

**VOLUME I OF
CONTRACT DOCUMENTS
FOR THE**

**GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY**

**EPA FUNDED WATER MAIN EXTENSIONS
FUND ACTIVITY ID: FGL 2003 0028**



**WATER MANAGEMENT SERVICES, LLC
2 INTERNATIONAL PLAZA, SUITE 401
NASHVILLE, TENNESSEE 37217
(615) 366-6088
Fax (615) 366-6203**

WMS No. 08191

GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

EPA FUNDED WATER MAIN EXTENSIONS

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PROPOSAL SECTION

GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

INVITATION TO BID
FOR
CONSTRUCTION OF

EPA FUNDED WATER MAIN EXTENSIONS

RECEIPT OF PROPOSALS

Sealed Proposals for the construction of the EPA Funded Water Main Extensions project will be received at the office of the Green River Valley Water District, 85 East Les Turner Road, Cave City, Kentucky 42127, Attention: David Paige, Manager on or before (time), local time, on (day), (date), 2009, and immediately thereafter all bids will be publicly opened and read aloud.

Sealed envelopes containing Proposals shall be marked "EPA Funded Water Main Extensions." No Proposal will be considered unless it is made on the Proposal form which is included in the Contract Documents. The Proposal must not be removed from the Contract Documents with which it has been bound by the Green River Valley Water District. This Proposal must be addressed as indicated in the previous paragraph. It shall be the Bidder's responsibility that the envelope be properly addressed to ensure that the Proposal is received on or before the appropriate time.

The project will include the following described construction:

The furnishing, installing, and testing of approximately 6,080 linear feet of 4-inch CL 200; SDR 21 PVC water mains and approximately 68,545 linear feet of 3-inch CL 200; SDR 21 PVC water mains, including all valves, fittings, restrained fittings, restrained pipe systems, fire hydrant replacements, air release valve assemblies, terminal blow-off assemblies, tapping sleeves/valves, connections, tie-ins, steel casing pipe bores under roadways and/or state highway, detection tape, trace wire, silt and erosion controls, unclassified excavation, backfill, stream bank stabilization, erosion/sediment control system, restoration, pavement restoration, testing, two above ground duplex water booster stations, other appurtenances and other work as shown on the Construction Drawings or indicated in the Contract Specifications.

CONTRACT DOCUMENTS

All work must be performed in accordance with the Contract Documents which are available for inspection at the following locations:

Green River Valley Water District
85 East Les Turner Road
Cave City, Kentucky 42127

McGraw Hill Dodge Construction
1604 Elm Hill Pike, Suite 200
Nashville, Tennessee 37210

Water Management Services, LLC
2 International Plaza, Suite 401
Nashville, Tennessee 37217

AGC / Dodge Plan Room
1811 Cargo Court
Louisville, Kentucky 40299

AGC / Dodge Plan Room
950 Contract Street, Suite 100
Lexington, Kentucky 40505

Associated Builders and Contractors
1217 Broadway
Bowling Green, Kentucky 42104

Official (numbered) Bid Documents shall be obtained at the office of Water Management Services, LLC, 2 International Plaza, Suite 401, Nashville, Tennessee 37217 (telephone: 615/366-6088). A deposit of \$200.00 must be made for each set obtained. The deposits of all bidders, except the successful bidder, will be refunded without any deduction upon return of the Bid Documents (drawings and specifications) to Water Management Services, LLC in good condition and within 15 calendar days subsequent to the opening of bids. Non-bidders and bidders who have taken out additional sets will be refunded \$150.00 under the same conditions of return. No refund will be made for documents received after this fifteen-day period.

BID SECURITY

Each Proposal shall be accompanied by a certified or cashier's check or a satisfactory bid bond payable to the Green River Valley Water District in amount not less than five (5) percent of the Base Bid as a guarantee that the bidder will, within fifteen (15) days after the date of the award of the Contract, execute an Agreement and file bonds and insurance as required by the Contract Documents if his Proposal is accepted.

If an intended awardee fails to execute and file an Agreement, bonds and insurance as required by the Contract Document, the entire amount of the security submitted with the Proposal shall be forfeited.

HOLDING OF PROPOSAL

No bid shall be withdrawn after the opening of the Proposals without the consent of the Green River Valley Water District for a period of sixty (60) days after the scheduled time of the closing of bids. The bid securities of all bidders, except those submitted with the three lowest acceptable bidders, will be returned within fifteen (15) days after the time of the opening of the bids. The bid security accompanying the three lowest acceptable proposals may be held by the Green River Valley Water District until a construction Contract has been executed and a satisfactory Performance Bond in the sum of the full amount of the Contract has been delivered to the Green River Valley Water District.

TIME FOR COMPLETION

The successful bidder shall be required to fully complete all work within 300 consecutive calendar days from and including the date to start work established in a written order from the Green River Valley Water District.

NOTE: The Contractor's attention is directed to the Provisions for Liquidated Damages as provided in the Special Conditions and the Contract Agreement, in addition to the Excess Cost of Engineering as set forth in Paragraph 7.6 of the General Conditions.

EPA SPECIAL APPROPRIATIONS GRANT FUNDING

This project is being funded in part with an EPA Special Appropriations Grant as part of the FY 2008 Appropriations Act.

Bidders must comply with the following:

- a. Title VI of the Civil Rights Act of 19964, the Anti-Kickback Act, and the Contract Work Hours Standard Act.
- b. President's Executive Order No. 11246 as amended, which prohibits discrimination in employment regarding race, creed, color, sex or national origin.

- c. Certification of prior work under Executive Order 11246 (Equal Employment Opportunity) as amended.
- d. Bidders shall supply a statement that the Contractor/Subcontractor will comply with 41 CFR 60-4, in regard to affirmative action, to insure equal opportunity to females and minorities and will apply the time tables and goal set forth in 41 CFR 60-4. In addition the statement shall include verbiage that the bidders will make positive efforts to use small, minority, women owned and disadvantaged businesses.

AWARD OF CONTRACT

The award of any Contract will be made by the Green River Valley Water District to the lowest responsive, responsible bidder. Responsible bidder will be defined as one who furnished satisfactory evidence that the bidder has the experience and the ability and that he has sufficient capital and facilities to enable him to perform the work successfully and to complete the work within the time specified in the Contract Document. At a minimum, a responsible and responsive bidder shall be appropriately licensed, have provided the required bid bond, have the capability of meeting the bond and insurance requirements, and be in compliance with Federal, State and local laws and regulations applicable to the project.

The Green River Valley Water District reserves the right to reject any Proposal for failure to comply with all requirements of the notice or of any of the Contract Documents; however, it may waive any minor defects or informalities at its discretion. The Green River Valley Water District further reserves the right to reject all Proposals.

Plans and specifications for this project were prepared by Water Management Services, LLC.

Dated at Cave City, Kentucky this _____ day of _____, 200__.

GREEN RIVER VALLEY WATER DISTRICT

BY: David Paige, Manager

GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

EPA FUNDED WATER MAIN EXTENSIONS

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INSTRUCTIONS TO BIDDERS

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INSTRUCTIONS TO BIDDERS

1. EXAMINATION OF PROCUREMENT DOCUMENTS AND SITE

- 1.1 Before submitting a Bid, each Bidder must (a) examine the Procurement Documents thoroughly, (b) become familiar with federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress or furnishing the Goods and Special Services, (c) study and carefully correlate Bidder's observations with the Procurement Documents, and (d) if specified or if, in Bidder's judgment, any local condition may in any manner affect cost, progress or furnishing the Goods and Special Services, visit the site to become familiar with local conditions.
- 1.2 Upon request Owner will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.
- 1.3 Each Bidder, by making his bid, represents that he has read and understands the bidding documents. The Bidder shall include in his bid prices any and all costs that may be necessary to complete the work in accordance with the requirements of the Contract Documents.
- 1.4 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 1 and that the Procurement Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services.

2. SUBSURFACE EXPLORATION DATA

Investigation of subsurface conditions at the site may have been made for the purpose of design. In the event this exploration has been done, the results are available for inspection by prospective bidders but are not a part of the Contract Documents. The Owner assumes no responsibility whatsoever with respect to the sufficiency or accuracy of these preliminary investigations, or of their interpretation, and there is no guarantee, either expressed or implied, that the conditions indicated are representative of those existing throughout the work or any part of it, or that unforeseen developments may not occur.

3. EASEMENTS

Portions of the improvements under this project will be constructed on private property for which easements have been secured by the Owner. Work performed on or use of such easements shall be subject to the provisions of the easement agreements on file and open to inspection in the office of the Owner.

4. INTERPRETATION OF CONTRACT DOCUMENTS

Questions regarding documents, discrepancies, omissions, or intent of the Specifications or Drawings shall be submitted in writing to the Owner through the Engineer at least 10 days prior to opening of bids to provide time for issuing and forwarding an addendum. Any interpretation of the Contract Documents will be made only by addendum duly issued or delivered by the Owner to each person receiving a set of documents. The Owner will not be responsible for any other explanations or interpretations of the Contract Documents.

5. EXAMINATION OF BIDDING DOCUMENTS

Each bidder, by making his bid, represents that he has read and understands the bidding documents. The bidder shall include in his bid prices any and all costs that may be necessary to complete the work in accordance with the requirements of the Contract Documents.

6. MATERIAL SUBSTITUTION

Each bidder shall base his bid upon the materials and equipment as described in the bidding documents. The successful Contractor will not be allowed to make any substitutions on his own initiative but, in each instance, will be required to obtain authorization from the Owner before installing any work in variance with the requirements of the Contract Documents.

7. APPROXIMATE QUANTITIES

On all items on which bids are to be received on a unit price basis, the quantities stated in the bid will not be used in establishing final payment due the Contractor. The quantities stated, on which unit prices are invited, are approximate only. Bids will be compared on the basis of number of units stated in the bidding schedule. Payment on the Contract on unit price items will be based on the actual number of units installed in the completed work.

Any change order to the Contract, if required, shall comply with Federal Procurement Regulations as set forth in 40 CFR 31. Documentation of cost and pricing shall be submitted for review for any change orders exceeding \$25,000. This documentation shall be certified as accurate by the Contractor.

8. PREPARATION OF BID

Only bids which are made out on the bid form included in the Official (numbered) Bid Document will be considered. **The bid form must not be separated from this document.** Amounts are to be shown in both words and figures. In case of discrepancy between words and figures, the words shall prevail unless it clearly appears, in Owner's opinion, that the words rather than the figures are in error. If any portion of the bid is required to be given in unit prices and totals, the unit prices shall prevail unless it clearly appears, in Owner's opinion, that the unit prices rather than the totals are in error. If a discrepancy exists between the total base bid and the true sum of the individual bid items, the true sum shall prevail. A bid will be rejected if it does not contain a price for each and every item named in the bidding schedule. Bidders are warned against making any erasures or alterations of any kind, and bids which contain omissions, erasures, conditions, alterations, or additions not called for may be rejected.

9. SIGNING OF BID

If the bidder is a corporation, the legal name of the corporation shall be set forth together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If bidder is a partnership, the true name of the firm shall be set forth together with the signatures of all the partners. If the bidder is an individual, his signature shall be inscribed. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a power of attorney must be on file with the Owner prior to opening bids or submitting bids; otherwise, the bid may be regarded as irregular.

10. BID SECURITY

No bid will be considered unless accompanied by a bid security as defined in the Invitation to Bid as a guarantee that, if the bid is accepted, the bidder will execute the Agreement and file bonds and insurance as required by the Contract Documents within 15 days from the date of the award of the Contract.

11. RETURN OF BID SECURITIES

The security of the three lowest bidders will be returned after the execution of the Agreement with the successful bidder and the approval of his bonds and insurance. The security of all other bidders will be returned promptly after the bids have been opened and reviewed by the Owner. If all bids are rejected, the securities will be returned at the time of rejection.

12. AGREEMENT, BONDS, INSURANCE

The attention of bidders is specifically directed to the General Conditions of the Contract and to the forms of Agreement and bonds to be executed and types of insurance to be taken out in the event a Contract award is made.

The attention of bidders is specifically directed to the General Conditions of the Contract relative to the Certificate of Insurance requirements. If the Surety declines to provide the Certificate of Insurance containing the specified cancellation clause verbiage, the Surety shall be required to provide a separate letter to the Owner/Engineer stating the Surety shall notify the Certificate holder in writing thirty (30) days prior to cancellation, reduction, or change in coverage on this project.

13. BID SUBMITTAL

Each bid, properly signed, together with the bid security and all documents bound herewith, shall be enclosed in a sealed envelope addressed and entitled as specified in the Invitation to Bid and delivered to the office designated in the Invitation to Bid. All addenda issued shall be included with the documents at the time of bid submittal. Reference shall be made to the Invitation for proper address as required on the envelope.

14. WITHDRAWAL OF BID

Any bid may be withdrawn at any time prior to the hour fixed in the Invitation to Bid for the opening of bids, provided that a request in writing, executed by the bidder or his duly authorized representative for the withdrawal of such bid, is filed with the Owner prior to the time specified for opening of bids. The withdrawal of a bid will not prejudice the right of a bidder to file a new bid.

15. DESIGNATION OF SUBCONTRACTORS

Each bidder shall list on the form included in these documents the names and addresses of all subcontractors who will perform work or labor or render service to the bidder on or about the construction site. Each bidder shall show on the form the portion of the work to be done by each subcontractor.

16. QUALIFICATION OF BIDDERS

It is the intention of the Owner to award a Contract only to a bidder who furnishes satisfactory evidence that he has sufficient capital, facilities, and plans to enable him to prosecute the work successfully and promptly and to complete the work within the time specified in the Contract Documents. Furthermore, it is the intention of the Owner to award a Contract only to a bidder with a satisfactory record of performance, skill, integrity and judgment. Each bidder shall submit with his bid a listing of past projects including references. A form is provided in the Proposal for listing of this information.

17. DISQUALIFICATION OF BIDDERS

More than one bid for the same work described in this document from an individual, firm or partnership, a corporation or an association under the same or different names will not be considered. Reasonable grounds for believing that any bidder is interested in more than one bid for the work contemplated will cause the rejection of all bids in which such bidder is interested. If there are reasonable grounds for believing that collusion exists among the bidders, the bids of the participants in such collusion will not be considered. In addition, if at any time it shall be found that the person, firm, or corporation to whom the Contract has been awarded has, in presenting any bid or bids, colluded with any other party or parties, then the contract so awarded shall be null and void, and the Contractor and his sureties shall be liable to the Owner for all loss or damage which the Owner may suffer thereby, and the Owner may advertise for new bids for said work. The attention of each bidder is directed to the Non-collusion Affidavit in the Proposal and each bidder shall submit an executed form with his bid.

18. BID OPENING

Bids will be opened and the prices bid will be read aloud publicly at the time and place indicated in the Invitation to Bid. Bidders or their agents are invited to be present.

19. AWARD OF CONTRACT

The award of any Contract or Contracts will be made to the lowest responsive responsible bidder or bidders. The Owner reserves the right to reject any or all bids or to waive irregularities or informalities at its discretion.

20. EFFECTIVE DATE OF AWARD

If a Contract is awarded by the Owner, such award shall be effective when formal notice of such award signed by the authorized representative of the Owner has been delivered to the intended awardee or mailed to him at the main business address shown on his bid by some officer or agent of the Owner duly authorized to give such notice.

21. EXECUTION OF AGREEMENT

Copies of the Agreement, in the number stated in the form of Agreement, shall be executed by the successful bidder and returned, together with the required bonds and insurance within 15 days from and after the date of the award of the Contract. Effective date of bonds shall be the same or later than the date of the Agreement. Failure of a successful bidder to execute the Agreement and file required bonds and insurance within the required time shall be just cause for the annulment of the award. On failure of a successful bidder to execute the Agreement and file the required bonds and insurance within the required time, he shall forfeit his bid security as agreed hereinbefore. Upon annulment of an award as aforesaid, the Owner may then award a Contract to the next lowest, responsible bidder.

22. COMMENCEMENT AND COMPLETION OF WORK

The successful bidder shall commence work within 15 calendar days from and after the issuance by the Owner of a written Notice to Proceed and shall complete all work in accordance with the terms and conditions of the Contract Documents within 300 consecutive calendar days from and after the date of the Notice to Proceed. The Notice to Proceed will be issued within 10 days after award of Contract.

23. LIQUIDATED DAMAGES

The Contractor's attention is directed to the Provisions for Liquidated Damages as provided in the Special Conditions and in the Contract Agreement, in addition to the Excess Cost of Engineering as set forth in Paragraph 7.6 of the General Conditions.

24. UNCLASSIFIED EXCAVATION

This Contract includes excavation on an unclassified basis. The cost of all excavation necessary for the installation of the water lines and appurtenances required under this Contract will be merged into the price per foot for pipe installed or appurtenances thereto. No distinction will be made insofar as payment is concerned between earth and rock. The bid item for unclassified excavation covers additional excavation required by removing unsuitable material (subgrade) authorized by the Engineer in the field.

25. PAYMENT FOR EXCESS COSTS

The successful Contractor will be required to pay for the excess cost of field engineering and inspection as defined in the General Conditions of the Contract, if extensions of time are granted by Owner because of avoidable delays as therein defined.

26. UNDERGROUND FACILITIES

The information and data shown or indicated in the Contract Drawings with respect to existing underground facilities is based on available information and record drawings. The Owner/Engineer shall not be responsible for the accuracy or completeness of such information or record drawings. The Contractor shall have full responsibility for reviewing and checking all such information and data for locating all underground facilities shown or indicated on the Contract Drawings, for coordinating of the work with the Owner, and for the safety and protection thereof and repairing any damage thereto resulting from the work--the cost of which will be considered as having been included in the Contract price.

If underground facilities are uncovered or revealed which were not shown or indicated in the Contract Drawings and which the Contractor could not reasonably have been expected to be aware of, the Contractor shall promptly, after becoming aware thereof and before performing any work affected thereby, give written notice to the Owner/Engineer. The Engineer will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the underground facility and the Contract Document will be amended or supplemented to the extent necessary.

27. DELETIONS BY OWNER

Portions or segments of this work may be deleted by the Owner at the Owner's discretion during the course of construction operations because of funding considerations and/or unforeseen or unknown difficult construction conditions which may arise during the course of the work and which this Contract does not cover. Anticipated profit claims for such deletions will not be allowed.

28. PREVAILING WAGE DETERMINATION

The Contractor shall be aware and take into consideration wage rates which will be in effect for this project. These rates can be found in the Special Conditions of this document.

29. EPA SPECIAL APPROPRIATIONS GRANT FUNDING

This project is being funded in part with an EPA Special Appropriations Grant as part of the FY 2008 Appropriations Act.

Bidders must comply with the following:

- a. Title VI of the Civil Rights Act of 1996, the Anti-Kickback Act, and the Contract Work Hours Standard Act.
- b. President's Executive Order No. 11246 as amended, which prohibits discrimination in employment regarding race, creed, color, sex or national origin.
- c. Certification of prior work under Executive Order 11246 (Equal Employment Opportunity) as amended.
- d. Bidders shall supply a statement that the Contractor/Subcontractor will comply with 41 CFR 60-4, in regard to affirmative action, to insure equal opportunity to females and minorities and will apply the time tables and goal set forth in 41 CFR 60-4. In addition the statement shall include verbiage that the bidders will make positive efforts to use small, minority, women owned and disadvantaged businesses.

30. NOTICE OF INTENT FOR STORM WATER DISCHARGES

The Bidder's attention is directed to the requirement for executing a Notice of Intent (NOI) for storm water discharges upon award of this project. This NOI is included in the Agreement Section. The Owner will pay required fee and transmit the NOI package to the State for review and approval.

PROPOSAL TO
GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY
EPA FUNDED WATER MAIN EXTENSIONS

Full Name of Bidder _____

Main Business Address _____

Place of Business _____

TO: THE GREEN RIVER VALLEY WATER DISTRICT (hereinafter called "Owner")

The undersigned, as bidder, declares that the only person or parties interested in this Proposal as principals are those named herein, that this Proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the location of the proposed work, the proposed forms of Agreement and Bonds, and the Contract Drawings and Specifications for the above-designated work, all of which are on file at the Green River Valley Water District and all other documents referred to or mentioned in the Contract Documents, the Contract Drawings and Specifications, including Addenda No. _____, _____, _____, and _____ issued thereto; and he proposes and agrees if this Proposal is accepted that he will contract with the Green River Valley Water District in the form of the copy of the Agreement included in these Contract Documents to provide all necessary machinery, tools, apparatus and other means of construction, including utility and transportation services necessary to do all the work, and furnish all the materials and equipment specified or referred to in the Contract Documents in the manner and time herein prescribed and according to the requirements of the Owner as therein set forth, furnish the Contractor's Bonds and Insurance specified in the General Conditions of the Contract, and to do all other things required of the Contractor by the Contract Drawings, and that he will take in full payment therefore the sums set forth in the following Bidding Schedule.

I. BIDDING SCHEDULE

A. Unit Price Construction Items for Water Mains

Item No. 1

105 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main, 4" internal diameter, with 3" detection tape and #14 insulated copper trace wire, under roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 2

5,660 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main, 4" internal diameter, with 3" detection tape and #14 insulated copper trace wire, outside roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 3

275 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main with restrained pipe joints, 4" internal diameter, with 3" detection tape and #14 insulated copper trace wire, under and/or outside roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 4

40 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main, 4" internal diameter, inside 8" – 0.25" wall (solid weld) bore or directional bore, under roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 5

1,745 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main, 3" internal diameter, including 3" detection tape and trace wire, under roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 6

64,300 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main, 3" internal diameter, with 3" detection tape and #14 insulated copper trace wire, outside roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 7

2,250 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main with restrained pipe joints, 3" internal diameter, with 3" detection tape and #14 insulated copper trace wire, under and/or outside roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 8

250 linear feet of Class 200 (SDR 21) polyvinyl chloride pipe water main, 3" internal diameter, inside 6" – 0.25" wall (solid weld) bore or directional bore, under roadway, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 9

3 – 4" resilient seat gate valve, including box, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
each Total

Item No. 10

35 – 3" resilient seat gate valve, including box, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
each Total

Item No. 11

5,500 pounds of miscellaneous DIP fittings, complete in place. **Note: The Contractor shall include the cost difference between conventional MJ glands and the restrained glands (where required) in the unit price established for restrained joint systems.**

@ _____ Dollars _____ Cents
\$ _____
per pound Total

Item No. 12

2 – Air release valve in 4" precast manhole structure with JBS #1155 valve manhole assembly – Type A, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
each Total

Item No. 13

24 – Air release valve and 24" concrete pipe with JBS #1155 valve box assembly – Type B, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
each Total

Item No. 14

1 – 4" terminal blow-off assembly with concrete deadman anchor, complete in place and ready for use.

@ _____ Dollar _____ Cents
\$ _____
each Total

Item No. 15

11 – 3" terminal blow-off assembly with concrete deadman anchor, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
each Total

Item No. 16

1,400 linear feet of gravel driveway replacement, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 17

150 linear feet of asphalt driveway and/or parking lot replacement, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 18

320 linear feet of asphalt pavement replacement, Type "A", complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

Item No. 19

72,400 linear feet of topsoil and seeding of trenches, complete in place.

@ _____ Dollars _____ Cents
\$ _____
per linear foot Total

B. Unit Price Construction Items for Water Mains Ordered by the Engineer

Item No. 20

30 tons of bituminous (temporary) cold mix, complete in place.

@ _____ Dollars _____ Cents
\$ _____
per ton Total

Item No. 21

180 cubic yards of Class C (2,000 psi) concrete for cradle, blocking, encasement, etc., complete in place.

@ _____ Dollars _____ Cents
\$ _____
per cubic yard Total

Item No. 22

60 - Water valve / line markers, complete in place.

@ _____ Dollars _____ Cents
\$ _____
each Total

Item No. 23

100 cubic yards of unclassified excavation for undercuts.

@ _____ Dollars _____ Cents
\$ _____
per cubic yard Total

Item No. 24

100 cubic yards of crushed stone backfill for undercuts, complete in place.

@ _____ Dollars _____ Cents
\$ _____
per cubic yard Total

Item No. 25

450 square yards of plain stone rip-rap streambank stabilization, complete in place.

@ _____ Dollars _____ Cents
\$ _____
per square yard Total

Item No. 26

100 square yards of grouted rubble rip-rap streambank stabilization, complete in place.

@ _____ Dollars _____ Cents
\$ _____
per square yard Total

C. Lump Sum Construction Items for Water Mains

Item No. 27

4 – Tie-ins and connections to existing 6", 4" and/or 3" water mains without tapping sleeve and valves, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
lump sum each Total

Item No. 28

3 – 6"x3" tapping sleeve and valve with valve box and connection to existing 6" water mains, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
lump sum each Total

Item No. 29

1 – 4"x4" tapping sleeve and valve with valve box and connection to existing 4" water mains, complete in place and ready for use.

@ _____ Dollars _____ Cents
\$ _____
lump sum each Total

TOTAL BASE BID FOR UNIT PRICE AND LUMP SUM CONSTRUCTION ITEMS FOR WATER MAINS

The sum of Item Numbers 1 through 33 is

_____ (in writing)
Dollars and _____ Cents
_____ (in writing)
Total Bid \$ _____
_____ (in figures)

II. PROPOSAL CONDITIONS

- A. It is expressly understood that quantities in the Bidding Schedule for Unit Price Items are approximate only and that payment on a Contract will be made only on the actual quantities of work completed in place, measured on the basis defined in the Contract Conditions and the Contract Specifications.
- B. The undersigned has carefully checked the above Bidding Schedule against the Contract Drawings and Specifications before preparing this Proposal and accepts the said quantities to be substantially correct, both as to classification and amount, and as correctly listing the complete work to be done in accordance with the Contract Drawings and Specifications.
- C. If this Proposal is accepted and the undersigned shall fail to contract as aforesaid, and to give the bond for faithful performance required by the General Conditions of Contract and by law, and to provide all insurance as required by the Contract Documents within fifteen (15) days after the date of the award of the Contract, the Green River Valley Water District at its option, determined that the bidder has abandoned this Contract and thereupon this Proposal and the acceptance thereof shall be null and void, and the forfeiture of such security accompanying this Proposal shall operate and the same shall be the property of the Green River Valley Water District.

III. BID SECURITY

Accompanying this Proposal is a _____,
in the amount of _____
Dollars (\$ _____).

- Note: (a) Insert the words "Cash," "Cashier's Check," "Certified Check" or "Bid Bond" as the case may be.
- (b) Amount must be equal to at least that stated in the Notice to Bidders but not less than that required by State Statutes.

IV. GENERAL

Bidder understands that the Owner reserves the right to reject any or 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 sixty (60) calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the conditional acceptance of this bid, bidder will execute the formal Contract attached within 15 days and deliver the Surety Bond or Bonds and insurance as required by the Contract Documents. The bid security attached in the sum of _____

Dollars (\$ _____) is to become the property of the Owner in the event the Contract, Insurance and Bonds are not executed within the time above set forth.

V. STARTING AND COMPLETION AND LIQUIDATED DAMAGES

If awarded a Contract under this Proposal, the Undersigned proposes to start work at the site within fifteen (15) calendar days after the receipt from the Owner of a written Notice to Proceed. The Undersigned further agrees to fully complete all work covered by this Proposal to the point of final acceptance by the Owner within 300 consecutive calendar days from and including the date of receipt from the Owner of a written Notice to Proceed.

NOTE: The Contractor's attention is directed to the provisions for Liquidated Damages as provided in Paragraph 13 of the Special Conditions and in the Agreement Section, in addition to the Excess Cost of Engineering as set forth in Paragraph 7.6 of the General Conditions.

VI. PROPOSAL SIGNATURE

State of _____)
County of _____)ss

_____, being first duly sworn on oath deposes and says that the bidder on the above proposal is organized as indicated below and that all statements herein made are made on behalf of such bidder and that this deponent is authorized to make them.

_____, also deposes and says that he has examined and carefully prepared his bid proposal from the Contract Drawings and Specifications and has checked the same in detail before submitting this Proposal or bid; that the statements contained herein are true and correct.

(a) Corporation

The bidder is a corporation organized and existing under the laws of the State of _____, which operates under the legal name of _____, and the full names of its officers are as follows:

President _____
Secretary _____
Treasurer _____
Manager _____

and it (does) or (does not) have a corporate seal. The (name) _____
_____ is authorized to sign construction proposals
and contracts for the company by action of its Board of Directors taken on
_____, a certified copy of which is hereto attached.
(Strike out this last sentence if not applicable.)

