Case 2004-00495

FOR BID

SOUTHEAST DAVIESS COUNTY WATER DISTRICT

PHILPOT PUMP STATION REPLACEMENT, TRUNK LINES & CREEK CROSSING REPLACEMENT
WX21059008
SAI KY20031008-1512

PROJECT SPECIFICATIONS
2004

KENTUCKY INFRASTRUCTURE AUTHORITY
CDF PROJECT

PREPARED BY
HRG, PLLC
416 W. Third Street
Owensboro, KY 42301
270-683-7558

12/8/04

SOUTHEAST DAVIESS COUNTY WATER DISTRICT
PHILPOT PUMP STATION REPLACEMENT, TRUNK LINES
& CREEK CROSSING REPLACEMENT
WX21059008
SAI KY20031008-1512

INDEX

NOTICE TO BIDDERS

Sealed bids will be received by Southeast Daviess County Water District, 3400 Bittel Road, Owensboro, KY 42301, until _____, _____, 2004 for the following:

Philpot Pump Station Replacement,
Trunk Lines & Creek Crossing Replacement

Bids are to be delivered to the Southeast Daviess County Water District, 3400 Bittel Road, Owensboro, KY 42301, to be publicly opened and read at said location at _____ on _____, 2004.

Project plans and contract documents may be examined at:

HRG, PLLC Surveying & Engineering
416 West Third Street
Owensboro, Kentucky 42301
Phone (270)683-7558

Contract Documents and Bid Forms may be obtained from HRG, PLLC Surveying & Engineering upon payment of Ninety-Five ($95.00) Dollars. A Fifteen ($15.00) Dollar refund will be made to all unsuccessful Prime Bidders upon return of all plans and documents unmarked and in good condition within 30 calendar days after the bid opening. Bids are of the unit price variety and shall be submitted on the forms provided and returned sealed in the official bid envelope.

No bids may be withdrawn for a period of ninety (90) days after the bid opening date.

All bids must be accompanied by the Bid Bond or Cashiers Check in the amount of five (5) percent of the Total Base Bid and said surety shall be made payable to Southeast Daviess County Water District. The successful bidder shall provide a Performance Bond and Payment Bond in the amount of one hundred (100) percent of the Total Base Bid.

Southeast Daviess County Water District reserves the right to accept any bid, to reject any and all bids, to waive any irregularities or informalities in awarding the Contract, and to accept what in their opinion is the lowest, responsive, responsible and best bid. Further, Southeast Daviess County Water District reserves the right to reject any Bid where evidence or information does not satisfy the OWNER that the Bidder is qualified to carry out the Project per Contract Documents, and to delete any Bid Item(s).

SOUTHEAST DAVIESS COUNTY WATER DISTRICT
PHILPOT PUMP STATION REPLACEMENT
AND TRUNK LINES

By Order Of

Southeast Daviess County Water District
3400 Bittel Road
Owensboro, KY 42301

By_____
Bill Higdon, District Manager

Received for publication _____, 2004
Owensboro Publishing Company

By:_____ Title:_____

INSTRUCTIONS TO BIDDERS

Proposals are requested by Southeast Daviess County Water District for the Philpot Pump Station Replacement, Trunk Lines & Creek Crossing Replacement and related work. The project is located in Daviess County, Kentucky.

1. Bidders shall inform themselves of all conditions under which the proposed project work is to be performed relative to but not limited to the site location, obstacles which may be encountered and other pertinent factors; by a visit to the site for personal examination, by a complete study of the Contract Plan, Project Specifications and Contract Documents, by personal interview as applicable with the Project Engineer and/or Project Owner.

   Any revision or interpretation of the Contract Plans, Contract Specifications or Contract Documents will be made by addendum only and will be issued to each individual plan holder.

   Quantities listed in the Bid Items, including the unit price Bid Items, are approximate only and may vary from the final in-place quantities. Final payment due to the Contractor will be based on in-place measured quantities for unit price items. Bid proposals, however, will be compared on the basis of the approximate quantities included in the Proposal.

   The Bidder's attention is called to the Wage Rate Section of the Specifications.

   Any Bidder may withdraw his Proposal at any time prior to the scheduled bid closing time. No Project Proposals may be withdrawn after this time except as stated in the Notice for Bids.

   Proposals shall be submitted on the Project Proposal Forms furnished by the Owner without change or alterations. Each Proposal shall be submitted with the cashiers check or BID BOND in the amount of five (5) percent of the total bid price. Bid Bonds shall be issued by a company with a licensed agent. A PERFORMANCE and PAYMENT BOND (surety bond) shall be furnished by the successful Bidder in the amount of one hundred (100) percent of the total contract price.

   Only those proposals which have been properly completed, signed and appropriate Bid Security provided will be considered and read.

2. **Preparation of Bid**: Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures. Facsimile (i.e. fax) bid proposals will not be accepted.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be sealed in another envelope addressed as specified in the Notice to Bidders.

3. **Subcontracts**: The bidder is specifically advised that any proposed subcontractor(s) must be acceptable to the Owner.

4. **Telegraphic Modification**: Any bidder may modify his/her bid by telegraphic or facsimile communication at any time prior to the scheduled closing time for receipt of bids, provided such telegraphic communication is received by the Owner prior to the closing time, and provided further, the Owner is satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the unit price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened. If written confirmation is not received within two (2) days from the closing time, no consideration will be given to the telegraphic modification.

5. **Method of Bidding**: The Owner invites the following bid(s):

   Unit Price Bids per bidding schedule.

6. **Qualifications of Bidder**: 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 investigations of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

7. **Bid Security**: Each bid must be accompanied by cash, cashiers check of the bidder, or a bid bond, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of five (5) percent of the bid. Such cash, checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or if no award has been made within Ninety (90) days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he/she has not been notified of the acceptance of his/her bid.

8. **Liquidated Damages for Failure to Enter into Contract**: The successful bidder, upon his/her failure or refusal to execute and deliver the contract and bonds required within ten (10) days after he/she has received notice of the acceptance of his/her bid,

shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his/her bid.

9. **Time of Completion and Liquidated Damages**: Bidder must agree to commence work on or before a date to be specified in the written "Notice to Proceed" of the Owner and to fully complete all work by **July 1, 2005**. Bidder must agree also to pay as liquidated damages, the sum of **$100.00** for each consecutive calendar day thereafter as hereinafter provided in the General Provisions.

10. **Conditions of Work**: Each bidder shall inform him/herself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his/her obligation to furnish all material and labor to carry out the provisions of his/her contract. Insofar as possible, the Contractor, in carrying out the work, must employ methods or means as will not cause any interruption of or interference with the work of any other contractor.

11. **Addenda and Interpretations**: No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to **James R. Riney at P.O. Box 535, Owensboro, Kentucky, 42302** and to be given consideration must be received at least five (5) days prior to the date established for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes), not later than three (3) days prior to the date established for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from the obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

12. **Security for Faithful Performance**: Simultaneously with his/her delivery of the executed contract, the contractor shall furnish a surety bond as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Provisions. The surety on such bond shall be a duly authorized surety company satisfactory to the Owner. The surety bond shall remain in effect for one full year after receipt of final payment by the Contractor.

13. **Power of Attorney**: Attorneys-in-fact who sign bid documents or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney. Power of Attorney shall include a licensed agent.

14. **Notice to Special Conditions**: Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

a. Insurance requirements.
b. Wage rates.

15. **Laws and Regulations**: The bidder's attention is directed to the fact that all applicable laws and ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written in full.

16. **Method of Award--Lowest Qualified Bidder**: If at the time this contract is to be awarded, the lowest, qualified and best bid submitted by a responsible bidder does not exceed that amount of funds then estimated by the Owner as available to finance the contract, the contract will be awarded on the basis of the bid items. If such bid exceeds such amount, the Owner may reject all bids or may award the contract on the bid items combined with reduction in the bid quantities or the bid items to be determined by the Owner, as produces a net amount which is within the available funds. For purposes of this project the lowest, qualified and best bid shall also include the lowest responsible and responsive bidder. Conditional bids will not be accepted.

17. **Obligation of Bidder**: At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to his/her bid.

CONTRACT

THIS AGREEMENT made and entered into this _____

day of _____, 2004, by and between _____, hereinafter

called "OWNER" and _____

doing business as a _____(insert appropriate term: individual, partnership, corporation, etc.), hereinafter called "CONTRACTOR".

WITNESSETH:

(1) That the Contractor, for the consideration hereinafter set out, hereby agrees to commence and complete the construction of Philpot Pump Station Replacement, Trunk Lines & Creek Crossing Replacement.

(2) The Contractor will furnish all labor, equipment, materials and incidentals necessary to complete the herein described Project per Contract Plans and Specifications.

(3) The Contractor shall commence the work to be performed under this agreement within ten (10) days of receipt of Notice to Proceed and shall be fully completed by **July 1, 2005**.

(4) The Contractor agrees to perform all the work defined in the Contract Documents and Plans for the sum of $_____ or as shown in the Bid Schedule. The Contractor may request, at his option, partial payment for work performed and materials stored or stockpiled at the job site or at the Contractor's Owensboro, Kentucky yard. Requests shall be made no later than the 15th day of each calendar month for ninety (90) percent of the value; based on contract prices and paid invoices for work performed or materials stored as hereinabove defined. Payment will normally be made by the 20th day of the following month. All payment requests are subject to the review and approval of the Engineer.

(5) Upon completion of the project work the Contractor shall formally notify the Owner and Engineer requesting final inspection of the project. Upon satisfactory review and acceptance of the work by the Owner and Engineer and when the Contractor furnishes evidence of all supply, materials and other bills for the Project have been satisfactorily paid, the Contractor shall be paid in full within thirty (30) days.

Final payment will be withheld, in the amount of damage or estimated costs for any incomplete or unsatisfactory work requiring: repairs to public or private property, inspection and/or engineering costs, liquidated damages or unpaid bills associated with this project.

The CONTRACT DOCUMENTS are defined as:

Advertisement for Bids

Notice to Bidders

Bid and Bond Form

Agreement

General Conditions

Special Conditions

Project Specifications

Performance and Payment Bond

Notice to Proceed

Change Orders

Any duly issued Addenda

Plans and Technical Drawings prepared by

HRG, PLLC Surveying & Engineering

IN WITNESS WHEREOF the parties hereto do hereby execute or cause to be executed by the duly authorized officials in four (4) original copies on the day and year written above.

OWNER: Southeast Daviess County Water District

BY: _____
Joseph T. Elliott

TITLE: Chairman

ATTEST:

NAME: _____

TITLE: _____

CONTRACTOR: _____

BY: _____
Signature

_____
Printed Name

TITLE: _____

ATTEST:

NAME: _____

TITLE: _____

(Owner's Seal)

(Contractor's Seal)

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, Robert M. Kirtley, the duly authorized and acting legal representative of Southeast Daviess County Water District, do hereby certify as follows:

I have examined the attached contract and surety bonds and the manner of execution thereof, and I am of the opinion that the aforesaid agreement has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreement on behalf of the respective parties named thereon; and that the foregoing agreement constitutes a valid and legally binding obligation upon the parties executing the same in accordance with the terms, conditions and provisions thereof.

_____
Signature

_____
Date

SPECIAL CONDITIONS

1. **OMPC Public Improvements Specifications**
   All conditions and requirements of construction and implementation contained in the "Public Improvement Specifications" as issued in August 2002 by the Owensboro Metropolitan Planning Commission (OMPC) must be complied with on this project and are hereby incorporated by reference. Copies may be obtained from the OMPC office located on the second floor of the Owensboro City Hall or by downloading from the OMPC web page (www.iompc.org).

2. The Contractor's attention is directed to the existing water service lines and various utilities in the vicinity of the project. The Contractor shall submit BUD location requests prior to commencing any work. Additionally, the Contractor shall contact the District Manager to determine the location of existing services (possibly cross-country routes). Private lines; exact location unknown; have been reported in the project area. The Contractor shall assist the District to identify said line(s). The Contractor shall repair all damaged lines.

3. The Project consists of three distinct work areas:
   a.) Panther Creek Crossing Replacement – KY 142 at Panther Creek Bridge Crossing (400 l.f.±).
   b.) Philpot Pump Station – Construct replacement duplex water pumping station facility on KY 142 situated between the former Philpot fire station and former Philpot Elementary school.
   c.) Winkler Road/Pleasant Grove Road Trunk Line – Extending along Winkler Road, King Road and Pleasant Grove Road from KY 54 to the Indian Hill Tank site driveway (4828 Pleasant Grove Road) (6,300 l.f.±).

4. The pump station time clock shall be a Model 1015-00RS as manufactured by Paragon Electric Products, Maple Chase Co., 2820 Thather Road, Downers Grove, IL 60515; Phone 1-800-732-8400.

5. Performance standards for pumps include a maximum of 104 psi (i.e. flat-head pump curve) ±3%.

6. See specific pump performance standards in Section 4 contained herein.

7. Telemetry nor radio control systems are required by the Owner for this project. All necessary telemetry/radio control equipment for the Project will be furnished and installed by the Owner.

8. Brick color and style shall be approved by the Owner in writing. The brick shall be similar in color and style to the Owner's existing pumping station located on Wing Avenue south of E. Parrish Avenue.

9. Roofing color and style shall be approved by the Owner in writing.

10. Paint colors shall be approved by the Owner in writing.

11. Pump station floor shall be a **light** broomed finish.

12. The existing pump station valve vault shall be utilized. See plan sheet for construction limits under this contract at existing valve vault tie-in.

13. Each pump shall be equipped with low pressure (suction line) cut-off switch.

14. Exterior surfaces of all concrete walls shall be damp proofed with Sonneborn waterproofing system of Hydrocide 700 B Ashpalt Emulsion damp proofing compound applied per manufacturer's recommendations.

15. **Existing Water Meter Tie-In**
Water meter tie-ins shall include furnishing and installing additional Type 'K' copper service line. No additional compensation will be paid to the Contractor for incidental service line tie-in work/materials. The Contractor shall furnish and install all miscellaneous fittings, copper tubing from the existing tie-in location to the proposed main location. Existing meters shall remain in service except for the brief time required for actual reconnection. There are 19 total existing water meter tie-ins (14 same-side and 5 opposite-side of main).

16. **Paved Drives Schedule**

Approx. Width	Location
20'	@ Aldridge Car Lot
10'	#4840 Winkler Road
10'	#4816 Winkler Road
10'	#4780 Winkler Road
10'	#4772 Winkler Road
10'	#4764 Winkler Road
30'	#4740 Winkler Road

Crossing of paved driveway to be installed by "free bore technique" (maximum 20' length unless otherwise approved by Engineer) or by directional bore technique.

17. **HDPE Pipe and Fittings**
The 6" HDPE creek crossing pipe shall conform to the current requirements of PE 3408, the pipe shall be a DR9 (200 psi rating) per the DIP schedule. Flange

Adapters shall be 6" nomial size, SDR 11, flange outer diameter 8.62" rated at 160 psi (ISCO stock no. ISFFFA0611DIPS).

18. **Demolition**
Compensation for demolition of the existing pump station building, the venturi/valve vault and other demolition items shall be included in Bid Item No. 2 (Booster Pump Station).

19. **Existing Pump Station Service Line Extensions**
Compensation for relocation of meters and extension of existing pump station service lines shall be included in Bid Item No. 2 (Booster Pump Station).

20. **Existing Water Service Lines**
The Contractor's attention is directed to existing water service lines and various utilities in the vicinity of the project. The Contractor shall submit BUD location requests prior to commencing any work. Additionally, the Contractor shall contact the Owner to determine the location of existing water services (possibly cross-country routes).

21. **Gravel Drives**
The Contractor shall cross gravel roadways/drives by the open trench method and shall backfill with natural soil to a point six (6) inches above top of pipe. Remainder of trench(es) shall be backfilled with compacted dense grade aggregate (DGA). Compensation for this work shall be for per Bid Item for "Compacted DGA Driveway Materials (per ton).

22. **Dechlorination**
All water main disinfection water shall be dechlorinated in accordance with Kentucky Division of Water requirements 401 KAR 5:031.

23. **Polyethylene Wrap**
Use polyethylene wrap around all ductile iron fittings.

SECTION 1

GENERAL PROVISIONS

1.1. DEFINITIONS AND TERMS

Wherever encountered in these specifications or in other contract documents, the intent and meaning of the terms listed herein shall be interpreted as follows:

Award
The acceptance of the Owner.

Bid Bond
The security furnished with the bid to guarantee that the bidder will enter into the contract if his bid is accepted.

Bidder
An individual, partnership, firm, or corporation, submitting a proposal.

Calendar Day
Any day shown on the calendar, beginning and ending at midnight.

Change Order
A written order issued by the Engineer to the Contractor, approved by the Owner, covering changes in the plans or quantities or both, within the scope of the contract and establishing the basis of payment and time adjustments for the work affected by the changes.

Consultant
The firm responsible for project planning, design, and layout designated by the Owner to prepare the contract plans and specifications. The Project Consultant is HRG, PLLC.

Contract
The written agreement between the Owner and the Contractor setting forth the obligations of the parties thereunder, for the performance of the prescribed work.

Contract Item or Pay Item
A specific unit of work for which a price is established in the contract.

Contract Performance Bond
The security furnished to the Owner to guarantee completion of the work in accordance with the contract.

Contract Time
The number of calendar days allowed for completion of the contract. When a calendar date of completion is shown in the proposal in lieu of a number of calendar days, the contract shall be completed by that date.

Contractor
The individual, partnership, firm, or corporation, contracting with the Owner for performance of the prescribed work.

Engineer
The Project Engineer as designated by the Consultant and his duly appointed agents or representatives.

Equipment
All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the work.

Inspector
The Engineer or an authorized representative thereof assigned to make periodic inspections of contract performance.

Notice to Proceed
Written notice to the Contractor to proceed with the contract work including, when applicable, the date of beginning of contract time.

Owner
Southeast Daviess County Water District, 3400 Bittel Road, Owensboro, KY 42301, 270-685-5594.

Plans
The approved plans, profiles, and related drawings, or exact reproductions thereof, which show the location, character, dimensions, and details of the work to be done. Standard Drawings are drawings approved for repetitive use, showing details to be used where appropriate. Individual standard drawings attached to, or cited in, the plans or proposal become a part of the contract.

Project
The replacement booster pump station, line connections, water trunk line construction, creek crossing replacement with all appurtenances and associated construction to be performed thereon under this Contract.

Proposal
The offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.

Specifications
A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

Specified Completion Date
The date on which the contract work is specified to be completed.

Subcontractor
An individual, firm or corporation who, with the written consent of the Owner, subcontracts any part of the contract.

Surety
The corporation, firm, or individual; other than the Contractor; executing a bond furnished by the Contractor and having an agent licensed and doing business in the Commonwealth of Kentucky.

Work
The furnishing of all labor, materials, equipment and other incidentals necessary to the successful completion of the project or contract item and the carrying out of all duties and obligations imposed by the contract.

ABBREVIATIONS AND STANDARD SPECIFICATIONS REFERENCES

A.A.S.H.T.O.	American Association of State Highway Transportation Officials
A.I.S.C.	American Institute of Steel Construction
S.S.P.C.	Steel Structures Painting Council
A.S.T.M.	American Society for Testing and Materials
A.W.W.A.	American Water Works Association
K.R.S.	Kentucky Revised Statutes
M.U.T.C.D.	Manual on Uniform Traffic Control Devices for Streets and Highways
N.A.S.S.Co.	National Association of Sewer Service Companies
N.S.F.	National Sanitation Foundation
A.N.S.I.	American National Standards Institute

Kentucky Standard Specifications for Road and Bridge Construction, Transportation Cabinet, Department of Highways

1.2. BIDDING REQUIREMENTS AND CONDITIONS

Qualification of Bidders
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 contract and to complete the work specified therein.

The Owner reserves the right to reject any bid proposal submitted by a company or individual who has provided inferior, inadequate, incomplete or unsatisfactory work to the Owner in the past.

A financial statement from the Bidders may be required by the Owner in order to assist in the bid review, the analysis of acceptability and the ultimate bid award determination. Unsatisfactory demonstration of financial ability to engage and complete the project will result in rejection of the bid.

Interpretations of Bid Quantities

The quantities appearing on the Bid Form are estimated quantities only and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished in accordance with the contract. The estimated quantities or work to be done and materials to be furnished may each be increased, decreased, or omitted as provided herein.

Examination of Plans, Specifications, and Project Site

The bidder is expected to examine carefully the site of the proposed work, the proposal, plans, specifications, contract forms and related documents, before submitting a proposal. The submission of a bid shall be considered prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the contract. Profession of ignorance or misunderstanding regarding requirements of the work will in no way serve to modify the provisions of the contract.

Preparation of Proposal

The bidder must submit his proposal upon the forms furnished by the Owner. The bidder shall specify a unit price in figures for each pay item for which a quantity is given and shall also show the products of the respective unit prices and quantities written in figures in the column provided for that purpose and the total amount of the proposal obtained by adding the amounts of the several items. All figures should be in ink or typed. The bidder's proposal must be signed in ink by the individual, by one or more members of the partnership, or by one or more officers of a corporation, or by an agent of the Contractor legally qualified and acceptable to the Owner.

Irregular Proposals

Bids will be considered irregular and will be rejected when the bidder omits a unit price for any pay item and an amount for the entire quantity of the same pay item. Proposals will considered irregular and may be rejected for any of the following reasons:

(a) When the proposal is on a form other than that furnished by the Owner; or when the form is altered or any part thereof is detached; or

(b) When there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning; or

(c) When the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award; or

(d) Proposals in which the prices are determined to be unbalanced; or

(e) When bid proposals which are obviously excessively high or excessively low relative to the Engineer's estimate.

Bid Bond

No proposal will be considered unless accompanied by a Bid Bond of the character and in an amount no less than the amount indicated on the proposal form. Any proposal not accompanied by the required guaranty will be rejected, and not read.

Delivery of Proposals

Each proposal shall be submitted in a sealed envelope and shall be clearly identified as to contents. All proposals shall be received prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified for opening of bids will be returned to the bidder unopened. Facsimile (i.e. fax) bid proposals will not be accepted.

Disqualification of Bidders

Any of the following reasons may be considered as being sufficient for the disqualification of a bidder and the rejection of his proposal:

(a) More than one proposal for the same work from an individual, firm, or corporation under the same or different name; or

(b) Evidence of collusion among bidders. Bidders are advised that collusive bidding is a violation of the law and could result in criminal prosecution or civil damage actions.

1.3. AWARD AND EXECUTION OF CONTRACT

Consideration of Bid

The bid prices will be tabulated as soon as possible after the proposals are opened and a comparison of bids will be made. In the event of a discrepancy between the unit bid prices and extensions, the unit bid price shall govern. The Owner reserves the right to reject any and all proposals and to waive minor irregularities as may be deemed in the best interest of the Owner.

Award of Contract
Unless all bids are rejected, the contract will be awarded to the lowest, responsive, responsible and best bidder, without discrimination on the grounds of race, creed, color, sex, or national origin, whose proposal complies with the requirements of the law and the project specifications.

Contract Bond
Within ten (10) calendar days after the Notice of Award has been received by the bidder and at the time of execution of the contract, the successful bidder shall execute a performance and payment bond on a form acceptable to the Owner, in the penal sum of 100 percent of the amount of the contract, with a surety to be approved by the Owner. Contract bonds shall be conditioned upon the faithful performance of the requirements of the contract and any modifications thereof in conformity with the proposal, plans, and specifications; payment of proper compensation under the required labor and wage conditions as provided in the contract; and payment of claims against the Contractor for materials, labor and supplies. The contract bond shall be kept in full force for a period not less than one (1) full year after the date when final payment is made to the Contractor. The bonds shall be issued by a company with a Kentucky authorized contracting agent.

One-Year Warranty Period
The Contractor must guarantee all work for a period of one (1) year and shall promptly make corrections or adjustments which may be necessary to correct defects including repairs of any damages to other parts of the system resulting from such defects. Payment by the Owner does not constitute a waiver of the Owner's claims against the Contractor. The Contractor's One-Year Warranty period shall commence on the date of the final payment check issued by the Owner.

Execution of Contract
The bidder to whom the contract is awarded shall, within ten (10) calendar days after receiving the Notice of Award, execute and file with the Engineer the contract, accompanied by the following items:

(a) The contract bonds specified hereinabove; and

(b) Satisfactory evidence of required insurance coverage.

1.4. SCOPE OF WORK

Intent of Contract
The intent of the contract is to provide for the construction and completion in every detail of the utility mains, grade, drain, surface and appurtenances. The Contractor shall furnish all labor, materials, equipment, tools, transportation, supplies and incidentals necessary to complete the work in accordance with the plans, specifications, and terms of the contract.

The Contractor shall provide all labor, equipment, and incidentals necessary to test the completed construction items.

Change Orders

Additions or deletions in the scope of work of the Contract may be changed only by a Change Order. The value of such change may be either in increase or a decrease in the Contract Price and shall be based on a least one of the following criteria:

1. Previously established unit prices, or
2. A lump sum agreement, or
3. Cost-plus (as negotiated by the Owner, Engineer and Contractor) determined by direct cost with an additional amount of not more than fifteen (15) percent to cover overhead and profit.

Final Clean-up of Site

The work will not be considered as complete, and final payment will not be made until the project site and all ground occupied by the Contractor in connection with the work has been cleared of all rubbish, equipment, excess materials and weeds, as directed by the Engineer. All property, both public and private, which has been damaged in the prosecution of the work, shall be restored to a condition equal to or better than existed prior to commencement of the work, at the expense of the Contractor.

1.5. MATERIALS SPECIFICATIONS

Source of Supply and Materials Requirements

All construction materials shall conform to the Kentucky Standard Specifications for Road and Bridge Construction, Transportation Cabinet, Department of Highways, current edition.

