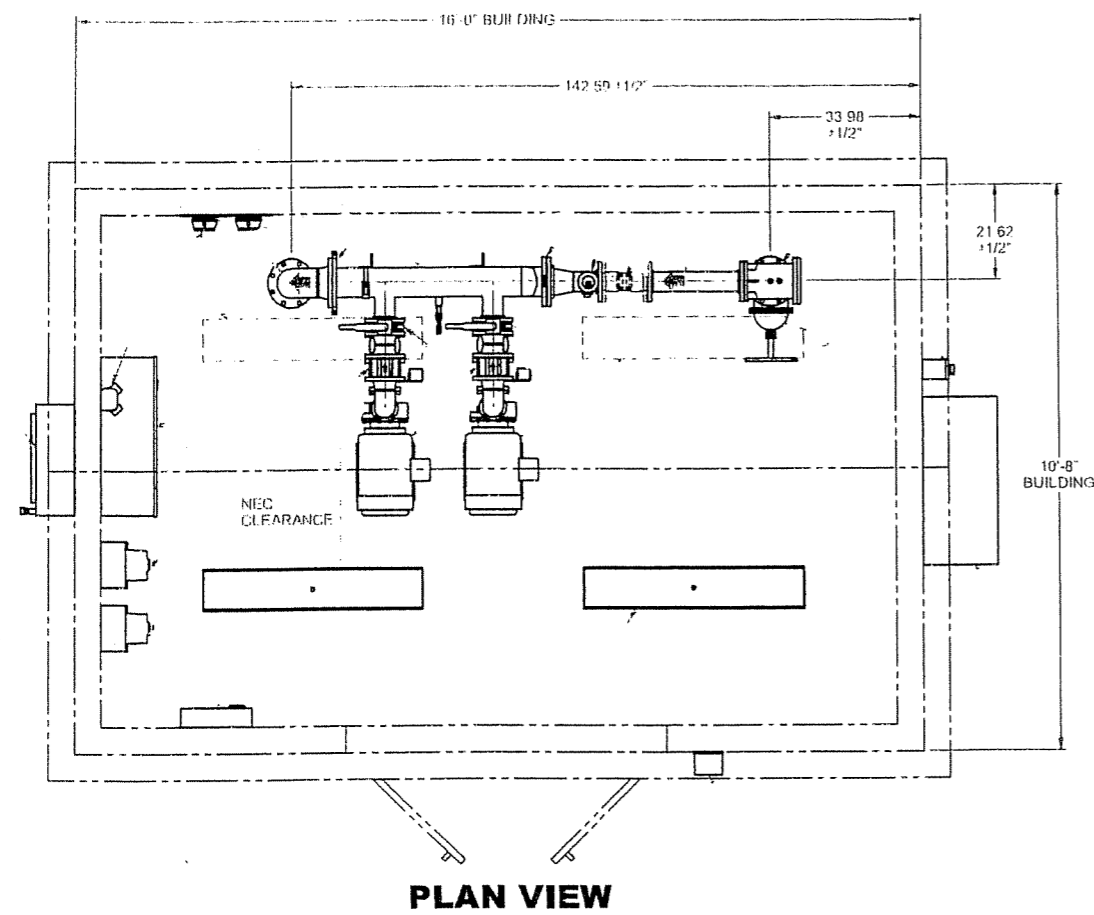
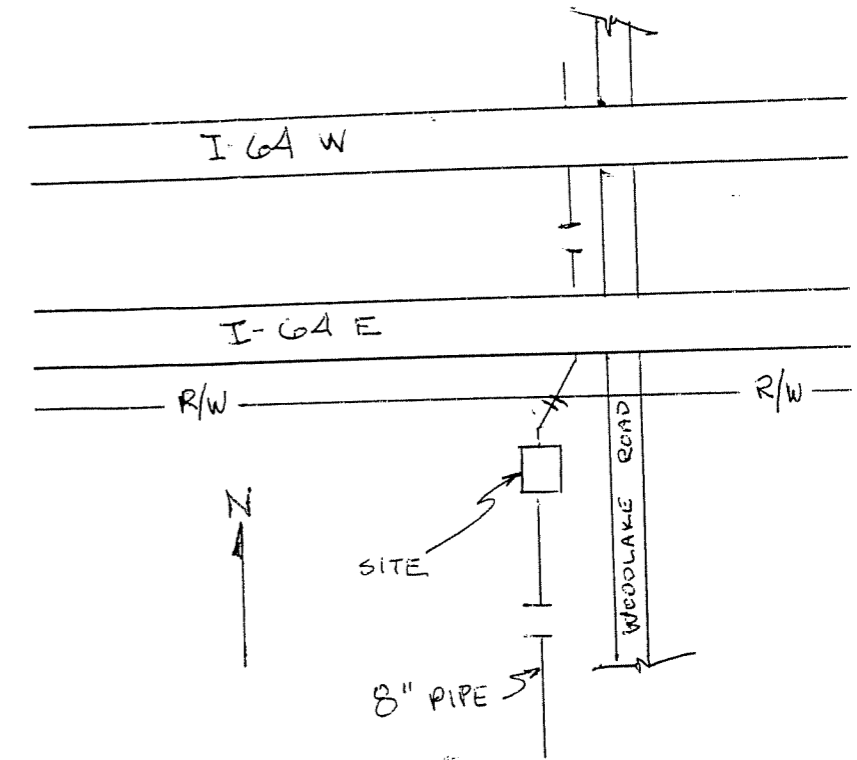
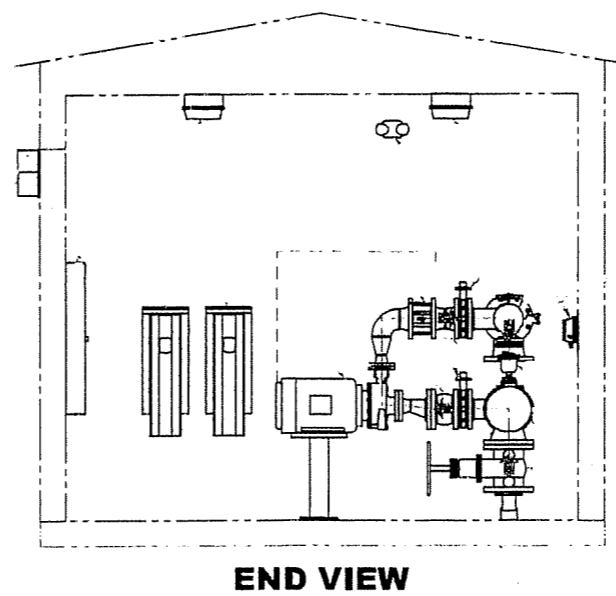
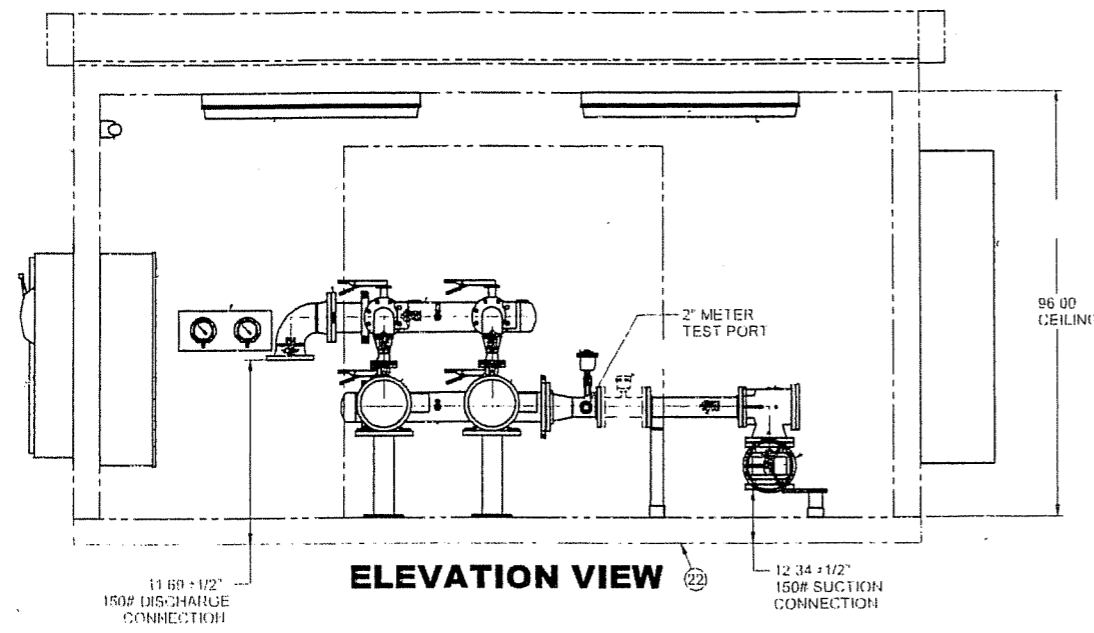
Requested by: _____