(b) Partnership

The bidder is a partnership consisting of individual partners whose full names are as follows:

_____	_____
_____	_____
_____	_____
_____	_____

The partnership does business under the legal name of:

(c) Individual

The bidder is an individual whose full name is _____
_____, and, if operating under a trade name, said trade name is
_____.

Dated _____, 200_____.

(Seal - If Corporation)

(Sign Here)

Legal Entity

By: _____

Telephone No. _____

Subscribed and sworn to before me this _____ day of _____, 200_____.

Notary Public

My Commission Expires:

CONTRACTOR'S BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____
(hereinafter called the Principal) and _____
_____ (hereinafter called the Surety), a corporation chartered and
existing under the laws of the State of _____ with its principal offices in the City of
_____ and authorized to do business in the State of _____
are held and firmly bound unto the Green River Valley Water District (hereinafter called the Owner), in the
full and just sum of _____ Dollars (\$ _____)

good and lawful money of the United States of America, to be paid upon demand of the Owner, to which
payment well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors,
administrators, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit or has submitted to the Owner, a proposal for
furnishing all labor, materials, equipment and incidentals necessary to furnish and install the EPA Funded
Water Main Extensions project.

WHEREAS, the Principal desires to file this bond in accordance with law, in lieu of a certified
bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE: The conditions of this obligation are such that if the Proposal be accepted,
the Principal shall, within fifteen days after the date of receipt of a written notice of award of contract,
execute a contract in accordance with the Proposal and upon the terms, conditions and price(s) set forth
therein, of the form and manner required by the Owner, and execute a sufficient and satisfactory contract
performance bond payable to the Owner, in an amount of One Hundred Percent (100%) of the total
Contract price in form and with security satisfactory to said Owner, then this obligation to be void; otherwise
to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply
with any or all of the foregoing requirements within the time specified above, immediately pay to the
aforesaid Owner, upon demand, the amount hereof in good and lawful money of the United States of
America.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and
sealed this _____ day of _____, 200__.

Principal

BY _____
(Seal)

Surety

(Seal)

Countersigned _____

Local Resident Producing Agent for _____

LIST OF SUBCONTRACTORS

PROJECT : EPA FUNDED WATER MAIN EXTENSIONS

The undersigned states that the following is a full and complete list of the proposed subcontractors on this Project and the class of work to be performed by each, and that such list will not be added to nor altered without written consent of the Owner.

<u>Subcontractor and Address</u>	<u>Class of Work to be Performed</u>
(1) _____ _____	_____
(2) _____ _____	_____
(3) _____ _____	_____
(4) _____ _____	_____
(5) _____ _____	_____
(6) _____ _____	_____
(7) _____ _____	_____

Dated _____

Bidder

By _____

STATEMENT OF EXPERIENCE OF BIDDER

The bidder is requested to state below that work of similar magnitude in order to judge his experience, skill and business standing and his ability to conduct the work as completely and as rapidly as required under the terms of the Contract.

<u>Project and Location</u>	<u>Reference</u>
(1) _____ _____	_____ _____
(2) _____ _____	_____ _____
(3) _____ _____	_____ _____
(4) _____ _____	_____ _____
(5) _____ _____	_____ _____
(6) _____ _____	_____ _____
(7) _____ _____	_____ _____

Dated _____

Bidder

By _____

**THE FOLLOWING CERTIFICATIONS ARE REQUIRED FOR UNITED
STATES ENVIRONMENTAL PROTECTION AGENCY GRANT**

**CERTIFICATION BY PROPOSED PRIME OR SUBCONTRACTOR
REGARDING EQUAL EMPLOYMENT OPPORTUNITY**

Name of Prime Contractor _____

Project Number _____

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246, Part II, Section 203 (b), 30 F.R. 12319-25). Any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicated that the prime or subcontractor has not filed a compliance report due under applicable instruction, such contractor shall be required to submit a compliance report.

CONTRACTOR'S CERTIFICATION

Contractor's Name: _____

Address: _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. Yes No
2. Compliance Reports were required to be filed in connection with such contract or subcontract. Yes No

If yes, state what reports were filed and with what agency.

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. Yes No
4. If answer to Item 3 is NO, please explain in detail on reverse side of this certification.

Certification - The information above is true and complete to the best of my knowledge and belief. (A willfully false statement is punishable by law-U.S. Code, Title 18, Section 1001.)

Name and title of signer (Please type)

Signature

Date

**CERTIFICATION REGARDING DEBARMENT,
SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(A) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

I am unable to certify to the above statements. My explanation is attached.

CERTIFICATION REGARDING LOBBYING
Certification for Contracts, Grants,
Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

TYPED NAME & TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

___ I am unable to certify to the above statements. My explanation is attached.

AGREEMENT SECTION

GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

EPA FUNDED WATER MAIN EXTENSIONS

SPECIAL CONDITIONS OF CONTRACT

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SPECIAL CONDITIONS OF CONTRACT

1. Construction Operations and Material Storage

The Contractor must carry on all his construction operations, including storage of materials, in such a way as to interfere as little as possible with the operation and maintenance of existing water or wastewater treatment facilities.

2. Soil Erosion, Sediment Control, and Notice of Intent (Storm Water)

2.1 The Contractor shall plan and control his construction operations to minimize all soil erosion and the siltation of drains and streams resulting from such erosion. All methods used for such control shall be approved by the Engineer.

2.2 The Contractor's attention is directed to Division H, Section 3 (Construction) - "Slope Protection and Erosion Control." This provision will be required on this project. All work shall be performed in full compliance with requirements of the Commonwealth of Kentucky - Division of Natural Resources. The Contractor shall provide and use all measures necessary to comply with State regulations. No separate payment will be made for this work.

2.3 Where the Contractor's operations subject soil to erosion by the wind, he shall control such erosion by approved methods until affected areas can be seeded and mulched.

2.4 The Contractor's attention is directed to the requirement for executing a Notice of Intent (NOI) for storm water discharges upon award of this project. This NOI is included in the Agreement Section. The Owner will pay required fee and transmit the NOI package to the State for review and approval. This NOI must be approved by the Commonwealth of Kentucky prior to beginning work on this project.

It shall be the responsibility of the Contractor to fully comply with all requirements and regulations of the NOI, storm water discharge regulations, and all other requirements contained herein

3. Project Sign

3.1 The Contractor shall furnish and erect one sign at an appropriate place on the project site as approved by the Engineer. The Contractor shall be responsible for protecting and maintaining the sign in good condition throughout the life of the project.

3.2 The sign will be fabricated of good quality 1-inch exterior plywood with suitable frames and posts. A 4-inch x 1¼-inch molding strip shall be placed around the outer edge projecting over the face of the sign. The entire woodwork shall be given a prime coat and final coats of high-grade sign enamel. The sign shall be not less than 4 feet by 8 feet and shall contain, at a minimum, the name of the Owner and its Officials, Project Name and Number, Contractor and Engineer. Layout of the sign shall be approved by the Engineer before painting. Lettering shall be done by a professional painter.

4. Contract Drawings

The Drawings applicable to the work to be performed under this Contract are referred to in this document as Contract Drawings and described as follows:

GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

EPA FUNDED WATER MAIN EXTENSIONS

The sheet index and titles of all Drawings appear on the index sheet of the Contract Drawings.

5. Arrangement and Charge for Water and Electrical Power

Where the Contractor desires a water and electrical power supply in connection with any construction work, he shall make complete and satisfactory arrangements with the Green River Valley Water District.

Payments shall be made by the Contractor in accordance with the Utility Agency's official rates and policies.

6. Use of Fire Hydrants

The Contractor shall not open, turn on, or make any connection to any hydrant unless prior written permission of the Green River Valley Water District or local utility is obtained.

7. Barricades and Warning Signs

The Contractor shall furnish, erect and maintain such barricades, fences, lights and danger signals, and take such other precautionary measures that will ensure the protection of persons, property and the work.

Traffic control devices shall meet the requirements of the "Manual of Uniformed Traffic Control Devices" (MUTCD).

Special Requirements may be required by Commonwealth of Kentucky concerning tunnel/bore crossings and the other work near the State or U.S. Highways on this project. The Contractor shall comply with these requirements.

8. Use of Explosives

Should the Contractor elect to use explosives in the prosecution of the work, and if permitted in this Contract, the Contractor shall employ only workmen familiar and skilled in the use of explosives, carefully cover the explosion with suitable timber, matting and/or excavation, and exercise the utmost care so as not to endanger life or property.

The Contractor shall obtain all necessary permits and/or licenses and carry on such work in compliance with all local Ordinances and Commonwealth of Kentucky Laws.

Whenever explosives are stored or kept they shall be stored in a safe and secure manner and all storage places shall be plainly marked "DANGEROUS -- EXPLOSIVES."

9. Restoration of Disturbed Areas

The Contractor shall be required to restore all areas disturbed by his operation to a condition equal to or better than the condition prevailing prior to construction.

10. Vegetation Damage

Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage.

Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

11. Coordination of Work

The Owner may award other separate contracts in connection with this project requiring work on or near the project site and may progress simultaneously with the work relating to the construction under this Contract. It is, therefore, a requirement that each contractor, including the Contractor for this Contract, coordinate his operations with those of other contractors, especially where connections must be made between contracts.

12. Sequence of Operations

The work designated to be performed under this Contract shall be coordinated in such manner that there shall be a minimum of interference with traffic and existing utilities. Existing water, gas, electric and communications shall not be interrupted without prior arrangements having been made with the management of the utility involved.

Backfilling and clean-up work shall be continuously prosecuted to the point that satisfactory ingress and egress to roadways can be maintained.

During the period required for construction under this Contract, it will be necessary that any existing wastewater treatment facilities, sanitary sewers, force mains, and pumping stations, be maintained in operation. The Contractor shall prepare and submit to the Owner and the Engineer a schedule of operations for approval. The Contractor shall dispose of all storm water and sewage accumulated in a manner acceptable to the Engineer.

13. Time for Completion and Liquidated Damages

The successful bidder shall commence work within 15 calendar days from and after the issuance by the Owner of a Written Notice to Proceed and shall complete all work in accordance with the terms and conditions of the Contract Documents within 300 consecutive calendar days from and after the date of the Notice to Proceed. The Notice to Proceed will be issued within 10 days after award of the Contract.

It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the Contract of the work to be done hereunder are ESSENTIAL CONDITIONS of this Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the "Notice to Proceed."

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed by and between the Contractor and the Owner that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality. If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding

of this Contract, to pay to the Owner the amount specified in the Agreement, not a penalty but as liquidated damages for breach of Contract, as hereinafter set forth, for each and every calendar-day that the Contractor shall be in default after the time stipulated in the Contract for completing the work.

The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain, and said amount shall be retained from time to time by the Owner from current periodical estimates.

Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- a. To any preference, priority or allocation order duly issued by the government;
- b. To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight, embargoes, and unusually severe weather; and
- c. To any delays of subcontractors or suppliers occasioned by any of the causes specific in subsections a and b of this article.

Provided, further that the Contractor shall within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner in writing of the causes of the delay and notify the Contractor within a reasonable time of its decision in the matter.

14. Maintenance and Access of Traffic

Portions of the work are located in developed areas requiring the access for fire and other departments to be provided for, and at least one free lane shall be available for all traffic. Contractors are to arrange operations in these areas to meet these requirements and secure approval of operating procedures from the city, county road commission, or Kentucky Department of Highways, as the case may be.

15. Pavement Restoration

Where water lines are constructed under paved roadway surfaces within public rights-of-way, the Contractor will restore the asphalt or crushed stone pavement and/or shoulders between shoulder lines. It shall be the responsibility of the Contractor, upon completion of the water line installation, to regrade the street with pug mix to the template that existed prior to construction. This regrading shall be satisfactory to city or county road commission before the street is released for paving operations.

The Contractor shall further be responsible for the maintenance of disturbed streets until repaving operations have been initiated.

The Contractor shall be responsible for adjusting all new and existing utility castings and utility valve boxes to the final pavement elevations. All costs associated with this work shall be merged into the unit price construction items established for pavement restoration.

The Contractor shall restore all curbs, gutters, sidewalks, ramps and private driveways or parking lots. Compensation for this work is detailed in other portions of this Document and any item, which must be removed as was evidenced and necessary for the installation of the

proposed water lines for which there is no specific pay item(s), shall be considered as incidental to the construction of the proposed sewer and, therefore, no additional compensation will be allowed for the restoration of this (these) item(s).

The Contractor shall also be required to restore, at his own expense, all pavements disturbed by his operations where the water line was not constructed under the pavements disturbed in the correction of water deficiencies discovered after restorations have been completed.

16. Work in Easements

Portions of the work to be constructed under this Contract lie within easements on private property. Work performed in such easements shall be subject to the provisions of said easements which may be found in the office of the Green River Valley Water District. In general, these Easement Agreements provide for restoring the property to the condition existing before construction began.

Unless indicated otherwise, these easement widths are as follows:

Permanent Easement - 20 feet.

17. Property Damage Claims

Any and all property damage claims received by the Owner, their agents, or the Contractor resulting from any alleged operation of the Contractor shall be investigated promptly (within 14 days) by the Contractor or insurance carrier. Any such claims made to the Owner shall be forwarded to the Contractor in writing and the Contractor shall subsequently forward such claims to his insurance carrier. Before final payment is made by the Owner to the Contractor, a summary of the Contractor's disposition of all such claims shall be provided to the Owner. Nothing contained in this paragraph shall be interpreted by the Contractor to lessen the requirements of the General Conditions and, in particular, Paragraph 3.16 of the General Conditions entitled "Responsibility for Damage."

18. Supervision and Emergency Procedures

The Contractor shall man this project with adequate and qualified foremen and superintendents at all times. During weekends and night time hours, the Contractor shall have someone who can be on call (with names and telephone numbers) to be furnished to the Engineer and the Green River Valley Water District for emergency measures such as backfilling open holes, placing of barricades, and correction of other potential problems and/or hazards. During regular working hours, the Contractor should arrange for a local office and someone to receive phone calls and instructions and/or questions.

19. Work in City and State Road Rights-of-Way

When ordered by the Engineer or Owner's Representative, the Contractor shall place temporary cold mix in street trench cuts. This temporary pavement shall be properly maintained by the Contractor until such time as final pavement restoration is completed.

At various locations on this project (in addition to what might be specifically shown on the Contract Drawings), the nature of construction and traffic conditions will require that the Contractor utilize and maintain heavy steel plates to facilitate traffic. These steel plates shall be of sufficient size and thickness to be utilized for varying trenching conditions.

The Contractor shall make every possible effort to backfill all excavations at the end of each day's construction operations. To accomplish this procedure, the Contractor shall mark and/or reference the end of the pipe each day for reopening trench the next morning. In some cases

the use of "sand or gravel bags" will facilitate this procedure, especially where major roads or highways must be crossed one lane at a time.

The Contractor shall remove equipment and other materials from and near the street or highway at the end of each day's construction operations. See previous provisions concerning barricades and warning signs.

All costs associated with furnishing, placing, maintaining and using these steel plates shall be merged into the Contractor's unit price bid for water mains□□.

20. Repair of Existing Water Mains and Services

Should the Contractor through his construction operations break or otherwise damage an existing water service or water main, the Contractor may undertake to make the necessary repairs as long as the following conditions are met:

- A. Notify the local Utility of the damage and coordinate with the Board on the operation of any valves.
- B. Complete the repair in compliance with requirements of the local Utility.
- C. Furnish and install materials, fittings and sleeves in compliance with the standards of the local Utilities Board.
- D. Store and have available on the project proper materials of sizes and type needed to avoid unnecessary repair delays.

Any repairs which are completed by the forces of the local Utility shall be billed to the Contractor based on the Utilities Standard invoicing procedures.

21. Deletions by Owner

Portions or segments of this work may be deleted by the Owner at their discretion during the course of construction operations because of funding considerations and/or unforeseen or unknown difficult construction conditions which may arise during the course of the work which this Contract does not cover.

22. Contract Supplements/Change Orders (if required)

Any change order to the Contract, if required, shall comply with Federal Procurement Regulations as set forth in 40 CFR 31. Documentation of cost and pricing shall be submitted for review for any change orders exceeding \$25,000. This documentation shall be certified as accurate by the Contractor.

23. Prevailing Wage Determination

The Contractor shall be required to fully comply with the current Prevailing Wage Determination No. _____, dated _____ for Hart County. This wage determination and all work on this project has been designated Project No. _____ Heavy/Highway Project as indicated on the following pages.

24. Construction Activities and Compliance with Crossing Permits By Kentucky Transportation Cabinet's Department of Highways, and Other Agencies Involved

The Contractor shall plan and control his construction activities to minimize all soil erosion and siltation of drains and streams. In addition, the Contractor shall comply with all requirements of the Kentucky Transportation Cabinet's Department of Highways and all other agencies.

Enclosed herewith and made a requirement of this Contract are crossing permits and approvals from the various agencies involved. The Contractor shall review the following data or specific data obtained from the agency and comply with all conditions.



SUITE 401
2 INTERNATIONAL PLAZA
NASHVILLE, TENNESSEE 37217

TELEPHONE: 615/366-6088
FAX: 615/366-6203

Water Management Services, LLC

ENGINEERING • PLANNING • OPERATIONS • RATE STUDIES

February 18, 2009

Ms. Lee Anne Devine
Corps of Engineers
Louisville District
P.O. Box 59
Louisville, Kentucky 40201

RE: Green River Valley Water District
EPA Funded Water Main Extensions
Stream Crossing Permit
(WMS No. 08191)

Dear Ms. Devine:

Transmitted herewith, on behalf of the Green River Valley Water District, is an application requesting permission to install a 3-inch CL 200; SDR 21 PVC water main across a blueline stream near Bonnieville in Hart County, Kentucky. The proposed crossing will occur across an unnamed tributary of Bacon Creek. Enclosed along with the application are a U.S.G.S. location map, a typical stream crossing detail, erosion control detail sheet, and a plan sheet copy showing the blueline crossing.

A copy of this submittal package has been sent to the Commonwealth of Kentucky Natural Resources and Environmental Protection Cabinet for approval as well. This project will be constructed in compliance with plans and specifications approved by the Kentucky Natural Resources and Environmental Protection Cabinet. These plans and specifications do contain provisions for slope protection and erosion control.

Should you have any questions or require additional information, please feel free to contact us at 615-366-6088.

Sincerely,

Tim W. Graves

TWG/atl

Enclosures

cc: Mr. David Paige, Manager, GRVWD

The public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions; searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

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Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME Green River Valley Water District	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) David Paige - Manager
6. APPLICANT'S ADDRESS PO Box 399 Cave City, Kentucky 42127	9. AGENT'S ADDRESS PO Box 399 Cave City, Kentucky 42127
7. APPLICANT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business (270) 773-2135	10. AGENT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business (270) 773-2135

11. STATEMENT OF AUTHORIZATION

I hereby authorize Water Management Services, LLC to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

David Paige
APPLICANT'S SIGNATURE

2/10/09
DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) EPA FUNDED WATER MAIN EXTENSIONS	
13. NAME OF WATERBODY, IF KNOWN (if applicable) unnamed tributary of Bacon Creek	14. PROJECT STREET ADDRESS (if applicable)
15. LOCATION OF PROJECT Hart COUNTY Kentucky STATE	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)	

17. DIRECTIONS TO THE SITE

SEE ATTACHED USGS MAP

18. Nature of Activity (Description of project, include all features)

BLUELINE STREAM CROSSING OF UNNAMED TRIBUTARY OF
BALCON CREEK WITH 3" SDR 21; CL. 200 PVC WATER MAIN
NEAR CHESTNUT GROVE ROAD + FRENCHMAN KNOB ROAD.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

PROPOSED PROJECT IS BEING SUBMITTED TO INCREASE
POTABLE WATER DISTRIBUTION FOR THE GRVWD WATER
TRANSMISSION SYSTEM IN AND AROUND HART COUNTY.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

n/a

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

n/a

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

n/a

23. Is Any Portion of the Work Already Complete? Yes _____ No _____ IF YES, DESCRIBE THE COMPLETED WORK

n/a

24. Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

n/a

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

*Would include but is not restricted to zoning, building and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

David Damp
SIGNATURE OF APPLICANT

2/10/09
DATE

SIGNATURE OF AGENT

DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States, knowingly and willfully falsifies, conceals, or covers up any trick scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

55' 596

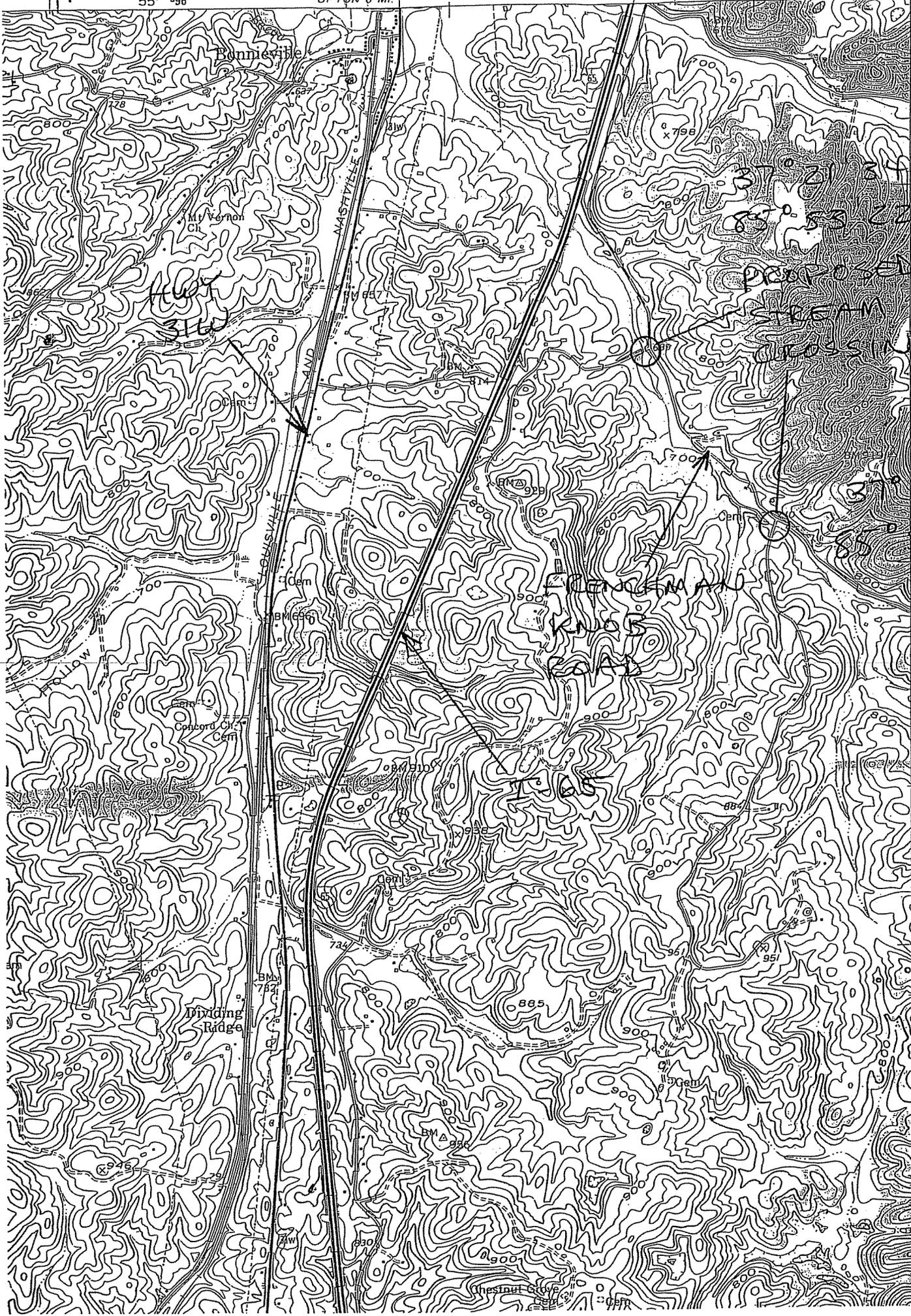
ELIZABETHTOWN 23 MI. UPTON 6 MI.

ELIZABETHTOWN 20 MI. 5 MI. TO KY. 224

1 960 000 FEET 599

85° 52' 30"

37° 22' 30"



N
N

4136

4135

4135

37° 21' 06"

85° 52' 57"

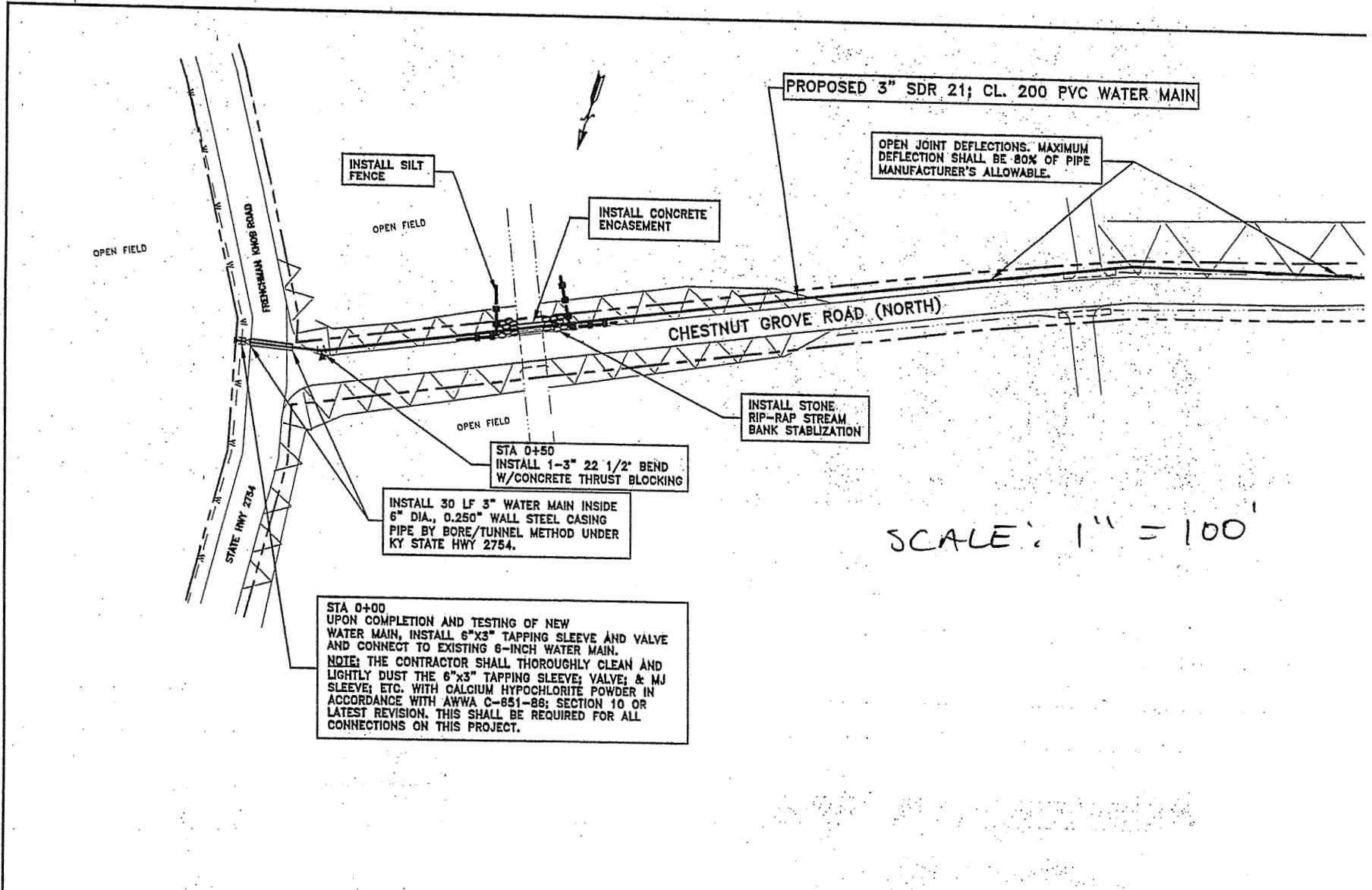
370 000 FEET

4133

20'

4132

4131



PROPOSED 3" SDR 21; CL. 200 PVC WATER MAIN

OPEN JOINT DEFLECTIONS. MAXIMUM DEFLECTION SHALL BE 80% OF PIPE MANUFACTURER'S ALLOWABLE.