The Contractor shall furnish upon request the manufacturer's/ vendor's specifications or manufacturer's/vendor's certification of materials standards for review and approval by the Engineer relative to the requirements of the contract.

Material Testing

The cost of any materials testing or sampling shall be the responsibility of the Contractor. The Contractor shall give the Engineer and/or Inspector all reasonable assistance in obtaining samples and shall furnish copies of all test results to the Engineer and the Owner immediately.

Defective Material

Any stockpiled or placed materials which the Engineer deems to be inferior or inadequate, shall be removed and replaced at the Contractor's expense.

Storage of Materials
Materials shall be stored by the Contractor so as to ensure preservation of their quality and fitness for the work. Stored materials shall be located so as to facilitate prompt inspection.

1.6. LEGAL CONSIDERATIONS AND INSURANCE

Laws to be Observed
In all operations connected with the work, all Federal, State, and local laws, regulations and ordinances controlling or limiting in any way the actions of those engaged on the work shall be strictly complied with by the Contractor and all his employees or subcontractors, in such manner as to save the Owner, its agents, and its employees harmless.

The Contractor shall not discriminate against any worker because of race, creed, color, sex, national origin, or age.

Safety, Health, and Sanitation
The Contractor shall comply with all applicable Federal, State, and local laws and regulations governing safety, health, and sanitation. The Contractor shall provide all safeguards, safety devices, safety fences, and protective equipment and shall take all other needed actions which are determined to be reasonably necessary to protect the life and health of all employees and personnel on the project, provide for the safety of the public, and protect all property affected by the performance of the work covered by the contract.

As provided in KRS Chapter 338 in the Kentucky Occupational Safety and Health Act and in subsequent regulations and standards promulgated by the Kentucky Occupational Safety and Health Standards Board, the Contractor shall not require any laborer or mechanic employed in performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety.

Licenses, Fees, and Permits
Unless specified otherwise in the Special Conditions, the Contractor shall be responsible for the securing and the payment of any applicable licenses, fees, or permits. The cost of such items shall be considered incidental to completion of the work specified and no additional compensation will be made for such items.

Insurance Requirements
The Contractor shall not commence site work under this Contract until all insurance requirements specified herein have been acquired and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on

this project until all similar insurance required for the Subcontractor has been so obtained and approved.

Compensation Insurance: The Contractor shall take out and maintain during the life of this Contract and before any work is commenced, Workman's Compensation Insurance for all his employees employed at the site of the project, and in the event that any of the work is sublet, the Contractor shall require the Subcontractor similarly to provide Workman's Compensation insurance for all the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in work under this Contract at the site of the project is not protected under the Workman's Compensation Statute, the Contractor shall provide, and shall cause such Subcontractor to provide Employer's Liability Insurance for the protection of his employees not protected by the Workmen's Compensation Statute.

Employer's Public Liability Insurance: The Contractor shall take out and maintain during the life of this contract, Employer's Public Liability Insurance in an amount no less than $1,000,000.00.

Comprehensive General Liability: The Contractor shall take out and maintain during the life of this contract such Public Liability and Property Damage Insurance as shall protect him, the owner, and any Subcontractor, during the performance of the work covered by this Contract, from claims for damages for personal injury, including accidental death, as well as for claims for property damages, which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them or in such manner as to impose liability on the Owner. The amounts of such insurance shall be as required by law or, in the absence of specified regulations, the amount of coverage shall be as follows:

Bodily Injury in an amount not less than $1,000,000.00 for each occurrence including wrongful death to any person, $2,000,000.00 aggregate.

Property Damage in an amount not less than $1,000,000.00 for each occurrence, $1,000,000.00 aggregate.

Automobile Insurance: The Contractor shall secure and maintain during the life of this Contract automobile bodily injury insurance in amounts not less than $1,000,000.00 each person, $1,000,000.00 each accident, and property damage liability insurance in amounts not less than $1,000,000.00. Such insurance shall cover the use of all such motor vehicles engaged in operating within the terms of this Contract on the site of the work to be performed thereunder, unless such coverage is included in the insurance specified hereinabove.

Proof of Carrying Insurance: The Contractor shall furnish the Owner with satisfactory proof of coverage of the insurance required, with a reliable company or companies, before commencing work. Such proof shall consist of certificates executed by the respective insurance companies and filed with the Engineer.

Indemnification

The Contractor shall indemnify and hold harmless the Owner, agents, or 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 claim, damage, losses, or expenses (a) is attributable to bodily injury, sickness, disease or death, or attributable to injury to, or destruction of, tangible property (other than the work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of the Contractor, anyone directly or indirectly employed by the Contractor, or anyone for whose acts the Contractor may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

In any and all claims against the Owner and its affiliated companies or any of its agents or employees by any employee of the Contractor, or anyone directly or indirectly employed by the Contractor or anyone for whose acts the Contractor may be liable, the indemnification obligation under the above paragraph shall not be limited in any way by the limitation payable by or for the Contractor under Workman's Compensation Acts, disability benefit acts, or other employee benefit acts.

Any provisions of this Contract in respect to indemnification which are prohibited or unenforceable by law shall be ineffective to the extent of such prohibition or unenforceability, and shall not invalidate the remaining provisions of this Agreement.

1.7. CONTRACT PROSECUTION AND PROGRESS

Subcontracting of Contract

The Contractor shall not subcontract, sell transfer, assign, or otherwise dispose of the contract, or any portion thereof, or of his right, title, or interest therein, without written consent of the Owner. When such consent is given, the Contractor will be permitted to subcontract a portion thereof, but will perform with his own organization work amounting to no less than fifty-one (51) percent of the total contract cost. No subcontract shall in any case release the Contractor of his liability under the contract and bonds. All transactions of the Engineer will be with the Contractor.

Preconstruction Conference

After the contract is awarded, the Engineer will schedule a preconstruction conference. At this conference, the Contractor shall be prepared to discuss the planned sequence of major operations to be performed on the project, and provide any relevant information as requested by the Engineer.

Prosecution of the Work

The Contractor shall not begin work until he has received official notice from the Engineer to do so. The Contractor shall begin work within ten (10) calendar days after receipt of the Notice to Begin Work. Once construction has begun, the work shall proceed in a timely manner at a progressive construction rate. The Contractor shall satisfactorily complete each work element of the project as soon as possible before beginning the next sequence of work elements.

Work under this Contract shall be performed in a safe, workmanlike manner by competent personnel with adequate training and supervision. Upon request of the Engineer the Contractor shall furnish experience and qualification records for the Contractor's personnel. Any of the Contractor's Project personnel whose experience/qualifications records are deemed unsatisfactory by the Engineer or Owner shall not provide work on the project.

The Contractor shall provide a qualified and competent person on each construction crew as superintendent or foreman to direct and coordinate the work. Such person shall have authority to carry out instructions and directions for the Engineer. The Contractor shall provide a qualified and competent superintendent of Projects experienced at directing more than one construction crew.

The Contractor shall communicate and cooperate with the Engineer on work scheduling and shall notify the Engineer of all work activities.

Specified Completion Date

The Contractor shall complete all work on the project by **July 1, 2005**. The contract time allowed for completion of the work specified in the contract is based on the original quantities of work as specified herein. When the final contract cost is greater than the original contract cost because of authorized additional work, an extension of the contract time will be granted the Contractor. The additional work may consist either of net increases in the original quantities or of addition of items to the contract, or both. The extension of contract time shall be in direct proportion to the amount of additional work, as determined by the Engineer.

When the period between the execution of the contract and the issuance of the Notice to Begin Work exceeds thirty (30) calendar days, then the specified completion date will be extended by the number of calendar days the Notice to Begin Work was withheld in excess of the 30 calendar days. No extension of time will be allowed at any time for weather or conditions resulting therefrom, except for delays caused by extraordinary conditions beyond the control of the Contractor. In the event of an extraordinary condition, the Contractor shall submit to the Owner a written request for extension of time at the time of occurrence. The extension shall be for a reasonable time as determined by the Engineer.

Failure to Complete on Time

For each calendar day, excluding weekends and legal holidays, that the work remains incomplete after the specified completion date, the Contractor shall pay to the Owner the sum of **$100.00 (One Hundred Dollars)** in daily charges (per each calendar day), not as a penalty but as agreed liquidated damages. Daily charges as agreed liquidated damages shall be deducted from any money due the Contractor, if not previously paid by the Contractor.

Conflicting Contract Document Conditions

In the event of conflicting requirements within the Contract Documents, applicable laws, regulations or policies the more stringent interpretation shall prevail. In the event of conflict of interpretation between the Owner and the Contractor then the decision of the Project Engineer shall be final.

1.8. UTILITIES COORDINATION

The Contractor shall be responsible for notifying utilities and coordinating work efforts with all utilities, relative to the project.

Damage to underground utility facilities shall be immediately reported to the respective utility authority. Damages shall be repaired to the satisfaction of the respective utility authority at the Contractor's expense.

The Contractor shall be responsible for contacting all utilities, including but not limited to those listed below, which have facilities in the vicinity of the project.

Southeast Daviess County Water District	(270)685-5594
Kenergy	(270)926-4141
Regional Water Resource Agency	(270)687-8440
Atmos Energy	(270)685-8150
BellSouth	(270)685-7623
Adelphia Communications/Cable	(270)926-0202
B.U.D.	1-800-752-6007

1.9. CONSTRUCTION STAKING

Construction control points will be furnished by the Owner on a one-time basis for the general project area. Additional staking or re-staking will be at the expense of the Contractor and shall be reasonable effort to protect the construction control points.

Control points will be provided for horizontal and vertical control at intervals and spacing along the project normally required by Contractors. Staking will include:

1. Key control points for horizontal control.
2. Benchmarks for elevation reference.
3. Coordinate listing for major construction items.
4. Curb bluetops

All staking is on a one-time basis provided by the Owner in sequence as the construction progresses. The Contractor pays for replacement stakes and for checking stakes after initially set.

The Contractor shall be responsible to notify and coordinate the construction staking on a timely basis with the Engineer or his duly designated representative. The actual staking

will be performed by the Contractor. Use of the construction staking by the Contractor constitutes acceptance of the staking by the Contractor.

The Contractor's attention is called to the provision listed below regarding engineering/surveying work provided at overtime occasions, provided after the scheduled completion date or under similar circumstances. The Owner will provide control layout, construction inspection and related work via the Consultant, based on normal working hours of the firm. All engineering inspection, or survey crew personnel will be furnished Monday through Friday (except holidays) between the hours of 7:30 a.m. and 4:00 p.m. by the Owner at no cost to the Contractor. Actual construction layout and staking shall be provided by the Contractor.

The Contractor shall pay for all overtime furnished by the consultant at the Consultant's Hourly Rate for the respective personnel. Overtime charges will be assessed against the Contract for work occurring during the Contract period. In addition, the overtime rates hereinabove described shall be assessed against the Contractor for any and all work and for each hour of work performed by the Consultant beyond expiration of the Contract completion date. Payments of all costs assessed to the Contractor for overtime or excess work provided by the Consultant will be deducted from payments due the Contractor if not previously paid in full by the Contractor during the time covered by the respective periodic payment requests. The Contractor is responsible for the cost of replacing damaged construction and layout staking and/or control points.

The Owner maintains at any and at all times the right of entry upon and to the job site(s). This right shall be extended by the Owner to include representatives of the Consultant and to State/Federal agencies.

The Contractor shall notify the Engineer immediately of control point (staking) which are inconsistent or which do not appear to be in compliance with the Plans. The Contractor shall suspend construction operations for any section or area of work where he discovers or feels there is such an inconsistency until the conflict is resolved by the Engineer.

At least one full working day notice shall be given by the Contractor to the Engineer when construction control is required for each phase or section of construction.

1.10. SUBSURFACE AND GROUNDWATER CONDITIONS

No assurance is given or implied regarding the nature or character of the subsurface conditions at the site. The Bidder is advised to perform whatever excavation, borings or similar work he deems necessary in order to best determine subsurface conditions. Unless otherwise noted in the Project Special Conditions, no direct payment will be allowed for work required due to subsurface and/or groundwater conditions.

1.11. INCIDENTALS

1.11.1. Drives, Entrances, etc.

All intersected drives, entrances, alleyways, sidewalks, housewalks or other hard surfaced areas shall be removed and reconstructed to a serviceable condition as determined by the Engineer. The items shall be reconstructed to a condition equal to or better than the original condition and shall be reconstructed of the same type of material existing prior to construction.

All cement concrete driveway slabs shall be reconstructed not less than six (6) inches in thickness. All cement concrete sidewalks (except at driveway crossings) shall be reconstructed not less than four (4) inches in thickness. Sidewalk sections at drives, alleys, etc., shall be constructed not less than six (6) inches in thickness.

Bituminous surfaced residential driveways, etc., shall be reconstructed not less than one and one-half (1-1/2) inches thick with not less than four (4) inches of D.G.A. base.

1.11.2. Tree Removal

Trees designated on the plans for removal and any other trees formally approved by the Owner per written change order shall be cut and removed from the job site by the Contractor. The stump shall be removed to a depth of at least twelve (12) inches below the proposed subgrade or the proposed finish grade, which ever is lower. The hole created by such removal shall be completely and thoroughly backfilled and unstable materials removed prior to placing base material or other construction items. All limbs, tree trunks, roots and associated debris shall become the property of the Contractor and shall be removed and properly disposed of a his expense.

Repair, temporary removal or replacement of utility lines occurring in conjunction with the tree removal shall be performed at the Contractor's expense. Damages to public or private property, utility mains or service lines shall be corrected at the expense of the Contractor to the satisfaction of the respective owner.

SECTION 2

EARTH WORK

2.1. CLEARING AND GRUBBING

This work shall consist of clearing, grubbing, removing, and disposing of all vegetation, topsoil (min. 6") and debris, which are within the limits of construction of the proposed facilities as shown on the Plans. This work shall include the loosening, loading, removing, transportation, disposing of all vegetation, natural material, man-made materials (wet or dry materials) necessary to be removed to construct all work included in this project to the lines, grades, and locations shown on the Plans. The Contractor must assume the risk of meeting and the contract price shall include the cost of removal of unstable soils, rock, boulders, rubbish, unforeseen obstacles, underground conduits, gas pipe, drain tile, trees, logs, roots, timber or masonry structures, fences, pavements, and sidewalks, and the delayer damage occasioned by the same whether these obstacles are shown on the plans or not. Clearing and grubbing work shall be incidental to the Contract Bid Items unless specifically identified as a separate item in the Bid Schedule.

This work shall also include, where applicable, the preservation from injury or defacement of all vegetation and objects designated to remain. The Engineer will designate all trees, shrubs, plants, and other items to be removed.

All materials resulting from clearing and grubbing shall be completely disposed of by the Contractor off the project site. In no case shall the Contractor place on adjacent property any material obtained from clearing and grubbing without written permission from the property owner, a copy of which shall be available to the Engineer. Burning of material on or near the project site is prohibited unless specifically approved on a case-by-case basis by the Engineer and unless performed in compliance with all Federal, State and Local regulations or restrictions.

2.2. EXCAVATION

Excavation shall be performed in a neat workmanlike manner, to the line and grade shown on the plans and typical sections or as directed by the Engineer. Care shall be exercised to avoid under-cutting or excessive cuts. All cuts shall be uniform; along a straight line; without sags, bulges, or heaped areas. No frozen material, stumps, logs, roots or other perishable material shall be placed in any embankment. Stone or masonry fragments greater than four (4) inches in any dimension shall be removed from the top foot of embankment material or subgrade material. Embankments shall not be constructed on frozen material.

Earth embankment shall be formed by uniformly distributing in successive horizontal layers not exceeding twelve (12) inches in thickness; loose depth; to the full width of the cross-section.

Each layer of the fill shall be thoroughly compacted as specified in the Contract Documents.

Excavation and fill placement shall be performed in a manner to provide positive drainage and in order to maintain a well-drained site. Daily work areas shall be graded to drain and when directed shall include temporary drains, swales or diversions installed at the Contractor's expense for protection of the site and/or adjacent areas.

Final grading, shaping and finishing shall be to a uniform line and grade to a tolerance on 0.10 of a foot. The final graded site shall be free of ponding or settlement area. The site shall be filled, leveled and final graded as many times as necessary to provide a uniform, well drained area at no additional compensation to the Contractor.

SECTION 3

WATER MAINS, SERVICE LINES AND APPURTENANCES

3.1. SCOPE OF WORK

Work under this section shall include all labor, equipment, materials, hand tools and incidentals necessary to construct the water mains, service lines and appurtenances as shown on the project plans.

The Contractor shall provide all labor, equipment, and incidentals necessary to test, disinfect and place all lines into service.

3.2. MATERIALS

C-900 Pipe

Watermain piping sections designated as C-900 materials shall be polyvinyl chloride (P.V.C.) conforming to all requirements of A.W.W.A. Standard Specification C-900 and shall meet the following requirements:

Dimension Ratio (DR)--	NIC
Pressure Class	NIC
Joint Length (Laying Length)	20 feet
Test Pressure (2 hours minimum)	150% of normal line pressure (100 psi minimum)
Minimum Cover	30 inches
Maximum Cover	40 inches

I.P.S. Pipe

Watermain piping sections shall be the type and diameter as noted on the construction plans. The I.P.S. pipe shall conform to all requirements of A.S.T.M. Standard Specification D-2241 A.S.T.M. Standard D-3139 for Polyvinyl Chloride (P.V.C.) plastic pipe.

Dimension Ratio (DR)--	21
Pressure Class	200
Joint Length (Laying Length)	20 feet
Test Pressure (2 hours minimum)	150% of normal line pressure (100 psi minimum)
Minimum Cover	30 inches
Maximum Cover	40 inches

P.V.C. Pipe

All pipe shall bear the National Sanitation Foundation seal of approval.

The pipe shall be jointed by means of rubber ring bell joint which shall be an integral and homogeneous part of the pipe barrel. The elastomeric seal gasket shall comply with the

requirements of A.S.T.M. F-477. Each joint of pipe shall bear the manufacturer's name and dimension ratio.

Ductile Iron Pipe

Ductile iron pipe for watermains shall conform to the requirements of AWWA Standard C-151 "Ductile-Iron Pipe, Centrifugally Cast Inmetal Molds or Sandlined Molds, for Water or Other Liquids" and AWWA Standard C-150 "Thickness Design of Ductile Iron Pipe". Rubber gaskets and pipe joints shall conform to requirements of AWWA Standard C-111 unless special gasket requirements are noted on the construction plans.

Pipe Characteristics for the Project

Pipe Class--	(4"-CL 51)(6" or larger-CL 50)
Lining--	Cement (AWWA C-104)
Laying Length--	18 feet
Joint Type--	Push On
Fitting Class--	Ductile Iron
Fitting Type--	Mechanical Joint
Minimum Cover--	30 inches
Maximum Cover--	40 inches
Outside Coating--	Asphaltic (AWWA C-151)

Steel Casing Pipe

Material--	Steel Pipe, A.S.T.M. 153-B
Nominal Casing Diameter--	As shown on the Contract Plans
Minimum Yield Strength--	35,000 psi

Steel casing shall be new material

High Density Polyethylene

A. **Pipe Materials**

High density polyethylene (Ultra-High Molecular weight) pipe shall be installed at the location(s) shown on the project plans; constructed in accord with the Project Specifications and shall be the size and length specified on the plans.

The pipe shall be manufactured in accordance with ASTM D-1248 and ASTM D-2122. Polyethylene materials shall meet the requirements of ASTM D-1505 for material designation PE 3408 and ASTM D-3350.

Care shall be taken to protect the pipe from damage or surface cuts during all phases of the handling, transit, storage, fabrication or construction. Damaged materials shall not be installed. Any pipe which is damaged during installation or otherwise discovered to be damaged after installation is to be

removed and replaced at the Contractor's expense with no additional compensation.

B. **Joint Fabrication**
Pipe sections shall be field fabricated by means of butt fusion in accordance with ASTM D-3261 and with the manufacturer's recommended procedures. Pipe ends shall be cleaned and squared prior to pipe fusion.

Joint or other pipe sections which are damaged or which fail shall be removed and replaced at the Contractor's expense with no additional compensation.

C. **Mechanical Jointing**
Full circle stainless steel sleeves (12" min. length) shall be installed on this project.

Water Fittings
Water main fittings; i.e., ells, tees, reducers, etc.; shall be mechanical joint type and either ductile iron conforming to the requirements of AWWA C-110 or cast iron materials. Compact ductile iron fittings shall conform to AWWA C-153 (350 pressure class). Valves, fittings and other appurtenances shall be the type and size shown on the project plans; shall include the appropriate type and sized gaskets, transition gaskets, seals, bolts and other incidental hardware. The cost of said miscellaneous hardware is to be considered incidental to the unit bid price of the related Pay Items. All fittings shall have the same outside coating and interior lining as the Ductile iron pipe.

Valves, Hydrants and Appurtenances
Valve assemblies shall be set plumb with valve boxes remaining directly over the valve. All new valve boxes or existing boxes which are reset shall be placed with the top of the valve box at finished grade. Valve boxes shall be backfilled and the earth thoroughly compacted.

In the event of valve settings in excess of three (3) feet, a permanent valve stem extension shall be furnished in the valve box. The cost of furnishing and installing the valve stem extension shall be included in the unit bid price per each valve and box setting.

Hydrants shall be set plumb with the nozzles being not less than twelve (12) inches above the finished grade. Hydrants shall be turned in order that the pumper nozzle is directed toward the street, unless otherwise approved by the Engineer. Hydrants shall be provided with a crushed stone drainage sump area, a concrete thrust block backing and conform to requirements of the plans and construction details.

Fire hydrant connector pipe with restrainers (as manufactured by Assured Flow Sales, Inc. or equal) or ductile iron hydrant tee may be installed in lieu of the standard hydrant

and thrust block method. The connector pipe shall be compact ductile iron, 350 psi and positioned between the hydrant and gate valve. The connector pipe shall be of the offset design so that the hydrant can be adjusted to ensure placement at the proper grade. Anchoring features shall be at both ends of the connector pipe to provide restrained joints. The connector pipe shall be cement lined.

All hydrants and all valves must be checked to verify that parts are in proper working order. Valve stem extensions shall be installed as directed by the Engineer.

Valves, hydrant assemblies and associated fittings shall be of the mechanical joint type only.

All valves, hydrants, fittings, etc., for this project shall be either cast iron or ductile iron materials. Cast iron items shall conform to the requirements of A.S.T.M. A126, Class B or A.S.T.M. A48. Ductile iron items shall conform to the requirements of A.S.T.M. specification A395, A445 or A536. Ductile iron fittings shall conform to the requirements of A.W.W.A. C-153.

Valve Characteristics for the Project

Gate Type--	Wedge Disc.
Seat--	Resilient Seat
Opening Direction--	Counterclockwise
End Type--	Mechanical Joint
Operation--	Non-rising Stem

Plug Valves

Valves shall be of the non-lubricated eccentric type with resilient faced, resilient seat plugs and shall be furnished with end connections as shown on the plans. Flanged valves shall be faced and drilled to the ANSI 125/150 lb. standard. Mechanical joint ends shall be to the AWWA Standard C111, latest revision. Bell ends shall be to the AWWA Standards C100, latest revision Class B. Screwed ends shall be to the NPT standard.

Port areas for valves through 20" shall be minimum 80% of full pipe area and port areas of 24" and larger valves shall be minimum 70% of full pipe area.

Valve bodies shall be of ASTM A126 Class B cast iron in compliance with AWWA C504, Section 2.2. Bodies in 3" and larger valves shall be furnished with a welded overlay seat of not less than 90% pure nickel in accordance with AWWA C507, Section 7.2. Valves utilizing resilient seats attached to the body shall not be acceptable. As per AWWA C504, Section 35.2 and AWWA C507, Section 7.2, sprayed or plated seats are not acceptable, nor shall screwed in seats be acceptable.

Plugs shall be of ASTM A126 Class B cast iron in compliance with AWWA C504, Section 2.2. The plug shall be of one piece construction and shall be capable of withstanding the full pressure rating of the valve without use of additional structural reinforcing ribs that extend beyond the profile of the plug itself. Plugs shall be resilient faced with neoprene or hycar, suitable for use with sewage. Plugs with cast inlays shall not be acceptable.

Valves shall be furnished with replaceable, sleeve type metal bearings conforming to AWWA C504, Section 3.6 and AWWA C507, Section 8. Bearings shall be of sintered, oil impregnated and permanently lubricated type 316 ASTM A743 Grade CF-8M or AISI Type 317L stainless steel in 1/2" - 36" sizes. In valves larger than 36", the upper and lower plug journals shall be fitted with ASTM A-240 type 316 stainless sleeves with bearings of ASTM B30, Alloy C95400 aluminum bronze. Non-metallic bearings shall not be acceptable.

Valves shaft seals shall be of the multiple V-ring type and shall be externally adjustable, repackable without removing the bonnet or actuator from the valve, and repackable under pressure. Shaft seals shall conform with AWWA C504, Section 3.7 and AWWA C507, Section 10.2. Valves utilizing O-ring seals or non-adjustable packing shall not be acceptable. All exposed nuts, bolts, springs, washers, etc., shall be stainless steel for buried valves and zinc plated for all others.

Valve pressure rating shall be 175 psi through 12" and 150 psi for 14" through 72". Each valve shall be given a hydrostatic and seat test with test results being certified.

Certified copies of proof-of-design test reports shall be furnished as outlines in AWWA C504, Section 5.5.

Manual valves shall have lever or gear actuators and tee wrenches, extension stems, floor stands, etc., as indicated on the plans. All valves 8" and larger shall be equipped with gear actuators. All gearing shall be enclosed in a semi-steel housing and be suitable for running in a lubricant with seals provided on all shafts to prevent entry of dirt and water into the actuator. The actuator shaft and the quadrant shall be supported on permanently lubricated bronze bearings. Actuators shall clearly indicate valve position and an adjustable stop shall be provided to set closing torque. All exposed nuts, bolts and washers shall be zinc plated.