Recommended by: _____

Ordered by: _____

Accepted by: _____

Federal Agency Approval (where applicable):



Warner A. Broughman III
and Associates

Concept WAB
Drawn BJC
Checked _____
File 02-38

**Northeast Woodford Water District
Woodlake Road**

PUMP STATION DETAIL

Sheet No.

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 7. a. State the date of the first discussions between Northeast Woodford District and FEWPB regarding for Northeast Woodford District's purchase of water.


b. Identify the party that initiated the discussions between Northeast Woodford District and FEWPB regarding for Northeast Woodford District's purchase of water.

RESPONSE: a. It is the belief of the undersigned that the first discussions between the Water District and FEWPB regarding the purchase of water by the Water District occurred at a meeting of the undersigned and Herbie Bannister of FEWPB on May 8, 2001.

b. The undersigned on behalf of the Water District initiated discussions between the Water District and FEWPB regarding the Water District's purchase of water.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**


REQUEST NUMBER 8. Provide all correspondence between Northeast Woodford District and FEWPB in which Northeast Woodford District's purchase of water from FEWPB is discussed.

RESPONSE: All correspondence between Northeast Woodford County Water District and FEWPB in which the Water District's purchase of water was discussed is as follows, copies of which are attached:

- a. Letter from John S. Davis to Herbie Bannister, P.E. of FEWPB dated August 3, 2004.
- b. Letter from David L. Billings of FEWPB to John S. Davis dated November 3, 2004.
- c. Letter from John S. Davis to Warner Caines of FEWPB dated February 1, 2005.
- d. Letter from John S. Davis to Jim Smith of FEWPB dated October 26, 2010.
- e. Letter from John S. Davis to Jim Smith of FEWPB, dated February 16, 2011.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 8.a

NORTHEAST WOODFORD WATER DISTRICT
225 A South Main Street
Versailles, KY 40383

August 3, 2004

Herbie Bannister, P.E.
Frankfort Electric and Water Plant Board
P.O. Box 308
Frankfort, KY 40602

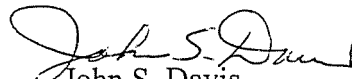
re: Connection to Frankfort

Dear Mr. Bannister:

The Commissioners of the Water District have decided to make the connection to your system at the intersection of U.S. 421 (Leestown Road) and KY 1685 (Spring Station/Woodlake Road). Please begin the process of preparing contracts and providing engineering information so that we may begin design and proceed to construction in the fall of this year.

If you have any questions, please give me a call.

Yours truly,


John S. Davis
Chairman

JSD:pac

cc: Joe Hoffman, Attorney

859 873 7334

Davis

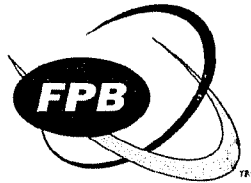
873 2190

home

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 8.b

Warner Caines
General Manager



* Electric * Water * Cable
* Cable Advertising * Community TV

Frankfort Plant Board

November 3, 2004

John S. Davis
Chairman, Northeast Woodford Water District
225 A South Main Street
Versailles, Kentucky 40383

REF: Proposed connection to Frankfort

Dear Mr. Davis:

In response to your letter dated August 3, 2004, The Frankfort Plant Board has decided to participate in the KY 1685 (Spring Station/Woodlake Road) project in order to provide water to the Northeast Woodford Water District.

It is our intention to install approximately 3220 l.f. of 12" ductile iron water main along KY 1685 from US421 to Interstate 64, where a master meter will be located and reflect the boundary between our two systems. For this to occur, Northeast Woodford Water District must agree to reimburse the Frankfort Plant Board those costs that you would incur to install 3220 l.f. 8" PVC water main (at \$13.00 per foot or the actual complete bid costs expressed in dollars per foot, which ever is greater), plus tapping, backflow prevention, and master meter costs. In addition Northeast Woodford Water District must agree to purchase a minimum of three million gallons per month.

Please advise in writing that this arrangement is agreeable so that we may start engineering for our portion of the project and begin preparing contract documents.

If you have any questions concerning this project, please feel free to contact my office at (502) 352-4468.