INSTALL SILT FENCE

INSTALL CONCRETE ENCASEMENT

CHESTNUT GROVE ROAD (NORTH)

INSTALL STONE RIP-RAP STREAM BANK STABILIZATION

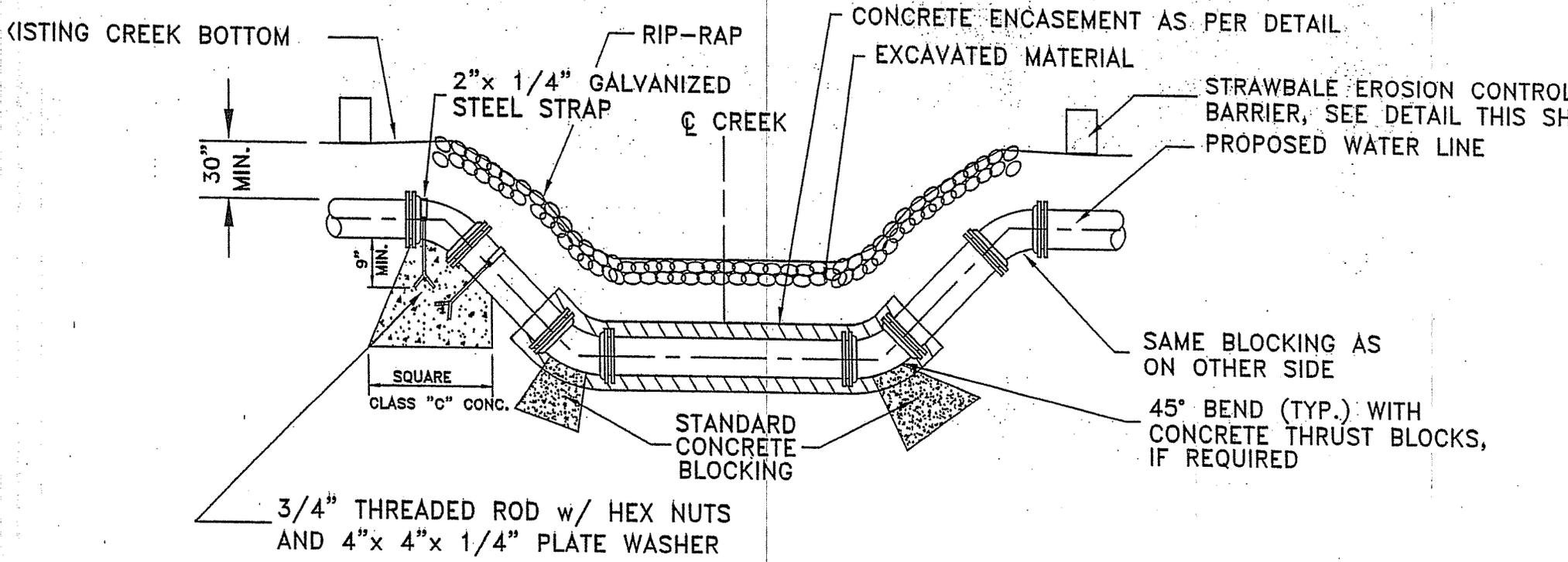
STA 0+50
INSTALL 1-3" 22 1/2° BEND
W/CONCRETE THRUST BLOCKING

INSTALL 30 LF 3" WATER MAIN INSIDE
6" DIA., 0.250" WALL STEEL CASING
PIPE BY BORE/TUNNEL METHOD UNDER
KY STATE HWY 2754.

STA 0+00
UPON COMPLETION AND TESTING OF NEW
WATER MAIN, INSTALL 6"x3" TAPPING SLEEVE AND VALVE
AND CONNECT TO EXISTING 6-INCH WATER MAIN.
NOTE: THE CONTRACTOR SHALL THOROUGHLY CLEAN AND
LIGHTLY DUST THE 6"x3" TAPPING SLEEVE; VALVE; & MJ
SLEEVE; ETC. WITH CALCIUM HYPOCHLORITE POWDER IN
ACCORDANCE WITH AWWA C-851-88; SECTION 10 OR
LATEST REVISION. THIS SHALL BE REQUIRED FOR ALL
CONNECTIONS ON THIS PROJECT.

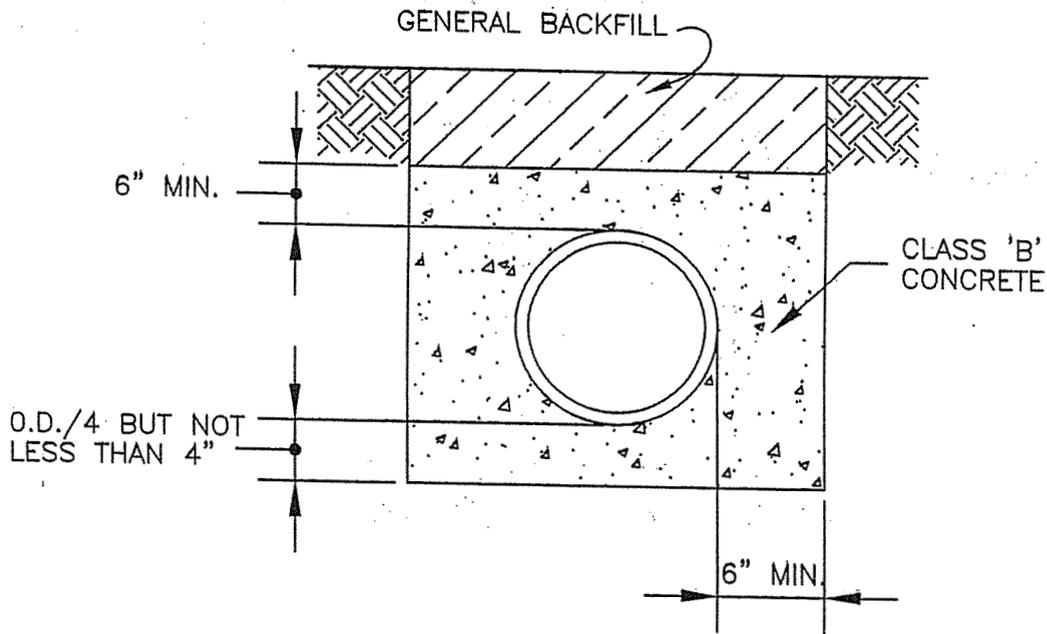
SCALE: 1" = 100'

NOTE: FOR UPPER THRUST BLOCK ON A VERTICAL BEND, CONCRETE VOLUME SHALL BE AS APPROVED BY THE ENGINEER. COST OF STEEL STRAP & REBAR TO BE MERGED INTO UNIT PRICE BID FOR CONCRETE BLOCKING.

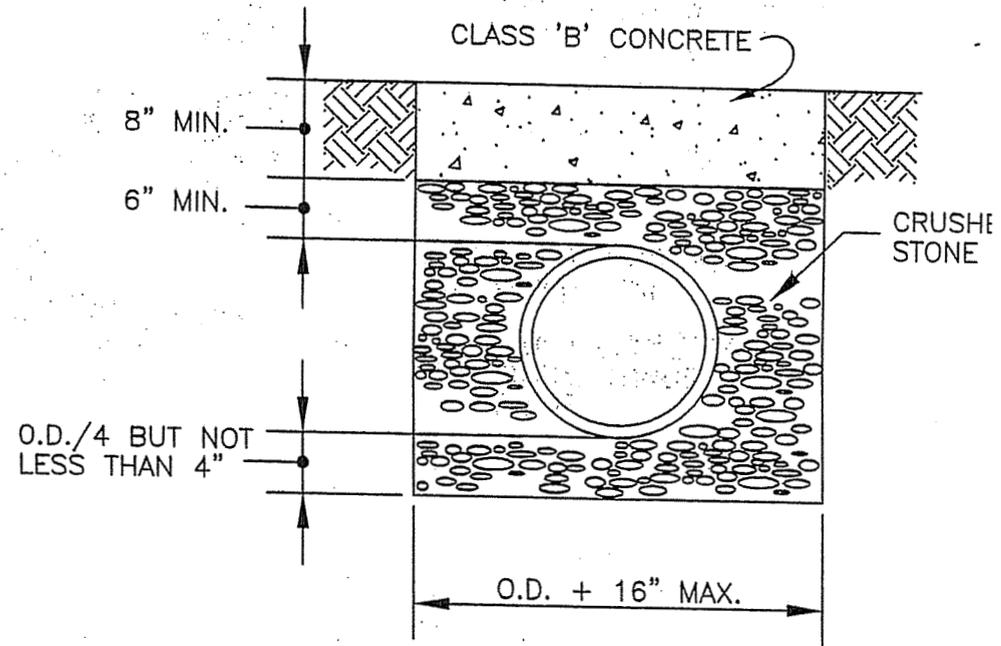


TYPICAL CREEK CROSSING

NOT TO SCALE



CONCRETE ENCASEMENT

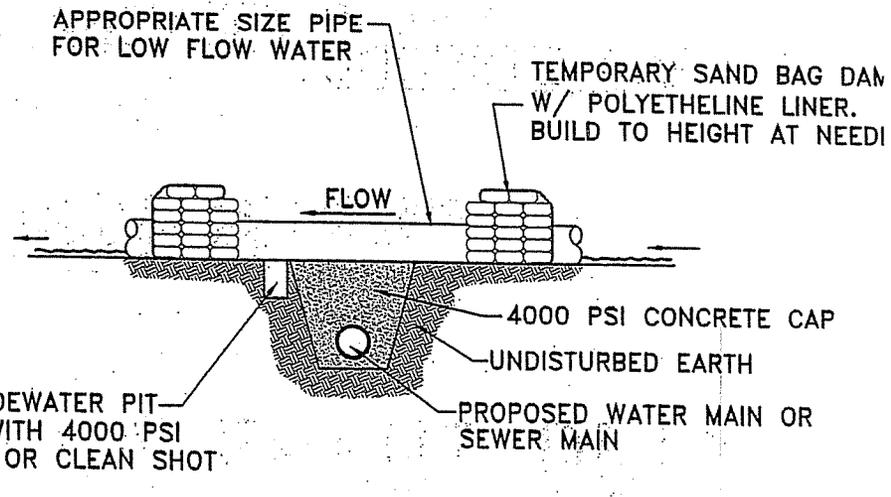
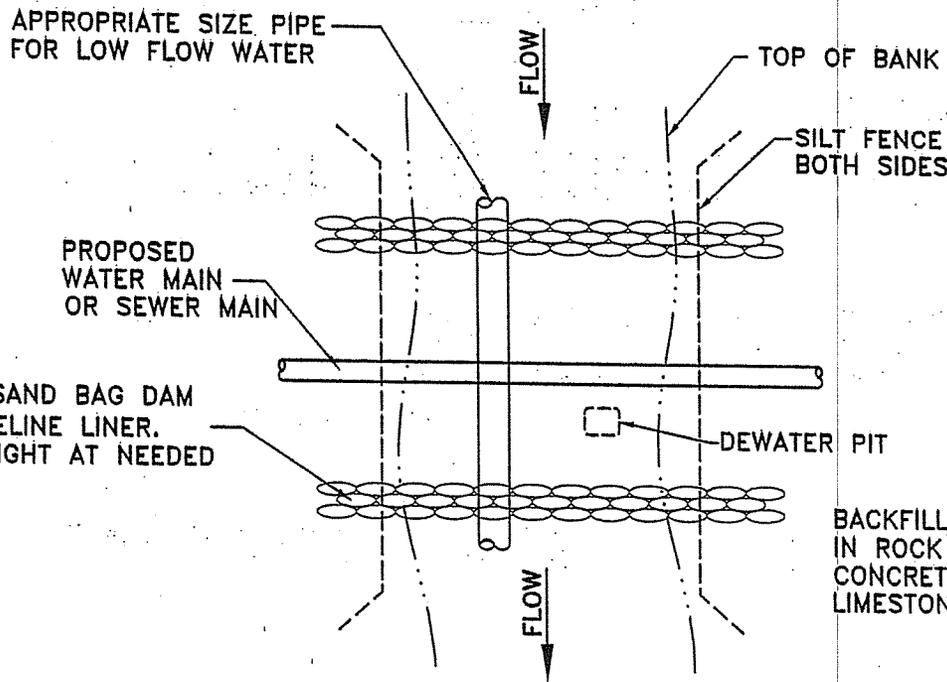


CONCRETE CAP

NOTE: TO BE USED WHERE NOTE ON DRAWINGS REQUIRES PIPE TO BE ENCASED OR CAPPED WITH CONCRETE OR WHERE THE OWNER OR HIS AUTHORIZED REPRESENTATIVE DIRECTS CONCRETE TO BE POURED.

CONCRETE CAP AND ENCASEMENT DETAILS

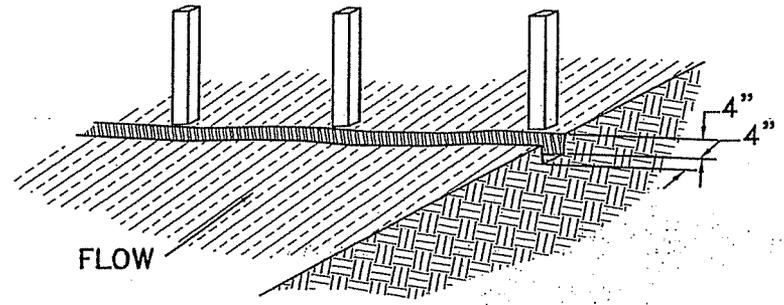
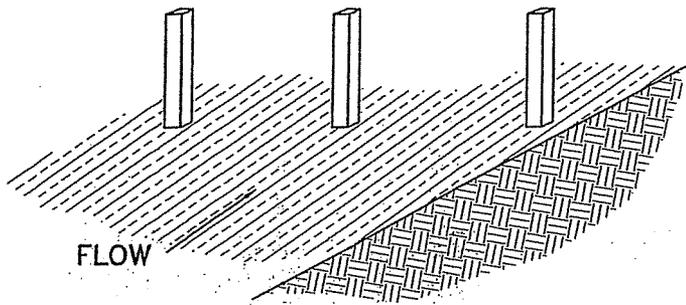
NOT TO SCALE



TYPICAL LOW FLOW STREAM CROSSING DETAIL

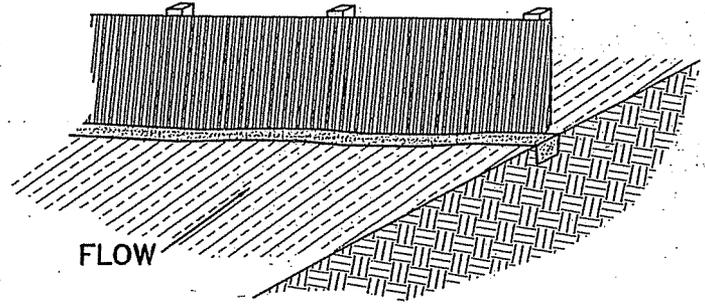
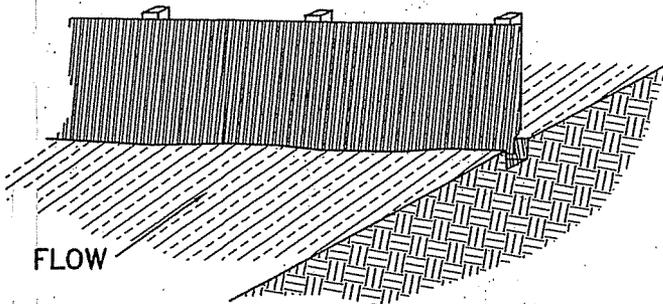
NOT TO SCALE

THE LINE OF STAKES.

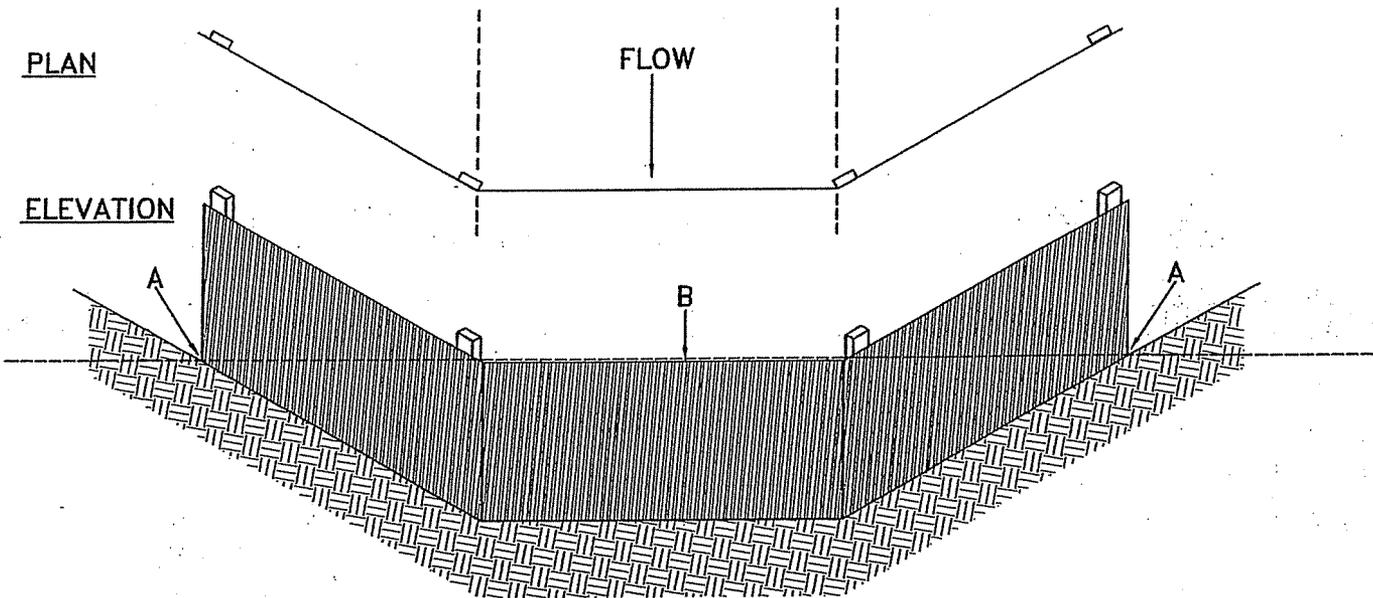


3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



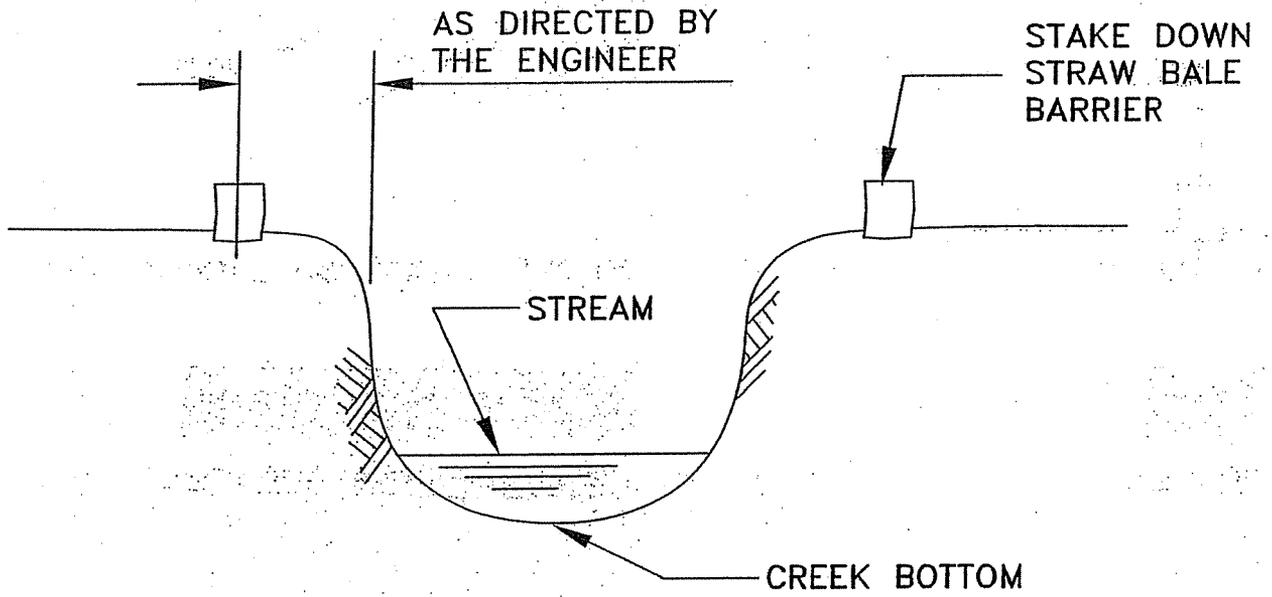
CONSTRUCTION OF A FILTER BARRIER



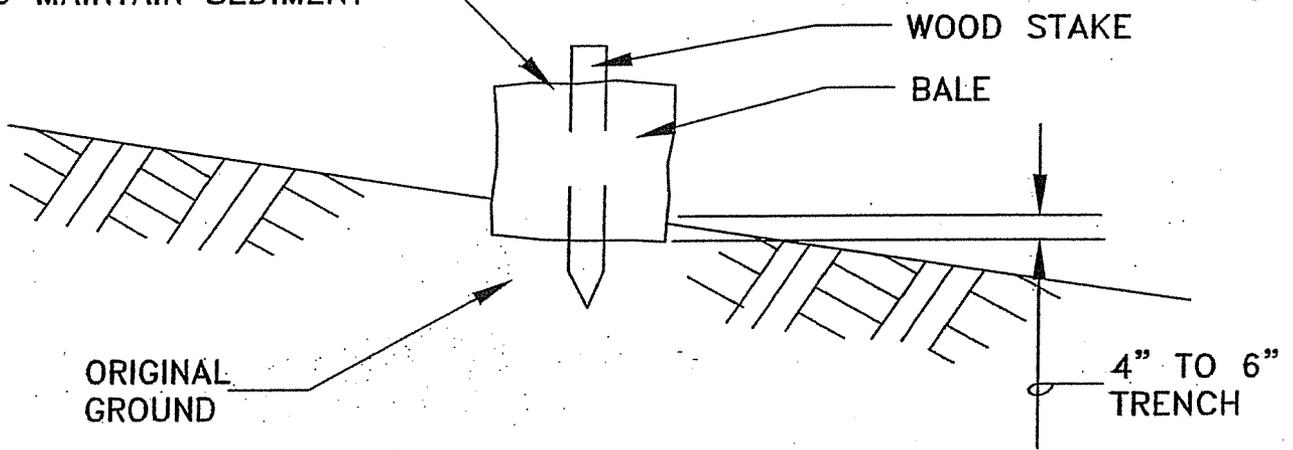
POINTS "A" SHOULD BE HIGHER THAN POINT "B".

PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

SILTATION FENCE



PLACE AND MAINTAINED CONTINUOUSLY
IS NECESSARY TO MAINTAIN SEDIMENT
CONTROL BARRIER



STRAWBALE SEDIMENT CONTROL BARRIER DETAIL

SCALE: NONE



SUITE 401
2 INTERNATIONAL PLAZA
NASHVILLE, TENNESSEE 37217

TELEPHONE: 615/366-6088
FAX: 615/366-6203

Water Management Services, LLC

ENGINEERING • PLANNING • OPERATIONS • RATE STUDIES

February 18, 2009

Ms. Lee Anne Devine
Corps of Engineers
Louisville District
P.O. Box 59
Louisville, Kentucky 40201

RE: Green River Valley Water District
EPA Funded Water Main Extensions
Stream Crossing Permit 2
(WMS No. 08191)

Dear Ms. Devine:

Transmitted herewith, on behalf of the Green River Valley Water District, is an application requesting permission to install a 3-inch CL 200; SDR 21 PVC water main across a blueline stream near Bonnierville in Hart County, Kentucky. The proposed crossing will occur across an unnamed tributary of Bacon Creek. Enclosed along with the application are a U.S.G.S. location map, a typical stream crossing detail, erosion control detail sheet, and a plan sheet copy showing the blueline crossing.

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2/10/09
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15. LOCATION OF PROJECT Hart COUNTY Kentucky STATE	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

17. DIRECTIONS TO THE SITE

SEE ATTACHED USGS MAP

18. Nature of Activity (Description of project, include all features)

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20. Reason(s) for Discharge

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21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

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22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

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24. Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

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STA 0+00
 UPON COMPLETION AND TESTING OF NEW WATER MAIN, INSTALL 4"x3" TAPPING SLEEVE AND VALVE AND CONNECT TO EXISTING 3-INCH WATER MAIN.
 NOTE: THE CONTRACTOR SHALL THOROUGHLY CLEAN AND LIGHTLY DUST THE 3"x4" TAPPING SLEEVE & VALVE, & MJ SLEEVE, ETC. WITH CALCIUM HYPOCHLORITE POWDER IN ACCORDANCE WITH AWWA C-651-88, SECTION 10 OR LATEST REVISION. THIS SHALL BE REQUIRED FOR ALL CONNECTIONS ON THIS PROJECT.

INSTALL 3" WATER LINE IN TUNNEL/BORE UNDER STATE HWY 2185

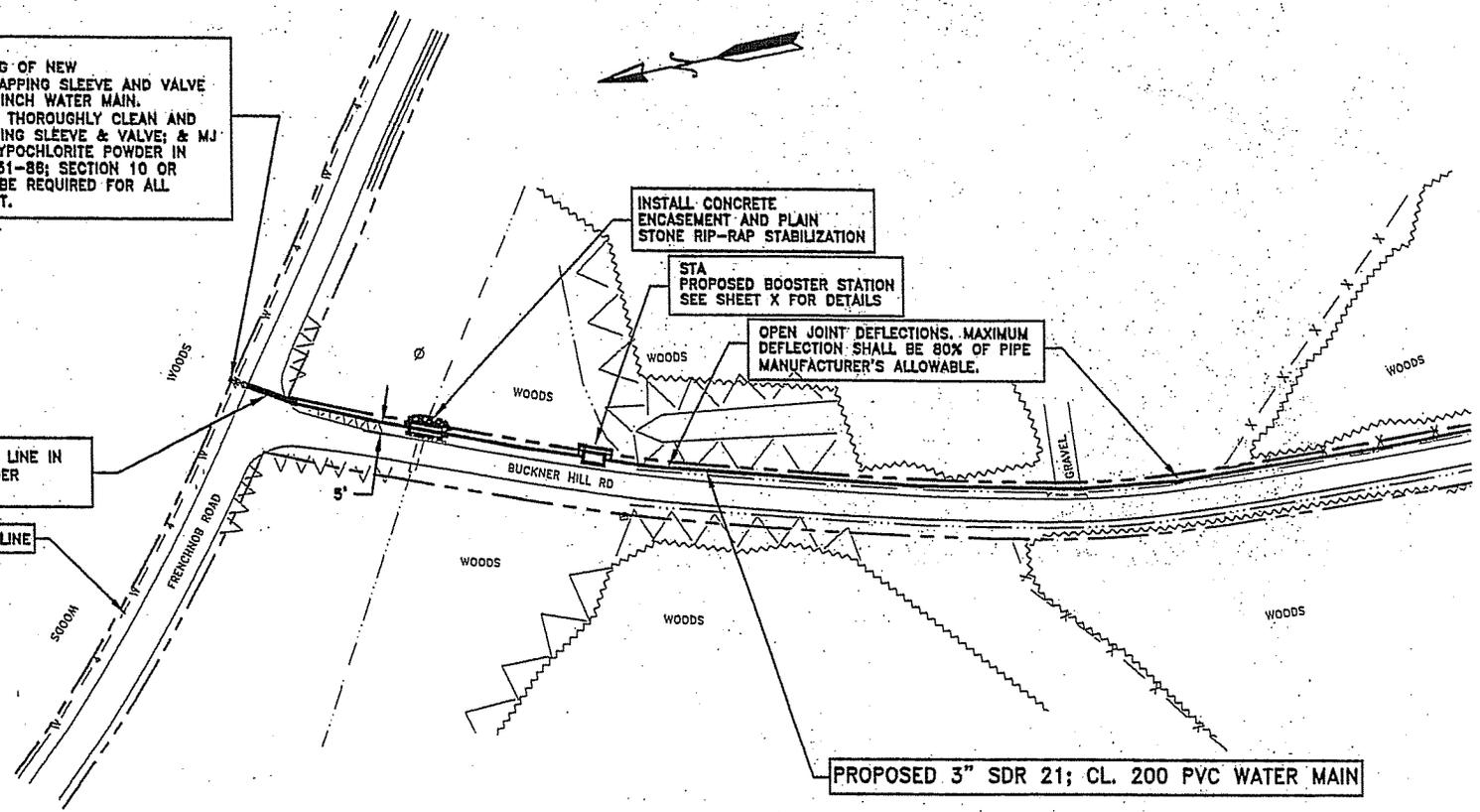
EXISTING 4" WATER LINE

INSTALL CONCRETE ENCASEMENT AND PLAIN STONE RIP-RAP STABILIZATION

STA PROPOSED BOOSTER STATION
 SEE SHEET X FOR DETAILS

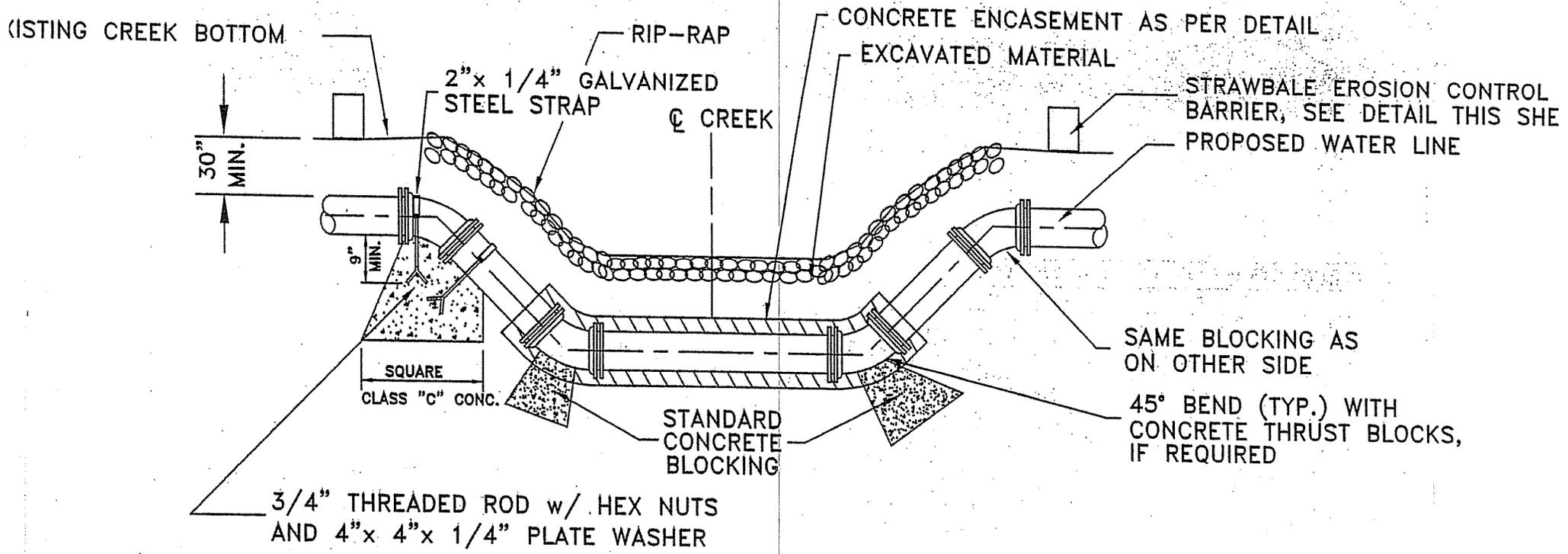
OPEN JOINT DEFLECTIONS. MAXIMUM DEFLECTION SHALL BE 80% OF PIPE MANUFACTURER'S ALLOWABLE.