Valves and gear actuators for buried or submerged service shall have seals on all shafts and gaskets on the valve and actuator covers to prevent the entry of water. Actuator mounting brackets for buried or submerged service shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts, springs and washers

shall be stainless steel. All gear actuators shall conform to AWWA C504, Section 3.8.

All valves and actuators shall be as manufactured by DeZurik or approved equal.

Hydrant Characteristics for the Project

Hydrant Type--	Dry Barrel Traffic Model
Main Valve Size--	5-1/4" For Water Mains 6" Dia. and Larger 4-1/2" For 4" Water Mains
Minimum Trench Depth--	3-1/2'
Opening Direction--	Counterclockwise
Opening Nut Size and Shape--	1-1/2" pentagon, point to flat
Color--	Red
Number of Hose Nozzles--	Two (2)

Hose Nozzle Specifications

Inside Diameter of Nipple--	2-1/2"
Thread Type--	National Standard Thread

Pumper Nozzle Specifications

Inside Diameter of Nipple--	4-1/2"
Thread Type--	National Standard Thread
Connection Type--	Mechanical

Stainless Steel Tapping Sleeve

Type--	Full Circle Single or Double Panel
Material--	Stainless Steel (Band and Armor Plate)
Gasket--	Full Circle, Full Width Neoprence with Check-O-Seal design
Band Lugs--	Stainless Steel
Nuts & Bolts--	Stainless Steel
Band Length--	12" minimum
Flange--	Stainless Steel Standard AWWA C207 Class D, ANSI 150 lb. Drilling with Recessed Flange to accept Tapping Valve

All materials installed during the performance of this work shall be new materials and appurtenances in accordance with the contract specifications and contract plans with the exception of resetting of existing water meter boxes. New gaskets or fittings as required shall be furnished by the Contractor for the relocation and/or resetting of existing water meter assembly. After new water mains have been successfully placed into service the Contractor shall cut off, disconnect, plug and otherwise render inactive any cross-connection from the existing water lines (mains) which are being replaced. Additional compensation will not be allowed for such work; the cost of such work shall be considered incidental to the several Pay Items for the proposed water system.

Water meter service lines shall be installed by boring technique or by pushing service line under existing paved areas.

Compensation for driveway, road or street crossings will be included in the Unit Bid Price per linear foot of service line installation. The Contractor shall use due care and consideration when installing service lines by pushing under existing pavement, particularly in the presence of other existing buried utilities.

Standard Manufactured Items

Listed below are manufacturer's items which have been deemed acceptable for this project. This listing is in no manner exclusive and other suppliers' items which are equal will be acceptable. Suppliers of other manufacturer's items must submit specifications, technical data and materials testing reports for review and approval by the Owner and by the Engineer prior to materials acceptance under the "or equal" clause.

Polyvinyl Chloride Pipe:
Certaineed, Capco, Can-Tex, H & W, Vulcan, or equal.

Ductile Iron Pipe:
U.S. Pipe, Griffin, Tyler, or equal.

Gate Valves:
Kennedy, Mueller, or equal.

Fire Hydrants:
Mueller, Kennedy, or equal.

Tapping Sleeve:
Power Seal, JCM Industries, Inc. Smith-Blair, Inc., or equal.

Defective or Damaged Materials

The Contractor shall be responsible for all material furnished by or to him, and shall replace at no expense to the Owner all such material found to be damaged or defective in manufacture or as a result of improper handling. Replacement of defective or damaged

materials shall include furnishing all material and labor required for a satisfactory and acceptable installation as approved by the Engineer.

The Contractor shall be responsible for the safe storage of materials furnished by or to him, and accepted by him for use on the project, until such time as the materials are incorporated into the completed project. The exterior as well as the sealing surfaces of all pipe, fittings, structures, seals and other accessories shall be kept free of dirt and foreign matter at all times. Care shall be taken at all times to avoid damage to pipe materials, fittings and appurtenances. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing. Pipe stored outside and exposed to prolonged periods of sunlight (several months or more) should be covered by canvas or other opaque material. Clear plastic sheets shall not be used. Air circulation shall be provided under covering.

3.3. DAMAGES TO EXISTING WATER FACILITIES

Repairs to existing facilities which are damaged by the Contractor, his agents, or subcontractors shall be repaired entirely at the expense of the Contractor. No Owner supplied materials may be used for such repairs. The Owner's crews will not be available to repair damages resulting from actions by the Contractor.

3.4. RESTORATION OF PRIVATE AND PUBLIC PROPERTIES

The Contractor shall protect all private properties and public properties from unnecessary disturbance or damage. Any areas of public or private property which are damaged or otherwise disturbed by the Contractor or his agents during the completion of this project shall be restored to a condition equal to or greater than that existing prior to construction at no expense to the Owner. The Contractor shall be responsible for adjusting to proper grade and alignment any existing or proposed water valves, water meter/box, fire hydrant, water mains, etc., within the limits of the project.

3.5. GENERAL INSTALLATION CONDITIONS

Existing water mains are to remain in service and functional at all times. Where existing service lines are to be replaced, new service lines shall be provided as quickly and as timely as possible with minimal inconvenience to the water customer.

Mains, service lines and hydrant connectors shall have not less than thirty (30) inches nor more than forty (40) inches cover above the top edge of the pipe. Forty-eight (48) inches of cover may be allowed in special locations only when previously approved by the

Engineer or the Owner on a case by case basis. Street cuts shall be backfilled with compacted D.G.A. materials.

The cost of furnishing, transporting, placing and compacting the granular fill material along water main sections, service line sections, etc., shall be paid for at the Unit Bid Price for special fill material.

The Contractor shall remove pavement or other improved surfaces; excavate the trenches and pits to the required dimensions; provide for the maintenance of traffic and other utilities; sheet, brace and support the adjoining ground or structures where necessary; handle all drainage or ground water; guard the site; distribute and lay the pipe and accessories; relocate any conduits, ducts or pipes where necessary; replace all damaged drains, sewers or other structures; backfill the trench and pits; remove surplus excavated material and clean the site of all debris; test the completed pipe line for pressure and leakage requirements; disinfect the completed pipeline; restore the pavements and other improved surfaces of the trench; and restore all disturbed ground surfaces to a condition, equal to or better than the original surface, as directed by the Engineer.

Temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers and other structures encountered in the progress of the work shall be furnished by the Contractor at his own expense. Where grade, alignment or minimum cover of the pipe is obstructed by existing utility structures such as conduits, ducts, pipes, branch connections to main sewers, or main drains, the line shall be adjusted by raising or lowering the main; (1) where grades are not critical or the obstruction shall be permanently supported, relocated, removed, or (2) reconstructed by the Contractor in cooperation with the owners of such utility structures where lines and grades are critical; as approved by the Engineer.

All pipe shall be laid to and maintained at the required lines and grades if shown on the plans. If lines and grades are not shown on the plans, the minimum cover as called for on the plans shall be maintained at all times. Fittings, valves, air vents and hydrants shall be installed at the required locations with valve and hydrant stems plumb. No deviation shall be made from the required line and grade or minimum/maximum cover requirements without approval from the Engineer or his representative.

3.6. PIPE PLACEMENT

The trench bottom shall be constructed to provide a firm, stable and uniform support for the full length of the pipe. The trench shall be dug to the required alignment and depth and only so far in advance of pipe laying as is safe and practical. No trench shall be left open and unguarded while construction operations are not in progress.

All pipe, fittings, valves, hydrants, and accessories shall be carefully lowered into the trench using suitable equipment in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall the pipe or accessories be dropped or dumped into the trench.

All foreign matter or dirt shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean by means approved by the Engineer during and after laying.

The pipe shall be cut in a neat and workmanlike manner without damage to the pipe so as to have a smooth end at right angles to the axis of the pipe. Pipe ends shall be cut square, deburred and beveled in accordance with the pipe manufacturer's recommendations.

The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defective, damaged or unsound material shall be repaired or replaced as directed by the Engineer.

The sealing surface of the pipe, the bell to be joined, and the elastomeric gaskets shall be cleaned immediately before assembly, and assembly shall be made as recommended by the manufacturer. When pipe laying is not in progress, the open ends of installed pipe shall be closed to prevent entrance of trench water into the line. Adequate backfill shall be placed on the empty water pipe to prevent floating. Any pipe that has floated shall be removed from the trench and the backfill restored. No pipe shall be laid when the trench conditions or the weather are unsuitable for proper installation, as determined by the Engineer.

3.7. BACKFILLING PIPELINE TRENCHES

General Requirements

All backfilling shall be accomplished in accordance with the details shown on the plans.

The Contractor shall obtain a compaction of the backfill of at least 95 percent of standard (A.S.T.M. D-698) Proctor density where mechanical tamping of backfill is required. Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to the level of the surrounding terrain. The Contractor shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction.

In the event that pavement is not placed immediately following trench backfilling in streets and highways, the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times for traffic and pedestrian crossing.

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.

Method "A" -- Backfilling in Open Terrain

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

The Contractor shall backfill with natural soil to a point six (6) inches above top of pipe. The upper portion of the trench 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 of this portion of the trench may be accomplished by any means approved by the Engineer. The trench backfill shall be heaped over until completely settled and then leveled.

Method "B" -- Backfilling under Sidewalks and Unpaved Driveways

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

The Contractor shall backfill with natural soil to a point six (6) inches above top of pipe. That portion of the trench to a point six (6) inches below the grade line, shall be backfilled with material free from rock and acceptable to the Engineer. The material shall be placed and compacted in layers of approximately six (6) inches. Upon approval by the Engineer, the Contractor may backfill this portion of the trench with crushed stone in lieu of materials which require compaction.

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.

Method "C" -- Backfilling under Streets, Roads & Paved Driveways

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

The Contractor shall backfill with natural soil to a point six (6) inches above top of pipe. That portion of the trench to a point six (6) inches below the bottom of the pavement or concrete sub-slab, shall be backfilled with crushed stone.

The upper portion of the trench, from a point six (6) inches below the pavement or concrete sub-slab up to grade, shall be backfilled with a base course of dense-graded aggregate or crushed stone suitable to the Engineer. At such time that pavement replacement is accomplished, the excess base course shall be removed as required.

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. The trench settlement shall be repaired at no additional cost to the Owner.

Backfilling at Unimproved Driveways, Rural Roads and Unimproved Streets

The Contractor shall backfill with natural soil to a point twelve (12) inches above the top of the pipe. The remainder of the trench shall be backfilled with dense-graded aggregate (DGA) or crushed limestone suitable to the Engineer.

3.8. REACTION OR THRUST BLOCKING

A reaction or thrust blocking shall be provided at each hydrant, bend, tee and at reducers or fittings where changes in pipe diameters or directions occur. Anchorage may also be made to the water main pipe with rods and clamps.

3.9. SERVICE CONNECTIONS

Service connections for all pipe diameters and classes may be made by means of a suitable saddle, tapped coupling, or service connector for plastic pipe. The saddle, tapped coupling or service connector shall be installed according to the recommendations of the manufacturer thereof.

Service connections in Pressure Class 150 or 200 (C-900 pipe) with six inches or greater nominal size may be direct tapped. Threaded corporation stops shall be A.W.W.A. threaded stops. Non-threaded stops shall be rubber sleeved corporation stops. Tapping equipment used shall be standard water-works equipment using an A.W.W.A. threaded drill-tap tool designed for plastic pipe. Teflon tape shall be placed on the corporation stop threads prior to installation. Installation of corporation stops shall leave one to three threads visible. Stops shall not be torqued to more than thirty-five foot pounds.

3.10. PRESSURE AND LEAK TESTS

Sufficient backfill shall be placed prior to filling with water and field testing to prevent lifting of the pipe. When local conditions require that the trenches be backfilled immediately after the pipe has been laid, the testing may be carried out after the backfilling has been completed but before placement of permanent surface.

At least seven (7) days shall elapse after the last concrete thrust or reaction blocking has been cast.

The Contractor may perform simultaneous Pressure and Leakage Tests or may perform separate Pressure and Leakage Tests on the installed system at test durations and pressures specified.

The Contractor shall furnish the gauges and measuring device for the leakage test, pump, pipe, connections, and all other necessary apparatus, and shall furnish the necessary assistance to conduct the test.

3.11. DISINFECTION

All new lines and exposed sections of existing lines shall be disinfected utilizing chlorine and flushed prior to being placed into service.

Due to safety and environmental hazards, **pressurized chlorine** gas shall NOT be used for waterline disinfection.

Disinfection of new, repaired or extended water distribution systems shall meet the requirements of the Kentucky Division of Water Quality and in accordance with A.W.W.A. Standard C-601 "Disinfection of Water Mains". Said systems shall be thoroughly disinfected before being placed into service, by use of chlorine or chlorine compounds in such amounts as to produce a concentration of at least fifty (50) ppm and a residual of a least twenty-five (25) ppm at the end of twenty-four (24) hours then followed by thorough flushing prior to the bacteriological sampling. New water distribution lines shall not be placed into service until the proper number of bacteriological samples taken at the points specified in the following paragraph of this section are examined and are shown to be negative following disinfection. Chlorination residual tests (50 and 25 ppm) shall be taken at each bacteriological test point.

Bacteriological samples shall be submitted for each new construction project, routine repair, replacement, or extension to existing systems after disinfection and flushing. Two samples shall be taken from the first one-half (1/2) mile of water line. On shorter lines a sample shall be taken from a tap point placed as near as possible to the origin and to the terminus points of the main (i.e., minimum of two (2) separate testing points per short run water main). Additionally, one (1) sample per mile for each mile of new distribution line shall be submitted. If bacteriological tests are positive, the sterilization and bacteriological tests shall be performed until bacteriological tests are negative. A complete chain of custody procedure shall be provided for each set of chlorine residual/bacteriological test samples.

All water sampling and testing shall be performed by independent laboratories/personnel which are deemed satisfactory and approved by the Engineer. Sampling, testing,

analysis, etc., shall be provided at the expense of the Contractor and shall be considered incidental to the several Pay Items for the proposed water system.

3.12. CONNECTIONS TO EXISTING LINES

Connection of a new main to an existing main shall be performed in a safe, neat sanitary workmanlike manner. Connection to existing water mains shall be made under full pressure unless otherwise approved by the Engineer. A tapping valve and sleeve shall be utilized to provide the connection and shall be mechanical joint tapping sleeves.

Tapping sleeves shall be the proper size and shall be installed in accordance with the manufacturer's recommendations. Tapping sleeves shall be pressure tested to the pressure specified for the water main in the materials section of these specifications. Pressure testing shall be performed prior to the actual tapping of the existing water main.

In the event water service has to be interrupted, it must be under the approval and direct supervision of the utility owner. It will be the Contractor's responsibility to inform all affected customers 24 hours in advance of the interruption. The Contractor shall be responsible for opening and closing all valves that will affect customer service.

Great care shall be taken to prevent pipe line contamination when dewatering, cutting into or making connections with existing pipelines used for the conveyance or distribution of water for domestic or public use. The Contractor shall work with the Engineer in isolating services and shall conduct his operation in such a manner that no trench water, mud or other contaminating substances are permitted to get into the connected line or lines at any time during the progress of the work. The interiors of all pipe, fittings and valves, both new and reused, installed in such connections, shall be thoroughly cleaned and disinfected in accordance with A.W.W.A. Standard C-601, "Disinfection of Water Main" and requirements of the Kentucky Division of Water Quality.

3.13. SPECIAL CONDITIONS

In the event a new service line, new meter, meter box, etc., will be required at a previously non-existent service location, the Contractor shall install such items along the project at the respective Unit Bid Prices. The Engineer shall approve new service installations and location in writing prior to installation by the Contractor.

The Contractor shall be responsible for any damages to existing meters, meter boxes, etc., and should these be damaged due to his negligence, he shall be required to replace the damaged material with new equipment at no cost to the Owner.

The Contractor's attention is called to the sections of the General Specifications requiring disinfection and testing of the lines as well as the minimum intervals for test-point spacing. Test-point sampling, blow-offs, line flushing, etc., may be performed using newly installed fire hydrants, 3/4" corporation stops, or other points approved by the Engineer.

Incidental corporation stops installed by the Contractor for water testing, blow-off, etc., shall be provided by the Contractor at no additional cost to the Owner. Cost for such corporation stops shall be incidental to the Unit Price Bid per linear foot of water line. Ends of corporation stops shall be protected by use of a plastic cap or heavy-duty tape upon final use for point testing or other construction related use.

Upon final testing, disinfection and blow-off, the tested water line shall be flushed and purged of air. Air shall be released at all hydrants, corporation stops or by other methods approved by the Engineer.

3.14. COORDINATION WITH WATER DEPARTMENT/DISTRICT AND EMERGENCY SERVICES OFFICES

The Contractor shall notify the Owner's Superintendent not less than 24 hours prior to the time an active water main is temporarily shut down or otherwise disrupts existing water service. Active water mains shall not be temporarily shut off for more than two (2) hours without approval by and scheduling with the Engineer and with the Owner's Superintendent.

The Contractor shall notify the appropriate Fire Department(s) prior to temporarily shutting down an existing water main and shall notify all area emergency agencies (i.e., police, ambulance, etc.) prior to blocking a public roadway in any manner which would result in the road becoming impassible by emergency vehicles.

3.15. QUALITY CONTROL

Each truckload of pipe delivered to the project shall be subject to field measurements and tests deemed necessary by the Engineer. These tests may be conducted by the Engineer or his representative. The costs of such testing shall be the responsibility of the Owner, however, the cost of any pipe destroyed during such testing shall be the responsibility of the Contractor.

3.16. DITCH CROSSING PROTECTION

At ditch crossing locations shown on the construction plans bag mix shall be placed on top of the water line for ballast and line protection. The water line trench shall be excavated to a depth which will provide a minimum of 30 inches cover between top of the pipe and the ditch bottom.

Bags of pre-mixed cement concrete shall be placed over the pipe to form a continuous protective cover prior to backfilling the trench. The bags shall be placed flat over the pipe with the length dimension of the bag being perpendicular to the centerline of the water line. The paper bags shall be cut or perforated in order for the concrete mix to bond between bags. The protective concrete bags shall extend a minimum of four (4) feet beyond the limits of the natural or proposed ditch bottom. Compensation for the ditch crossing protection shall be included in the bid price.

3.17. JACK AND BORE

Roadway crossings and other sections of the proposed project requiring steel encasement pipe shall be installed at locations, to the line and grade, shown on the Project Plans. Unless otherwise noted in the Project Plans or Specifications the steel casing shall be installed by Jack and Bore Technique. Compensation for the Jack and Bore installed steel casing shall be paid per bid unit price for the respective size of installed steel casing sections as verified by and as approved by the Engineer.

Steel pipe shall conform to requirements of A.S.T.M. A53-B and shall not be less than the minimum diameter and wall thickness shown on the Project Plans. The steel pipe shall have a minimum yield strength of not less than 35,000 psi. Steel casing shall be new materials.

The void between the carrier pipe and the steel casing pipe at each end of the casing shall be thoroughly sealed with mastic.

When a casing is extended under a road ditch, the top of the casing shall be a minimum of thirty (30) inches below the ditch flow line.

3.18. WATER LINE EASEMENTS AND TEMPORARY WORK/STORAGE AREAS

The Contractor will not be responsible for securing permanent easements or rights of way for the water line location. The Contractor shall secure written permission for use of any private properties in conjunction with this project regarding equipment or material storage, temporary office placement, or other construction related activities. Copies of

the written private property access agreement shall be available to the Owner or Engineer upon request.

3.19. SALVAGE MATERIALS AND ITEMS

Existing water line pipe, fittings, blow-offs, hydrants and appurtenances required to be removed by the Contractor during the performance of this Contract shall be salvaged and returned by the Contractor to the water utility storage yard unless otherwise directed by the Engineer.

3.20. TRACER WIRE

The Contractor shall install a tracer wire along the entire water main system. The tracer shall be continuous along the main with no gaps, breaks nor open circuits. The insulated copper wire
shall be installed along the top elevation of the water line pipe, secured with tape and shall be connected to **the exterior** of each valve box for future electronic signal tracing.

Splices in the tracer wire shall provide a positive, secure connection and shall be protected by wrapping with electrical tape, approved electrical connector or electrical sealing compound. The wire shall be loosely strong and shall **NOT** be pulled taut. All tracer wire shall be tested by the Contractor and shall satisfactorily convey electrical signal. Any defective section of tracer wire shall be repaired and/or replaced at the Contractor's expense.

The cost of installing the tracer wire shall be included in the bid unit price(s) for the water main construction.

3.21. TRACER WIRE MATERIAL

Insulated copper wire: AWG 14, Type 1, THHN or THWN, 600 V; insulation shall be gasoline and oil resistant.

3.22. FINAL INSPECTION

Final inspection of the water distribution system shall be completed after pressure/leak tests and disinfection procedures have been completed with satisfactory test results furnished to the Engineer. At the time of final inspection the Contractor shall be required to flush all hydrants and blow-offs. All valves and hydrants shall be inspected for plumbness and correct construction.

Final inspection shall be completed prior to final release of the project retainage funds. Unsatisfactory construction items discovered during the final inspection process shall be repaired by the Contractor to the satisfaction of the Engineer.

Any valves, hydrants, blow-offs, air release valves or other construction items which are not found to be completed, turned on, or ready for use at the time of subsequent fire flow or system testing by the local fire department and/or water system operator, will be reported to the Contractor for repair. A service call fee of not less than $100.00 will be paid by the Contractor to the fire department and/or water system operator that dispatched personnel and equipment necessary for testing the completed line in the event the item (i.e. line, hydrant, valve, etc.) is not available for service, is not turned on or is otherwise inoperable.

3.23. PROXIMITY TO EXISTING SEWER MAINS

Water mains crossing sewer shall be laid to provide a vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.

Water mains shall be laid at least 10 feet horizontally from any existing or proposed sewer main. The distance shall be measured edge to edge.

3.24. METER SETTER CHANGE-OUT (PRV/DOUBLE CHECK)

Meter Box and Cover

A meter box with cover shall be provided for each service and shall be as near the property line as possible and shall be located as directed by the Engineer. The meter box shall be high density polyethylene (0.300 inch wall thickness) construction as manufactured by Carson Industries or approved equal. The size shall be 24" deep unless otherwise specified or required by the meter size (DX 1015-24 HDPE or approved equal).

The meter box cover shall be a non-hinged HDPE cover (DX 1015-8 or approved equal) with a cast iron meter reading lid (DX 1015-24 CIR or approved equal).

Meter boxes and covers shall be set with backfill neatly compacted in place. In yards and other maintained areas, the top of the meter box cover shall be 1/2 inch to 1 inch above original grade, otherwise 2 inches above original grade.

Salvageable parts from damaged meter boxes shall be secured by the Contractor and be returned to the City's maintenance shop.

Meter Setting Equipment

The meter setting equipment shall consist of a copper meter yoke, with an inlet and outlet suitable for connection to the existing service pipes. The meter yoke shall be provided with a plain stop. Unless otherwise specified or required for the service, the yoke shall accept a 5/8 inch by 3/4 inch meter as specified below. The cost of existing service line tie-in shall be included with the unit price bid for meter setter change-out.

Copper meter yokes shall have angle ball valve inlet, double check valve outlet and 7" rise. Meter yokes shall include an individual PRV, the tandem yoke shall be an A.Y. McDonald Model No. 22-207 WD 2233 or approved equal.

Meter yokes shall be supplied with two (2) end connections (with gaskets) per meter setting. Inlet end connections shall be Ford Pack Joint or equal for 3/4" CTS or as required based upon type of service line used. Outlet end connections shall be FIP double purpose outlet, or as required based upon type of existing service line. Insert stiffeners (of approved length) shall be furnished and installed for each inlet and outlet meter setting service pipe connection.

Existing meter setters shall be removed by the Contractor and returned by the Contractor to the Owner's maintenance shop for reuse/rebuilding by the Owner.

Pressure Reducing Valve (Individual)

When called for on the drawings or when directed by the Engineer, the Contractor shall install a pressure reducing valve, with strainer, equal to the size of the service. This valve shall be placed inside the meter box according to the standard drawings. Pressure reducing valves shall be Honeywell Braukmann Series DO5, Wilkins Series 500 YSBR, A.W. Cash Company, No. E24U or Watts Series 223 and Series N223B for larger size lines, or approved equal . All PRV's shall include a separate strainer. PRV units for 1-1/2" or larger lines shall be installed in-line and within a separate meter box assembly.

SECTION 4

WATER BOOSTER PUMPING STATION AND APPURTENANCES

4.1. SCOPE OF WORK

The work to be performed under this Section of the Specifications consists of furnishing all labor, equipment and materials, and performing all operations in connection with the construction of the Booster Pumping Station, complete, in place, including applicable radio telemetering system and chlorination system, and all appurtenances as shown on the plans and specified herein. It shall also provide for payment to include the initial start-up of the complete facilities and for putting the facilities into satisfactory operating condition.

4.2. EARTHWORK

Clearing and Grubbing

This work shall consist of clearing, grubbing, removing, and disposing of all vegetation and debris which are within the limits of construction of the proposed facilities as shown on the Plans. This work shall include the loosening, loading, removing, transportation, disposing of all vegetation, natural material, man-made materials (wet or dry materials) necessary to be removed to construct all work included in this project to the lines, grades, and locations shown on the Plans. The Contractor must assume the risk of meeting and the contract price shall include the cost of removal of unstable soils, rock, boulders, rubbish, unforeseen obstacles, underground conduits, gas pipe, drain tile, trees, logs, roots, timber or masonry structures, fences, pavements, and sidewalks, and the delayer damage occasioned by the same whether these obstacles are shown on the plans or not. Clearing and grubbing work shall be incidental to the Contract Bid Items unless specifically identified and a separate item in the Bid Schedule.