Sincerely,

David L. Billings, P.E.
Chief Water Engineer

Cc Warner Caines
Herbbie Bannister
Bunk Sullivan

Equal Opportunity/Affirmative Action Employer

317 West Second Street (P.O. Box 308) Frankfort, Kentucky 40601 Phone (502) 352-4372
Fax (502) 223-3887 www.fewpb2.com

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 8.c

NORTHEAST WOODFORD WATER DISTRICT

225A SOUTH MAIN STREET
VERSAILLES, KENTUCKY 40383

February 1, 2005

Warner Caines, Manager
Frankfort Electric and Water Plant Board
Frankfort, Kentucky 40601

Dear Mr. Caines:

The Northeast Woodford Water District has reviewed the proposed water project for connection to your system at Woodlake Road. The District wishes to proceed with the project within the budget previously discussed. We propose to divide the project into two separate phases. The first phase will consist of the construction of the water line from the end of our line along Spring Station and Woodlake road to the Interstate. The second phase of the project will consist of the construction of a pump station and connection to your system.

Please proceed with the planning of this vital connection so that we may complete the project when funds become available. Give me a call if you need additional information.

Yours truly,

John S. Davis
Chairman

cc: Broughman & Associates

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 8.d

**Northeast Woodford Water District
225-A South Main Street
Versailles, KY 40383**

October 26, 2010


Mr. Jim Smith
Frankfort Electric & Water Plant Board
P.O. Box 308
Frankfort, Kentucky 40602

Dear Mr. Smith,

The Northeast Woodford Water District requests permission to connect with the Frankfort Electric & Water Plant Board's water system at the intersection of Highway 421 and Woodlake Road in Woodford County. The connection is planned to be used for standby or emergency use only. This district is currently constructing lines in the Woodlake Road area and positioned to construct the line in early 2011.

Your support will be greatly appreciated. Please contact me at 859-873-2190, if there are any questions concerning this request.

Sincerely,


John S. Davis
Chairman

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 8.e

**Northeast Woodford Water District
225-A South Main Street
Versailles, KY 40383**

February 16, 2011

Mr. Jim Smith
Frankfort Electric & Water Plant Board
P.O. Box 308
Frankfort, Kentucky 40602

Dear Mr. Smith,

The Northeast Woodford Water District has reviewed the proposed Water Supply Agreement to connect with the Frankfort Electric & Water Plant Board's water system at the intersection of Highway 421 and Woodlake Road in Woodford County. The district recommends the agreement be changed as indicated by the pen and ink annotations on the enclosed draft document. The changes relate to the maximum flow rate, the additional costs in the construction and the inclusion of the Public Service Commission in the approval of rate changes and the overall agreement.

Please contact me at 859-873-2190, if there are any questions pertaining to the changes. The Northeast Woodford Water District looks forward to being a customer of the Frankfort Electric & Water Plant Board and the outstanding service you will provide our customers.

Sincerely,

John S. Davis
Chairman

Water Supply Agreement

THIS AGREEMENT made and entered into on this _____ day of _____, 2010, by and between the Electric and Water Plant Board of the City of Frankfort, Kentucky, whose address is 317 West Second Street, P.O. Box 308, Frankfort, Kentucky 40602, having the powers granted by KRS 96.171 *et seq.*, ("Board"), and the Northeast Woodford Water District, whose address is 225 A South Main Street, Versailles, Kentucky 40383, a water district created and existing under the laws of the state of Kentucky ("District");

WHEREAS: The City of Versailles, Kentucky is currently the District's sole supplier of water.

WHEREAS, The District desires to obtain a supplementary source of supply of water;

WHEREAS, the Board operates a water supply system along US 421 with the additional capacity to serve as the District's supplementary source of supply;

WITNESSETH: That the parties hereto in consideration of the mutual duties and obligations herein created, have, and do agree as follows:

1. **Quality:** During the term of this agreement and any renewal or extension thereof, the Board will furnish to the District at the point of delivery hereinafter specified, treated, potable water that complies with all applicable Kentucky Division of Water and U.S. Environmental Protection Agency standards for water quality.

2. **Points of Delivery, Flow Rates, Minimum Quantities, and Pressure:** The Board will provide water to the District at the following point of delivery:

New metering point at the intersection of Woodlake Road and I-64. The Board will install, at the District's expense, metering equipment inside the District's pump station; the Board shall have access to the pump station for proper maintenance or testing of the metering equipment; the maximum flow rate shall be 400 gallons per minute; the minimum consumption shall be 3,000,000 gallons per month computed on an annual basis beginning when all facilities are operational. The District will pay the Board forty-one thousand, eight hundred and sixty dollars **(\$41,860.00)** to aid in construction of the Board's proposed facilities along Woodlake Road from US 421 to I-64. In addition, upon presentation of a work order, the District shall pay the actual charges for metering, telemetry, and a tap fee (estimated at **\$3,800**, **\$20,000**, and **\$1,300** respectively).

The parties, in writing, may agree to one or more additional points of delivery, subject to the force majeure events described herein. Adequate pressure normally provided from the Board's existing facilities will be supplied to the point of delivery. If a greater pressure than is normally available at the points of delivery is required by the District, the cost of providing such greater pressure shall be the responsibility of the District. Notwithstanding the foregoing, the Board under this Agreement assumes no obligation

whatsoever to furnish satisfactory quantity or pressure for any particular service such as irrigation, fire protection, industrial, or commercial use.

3. **Term of Agreement and Effective Date:** This Agreement will take effect on the Effective Date and will continue for a term of forty-two (42) years thereafter. The Parties acknowledge that this Agreement will require submission to the Kentucky Public Service Commission ("PSC") for approval. The Board shall file an executed copy of this Agreement with the PSC. The District pledges its assistance to help expedite the PSC review process. The Effective Date of this Agreement shall be the date the Agreement is deemed to be "filed" by the PSC. The Board shall give written notice of the Effective Date to the District.
4. **Metering Equipment and Flow Measurement:** The Board will own, operate and maintain the metering equipment located at the point of delivery. The Board shall make annual tests and inspections of the master meter; and additional testing may be performed by the Board at its sole discretion at any time. The Board will provide a twenty-four (24) hour notice to the District prior to conducting any meter test, allow District personnel to witness the test, and submit test results to the appropriate official or agent designated by the District upon request. A meter registering within the acceptable limits as defined by American Water Works Association (AWWA) standards shall be deemed to be accurate. A reading of the meter determined by the test results to be inaccurate (registering outside of acceptable limits of AWWA standards based upon type of meter) shall cause billings for at least one (1) month, and

thereafter. The Parties acknowledge that this Agreement will require submission to the Kentucky Public Service Commission ("PSC") for approval. The Board shall file an executed copy of this Agreement with the PSC. The District pledges its assistance to help expedite the PSC review process. The Effective Date of this Agreement shall be the date the Agreement is deemed to be "filed" by the PSC. The Board shall give written notice of the Effective Date to the District.