PROPOSED 3" SDR 21; CL. 200 PVC WATER MAIN



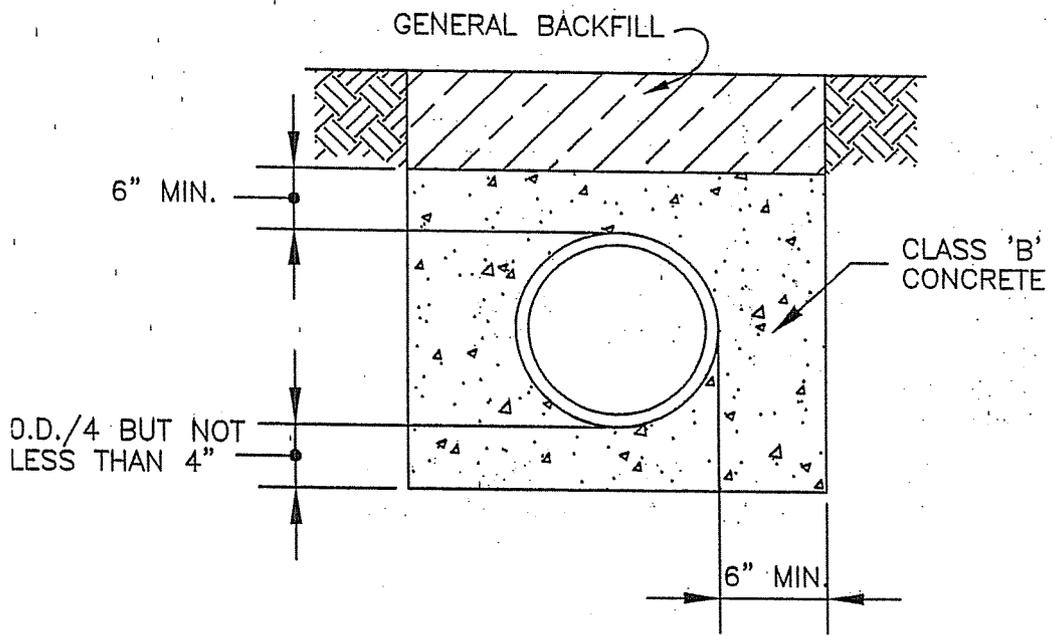
SCALE:
 1" = 100'

NOTE: FOR UPPER THRUST BLOCK ON A VERTICAL BEND, CONCRETE VOLUME SHALL BE AS APPROVED BY THE ENGINEER. COST OF STEEL STRAP & REBAR TO BE MERGED INTO UNIT PRICE BID FOR CONCRETE BLOCKING.

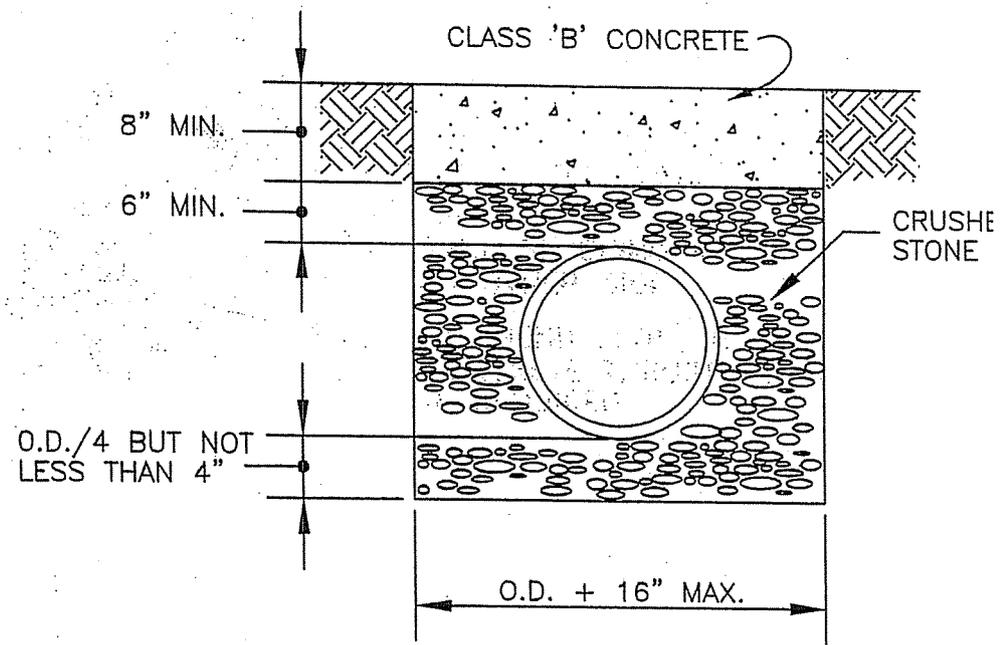


TYPICAL CREEK CROSSING

NOT TO SCALE



CONCRETE ENCASEMENT



CONCRETE CAP

NOTE: TO BE USED WHERE NOTE ON DRAWINGS REQUIRES PIPE TO BE ENCASED OR CAPPED WITH CONCRETE OR WHERE THE OWNER OR HIS AUTHORIZED REPRESENTATIVE DIRECTS CONCRETE TO BE POURED.

CONCRETE CAP AND ENCASEMENT DETAILS

NOT TO SCALE

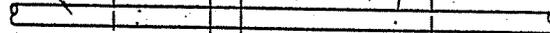
APPROPRIATE SIZE PIPE
FOR LOW FLOW WATER

FLOW

TOP OF BANK

SILT FENCE
BOTH SIDES

PROPOSED
WATER MAIN
OR SEWER MAIN



TEMPORARY SAND BAG DAM
W/ POLYETHELINE LINER.
BUILD TO HEIGHT AT NEEDED

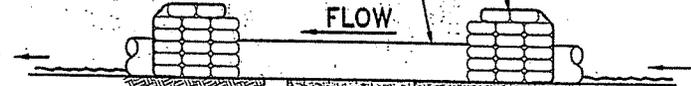
DEWATER PIT

BACKFILL DEWATER PIT
IN ROCK WITH 4000 PSI
CONCRETE OR CLEAN SHOT
LIMESTONE

APPROPRIATE SIZE PIPE
FOR LOW FLOW WATER

FLOW

TEMPORARY SAND BAG DAM
W/ POLYETHELINE LINER.
BUILD TO HEIGHT AT NEEDED



4000 PSI CONCRETE CAP

UNDISTURBED EARTH

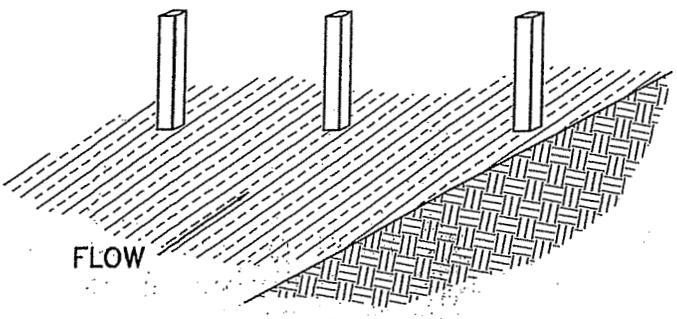
PROPOSED WATER MAIN OR
SEWER MAIN

TYPICAL LOW FLOW STREAM CROSSING DETAIL

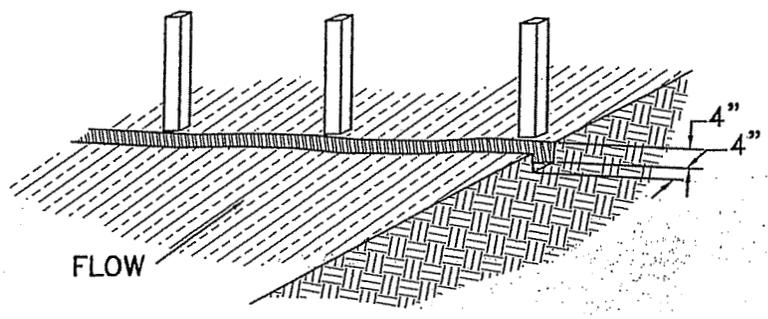
NOT TO SCALE

IF SET THE STAKES.

THE LINE OF STAKES.



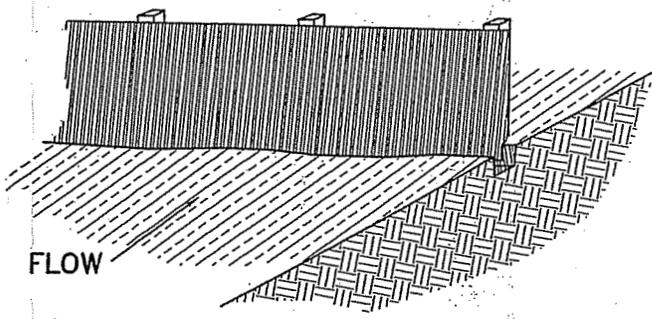
FLOW



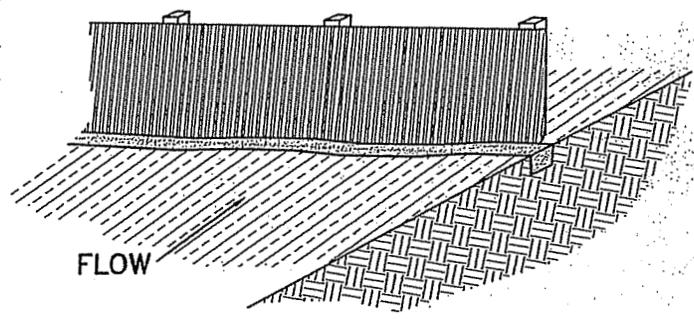
FLOW

3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

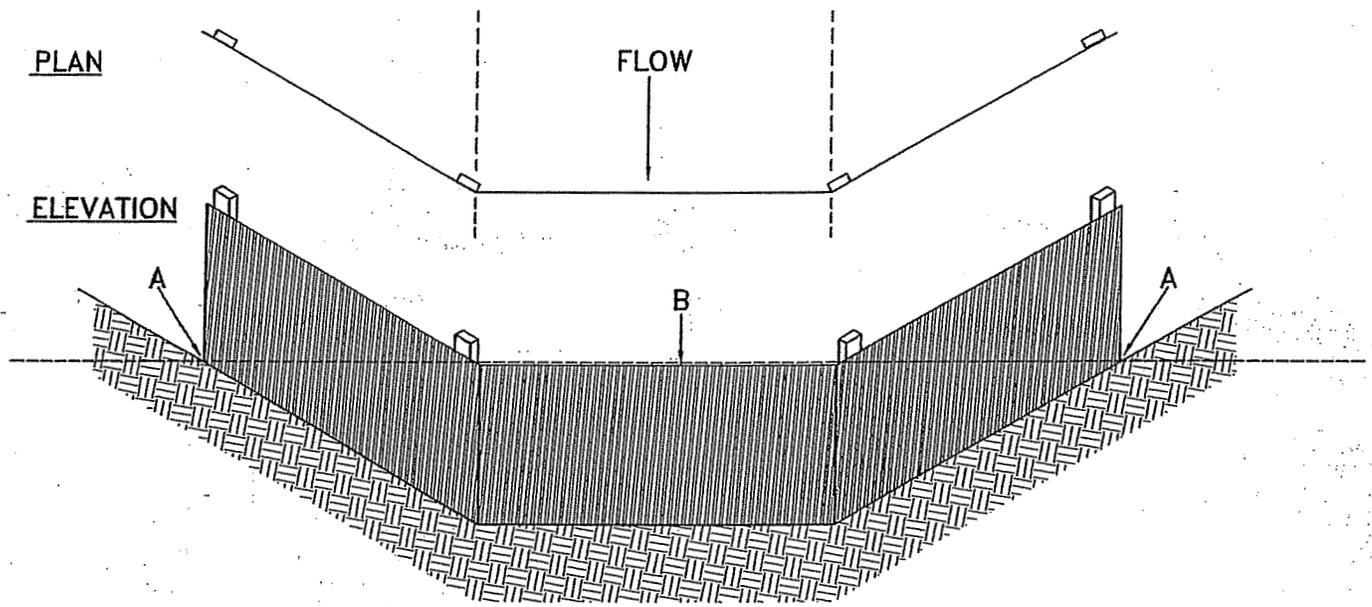


FLOW



FLOW

CONSTRUCTION OF A FILTER BARRIER



PLAN

FLOW

ELEVATION

A

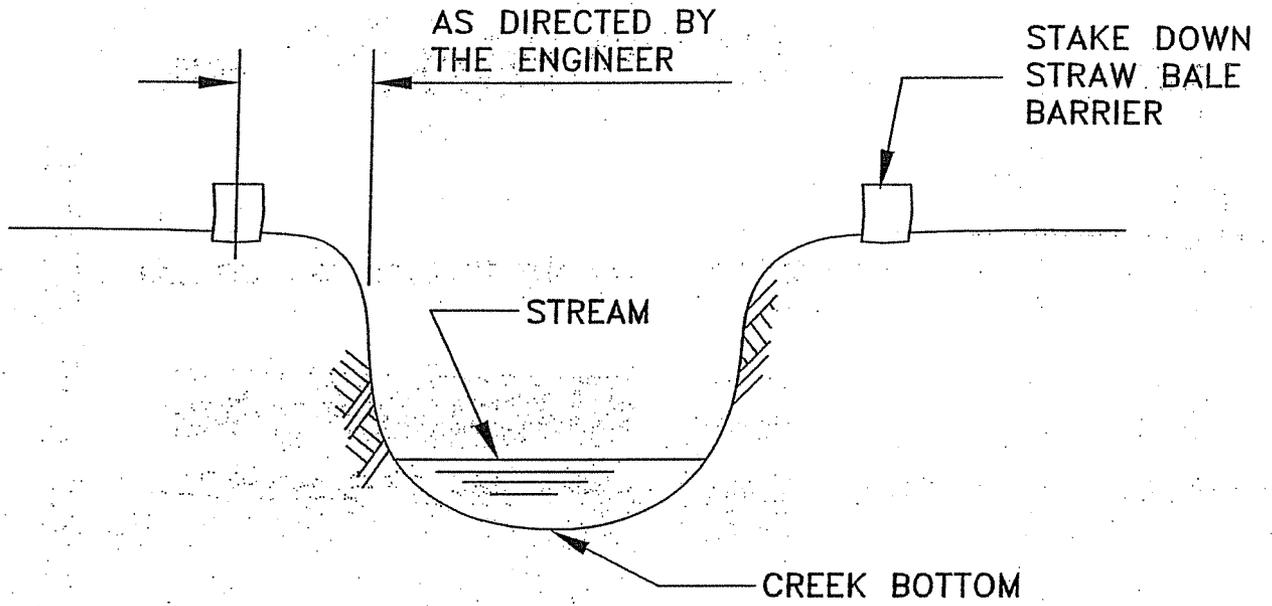
B

A

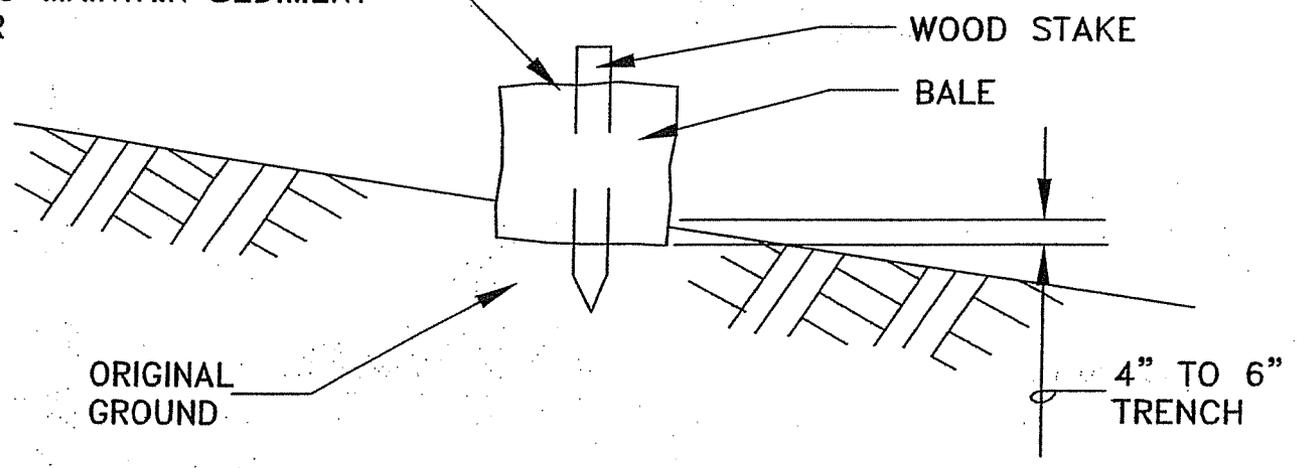
POINTS "A" SHOULD BE HIGHER THAN POINT "B".

PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

SILTATION FENCE



MAINTAINED CONTINUOUSLY
 NECESSARY TO MAINTAIN SEDIMENT
 CONTROL BARRIER



STRAWBALE SEDIMENT CONTROL BARRIER DETAIL

SCALE: NONE



SUITE 401
2 INTERNATIONAL PLAZA
NASHVILLE, TENNESSEE 37217

TELEPHONE: 615/366-6088
FAX: 615/366-6203

Water Management Services, LLC

ENGINEERING • PLANNING • OPERATIONS • RATE STUDIES

February 18, 2009

Ms. Lee Anne Devine
Corps of Engineers
Louisville District
P.O. Box 59
Louisville, Kentucky 40201

RE: Green River Valley Water District
EPA Funded Water Main Extensions
Stream Crossing Permit 3
(WMS No. 08191)

Dear Ms. Devine:

Transmitted herewith, on behalf of the Green River Valley Water District, is an application requesting permission to install a 4-inch CL 200; SDR 21 PVC water main across a blueline stream near Bonnieville in Larue County, Kentucky. The proposed crossing will occur across an unnamed tributary of Bacon Creek. Enclosed along with the application are a U.S.G.S. location map, a typical stream crossing detail, erosion control detail sheet, and a plan sheet copy showing the blueline crossing.

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Sincerely,

Tim W. Graves

TWG/atf

Enclosures

cc: Mr. David Paige, Manager, GRVWD

The public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

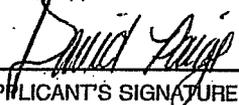
1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME Green River Valley Water District	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) David Paige - Manager
6. APPLICANT'S ADDRESS PO Box 399 Cave City, Kentucky 42127	9. AGENT'S ADDRESS PO Box 399 Cave City, Kentucky 42127
7. APPLICANT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business (270) 773-2135	10. AGENT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business (270) 773-2135

11. STATEMENT OF AUTHORIZATION

I hereby authorize Water Management Services, LLC to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


APPLICANT'S SIGNATURE

2/10/09
DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) EPA FUNDED WATER MAIN EXTENSIONS	
13. NAME OF WATERBODY, IF KNOWN (if applicable) unnamed tributary of Bacon Creek	14. PROJECT STREET ADDRESS (if applicable)
15. LOCATION OF PROJECT Larue COUNTY Kentucky STATE	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)	

17. DIRECTIONS TO THE SITE

SEE ATTACHED USGS MAP

18. Nature of Activity (Description of project, include all features)

BLUEWEE STREAM CROSSING OF UNNAMED TRIBUTARY OF BACON CREEK WITH 4" SDR 21; CL. 200 PVC WATER MAIN NEAR POLLEY ROAD + WEBB ROAD.

19. Project Purpose (Describe the reason or purpose of the project, see Instructions)

PROPOSED PROJECT IS BEING SUBMITTED TO INCREASE POTABLE WATER DISTRIBUTION FOR THE GRUWD WATER TRANSMISSION SYSTEM IN AND AROUND HART + LATWE

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

COUNTIES.

20. Reason(s) for Discharge

n/a

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

n/a

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

n/a

23. Is Any Portion of the Work Already Complete? Yes _____ No _____ IF YES, DESCRIBE THE COMPLETED WORK

n/a

24. Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

n/a

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

*Would include but is not restricted to zoning, building and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

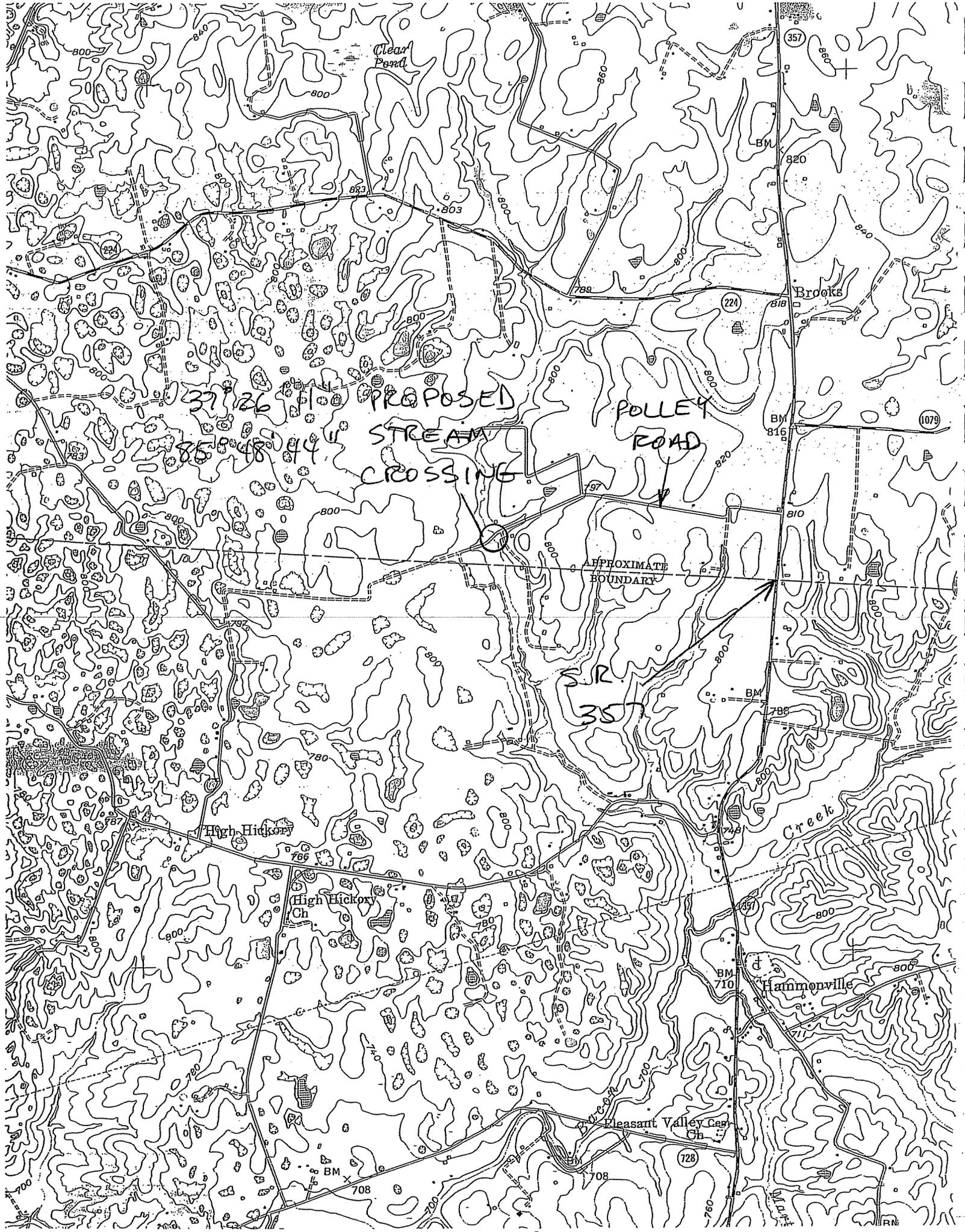
DATE

SIGNATURE OF AGENT

DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States, knowingly and willfully falsifies, conceals, or covers up any trick scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