This work shall also include, where applicable, the preservation from injury or defacement of all vegetation and objects designated to remain. The Engineer will designate all trees, shrubs, plants, and other items to be removed.

All materials resulting from clearing and grubbing shall be completely disposed of by the Contractor off the project site. In no case shall the Contractor place on adjacent property any material obtained from clearing and grubbing without written permission from the property owner, a copy of which shall be available to the Engineer. Burning of material on or near the project site is prohibited unless specifically approved on a case-by-case basis by the Engineer and unless performed in compliance with all Federal, State and Local regulations or restrictions.

Excavation

Excavation shall be performed in a neat workmanlike manner, to the line and grade shown on the plans and typical sections or as directed by the Engineer. Care shall be exercised to avoid under-cutting or excessive cuts. All cuts shall be uniform; along a straight line; without sags, bulges, or heaped areas. No frozen material, stumps, logs,

roots or other perishable material shall be placed in any embankment. Stone or masonry fragments greater than four (4) inches in any dimension shall be removed from the top foot of embankment material or subgrade material. Embankments shall not be constructed on frozen material.

Earth embankment shall be formed by uniformly distributing in successive horizontal layers not exceeding twelve (12) inches in thickness; loose depth; to the full width of the cross-section.

Each layer of the fill shall be thoroughly compacted as specified in the Contract Documents.

Excavation and fill placement shall be performed in a manner to provide positive drainage and in order to maintain a well drained site. Daily work areas shall be graded to drain and when directed shall include temporary drains, swales or diversions installed at the Contractor's expense for protection of the site and/or adjacent areas.

Final grading, shaping and finishing shall be to a uniform line and grade to a tolerance on 0.20 foot. The final graded site shall be free of ponding or settlement area. The site shall be filled, leveled and final graded as many times as necessary to provide a uniform, well drained area at no additional compensation to the Contractor.

4.3. MASONRY

This item shall include the furnishing and laying of all concrete block and clay masonry as shown on the plans and specified herein.

General

Where not specified in detail, workmanship shall be in accordance with the building code requirements for masonry structures (ACI 530-99/ASCE 5-99/TMS 402-99).

Masonry shall not be laid in freezing weather unless suitable means are provided to heat the materials, protect the work from cold and frost, and insure that the mortar will harden without freezing. No antifreeze ingredient shall be used.

Facing material shall be protected against staining and the top of walls shall be covered with non-staining waterproof coverings when the work is not in progress. When work is resumed, the top surface shall be cleaned of all loose mortar, and in drying weather, thoroughly wet.

Store materials on raised platforms; keep dry but allow for air circulation. The color of the mortar shall blend with the color of the block.

Material

Concrete block (i.e. CMU's) used in load-bearing walls shall meet the current requirements of ASTM Specification C-90 for hollow load-bearing concrete masonry units. Exterior walls shall be constructed of standard brick that meet the current requirements of ASTM specification C216, Grade SW, of a color and style as directed by the Owner or as shown on the plans. Interior walls shall be 8" plain concrete block as shown on the plans.

Masonry cement shall be prepackaged as per the latest revision of ASTM C91. The cement shall be shipped and stored in unbroken packages. One set of certified test reports shall be furnished for each shipment. The elapsed time from packaging to actual use shall not exceed six months unless the materials are retested.

Hydrated lime shall meet the current requirements of ASTM C207, Type S.

Mixing and use procedures shall be in accordance with the manufacturer's printed instructions and these specifications.

Reinforcing steel shall be uncoated, meeting current ASTM A615, Grade 60.

Laying Concrete Block/Brick

The concrete block or brick shall be laid in full beds of mortar, plumb, level and true to line in regular bond and property jointed with other connecting work. Units with open cells exposed in the wall will not be permitted. Joints shall be uniform and rodded. Concrete block joints shall not exceed one-half (1/2") inch in thickness.

The courses shall be laid so as to correspond exactly in height with sills and lintels over windows, doors, opening, belt courses, etc., without cutting or chipping of the block/brick.

Each course shall be bonded at corners and intersections and vertical joints shall be broken at least every eight (8") inches.

For bed joints, a thick bed of mortar shall be spread and a shallow furrow made so that the joint will be completely filled with mortar. Spreading of the mortar shall extend only as far ahead that the mortar will be plastic when the blocks are laid.

For head joints, the end of the block or brick shall be buttered with an ample quantity of mortar and the block or brick shoved into place so that the vertical joint is completely filled with mortar.

In making closures, ample mortar shall be spread in the closure space and the closure block/brick shall be buttered on both ends and shoved into place so that both horizontal

and vertical joints are completely filled. The previously laid block or brick shall not be disturbed in making the closure.

Where nails or line pins are used, the holes left by their removal shall be filled immediately on removal with fresh mortar.

Windows and door frames shall be set a minimum of 1/8" clear to allow caulking. Joints between frames and masonry shall be caulked with an approved caulking compound applied in accordance with the manufacturer's printed directions, using a pressure gun as specified hereinafter.

These specifications are intended to produce sound, watertight exterior walls, and the Contractor will be held strictly responsible for the watertightness of said walls. If the leaky walls should develop, the Contractor will be required to correct this condition at his own expense to the satisfaction of the Engineer.

Built-In Work

Other trades shall be consulted in advance and make provisions for installation of their work in order to avoid cutting and patching. Built-in work specified under other Sections of these detailed specifications shall be placed as the work progresses.

Pointing and Cleaning

On completion, all exposed masonry shall be pointed up, and all holes and joints filled. Loose mortar shall be removed and defective joints cut out and repointed where necessary. Exposed masonry surfaces, either painted or unpainted, shall be thoroughly cleaned. All surfaces shall be left free from mortar and other stains at completion of work. No acid shall be used on interior masonry.

Masonry Wall Reinforcement

Masonry wall reinforcement shall be ladder design and meet current ASTM A951, hot-dip galvanized specifications.

Reinforcement shall be adjustable (2-piece) manufactured from cold drawn steel wire, designed for multiwythe cavity masonry walls. Side rods and cross ties spaced not more than 16". Provide seismic clip and continuous wire in brick bed joints.

Prefabricated or job fabricated corner and tee sections shall be used to form continuous reinforcement around corners, and for anchoring abutting walls and partitions. Material in corner and tee sections shall correspond to type and design of reinforcement used.

Unless otherwise noted on the plans, masonry walls shall be reinforced with single wythe. Reinforcement shall be installed in the first and second bed joints, 8 inches apart immediately above lintels and below sills at openings and in bed joints at 16-inch vertical intervals elsewhere. Reinforcement in the second bed joint above or below openings

shall extend two feet beyond the jambs. All other reinforcement shall be continuous except that it shall not pass through vertical masonry control joints. Side rods shall be lapped at least 6 inches at splices. Reinforcement shall be so placed as to assure a 5/8" mortar cover on the exterior face of walls and 1/2" mortar cover on interior faces.

4.4. FLOORS

The interior floors of the structures shall be of the type and finish shown in the Finish Schedule on the Plans or as otherwise indicated on the plans and specified hereinafter.

4.5. METAL WINDOWS

Metal windows shall be aluminum, architectural projected sash of the types and sizes shown on the plans. They shall be furnished complete with hardware and all standard erection fittings. "T" mullions shall be furnished complete with inside covers.

All projected out window vents shall be equipped with inside screens, and provided with access to window vent operating handles. Screens shall be provided for all ventilators. All projected windows shall be furnished with cam handles.

Screen frames shall be one piece extruded section aluminum frames. Screen cloth shall be 18/4 mesh aluminum wire, held in place by aluminum or plastic splines.

Glazing is specified hereinafter. All windows shall be set true in openings, securely wedged and held in place during construction.

All aluminum sections shall be coated after fabrication as specified hereinafter.

4.6. PROTECTION OF ALUMINUM

All sash and frame members shall receive a uniform temporary protective coating of water clear lacquer after fabrication in accordance with AAMA Specification 302.4 Section A1.5. Any surfaces of aluminum that come in contact with masonry materials shall be coated with heavy-bodied bituminous paint.

4.7. GLASS, GLAZING AND CAULKING

All glass for metal sash except as noted shall be DSB glass as manufactured by Pittsburgh Plate Glass Company, Libby-Owens-Ford, or equal. All exterior windows shall be insulating glass units manufactured from two pieces of clear tempered float glass

separated by a sealed desiccated air space equal to PPG's "Clear Twindow". The manufacturer's mounting recommendations shall be followed to insure against breakage or seal failure.

All glass shall be set without springing, in a bed of glazing compound, secured in place with the proper glazing beads and then trim puttied. The surface of the putty shall be struck to a fine and even line and left with a smooth surface.

Glazing compound (putty) shall be "Tremglaze" as manufactured by Tremco Manufacturing Company or "DAP" or equal. Glazing compound for all aluminum sections shall be aluminum pigmented. Glazing compound for all other work shall be color to match adjacent material.

Caulking shall be Hornflex Thiokol Lp-32 sealant as manufactured by the A.C. Horn Co. or equal applied in strict accordance with the manufacturer's specifications. Caulking compound shall comply with Federal Specifications TT-C-598.

4.8. DOORS (HOLLOW METAL)

General
Doors shall be of the sizes and types as shown in the Door Schedule on the plans.

Hollow Metal Doors
Doors shall be of hollow metal completely flush design, 1 3/4 inches thick, of the types shown on the Plans and as manufactured by Truscon Division, Republic Steel Corporation, The Ceco Corporation, or equal. Doors shall be fabricated from 16 gauge cold-rolled steel. Door shall include a rust proof vent/grill.

All doors shall have sound deadening material of an approved type applied to or placed in the interior panels. Where glazing is required, mounting and moldings shall be 16 gauge steel to receive 1/4-inch glass.

All exterior doors shall be complete with 5 inch wide aluminum panic type exit vinyl bumper thresholds unless otherwise indicated on the Plans. All exterior doors shall also be weatherstripped using aluminum jamb type weatherstripping with vinyl bulb.

Where indicated in the door schedule or otherwise shown on the Plans, doors shall be equipped with 12 inch by 12 inch adjustable type louvers equal to Airolite Type 543-A-5. Louvers of the same quality and style by Airstream Products, Inc., or Ellison Louvers Co., Inc., or equal, will be accepted. The louvers shall be mounted in a flanged frame and the frame factory mounted to the door.

Frames

Frames for all doors shall be formed or rolled on No. 16 gauge furniture steel unless noted otherwise on the Plans. Corners shall be mitered, welded the full length of joint and ground off smooth. Not less than three (3) anchors per side for properly securing frames to walls and an angle clip at the bottom of each jamb for fastening to floor construction shall be furnished.

All work shall be accurately mortised, reinforced, drilled, and tapped at the factory to receive hardware except that drilling and tapping for door checks shall be done at the building by the door erector. All doors and frames shall be reinforced so that door checks can be applied to either side. Cover boxes in back of all hardware cutouts in combination type frames shall be provided.

Hardware shall be as listed under "Finished Hardware".

All work shall be given a prime finish at the factory consisting of a coat of Tnemic 37-77 Chem-Prime then filled as necessary to eliminate all irregularities and finally given a coat of light gray primer. Each coat shall be baked on and sanded smooth.

Finished Hardware

The following Federal Specifications form a part of this specification. Unless otherwise indicated, the type numbers are related to the Federal Specifications:

FF-H-106b Hardware, Builders: Locks and Door Trim.
FF-H-111a Hardware, Builders; Shelf and Miscellaneous
FF-H-116b Hardware, Builders; Hinges (nontemplate)
FF-H-121a Hardware, Builders; Door Closers

All hardware shall be properly wrapped in separate packages complete with trimmings, screws. etc., each plainly labeled and numbered to agree with the door numbers and Contractor's typewritten schedule. The Contractor shall submit his schedule for correction and approval to the Engineer before proceeding with any work. Hardware shall be delivered to shops of the various door manufacturers, or to the building as directed.

All hardware shall be stainless steel unless otherwise specified rated for heavy duty/commercial grade service and shall meet or exceed ANSI Grade 1.

All butts and other hardware where required shall be cut to standard template where required. Butt hinges for interior doors and inswinging exterior doors shall be Type 2105 (U.S. 28) unless otherwise specified.

Keys shall be furnished as follows: Locks for the building shall be keyed to the Owner's master key set. Furnish four (4) keys.

All hardware shall meet the approval of the State Building Code requirements, the National Board of Fire Underwriters, and other authorities having jurisdiction.

The hardware supplier shall furnish five (5) copies of a complete detail list with manufacturer's catalog cuts, of all items of hardware he proposes to furnish for this project, for the Engineer's approval. Hardware schedules are shown on the Plans.

4.9. WOOD TRUSS WITH ASPHALT SHINGLE ROOF SYSTEM

Provide roof framing and finishes as shown on the plans. Wood trusses shall be metal-plate-connected, pre-fabricated and installed in accordance with current truss-plate institute specifications and guidelines. Temporary and permanent truss bracing shall be provided and maintained by the Contractor. Truss system shall be desinged for loads shown on the plans. Roof decking shall be plywood structural wood panels (OSB panels are not acceptable), of thickness as shown on the plans.

4.10. FLASHING

Flashing except where noted otherwise on the Plans or herein may be of the membrane type, of three ounce sheet copper covered on both sided with asphalt saturated cotton fabric, bonded under pressure, with asphalt mastic as the bonding agent. Fabric before saturation shall weigh not less than 4 ounces per square yard and not less than 11 ounces after saturation. Assembled sheets shall be crimped or otherwise deformed to secure bond with masonry mortar.

Where necessary to pass anchors through sheets, holes shall be no larger than the anchor cross section. Such holes shall be properly waterproofed with plastic cement.

All flashings shall be applied only to dry surfaces, free from loose materials and slopes or pockets which would prevent free drainage to the weather side.

Surfaces receiving flashing shall be thoroughly brush coated with asphalt or trowel coated with plastic cement and the sheet completely embedded in the coating. All laps in sheets shall be not less than 4 inches. Sheets shall be of such sizes as will avoid as much as practicable the necessity for lapping.

Flashing sheets, not exposed, shall be turned up not less than 3 inches at backs of walls and shall extend to within 1/2 inch of exposed wall faces at lower edge. Alternate flashing material may be of three ounce sheet copper uniformly coated on all sided and edges with a compound of such thickness as to weigh not less than 4 ounces per square foot of sheet, exclusive of weight of metal. Compound shall consist of oxidized bitumen

and such other ingredients as to produce a coating which is acid and alkali proof and of such nature as to readily produce waterproof joints when lapped as specified.

Through-wall flashing and flashing at heads and sills of windows shall be 16 ounce copper and shall be installed where specified or shown on the Plans. Flashing shall be specifically formed to provide a mechanical bond in the mortar bed to prevent movement in all lateral directions. The bonding features shall occur at intervals of not more than three (3) inches and shall consist of a series of raised ribs and buttons that transverse the sheet. All through-wall flashing shall be installed with a layer of mortar above and below the flashing. The total thickness of two (2) layers of mortar and flashing shall equal a regular mortar joint. Ends of flashing shall equal a regular mortar joint. Ends of flashing sheets shall lap at least one (1) raised rib forming a lap joint not less than two (2) inches wide which shall not be soldered except for special conditions.

4.11. ROOFING

Where shingle roofing is indicated on the plans it shall conform to the following.

Provide roofing felt or underlayment as shown on the plans. Shingles shall be glass-fiber-reinforced asphalt, algae-resistent treated, with minimum 25-year warranty life. Shingle color and tab style as selected by the Owner.

All shingle roofing shall be installed strictly in accordance with published instructions of the manufacturer of the approved roofing material and by an approved firm regularly engaged in such work.

During construction roof and all materials shall be dry.

The specifications for roofing shall be construed to also include all necessary minor items of materials and work consistent with established good practice for roofing work.

4.12. ELECTRICAL

General

The work included under this section consists of the furnishing of all labor, tools, equipment, and services necessary for a complete electrical system as indicated on Drawing and/or as specified herein. Scale of Drawings is approximate. Exact locations, dimensions and elevations shall be governed by actual field conditions. Work intended, having minor details obviously omitted, shall be furnished and installed complete to perform the functions intended.

Bidders shall refer to the Drawings and Specifications for the general construction of the project and for floor and ceiling elevations.

Each Bidder is advised to visit the premises and acquaint himself with working conditions. The Contractor will be required to accept the conditions at the site as they exist on the bidding date.

Cooperation With Other Contractors

This Contractor shall cooperate with all other Contractors on the job to obtain the most practical arrangement of his work and the work of others.

Permits, Codes and Inspections

All work shall be installed in accordance with all applicable codes, including the National Electrical Code and shall comply with the requirements of the Utility Company and the Electrical Inspector. However, their request shall not authorize any change in the Drawings without consulting with the Engineer.

Grounding and Testing

A complete grounding system shall be provided which shall be in accordance with N.E.C., state and local ordinances, utility company requirements and as shown on the drawings. All electrical equipment shall be grounded and special building and equipment grounds shall be provided where specified herein, shown on drawings or as required for adequate continuity of ground.

The grounding conductor shall be continuous and carried throughout the power system. Properly ground the neutral point of all transformers to conduit, system ground wire and driven grounds.

The system neutral shall be identified throughout and shall be grounded at the point of service only.

All cord connected equipment shall be grounded to the system through a grounding plug and grounding conductor cord.

All equipment is to be grounded with conductor as shown but no less than required by N.E.C. Metallic conduit may be used as grounding conductor indoors but a separate grounding conductor shall be run to all equipment installed outdoors.

Ground conductor is to be insulated or jacketed conductor properly identified. All grounding connections other than plug connections are to be cadweld type or equivalent.

The complete electric system shall be tested for grounds and short circuits before final acceptance of the work. All tests shall be in accordance with National Electric Code and local Utility Company requirements.

Materials

All materials, equipment and appliances entering into this Contract shall be new unless specified otherwise.

It shall be the responsibility of the Contractor to determine that the equipment and appliances which he proposes to furnish can be installed in the available space and can be brought into the building. Equipment must be installed so that all parts are readily accessible for inspection and maintenance. No extra compensation will be allowed for dismantling of equipment to install in the available space or to obtain entrance into the building.

Where equipment, material or articles are transferred to the Specification by the name of the manufacturer, brand, trade name or catalog reference, it is not the intention to prohibit the use of other equipment, materials or articles of equal quality, however manufacturer's other than those specified must be submitted for approval ten (10) days prior to the bid.

Identification

All items such as disconnect switches, motor starters, panel number on both panel on both the panel itself and main switch gear, special device plates, etc. shall be marked. All marking shall be engraved laminated bakelite name plates with black background and white letters. Each plate shall be attached with stainless steel screws. No glue shall be used with the exception of as an aid in setting the screws. All plates shall be centered and parallel to the item wherever possible. Lettering shall be one (1) inch in size. Wording shall be as approved by the Engineers.

Special Supervision and Instruction

Each specialized installation shall be made under the supervision of a factory trained Engineer who shall (a) submit a written report that the installation has been installed in keeping with the specified requirements, and manufacturer's standards, and that it is entirely safe to test and operate; (b) instruct the Owner's operating personnel; (c) prepare per permanent form operating instructions, parts list, wiring diagrams and control diagrams. Upon job completion, 6 sets of all lists and diagrams reflecting as-built conditions shall be furnished to the Owner.

Concrete Work

All concrete work and associated reinforcing shall conform to requirements of the General Concrete Specification. Concrete Contractor, The Electrical Contractor shall provide the General Contractor with detail drawings for equipment bases along with anchor bolts, etc., necessary for such equipment. Exterior concrete work such as floodlight bases, electric manholes, pull boxes, and concrete encased underground conduit, shall be furnished and installed by the Electrical Contractor.

Excavation and Backfill
This contractor shall do all excavation required for his work.

Operation of Equipment
The Owner reserves the right to use the equipment installed by this Contractor prior to the date of final acceptance. The use of the equipment shall in no way invalidate the guarantee except that the Owner shall be liable for any damage to the equipment during this period due to the negligence of his operation or other employees.

Workmanship
All work performed under this Contract must be done by workmen skilled in their respective trades. All work must present an appearance typical of the best trade practice. Any work not installed in this manner shall be repaired, removed or replaced or otherwise remedied as directed by the Engineer at the Contractor's expense.

Outlet, Junction and Pull Boxes
Provide an outlet box for each switch, receptacle, lighting fixture, signal, telephone, sound and wherever else required for light, power, and signal wiring devices. All outlets shall be duplex; with GFI protection units as shown on the plan.

Boxes for concealed work shall be galvanized pressed steel. Boxes for exposed work shall be of the threaded hub, cast type.

Boxes shall be at least 1-1/2" deep; and of sufficient size to accommodate the wiring devices to be installed at the outlet locations. Boxes for ceiling and bracket mounted fixtures shall be equipped with fixture studs in the center of the box.

Junction and pull boxes not more than 100 cubic inches in size shall be standard manufactured outlet boxes, over 150 cubic inches in size shall be constructed same as cabinets with covers of the same gauge as the box secured by screws or bolts. All boxes shall be galvanized.

Junction and pull boxes of appropriate dimensions for conduits and conductors shall be installed where shown on the drawings, and one (1) addition where necessary for pulling wire. Care shall be taken to locate such boxes in storage rooms, janitors closets, etc. Boxes shall be concealed wherever possible and set with cover flush with surrounding walls or ceilings.

All boxes shall be installed parallel and perpendicular to adjacent walls or ceilings and flush with surrounding surface. Where outlets are shown to be one above the other, they shall be installed on the same vertical center line. When boxes are shown beside each other, they shall be installed on the same horizontal center line unless specifically indicated otherwise. Where wall devices and outlets are to be installed by other trades,

work shall be so coordinated as to be on the same center line. All boxes shall be installed no less than one (1) foot above outside finished grade.

Conduit

All wiring installed shall be in **rigid** conduit. Minimum size conduit used shall be 3/4". Conduit shall be concealed wherever possible where noted otherwise on the Drawing. All conduits through exterior walls shall be one foot (1') above the outside finished grade.

Motor connections shall be made with 18 inches of flexible oil-tight conduit. Underground conduit for control circuits and telemetering cables shall be rigid plastic conduit encased in concrete, minimum four inches on all sides. All other conduit including conduit concealed in pored slabs and fills, feeder conduit and exposed conduit shall be rigid steel conduit. Inside of conduits shall be treated for easy pulling of wire.

Conduits shall be sizes required to accommodate the number of conductors in accordance with Code or as called out on the drawing. All joints shall be cut square, reamed smooth and made up tight. Concealed conduits shall be run in a direct line with as long a radius as possible at bends. Exposed conduit shall be run parallel to or at right angles to the building lines. All bends and offsets shall be free from dents and flattening and there shall be no more than the equivalent of four quarter bends between boxes. Conduits shall be continuous from box to box and secured in such a manner that the system shall be electrically continuous from point of service to all outlets.

Plug ends of conduits with approved cap or disc to prevent the entrance of foreign materials or moisture during construction. All conduit runs shall be swabbed to remove such moisture and materials prior to pulling wire.

Install pull wire in all open conduits for telephone and other systems as indicated.

Where expansion joints occur in the building, all conduits crossing these joints shall be provided with expansion and deflecting fittings.

Where exposed conduit passes through or enters walls or ceiling, chromium plated, plated around conduits shall be provided. Plates shall have securing clamps.

Wire

All wire for power and A.C. control circuits shall be rated to 600 volts. All branch circuit wiring, secondary service entrance conductors and distribution feeders shall be thermoplastic insulated heat and moisture resistant, Type THHN. A.C. control circuits shall be No. 12 A.W.G. strand. All wire on this project shall be copper wire.

All terminals, taps, and splices for wire #8 and larger shall be solderless pressure type conductors. The connections shall be in accordance with methods using hydraulic type presses. For joints on wire smaller than #8, an approved type pressure connector shall be

used. Approved type pressure connectors for smaller wire is as follows: T and B "STA-KONS", SCOTCHLOCK", IDEAL "WRAPCAP" or BUCHANAN "PRESS-SHUR".

All joints for the smaller wire shall be mechanically strong before applying pressure connector. Each joint shall be wrapped with rubber tape to the thickness of the insulation and two layers of plastic tape over the rubber.

Where conductors are connected to metallic surfaces, the surface shall be cleaned and polished before installing the conductors to remove any coating. Where conductors are connected to screw or bolt type terminals, pressure type lugs shall be applied to the end of the conductors.

Wire installed in long vertical conduit runs shall be supported at intervals in accordance with Code Requirements. All feeders, wire #8 and larger shall be supported at the entrance into the panels, outlet junction and pull boxes. These supports shall be manufacturer by O-Z TYPE "S".

Wire shall be pulled without the use of oil or grease. Care shall be taken in pulling wire so as not to strain wire beyond the rated tensile strength of the wire.

Disconnect Switches

Disconnect switches shall be heavy duty, housed in phosphate-coated or equivalent, code gauge steel N.E.M.A. 1 enclosure for interior use and N.E.M.A. 3R raintight enclosure for exterior use. Disconnect switches shall be mounted no less than one (1) foot above outside finished grade.

Electrical Service

Contractor shall install new electrical service from the utility service entrance as indicated on the drawings.

New Switchgear and Motor Control Center

If required, provide switchgear and distribution equipment assemblies as indicated on the drawings. Switchgear shall be designed to operate on 480 volt, three phase, four wire system.

The main switchgear motor control sections shall be indoor type N.E.M.A. 1 construction, metal enclosed, dead front, free standing, and shall consist of unitized sections bolted, and bussed together to form a mechanically sound and electrically coordinated assembly.

The entire assembly shall be designed, manufactured and tested in accordance with the latest applicable standards of the A.S.A. and the N.E.M.A. Each applicable section shall bear the Underwriters Laboratories Label.