4. **Metering Equipment and Flow Measurement:** The Board will own, operate and maintain the metering equipment located at the point of delivery. The Board shall make annual tests and inspections of the master meter; and additional testing may be performed by the Board ^{at the District's request} ~~at its~~ sole discretion at any time. ^{The District shall pay for any additional tests that the District performs} The Board will provide a twenty-four (24) hour notice to the District prior to conducting any meter test, allow District personnel to witness the test, and submit test results to the appropriate official or agent designated by the District upon request. A meter registering within the acceptable limits as defined by American Water Works Association (AWWA) standards shall be deemed to be accurate. A reading of the meter determined by the test results to be inaccurate (registering outside of acceptable limits of AWWA standards based upon type of meter) shall cause billings for at least one (1) month, and up to three (3) months, previous to such test to be adjusted by the percentage of inaccuracy found by such test. If any meter should fail to register usage for any regular billing period, the amount of water furnished during such billing period shall be determined based on historical consumption.

5. **Billing and Payment:** The District shall at all times pay the rates and charges for water that exist at the time of delivery under the existing published rates, rules and regulations of the Board.

The District and the Board acknowledge the Board's wholesale water rate is determined by the Board's rate-making methodology, and agree that the Board's rate making methodology is a reasonable basis for the rate adjustments under the Water Supply Agreement. That methodology requires that the wholesale rate be determined by considering the following components *as they relate to the Northeast Woodford Water District* including but not limited to:

A. Operation and maintenance expenses

B. Depreciation expenses

C. Debt service and coverage on debt service

The rate so developed shall be submitted for approval by the Ky PSC.
6. **Force Majeure:** Emergency failures due to main supply line breaks, power failure, flood, fire, act of God, war, riot, earthquake, explosion, or other catastrophic events shall excuse the Board from its performance under this Agreement for such reasonable period of time as may be necessary to restore service.

7. **Proportionate Reduction:** In the event any occurrence, condition, or circumstance leads the Board to request voluntary curtailment of water consumption or to impose mandatory curtailment of water consumption with respect to the Board's own water users, the District will make the same request for voluntary curtailment of consumption or will impose the same mandatory curtailment of water consumption, upon its water users, to the end

catastrophic events shall excuse the Board from its performance under this Agreement for such reasonable period of time as may be necessary to restore service.

7. **Proportionate Reduction:** In the event any occurrence, condition, or circumstance leads the Board to request voluntary curtailment of water consumption or to impose mandatory curtailment of water consumption with respect to the Board's own water users, the District will make the same request for voluntary curtailment of consumption or will impose the same mandatory curtailment of water consumption, upon its water users, to the end that District water users will be treated alike with respect to curtailment of water consumption, and the District will cooperate fully in taking the same character of enforcement action as the Board takes with respect to any such request or mandate.
8. **Assignment:** This Agreement shall be binding on all successors and assigns of the Parties but shall not be assigned by either Party without the written consent of the other.
9. **Waivers:** The failure of any Party at any time to enforce any provision of this Agreement, to exercise its rights under any provision, or to require a certain performance of any provision shall in no way be construed a waiver of such provision nor in any way affect the validity of this Agreement or the right of the Party thereafter to enforce each and every provision.
10. **Authority to Execute Agreement:** The Board possesses full authority to enter into this Agreement as indicated by the Board's minutes attached hereto

as Exhibit A. The District possesses full authority to enter into this Agreement as indicated by the District's minutes attached hereto as Exhibit B.

11. Entire Agreement: This Agreement constitutes the entire understanding and agreement between the Parties and supersedes all other understandings and agreements between the Parties with respect to the subject matter of this Agreement. There are no understandings, representations or warranties of any kind, expressed or implied, not expressly set forth in this Agreement. No modifications or amendment of this Agreement shall be effective unless in writing and executed on behalf of both Parties.

IN TESTIMONY WHEREOF, the parties hereto have caused this Agreement to be executed by its duly authorized officers, on this date and year first above written.

Electric and Water Plant Board
of the City of Frankfort,
Kentucky

By: _____
Board Chair

Attest:

Northeast Woodford
Water District

By: _____
Board Chair

Attest:

APPROVED
Kentucky Public Service Commission

By _____

Handwritten signature/initials

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**


REQUEST NUMBER 9. State whether Northeast Woodford District has or will make any payments to FEWPB for facilities necessary to deliver water to Northeast Woodford District. If yes, state the amount and purpose for each payment.

RESPONSE: The Water District has paid FEWPB the total sum of \$66,960.00. This amount is the total of the amounts set forth in paragraph 2 of the Water Supply Agreement between the Water District and FEWPB (Copy attached to Testimony on Behalf of Northeast Woodford County Water District, Testimony of Fred Faust as Exhibit "B"). The purpose of this payment is as follows:

- a. Construction of FEWPB facilities along Woodlake Road from US 421 to I-64 -- \$41,860.00.
- b. Metering -- \$3,800.00.
- c. Telemetry -- \$20,000.00.
- d. Tap fee -- \$1,300.00.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

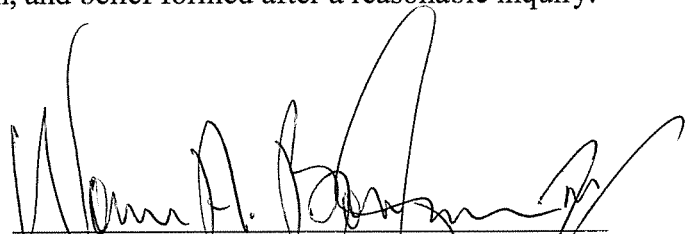
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 10. Refer to the Testimony of Warner A. Broughman, III at paragraph 3. State the number of “property owners who did not otherwise [have] access to a public water supply.”

RESPONSE: The number of properties that front along the waterlines and do not connect to a public water supply is 17.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 11. a. State the number of Northeast Woodford District customers who are expected to receive water service as a result of the construction of the projects listed in Item 3 and the purchase of water from FEWPB.

b. State the average total monthly volume that these customers are expected to purchase.

c. Explain why Northeast Woodford District could not serve these customers with water purchased from the city of Versailles.

RESPONSE: a. Ten to twelve new customers are expected to receive water service as a result of the construction of the projects listed in Item 3. Some customers may want more than one meter.