PROPOSED
STREAM
CROSSING

POLLEY
ROAD

APPROXIMATE
BOUNDARY

S.R.
357

Clear
Pond

Brooks

High Hickory

High Hickory
Ch

Hammonville

Pleasant Valley Cem
Ch

Creek

357

224

1079

BM 816

BM 810

BM 788

BM 743

BM 710

728

BM 708

708

760

800

840

800

860

860

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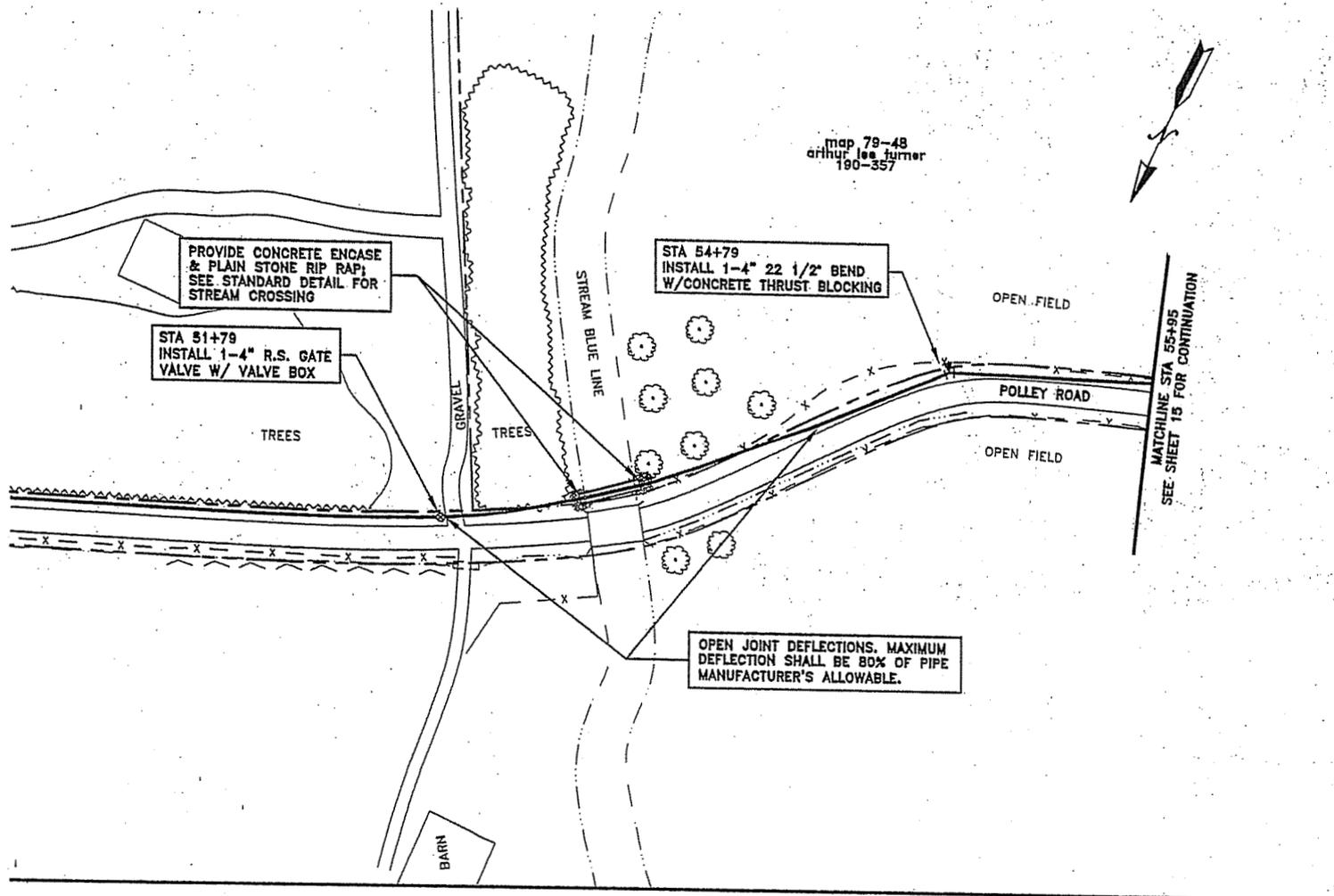
720

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720



map 79-48
 arthur lee turner
 190-357

PROVIDE CONCRETE ENCASE
 & PLAIN STONE RIP RAP;
 SEE STANDARD DETAIL FOR
 STREAM CROSSING

STA 51+79
 INSTALL 1-4" R.S. GATE
 VALVE W/ VALVE BOX

STA 54+79
 INSTALL 1-4" 22 1/2° BEND
 W/CONCRETE THRUST BLOCKING

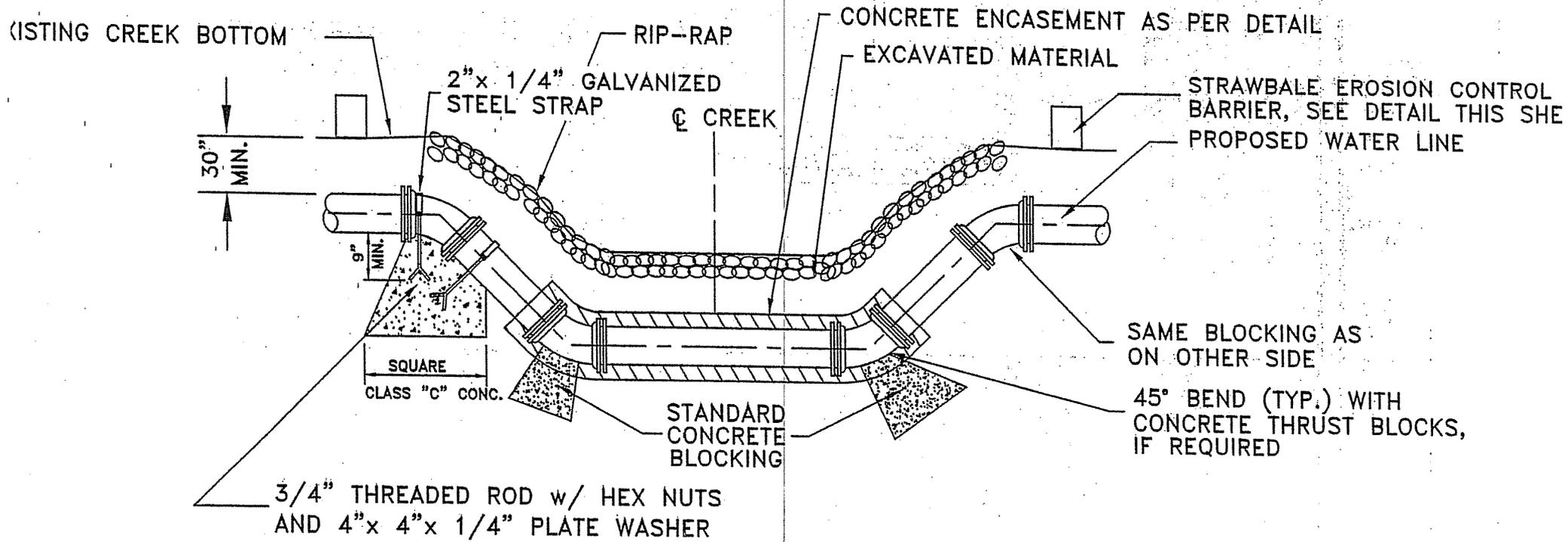
MATCHLINE STA 55+95
 SEE SHEET 15 FOR CONTINUATION

OPEN JOINT DEFLECTIONS. MAXIMUM
 DEFLECTION SHALL BE 80% OF PIPE
 MANUFACTURER'S ALLOWABLE.

DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	
SCALE	AS
PROJECT NO.	14

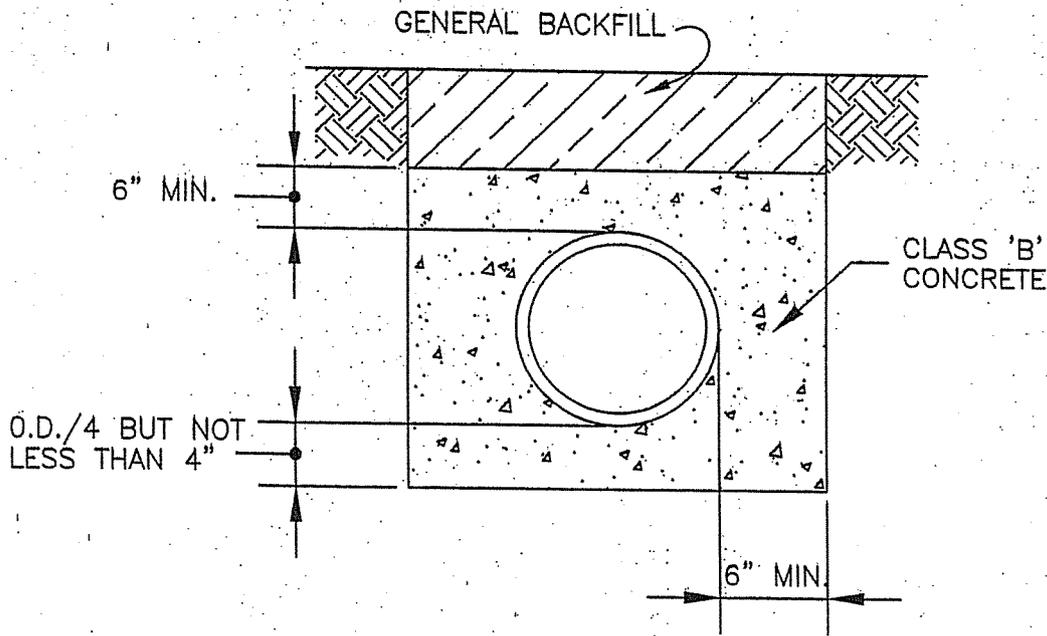
SCALE : 1" = 100'

NOTE: FOR UPPER THRUST BLOCK ON A VERTICAL BEND; CONCRETE VOLUME SHALL BE AS APPROVED BY THE ENGINEER. COST OF STEEL STRAP & REBAR TO BE MERGED INTO UNIT PRICE BID FOR CONCRETE BLOCKING.

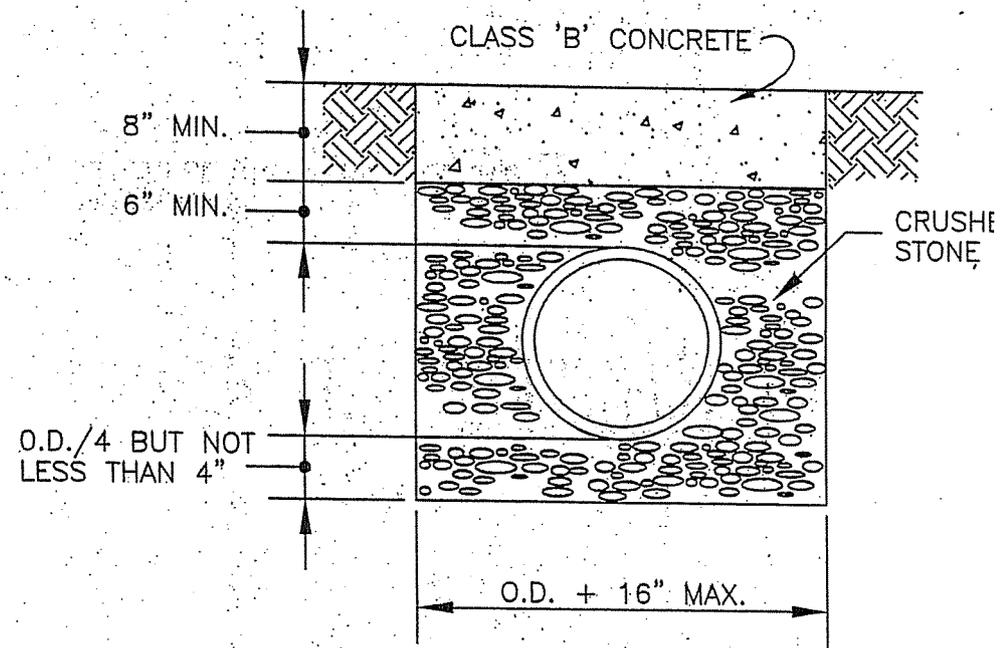


TYPICAL CREEK CROSSING

NOT TO SCALE



CONCRETE ENCASEMENT

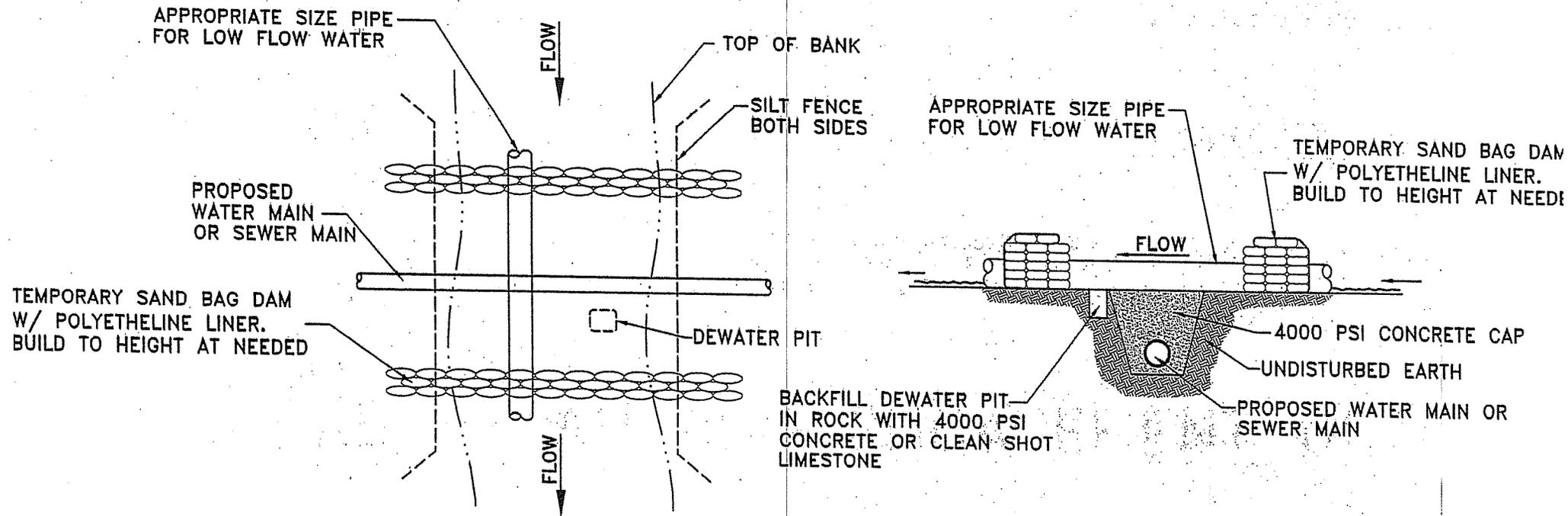


CONCRETE CAP

NOTE: TO BE USED WHERE NOTE ON DRAWINGS REQUIRES PIPE TO BE ENCASED OR CAPPED WITH CONCRETE OR WHERE THE OWNER OR HIS AUTHORIZED REPRESENTATIVE DIRECTS CONCRETE TO BE POURED.

CONCRETE CAP AND ENCASEMENT DETAILS

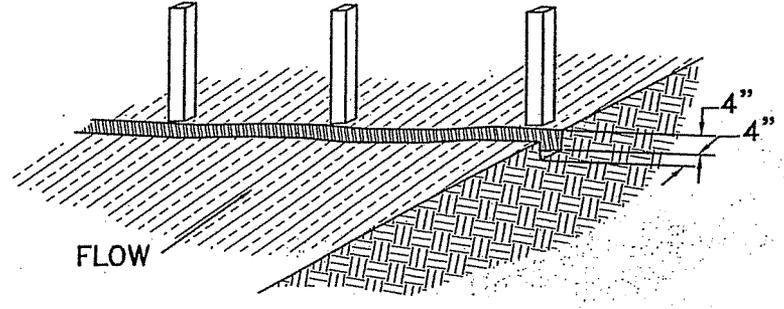
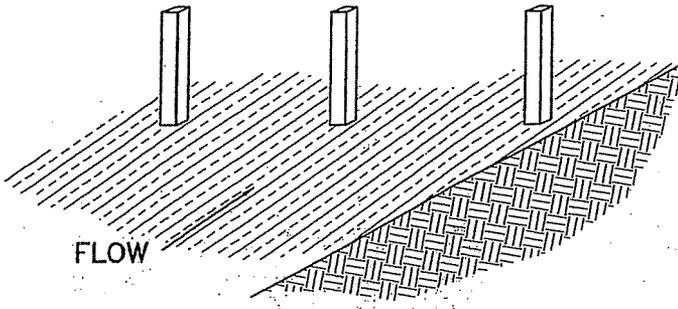
NOT TO SCALE



TYPICAL LOW FLOW STREAM CROSSING DETAIL
 NOT TO SCALE

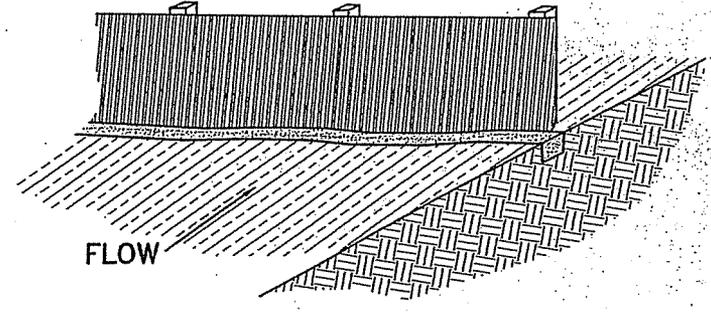
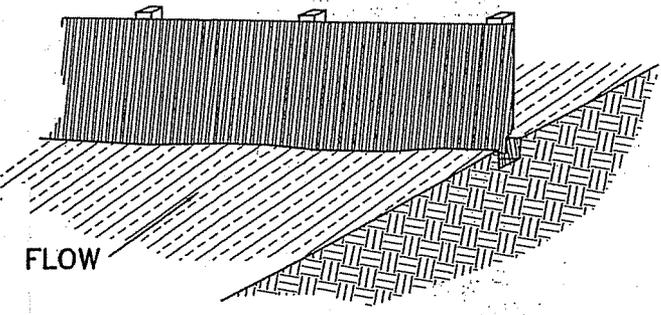
TO SET THE STAKES.

THE LINE OF STAKES.

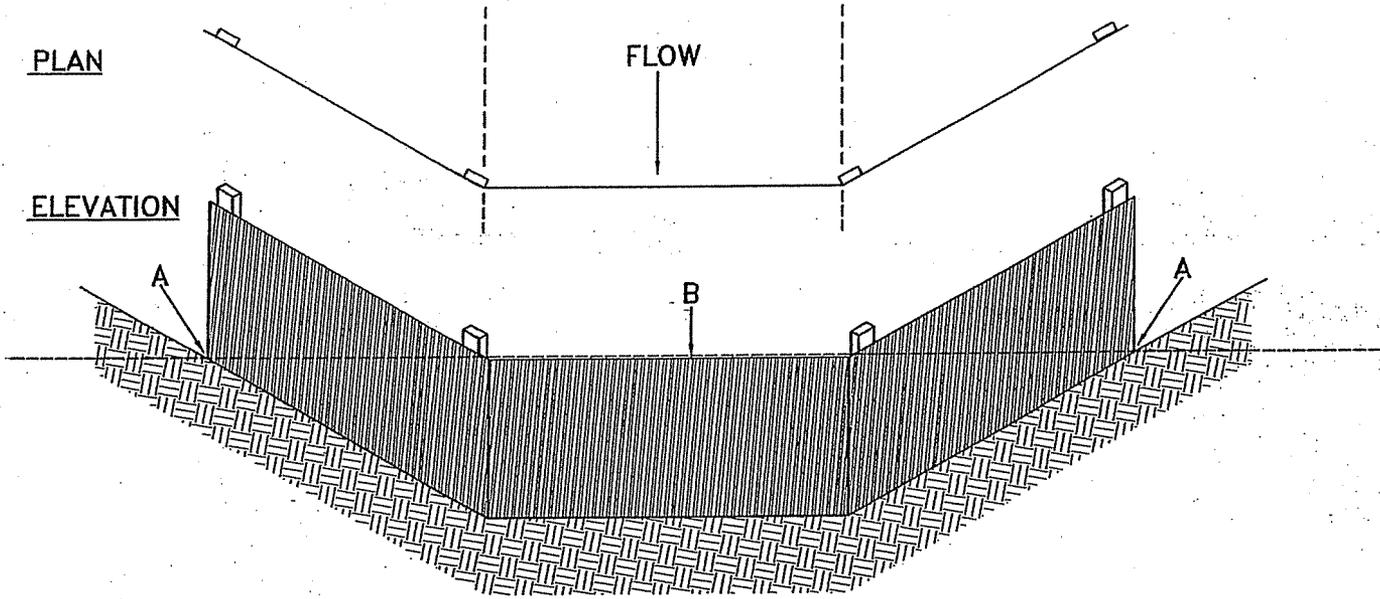


3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



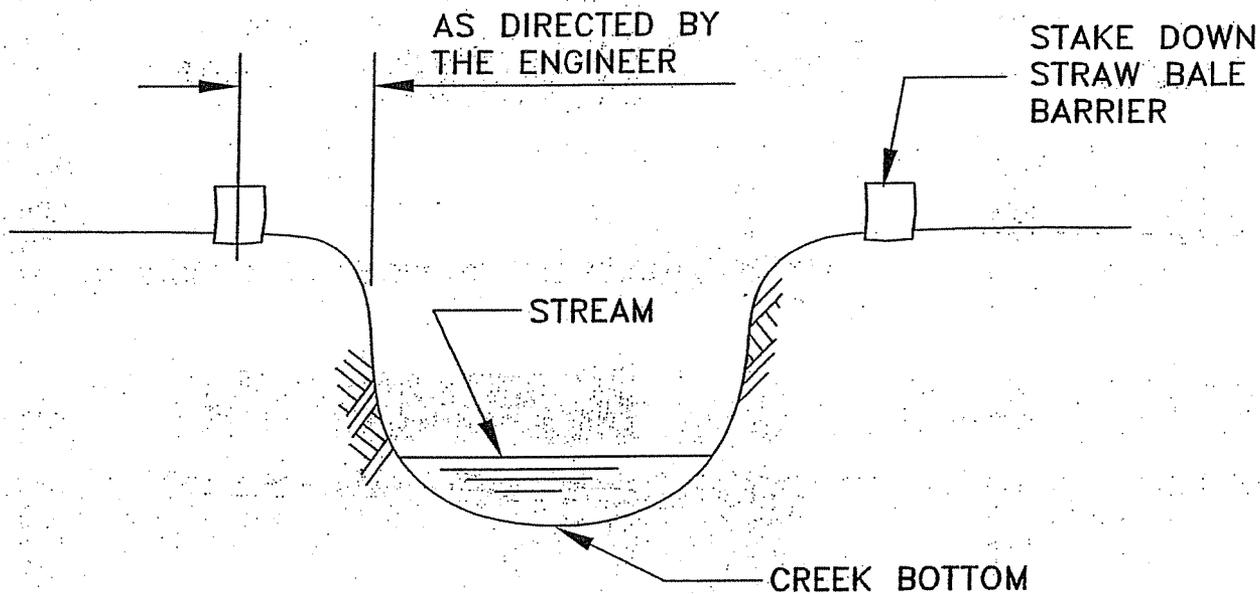
CONSTRUCTION OF A FILTER BARRIER



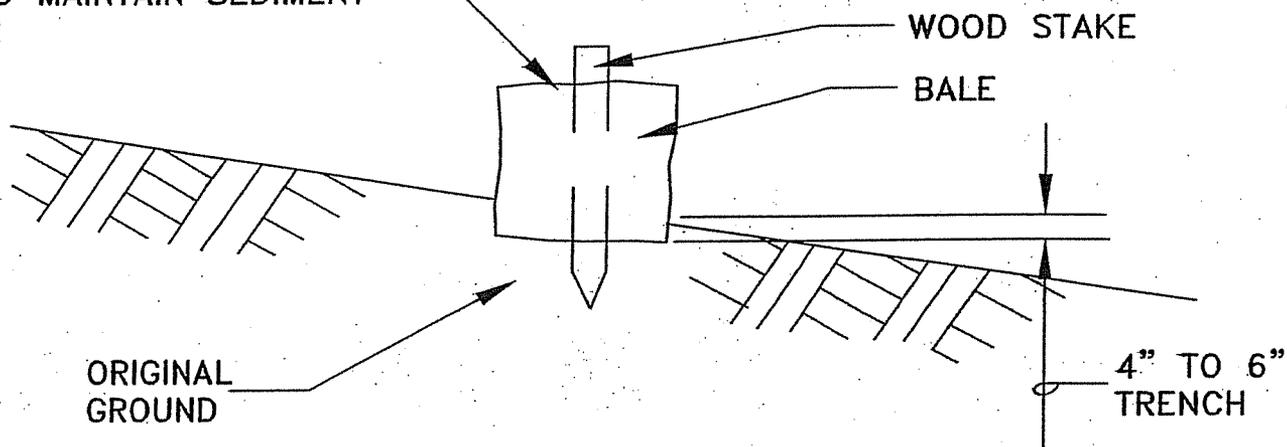
POINTS "A" SHOULD BE HIGHER THAN POINT "B".

PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

SILTATION FENCE



LACE AND MAINTAINED CONTINUOUSLY
S NECESSARY TO MAINTAIN SEDIMENT
CONTROL BARRIER



STRAWBALE SEDIMENT CONTROL BARRIER DETAIL

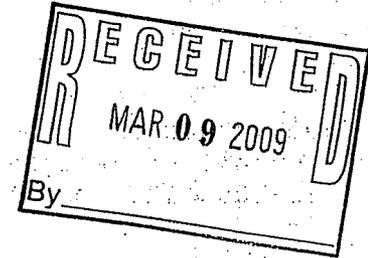
SCALE: NONE



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059
FAX: (502) 315-6677
<http://www.lrl.usace.army.mil/>

✓ # 08191

March 4, 2009



Operations Division
Regulatory Branch (South)
ID No. LRL-2009-195-let

Mr. Tim Graves
Water Management Services, LLC
2 International Plaza, Suite 401
Nashville, Tennessee 37217

Dear Mr. Graves:

This is in response to your request, submitted on behalf of the Green River Valley Water District, for authorization to install a water main across two locations of an unnamed, intermittent tributary to Bacon Creek impacting 10 linear feet (0.001 acre) at each location and one crossing of an unnamed, ephemeral tributary to Bacon Creek impacting 10 linear feet (0.001 acre). The information supplied by you was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act.

Your project is considered a discharge of backfill or bedding material for utility lines. The project is authorized under the provisions of 33 CFR 330 Nationwide Permit (NWP) No. 12, Utility Line Activities, as published in the Federal Register March 12, 2007. Under the provisions of this authorization you must comply with the enclosed:

1. Terms for Nationwide Permit No. 12;
2. Nationwide Permit General Conditions; and
3. Water Quality Certification (WQC) Conditions for Nationwide Permit No. 12 dated March 19, 2007, issued by the Kentucky Division of Water.

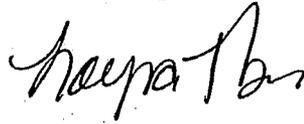
Once you obtain your certification, or if no application was required, you may proceed with the project without further contact or verification from us.

This decision is valid for 2 years from the date of this letter. The enclosed Compliance Certification should be signed and returned when the project is completed. If your project is not completed within this 2-year period or if your project is modified, you must contact us for another permit determination. A copy of this letter is being sent to the applicant and to the Kentucky Division of Water (KDOW).

Attached to this verification that your project is authorized by NWP No. 12 are a preliminary jurisdictional determination (JD), a Notification of Appeal Process (NAP) fact sheet, and Request for Appeal (RFA) form. However, a preliminary jurisdictional determination is not appealable and impacting "waters of the U.S." identified in the preliminary JD will result in you waiving your right to request an approved JD at a later date. You may request an approved JD (which may be appealed), by contacting me for further instruction.

If you have any questions, please contact this office by writing to the above address, ATTN: CELRL-OP-FS, or by calling me at (502) 315-6689. All correspondence pertaining to this matter should refer to our ID No. LRL-2009-195.

Sincerely,



Layna Thrush
Project Manager, South
Regulatory Branch

Enclosures



ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

Teresa J. Hill
Secretary

Capital Plaza Tower
500 Mero Street, 5th Floor
Frankfort, Kentucky 40601
Phone: (502) 564-5525
Fax: (502) 564-3354
www.eppc.ky.gov

General Certification--Nationwide Permit # 12 Utility Line Activities

This General Certification is effective March 19, 2007, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or (10) are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

For all other operations, 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 NATIONWIDE PERMIT 12, namely Utility Line Activities, provided that the following conditions are met:

1. This general Water Quality Certification is limited to the crossing of intermittent and perennial streams by utility lines. The length of a single utility line 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 construction of permanent or temporary access roads will impact less than 300 linear feet of intermittent and perennial streams and less than one acre of jurisdictional wetlands.
3. 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

General Certification--Nationwide Permit # 12
Utility Line Activities
Page Two

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.