Motor Control Centers

The control center sections shall consist of an assembly of circuit breakers and motor starter combinations mounted in NEMA 1A enclosures each to form a rigid, dead front wall mounted, industrial control assembly.

Power shall be distributed by means of a copper horizontal bus assembly. The control centers shall be provided with a bus interconnection between sections and provisions for the incoming feeders with service at 480 volt, 3 phase, 4 wire.

The enclosure shall be fabricated from 12 gauge steel formed and reinforced to provide a rigid structure. All seams shall be continuously welded and ground smooth. The front of each enclosure shall be offset and flanged, removable front channel barriers shall be provided between cubicles. A section shall be provided at bottom for incoming bus and load connections. A wide wiring gutter shall be available for the full length of each section. Wiring space shall be available for incoming feeders to the main bus.

Unit cubicles shall be of the combination type in all components and wiring readily accessible from the front. The disconnect and starter which form the combination shall be mounted behind the door. Electrical connections between main bus and line side of a disconnect are to be made at factory. The wiring shall be modified Class 1 Type "B"; i.e. the factory shall provide control connections to terminal board adjacent to each unit cubicle. Connections from the load side of the disconnect switch to its starter or contactor shall be included under this classification.

The unit cubicle doors shall be fabricated from #14 gauge steel and shall be fastened to the enclosure with a concealed continuous hinge. Each door shall be interlocked with its associated switch, so that door cannot be opened when switch is in closed position. Where 120 volt external control is indicated, a door interlock switch shall be provided in the control circuit for each cubicle to insure that 120 volt control circuit will also be de-energized when doors are opened. Provide on/off switch, red alarm light, and green running light in doors and/or other lights as shown on the drawings.

Individual control transformers shall be provided in each starter.

A continuous ground bus in the bottom of the motor control center shall extend the entire length of the sections. Engraved laminated bakelite name plate shall be provided for identification of each component.

Unit wiring diagrams and control center arrangement drawings shall be furnished.

Control centers shall be as manufactured by SQUARE "D", or equal. Equals must be submitted for approval (10) days prior to bid.

The steel work shall be thoroughly cleaned and phosphatized for rust inhibition before painting with color as specified by the Owner.

The size, capacity, type, etc. of the control and switching components shall be as called for in the wiring diagrams and schedules on the drawings. Each starter for three phase motors shall be provided with 3 overload relays. All stop push buttons shall have lockout. Pilot lights shall be "push-to-test" type.

Motor starters and contactor shall be of the magnetic "across-the-line" type in size up to and including 49 HP. Provide auxiliary contacts on starters for running light and alarm light indications.

Underground Trench System
This Contractor shall install underground cable trenching as described by these specifications and the drawings.

Control and Telemetering Circuits
This Contractor shall be responsible to install conduit, boxes, panels, wiring and other hardware necessary for a complete and operational control and telemetering system even if not shown on the drawings.

The drawings are diagrammatical and not all inclusive. Final circuits will be determined from shop drawings on actual equipment installed.

Control and Telemeter circuits will be run in conduit separate from the power circuits and shall be kept separate from the power circuits in any underground trench as much as reasonably possible.

All control telemeter conductor shall be 600 volt rated and suitable for installation in wet locations.

Transformers
If required, provide and install dry type low voltage transformers as shown on the drawings.

Lightning Arresters
Install 1, 2 and 3 pole lightning arresters of the proper type and voltage, properly connected and grounded to approved manufacturer's recommendations at each of the following locations:

(a) Line side of main switch.
(b) Line side of disconnect switch of each 3 phase 480 V motor.
(c) Motor control center bus.
(d) Primary side of each step down transformer (3).

Responsibility
It shall be the responsibility of this Contractor to connect all electrical equipment, pump motors, etc. even though each connection item may not be specified on the plan.

4.13. VENTILATING EQUIPMENT

The Contractor shall furnish and install exhaust ventilators and louvers as shown on the Plans and listed herein (including rust proof door vent). All motors shall be provided with thermal overload protection. The chlorine room and the fluoride room fans shall be constructed of materials compatible with the proposed service. Fans shall be properly connected to electrical service and shall be operated by manual controls as shown on the Plans. All fans and vents shall have a screen to prevent birds or insects from entering from outside. The ventilators shall be ILG, Aerovent, or equal. Dayton model numbers are used only to establish the quality, size, and configuration.

Location	Air Req'd CFM	HP, Voltage, and RPM	Dayton Model
All Rooms	600	1/20, 120, 1550	2C100 12"

The fans shall be properly connected to electrical service and operated as shown on the Electrical Plans. Each type DDP fan shall be provided with a safety guard meeting OSHA requirements.

Gravity louvers of the sizes on the Plans shall be aluminum as manufactured by the ILG Industries, Inc., Aerovent, or equal. All louvers or vents shall have a screen to prevent birds of insects from entering from outside.

4.14. DEHUMIDIFIER

Dehumidifier units and wall mounting brackets shall be provided and installed where shown on the Plans. The unit shall be installed at least 24" above the floor elevation. Unit shall have a 27 pint per day capacity with adjustable humidstat and 250 CFM fan. Unit shall be 115 volt, 6 amps with 2-inch discharge for draining to floor drain.

Dehumidifier shall conform to Standard DH-1 of the Association of Home Appliance Manufacturers and be EBCO Model OD-2700L or equal.

4.15. SUMP PUMP

The Contractor shall furnish and put into operation in the pump pit one (1) completely submersible sump pump. The sump pump shall have the following characteristics:

Capacity, GPM	20
Total Dynamic Head, Ft.	20
Motor Horsepower	1/3
Speed, RPM	1750

The pump shall be controlled by a mechanical float switch. The pump case and motor cap shall be constructed of heavy iron castings painted with metallic paint for corrosion protection. The sump pump, a Wayne model CDU 790 (#56137 WYN) or equal, complete with a galvanized pull chain attached to the pump pit grating.

4.16. BOOSTER PUMPS

Pump shall be designed for pumping water at a rated capacity of 500 gallons per minute, 108 feet total dynamic head and 600 gallons per minute, 100 feet total dynamic head (including friction loss) with a minimum efficiency of 80% Pumps shall be "DUALAYNE" inline discharge head type, vertical can pumps as manufactured by Layne.

Two (2) vertical Turbine In-Line pumps as manufactured by Layne-Western, Louisville, Kentucky, or approved equal, shall be furnished. These pumps will have two positions on the pump curve that is critical. Each pump shall deliver 500 gpm against 108 feet of T.D.H. and 600 gpm against 100 feet of T.D.H. The speed of this pump shall not exceed 1800 rpm, and the efficiency shall not be less than 80% of the 600 gpm rate. Each pump shall be driven by a 20 H.P. motor.

Bowl Assembly

Pump bowls shall be of close grained ASTM A48, Class 30, cast iron. Sizes 8 inch through 19 inch shall have porcelain enamel coating of the water passages. For pumps 8 inch and larger the suction case and intermediate bowls shall be fitted with replaceable wear rings of bronze ASTM B505 alloy 836. Wear rings shall have the minimum practical clearance to the mating cylindrical surface of the impeller to provide adequate sealing independent of vertical positioning of the impellers. Bowls and cases shall have bronze sleeve type bushings to support and guide the shaft. Bushing material shall be bronze, ASTM B505 alloy 836, shall be provided to protect the suction case bearing from abrasives in the liquid pumped. The intermediate stages shall be selected to provide the maximum efficiency with least number of stages. Impeller shall be of the enclosed type, cast of bronze, ASTM B584 alloy 836, accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. The design shall be non-overloading for

the capacity of the motor selected. The impeller shall be securely fastened to the bowl shaft with taper collets of ASTM A582, Grade 416 stainless steel. Bowl shaft shall be of sufficient diameter to transmit the pump horsepower with a liberal safety factor and rigidly support the impellers between the bowl or case bearings. The bowl shaft material shall be high chrome stainless steel of ASTM A2769, Grade 410. The bearings shall be lubricated by the liquid pumped.

Column Assembly
Furnished only when required to satisfy NPSH requirements.

Discharge Head
The discharge head shall be of ASTM A53 Grade B fabricated steel "Inline" type with suction and discharge nozzles on the same horizontal centerline of facilitate piping arrangements. Suction flange and discharge flange shall be faced and drilled to match 150 pound ANSI connections. Base of head shall be machined to match drilling of barrel flange. Nozzles shall be furnished with 1/2" couplings for pressure gauge connections. Head height shall be sufficient for use with mechanical seal and spacer coupling. Heads shall be stress relieved after welding and hydrostatically tested to 1-1/2 times working pressure.

Packed Type Stuffing Box
The cast iron stuffing box shall be of the deep bore type with a minimum of six rings of packing and a seal cage. Connections for grease inlet and pressure relief shall be provided. The packing gland shall be of the bronze split type and secured in place with ASTM A193 Grade B8 stainless steel studs and silicon bronze nuts.

Mechanical Seal Unbalanced Type Stuffing Box
The stuffing box shall be cast iron bolted to the discharge head and fitted with a bronze throttle bushing and of sufficient size to accommodate a John Crane type N/A unbalanced mechanical seal suitable for pressure to_____psi and temperatures to ____F. The seals shall be field mounted to prevent damage in shipment. Seal materials shall be suitable for the liquid pumped. When unbalanced seal is used, shaft through stuffing box shall be high chrome stainless steel of ASTM A276, Grade 410.

Mechanical Seal Balanced Type
The stuffing box shall be cast iron or steel bolted to the discharge head and fitted with a bronze throttle bushing and of sufficient size to accommodate a John Crane type N/A balanced mechanical seal. The seal shall be mounted on a 416 stainless steel shaft sleeve and fitted with a seal flange having a relief connection to suction pressure. Seal materials shall be suitable for the liquid pumped. The seal, sleeve, and flange to be assembled as a unit, but shipped separately for field mounting.

Steady Bushing

When using a mechanical seal type stuffing box the lower end of the vertical hollow shaft motor shall be furnished with a steady bushing between the motor drive shaft and the motor quill.

Couplings

When driven with a solid motor a flanged adjustable three-piece or spacer type four-piece coupling shall be furnished. The coupling shall be steel designed to transmit the required torque and horsepower. The lower half of the coupling shall have a threaded adjusting nut. The upper half shall have a circular key to absorb pumping down thrust and a vertical key to transmit torque.

Shop Tests

The shop drawings shall include a statement showing the facilities for the shop test of the pumping units to be furnished. Each pump shall be fully tested at the manufacturer's works before shipment at its full rated speed, capacity and head and at such other conditions of head and capacity necessary to establish that it meets all points on the characteristic curve specified in these specifications and as submitted with the bid. Pumps with "dog-legs" near the design condition will be rejected. The "flat curve" pump shall not exceed the performance standards shown on the plans and/or contained herein.

Five (5) certified copies of the results of these tests shall be sent to the Engineer. These tests shall be under the model test conditions of the Hydraulics Institute using suction conditions as specified and such other suction conditions as may be necessary to establish the desired data.

General Requirements, Pumping Equipment

(1) **General**

Pumps shall meet latest requirements of the American Water Works Association.

Pumps will be started against shutoff head. All bearings in pumps and motors shall be designed to take the stress involved.

(2) **Nameplates**

The pump and motor shall be provided with a substantial nameplate of noncorrodible metal, securely fastened in place, and clearly and permanently inscribed with the manufacturer's name, model or type designation, serial number, rated capacity, electrical or other power characteristics, and other appropriate nameplate data.

(3) **Lubricants**

The pump and motor shall be delivered with the equipment fully lubricated insofar as possible. If any point cannot be so serviced, it shall be clearly marked

to the effect that it is not lubricated and requires servicing prior to operation. An adequate supply of the proper lubricant, with instructions for its application, shall be supplied with the equipment for each point not lubricated prior to shipment.

(4) **Painting**

All pumping equipment, motors, etc. shall be shop painted by the manufacturer in accordance with the manufacturer's standard procedure and using the manufacturer's standard protective coatings. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust resistant coating. Field painting shall be provided by the Contractor in accordance with the "Painting" section contained herein.

(5) **Plans and Bulletins**

After the contract has been awarded, a final set of performance curves, foundation, equipment, shop drawings and erection drawings shall be submitted as specified. The Engineer's approval of these documents shall be obtained before fabrication and shipment of pumps. Prior to the approval of any such shop drawings, bulletins, and performance curves, any work which the Contractor may do is at his own risk.

(6) **Instruction Manuals (O & M Manual Sets)**

Before the pumping units are put in service, two Instruction Manuals (O & M Manual sets), clean and unused, shall be delivered to the purchaser covering the pumps, motors, pump priming equipment and other related items. Each Instruction Manual shall be designated with the serial number of the piece of equipment to which it applies, and shall include the design data for this equipment, operating instructions, maintenance instructions, lubrication instructions, wiring diagrams, test curves for any factory tests,k and assembly drawings showing location of parts and parts numbers together with parts lists.

(7) **Manufacturer's Representatives**

The Contractor shall include in his bid price the costs of the services of manufacturer's factory-trained representatives to supervise the installation and to supervise the initial start-up and field acceptance tests of all equipment covered by this Section of the Specifications. The manufacturer shall guarantee the equipment; for a period of one year from the date of final payment; to be free of faults in design, materials and workmanship.

The Contractor, upon approval of the Engineer of by directions of the Engineer, shall be responsible for notifying the manufacturer when these services will be required. While the manufacturer's representative is at the site of the job, he shall be considered as a part of the Contractor's organization.

(8) **Foundation and Foundation Bolts**

The concrete pump foundations are an integral part of the floor slab in the pump room and shall be poured by the Contractor as indicated on the plans. Anchor bolts shall be furnished by the manufacturer and installed by the Contractor.

(9) **Materials**

Materials shall be of the first quality and character and best adapted to the purpose for which they are to be used. The various materials specified, such as cast iron, semi-steel, steel, bronze, etc. shall conform in general to the current specifications of the American Society of Testing Materials insofar as they may apply.

(10) **Castings, Bolts and Nuts**

Castings shall be free from blow holes, shrinkage strains, cracks, and all other defects and shall be smooth, true to form, and of accurate dimensions.

All heavy parts requiring removal shall have eye bolts, suitable holes tapped for eye bolts (which shall be furnished with the equipment) or suitable lugs cast on the equipment.

(11) **Specifications**

These specifications are not intended to cover the equipment complete in each and every detail. The Owner will not be responsible for the absence of any detail which may be required or found necessary for the operation of these units in the true spirit and intent of these documents.

Pump Characteristics (Two Pumps Required)

(1)

Design Condition	**Curve Point 1**	**Curve Point 2**
Capacity, GPM	350	420
Total Dynamic Head, Feet	175	139
Efficiency, Minimum, Percent	80	80

(2) **General Characteristics**

Style	Vertical Hollow Shaft
Minimum Shut-Off Head, Feet	240 (+/- 3%)
Maximum Speed, RPM	1800
Horsepower (Maximum)	25
Discharge Size, Inches	8
Suction Size, Inches	10
NPSHR	5.82'

(3) **Motor Characteristics**

Horsepower	25
Style	NEMA Style, Type 1, Design B
Power	230/460 Volt; 3-Phase
Speed	1800 rpm
Ratchet	Non-reversible ratchet
Service Factor	1.15

The motor base diameter shall not exceed the discharge head diameter. The motor shall include a WP-1 enclosure.

Pressure Gauges (2 Required)
There shall be provided two pressure gauges, one calibrated in psi from Zero to 200 psi placed on the discharge, and one calibrated in psi from Zero to 100 psi placed on the suction side of the pump. Each gauge shall have a 4-1/2 inch white face dial with black figures and graduations. Each gauge shall be provided with threaded bottom connections, with snubbers gauge cock, lever handle, and blow-off and shall be Ashcroft "Duragauges," Marsh "Quality Gauges," or approved equal.

4.17. BOOSTER PUMP CONTROL PANEL

Scope
One booster pump control panel shall be furnished and installed. The control panel shall be supplied by a company regularly engaged in the manufacture of such equipment, such as Square D or equal.

Panel Size
The panel shall be a minimum of 18 inches tall by 18 inches wide by 12 inches deep. The manufacturer shall provide a larger panel if required to house the control equipment. The panel shall be of NEMA 4 construction and shall be wall mounted at the location indicated on the drawings. Panel shall be 18 inches above finished floor. Panel shall be fabricated of stainless steel.

Panel Equipment
The panel shall contain the following equipment for pump control:

A. Hand-Off-Automatic Switches (1 per pump)
B. 24 hour, 96 pin Time Clock (See Special Conditions)
C. Alternator
D. Green "Pump Running" Light, Red "Pump Failure" Light (2 Lights Per Pump)
E. White "Power On" Light

The panel shall also contain all necessary terminal strips, contacts, relays, etc., as is necessary for operations. Name plates shall be furnished for each switch and light on the front door of the panel. Pump controls shall be mounted at eye level.

Operation
The panel shall be wired such that the Owner can set the time clock to allow pumps to run at various times of the day. When in the automatic mode, the pump will energize and de-energize only at times allowed by the preset time clock. When one pump de-energizes the alternator will cause the other pump to energize the next time the clock calls for a pump to come on. When in the hand position, the pump will be energized whether or not the time clock is calling for it to run. When the pump is running, the lag pump shall be locked out when in the automatic position.

Testing
The manufacturer shall fully test the control panel to insure that it operates in the manner described above. The manufacturer shall provide a field technician to check the field installation of the equipment and be on the job when the booster pumps are starter up.

Shop Drawings
The manufacturer shall provide shop drawings of the control panel and shall include drawings of the panel enclosure, a listing of all enclosed equipment and manufacturer's data for each item and a wiring diagram indicating all electrical hookups for the control wiring. If any changes are made to the panel or its wiring during construction, "As-Built" wiring diagrams shall be furnished.

Guarantee
The control panel and all its equipment shall be guaranteed to be free from defects in material and workmanship for a period of not less than one (1) year from the date of final payment.

4.18. ELECTRIC MOTORS

Electrical equipment and motors furnished for operating the mechanical equipment shall conform to the requirements of "Electrical Work" in this Section of the specifications and to the following:

General
All electrical equipment shall conform to the latest regulations and standards of the American Institute of Electrical Engineers, the American Standards Association, and the National Electrical Manufacturers Association and these Specifications. The

Contractor shall not avail himself of any discrepancy or conflict but shall report same to the Engineer immediately for a determination.

Motors

Electric motors shall conform to the latest applicable NEMA, AIEE and ASA Standards and shall receive routine tests as required by AIEE.

Motors shall be General Electric, Wagner, Electric Machinery or Reliance. They shall have Class B insulation with a tough moisture resistant flexible varnish on each conductor, reliable slot insulation and the end of coils shall be securely braced. Horizontal motors shall be solid shaft. Motors of up to 200 H.P. for indoor service shall be open, drip-proof, 60-degrees C. rise (by resistance) over 40-degrees C. ambient at 1.15 service factor. All motors shall have ball bearings with sealed-in lubricant or be lubricated by readily accessible fittings provided. The motors shall be capable of bringing the equipment up to speed without exceeding the specified service factor.

Voltage

Motor voltage, phase and cycle requirements shall be as shown for each individual motor. In general, motors less than 1/2 H.P. shall be single phase 115 or 208 volt, 60 hertz, unless otherwise specified. Motors less than 1/4 H.P. may be capacitor or shaded pole type, over 1/4 H.P., but less than 1/2 H.P., all motors shall be capacitor type.

Electrical Control Equipment

In general, the electrical equipment is furnished and installed and the equipment specified herein is connected to the electrical system as shown on the plans and as indicated in the paragraph below. The equipment manufacturer shall be responsible for any changes in electrical equipment caused by an increase in horsepower. Any changes cause by such increase in horsepower shall be at no expense to the Owner.

4.19. STAIRS AND GRATING

Work performed under this article shall include furnishing and installing the stair and grating as shown on the plans.

A. **Stairs**

The stairs shall be constructed of steel channels with steel grating treads according to dimensions as shown on the plans.

The Contractor shall furnish and install a 1-1/2" round steel handrail (Schedule 40) on both sides of the stairs as shown.

B. **Grating**
The grating shall be constructed of materials for respective locations and according to dimensions as shown on the plans. The grating shall be designed to support a uniform load of 100 pounds per square foot.

4.20. PAINTING

Scope of Work
Work performed under this section shall consist of the furnishing of all tools, labor, equipment and materials for all required painting of the project.

Preparation of Surfaces
All surfaces to be painted shall be cleaned and prepared with the object of obtaining a smooth, clean, durable and dry surface. No painting shall be done before prepared surfaces are approved by the resident inspector.

A. **Metal Surfaces** - shall be free of rust, dust scale and all loose and foreign material. Surface preparation shall be done in accordance with procedures established currently by the Steel Structures Painting Council surface Preparation Specifications, No. 10 "Near White Blast Cleaning." All surfaces that are to be continuously exposed to water are to be done in accordance with SSPC Surface Preparation Specification No. 5 "White Metal Blast Cleaning".

B. **Concrete or Masonry Surfaces** -care must be exercised to assure that the surface is free of dust, form oils, curing compounds and any foreign matter that would interfere with the bond of the materials. Surfaces to be walked on or submerged shall be etched with a solution of muriatic acid until a granular effect is obtained. Normally a 15% to 20% solution is effective. Some surfaces, however, may require stronger solutions or repeated etchings. After etching, the surfaces should be flushed with clean water.

C. **Wood Surfaces** - shall be thoroughly cleaned and made free of all foreign matter. All holes, cracks and other defects shall be filled and smoothed. In any case, the manufacturer's recommendations shall be closely followed.

Quality of Paint
Paints and paint products, for use on this project, shall be of the quality as manufactured by Porter Coatings, Division of Porter Paint Company, TNEMEC Paint Co., Sherman-Williams, or approved equal.

Colors for use on this project shall be approved by the engineers prior to beginning painting on the project.

The paint manufacturer shall have available trained field representatives to advise the contractor on the usage of his products.

Application of Materials

Paint shall be applied in the amount necessary per application to achieve the dry mil thickness as prescribed by the paint manufacturer. Over application resulting in excessive mil thickness per coat will not be permitted. Sufficient drying time must be allowed between coats to assure release of solvents from the coats.

Where thinners are required, only those products supplied by the manufacturer of the paint being used shall be permitted for use. Thinners shall only be used when the recommendations of the paint manufacturer are specifically followed.

Paint shall also be applied in a manner to be free of holidays, voids, and pinholes. The finished paint surface may be tested electronically to determine whether or not any deficiencies exist and also if adequate quantities of materials are used.

Painting shall only be done at such time depending upon the weather conditions, as the contractor and engineer may agree upon in order to assure a durable and satisfactory paint job.

Surfaces To Be Painted

A. **Interior Concrete Block Masonry and Pre-Stree Ceilings** - shall receive one coat of block sealer with a coverage of 75-100 square feet per gallon. The finish shall be two (2) coats of latex.

B. **Exterior Above Grade Masonry** - Concrete block surfaces shall first be filled block filler/primer then the surface shall be painted with two (2) coats latex finish coating.

C. **Windows and Doors** - shall receive one (1) coat applied at 2.0 mils dry film per coat. The finish shall be two (2) coats with a 1.5 mils dry film per coat.

D. **Interior Wood** - shall receive one (1) coat of undercoat/primer with a 2.0 mils dry film per coat. The finish shall be two (2) coats of latex with a 2.0 mils dry film per coat.

E. **Exterior Wood** - shall receive one (1) coat of primer with a 2.0 mils dry film per coat. The finish shall be two (2) coats of finish with a 2.0 mils dry per coat.

F. **Interior and Exterior Non-Submerged Metal Surfaces**
This will include pumps, piping, valves, and miscellaneous metals not exposed to severe conditions of moisture cased by condensation. Metals falling in this

category shall receive one (1) coat of shop or field primer, and two (2) coats of enamel with a 1.5 mils dry film per coat. If bituminous coated pipe is used, prime with two (2) coats of Porter #164 Sta-Kil, or equal, primer before finish is applied.

NOTE: Pumps, pipes, and valves subjected to conditions of high condensation shall receive one (1) coat of primer with two (2) coat of finish coating.

G. **Submerged Metal Surfaces** - Metal surfaces to be submerged in water treatment plants shall receive one (1) coat of field primer with a 5.0 mils dry film thickness and one (1) coat of finish with a 5.0 mils dry film thickness.

4.21. OVERHEAD BRIDGE CRANE SYSTEM

Support Members

The Contractor shall install four (4) MC 6x15.3 with 1/4 inch top plates as shown on construction plans. The steel channels shall be anchored to wall at mid-height, top and bottom. Two (2) W8x24 steel cross members shall be bolted to the channels. All steel shall be primed and painted.

Crane System

The Contractor shall furnish and install a new one (1) ton Harrinton Crane System Model No. HPC-510 (bottom running bridge beam). The crane shall have a 15 foot bridge beam span (S7x15.3). The Contractor shall provide a one (1) ton hoist trolley.

Chain Hoist

The Contractor shall furnish and install a new steel body hand hoist (chain type) as manufactured by Little Mule (Model LMHA-2000) or approved equal. The hand chain hoist shall have a rated capacity of not less than 2,000 pounds lift capacity and shall meet or exceed the following criteria:

• Lift height	15 ft. (min.)
• Hook throat opening	1-1/8 in. (min.)
• Headroom	12 in. (min.)
• Hand chain overhaul for 1 foot lift	56 ft.
• Average pull to lift rated load	53 lbs.
• Shipping weight	30 lbs (max.)

The chain hoist shall have lubricated bearings, bushing and gears. The unit shall have heat treated spur gearing with compact gear housing. A ratchet and pawl type mechanical load brake shall be provided.

The assembly shall be equipped with a hardened load chain; 360 degree swivel hooks and hook latches (for positive load engagement).

SECTION 5

SEEDING AND PROTECTION

5.1. SCOPE OF WORK

This work shall consist of the preparation, seeding and mulching of all disturbed areas within the limits of construction, as directed by the Engineer.