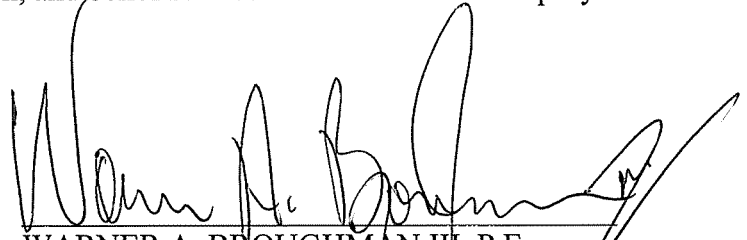
b. Approximately 300,000 to 500,000 gallons per month. This amount will depend on the number of farm customers that want more than one meter.

c. All new customers can be served with water purchased from Versailles because of the construction of the new waterlines that are part of the projects. Prior to the projects these customers could not receive any public supply of water because no waterlines serviced such customers.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and

accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

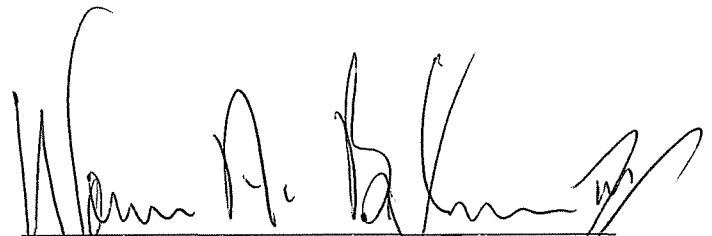
REQUEST NUMBER 12. Provide all documents that Northeast Woodford District provided to Bluegrass Area Water Management Council regarding the two projects listed in Item 3.

RESPONSE: The documents provided to Bluegrass Area Water Management Council consisted of the following, copies of which are attached:

- a. Kentucky Water Project Profile ---- Regional Interconnection to Frankfort Water System
- b. Kentucky Water Project Profile ---- Northeast Woodford Water District – Phase II Regional Interconnect to Frankfort

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 12.a

KENTUCKY WATER PROJECT PROFILE

Areas indicated with (*) are required fields.

1.* Project Title (use title which will be identifiable by local community):

Regional Interconnection to Frankfort Water System

2.* Project Description:

Provide a brief narrative denoting if project relates to source, distribution, treatment, storage or other)

1-mile transmission pipeline with booster pump station to provide capability to purchase additional supplies of water from a second source of supply.

* **Project Descriptor:** waterline extension; pump station

* **WRIS Project Number (PNUM):** WX21239002

This number is assigned by an ADD through the respective Area Water Management Planning Council once the project profile is approved by the Council. This number ties each project to mapped/spatial information in the Water Resource Information System (WRIS). Project profiles without this number AND the required corresponding mapped/spatial information will NOT be accepted.

* **Project County:** Woodford

* **Is it a multi-county project:** Yes No

* **Project Submitted By:** Bluegrass

* **Select the PWSID# from the list below:**

Available:

- 0010082
- 0010702
- 0011016
- 0020386
- 0020956
- 0021006
- 0030239
- 0030660
- 0040020

Selected:

1203110

Include >

< Remove

3. Legal Applicant

* **Legal Applicant:** Woodford County Fiscal Court

Water Utility which will own proposed improvements:
(if different from Legal Applicant)

* **Organizational Structure:** Water District

Authorized Official Information

* **First Name:** John

* **Last Name:** Davis

M.I.: S

* **Title:** Chairman

* **Street Address Line 1:** 225 South Main Street

Street Address Line 2:

* P.O. Box:
 * City: Versailles * State: KY * Zip: 40383
 * County: Woodford
 * Telephone: (859) 271-1778 Ext:
 Fax: 859-272-1020
 Email: wabiii@prodigy.net

Contact Person Information

* First Name: Warner * Last Name: Broughman M.I.: A
 * Title:
 * Street Address Line 1:
 Street Address Line 2:
 * P.O. Box:
 * City: * State: * Zip:
 * County:
 * Telephone: 859-271-1778 Ext:
 Fax:
 Email:

Project Administrator Information

* First Name: N/A * Last Name: N/A M.I.:
 Title:
 Street Address Line 1:
 Street Address Line 2:
 P.O. Box:
 City: State: Zip:
 County:
 * Telephone: N/A Ext:
 Fax:
 Email:

Consulting Engineer Information

* First Name: Warner * Last Name: Broughman M.I.: A
 Firm: Warner Broughman & Associates
 Street Address Line 1:
 Street Address Line 2:
 P.O. Box:
 City: State: Zip:
 County:
 * Telephone: 859-271-1778 Ext:
 Fax:
 Email:

4.* Project Type (atleast one required/check all that apply):

- Planning
- Design
- Construction
- Management

5. Project Alternatives: Please list a minimum of three:

- a.* Construct new transmission main to Frankfort

- b.* Construct new transmission main to KY-American Water Co.

- c.* Do nothing (resulting in tap-on ban and use restrictions).

6. Special Impact(s) of Proposed Water Project:

- a.* New service/improve service to 0 unserved 365 underserved households
- b. Number of new jobs: 0 Number of retained jobs: 0
- c. Other beneficial technical, managerial, fiscal impacts: (20 words or less)
This project accomplishes some regionalization of the water district by way of an interconnection with a new supplier.

- d.* Does proposed activity relate to public health protection emergency: Yes No
- e.* Does project involve regionalization: Yes No
- f. Number of systems affected/involved: 1

7.* Median Household Income of Service Area:

\$ 35000

8.* Project Start Schedule:

- Years 0-2 Years 3-10 Years 11-20

9. Estimated Funding Sources:

- * Estimated Local Funding Amount \$ 0
- * Estimated Other Funding Amount (all sources) \$ 150000
- Total Estimated Project Cost \$ 150000

10. Project Data - Water (complete all items which apply to your project)

- a.* Is project related to source protection? Yes No

Drinking Water Facilities

- b.* Is project related to source? Yes No
- Number of new surface/spring sources 0 Total MGD 0
- Number of new wells 0 Total MGD 0

Elimination of Public Water Systems through Mergers

- 0 Number of systems serving 500 or fewer population
- 0 Number of systems serving 501-3,000 population
- 0 Number of systems serving 3,001-10,000 population
- 0 Number of systems serving 10,001 or greater population

Interconnections

- 0 Number of water treatment plants eliminated
- 0 Number of supplemental potable water supply
- 1 Number of emergency backup potable water supply

Source Water Quantity and Quality

0 Number of existing raw water sources replaced

0 Number of existing raw water sources supplemented

Briefly describe why the above items apply to your project:

Water district will purchase water from a new source not currently supplying water to the district.

c.* Is project related to water treatment? Yes No

If new or expanded plant, proposed design capacity ⁰

MGD (as a result of this project)

Project will involve expansion or modification of Microbiology and Turbidity

Pre-filtration (CT/Microbial removal)

Filtration (Surface Water Treatment Rule Compliance)

Disinfection Process (CT/Microbial Inactivation)

Best Available Technologies

VOCs IOCs SOCs Radionuclides

Disinfectants Disinfection by-products

Secondary contaminants

d.* Is project related to distribution (Extension/Rehab)? Yes No

e. Management (describe)

f. Other (describe)

g.* Date Project was approved by the Area Water Management Planning Council: 06/18/2001

NORTHEAST WOODFORD COUNTY WATER DISTRICT

RESPONSE 12.b

KENTUCKY WATER PROJECT PROFILE

Areas indicated with (*) are required fields.