4. The activities do not result in any permanent changes in pre-construction elevation contours in waters or wetlands or stream dimension, pattern or profile.
5. Utility line construction projects through jurisdictional wetlands shall not result in conversion of the area to non-wetland status.
6. Stream impacts covered under this nationwide permit and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan.
7. The activity will not occur within waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Waters, Cold Water Aquatic Habitat, or Exceptional Waters.
8. Activities that do not meet the conditions of this general certification require an individual Section 401 water quality certification.
9. Activities qualifying for coverage under this general water quality certification are subject to the following conditions:
 - Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
 - Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access. Effective erosion and sedimentation control measures must be employed at all times during the project to prevent degradation of waters of the Commonwealth. Site regrading and reseeding will be accomplished within 14 days after disturbance.
 - To the maximum extent practicable, all in stream work under this certification shall be performed during low flow.

General Certification--Nationwide Permit # 12
Utility Line Activities
Page Three

- Heavy equipment, e.g., bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances where such in stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If riprap is utilized, it is to be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when work will be done.
- Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/928-2380.

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, 2012, or sooner if the USACE makes significant changes to this nationwide permit.

Compliance Certification:

Permit Number: LRL-2009-195

Name of Permittee: Green River Valley Water District

Date of Issuance: March 4, 2009

Upon completion of the activity authorized by this permit and any mitigation required by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
CELRL-OP-FS
P.O. Box 59
Louisville, Kentucky 40201

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

TERMS FOR NATIONWIDE PERMIT NO. 12

Utility Line Activities

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade

corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility-line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

NATIONWIDE PERMIT GENERAL CONDITIONS

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work

below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation

Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NHPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NHPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NHPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NHPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NHPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) If 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48-activities requiring pre-construction notification and for other NWP-activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the

United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 2 March 2009

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Mr. Tim Graves
Water Management Services, LLC
2 International Plaza, Suite 401
Nashville, TN 37217

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CELRL, Green River Valley Water District Main Extensions, LRL-2009-195

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: (USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: KY County/parish/borough: Hart & Larue City: Bonnierville State: KY
Center coordinates of site (lat/long in degree-decimal format): Lat. 37.36° N
Long. -85.889° W

Universal Transverse Mercator:

Name of nearest waterbody: Bacon Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 30 linear feet: 2-4 width (ft) and/or acres.

Cowardin Class: Riverine

Stream Flow: Intermittent/Ephemeral

Wetlands: acres.

Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: 2 March 2009

Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply)

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Water Management Services, February 2009.

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Office concurs with data sheets/delineation report.

Office does not concur with data sheets/delineation report.

Data sheets prepared by the Corps:

Corps navigable waters' study:

U.S. Geological Survey Hydrologic Atlas:

USGS NHD data.

USGS 8 and 12 digit HUC maps.

U.S. Geological Survey map(s). Cite scale & quad name:

USDA Natural Resources Conservation Service Soil Survey. Citation:

National wetlands inventory map(s). Cite name:

State/Local wetland inventory map(s):

FEMA/FIRM maps:

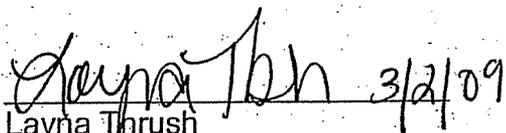
100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

Photographs: Aerial (Name & Date):
or Other (Name & Date):

Previous determination(s). File no. and date of response letter:

Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.


Layna Thrush
Regulatory Project Manager
(REQUIRED)

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

SAMPLE

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Int. 1	37.36	-85.889	Riverine	10	non-section 10 - non-wetland
Int. 2	37.352	-85.882	Riverine	10	non-section 10 - non-wetland
Eph. 1	37.437	-85.812	Riverine	10	non-section 10 - non-wetland

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: Green River Valley Water District		File Number: LRL-2009-195	Date: 4 Mar 2009
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
X	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I: The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/ccwo/reg> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:

Layna Thrush
US Army Corps of Engineers – Louisville District
PO Box 59
Louisville, KY 40201-0059
(502) 315-6689

If you only have questions regarding the appeal process you may also contact:

Mike Montone
US Army Corps of Engineers – Great Lakes and Ohio River Div
CELRD-PDS-O
550 Main Street, Rm 10032
Cincinnati, OH 45201-3222
(513) 684-6212

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.	Date:	Telephone number:
----------------------------------	-------	-------------------

ADDRESS FOR COORDINATING AGENCY

Ms. Sandra Gruzesky
Director
Kentucky Energy and Environment Cabinet
Division of Water
200 Fair Oaks, 4th Floor
Frankfort, Kentucky 40601

ADDRESS FOR APPLICANT

Mr. David Paige
Green River Valley Water District
P.O. Box 399
Cave City, Kentucky 42127



SUITE 401
2 INTERNATIONAL PLAZA
NASHVILLE, TENNESSEE 37217

TELEPHONE: 615/366-6088
FAX: 615/366-6203

Water Management Services, LLC

ENGINEERING • PLANNING • OPERATIONS • RATE STUDIES

March 9, 2009

Mr. Alan Ingram
Inventory and Data Management Section
KPDES Branch
Kentucky Division of Water
200 Fair Oaks Lane – 4th Floor
Frankfort, Kentucky 40601

RE: Green River Valley Water District
EPA Funded Water Main Extensions
WMS No. 08191

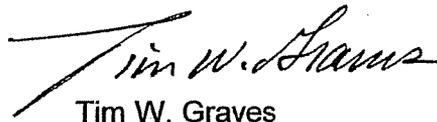
Dear Mr. Ingram:

On behalf of the Green River Valley Water District we are transmitting one copy of the KPDES - Notice of Intent for Storm Water Discharges for the Green River Valley Water District's EPA Funded Water Main Extensions project. Also included is a half sized set of the design drawings.

This project proposes the construction of approximately 73,350 linear feet of 3" & 4" PVC water main piping in the Munfordville/Bonnieville/Hart County area.

If additional information is required please call me at 366-6088 or email me at tgraves@wmsengineers.com. Upon your review, please email me and send your approval letter to me for distribution to the appropriate parties.

Sincerely,


Tim W. Graves

TWG/atl

Enclosures

ccs: Mr. David Paige, Manager, GRVWD

STORM WATER POLLUTION PREVENTION PLAN

for

Green River Valley Water District

EPA FUNDED WATER MAIN EXTENSIONS

Prepared by:

Water Management Services, LLC

March 3, 2009

WMS No. 08191

GREEN RIVER VALLEY WATER DISTRICT

EPA FUNDED WATER MAIN EXTENSIONS

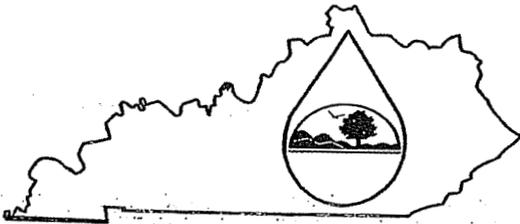
STORM WATER POLLUTION PREVENTION PLAN

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Features

1. Notice of Intent
2. Location Map
3. Prevention Plan Information
4. Notice of Termination Form
5. Project Specifications Excerpts - Erosion Control, Etc.
6. Misc. Details
7. Drainage and Erosion Control Plans (Typically a set of project plans)

KPDES FORM NOI-SW



**Kentucky Pollutant Discharge Elimination System
 (KPDES)
 Notice of Intent (NOI)
 for Storm Water Discharges
 Associated with Industrial Activity Under the
 KPDES General Permit**

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:	David Paige - Manager	Phone:	2707732135
Address:	PO Box 399	Status of Owner/Operator:	M
City, State, Zip Code:	Cave City, Kentucky 42127		

II. Facility/Site Location Information

Name:	Green River Valley Water District		
Address:	PO Box 399		
City, State, Zip Code:	Cave City, Kentucky 42127		
County:	Hart, Larue, & Green		
Site Latitude: (degrees/minutes/seconds)	37° 21' 15"	Site Longitude: (degrees/minutes/seconds)	85° 50' 35"

III. Site Activity Information

MS4 Operator Name:			
Receiving Water Body:	Green River, Bacon Creek, Lynn Camp Creek		
Are there existing quantitative data?	Yes <input type="checkbox"/> If Yes, submit with this form. No <input checked="" type="checkbox"/>		
SIC or Designated Activity Code Primary	2nd	3rd	4th
If this facility is a member of a Group Application, enter Group Application Number:			
If you have other existing KPDES Permits, enter Permit Numbers:			

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:	April 2009	Completion Date:	June 2010
Estimated Area to be disturbed (in acres):	17 acres		
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:	David Paige, Manager - Green River Valley Water District		
Signature:	<i>David Paige</i>	Date:	3/9/09

General Information

The Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) shall be kept onsite at all times during construction. For this project, erosion control and stream bank stabilization measures are shown on the project plans. Erosion control structures shall be constructed, inspected, and maintained per the requirements of this NOI/SWPPP and the project specifications. The Notice of Termination (NOT) shall be filed upon completion of the project. Construction shall be performed in such a manner as to prevent the discharge of polluted water into any stream or wetland. This plan may be amended to accommodate unforeseen circumstances during the course of the project. If amendments are made to the plan the changes will be implemented within 7 days.

Erosion control measures placed by other entities in the vicinity of this project shall be protected from damage. If temporary removal of other existing erosion control measures are required to facilitate construction, they shall be replaced as soon as possible in equal or better condition. The original installer or entity responsible for the maintenance of the erosion control measures shall be notified prior to removal.

1. Site and Project Descriptions

- 1a. The project is in and around the Munfordville/Bonnieville/Hart County area with some work in Larue and Green Counties:

The project consists of the installation of approximately 73,350 feet of new 3" & 4" CL 200 PVC water main.

- 1b. Work should proceed in the following sequence:

- >Mobilization and delivery of equipment and materials to the site
- >Installation of erosion control measures
- >Initial layout and/or staking if necessary
- >open cutting of trench, installation of water main in trench and backfilling
- >cleanup, grading, and seeding of disturbed areas
- >final inspection

- 1c. The total area expected to be disturbed is approx. 17.00 ac. The majority of the disturbance will be simple open cut trench.

- 1d. Topography: N/A

- 1e. (omitted)

- 1f. Runoff coefficient for the project area is estimated at 0.2. This figure should remain unchanged after the project as the open cut trench will be restored to its original condition by grading, seeding, and strawing.

- 1g. Drainage map: See project plans, if applicable.

- 1h. No other discharge besides storm water should be generated by the execution of this project.

- 1i. Alteration to streams and / or wetlands and current ARAP tracking number: N/A

- 1j. The receiving body of any storm water runoff is primarily the Green River, Bacon Creek, and Lynn Camp Creek. There are no known wetlands (0 acres) affected on this project.

- 1k. Buffer zones for waters of the State: N/A
- 1l. Residential projects: N/A
- 1m. Projects of 50 acres or more, phase descriptions: N/A
- 1n. Protection of undisturbed areas: N/A

2. Erosion and Sediment Controls

2a. General Criteria

Erosion and sediment control measures for this project may include but are not limited to silt fences, straw bale barriers, check dams, detention areas, and trench plugs (subterranean earthen or concrete check dams). These devices will be properly installed according to manufacturer's recommendations and per State requirements. Sediment which escapes the project site will be recovered before entry into any storm sewer structure or stream. Sediment control structures will be inspected and maintained per State requirements of this permit and before 50% of capacity is reached. Litter, construction debris, etc. will be routinely collected and disposed of in such a manner as not to enter storm water, drainage features, streams, or interfere with sediment control devices.

Offsite material storage areas are subject to the same sediment and erosion control measures as the main project location. Existing vegetation in the project area shall not be disturbed more than 10 days prior to beginning earthwork unless the area is seeded and/or mulched or protected by temporary ground cover. Clearing and grubbing shall be kept to the minimum necessary for grading and equipment operation. Sound construction practices will be utilized by minimizing the exposure time of graded or exposed areas. Erosion and sediment control measures shall be in place prior to any actual earthwork begins and maintained throughout the life of the project. Temporary erosion control devices may be removed for work but will be replaced or restored before the end of the work day or before any imminent rainfall event.

No more than 50 acres of active soil disturbance is allowed at any one time during the construction project. Projects over 50 acres must be constructed in phases and completed areas must be stabilized within 15 days of completion.

The following records will be maintained: Dates of major grading, dates when construction is temporarily or permanently ceased on a portion of the site, and dates when stabilization measures are initiated.

2b. Stabilization Practices

Sound stabilization practices will be an integral part of the project from the onset of construction. This will include but not be limited to preserving natural turf, trees, and other vegetation whenever possible, careful placement of overburden within protected areas, geotextiles, sodding, and use of stone rip-rap on stream banks in a timely manner after backfilling operations are complete. Permanent soil stabilization (ie. seeding and strawing) shall be implemented as soon as possible after completion of grading. No stabilization, erosion, or treatment measures are to be installed in a stream without obtaining an ARAP.

2c. Structural Practices

Erosion and sediment control devices for this project shall include but not be limited to silt fencing, straw bale barriers, check dams, and temporary silt basins, etc. as shown on the erosion control plans. These devices shall be installed per State requirements of which details are included herein.

Discharges from the sedimentation basins shall be through pipe or grassy or lined channels. Muddy water pumped from the construction area shall be held in the basins for settling prior to releasing.

2d. Storm Water Management

Upon completion of the water main installation all trenches shall be finish graded, seeded, and strawed. This method is a standard procedure for finishing utility line installations and will ultimately provide permanent stabilization as the turf will have been restored to its original condition. Stone rip-rap will remain in place along disturbed areas of the stream bank as permanent stabilization. These measures will in no way affect the original hydrological regime of the local waters.

2e. Other Items Needing Control

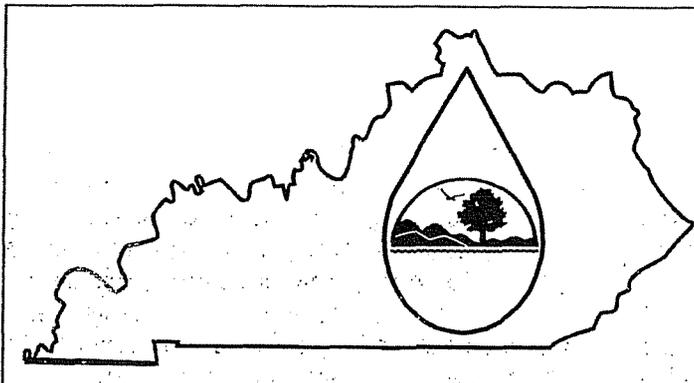
No solid waste materials shall be discharged into the stream or its drainage features. Offsite vehicular tracking of sediments shall be minimized. Excess concrete will not be "washed out" from concrete trucks onsite.

Vehicular access points to the site shall also be inspected for offsite sediment tracking.

3. Inspection and Maintenance

The erosion and sediment control structures shall be inspected and maintained regularly. Inspections shall be performed by the permittee (Contractor) at least twice per calendar week and at least 72 hours apart and repairs made if necessary. In general, any control measures in disrepair shall be replaced, modified, or repaired as necessary before the next rain event but in no case more than 7 days after the problem is identified.

Inspections shall be documented utilizing the standard form included herein. The form shall be prepared, signed, and maintained on site and be available upon request. Instructions for preparing the inspection form are included on said form.



Kentucky Pollutant Discharge
Elimination System (KPDES)

NOTICE OF TERMINATION (NOT)
of Coverage Under the KPDES
General Permit for Storm Water
Discharges Associated with
Industrial Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the KPDES program.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.
(Please see instructions on back before completing this form.)

I. PERMIT INFORMATION

KPDES Storm Water General Permit Number: _____

Check here if you are no longer the Operator of the Facility:

Check here if the Storm Water Discharge is Being Terminated:

II. FACILITY OPERATOR INFORMATION

Name: _____

Address: _____

City/State/Zip Code: _____

Telephone Number: _____

III. FACILITY/SITE LOCATION INFORMATION

Name: _____

Address: _____

City/State/Zip Code: _____

Certification: I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a KPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity of waters of the Commonwealth is unlawful under the Clean Water Act and Kentucky Regulations where the discharge is not authorized by a KPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Kentucky Revised Statutes.

NAME (Print or Type)	TITLE
SIGNATURE	DATE

SPECIAL CONDITIONS OF CONTRACT

1. Construction Operations and Material Storage

The Contractor must carry on all his construction operations, including storage of materials, in such a way as to interfere as little as possible with the operation and maintenance of existing water or wastewater treatment facilities.

2. Soil Erosion and Sediment Control

2.1 The Contractor shall plan and control his construction operations to minimize all soil erosion and the siltation of drains and streams resulting from such erosion. All methods used for such control shall be approved by the Engineer.

2.2 The Contractor's attention is directed to Division G, Section 3 (Construction) - "Slope Protection and Erosion Control." This provision will be required on this project. All work shall be performed in full compliance with requirements of the Commonwealth of Kentucky - Division of Natural Resources. The Contractor shall provide and use all measures necessary to comply with State regulations. No separate payment will be made for this work.

2.3 Where the Contractor's operations subject soil to erosion by the wind, he shall control such erosion by approved methods until affected areas can be seeded and mulched.

3. Project Sign

3.1 The Contractor shall furnish and erect one sign at an appropriate place on the project site as approved by the Engineer. The Contractor shall be responsible for protecting and maintaining the sign in good condition throughout the life of the project.

3.2 The sign will be fabricated of good quality 1-inch exterior plywood with suitable frames and posts. A 4-inch x 1¼-inch molding strip shall be placed around the outer edge projecting over the face of the sign. The entire woodwork shall be given a prime coat and final coats of high-grade sign enamel. The sign shall be not less than 4 feet by 8 feet and shall contain, at a minimum, the name of the Owner and its Officials, Project Name and Number, Contractor and Engineer. Layout of the sign shall be approved by the Engineer before painting. Lettering shall be done by a professional painter.

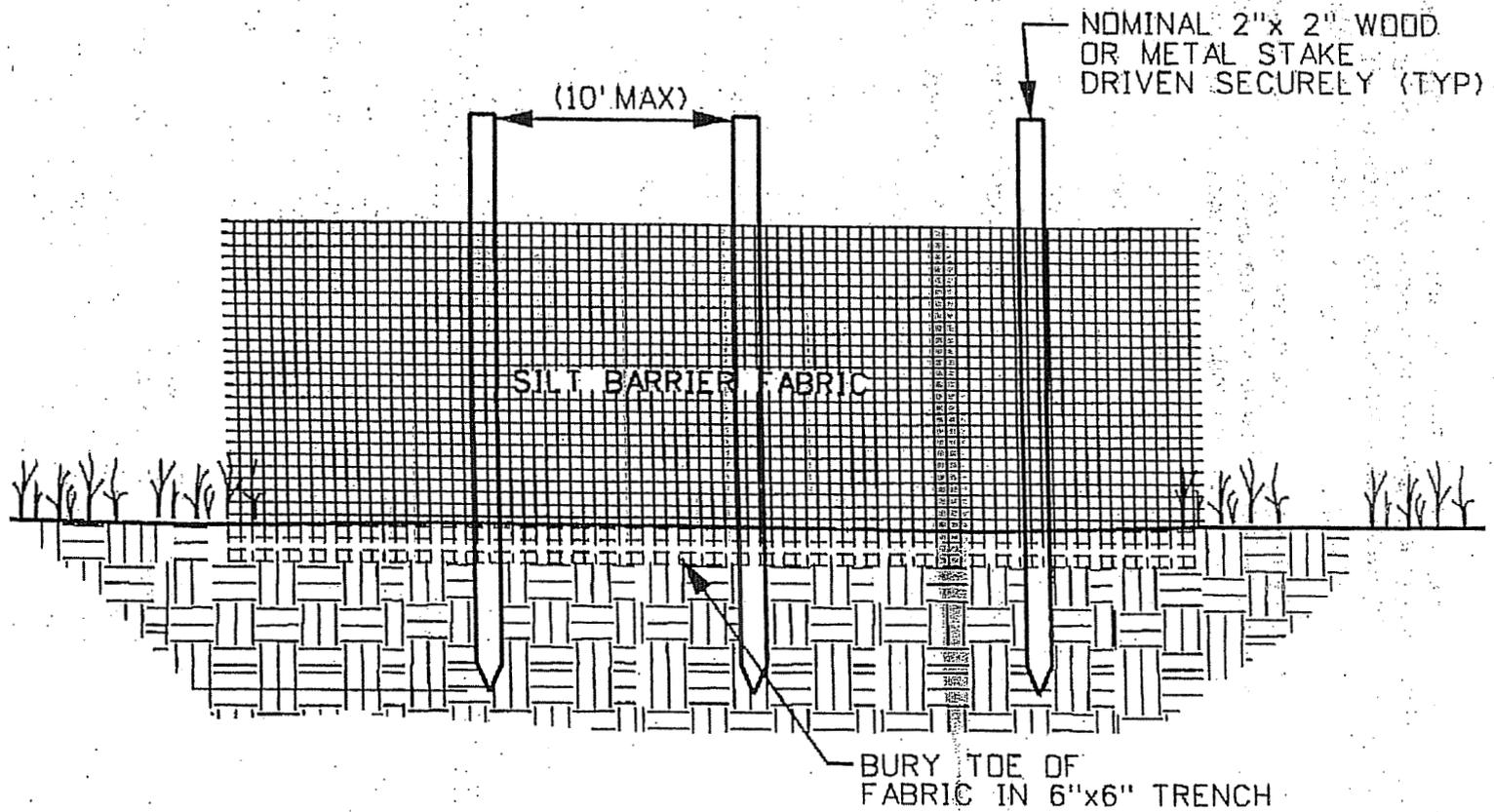
4. Contract Drawings

The Drawings applicable to the work to be performed under this Contract are referred to in this document as Contract Drawings and described as follows:

GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

EPA FUNDED WATER MAIN EXTENSIONS
(PROJECT C)

The sheet index and titles of all Drawings appear on the index sheet of the Contract Drawings.



SILT FENCE

N.T.S.

Excavation for all bores on this project shall be unclassified and no distinction made between rock and other materials excavated, with the cost of excavation merged into the unit price per foot of pipe in bore. Refer to casing pipe specifications in Materials.

7. SLOPE PROTECTION AND EROSION CONTROL

This section shall consist of temporary control measures as shown in the Drawings or directed by the Engineer or as required by the Commonwealth of Kentucky Division of Natural Resources during the life of the Contract to control erosion and water pollution through the use of hay bales and other control devices.

The temporary pollution control provisions contained herein shall be coordinated with the permanent erosion control features to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.

- a. Baled hay or straw erosion checks are temporary measures to control erosion and prevent siltation. Bales shall be either hay or straw containing five (5) cubic feet or more of material.

Baled hay or straw checks shall be used where the existing ground slopes in ditches or other areas where siltation erosion or water run-off is a problem.

- b. Baled hay or straw erosion checks - Hay or straw erosion checks shall be embedded in the ground 4 to 6 inches to prevent water flowing under them. The bales shall also be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales can remain in place until they rot or can be removed after they have served their purpose, as determined by the Engineer. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris clean-out will be considered routine maintenance.

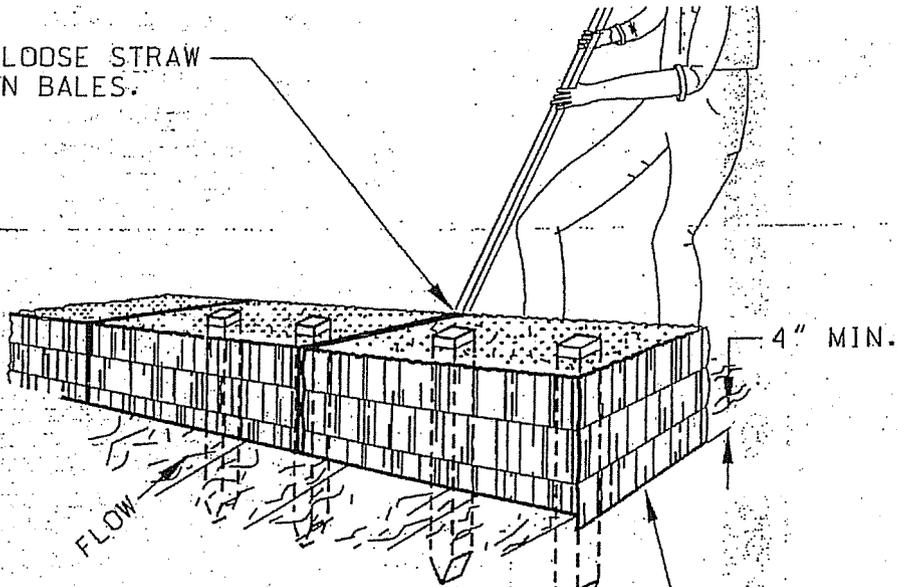
- c. Temporary silt fences - Silt fences utilizing posts, filter cloth (burlap or plastic filter fabric, etc.) or other approved materials are temporary measures for erosion control. These fences shall be installed to retain suspended silt particles in the run-off water.

- d. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or permanent erosion control methods are installed. Any materials removed shall become the property of the Contractor.

In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense.

- e. Erosion control outside project area - Temporary pollution control shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads and equipment storage sites. Bid price in such cases shall include all necessary clearing and grubbing, construction incidentals, maintenance, and site restoration when no longer needed.
- f. No separate measurement and payment will be made for this work. It will be considered a subsidiary obligation of the Contractor under other bid items to which it reflects.

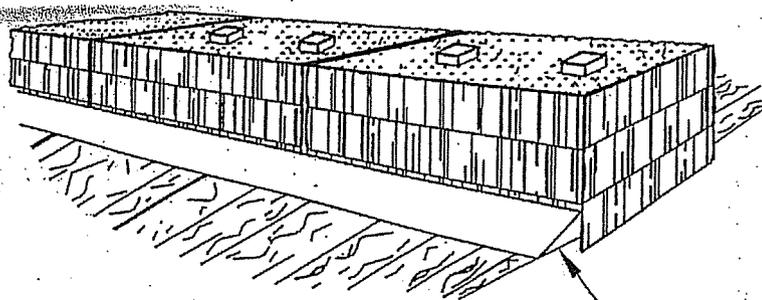
WEDGE LOOSE STRAW
BETWEEN BALES.



4" MIN.

PLACE AND STAKE
STRAW BALES

EXCAVATE TRENCH
WIDTH FOR BALE



BACKFILL AND COMPACT
THE EXCAVATED SOIL

STRAW BALE INSTALLATION

N.T.S.



08191

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

STREAM CONSTRUCTION PERMIT

For Construction In Or Along A Stream

Issued to: Green River Valley Water District
Address: PO Box 399
Cave City, KY 42127

Permit expires on
February 27, 2010

Permit No. 17693

In accordance with KRS 151.250 and KRS 151.260, the Environmental and Public Protection Cabinet approves the application dated February 23, 2009 for Installation of a subfluvial water main stream crossing in the floodplain of an unnamed tributary to Bacon Creek at about stream mile 1.7, with coordinates 37.436409, -85.812468, in Larue County.

There shall be no deviation from the plans and specifications submitted and hereby approved unless the proposed change shall first have been submitted to and approved in writing by the Cabinet. This approval is subject to the attached limitations. **Please read these limitations carefully!** If you are unable to adhere to these limitations for any reason, please contact this office prior to construction.

This permit is valid from the standpoint of stream obstruction only. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. Specifically if the project involves work in a stream, such as bank stabilization, dredging, relocation, or in designated wetlands, a 401 Water Quality Certification from the Division of Water will be required.

This permit is nontransferable and is not valid unless actual construction of this authorized work is begun prior to the expiration date noted above. Any violation of the Water Resources Act of 1966 as amended is subject to penalties as set forth in KRS 151.990.

If you have any questions regarding this permit, please call Mr. Jim Oerther at (502) 564-3410.

Issued February 27, 2009.