5.2. MATERIALS

Materials shall conform to the following requirements:

Seed Mixture

70 percent Kentucky 31 Fescue
15 percent Creeping Red Fescue
10 percent Red Top
5 percent White Dutch Clover (per Mixture No. 1, Kentucky Standard Specifications)

Application Rate: 4 pounds per 1,000 square feet (175 pounds per acre)

Fertilizer

Fertilizer shall conform to the requirements of Section 827.04 of the Kentucky Standard Specifications. Unless otherwise specified the fertilizer shall be 10-10-10.

Application Rate: 23 pounds per 1,000 square feet (1,000 pounds per acre)

Straw Mulch

Straw mulch shall conform to the requirements of Section 827.06 of the Kentucky Standard Specifications.

Application Rate: 2 tons per acre (approximately 2-inches loose depth)

5.3. CONSTRUCTION REQUIREMENTS

Areas of established lawns and other non-agricultural areas disturbed during construction work shall be backfilled and graded to existing/adjacent ground lines in a smooth and uniform manner. All backfill shall be free of large roots, asphalt, concrete or other debris.

Fertilizer shall be thoroughly incorporated into the soil, either prior to or at the time of seeding.

Normally seeding and ground cover restoration will occur from March through June and from September through November, inclusive.

The Contractor is required to exercise extreme care when backfilling and shaping the disturbed areas to insure that flooding and water ponding will not occur. Areas of excessive settlement, ponding, etc., shall be reshaped, filled or regraded as many times as necessary to provide a uniformly contoured restoration area, at no additional cost to the Owner.

The Contractor shall grade, disc, shape, seed, fertilize, mulch and water the ground cover restoration areas as many times as necessary in order to provide a uniform ground cover of specified grasses and clovers in all restoration areas. The Contractor shall provide a guaranteed ground cover at all restoration areas for a period of one year after project completion.

SECTION 6

FENCING

6.1. SCOPE OF WORK

Work under this section shall include all labor, equipment, materials hand tools, and incidentals necessary to furnish and place the fencing (including required temporary fencing). The fence shall be constructed along a true line as shown on the Contract Plans. All materials shall conform to the Standard Specifications for road and bridge construction issued by the Kentucky Department of Highways.

6.2. FENCING MATERIALS

Fencing materials shall meet the following minimum size and physical characteristic requirements:

Barbed Wire -	12 1/2 gage steel 4 point pattern 5" spacing
Timber/Corner Pull Posts and Brace Posts -	Treated timber 8"x8" nominal size 8' overall minimal length 3' minimum bury depth maximum spacing: 250'
Line Posts -	Studded steel "T" posts Weight: 1.33 #/L.F. 7' overall minimum length 2.5' minimum driven depth Maximum spacing: 10'
Timber Braces -	Treated timber Nominal size: 4"x4" Diagonal placement with Maximum 10' horizontal span Length
Chain Link Fence Fabric -	Zinc coated steel 0.148" nominal diameter (No. 9 Gage) 2" mesh spacing Top and bottom salvages shall be twisted and barbed.

Chain Link Line Posts -	Steel posts (A.S.T.M. A-569) Minimum O.D. - 2" (2.28 #/L.F.) Zinc galvanized coating per A.S.T.M. B-6
Chain Link Corner Posts -	Steel posts (A.S.T.M. A-569) Minimum O.D. – 3"(4.64 #/L.F.) Zinc galvanized coating per A.S.T.M. B-6
Chain Link Top Rail -	Steel pipe (A.S.T.M. A-569) Minimum O.D. - 1-5/8" (1.84 #/L.F.) Zinc coated galvanized coating per A.S.T.M. B-6
Chain Link Post Depth -	Corner posts at 36" depth in 2500 psi concrete (minimum 12" diameter) Line posts at 30" depth in 2500 psi concrete (minimum 12" diameter)
Temporary Safety Fence -	Polypropylene High Visibility Safety: i.e., Orange, Yellow, etc. Nominal 48" tall Minimum tensile strength: 600 lbs./ft. of width 700 lbs./ft. of length Temperature Range: -22 degrees to 150 degrees Fahrenheit Ultra Violent Resistance: Fully stabilized
Vinyl Fence -	5"x 5" square posts 5-1/2" x 1-1/2" rails – 16' long Maximum 8' horizontal span length Flexural strength (ASTM D 790) Tensile Elongation (ASTM D 696)

6.3. CONSTRUCTION

Fence shall be constructed with new materials at locations shown on the Contract Plans. Sufficient tension shall be applied to each of the fence fabric and the barbed wire strands between pull posts in order to provide a stock tight fence.

Posts shall be set or driven to the minimum depth established for the respective type post. Posts shall be erected plumb and shall be in true alignment. Posts shall be set firm and rigid in its position by tamping, concreting or driving as is applicable.

Posts which are split, bent or otherwise damaged shall be removed and replaced by the Contractor at no additional compensation.

Wire Fence

Diagonal braces shall be placed at each corner post system and at each pull post system. Ends of the diagonal brace shall be chamfered to fit vertical posts at each end and shall be secured to posts by spike nailing.

Barbed wire strands and/or woven wire fence fabric shall be secured to steel posts by use of standard manufactured ties or wire loops. Fence fabric and/or barbed wire strands shall be secured to wooden posts by steel staple nails. Barbed wire strands shall be installed at uniform spacing and shall be parallel to the general ground level for barbed wire fences.

Temporary Fence

Temporary fencing shall be erected along pasture areas where livestock will remain during construction process and shall be placed along the temporary construction easement limits. Any temporary fencing required during the construction project shall be coordinated with the respective property owner/farm operator by the Contractor. The cost of furnishing, installing, maintaining and removing any temporary fence sections necessary during the project shall be merged into the bid unit price for permanent fence construction.

Temporary Safety Fence

Temporary safety fence shall be constructed at locations shown on the Contract Plans and per manufacturer's recommendations. Sufficient tension shall be applied to the fence fabric between pull posts in order to provide a tight fence.

Temporary safety fencing shall be placed along the temporary construction easement limits or as indicated on the Contract Plans. The cost of furnishing, installing, maintaining and removing any temporary safety fence sections necessary during the project shall be a separate bid item.

Chain Link Fence

Fence height shall be as shown on plans. Three strands of barbed wire shall be placed at the top of the fence supported by barbed wire arms. Post caps and socket type brace connections shall be galvanized malleable iron. All posts, rails, gate frames and expansion sleeves shall be zinc coated steel.

Fabric ties shall be minimum 0.148" nominal diameter (No. 9 Gage) aluminum alloy. All hog rings and tension wire shall be zinc coated steel wire.

Vinyl Fence

Fence height shall be as shown on plans. The posts shall be set plumb in concrete to a set depth of 36 inches. The rails shall be 16-foot long with the posts set on 8-foot centers. All posts shall have caps covering exposed openings.

SECTION 7

MATERIALS SPECIFICATIONS

7.1. MATERIALS SPECIFICATIONS

All construction materials shall conform to the requirements as specified by the Kentucky Department of Highways or as otherwise defined in the Project Specifications and Contract Documents.

The cost of any materials testing or sampling shall be the responsibility of the Owner. Any stockpiled or placed materials which the Engineer deems inferior or inadequate shall be removed and replaced at the Contractor's expense.

All construction materials shall be the type and size shown on the Construction Plans.

The Contractor shall furnish upon request the manufacturer's/vendor's certification of materials standards for review and approval relative to the requirements of the Contract Documents.

7.2. FLOWABLE FILL AS PIPE BACKFILL (NIC)

Unless otherwise specified on the project plans, flowable fill shall be used at roadway crossings as backfill material. Compensation for furnishing and placing the flowable fill shall be paid per cubic yard as verified by and as approved by the Engineer.

Description

Flowable fill is a low strength mixture consisting of portland cement, sand, class F fly ash, water and other materials as approved by the Engineer. Flowable fill has a density between 115 lb./c.f. and 130 lb./c.f. and is of a consistency that will flow under and around pipe. Flowable fill does not require compaction, finishing, or curing and will not settle after hardening occurs. It is ideal for use in restricted areas where placing and compacting fill material is difficult and where traffic cannot be delayed for a long period. When used to backfill aluminum pipe, an approved means of separation shall be provided, such as bituminous coating.

Materials

Unless otherwise approved by the Engineer flowable fill shall be proportioned as follows, per cubic yard:

Cement	30 lbs.
Fly Ash, Class F	300 lbs.
Sand (S.S.D.)	3000 lbs.
Water (Maximum)	550 lbs.

To expedite settlement and hardening of the flowable fill, bleed water should appear on the surface within 5 to 10 minutes after placement. The release of water by bleeding

caused the solid particles to realign into intimate contact and the mixture becomes firm. A delay in bleeding indicates there are too many fines in the mixture or insufficient water. If the maximum water was added, the fly ash quantity shall be reduced in increments of 50 lbs. until the mixture is bleeding freely. Approximately 60 lbs. of sand shall be added to replace each 50 lbs. increment of fly ash to maintain the original yield. If two increment reductions, 100 lbs., do not promote free bleeding of the mixture, other possible remedies shall be evaluated. The flowable fill is too dry when cracks develop as it flows into place.

A set of test cylinders shall be cast for each 300 cubic yards of flowable fill. Cylinders shall not be rodded, but the sides of the mold shall be tapped lightly. The test cylinders shall be allowed to bleed for about 30 minutes, refilled, and then covered with a sheet of tough durable impervious plastic or cylinder lid. Plastic shall be secured in place around the mold, within one inch of the top, with a rubber band or string prior to covering the lid with wet burlap. The burlap shall be removed after 24 hours and the cylinder cured at 60 degrees Fahrenheit to 90 degrees Fahrenheit, in the shade, until 28 days old. The plastic covering and mold shall then be removed and the compressive strength test shall be performed. The average of the 28 days compressive strength tests shall be 50 Psi to 100 Psi. This strength range will provide the optimum balance of adequate cohesion while allowing ease of subsequent removal, if necessary.

Construction

Unless otherwise approved by the Engineer, flowable fill shall be delivered in revolving drum truck mixers to insure that the mixture is in suspension when placed. Agitation will be required during transportation and waiting time. Subsidence may occur if the mixer is not agitated. Flowable fill may be placed by discharging directly from truck chutes into the trench or it may be placed by means of conveyors, buckets or pumps. If pumping is utilized the voids shall be adequately filled with solid particles to provide adequate cohesiveness for transport through the pump line under pressure without segregation. Inadequate void filling results in mixtures that may segregate in the pump and may cause line blockage. Continuous flow through the pump line shall be maintained. Interrupted flow may cause segregation which restricts flow and may result in line blockage.

The flowable fill shall extend from the top of the compacted bedding to the bottom of the pavement structure. Flowable fill shall be in place a minimum of 2 hours prior to the addition and compaction of any material above it unless otherwise directed by the Engineer.

When flowable fill is used, the Contractor may reduce the trench width to a minimum of 6 inches clearance on each side of the pipe. Standing water in the trench does not have to be pumped out before backfilling with flowable fill.

Because certain types of pipe may float, it may be necessary to backfill in lifts or anchor the pipe. Backfilling in lifts is generally more applicable to long lines of pipe, allowing time for a substantial amount of the water to dissipate prior to applying the next lift.

Anchors may be made of small lumber or metal straps, and shall be adequately spaced. For larger diameter pipe, it may be possible to maintain a surge of flowable fill on top of the pipe to prevent floating. Floating will usually not occur after the level of the backfill is above the springline of the pipe. The Contractor shall be responsible to insure that the pipe remains in the correct horizontal position and at the specified elevation.

7.3. PORTLAND CEMENT ROADBED MODIFICATION (NIC)

The roadbed modification process is achieved by uniformly mixing portland cement with roadbed materials and compacting to the lines, grades, thickness, and cross sections as specified in the contract plans. Modification shall also comply with Kentucky's Standard Specifications for Road and Bridge Construction, Section 304. Mixing depth and cement ratio shall be as defined in the Contract Documents or as directed by the Engineer.

SECTION 8

WAGE RATES

8.1. WAGE RATES

In accordance with the provisions of KRS 337.010, this project will contain Kentucky Department of Labor prevailing wage rate requirements. No Federal funds are anticipated for use on this project. Therefore, prevailing Federal wage rates **WILL NOT** be required on the Project.

Copies of the wage rate determination as prepared by the Kentucky Department of Labor for application on this project are attached and hereby incorporated as an integral portion of the Project Specifications as **Appendix 'C'.**

SECTION 9

PERMITS

9.1. PERMITS SECURED BY CONTRACTOR

Refer to Section 1.6., "Legal Considerations and Insurance", for information regarding permits to be secured by the Contractor.

9.2. PERMITS SECURED BY OWNER

Highway Crossings
Permits have been obtained by the Owner for utility construction along and crossing beneath highway rights-of-way from the Kentucky Department of Highways. One copy of the approved highway permits shall be kept available at the encroachment site by the Contractor at the time of any construction on highway right-of-way.

The Kentucky Department of Highways' standard requirements and approval criteria for the highway encroachment permits are included herein by reference in **APPENDIX 'A'**.

Division of Water
Permits have been obtained by the Owner, for system construction, from the Kentucky Division of Water. All permit conditions and criteria must be complied with and are incorporated into the Contract Documents by reference in **APPENDIX 'B'**.

Other Permits and Fees
The Contractor is responsible for securing all other applicable permits and payment of all other applicable fees.

APPENDIX A

KENTUCKY DEPARTMENT OF HIGHWAYS ENCROACHMENT PERMIT

Commonwealth of Kentucky
Transportation Cabinet
Department of Highways, District Two
1840 North Main Street, P.O. Box 600
Madisonville, Kentucky 42431-5003
270-824-7080, (Fax) 270-824-7091

Maxwell C. Bailey
Secretary of Transportation

Ernie Fletcher
Governor

BUD
Before 'U' Dig
CALL TOLL FREE
1-800-752-6007
For Buried Line/Cable Locations

August 17, 2004

Mr. Bill Higdon
Southeast Daviess County Water District
3400 Bittel Road
Owensboro, KY 42341

Re: Daviess County MP 030-0054-006.400
KY 54 Owensboro-Leitchfield Road
Southeast Daviess County Water District
Utility Permit # 02-0336-04

Dear Mr. Higdon:

The Department of Highways has approved your application for an encroachment permit. We are returning two copies of the approved permit so one may be kept in your record files. The other copy must be given to the party responsible for completing the project and must be kept at the job site at all times.

Please see that the work is done in strict conformity with the permit and any other applicable conditions (see Form TC 99-21 and any other attached documents, conditions, or specification). The work should be completed no later than July 1, 2005. When the permitted work and any necessary restoration have been completed, please notify this office by using the attached form which will serve as notification for final inspection.

If there are any questions regarding this permit, please do not hesitate to contact our District Permit Engineer Technologist at 270-824-7080 or fax number 270-824-7091.

Sincerely,

Francis M. Davis

for E. H. Merryman, P.E.
Chief District Engineer
Districts One & Two

EHM:ba
Attachments

KENTUCKY TRANSPORTATION CABINET
Department of Highways
Permits Branch

TC 99-1E
Rev. 10/01

Released Date _____

ENCROACHMENT PERMIT

PERMIT NO. 2-0336-04

APPLICANT IDENTIFICATION:
NAME: Southeast Daviess County Water District
CONTACT PERSON: Bill Higdon
ADDRESS: 3400 Bittel Road
CITY: Owensboro
STATE: Kentucky ZIP CODE: 42301
PHONE: area code (270) 685-5594

PROJECT IDENTIFICATION:
ACCESS CONTROL: ☑ By Permit ☐ Partial ☐ Full
COUNTY: Daviess PRIORITY ROUTE NO: KY 54
MILEPOINT: 6.447 ☐ Left ☒ Right ☐ X-ing
PROJECT STATUS: ☑ Maint. ☐ Const. ☐ Design
PROJECT # STATE: m P. -030-0054-006.4
PROJECT # FEDERAL: _____
ROAD/STREET NAME: Duncsford - Leitchfield

TYPE OF ENCROACHMENT:
☐ COMMERCIAL ENTRANCE - BUSINESS _____
☐ PRIVATE ENTRANCE: ☐ Single Family ☐ Far
☑ UTILITY: ☐ Overhea ☑ Underground
☐ GRADE: ☐ Fill ☐ Landscape on R/
☐ AIRSPACE: ☐ Agreement ☐ Lease
☐ OTHER: (Specify)

TYPE OF INDEMNITY: ☑ Bond ☐ Cash
☐ SELF-INSURED AMOUNT ENCUMBERED $ 2000.00
☐ OTHER _____

NAME AND ADDRESS OF LOCAL INSURANCE AGENCY OR SELF-INSURED REPRESENTATIVE:

ATTACHMENTS:
☐ Standard Drawings (List on TC 99-21 under Misc.)
☑ Applicant's Plans
☐ Highway Plan and Profile Sheets
☐ TC 99-3 (Ponding Encroachment Specs. and Conditions)
☐ TC 99-4 (Rest Area Usage Specs. and Conditions)
☐ TC 99-5 (Tree Cutting/Trimming Specs. and Conditions)
☐ TC 99-6 (Chemical Use of Specs. and Conditions)
☐ TC 99-10 (Typical Highway Boring Crossing Detail)
☐ TC 99-12 (Overhead Utility Encroachment Diagram)
☐ TC 99-13 (Surface Restoration Methods)
☐ TC 99-21 (Encroachment Permit General Notes and Specs.)
☐ TC 99-22 (Agreement for Services to be Performed)
☐ TC 99-23 (Mass Transit Shelter Specs. and Conditions)
☐ Other Attachments (Specify):

IDEMNITY: The applicant, in order to secure this obligation, has deposited with the Transportation Cabinet as a guarantee of conformance with the Department's Encroachment Permit requirements, an indemnity in the amount of $ 2000.00 as determined by the as determined by the Department. It shall be the responsibility of the applicant or permitee, his heirs and assignees to keep all indemnities in full force until construction or reconstruction has been completed and duly accepted by an authorized agent of the Transportation Cabinet, Department of Highways.

BRIEF DESCRIPTION OF WORK TO BE DONE.

Install approximately 100 l.f. of 10" water main, a 10"x 10"x 10" tapping valve assembly and miscellaneous fittings along the northern right of way limit of KY 54 immediately west of Winkler Road (county road).

IMPORTANT (PLEASE READ): Applicant ☐ does ☑ does not intend to apply for excess R/W.

When the work is completed in accordance with the terms of this encroachment permit, your indemnity will be released. However, the permit is effective until revoked by the Transportation Cabinet and the terms on the permit accompanying permit documents and drawings remain in effect as long as the encroachment exists. FUTURE MAINTENANCE OF THE ENCROACHMENT IS THE RESPONSIBILITY OF THE PERMITEE. It is important that you understand the requirements of this encroachment permit application and accompanying documents. If you have not done so, it is suggested that you review these documents and place the permit package in a safe place for future reference.

A copy of this permit and all documents shall be given to your contractor and shall be readily available at the work site for the encroachment permit inspector to review at all times. Failure to meet this requirement may result in cancellation of this permit.

IN THE EVENT THIS APPLICATION IS APPROVED, THIS DOCUMENT SHALL CONSTITUTE A PERMIT FOR THE APPLICANT TO USE THE RIGHT-OF-WAY, BUT ONLY IN THE MANNER AUTHORIZED BY THIS DOCUMENT AND REGULATIONS OF THE DEPARTMENT AND THE DRAWINGS, PLANS, ATTACHMENTS, AND OTHER PERTINENT DATA ATTACHED HERETO AND MADE A PART HEREOF

APPENDIX B

DIVISION OF WATER APPROVAL LETTER

RECEIVED NOV 4 2004

ERNIE FLETCHER
GOVERNOR

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601-1190
www.kentucky.gov

LAJUANA S. WILCHER
SECRETARY

October 29, 2004

Mr. Bill Higdon, Manager
SE Daviess County Water District
3400 Bittel Road
Owensboro, KY 42301

RE: SE Daviess County Water District, PWS--33865
DW #0300387-04-003
Philpot Pump Station and WLE
Activity ID # APE20040003
Daviess County

Dear Mr. Higdon:

We have reviewed the plans and specifications for the above referenced project. The plans include replacement of a booster pump station, replacement of 400 ft of 6-inch HDPE water line at a creek crossing, and construction of approximately 6,400 feet of 10-inch PVC water line. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the enclosed major construction permit.

We would also like to call your attention to some items related to the proposed project. First, a valve was added to the plans near the intersection of King Rd and Winkler Rd due to an applicable 10 State Standard. Second, with approximately 12,000 ft of upgraded water line along KY 142, the proposed Philpot booster pump station could be designed with a much lower operating head. If this upgrade occurred prior to the pump station replacement, lower up front costs could result for the booster pump station and reduced energy costs associated with operation of the pump station would result. Third, the new pumps may operate at or beyond the end of their operating curves if the water line just south of the Philpot pump station is upgraded in the future. Given this scenario, problems (including lower efficiency and shorter operating life) would certainly result.

If you have any questions regarding this decision or any of the items we are calling to your attention, please contact Keith Metzker at 502/564-2225, extension 557.

Sincerely,

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

DM:KM

C: James R. Riney, P.E.
Daviess County H.D.
Madisonville Regional Office
Water Quality
Water Resources
Drinking Water Files

Distribution-Major Construction

SE Daviess Co Water District

Subject Item Inventory

Activity ID No.: APE20040003

Subject Item Inventory:

ID	Designation	Description
AIOO33865		
PORT4	Water Line	6,400 ft of 10" PVC and 400 ft of 6" HDPE
PORT5	Philpot Pump Station	Booster Pump Station w/2 Pumps Designed for 350 gpm @ 150 feet of head

Subject Item Groups:

ID	Description	Components
GACT4	350 gpm Booster Pump Station, 6,400 ft of 10" PVC Water Line, and 400 ft of 6" HDPE Water Line	PORT5 Booster Pump Station w/2 Pumps Designed for 350 gpm @ 150 feet of head
		PORT4 6,400 ft of 10" PVC and 400 ft of 6" HDPE

KEY

ACTV = Activity
AIOO = Agency Interest
AREA = Area
COMB = Combustion
EQPT = Equipment
MNPT = Monitoring Point
PERS = Personnel
PORT = Transport
STOR = Storage
STRC = Structure
TRMT = Treatment

GACT4 (Philpot Pump Station + WL) 350 gpm Booster Pump Station, 6,400 ft of 10" PVC Water Line, and 400 ft of 6" HDPE Water Line:

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new or relocated water line(s). Take samples at connection points to existing lines, at 1 mile intervals, and at dead ends without omitting any branch of the new or relocated water line. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7), 401 KAR 8:150 Section 4, Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-2	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new pump(s). If the pump(s) are independent of (not directly connected to) the new or relocated lines, take at least 1 sample at the discharge side pitcock. Otherwise, no additional sampling beyond the sampling required for new or relocated lines shall be required. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

Submittal/Action Requirements:

Coliform:

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

Submittal/Action Requirements:

Condition No.	Condition
S-2	For proposed changes to the approved plan, submit information: Due prior to any modification to the Cabinet for approval. Changes to the approved plan shall not be implemented without the prior written approval of the Cabinet. [401 KAR 8:100 Section 1(8)]
S-3	The person who presented the plans shall submit the professional engineer's certification: Due when construction is complete to the Division of Water. The certification shall be signed by a registered professional engineer and state that the water project has been constructed and tested in accordance with the approved plans, specifications, and requirements. [401 KAR 8:100 Section 1(8)]

Narrative Requirements:

Additional Limitations:

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

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

Narrative Requirements:

Condition No.	Condition
T-4	During construction, a set of approved plans and specification shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 1(7)(a)]

PORT4 (Water Line) 6,400 ft of 10" PVC and 400 ft of 6" HDPE:

Limitation Requirements:

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

Limitation Requirements:

Condition No.	Parameter	Condition
L-7	Distance	When water lines and sewers cross, 1) water lines shall be laid such that the bottom of the water line is a vertical Distance >= 18 in above the top of the sewer line, 2) 1 full length of the water pipe shall be located so that both joints of the water pipe will be as far from the sewer as possible, and 3) special structural support for the water and sewer pipes may be required. [Recommended Standards for Water Works 8.6.3] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-8	Distance	The open end of an air relief pipe from automatic valves shall be extended a Distance >= 1.0 ft above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve shall be extended to the top of the pit. Use of manual air relief valves is recommended wherever possible. [Recommended Standards for Water Works 8.4.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-9	Pressure	Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure >= 20 psi under all conditions of flow. [Recommended Standards for Water Works 8.1.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-10	Pressure	Pressure >= 30 psi must be available on the discharge side of all meters. [401 KAR 8:100 Section 4(2)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
L-11	Residual Disinfection	New or relocated water lines shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect the new or relocated lines use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection >= 25 ppm at the end of 24 hours. Follow the line disinfection with thorough flushing and place the lines into service if, and only if, Coliform monitoring applicable to the line does not show the presence of Coliform. If Coliform is detected, repeat flushing of the line and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:150 Section 4(1), Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-12	Velocity	Each fire hydrant shall be sized so that Velocity >= 2.5 ft/sec can be achieved in the water main served by the hydrant during flushing. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

Monitoring Requirements:

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

Narrative Requirements:

Asbestos (Friable):

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

Additional Limitations:

Condition No.	Condition
T-2	Additional Limitations: Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1]
T-3	Additional Limitations: Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]
T-4	Additional Limitations: At high points in water lines, where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. [Recommended Standards for Water Works 8.4.1]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-5	Additional Limitations: All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.5.4]
T-6	Additional Limitations: For each fire hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]
T-7	Additional Limitations: No flushing device, blow-off, or air relief valve shall be directly connected to any sewer. Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any storm drain or sanitary sewer. Such chambers, pits or manholes shall be drained to absorptions pits underground or to the surface of the ground where they are not subject to flooding by surface water. [Recommended Standards for Water Works 8.1.6, Recommended Standards for Water Works 8.4.3]
T-8	Additional Limitations: If water lines are installed or replaced in areas of organic contamination or in areas within 200 ft of underground or petroleum storage tanks, ductile iron or other nonpermeable materials shall be used in all portions of the water line installation or replacement. [401 KAR 8:100 Section 1(5)(d)6, Recommended Standards for Water Works 8.0.2]
T-9	Additional Limitations: No water pipe shall pass through or come in contact with any part of a sewer manhole. [Recommended Standards for Water Works 8.6.6]
T-10	Additional Limitations: If a fire sprinkler system is to be installed, a double check detector assembly approved for backflow prevention shall be utilized. The double check detector assembly of the system shall be accessible for testing. [401 KAR 8:100 Section 1(7)]
T-11	Additional Limitations: If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact John Dovak of the Water Quality Branch at (502) 564-2225, extension 485. [401 KAR 8:100 Section 1(7)]

Narrative Requirements:

Subfluvial Pipe Crossings:

Condition No.	Condition
T-12	Subfluvial Pipe Crossings: For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met. 1) No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings. 2) Crossing trenches shall be backfilled as closely as possible to the original contour. 3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain. 4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing. 5) For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least 6 inches of concrete with all pipe or conduit points in the crossing at least 6 inches below the original contour of the channel. [401 KAR 8:100 Section 1(7)]
T-13	Subfluvial Pipe Crossings: For subfluvial pipe crossings greater than 15 feet in width, 1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and 2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair. Valves shall a) be easily accessible, b) not be subject to flooding, and c) if closest to the supply source, be in a manhole with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes. [Recommended Standards for Water Works 8.7.2]

PORT5 (Philpot Pump Station) Booster Pump Station w/2 Pumps Designed for 350 gpm @ 150 feet of head:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Pressure	Pump stations shall be located or controlled so that intake Pressure >= 20 psi is maintained during normal pump operation. [Recommended Standards for Water Works 6.4.b] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-2	Pressure	Pump stations shall be located or controlled so that an automatic cutoff or a low pressure controller maintains a Pressure >= 10 psi in the suction line under all operating conditions. [Recommended Standards for Water Works 6.4.c] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Residual Disinfection	New pumps shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect new pumps use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection >= 25 ppm at the end of 24 hours. Follow the disinfection with thorough flushing and place each pump into service if, and only if, Coliform monitoring applicable to the pump does not show the presence of Coliform. If Coliform is detected, repeat flushing of the pump and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the pump has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Slope	Pumping facilities shall be located and designed to maintain the sanitary quality of pumped water. As part of this, all pump station floors shall have Slope >= 3 in per 10 ft to a suitable drain. [Recommended Standards for Water Works 6.2.e, Recommended Standards for Water Works 6.0, Recommended Standards for Water Works 6.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Air Change Rate	Ventilation shall conform to existing local and/or state codes. At a minimum forced ventilation shall produce an Air Change Rate >= 6 air change(s)/hr. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.2.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

Limitation Requirements:

Condition No.	Parameter	Condition
L-6	Height	Pumping stations shall not be subject to flooding. To this end, 1) grading around stations shall lead surface drainage away and 2) stations shall be elevated or protected to a Height >= 3 ft above the highest of the following: a) the 100-year flood elevation, or b) the highest recorded flood elevation. [Recommended Standards for Water Works 6.1.1, Recommended Standards for Water Works 6.0] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-7	Height	When a pump station has pits or compartments which must be entered, stairways or ladders shall be provided between all floors. Stairs shall have risers with a Height <= 9 in, handrails on both sides, and treads with non-slip material wide enough for safety. [Recommended Standards for Water Works 6.2.3] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	Additional Limitations: Pumping stations shall be so located that the proposed site will meet the requirements for hydraulics of the system. [Recommended Standards for Water Works 6.1]
T-2	Additional Limitations: Pumping stations shall be readily accessible at all times for servicing and repairs. [Recommended Standards for Water Works 6.1.1.b, Recommended Standards for Water Works 6.4.3]
T-3	Additional Limitations: Pumping stations shall be designed to prevent vandalism and protect against entrance of animals or unauthorized persons. [Recommended Standards for Water Works 6.1.1.d]
T-4	Additional Limitations: Pumping stations shall be of durable construction with outward-opening doors. [Recommended Standards for Water Works 6.2.b]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-5	Additional Limitations: Pumping stations shall be fire and weather resistant. [Recommended Standards for Water Works 6.2.b]
T-6	Additional Limitations: Pumping stations shall have suitable pump gland discharges so that drainage from the glands is not onto the floor. [Recommended Standards for Water Works 6.2.f]
T-7	Additional Limitations: If underground structures are present at pumping stations, they shall waterproofed. [Recommended Standards for Water Works 6.2.d]
T-8	Additional Limitations: Pumping stations shall have adequate space for the installation of additional pumps. [Recommended Standards for Water Works 6.2.a]
T-9	Additional Limitations: Pumping stations shall have adequate space for the safe servicing of all equipment. [Recommended Standards for Water Works 6.2.a]
T-10	Additional Limitations: Pump stations shall have crane-ways, hoist beams, eyebolts, or other adequate facilities for servicing or removal of pumps, motors or other heavy equipment. [Recommended Standards for Water Works 6.2.2.a]
T-11	Additional Limitations: Pump stations shall have openings as needed for removal of heavy or bulky equipment. [Recommended Standards for Water Works 6.2.2.b]
T-12	Additional Limitations: Pump stations shall have a convenient tool board, or other facilities as needed, for proper maintenance of equipment. [Recommended Standards for Water Works 6.2.2.c]
T-13	Additional Limitations: In areas where excess moisture could cause safety hazards or damage to equipment, dehumidification shall be provided. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.2.6]
T-14	Additional Limitations: Electrical controls shall be located above grade. [Recommended Standards for Water Works 6.6.5]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-15	Additional Limitations: All electrical equipment and work shall conform with the applicable state and local electrical codes and the National Electrical Code. [Recommended Standards for Water Works 6.5, Recommended Standards for Water Works 6.2.7]
T-16	Additional Limitations: Pump stations shall be adequately lighted throughout. [Recommended Standards for Water Works 6.2.7]
T-17	Additional Limitations: All automatic pump stations shall be provided with automatic signaling apparatus which will report when the station is out of service. All remote controlled stations shall be electrically operated and controlled and shall have signaling apparatus of proven performance. [Recommended Standards for Water Works 6.5]
T-18	Additional Limitations: Automatic or remote control pump stations shall be located or shall have control devices setup so that the range between start and cutoff pressure prevents excessive pump cycling. [Recommended Standards for Water Works 6.4.d]
T-19	Additional Limitations: Equipment shall be provided or other arrangements made to prevent surge pressures from activating controls which switch on pumps or activate other equipment outside the normal design cycle of operation. [Recommended Standards for Water Works 6.6.5]
T-20	Additional Limitations: Provisions shall be made to prevent energizing the motor in the event of a backspin cycle. [Recommended Standards for Water Works 6.6.5]
T-21	Additional Limitations: Pump stations shall be provided with enough heat to prevent freezing of equipment or treatment processes. [Recommended Standards for Water Works 6.2.4]
T-22	Additional Limitations: Pump stations shall have at least 2 pumps. Pumps shall be sized so that if any single pump is out service, the remaining pump or pumps shall be capable of providing the peak demand on the station. [Recommended Standards for Water Works 6.3, Recommended Standards for Water Works 6.4.1]
T-23	Additional Limitations: Provisions shall be made for pump alternation. [Recommended Standards for Water Works 6.6.5]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-24	Additional Limitations: Pumps shall a) have ample capacity to supply the peak demand against the required distribution system pressure without dangerous overloading, b) be driven by prime movers able to meet the maximum horsepower condition of the pumps, c) be provided readily available spare parts and tools, and d) be served by control equipment that is properly protected against temperatures to be encountered. [Recommended Standards for Water Works 6.3]
T-25	Additional Limitations: Pumps, their prime movers and accessories shall be controlled in such a manner that they will operate at rated capacity without dangerous overload. [Recommended Standards for Water Works 6.6.5]
T-26	Additional Limitations: Pump stations shall be located or controlled so that a bypass is available. [Recommended Standards for Water Works 6.4.e]
T-27	Additional Limitations: Pump stations shall contain indicating and totalizing metering of the total water pumped. Each pump shall have a) a standard pressure gauge on its discharge line and b) a compound gauge on its suction line. Each pump should have a means for measuring the instantaneous volume per time discharge. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.4.2, Recommended Standards for Water Works 6.6.3]
T-28	Additional Limitations: Pumps shall be adequately valved to permit satisfactory operation, maintenance and repair of the equipment. Each pump shall have a positive-acting check valve on the discharge side between the pump and the shut-off valve. [Recommended Standards for Water Works 6.6.1]
T-29	Additional Limitations: Piping for pumps shall, in general, 1) be designed so that the friction losses will be minimized, 2) not be subject to contamination, 3) have watertight joints, 4) be protected against surge or water hammer, 5) be provided with restraints where necessary, and 6) a) be such that each pump has an individual suction line or 6) b) be manifolded such that the lines insure similar hydraulic and operating conditions. [Recommended Standards for Water Works 6.6.2]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-30	Additional Limitations: To ensure continuous service when the primary power is interrupted, power supplied to pump stations shall be a) from at least 2 independent sources or b) from a primary source with a standby or auxiliary source provided. If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination. [Recommended Standards for Water Works 6.6.6]

JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

RECEIVED NOV 4 2004

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
14 REILLY RD
FRANKFORT KY 40601

General Certification--Nationwide Permit #12
Utility Line Backfill and Bedding

This General Certification is issued March 17, 2002, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33USC 1314), as well as Kentucky Statute KRS 224.16-070.

The Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 5, established pursuant to Sections 301, 302, 304, 306 and 307 of the CWA, will not be violated for the activity covered under 33 CFR Part 330 Appendix A (B) (12), namely utility line backfill and bedding provided that the following conditions are met:

1. This general Water Quality Certification is limited to the crossing of streams by utility lines. The length of a single utility stream crossing shall not exceed twice the width of the stream. This document does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.

2. The provisions of 401 KAR 5:005 Section 8 are hereby incorporated into this General Water Quality Certification. Namely, "Sewer lines shall be located at least 50 feet away from a stream which appears as a blue line on a USGS 7 ½ minute topographic map except where the sewer alignment crosses the stream. The distance shall be measured from the top of the stream bank. The cabinet may allow construction within the 50' buffer if adequate methods are used to prevent soil from entering the stream.

   Gravity sewer lines and force mains that cross streams shall be constructed by methods that maintain normal stream flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to re-entering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the sewer line excavation shall not be allowed to enter the flowing portion of the stream." The provisions of this condition shall apply to all types of utility line stream crossings.

3. 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 regarding and reseeding will be accomplished within 14 days after disturbance.

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

5. This General Certification shall not apply to those waters of the Commonwealth identified as Outstanding State Resource Waters, Exceptional Waters or Cold Water Aquatic Habitat Waters, as designated by the Division of Water. An individual Water Quality Certification will be required for projects in these waters.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

This general certification will expire on March 19, 2007, or sooner if the COE makes significant changes to this nationwide permit.

401 KAR 4:050. Construction exemptions.

RELATES TO: KRS 151.110, 151.250, 151.310

STATUTORY AUTHORITY: KRS 151.230, 151.250

NECESSITY, FUNCTION, AND CONFORMITY: In the course of regulating construction in or along streams pursuant to KRS 151.250, the Natural Resources and Environmental Protection Cabinet frequently encounters actions or proposed actions which are of such nature or location as to have little potential for damage or such that any damage which would occur is limited in extent to the immediate vicinity of the action. This administrative regulation exempts construction of this type from the provisions of KRS 151.250.

Section 1. A construction permit pursuant to KRS 151.250 shall not be required for construction in or along a stream whose watershed is less than one (1) square mile, except for the construction of dams as defined by KRS 151.100 or other water impounding structures or for any construction that does or may endanger life or cause severe damage to residential or commercial property.

Section 2. A construction permit pursuant to KRS 151.250 shall not be required for a subfluvial utility or pipeline crossing provided that the construction of the crossing meets the following criteria:

(1) During the construction of the crossing, no material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc., unless prior approval has been obtained from the cabinet.

(2) The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside of the flood plain unless the applicant has received prior approval from the cabinet to fill within the flood plain.

(3) For subfluvial crossings of erodible channels, there shall be at least thirty (30) inches clear to the top of the pipe or conduit at all points.

(4) For subfluvial crossings of nonerodible channels, there shall be at least six (6) inches of clear cover above the top of the pipe or conduit at all points, and the pipe or conduit shall be encased on all sides by at least six (6) inches of concrete.

(5) The weight of a pipe and its contents during normal operating conditions at all points must exceed that of an equal volume of water, or the applicant must provide the division with sufficient information to show that the pipe and joints have sufficient strength. (7 Ky.R. 365; eff. 11-6-80.)

APPENDIX C

KENTUCKY DEPARTMENT OF LABOR
WAGE RATES

ERNIE FLETCHER
GOVERNOR

LaJuana S. Wilcher
Secretary

Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department of Labor
1047 US HWY 127 S STE 4
FRANKFORT, KY 40601
(502) 564-3070

June 30, 2004

James Riney
HRG PLLC Surv. & Eng.
416 West Third St.
Owensboro KY 42301

Re: Southeast Daviess Co. Water Dist., Philpot Pump Station & Trunk Lines

Advertising Date as Shown on Notification: July 1, 2004

Dear James Riney:

This office is in receipt of your written notification on the above project as required by KRS 337.510 (1).

I am enclosing a copy of the current prevailing wage determination number CR 2-009, dated December 8, 2003 for DAVIESS County. This schedule of wages shall be attached to and made a part of the specifications for the work, printed on the bidding blanks, and made a part of the contract for the construction of the public works between the public authority and the successful bidder or bidders.

The determination number assigned to this project is based upon the advertising date contained in your notification. There may be modifications to this wage determination prior to the advertising date indicated. In addition, if the contract is not awarded within 90 days of this advertising date or if the advertising date is modified, a different set of prevailing rates of wages may be applicable. It will be the responsibility of the public authority to contact this office and verify the correct schedule of the prevailing rates of wages for use on the project. Your project number is as follows: 030-H-00209-03-2, Heavy/Highway

Sincerely,

Patty Lacy
Prevailing Wage Specialist

COMMISSIONER'S CURRENT REVISION
KENTUCKY PREVAILING WAGE DETERMINATION
LOCALITY NO. 009

Determination No. CR-2-009

Date of Determination: December 8, 2003

Project No. 030-H-00209-03-2

Type: ____ Bldg __x__ HH

This schedule of the prevailing rate of wages for Locality No. 009, which includes Daviess and McLean Counties, has been determined in accordance with the provisions of KRS 337.505 to 337.550. This determination shall be referred to as Prevailing Wage Determination No. CR-2-

Apprentices shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request to any interested person.

Overtime is to be computed at not less than one and one-half (1 1/2) times the indicated BASE RATE for all hours worked in excess of eight (8) per day, or in excess of forty (40) per week. However, KRS 337.540 permits an employee and employer to agree, in writing, that the employee will be compensated at a straight time base rate for hours worked in excess of eight (8) hours in any one workday, but not more than ten (10) hours worked in any one workday, if such written agreement is prior to the over eight (8) hours in a workday actually being worked, or where provided for in a collective bargaining agreement. The fringe benefit rate is to be paid for each hour worked at a straight time rate for all hours worked. Fringe benefit amounts are applicable for all hours worked except when otherwise noted. Welders will receive rate for craft in which welding is incidental.

No laborer, workman or mechanic shall be paid at a rate less than that of the General Laborer except those classified as bona fide apprentices registered with the Kentucky State Apprenticeship Supervisor unless otherwise specified in this schedule of wage rates.

NOTE: The type of construction shall be determined by applying the following definitions.

BUILDING CONSTRUCTION

Building construction is the construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment, or supplies. It includes all construction of such structures, the installation of utilities and the installation of equipment, both above and below grade level, as well as incidental grading, utilities and paving.

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HIGHWAY CONSTRUCTION

Highway construction includes the construction, alteration or repair of roads, streets, highways, runways, taxiways, alleys, trails, paths, parking areas, and other similar projects not incidental to building or heavy construction. It includes all incidental construction in conjunction with the highway construction project.

HEAVY CONSTRUCTION

Heavy projects are those projects that are not properly classified as either "building" or "highway". For example, dredging projects, water and sewer line projects, dams, flood control projects, sewage treatment plants and facilities, and water treatment plants and facilities are considered heavy.

Guy R. Patterson, Jr., Director
Employment Standards,
Apprenticeship & Training
Kentucky Labor Cabinet

&

Joe Norsworthy, Secretary
Kentucky Labor Cabinet
Frankfort, Kentucky 40601

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CLASSIFICATIONS		RATE AND FRINGE BENEFITS	
ASBESTOS/INSULATION WORKERS:		BASE RATE	$24.35
		FRINGE BENEFITS	8.76
ASBESTOS & LEAD ABATEMENT WORKERS:		BASE RATE	$15.55
		FRINGE BENEFITS	4.55
BOILERMAKERS:		BASE RATE	$27.15
		FRINGE BENEFITS	13.54
BRICKLAYERS:		BASE RATE	$20.76
		FRINGE BENEFITS	5.51
CARPENTERS:			
Carpenters:	BUILDING	BASE RATE	$18.05
		FRINGE BENEFITS	6.64
	HEAVY & HIGHWAY	BASE RATE	$21.45
		FRINGE BENEFITS	6.13
Divers:	HEAVY & HIGHWAY	BASE RATE	$32.55
		FRINGE BENEFITS	6.13
Piledrivermen:	BUILDING	BASE RATE	$18.30
		FRINGE BENEFITS	6.64
	HEAVY & HIGHWAY	BASE RATE	$21.70
		FRINGE BENEFITS	6.13

MCLEAN COUNTY:

CEMENT MASONS:		BASE RATE	$12.92
		FRINGE BENEFITS	4.35

Add $.25 to base rate for 50-75 feet above finished grade level; 75-100 feet above finished grade level; and each additional 50 feet thereafter above finished grade level.

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CLASSIFICATIONS	RATE AND FRINGE BENEFITS	
DAVIESS COUNTY:		
CEMENT MASONS:	BASE RATE	$11.20
	FRINGE BENEFITS	.71
ELECTRICIANS:		
Electricians:	BASE RATE	$22.95
	FRINGE BENEFITS	10.46
Heliarc Welding & Cablesplicers:	BASE RATE	$23.75
	FRINGE BENEFITS	10.46

When workmen are requested to work from swinging seats or on radio and television towers, tanks, smoke stacks, structural steel and bridges and where a man can fall 35 feet or more, but not including outside linework, the rate of pay shall be twenty-five percent (25%) above the base rate. Structural steel is defined to mean unprotected, unfloored raw steel.

ELEVATOR CONSTRUCTORS:		
Elevator Mechanics:	BASE RATE	$25.105
	FRINGE BENEFITS	6.93
GLAZIERS:	BASE RATE	$19.11
	FRINGE BENEFITS	3.88

Add $.35 for glaziers working on a scaffold 30 ft. or more above ground or any permanent part of a structure

IRONWORKERS:	BASE RATE	$23.50
	FRINGE BENEFITS	10.48

LABORERS:

BUILDING GROUP 1
General laborers, watchman, water boy, wrecking labor on building and structures, clearing right-of-way and building site, carpenter tender, deck hand flagging traffic, truck spotters and dumpers, axe and cross cut saw filer, concrete pudlers and form strippers, asbestos abatement laborers, toxic waste removal laborer, lead abatement laborer

	BASE RATE	$16.82
	FRINGE BENEFITS	7.66

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CLASSIFICATIONS — RATE AND FRINGE BENEFITS

LABORERS: (Continued)

BUILDING GROUP 2
All power driven tools, hod carriers, mason tenders, finishing tenders, mortar mixers, jack hammer, vibrators, soil compactors, wagon drill, core drill, test drill, well drill, concrete pump machine, tunnel boring machine, men in tunnel and crib ditch work, signal men, riprap rock setters and handlers, asphalt rakers, tampers and smoothers, pipe layers, grout pump man, chain saw, pipe clearing, doping and wrapping, swampers and straight cable hooking, cement guns, grade checkers machine excavating, tool room checkers, batch plant scale man, sand hog free air, sand hog compressed air, cutting torch man on salvage work, road form setters, brick slingers, hand spikers, power buggy, handling of creosote material, sandblasters, curing of concrete and apply hardner, air and gas tampers, concrete saw, power post hold diggers and green cut men on concrete work, pavement breakers, multi-craft tender

BASE RATE	$17.02
FRINGE BENEFITS	7.66

BUILDING GROUP 3
Powderman, blasters

BASE RATE	$17.32
FRINGE BENEFITS	7.66

HEAVY HIGHWAY GROUP 1
Aging and curing of concrete (any mode or method), asbestos abatement worker, asphalt plant laborers, asphalt laborers, batch truck dumpers, carpenter tenders, cement mason tenders, cleaning of machines, concrete laborers, demolition laborers, dredging laborers, drill helper, environmental laborer - nuclear, radiation, toxic and hazardous waste - Level D, flagmen, grade checkers, all hand digging and hand back filling, highway marker placers, landscaping laborers, mesh handlers and placers, puddler, railroad laborers, rip-rap and grouters, right of way laborers, sign, guard rail and fence installers (all types), signal men, sound barrier installer, storm and sanitary sewer laborers, swampers, truck spotters and dumpers, and wrecking of concrete forms:

HEAVY & HIGHWAY	BASE RATE	$16.88
	FRINGE BENEFITS	8.03

HEAVY HIGHWAY GROUP 2
Batter board men (sanitary and storm sewer), brickmason tenders, mortar mixer operator, burner and welder, bushhammers, chain saw operator, concrete saw operators, deckhand scow man, dry cement handlers, environmental laborers - nuclear, radiation, toxic and hazardous waste - Level C, forklift operators for masonry, form setters, green concrete cutting, hand operated grouter and grinder machine operator, jack hammers, lead paint abatement, pavement breakers, paving joint machine, pipe layers-laser operators (non-metallic), plastic pipe fusion, power driven Georgia buggy or wheelbarrow, power post hole diggers, precast manhole setters, walk-behind tampers, walk-behind trenchers, sand blasters, concrete chippers, surface grinders, vibrator operators, wagon drillers:

HEAVY & HIGHWAY	BASE RATE	$17.13
	FRINGE BENEFITS	8.03

CLASSIFICATIONS		RATE AND FRINGE BENEFITS	
LABORERS: (Continued)			
HEAVY HIGHWAY GROUP 3			
Air track driller (all types), asphalt luteman and rakers, gunnite nozzleman, gunnite operators and mixers, grout pump operator, powderman and blaster, side rail setters, rail paved ditches, screw operators, tunnel laborers (free air), and water blasters:			
	HEAVY & HIGHWAY	BASE RATE	$17.18
		FRINGE BENEFITS	8.03
HEAVY HIGHWAY GROUP 4			
Caisson workers (free air), cement finishers, environmental laborer - nuclear, radiation, toxic and hazardous waste - Levels A and B, miners and drillers (free air), tunnel blasters, and tunnel muckers (free air):			
	HEAVY & HIGHWAY	BASE RATE	$17.78
		FRINGE BENEFITS	8.03
MCLEAN COUNTY:			
MARBLE, TILE & TERRAZZO WORKERS:		BASE RATE	$14.25
		FRINGE BENEFITS	1.20
DAVIESS COUNTY:			
MARBLE, TILE & TERRAZZO WORKERS:		BASE RATE	$13.00
		FRINGE BENEFITS	.28
MILLWRIGHTS:		BASE RATE	$21.15
		FRINGE BENEFITS	10.24

OPERATING ENGINEERS:

BUILDING CLASS A:
Auto patrol, batcher plant, bituminous paver, cableway, carrydeck crane, central compressor plant, clamshell, concrete mixer (21 cu. ft. or over), concrete pump, crane, crusher plant, derrick, derrick boat, ditching and trenching machine, dragline, dredge operator, dredge engineer, elevating grader and all types of loaders, heavy equipment robotics operator/mechanic, hoe type machine, hoist (1 drum when used for stack or chimney construction or repair), hoisting engine (2 or more drums), horizontal directional drill operator, hydraulic boom trucks, locomotive, mechanically operated lazer screed, motor scraper, carry-all scoop, bulldozer, heavy duty welder, mechanic, orangepeel bucket, overhead crane, piledriver, power blade, motor grader, roller (bituminous), scarifier, shovel, tractor shovel, truck crane, winch truck, push dozer, highlift, forklift (regardless of lift height and except when used for masonry construction), telescoping type forklift, all types of boom cats, core drill, hopto, tow or push boat, A-frame winch truck, concrete paver, gradeall, hoist, hyster, pumpcrete, Ross carrier, boom, tail boom, rotary drill, hydro hammer, mucking machine, rock spreader attached
to equipment, scoopmobile, KeCal loader, tower cranes (French, German and other types), hydrocrane, backfiller, gurries, sub-grader, tunnel mining machines including moles, shields, or

CLASSIFICATIONS — RATE AND FRINGE BENEFITS

OPERATING ENGINEERS: (Continued)

similar types of tunnel mining equipment:

BUILDING	*BASE RATE	$20.95
	FRINGE BENEFITS	9.15

*Operators on cranes with boom 150 feet and over including jib, shall receive $1.00 above base rate; 225 feet and over including jib shall receive $1.50 above rate. All operators on cranes with piling leads will receive $1.00 above base rate regardless of boom length.