1.* Project Title (use title which will be identifiable by local community):

Northeast Woodford Water District-Phase II Regional Interconnect to Frankfo.

2.* Project Description:

Provide a brief narrative denoting if project relates to source, distribution, treatment, storage or other)

Northeast Woodford Water District continues it regional interconnection with Frankfort with a tap-on fee, booster pump station and extension along Spring Station Road to serve 3 unserved customers. The project will benefit the entire Water District with an alternate source of water. The tap-on fee will include an 8-inch pipeline to the Frankfort Plant Board's line on US 421. The Spring Station extension will include 2000 LF od 6-inch line to 3 farms that have no water currently. The total cost is expected to be \$300,000.

* **Project Descriptor:** NEWD Phase II Interconnect

* **WRIS Project Number (PNUM):** WX21239013

This number is assigned by an ADD through the respective Area Water Management Planning Council once the project profile is approved by the Council. This number ties each project to mapped/spatial information in the Water Resource Information System (WRIS). Project profiles without this number AND the required corresponding mapped/spatial information will NOT be accepted.

* **Project County:** Woodford

* **Is it a multi-county project:** Yes No

* **Project Submitted By:** Bluegrass

* **Select the PWSID# from the list below:**

Available:

- 0010082
- 0010702
- 0011016
- 0020386
- 0020956
- 0021006
- 0030239
- 0030660
- 0040020

Selected:

1200310

Include >

< Remove

3. Legal Applicant

* **Legal Applicant:** Northeast Woodford County Water District

Water Utility which will own proposed improvements:
(if different from Legal Applicant)

* **Organizational Structure:** Water District

Authorized Official Information

* **First Name:** John

* **Last Name:** Davis

M.I.: S

* **Title:** Chairman

* **Street Address Line 1:** 225 South Main Street

Street Address Line 2:

* P.O. Box:
 * City: Versailles * State: KY * Zip: 40383
 * County: Woodford
 * Telephone: (859) 873-7334 Ext:
 Fax:
 Email:

Contact Person Information

* First Name: Warner * Last Name: Broughman, III M.I.: A
 * Title:
 * Street Address Line 1:
 Street Address Line 2:
 * P.O. Box:
 * City: * State: * Zip:
 * County:
 * Telephone: 859-271-1778 Ext:
 Fax: 859-272-1020
 Email: wabiii@prodigy.net

Project Administrator Information

* First Name: Warner * Last Name: Broughman, III M.I.: A
 Title:
 Street Address Line 1:
 Street Address Line 2:
 P.O. Box:
 City: State: Zip:
 County:
 * Telephone: 859-271-1778 Ext:
 Fax: 859-272-1020
 Email: wabiii@prodigy.net

Consulting Engineer Information

* First Name: Warner * Last Name: Broughman M.I.:
 Firm: Broughman and Associates
 Street Address Line 1:
 Street Address Line 2:
 P.O. Box:
 City: State: Zip:
 County:
 * Telephone: 859-271-1778 Ext:
 Fax: 859-272-1020
 Email:

4.* Project Type (atleast one required/check all that apply):

- Planning
- Design
- Construction
- Management

5. Project Alternatives: Please list a minimum of three:

- a.* Construct new transmission main to Frankfort

- b.* Construct new transmission to Kentucky American Water Co.

- c.* Do nothing (resulting in tap-on ban and use restrictions).

6. Special Impact(s) of Proposed Water Project:

- a.* New service/improve service to 3 unserved 0 underserved households
- b. Number of new jobs: 0 Number of retained jobs: 0
- c. Other beneficial technical, managerial, fiscal impacts: (20 words or less)
Will allow back up supply om case of emergency from primary supplier. Will help keep price in line from primary supplier by having a second source.
- d.* Does proposed activity relate to public health protection emergency: Yes No
- e.* Does project involve regionalization: Yes No
- f. Number of systems affected/involved: 1

7.* Median Household Income of Service Area:

\$ 49491

8.* Project Start Schedule:

- Years 0-2 Years 3-10 Years 11-20

9. Estimated Funding Sources:

* Estimated Local Funding Amount \$ 0

* Estimated Other Funding Amount (all sources) \$ 300000

Total Estimated Project Cost \$ 300000

10. Project Data - Water (complete all items which apply to your project)

- a.* Is project related to source protection? Yes No
- Drinking Water Facilities**
- b.* Is project related to source? Yes No
- c.* Is project related to water treatment? Yes No
- d.* Is project related to distribution (Extension/Rehab)? Yes No

Check all that apply to your project

- Extension Water Tank
- Rehab/Improvement Pump Station

Proposed project involves construction of line

Total linear feet 2000 of new line

Line Size (in inches) 2 3 4 6 8 10 greater than 10

Material Ductile Iron PVC PE Other

Project activity improves pressure, as a result of

Replacement of 0 total linear feet of inadequately sized lines

0 total gallons of increased storage due to additional demand

Leaks, Breaks, or restrictive flows due to age

Project activity improves water quality by providing:

Adequate turnover of water

Proper maintenance of disinfection residual

Replacement of 0 total linear feet of lead, copper, asbestos-cement lines

Briefly describe why the above items apply to your project:

e. Management (describe)

f. Other (describe)

g.* Date Project was approved by the Area Water Management Planning Council: 10/21/2005

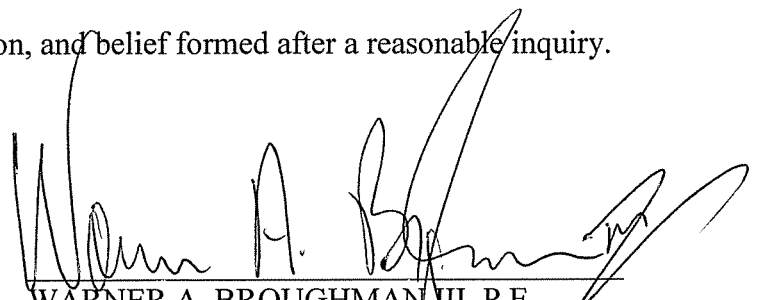
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 13. State whether, in the event of a disruption in service from the city of Versailles, Northeast Woodford District can use water from its connections with FEWPB to supply its entire system. Explain.