By:

Ron Dutta, P.E., Acting Manager
Water Resources Branch

RD/JO/kcc

pc: Bowling Green Regional Office
Tommy turner - Larue
Sam L. McIllwain, P.E.
File

Stream Construction Permit

Green River Valley Water District

Facility Requirements

Permit Number: 17693

Activity ID No.: APE20090002

STRC0000000007 (water line) Installation of a subfluvial water main stream crossing in the floodplain of an unnamed tributary to Bacon Creek at about stream mile 1.7, with coordinates 37.436409, -85.812468, in Larue County.:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Green River Valley Water District must submit final construction report: Due within 90 days after completion of construction Green River Valley Water District must notify in writing that the project has been completed in accordance with the approved plans and specifications. A Final Construction Report Form is enclosed. [401 KAR 4:060 Section 3(2)]

Narrative Requirements:

Condition No.	Condition
T-1	The existing stream flow shall be maintained at all times during construction using standard flow diversion or pump around methods. Cofferdams or other structures placed in the stream shall be removed immediately if adverse flooding conditions result or if a flooding event is imminent. [401 KAR 4:060]
T-2	The weight of the pipe and its contents during normal operationg 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. [401 KAR 4:060]
T-3	The trench shall be backfilled as closely as possible to the original contour. All excess material from the construction of the trench shall be disposed of outside of the floodplain unless the applicant has received prior approval from the cabinet to fill within the floodplain. [401 KAR 4:060]
T-4	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. [401 KAR 4:060]
T-5	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 by at least six (6) inches of concrete. [401 KAR 4:060]
T-6	This permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of the proposed construction. The applicant is liable for any damage resulting from the construction, operation, or maintenance of this project. This permit has been issued under the provisions of KRS Chapter 151.250 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. [KRS 151.250]
T-7	A copy of this permit must be available at the construction site. [KRS 151.250]

Stream Construction Permit

Green River Valley Water District

Facility Requirements

Permit Number: 17693

Activity ID No.: APE20090002

Page 2 of 2

Narrative Requirements:

Condition No.	Condition
---------------	-----------

- | | |
|------|---|
| T-8 | Any work performed by or for Green River Valley Water District that does not fully conform to the submitted application or drawings and the limitations set forth in this permit, is subject to partial or total removal and enforcement actions pursuant to KRS 151.280 as directed by the Kentucky Department for Environmental Protection. [KRS 151.280]. |
| T-9 | Any design changes or amendments to the approved plans must be submitted to the Division of Water and approved in writing prior to implementation. [KRS 151.250] |
| T-10 | Since Larue County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Green River Valley Water District must contact the local permitting agency for final approval of the construction for compliance with the requirements of the local floodplain ordinance. [401 KAR 4:060 Section 1(16)] |
| T-11 | Green River Valley Water District must use standard silt control practices in such quantity to prevent siltation of the unnamed tributary to Bacon Creek. Silt fences, rock check dams and/or straw-bales are acceptable. [KRS 224.70-110] |
| T-12 | Upon completion of construction all disturbed areas shall be seeded and mulched or otherwise stabilized to prevent erosion. [401 KAR 4:060] |
| T-13 | The entry of mobile equipment into the stream channel shall be limited as much as reasonably possible to minimize degradation of the waters of the Commonwealth. [401 KAR 4:060] |
| T-14 | Measures shall be taken to prevent possible spills of fuels and lubricants from entering the stream. [KRS 224.70-110] |
| T-15 | Construction other than as authorized by this permit shall require written approval from the Division of Water. [401 KAR 4:060] |

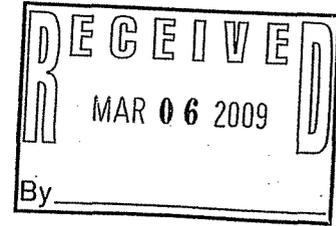


08191

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov



STREAM CONSTRUCTION PERMIT

For Construction In Or Along A Stream

Issued to: Green River Valley Water District
Address: PO Box 399
Cave City, KY 42127

Permit expires on
February 27, 2010

Permit No. 17694

In accordance with KRS 151.250 and KRS 151.260, the Environmental and Public Protection Cabinet approves the application dated February 23, 2009 for installation of a subfluvial water main stream crossing in the floodplain of an unnamed tributary to Bacon Creek about stream mile 2.1, with coordinates 37.351657, -85.882129.

There shall be no deviation from the plans and specifications submitted and hereby approved unless the proposed change shall first have been submitted to and approved in writing by the Cabinet. This approval is subject to the attached limitations. **Please read these limitations carefully!** If you are unable to adhere to these limitations for any reason, please contact this office prior to construction.

This permit is valid from the standpoint of stream obstruction only. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. Specifically if the project involves work in a stream, such as bank stabilization, dredging, relocation, or in designated wetlands, a 401 Water Quality Certification from the Division of Water will be required.

This permit is nontransferable and is not valid unless actual construction of this authorized work is begun prior to the expiration date noted above. Any violation of the Water Resources Act of 1966 as amended is subject to penalties as set forth in KRS 151.990.

If you have any questions regarding this permit, please call Mr. Jim Oerther at (502) 564-3410.

Issued February 27, 2009.

By:

Ron Dutta, P.E., Acting Manager
Water Resources Branch

RD/JO/kec

pc: Bowling Green Regional Office
Kerry McDaniels - Hart
Sam L McIlwain, P.E.
File

Stream Construction Permit

Green River Valley Water District

Facility Requirements

Permit Number: 17694

Activity ID No.: APE20090003

STRC0000000008 (water line) Installation of a subfluvial water main stream crossing in the floodplain of an unnamed tributary to Bacon Creek about stream mile 2.1, with coordinates 37.351657, -85.882129, in Hart County.:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Green River Valley Water District must submit final construction report: Due within 90 days after completion of construction Green River Valley Water District must notify in writing that the project has been completed in accordance with the approved plans and specifications. A Final Construction Report Form is enclosed. [401 KAR 4:060 Section 3(2)]

Narrative Requirements:

Condition No.	Condition
T-1	The existing stream flow shall be maintained at all times during construction using standard flow diversion or pump around methods. Cofferdams or other structures placed in the stream shall be removed immediately if adverse flooding conditions result or if a flooding event is imminent. [401 KAR 4:060]
T-2	The weight of the pipe and its contents during normal operation 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. [401 KAR 4:060]
T-3	The trench shall be backfilled as closely as possible to the original contour. All excess material from the construction of the trench shall be disposed of outside of the floodplain unless the applicant has received prior approval from the cabinet to fill within the floodplain. [401 KAR 4:060]
T-4	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. [401 KAR 4:060]
T-5	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 by at least six (6) inches of concrete. [401 KAR 4:060]
T-6	This permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of the proposed construction. The applicant is liable for any damage resulting from the construction, operation, or maintenance of this project. This permit has been issued under the provisions of KRS Chapter 151.250 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. [KRS 151.250]
T-7	A copy of this permit must be available at the construction site. [KRS 151.250]

Stream Construction Permit

Green River Valley Water District

Facility Requirements

Permit Number: 17694

Activity ID No.: APE20090003

Page 2 of 2

Narrative Requirements:

Condition No.	Condition
T-8	Any work performed by or for Green River Valley Water District that does not fully conform to the submitted application or drawings and the limitations set forth in this permit, is subject to partial or total removal and enforcement actions pursuant to KRS 151.280 as directed by the Kentucky Department for Environmental Protection. [KRS 151.280]
T-9	Any design changes or amendments to the approved plans must be submitted to the Division of Water and approved in writing prior to implementation. [KRS 151.250]
T-10	Since Hart County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Green River Valley Water District must contact the local permitting agency for final approval of the construction for compliance with the requirements of the local floodplain ordinance. [401 KAR 4:060 Section 1(16)]
T-11	Green River Valley Water District must use standard silt control practices in such quantity to prevent siltation of the unnamed tributary to Bacon Creek. Silt fences, rock check dams and/or straw-bales are acceptable. [KRS 224.70-110]
T-12	Upon completion of construction all disturbed areas shall be seeded and mulched or otherwise stabilized to prevent erosion. [401 KAR 4:060]
T-13	The entry of mobile equipment into the stream channel shall be limited as much as reasonably possible to minimize degradation of the waters of the Commonwealth. [401 KAR 4:060]
T-14	Measures shall be taken to prevent possible spills of fuels and lubricants from entering the stream. [KRS 224.70-110]
T-15	Construction other than as authorized by this permit shall require written approval from the Division of Water. [401 KAR 4:060]



08191

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STREAM CONSTRUCTION PERMIT

For Construction In Or Along A Stream

Issued to: Green River Valley Water District
Address: PO Box 399
Cave City, KY 42127

Permit expires on
February 27, 2010

Permit No. 17695

In accordance with KRS 151.250 and KRS 151.260, the Environmental and Public Protection Cabinet approves the application dated February 23, 2009 for installation of a subfluvial water main stream crossing in the floodplain of an unnamed tributary to Bacon Creek at about stream mile 1.3, with coordinates 37.359334, -85.889375, in Hart County.

There shall be no deviation from the plans and specifications submitted and hereby approved unless the proposed change shall first have been submitted to and approved in writing by the Cabinet. This approval is subject to the attached limitations. **Please read these limitations carefully!** If you are unable to adhere to these limitations for any reason, please contact this office prior to construction.

This permit is valid from the standpoint of stream obstruction only. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. Specifically if the project involves work in a stream, such as bank stabilization, dredging, relocation, or in designated wetlands, a 401 Water Quality Certification from the Division of Water will be required.

This permit is nontransferable and is not valid unless actual construction of this authorized work is begun prior to the expiration date noted above. Any violation of the Water Resources Act of 1966 as amended is subject to penalties as set forth in KRS 151.990.

If you have any questions regarding this permit, please call Mr. Jim Oerther at (502) 564-3410.

Issued February 27, 2009.

By:

Ron Dutta, P.E., Acting Manager
Water Resources Branch

RD/JO/kec

pc: Bowling Green Regional Office
Kerry McDaniels - Hart
Sam L. McIllwain, P.E.
File

Stream Construction Permit

Green River Valley Water District

Facility Requirements

Permit Number: 17695

Activity ID No.: APE20090004

STRC0000000009 (water line) Installation of a subfluvial water main stream crossing in the floodplain of an unnamed tributary to Bacon Creek at about stream mile 1.3, with coordinates 37.359334, -85.889375, in Hart County.:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Green River Valley Water District must submit final construction report: Due within 90 days after completion of construction Green River Valley Water District must notify in writing that the project has been completed in accordance with the approved plans and specifications. A Final Construction Report Form is enclosed. [401 KAR 4:060 Section 3(2)]

Narrative Requirements:

Condition No.	Condition
T-1	The existing stream flow shall be maintained at all times during construction using standard flow diversion or pump around methods. Cofferdams or other structures placed in the stream shall be removed immediately if adverse flooding conditions result or if a flooding event is imminent. [401 KAR 4:060]
T-2	The weight of the pipe and its contents during normal operations 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. [401 KAR 4:060]
T-3	The trench shall be backfilled as closely as possible to the original contour. All excess material from the construction of the trench shall be disposed of outside of the floodplain unless the applicant has received prior approval from the cabinet to fill within the floodplain. [401 KAR 4:060]
T-4	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. [401 KAR 4:060]
T-5	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 by at least six (6) inches of concrete. [401 KAR 4:060]
T-6	This permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of the proposed construction. The applicant is liable for any damage resulting from the construction, operation, or maintenance of this project. This permit has been issued under the provisions of KRS Chapter 151.250 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. [KRS 151.250]
T-7	A copy of this permit must be available at the construction site. [KRS 151.250]

Stream Construction Permit

Green River Valley Water District

Facility Requirements

Permit Number: 17695

Activity ID No.: APE20090004

Page 2 of 2

Narrative Requirements:

Condition No.	Condition
T-8	Any work performed by or for Green River Valley Water District that does not fully conform to the submitted application or drawings and the limitations set forth in this permit, is subject to partial or total removal and enforcement actions pursuant to KRS 151.280 as directed by the Kentucky Department for Environmental Protection. [KRS 151.280]
T-9	Any design changes or amendments to the approved plans must be submitted to the Division of Water and approved in writing prior to implementation. [KRS 151.250]
T-10	Since Hart County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Green River Valley Water District must contact the local permitting agency for final approval of the construction for compliance with the requirements of the local floodplain ordinance. [401 KAR 4:060 Section 1(16)]
T-11	Green River Valley Water District must use standard silt control practices in such quantity to prevent siltation of the unnamed tributary to Bacon Creek. Silt fences, rock check dams and/or straw-bales are acceptable. [KRS 224.70-110]
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T-14	Measures shall be taken to prevent possible spills of fuels and lubricants from entering the stream. [KRS 224.70-110]
T-15	Construction other than as authorized by this permit shall require written approval from the Division of Water. [401 KAR 4:060]

SUPPLEMENTAL GENERAL CONDITIONS
FOR
CLEAN WATER STATE REVOLVING FUND
DRINKING WATER STATE REVOLVING FUND
EPA SPECIAL APPROPRIATION GRANTS
(Drinking Water and Wastewater)

Project Name: _____

Project Number: _____

The attached instructions and regulations as listed below shall be incorporated into the Specifications and comprise Special Conditions.

	<u>Attachment No.</u>
SRF/EPA Special Provisions	1
Requirements for Sub-agreements Awarded by Prime Contractors	2
40 CFR 31.36 (Procurement)-grants only	3A
KRS Chapter 45A-Kentucky Model Procurement Code-loans only	3B
Equal Employment Opportunity (EEO) Documents:	
Notice of Requirement for Affirmative Action	4
Contract Specifications (Executive Order 11246)	5
EEO Goals for Region 4 Economic Areas	6
Special Notice #1 - Check List of EEO Documentation	7
Employer Information Report EEO-1 (SF 100)	8
Labor Standards Provisions for Federally Assisted Construction, EPA Form 5720-4	9
Certifications	
Debarment, Suspension and Other Responsibility Matters	10
Anti-lobbying	11
Utilization of Small, Minority and Women's Businesses	12
Region 4 Disadvantaged Business Enterprise (DBE) Negotiated Rates	13
Bonds and Insurance	14
Outlay Management Schedule	15
Storm Water General Permit	16
Wage Rates	17

These special conditions shall supersede any conflicting provisions of this contract.

EPA SPECIAL PROVISIONS

- a) The construction of the project shall conform to the applicable requirements for state, territorial and local laws and ordinances to the extent that such requirements do not conflict with Federal laws.
- b) The EPA shall have access to the site and the project.
- c) Any contract(s) awarded under this invitation for Bids are expected to be funded in part by a grant from the U.S. Environmental Protection Agency. Neither the United States nor any of its departments, agencies or employees are or will be a part to this Invitation for Bids or any resulting contract.
- d) The Method of Award is to the lowest responsible responsive bidder.
- e) A statement that the bidder must make positive efforts to use small and minority owned business and women business enterprises.

SRF SPECIAL PROVISIONS

- (a) Line crossings of all roads and streets shall be done in accordance with the Kentucky Transportation Cabinet requirements as may be set forth in the Special Conditions.
- (b) Construction is to be carried out so as to prevent by-passing of flows during construction unless a schedule has been approved by the State or EPA, whichever is applicable.
- (c) Siltation and soil erosion must be minimized during construction. All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. To apply, the contractor must submit the "Notice of Intent" form at least 48 hours prior to start of construction. See Attachment 16 for the "Notice of Intent" form.
- (d) Restore disturbed areas to original or better condition.
- (e) Use of Chemicals: All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either DOW or EPA. Use of all such chemicals and disposal of residues shall be in conformance with instructions on the manufacturer's label.
- (f) The construction of the project, including the letting of contracts in connection therewith, shall conform to the applicable requirements of state, territorial, and local laws and ordinances to the extent that such requirements do not conflict with Federal laws and this subchapter.
- (g) The owner shall provide and maintain competent and adequate supervision and inspection.
- (h) The Kentucky Infrastructure Authority and Kentucky Division of Water shall have access to the site and the project work at all times.
- (i) In the event Archaeological materials (arrowheads, stone tools, stone axes, prehistoric and historic pottery, bottles, foundations, Civil War artifacts, and other types of artifacts) are uncovered during the construction of this project, work is to immediately cease at the location and the Kentucky Heritage Council shall be contacted. The telephone number is (502) 564-7005. Construction shall commence at this location until a written release is received from the Kentucky Heritage Council. Failure to report a find could result in legal action.

GRANT REQUIREMENTS FOR SUB-AGREEMENTS
AWARDED BY A PRIME CONTRACTOR

A contractor must comply with the following provisions in its award of sub-agreements. (This section does not apply to a supplier's procurement of materials to produce equipment, materials and catalog, off-the-shelf, or manufactured items.)

- (a) 40 CFR Part 32 (Debarment and Suspension Under EPA Assistance Programs);
- (b) The limitations and sub-agreement award in 40 CFR 31.35, and 31.36(i) (3,4,6,10,12) ;
- (c) The requirement for small, small rural, minority, women's and labor surplus area business in 40 CFR 31.36(e);
- (d) The specifications requirements of 40 CFR 31.36(c) (1);
- (e) The Federal cost principles in 40 CFR 31.22 and 31.36(f)(3);
- (f) The prohibited types of sub-agreements in 40 CFR 31.36(f)(4);
- (g) 40 CFR Part 34 (Anti-Lobbying under EPA Assistance Programs).

**TITLE 40--PROTECTION OF ENVIRONMENT
CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY**

**PART 31--UNIFORM ADMINISTRATIVE REQUIREMENTS FOR GRANTS AND
COOPERATIVE AGREEMENTS TO STATE AND LOCAL GOVERNMENTS**

Subpart C--Post-Award Requirements

Sec. 31.36 Procurement.

(a) States. When procuring property and services under a grant, a State will follow the same policies and procedures it uses for procurements from its non-Federal funds. The State will ensure that every purchase order or other contract includes any clauses required by Federal statutes and executive orders and their implementing regulations. Other grantees and sub-grantees will follow paragraphs (b) through (i) in this section.

(b) Procurement standards. (1) Grantees and sub-grantees will use their own procurement procedures which reflect applicable State and local laws and regulations, provided that the procurements conform to applicable federal law, the standards identified in this section, and if applicable, Sec. 31.38.

(2) Grantees and sub-grantees will maintain a contract administration system which ensures that contractors perform in accordance with the terms, conditions, and specifications of their contracts or purchase orders.

(3) Grantees and sub-grantees will maintain a written code of standards of conduct governing the performance of their employees engaged in the award and administration of contracts. No employee, officer or agent of the grantee or sub-grantee shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

(i) The employee, officer or agent,

(ii) Any member of his immediate family,

(iii) His or her partner, or

(iv) An organization which employs, or is about to employ, any of the above, has a financial or other interest in the firm selected for award. The grantee's or sub-grantee's officers, employees or agents will neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors, or parties to sub-agreements. Grantee and sub-grantees may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal intrinsic value. To the extent permitted by State or local law or regulations, such standards or conduct will provide for penalties, sanctions, or other disciplinary actions for violations of such standards by the grantee's and sub-grantee's officers, employees, or agents, or by contractors or their agents. The awarding agency may in regulation provide additional prohibitions relative to real, apparent, or potential conflicts of interest.

(4) Grantee and sub-grantee procedures will provide for a review of proposed procurements to avoid purchase of unnecessary or duplicative items. Consideration should be given to consolidating or breaking out procurements to obtain a more economical purchase. Where appropriate, an analysis will be made of lease versus purchase alternatives, and any other appropriate analysis to determine the most economical approach.

(5) To foster greater economy and efficiency, grantees and sub-grantees are encouraged to enter into State and local intergovernmental agreements for procurement or use of common goods and services.

(6) Grantees and sub-grantees are encouraged to use Federal excess and surplus property in lieu of purchasing new equipment and property whenever such use is feasible and reduces project costs.

(7) Grantees and sub-grantees are encouraged to use value engineering clauses in contracts for construction projects of sufficient size to offer reasonable opportunities for cost reductions.

Value engineering is a systematic and creative analysis of each contract item or task to ensure that its essential function is provided at the overall lower cost.

(8) Grantees and sub-grantees will make awards only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement.

Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

(9) Grantees and sub-grantees will maintain records sufficient to detail the significant history of a procurement. These records will include, but are not necessarily limited to the following: rationale for the method of procurement, selection of contract type, contractor selection or rejection, and the basis for the contract price.

(10) Grantees and sub-grantees will use time and material type contracts only--

(i) After a determination that no other contract is suitable, and

(ii) If the contract includes a ceiling price that the contractor exceeds at its own risk.

(11) Grantees and sub-grantees alone will be responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements. These issues include, but are not limited to source evaluation, protests, disputes, and claims. These standards do not relieve the grantee or sub-grantee of any contractual responsibilities under its contracts. Federal agencies will not substitute their judgment for that of the grantee or sub-grantee unless the matter is primarily a

Federal concern. Violations of law will be referred to the local, State, or Federal authority having proper jurisdiction.

(12) Grantees and sub-grantees will have protest procedures to handle and resolve disputes relating to their procurements and shall in all instances disclose information regarding the protest to the awarding agency. A protestor must exhaust all administrative remedies with the grantee and sub-grantee before pursuing a protest with the Federal agency. Reviews of protests by the Federal agency will be limited to:

(i) Violations of Federal law or regulations and the standards of this section (violations of State or local law will be under the jurisdiction of State or local authorities) and

(ii) Violations of the grantee's or sub-grantee's protest procedures for failure to review a complaint or protest. Protests received by the Federal agency other than those specified above will be referred to the grantee or sub-grantee.

(c) Competition. (1) All procurement transactions will be conducted in a manner providing full and open competition consistent with the standards of Sec. 31.36. Some of the situations considered to be restrictive of competition include but are not limited to:

(i) Placing unreasonable requirements on firms in order for them to qualify to do business,

(ii) Requiring unnecessary experience and excessive bonding,

(iii) Noncompetitive pricing practices between firms or between affiliated companies,

(iv) Noncompetitive awards to consultants that are on retainer contracts,

(v) Organizational conflicts of interest,

(vi) Specifying only a "brand name" product instead of allowing "an equal" product to be offered and describing the performance of other relevant requirements of the procurement, and

(vii) Any arbitrary action in the procurement process.

(2) Grantees and sub-grantees will conduct procurements in a manner that prohibits the use of statutorily or administratively imposed in-State or local geographical preferences in the evaluation of bids or proposals, except in those cases where applicable Federal statutes expressly mandate or encourage geographic preference. Nothing in this section preempts State licensing laws. When contracting for architectural and engineering (A/E) services, geographic location may be a selection criteria provided its application leaves an appropriate number of qualified firms, given the nature and size of the project, to compete for the contract.

(3) Grantees will have written selection procedures for procurement transactions. These procedures will ensure that all solicitations:

(i) Incorporate a clear and accurate description of the technical requirements for the material, product, or service to be procured. Such description shall not, in competitive procurements, contain features, which unduly restrict competition. The description may include a statement of the qualitative nature of the material, product or service to be procured, and when necessary, shall set forth those minimum essential characteristics and standards to which it must conform if it is to satisfy its intended use. Detailed product specifications should be avoided if at all possible. When it is impractical or uneconomical to make a clear and accurate description of the technical requirements, a "brand name or equal" description may be used

as a means to define the performance or other salient requirements of a procurement. The specific features of the named brand which must be met by offerers shall be clearly stated; and

(ii) Identify all requirements which the offerers must fulfill and all other factors to be used in evaluating bids or proposals.

(4) Grantees and sub-grantees will ensure that all pre-qualified lists of persons, firms, or products which are used in acquiring goods and services are current and include enough qualified sources to ensure maximum open and free competition. Also, grantees and sub-grantees will not preclude potential bidders from qualifying during the solicitation period.

(5) Construction grants awarded under Title II of the Clean Water Act are subject to the following "Buy American" requirements in paragraphs (c)(5) (i)-(iii) of this section. Section 215 of the Clean Water Act requires that contractors give preference to the use of domestic material in the construction of EPA-funded treatment works.

(i) Contractors must use domestic construction materials in preference to non-domestic material if it is priced no more than 6 percent higher than the bid or offered price of the non-domestic material, including all costs of delivery to the construction site and any applicable duty, whether or not assessed. The grantee will normally base the computations on prices and costs in effect on the date of opening bids or proposals.

(ii) The award official may waive the Buy American provision based on factors the award official considers relevant, including:

(A) Such use is not in the public interest;

(B) The cost is unreasonable;

(C) The Agency's available resources are not sufficient to implement the provision, subject to the Deputy Administrator's concurrence;

(D) The articles, materials or supplies of the class or kind to be used or the articles, materials or supplies from which they are manufactured are not mined, produced or manufactured in the United States in sufficient and reasonably available commercial quantities or satisfactory quality for the particular project; or

(E) Application of this provision is contrary to multilateral government procurement agreements, subject to the Deputy Administrator's concurrence.

(iii) All bidding documents, sub-agreements, and, if appropriate, requests for proposals must contain the following "Buy American" provision: In accordance with section 215 of the Clean Water Act (33 U.S.C. 1251 et seq.) and implementing EPA regulations, the contractor agrees that preference will be given to domestic construction materials by the contractor, subcontractors, material-men and suppliers in the performance of this sub-agreement.

(d) Methods of procurement to be followed--(1) Procurement by small purchase procedures. Small purchase procedures are those relatively simple and informal procurement methods for securing services, supplies, or other properties that do not cost more than the simplified acquisition threshold fixed at 41 U.S.C. 403(11) (currently set at \$100,000). If small purchase procedures are used, price or rate quotations shall be obtained from an adequate number of qualified sources.

(2) Procurement by sealed bids (formal advertising). Bids are publicly solicited and a firm-fixed-price contract (lump sum or unit price) is awarded to the responsible bidder whose bid, conforming with all the material terms and conditions of the invitation for bids, is the lowest in price. The sealed bid method is the preferred method for procuring construction, if the conditions in 31.36(d)(2)(i) apply.

(i) In order for sealed bidding to be feasible, the following conditions should be present:

(A) A complete, adequate, and realistic specification or purchase description is available;

(B) Two or more responsible bidders are willing and able to compete effectively and for the business; and

(C) The procurement lends itself to a firm fixed price contract and the selection of the successful bidder can be made principally on the basis of price.

(ii) If sealed bids are used, the following requirements apply:

(A) The invitation for bids will be publicly advertised and bids shall be solicited from an adequate number of known suppliers, providing them sufficient time prior to the date set for opening the bids;

(B) The invitation for bids, which will include any specifications and pertinent attachments, shall define the items or services in order for the bidder to properly respond;

(C) All bids will be publicly opened at the time and place prescribed in the invitation for bids;

(D) A firm fixed-price contract award will be made in writing to the lowest responsive and responsible bidder. Where specified in bidding documents, factors such as discounts, transportation cost, and life

cycle costs shall be considered in determining which bid is lowest. Payment discounts will only be used to determine the low bid when prior experience indicates that such discounts are usually taken advantage of; and

(E) Any or all bids may be rejected if there is a sound documented reason.

(3) Procurement by competitive proposals. The technique of competitive proposals is normally conducted with more than one source submitting an offer, and either a fixed-price or cost-reimbursement type contract is awarded. It is generally used when conditions are not appropriate for the use of sealed bids. If this method is used, the following requirements apply:

(i) Requests for proposals will be publicized and identify all evaluation factors and their relative importance. Any response to publicized requests for proposals shall be honored to the maximum extent practical;

(ii) Proposals will be solicited from an adequate number of qualified sources;

(iii) Grantees and sub-grantees will have a method for conducting technical evaluations of the proposals received and for selecting awardees;

(iv) Awards will be made to the responsible firm whose proposal is most advantageous to the program, with price and other factors considered; and

(v) Grantees and sub-grantees may use competitive proposal procedures for qualifications-based procurement of architectural/engineering (A/E) professional services whereby competitors' qualifications are evaluated and the most qualified competitor is selected, subject to negotiation of fair and reasonable compensation. The method, where price is not used as a selection factor, can only be used in procurement of A/E professional services. It cannot be used to purchase other types of services though A/E firms are a potential source to perform the proposed effort.

(4) Procurement by noncompetitive proposals is procurement through solicitation of a proposal from only one source, or after solicitation of a number of sources, competition is determined inadequate.

(i) Procurement by noncompetitive proposals may be used only when the award of a contract is infeasible under small purchase procedures, sealed bids or competitive proposals and one of the following circumstances applies:

(A) The item is available only from a single source;

(B) The public exigency or emergency for the requirement will not permit a delay resulting from competitive solicitation;

(C) The awarding agency authorizes noncompetitive proposals; or

(D) After solicitation of a number of sources, competition is determined inadequate.

(ii) Cost analysis, i.e., verifying the proposed cost data, the projections of the data, and the evaluation of the specific elements of costs and profits, is required.

(iii) Grantees and sub-grantees may be required to submit the proposed procurement to the awarding agency for pre-award review in accordance with paragraph (g) of this section.

(e) Contracting with small and minority firms, women's business enterprise and labor surplus area firms.

(1) The grantee and sub-grantee will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible.

(2) Affirmative steps shall include:

(i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;

(iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises;

(v) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and

(vi) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (e)(2) (i) through (v) of this section.

(f) Contract cost and price.