BUILDING CLASS B:
All air compressors (over 900 cu. ft. per min.), bituminous mixer, joint sealing machine, concrete mixer (under 21 cu. ft.), form grader, roller (rock), tractor (50 HP and over), bull float, finish machine, outboard motor boat, flexplane, fireman, boom type tamping machine, truck crane oiler, greaser on grease facilities servicing heavy equipment, switchman or brakeman, mechanic helper, whirley oiler, self-propelled compactor, tractair and road widening trencher and farm tractor with attachments (except backhoe, highlift and endloader), elevator (regardless of ownership when used for hoisting any building material), hoisting engine (1-drum or buck hoist, forklift (when used for masonry construction, firebrick masonry excluded), well points, grout pump, throttle-valve man, tugger, and electric vibrator compactor:

BUILDING	BASE RATE	$18.21
	FRINGE BENEFITS1	9.15

BUILDING CLASS C:
Bituminous Distributor, Cement Gun, Conveyor, Mud Jack, Paving Joint Machine, Roller (earth), Tamping Machine, Tractors (under 50 HP), Vibrator, Oiler, Concrete Saw, Burlap and Curing Machine, Truck Crane Oiler, Hydro-Seeder, Power Form handling Equipment, Deckhand Steersman, Hydraulic Post Driver and Drill Helper:

BUILDING	BASE RATE	$17.44
	FRINGE BENEFITS	9.15

HEAVY HIGHWAY CLASS A:
A-Frame Winch Truck, Auto Patrol, Backfiller, Batcher Plant, Bituminous Paver, Bituminous Transfer Machine, All types of Boom Cats, Bulldozer, Cableway, Carry-All Scoop, Carry Deck Crane, Central Compressor Plant Operator, Clamshell, Concrete Mixer (21 cu. ft. or over), Concrete Paver, Truck-Mounted Concrete Pump, Core Drills, Crane, Crusher Plant, Derrick, Derrick Boat, Ditching and Trenching Machine, Dragline, Dredge Operator, Dredge Engineer, Earth Movers, Elevating Grader and all types of Loaders, Grade-All, Gurries, Heavy Equipment Robotics Operator/Mechanic, Highlift, Hoe-Type Machine, Hoist (two or more drums), Hoisting Engine (two or more drums), Horizontal Directional Drill Operator, Hydraulic Boom Truck, Hydrocrane, Hyster, KeCal Loader, Letourneau, Locomotive, Mechanic, Mechanically Operated Laser Screed, Mechanic Welder, Mucking Machine, Motor Scraper, Orangepeel Bucket, Piledriver, Power Blade, Pumpcrete, Push Dozer, Rock Spreader attached to Equipment, All Rotary Drills, Roller (bituminous), Scarifier, Scoopmobile, Shovel, Side Boom, Subgrader,

CLASSIFICATIONS — RATE AND FRINGE BENEFITS

OPERATING ENGINEERS: (Continued)

Tailboom, Telescoping Type Forklift, Tow or Push Boat, Tower Cranes (French, German and other types), Tractor Shovel, Truck Crane, Tunnel Mining Machines including Moles, Shields, or Similar types of Tunnel Mining Equipment:

HEAVY & HIGHWAY	*BASE RATE	$21.10
	FRINGE BENEFITS	9.15

*Operators on cranes with booms one hundred fifty feet (150') and over including jib shall Receive $.50 above base rate.

HEAVY HIGHWAY CLASS B:
All Air Compressors (over 900 cu. ft. per min.), Bituminous Mixer, Boom Type Tamping Machine, Bull Float, Concrete Mixer (under 21 cu. ft.), Electric Vibrator Compactor/Self-Propelled Compactor, Elevator (one drum or buck hoist), Elevator (regardless of ownership when used to hoist building material), Finish Machine, Firemen, Flex-Plane, Forklift (regardless of lift height), Form Grader, Hoist (one drum), Joint Sealing Machine, Mechanic Helper, Outboard Motor Boat, Power Sweeper (riding type), Roller (rock), Ross Carrier, Skid Mounted or Trailer Mounted Concrete Pumps, Switchman or Brakeman, Throttle Valve Man, Tractair and Road Widening Trencher, Tractor (50 HP and over), Truck Crane Oiler, Tugger, Welding Machine, Well Points, and Whirley Oiler:

HEAVY & HIGHWAY	*BASE RATE	$18.68
	FRINGE BENEFITS	9.15

HEAVY HIGHWAY CLASS B2:
Greaser on Grease Facilities servicing Heavy Equipment:

HEAVY & HIGHWAY	*BASE RATE	$19.06
	FRINGE BENEFITS	9.15

HEAVY HIGHWAY CLASS C:
Bituminous Distributor, Burlap and Curing Machine, Caisson Drill and Core Drill Helper (track or skid mounted), Cement Gun, Concrete Saw, Conveyor, Deckhand Oiler, Grout Pump, Hydraulic Post Driver, Hydro Seeder, Mud Jack, Oiler, Paving Joint Machine, Power Form Handling Equipment, Pump, Roller (earth), Steermen, Tamping Machine, Tractors (under 50 H.P.) and Vibrator:

HEAVY & HIGHWAY	*BASE RATE	$18.42
	FRINGE BENEFITS	9.15

*Employees assigned to work below ground level are to be paid ten percent (10%) above base wage rate. This does not apply to open cut work.

PAINTERS:
Painters (BUILDING)

Brush, roller, and paperhangers	*BASE RATE	$20.30
	FRINGE BENEFITS	6.88

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CLASSIFICATIONS		RATE AND FRINGE BENEFITS	
Painters (BUILDING, continued):			
Drywall finishers and plasterers		BASE RATE	$20.55
		FRINGE BENEFITS	6.88
Spray, sandblast, power tools, waterblast, steam cleaning, brush and roller of mastics, creosotes, Kwinch Koate, and coal tar epoxy			
		BASE RATE	$21.30
		FRINGE BENEFITS	6.88
Spray of mastics, creosotes, Kwinch Koate, and coal tar epoxy			
		BASE RATE	$22.30
		FRINGE BENEFITS	6.88
Painters (HEAVY & HIGHWAY)		BASE RATE	$23.45
		FRINGE BENEFITS	7.84
PLUMBERS AND PIPEFITTERS:		BASE RATE	$23.42
		FRINGE BENEFITS	8.85
ROOFERS:		BASE RATE	$12.00
SHEETMETAL WORKERS:		BASE RATE	$24.61
		FRINGE BENEFITS	11.32
SPRINKLER FITTERS:		BASE RATE	$25.05
		FRINGE BENEFITS	9.65
MCLEAN COUNTY ONLY:			
TRUCK DRIVERS:	BUILDING	BASE RATE	$10.77
DAVIESS COUNTY ONLY:			
TRUCK DRIVERS:	BUILDING	BASE RATE	$10.00

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CLASSIFICATIONS		RATE AND FRINGE BENEFITS	
DAVIESS & MCLEAN COUNTY:			
TRUCK DRIVERS HEAVY & HIGHWAY:			
Greaser, Tire changer:	HEAVY & HIGHWAY	BASE RATE	$18.53
		FRINGE BENEFITS	8.80
Truck Mechanic:	HEAVY & HIGHWAY	BASE RATE	$18.76
		FRINGE BENEFITS	8.80
Single axle dump & flatbed, terrain vehicle when used to haul materials, semi-trailer or pole trailer when used to pull building materials & equipment, tandem axle dump, distributor, & mixer:			
	HEAVY & HIGHWAY	BASE RATE	$18.83
		FRINGE BENEFITS	8.80
Euclid, other heavy earthmoving equipment & lowboy, articulator cat truck & 5 axle vehicle, winch & a-frame when used in transporting materials, ross carrier; fork lift truck when used to transport building materials, & drivers on pavement breaker:			
	HEAVY & HIGHWAY	BASE RATE	$18.84
		FRINGE BENEFITS	8.80

APPENDIX D

KY STATE CLEARINGHOUSE REVIEW COMMENTS

Ernie Fletcher
GOVERNOR

COMMONWEALTH OF KENTUCKY
OFFICE OF THE GOVERNOR
DEPARTMENT FOR LOCAL GOVERNMENT
1024 CAPITAL CENTER DRIVE, SUITE 340
FRANKFORT, KENTUCKY 40601-8204
TEL (502) 573-2382

COMMISSIONER

December 18, 2003

Ms. Jan Kuegal
3400 Bittel Road
Owensboro, KY 42301

RE: SE Daviess Co. Water District- Replace Philpot Pump Station, Trunk Line Extension and Creek Crossing Replacement
WX21059008
SAI# KY20031008-1512

Dear Ms. Kuegal:

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

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

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

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

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

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

Sincerely,

/Ronald W. Cook

Ronald W. Cook
Kentucky State Clearinghouse

Attachments
Cc: Green River ADD
KIA

The Transportation has made the following advisory comment pertaining to State Application Identifier Number KY200310081512

Greer, Daryl:
The Division of Planning has no comments on this project.

Hall (D2), Nick:
The Kentucky Department of Highways is responsible for controlling both public and private usage of right-of-way of the State road system. Any firm, individual, or governmental agency desiring access to a State road or desiring to perform any type of work (including signage) on State right-of-way must obtain a permit from the Department.

To obtain the necessary permits and/or discuss the details of this project, please contact our District Office in Madisonville at the following address/number:

Mr. Kenny Potts, Traffic Branch Manager
Kentucky Department of Highways
1840 North Main Street
P. O. Box 600
Madisonville, Kentucky 42431
Telephone (270) 824-7080
Fax (270) 824-7091

Waldner, David:
If applicable, applicant must secure required permits for right of way encroachment.

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

The Heritage Council has made the following advisory comment pertaining to State Application Identifier Number KY200310081512

The project will have no effect on any property listed in or eligible for listing in the National Register of Historic Places. Further, an archaeological survey will not be necessary. Therefore, we have no objection to the project.

The Natural Resources has made the following advisory comment pertaining to State Application Identifier Number KY200310081512

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

PRIOR APPROVALS
The proposed project is subject to Division of Water (DOW) jurisdiction because the following are or appear to be involved:Water distribution lines and appurtenances
Prior approval must be obtained from the DOW before construction can begin on the above matters. The applicant must cite this State Application Identifier (SAI) when submitting plans and specifications to the

DOW. It is beneficial if applicants make prior contact with the DOW before submitting plans and specifications. DOW forms can be downloaded from http://water.nr.state.ky.us/dow.

WATER SUPPLY
The proposed project (SAI 0310081512) is by and for the benefit of the water distribution system of the Southeast Daviess County Water District (SDCWD). If funded and implemented, the project would include the installation of a water trunk line from KY 54 to Pleasant Grove Road, the replacement of a pump station and the replacement of an exposed water line at a creek crossing. The source of water for the water distribution lines will be the Owensboro Water Treatment Plant (OWTP). The proposed project should have little impact on the OWTP since they are at 46 percent of capacity. Therefore, the DOW endorses this project.

Plans and specifications must be submitted to the DOW and receive written approval prior to beginning construction. A hydraulic analysis must be submitted along with the plans and specifications.

The SDCWD must maintain appropriately certified operators for the WTP per 401 KAR 8:030.

WATER RESOURCES
Daviess County received funding under KRS 151.118 to develop a long-range water supply plan pursuant to KRS 151.114. The water management plan is being amended by the Daviess County Water Management Council to include this proposed project. The WX number for this project is WX21059008.

FLOODPLAIN CONSTRUCTION
From the application data, the DOW ascertains that the sites of the proposed project are located in floodplain areas. Therefore, application must be made to the DOW for a floodplain construction permit. Permission, or exemption, depends upon design and exact site.

Corps of Engineers Requirements
Regarding the proposed stream crossing, the applicant must consult, before construction can begin, with the US. Army Corps of Engineers (CoE) to ascertain if a 33 USC § 1341 ("401 ") water quality certification (WQC) by the Division of Water, or a 33 USC § 1344 ("404 ") dredge or fill material permit, or both, are required.

Stormwater Discharge
The SDCWD may need to apply (if it does not already have one), for a Kentucky Pollutant Discharge Elimination System (KPDES) stormwater discharge permit regarding the proposed project's drainage (stormwater) construction if the area disturbed is equal to or greater than 1 acre.

Kentucky Division for Air Quality Regulation 401 KAR 63:010 Fugitive Emissions states that no person shall cause, suffer, or allow any material to be handled, processed, transported, or stored without taking reasonable precaution to prevent particulate matter from becoming airborne. Additional requirements include the covering of open bodied trucks, operating outside the work area transporting materials likely to become airborne, and that no one shall allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway. Please note the Fugitive Emissions Fact Sheet located at http://www.air.ky.gov/e_clearinghouse.html.

Kentucky Division for Air Quality Regulation 401 KAR 63:005 states that open burning is prohibited. Open Burning is defined as the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the outdoor atmosphere without passing through a stack or chimney. However, open burning may be utilized for the expressed purposes listed on the Open Burning Fact Sheet located at http://www.air.ky.gov/e_clearinghouse.html

All solid waste generated by this project must be disposed at a permitted facility.

During projects such as this, non-regulated underground storage tanks may be encountered as well as asbestos, lead paint, and other contamination. If this occurs, whatever is encountered must be properly reported and addressed.

SECTION 10

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

10.1. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Bid Item No. 1

Payment for this Bid Item shall be a lump sum payment for all clearing, grubbing and excavation as verified by and as approved by the Engineer. Removal items shall include but not be limited to all trees, vegetation, topsoil, foundations, structures, debris, old drainage items/ditch pavement, stumps, brush and undergrowth and incidentals.

Payment shall be full compensation for all labor, equipment, materials, clearing, grubbing, removal, disposal and incidentals necessary to clear the site in order to complete the project in accordance with the Contract Documents.

Bid Item No. 2

Payment for his Bid Item shall be a lump sum payment for the water booster pumping station as verified by and as approved by the Engineer. Payment shall include the fence and gates, access drive, service line extensions (i.e. gas, electric), watermain taps and connector lines, site grading, drainage pipe and all work items and incidentals shown on Project Plan Sheet No. 1.

Payment shall be full compensation for all labor, equipment, materials, tools, fence and gates, booster station, excavation, incidental piping, valves and fittings, concrete, gravel drive and culvert pipe, telemetry hardware/software and antenna, backfilling, grading, dressing, furnishing fill material, hauling and disposal of excess topsoil/excavation materials, demolition item (building, valve vault, etc.) and incidentals necessary to furnish and install the water booster pumping station in accordance with the Contract Documents.

Bid Item No. 3

Payment for this Bid Item shall be per linear foot of the respective size of water service line (Type 'K' copper) installation from the corporation stop on the water main to the water meter as verified by field measurement and approved by the Engineer. This item shall include costs for flushing, sterilizing and testing service lines. Flange nuts, flange, gaskets, bronze service saddle and corporation stop.

Payment shall be full compensation for all labor, equipment, materials, transportation, excavation, placing, testing, sterilizing, backfilling, hauling and disposing of excess excavation materials and incidentals necessary to install the respective size service line in accordance with the Contract Documents.

Bid Item Nos. 4 and 5

Payment for this Bid Item shall be for each hot tap of the respective size as verified and approved by the Engineer. Payment shall include stainless steel sleeve, tapping valve and valve stem/valve box extensions.

Payment shall be full compensation for all labor, equipment, tools, tapping machine, placing sleeve and valve, pressure testing sleeve prior to making tap, excavation, concrete blocking, materials, actual line tapping and incidentals necessary to complete the work in accordance with the Contract Documents.

Bid Item Nos. 6 and 7

Payment for this Bid Item shall be for each respective line valve and valve box installed along a new water main as verified and approved by the Engineer. Payment shall include necessary valve stem/valve box extensions.

Payment shall be full compensation for all labor, equipment, tools, transportation, placing materials, excavation, casting adjustment, backfilling, concrete thrust blocks, hauling and disposal of excess excavation materials, and incidentals necessary to install the complete line valve assembly in accordance with the Contract Documents.

Bid Item No. 8

Payment for this Bid Item shall be per each setting of the respective size fire hydrant, hydrant valve, valve box, tee fitting and incidental hardware as verified and approved by the Engineer.

Payment shall be full compensation for all labor, equipment, tools, new hydrant, valve, hydrant extension, valve stem/valve box extensions, fittings, excavation, transporting and placing materials, concrete blocking materials, stone drain pits, backfilling, hauling and disposing of excess excavation material and incidentals necessary to install the hydrant/valve assembly in accordance with the Contract Documents.

Bid Item No. 9

Payment for this Bid Item shall be for each tie-in to the respective size of existing water main as verified by field measurement and approved by the Engineer. This item shall not apply to hot tap locations. This item shall include furnishing and installing tie-in fittings and shall include removal of existing blow off valves.

Payment shall be full compensation for all labor, equipment, materials, backfilling and tools necessary to complete the tie in accordance with the Contract Documents.

Bid Item No. 10

Payment for this Bid Item shall be per linear foot of the respective size and class of in-place HDPE pipe water main installation as verified by field measurement and approved by the Engineer. Payment shall include in line fittings (i.e. ells, tees, crosses, reducers, nipples, corporation stops, sleeves, etc.) and shall include plugging, abandoning or removal of existing water lines.

Payment shall be full compensation for all labor, equipment, materials, transportation, excavation, placing, testing, sterilizing, backfilling, hauling and disposal of excess

excavation materials, concrete thrust blocks and incidentals necessary to install the respective size water main in accordance with the Contract Documents.

Bid Item No. 11

Payment for this Bid Item shall be per linear foot of the respective size of in-place P.V.C. water main installation as verified by field measurement and approved by the Engineer. Payment shall include in line fittings (i.e. ells, tees, crosses, reducers, nipples, corporation stops, sleeves, etc.) and shall include plugging, abandoning or removal of existing water lines.

Payment shall be full compensation for all labor, equipment, materials, transportation, excavation, placing, testing, sterilizing, backfilling, hauling and disposal of excess excavation materials, concrete thrust blocks and incidentals necessary to install the respective size water main in accordance with the Contract Documents.

Bid Item No. 12

Payment for this Bid Item shall be per linear foot of in-place crossing protection at creeks or ditches for the respective size water main as verified and approved by the Engineer. Payment shall include furnishing, transportation, placing and protecting the concrete materials; weighting or anchoring the water main to prevent flotation; and pumping/dewatering of the trench. Compensation for excavation, backfilling and disposal of excess excavation shall be included in the bid unit price per linear foot of water line.

Payment shall be full compensation for all labor, materials, equipment, furnishing, transporting, placing, weighting/anchoring, pumping/dewatering, protection and incidentals necessary to place the cement protection bags in accordance with the Contract Documents.

Bid Item No. 13

Payment for this Bid Item shall be per each leak detection assembly installed at a creek/ditch crossing as verified by and as approved by the Engineer. Payment for this Bid Item does **not** include the water meter nor does it include the ditch crossing protection materials, **nor** the actual water main pipe.

Payment shall be full compensation for all labor, equipment, materials, furnishings, transporting, excavation, tapping, bronze saddles, corporation stops, valve stem and valve box extensions, meter box, bronze meter setter, ball valve, copper tubing, compression fittings, line fittings and line valves, sleeves, hauling and disposal of excess excavation materials, backfilling, placing materials, stabilization materials, barricades and safety equipment, flushing, air release, testing, sterilization and incidentals necessary to furnish and install the leak detection assembly in accordance with the Contract Documents.

Bid Item No. 14

Payment for this Bid Item shall be per ton for driveway DGA materials in-place approved by the Engineer and as verified by proper weight tickets.

Payment per ton of driveway DGA restoration materials shall be full compensation for existing materials removal, excavation, disposal, labor, equipment, materials, furnishing, placing and incidentals necessary to restore existing gravel drives, etc. in compliance with the Contract Documents.

Bid Item No. 15

Payment for shaping, fertilizing, seeding and mulching shall be a lump sum payment. Payment shall be for providing a uniform initial grass cover on a shaped backfill.

Payment for the lump sum bid item shall be full compensation for all labor, equipment, materials, backfilling, seed, fertilize, lime, straw mulch and incidentals in accordance with the Contract Documents.

Alternate Bid Item No. 1

Payment for this Bid Item shall be per linear foot of the 10" ductile iron pipe water main as verified by and approved by the Engineer.

Payment shall be full compensation for all labor, equipment, materials, fittings, sleeves, plugs, transportation, excavation, placing, testing, sterilization, backfilling, hauling and disposal of excess excavation materials, concrete thrust blocks and anchoring, and incidentals necessary to install the respective size ductile iron water main in accordance with the Contract Documents.

BID SCHEDULE

Bid Schedule

Bid unit prices shall be submitted in both written and numerical form. Total Bid Price shall be submitted in numerical form only. **In the event of discrepancy, the written form will take precedence and be used in tabulating the total project bid.**

Bid Item #1
Lump Sum for **clearing, grubbing and excavation** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents

$_____
Lump Sum

Bid Item #2
Lump Sum for **water booster pumping station** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents

$_____
Lump Sum

Bid Item #3
300 l.f. of **3/4" water service line (Type 'K' copper)** installation including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Linear Foot)

$_____ $_____
Per Linear Foot Total

Bid Item #4
2 each **6" x 6" x 6" stainless steel tapping sleeve, valve & valve box (hot tap)** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #5
1 each **10"x 10"x 10" stainless steel tapping sleeve, valve and valve box (hot tap)** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #6
2 each **6" resilient seat gate valves and valve box assembly** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #7
3 each **8" resilient seat gate valves and valve box assembly** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #8
3 each **fire hydrant/valve assembly** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #9

1 each **tie into existing 10" line stub** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #10

400 l.f. of **6" HDPE (DR 9) directional bore water main replacement (creek crossing)** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Linear Foot)

$_____ $_____
Per Linear Foot Total

Bid Item #11

6,400 l.f. **10" P.V.C. (ASTM 2241/DR 21) water main** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Linear Foot)

$_____ $_____
Per Linear Foot Total

Bid Item #12

75 l.f. **special ditch crossing protection** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Linear Foot)

$_____ $_____
Per Linear Foot Total

Bid Item #13
1 each **leak detector assembly** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Each)

$_____ $_____
Per Each Total

Bid Item #14
100 tons of **compacted DGA driveway materials** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Ton)

$_____ $_____
Per Ton Total

Bid Item #15
Lump Sum for **shaping, fertilizing, seeding and mulching** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents

$_____
Lump Sum

Alternate Bid Item #1
6,300 l.f. of **10" D.I.P. water main (Class 50)** including all labor, materials, equipment, and incidentals; complete, in place and ready for use.

At_____Dollars and_____Cents
(Per Linear Foot)

$_____ $_____
Per Linear Foot Total

TOTAL PROJECT BID: $_____

The above unit prices shall include all labor, materials, equipment, safety and occupational regulations, overhead, profit, insurance, and all incidentals necessary to complete the work specified, complete, in place and ready to use.

Bidder acknowledges receipt of the following Addenda:

Addendum #1 Dated_____
Addendum #2 Dated_____
Addendum #3 Dated_____

Bidder understands that the Owner reserves the right to reject any and all bids and to waive any informalities in the bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of Ninety (90) calendar days following the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, bidder will execute the contract agreement attached within ten (10) days and deliver a Surety Bond or Bonds as required by the project specifications. The bid security attached in the sum of (insert bid bond dollar amount **or** percentage of total bid)

_____($_____)

is to become the property of the Owner in the event the contract and bond are not executed within the time setforth hereinabove, as liquidated damages resulting from the delay and additional expense to the Owner caused thereby.

Respectfully submitted:

By_____
Title

_____
Business Address & Zip Code

SUBCONTRACTORS LISTING

All subcontractors performing work in fulfillment of this bid must be listed on this page with the information requested.

NAME	ADDRESS	PHONE	FAX	CRAFT
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

STATEMENT REQUIRED PURSUANT TO KRS45A.395

The provisions of KRS45A.395 require that any bidder or offeror submit a sworn statement in conformity with such statute as a prerequisite to a determination that such bidder or offeror is a responsible bidder.

The undersigned, individually and as the_____(office or title) of _____(bidder or offeror) states under penalty of perjury that neither he (she), nor, to the best of his (her) knowledge, anyone acting on behalf of Bidder or Offeror, has knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to the Bidder or Offeror will not violate any provision of the campaign finance laws of the Commonwealth. "Knowingly" means, with respect to conduct or to a circumstance described by a statute defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

This the _____ day of _____, 2004.

_____
(Company Name)

By: _____ _____
(Typed or printed name) (Signature)

Title: _____

VENDOR'S STATEMENT PURSUANT TO KRS45A.343

45A.343 Local Public Agency may adopt provisions of KRS 45A.345 to 45A.460— Effect of adoption – Contracts required to mandate revealing of violations of and compliance with specified KRS chapters – Effect of nondisclosure or noncompliance. (KRS 136 – Corporate taxes; KRS 139 – Sales & use taxes; KRS 141 – Income taxes; KRS 337 – Wage and hour; KRS 338 – Occupational safety; KRS 341 – Unemployment; KRS 342 – Workers Comp.)

The undersigned, as a duly authorized officer of _____, pursuant to KRS45A.343 states;

1. To the best of my knowledge, information and belief,_____ has not been finally determined to have violated any of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, or 342 that apply to it within the five year period preceding this statement.

2. _____ acknowledges that it will be required to be in compliance with those provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 that apply to it for the duration of the Contract to be entered into with the _____.

3. _____ acknowledges that if it fails to reveal any final determination of violation of KRS Chapters 136, 139, 141, 337, 338, 341, or 342, or to comply with the applicable provisions of those statutes for the duration of the aforesaid Contract, such shall be grounds for _____ to:

   a. Cancel its contract with _____, and

   b. Disqualify _____from eligibility for future contracts awarded by _____ for a period of two years.

This the_____day of _____, 2004.

_____
(Company Name)

By:_____ _____
(Typed or printed name) (Signature)

Title:_____