RESPONSE: In the event of a disruption of service from the city of Versailles the entire Northeast Woodford County Water District system can be served from the connection with FEWPB. The pump station which is part of the projects is designed to pump the entire daily flow required by the Water District. The pump station will have the ability to fill both of the Water District's water tanks and the telemetry will be able to monitor the levels in each tank. In the event of a disruption of service from Versailles the pump station at Versailles would be shut down and the water from FEWPB would be pumped into the entire system.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

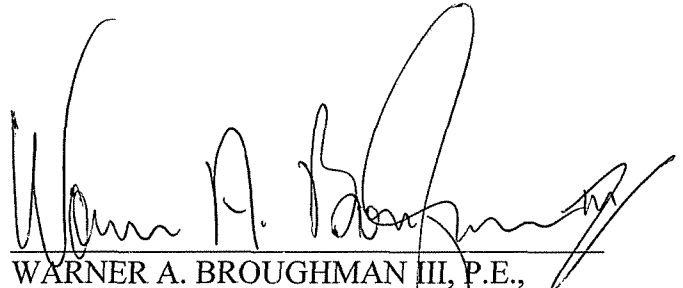
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 14. Identify the areas of Northeast Woodford District's distribution system that will receive water purchased from FEWPB.

RESPONSE: The entire Northeast Woodford County Water District system will receive water purchased from FEWPB. The plan for operation with FEWPB is to occasionally shut down the pump station at Versailles and pump water only from the FEWPB connection in order to meet the minimum purchase requirement contained in the water purchase contract with FEWPB.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

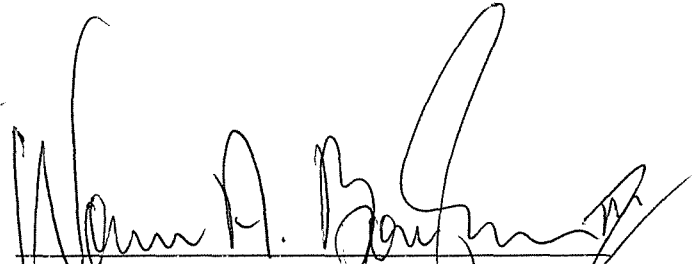
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 15. Provide a map of Northeast Woodford District's distribution system. Indicated on this map the areas to which each water supplier will be primarily supplying water.

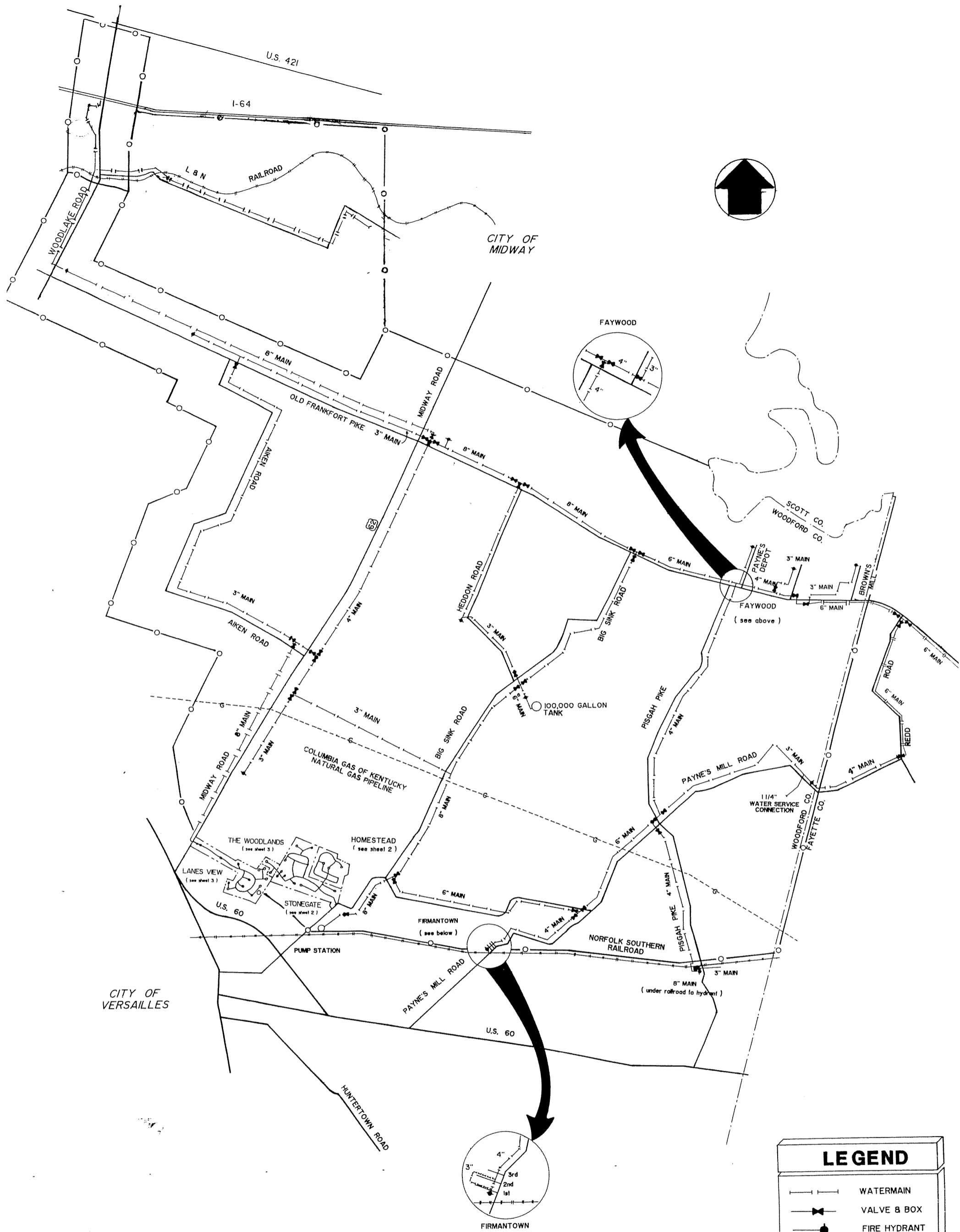
RESPONSE: The attached map shows the entire Northeast Woodford County Water District distribution system. Because the entire system will be supplied, at different times, by each water supplier there are no areas where there will be only one primary supplier.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT



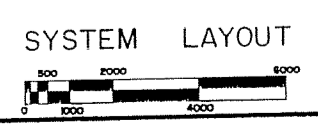
LEGEND	
	WATERMAIN
	VALVE & BOX
	FIRE HYDRANT & VALVE
	RAILROAD TRACK
	GAS PIPELINE
	TANK
	SERVICE AREA

REVISED 3/12

Warner A. Broughman III
and Associates
LEXINGTON KENTUCKY

Concept _____
Drawn B.T. 9-88
Checked W.A.B. III
File _____

NORTHEAST WOODFORD WATER DISTRICT
VERSAILLES, KENTUCKY



Sheet No.
1

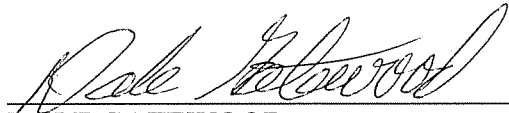
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 16. State whether the water purchased from FEWPB can be safely mixed with that purchased from the city of Versailles. Explain.

RESPONSE: Yes, the water purchased from FEWPB can be safely mixed with water purchased from Versailles. During the course of planning the Projects the Water District spoke with the Division of Water about this issue. The Division of Water informed the Water District that Versailles and FEWPB use the same water treatment style and both use chlorine and ammonia for total chlorine. Also, the Water District understands that the City of Georgetown water system has mixed its water with FEWPB and Kentucky American Water and further that Versailles, before construction of their new plant, mixed its water with Kentucky American Water.

It is hereby certified that the foregoing response was prepared by Dale Gatewood, Northeast Woodford County Water District Field Manager, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



DALE GATEWOOD
NORTHEAST WOODFORD COUNTY
WATER DISTRICT, FIELD MANAGER


**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 17. If water purchased from FEWPB cannot be safely mixed with that purchased from the city of Versailles, describe Northeast Woodford District's plans to avoid the mixing of the purchased waters.

RESPONSE: Please see Response to Request Number 16. However, in the event the water purchased from FEWPB does not mix with water purchased from Versailles then the Water District can separate water purchased from the two suppliers by closing five gate valves.

It is hereby certified that the foregoing response was prepared by Dale Gatewood, Northeast Woodford County Water District Field Manager, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 23, 2012



DALE GATEWOOD
NORTHEAST WOODFORD COUNTY
WATER DISTRICT, FIELD MANAGER


**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 18. Provide all projections of Northeast Woodford District's expected future demand.

RESPONSE: The Water District does not have any projections regarding future demand. The Water District expects only normal rural growth. The Water District does not plan to expand its boundaries, participate in new residential development within its boundaries, nor does the Water District foresee any other activity that would increase demand beyond normal growth.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS


**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 19. State whether Northeast Woodford District intends to purchase from FEWPB quantities of water greater than the minimum quantity specified in its water purchase agreement with FEWPB.

RESPONSE: The Water District does not intend to purchase quantities of water from FEWPB greater than the minimum quantity specified in the water purchase agreement. However, in the event of an emergency or failure of the Versailles system the Water District may purchase water from FEWPB in excess of the specified minimum amount. Further, in the event Versailles raises its rate charged to wholesale customers so that such rate is disproportionate to the wholesale rate charged by FEWPB, then the Water District may consider purchasing quantities of water from FEWPB greater than the specified minimum amount.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS


**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 20. State whether FEWPB has imposed any limitation upon the quantity that Northeast Woodford District may purchase under its water purchase agreement with FEWPB.

RESPONSE: FEWPB has not imposed a maximum limitation upon the quantity of water which the Water District may purchase under the water purchase agreement. FEWPB has imposed a minimum quantity of 3,000,000 gallons per month on an annual basis.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF
COMMISSIONERS

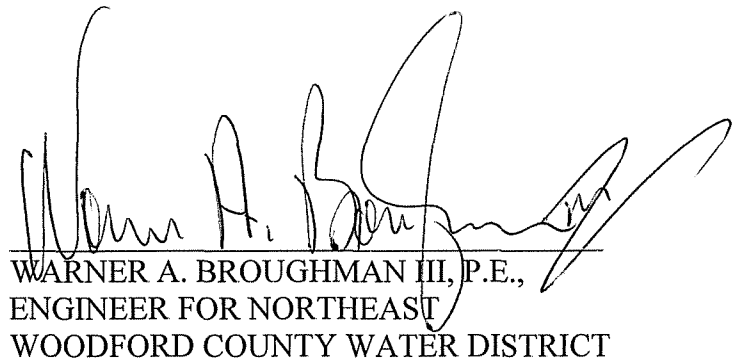
**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**

REQUEST NUMBER 21. State the maximum monthly quantity of water that Northeast Woodford District can physically obtain from FEWPB through the planned connection.

RESPONSE: The maximum monthly quantity of water that can be physically obtained from FEWPB through the planned connection depends on various factors. If the tanks are nearly full and volume of usage is low the pump station is capable of pumping 13 million gallons per month. If, on the other hand, the tanks are low and heavy usage is in effect the pumps can deliver more than 18 million gallons per month.

It is hereby certified that the foregoing response was prepared by Warner A. Broughman III, P.E., Engineer for Northeast Woodford County Water District, and that the response is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Dale: March 29, 2012



WARNER A. BROUGHMAN III, P.E.,
ENGINEER FOR NORTHEAST
WOODFORD COUNTY WATER DISTRICT

**NORTHEAST WOODFORD COUNTY
WATER DISTRICT RESPONSE TO PUBLIC
SERVICE COMMISSION STAFF'S REQUEST FOR INFORMATION**


REQUEST NUMBER 22. As of April 1, 2012, FEWPB will assess a rate of \$2.01 per 1,000 gallons to its wholesale customers. The city of Versailles currently charges a wholesale rate of \$2.26 per 1,000 gallons. State whether, given the differences in these wholesale rates, Northeast Woodford District will maximize its purchases from FEWPB to the fullest extent possible. Explain.

RESPONSE: The Water District believes that the correct rate assessed by FEWPB is \$1.91 per 1000 gallons as of April 1, 2012 for wholesale customers and \$2.01 per 1000 gallons as of April 1, 2013 for wholesale customers. The Water District does not intend to maximize its purchases from FEWPB to the fullest extent possible. The projects and the water supply agreement with FEWPB are intended to only obtain a supplementary supply of water for the Water District. The goal is to enhance the integrity of the Water District's system and provide an alternate source of water in the event of an emergency or failure of the Versailles system. Although the Water District is not legally obligated to purchase its water from Versailles, the Water District respects the city of Versailles as a member of the Woodford County community and as one of the Water District's partners in the past and future welfare and success of that community. The Water District does not intend to supplant Versailles as the Water District's primary supplier as long as the rates charged by Versailles are not unduly disproportionate to the rates charged by FEWPB.

It is hereby certified that the foregoing response was prepared by John S. Davis, Chairman of the Northeast Woodford County Water District Board of Commissioners, and that the response is

true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: March 29, 2012



JOHN S. DAVIS, CHAIRMAN OF THE
NORTHEAST WOODFORD COUNTY
WATER DISTRICT BOARD OF COMMISSIONERS