(1) Grantees and sub-grantees must perform a cost or price analysis in connection with every procurement action including contract modifications. The method and degree of analysis is dependent on the facts surrounding the particular procurement situation, but as a starting point, grantees must make independent

estimates before receiving bids or proposals. A cost analysis must be performed when the offerer is required to submit the elements of his estimated cost, e.g., under professional, consulting, and architectural engineering services contracts. A cost analysis will be necessary when adequate price competition is lacking, and for sole source procurements, including contract modifications or change orders, unless price reasonableness can be established on the basis of a catalog or market price of a commercial product sold in substantial quantities to the general public or based on prices set by law or regulation. A price analysis will be used in all other instances to determine the reasonableness of the proposed contract price.

(2) Grantees and sub-grantees will negotiate profit as a separate element of the price for each contract in which there is no price competition and in all cases where cost analysis is performed.

To establish a fair and reasonable profit, consideration will be given to the complexity of the work to be performed, the risk borne by the contractor, the contractor's investment, the amount of subcontracting, the quality of its record of past performance, and industry profit rates in the surrounding geographical area for similar work.

(3) Costs or prices based on estimated costs for contracts under grants will be allowable only to the extent that costs incurred or cost estimates included in negotiated prices are consistent with Federal cost principles (see Sec. 31.22). Grantees may reference their own cost principles that comply with the applicable Federal cost principles.

(4) The cost plus a percentage of cost and percentage of construction cost methods of contracting shall not be used.

(g) Awarding agency review.

(1) Grantees and sub-grantees must make available, upon request of the awarding agency, technical specifications on proposed procurements where the awarding agency believes such review is needed to ensure that the item and/or service specified is the one being proposed for purchase. This review generally will take place prior to the time the specification is incorporated into a solicitation document. However, if the grantee or sub-grantee desires to have the review accomplished after a solicitation has been developed, the awarding agency may still review the specifications, with such review usually limited to the technical aspects of the proposed purchase.

(2) Grantees and sub-grantees must on request make available for awarding agency pre-award review procurement documents, such as requests for proposals or invitations for bids, independent cost estimates, etc. when:

(i) A grantee's or sub-grantee's procurement procedures or operation fails to comply with the procurement standards in this section; or

(ii) The procurement is expected to exceed the simplified acquisition threshold and is to be awarded without competition or only one bid or offer is received in response to a solicitation; or

(iii) The procurement, which is expected to exceed the simplified acquisition threshold, specifies a "brand name" product; or

(iv) The proposed award is more than the simplified acquisition threshold and is to be awarded to other than the apparent low bidder under a sealed bid procurement; or

(v) A proposed contract modification changes the scope of a contract or increases the contract amount by more than the simplified acquisition threshold.

(3) A grantee or sub-grantee will be exempt from the pre-award review in paragraph (g)(2) of this section if the awarding agency determines that its procurement systems comply with the standards of this section.

(i) A grantee or sub-grantee may request that its procurement system be reviewed by the awarding agency to determine whether its system meets these standards in order for its system to be certified. Generally, these reviews shall occur where there is a continuous high-dollar funding, and third-party contracts are awarded on a regular basis.

(ii) A grantee or sub-grantee may self-certify its procurement system. Such self-certification shall not limit the awarding agency's right to survey the system. Under a self-certification procedure, awarding agencies may wish to rely on written assurances from the grantee or sub-grantee that it is complying with these standards. A grantee or sub-grantee will cite specific procedures, regulations, standards, etc., as being in compliance with these requirements and have its system available for review.

(h) Bonding requirements. For construction or facility improvement contracts or subcontracts exceeding the simplified acquisition threshold, the awarding agency may accept the bonding policy and requirements of the grantee or sub-grantee provided the awarding agency has made a determination that

the awarding agency's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:

(1) A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

(2) A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

(3) A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

(i) Contract provisions. A grantee's and sub-grantee's contracts must contain provisions in paragraph (i) of this section. Federal agencies are permitted to require changes, remedies, changed conditions, access and records retention, suspension of work, and other clauses approved by the Office of Federal Procurement Policy.

(1) Administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate.

(Contracts more than the simplified acquisition threshold)

(2) Termination for cause and for convenience by the grantee or sub-grantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of \$10,000)

(3) Compliance with Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60). (All construction contracts awarded in excess of \$10,000 by grantees and their contractors or sub-grantees)

(4) Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR part 3). (All contracts and sub-grants for construction or repair)

(5) Compliance with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR part 5). (Construction contracts in excess of \$2000 awarded by grantees and sub-grantees when required by Federal grant program legislation)

(6) Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR part 5).

(Construction contracts awarded by grantees and sub-grantees in excess of \$2000, and in excess of \$2500 for other contracts which involve the employment of mechanics or laborers)

(7) Notice of awarding agency requirements and regulations pertaining to reporting.

(8) Notice of awarding agency requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.

(9) Awarding agency requirements and regulations pertaining to copyrights and rights in data.

(10) Access by the grantee, the sub-grantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

(11) Retention of all required records for three years after grantees or sub-grantees make final payments and all other pending matters are closed.

(12) Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C.

1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15).

(Contracts, subcontracts, and sub-grants of amounts in excess of \$100,000)

(13) Mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

(j) Payment to consultants.

(1) EPA will limit its participation in the salary rate (excluding overhead) paid to individual consultants retained by grantees or by a grantee's contractors or subcontractors to the maximum daily rate for a GS-18. (Grantees may, however, pay consultants more than this amount). This limitation applies to

consultation services of designated individuals with specialized skills who are paid at a daily or hourly rate. This rate does not include transportation and subsistence costs for travel performed; grantees will pay these in accordance with their normal travel reimbursement practices. (Pub. L. 99-591).

(2) Sub-agreements with firms for services which are awarded using the procurement requirements in this part are not affected by this limitation.

(k) Use of the same architect or engineer during construction.

(1) If the grantee is satisfied with the qualifications and performance of the architect or engineer who provided any or all of the facilities planning or design services for a waste-water treatment works project and wishes to retain that firm or individual during construction of the project, it may do so without further public notice and evaluation of qualifications, provided:

(i) The grantee received a facilities planning (Step 1) or design grant (Step 2), and selected the architect or engineer in accordance with EPA's procurement regulations in effect when EPA awarded the grant; or

(ii) The award official approves noncompetitive procurement under Sec. 31.36(d)(4) for reasons other than simply using the same individual or firm that provided facilities planning or design services for the project; or

(iii) The grantee attests that:

(A) The initial request for proposals clearly stated the possibility that the firm or individual selected could be awarded a sub-agreement for services during construction; and

(B) The firm or individual was selected for facilities planning or design services in accordance with procedures specified in this section.

(C) No employee, officer or agent of the grantee, any member of their immediate families, or their partners have financial or other interest in the firm selected for award; and

(D) None of the grantee's officers, employees or agents solicited or accepted gratuities, favors or anything of monetary value from contractors or other parties to sub-agreements.

(2) However, if the grantee uses the procedures in paragraph (k)(1) of this section to retain an architect or engineer, any Step 3 sub-agreements between the architect or engineer and the grantee must meet all of the other procurement provisions in Sec. 31.36.

[53 FR 8068 and 8087, Mar. 11, 1988, and amended at 53 FR 8075, Mar. 11, 1988; 60 FR 19639, 19644, Apr. 19, 1995; 66 FR 3794, Jan. 16, 2001]

KRS Chapter 45A
Kentucky Model Procurement Code

45A.075 Methods of awarding state contracts.

Except as otherwise authorized by law, all state contracts shall be awarded by:

- (1) Competitive sealed bidding, pursuant to KRS 45A.080; or
- (2) Competitive negotiation, pursuant to KRS 45A.085 and 45A.090 or 45A.180; or
- (3) Noncompetitive negotiation, pursuant to KRS 45A.095; or
- (4) Small purchase procedures, pursuant to KRS 45A.100.

Effective: June 24, 2003

History: Amended 2003 Ky. Acts ch. 98, sec. 4, effective June 24, 2003. -- Created 1978 Ky. Acts ch. 110, sec. 16, effective January 1, 1979.

45A.080 Competitive sealed bidding.

(1) Contracts exceeding the amount provided by KRS 45A.100 shall be awarded by competitive sealed bidding unless it is determined in writing that this method is not practicable. Factors to be considered in determining whether competitive sealed bidding is not practicable shall include:

- (a) Whether specifications can be prepared that permit award on the basis of best value; and
- (b) The available sources, the time and place of performance, and other relevant circumstances as are appropriate for the use of competitive sealed bidding.

(2) The invitation for bids shall state that awards shall be made on the basis of best value. In any contract which is awarded under an invitation to bid which requires delivery by a specified date and imposes a penalty for late delivery, if the delivery is late, the contractor shall be given the opportunity to present evidence that the cause of the delay was beyond his control. If it is the opinion of the purchasing officer that there is sufficient justification for delayed delivery, the purchasing officer may adjust or waive any penalty that is provided for in the contract.

(3) Adequate public notice of the invitation for bids shall be given a sufficient time prior to the date set forth for the opening of bids. The notice may include posting on the Internet or publication in a newspaper or newspapers of general circulation in the state as determined by the secretary of the Finance and Administration Cabinet not less than seven (7) days before the date set for the opening of the bids. The provisions of this subsection shall also apply to price contracts and purchase contracts of state institutions of higher education.

(4) Bids shall be opened publicly at the time and place designated in the invitation for bids. At the time the bids are opened, the purchasing agency shall announce the agency's engineer's estimate, if applicable, and make it a part of the agency records pertaining to the letting of any contract for which bids were received. Each bid, together with the name of the bidder and the agency's engineer's estimate, shall be recorded and be open to public inspection. Electronic bid opening and posting of the required information for public viewing shall satisfy the requirements of this subsection.

(5) The contract shall be awarded by written notice to the responsive and responsible bidder whose bid offers the best value.

(6) Correction or withdrawal of bids shall be allowed only to the extent permitted by regulations issued by the secretary.

Effective: July 14, 2000

History: Amended 2000 Ky. Acts ch. 509, sec. 1, effective July 14, 2000. -- Amended 1998 Ky. Acts ch. 120, sec. 10, effective July 15, 1998. -- Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 27, effective May 30, 1997. -- Amended 1996 Ky. Acts ch. 60, sec. 2, effective July 15, 1996. -- Amended 1994 Ky. Acts ch. 278, sec. 1, effective July 15, 1994. -- Amended 1982 Ky. Acts ch. 282, sec. 1, effective July 15, 1982. -- Amended 1979 (1st Extra. Sess.) Ky. Acts ch. 9, sec. 1, effective February 10, 1979. -- Created 1978 Ky. Acts ch. 110, sec. 17, effective January 1, 1979.

45A.085 Competitive negotiation.

- (1) When, under administrative regulations promulgated by the secretary or under KRS 45A.180, the purchasing officer determines in writing that the use of competitive sealed bidding is not practicable, and except as provided in KRS 45A.095 and 45A.100, a contract may be awarded by competitive negotiation.
- (2) Adequate public notice of the request for proposals shall be given in the same manner and circumstances as provided in KRS 45A.080(3).
- (3) Contracts other than contracts for projects utilizing an alternative project delivery method under KRS 45A.180 may be competitively negotiated when it is determined in writing by the purchasing officer that the bids received by competitive sealed bidding either are unreasonable as to all or part of the requirements, or were not independently reached in open competition, and for which each competitive bidder has been notified of the intention to negotiate and is given reasonable opportunity to negotiate.
- (4) Contracts for projects utilizing an alternative project delivery method shall be processed in accordance with KRS 45A.180.
- (5) The request for proposals shall indicate the relative importance of price and other evaluation factors.
- (6) Award shall be made to the responsible offerer whose proposal is determined in writing to be the most advantageous to the Commonwealth, taking into consideration price and the evaluation factors set forth in the request for proposals.
- (7) Written or oral discussions shall be conducted with all responsible offerers who submit proposals determined in writing to be reasonably susceptible of being selected for award. Discussions shall not disclose any information derived from proposals submitted by competing offerers. Discussions need not be conducted:
 - (a) With respect to prices, where the prices are fixed by law or administrative regulation, except that consideration shall be given to competitive terms and conditions;
 - (b) Where time of delivery or performance will not permit discussions; or
 - (c) Where it can be clearly demonstrated and documented from the existence of adequate competition or prior experience with the particular supply, service, or construction item, that acceptance of an initial offer without discussion would result in fair and reasonable best value procurement, and the request for proposals notifies all offerers of the possibility that award may be made on the basis of the initial offers.

Effective: June 24, 2003

History: Amended 2003 Ky. Acts ch. 98, sec. 5, effective June 24, 2003. – Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 28, effective May 30, 1997. – Amended 1979 (1st Extra. Sess.) Ky. Acts ch. 9, sec. 2, effective February 10, 1979. – Created 1978 Ky. Acts ch. 110, sec. 18, effective January 1, 1979.

45A.090 Negotiation after competitive sealed bidding when all bids exceed available funds.

- (1) In the event that all bids submitted pursuant to competitive sealed bidding under KRS 45A.080 result in bid prices in excess of the funds available for the purchase, and the chief purchasing officer determines in writing:
 - (a) That there are no additional funds available from any source so as to permit an award to the responsive and responsible bidder whose bid offers the best value; and
 - (b) The best interest of the state will not permit the delay attendant to a resolicitation under revised specifications, or for revised quantities, under competitive sealed bidding as provided in KRS 45A.080, then a negotiated award may be made as set forth in subsections (2) or (3) of this section.
- (2) Where there is more than one (1) bidder, competitive negotiations pursuant to KRS 45A.085(3) shall be conducted with the three (3) (two (2) if there are only two (2)) bidders determined in writing to be the most responsive and responsible bidders, based on criteria contained in the bid invitation. Such competitive negotiations shall be conducted under the following restrictions:

(a) If discussions pertaining to the revision of the specifications or quantities are held with any potential offerer, all other potential offerers shall be afforded an opportunity to take part in such discussions; and

(b) A request for proposals, based upon revised specifications or quantities, shall be issued as promptly as possible, shall provide for an expeditious response to the revised requirements, and shall be awarded upon the basis of best value.

(3) Where, after competitive sealed bidding, it is determined in writing that there is only one (1) responsive and responsible bidder, a noncompetitive negotiated award may be made with such bidder in accordance with KRS 45A.095.

Effective: June 24, 2003

History: Amended 2003 Ky. Acts ch. 98, sec. 6, effective June 24, 2003. – Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 29, effective May 30, 1997. – Created 1978 Ky. Acts ch. 110, sec. 19, effective January 1, 1979.

45A.095 Noncompetitive negotiation.

(1) A contract may be made by noncompetitive negotiation only for sole source purchases, or when competition is not feasible, as determined by the purchasing officer in writing prior to award, under administrative regulations promulgated by the secretary of the Finance and Administration Cabinet or the governing boards of universities operating under KRS Chapter 164A, or when emergency conditions exist. Sole source is a situation in which there is only one (1) known capable supplier of a commodity or service, occasioned by the unique nature of the requirement, the supplier, or market conditions. Insofar as it is practical, no less than three (3) suppliers shall be solicited to submit written or oral quotations whenever it is determined that competitive sealed bidding is not feasible. Award shall be made to the supplier offering the best value. The names of the suppliers submitting quotations and the date and amount of each quotation shall be placed in the procurement file and maintained as a public record. Competitive bids may not be required:

(a) For contractual services where no competition exists, such as telephone service, electrical energy, and other public utility services;

(b) Where rates are fixed by law or ordinance;

(c) For library books;

(d) For commercial items that are purchased for resale;

(e) For interests in real property;

(f) For visiting speakers, professors, expert witnesses, and performing artists;

(g) For personal service contracts executed pursuant to KRS 45A.690 to 45A.725; and

(h) For agricultural products in accordance with KRS 45A.645.

(2) The chief procurement officer, the head of a using agency, or a person authorized in writing as the designee of either officer may make or authorize others to make emergency procurements when an emergency condition exists.

(3) An emergency condition is a situation which creates a threat or impending threat to public health, welfare, or safety such as may arise by reason of fires, floods, tornadoes, other natural or man-caused disasters, epidemics, riots, enemy attack, sabotage, explosion, power failure, energy shortages, transportation emergencies, equipment failures, state or federal legislative mandates, or similar events. The existence of the emergency condition creates an immediate and serious need for services, construction, or items of tangible personal property that cannot be met through normal procurement methods and the lack of which would seriously threaten the functioning of government, the preservation or protection of property, or the health or safety of any person.

(4) The Finance and Administration Cabinet may negotiate directly for the purchase of contractual services, supplies, materials, or equipment in bona fide emergencies regardless of estimated costs. The existence of the emergency shall be fully explained, in writing, by the head of the agency for which the purchase is to be made. The explanation shall be approved by the

secretary of the Finance and Administration Cabinet and shall include the name of the vendor receiving the contract along with any other price quotations and a written determination for selection of the vendor receiving the contract. This information shall be filed with the record of all such purchases and made available to the public. Where practical, standard specifications shall be followed in making emergency purchases. In any event, every effort should be made to effect a competitively established price for purchases made by the state.

Effective: July 15, 2002

History: Amended 2002 Ky. Acts ch. 344, sec. 9, effective July 15, 2002. -- Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 30, effective May 30, 1997. -- Amended 1990 Ky. Acts ch. 496, sec. 4, effective July 13, 1990. -- Created 1978 Ky. Acts ch. 110, sec. 20, effective January 1, 1979.

45A.100 Small purchases.

(1) Procurements may be made in accordance with small purchase administrative regulations promulgated by the secretary of the Finance and Administration Cabinet, pursuant to KRS Chapter 13A, as follows:

(a) Up to ten thousand dollars (\$10,000) per project for construction and one thousand dollars (\$1,000) for purchases by any state governmental body, except for those state administrative bodies specified in paragraph (b) of this subsection; and

(b) Up to forty thousand dollars (\$40,000) per project for construction or purchases by the Finance and Administration Cabinet, state institutions of higher education, and the legislative branch of government.

(2) Procurement requirements shall not be artificially divided so as to constitute a small purchase under this section. At least every two (2) years, the secretary shall review the prevailing costs of labor and materials and may make recommendations to the next regular session of the General Assembly for the revision of the then current maximum small purchase amount as justified by intervening changes in the cost of labor and materials.

(3) The secretary of the Finance and Administration Cabinet may grant to any state agency with a justifiable need a delegation of small purchasing authority, which exceeds the agency's small purchase limit, provided in subsection (1) of this section.

Delegations of small purchasing authority shall be granted or revoked by the secretary of the Finance and Administration Cabinet, in accordance with administrative regulations promulgated by the cabinet pursuant to KRS Chapter 13A. These administrative regulations shall establish, at a minimum, the criteria for granting and revoking delegations of small purchasing authority, including the requesting agency's past compliance with purchasing regulations, the level of training of the agency's purchasing staff, and the extent to which the agency utilizes the Kentucky Automated Purchasing System. The administrative regulations may permit the secretary of the Finance and Administration Cabinet to delegate small purchase procurements up to the maximum amount specified in subsection (1)(b) of this section.

Effective: July 15, 2002

History: Amended 2002 Ky. Acts ch. 320, sec. 2, effective July 15, 2002. -- Amended 2000 Ky. Acts ch. 225, sec. 1, effective July 14, 2000. -- Amended 1996 Ky. Acts ch. 60, sec. 1, effective July 15, 1996. -- Amended 1994 Ky. Acts ch. 323, sec. 1, effective July 15, 1994. -- Amended 1990 Ky. Acts ch. 496, sec. 5, effective July 13, 1990. -- Amended 1986 Ky. Acts ch. 384, sec. 1, effective July 15, 1986. -- Amended 1984 Ky. Acts ch. 384, sec. 1, effective July 13, 1984. -- Amended 1982 Ky. Acts ch. 282, sec. 2, effective July 15, 1982. -- Amended 1980 Ky. Acts ch. 242, sec. 1, effective July 15, 1980; and ch. 250, sec. 19, effective April 9, 1980. -- Created 1978 Ky. Acts ch. 110, sec. 21, effective January 1, 1979.

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

The following excerpts are from 45 FR 65984 (October 3, 1980):

The minority and female goals apply to Federal and federally assisted construction contractors and subcontractors which have covered contracts. The goals are expressed as a percentage of the total hours worked by such a covered or subcontractor's entire onsite construction workforce, which is working on any construction site within a relevant area. The goal applies to each construction craft and trade in the contractor's entire workforce in the relevant area including those employees working on private non-federally involved projects.

Until further notice, the following goals for minority utilization in each construction craft and trade shall be included in all Federal or federally assisted construction contracts and subcontracts in excess of \$10,000 to be performed in the respective geographic area. The goals are applicable to each nonexempt contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally assisted or non-federally related project, contract or subcontract.

Construction contractors which are participating in an approved Hometown Plan (see 41 CFR 60-4.5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the area covered by the Hometown Plan. With regard to all their other covered construction work, such contractors are required to comply as follows:

- Goals for female participation in each trade.....6.9%
- Goals for minority participation in each trade.....Insert goals for each year
(see Attachment Number 6)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area.

The following excerpts are from 45 FR 65977 (October 3, 1980):

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the covered area is (insert description of the geographical areas where the contract is to be performed giving the state, country, and city, if any).

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

EEO Specifications

Following is the standard language, which must be incorporated into all solicitations for offers and bids on all Federal and Federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in designated geographical areas:

1. As used in these specifications:

- (a) Covered Area means the geographical area described in the solicitation from which this contract resulted.
- (b) Director means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority;
- (c) Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
- (d) Minority includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take a good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7-a through p of these specifications. The goals set forth in the solicitation from which this contract resulted

are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative actions steps at least as extensively as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligation.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7-b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with

all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, lay-off, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative actions obligations (7 a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7 a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access

to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example: even though the Contractor has achieved its goal for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables for affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Attachment Number 6

EEO Goals for Economic Areas in Region 4
 Source: Appendix B-80 in 45 FR 65984 (October 3, 1980)

Alabama:

047 Mobile, AL	
SMSA Counties:	
5160 Mobile, AL	26.9
AL Baldwin; AL Mobile.	
6026 Pascagoula - Moss, Point MS	16.9
MS Jackson.	
Non-SMSA Counties	26.4
AL Choctaw; AL Clarke; AL Conecuh; AL Escambia; AL Monroe; AL Washington; AL Wilcox;	
MS George; MS Greene.	
048 Montgomery, AL:	
SMSA Counties	
5240 Montgomery, AL	29.9
AL Autauga; AL Elmore; AL Montgomery.	
Non-SMSA Counties	29.9
AL Barbour; AL Bullock; AL Butler; AL Coffee; AL Coosa; AL Covington;	
AL Crenshaw; AL Dale; AL Dallas; AL Geneva; AL Henry; AL Houston.;	
AL Lowndes; AL Macon; AL Perry; AL Pike; AL Tallapoosa.	
049 Birmingham, AL:	
SMSA Counties:	
0450 Anniston, AL	14.3
AL Calhoun	
1000 Birmingham, AL	24.9
AL Jefferson, AL St- Clair; AL Shelby; AL Walker; AL Etowah	
8600 Tuscaloosa, AL	20.6
AL Tuscaloosa.	
Non-SMSA Counties	20.7
AL Bibb; AL Blount AL Cherokee; AL Chilton; AL Clay; AL Cleburne; AL Cullman;	
AL Fayette; AL Greene; AL Hale; AL Lamar; AL Marion; AL Pickens; AL Randolph;	
AL Sumter; AL Talladega; AL Winston.	
050 Huntsville - Florence, AL:	
SMSA Counties:	
2650 Florence, AL	11.9
AL Colbert; AL Lauderdale.	
3440 Huntsville, AL	12.0
AL Limestone; AL Madison; AL Marshall.	
Non-SMSA Counties	11.2
AL Franklin; AL Lawrence AL Morgan; TN Lincoln.	
Georgia:	
035 Augusta, GA:	
SMSA Counties:	
0600 Augusta, GA - SC	27.2
GA Columbia; GA Richmond; SC Aiken	
Non-SMSA Counties	32.8
GA Burke; GA Emanuel; GA Glascock; GA Jefferson; GA Jenkins; GA Lincoln; GA	
McDuffie; GA Taliaferro; GA Warren; GA Wilkes; SC Allendale, SC Bamberg;	
SC Barnwell; SC Edgefield; SC McCormick	
036 Atlanta, GA	
SMSA Counties	
0520 Atlanta	21.2
GA Butts; GA Cherokee; GA Clayton; GA Cobb; GA Dekalb; GA Douglas; GA Fayette;	
GA Forsyth; GA Fulton; GA Gwinnett; GA Henry, GA Newton; GA Paulding; GA Rockdale;	
GA Walton	

Non-SMSA Counties	19.5
GA Banks; GA Barrow; GA Bartow; GA Carroll; GA Clarke; GA Coweta; GA Dawson; GA Elbert; GA Fannin; GA Floyd; GA Franklin; GA Gilmer; GA Gordon; GA Greene; GA Habersham; GA Hall; GA Haralson; GA Hart; GA Heard; GA Jackson; GA Jasper; GA Lamar, GA Lumpkin; GA Madison, GA Morgan; GA Oconee, GA Oglethorpe; GA Pickens; GA Pike; GA Polk; GA Rabun, GA Spalding; GA Stephens; GA Towns; GA Union; GA Upson; GA White.	
037 Columbus, GA:	
SMSA Counties	
1800 Columbus	29.6
AL Russell; GA Chattahoochee; GA Columbus.	
Non-SMSA Counties	31.6
AL Chambers; AL Lee; GA Harris; GA Marion; GA Meriwether; GA Quitman; GA Schley; GA Stewart; GA Sumter; GA Talbot; GA Troup; GA Webster.	
038 Macon, GA:	
SMSA Counties	
4660 Macon, GA	27.5
GA Bibb; GA Houston; GA Jones; GA Twiggs.	
Non-SMSA Counties	31.7
GA Baldwin; GA Bleckley; GA Crawford; GA Crisp; GA Dodge; GA Dooly; GA Hancock; GA Johnson; GA Laurens; GA Macon; GA Monroe; GA Peach; GA Pulaski; GA Putnam. GA Taylor; GA Telfair; GA Treutlen; GA Washington; GA Wheeler; GA Wilcox; GA Wilkinson.	
039 Savannah, GA:	
SMSA Counties:	
7520 Savannah, GA	30.6
GA Bryan; GA Chatham; GA Effingham	
Non-SMSA Counties	29.8
GA Appling; GA Atkinson; GA Bacon; GA Bullock; GA Candler; GA Coffee; GA Evans; GA Jeff Davis; GA Liberty; GA Long; GA McIntosh; GA Montgomery; GA Screven; GA Tattinall; GA Toombs; GA Wayne; SC Beaufort; SC Hampton; SC Jasper.	
040 Albany, GA	
SMSA Counties	
0120 Albany, GA	32.1
GA Dougherty; GA Lee.	
Non-SMSA Counties	31.1
GA Baker; GA Ben Hill; GA Berrien; GA Brooks; GA Calhoun; GA Clay; GA Clinch; GA Colquitt; GA Cook; GA Decatur; GA Early; GA Echols; GA Grady; GA Irwin; GA Lanier, GA Lowndes; GA Miller; GA Mitchell; GA Randolph; GA Seminole, GA Terrell; GA Thomas; GA Tift; GA Turner; GA Worth.	
Florida:	
041 Jacksonville, FL:	
SMSA Counties	
2900 Gainesville, FL	20.6
FL Alachua	
3600 Jacksonville, FL	21.8
FL Baker; FL Clay; FL Duval; FL Nassau; FL St. Johns.	
Non-SMSA Counties	22.2
FL Bradford; FL Columbia; FL Dade; FL Gilchrist; FL Hamilton; FL LaFayette; FL Levy; FL Marion; FL Putnam; FL Suwannee; FL Union; GA Brantley; GA Camden; GA Charlton; GA Glynn; GA Pierce; GA Ware.	
042 Orlando - Melbourne - Daytona Beach, FL.	
SMSA Counties:	
2020 Daytona Beach, FL	15.7
FL Volusia.	
4900 Melbourne - Titusville - Cocoa, FL	10.7
FL Brevard.	
5960 Orlando, FL	15.5

FL Orange; FL Osceola; FL Seminole.

Non-SMSA Counties	14.9
FL Flagler; FL Lake; FL Sumter.	
043 Miami - Fort Lauderdale, FL:	
SMSA Counties:	
2680 Fort Lauderdale - Hollywood, FL	15.5
FL. Broward.	
5000 Miami, FL	39.5
FL Dade.	
8960 West Palm Beach - Boca Raton, FL	22.4
FL Palm Beach.	
Non-SMSA Counties	30.4
FL Glades; FL Hendry; FL Indian River, FL Martin; FL Monroe:	
FL Okeechobee; FL St. Lucie.	
044 Tampa - St Petersburg, FL	
SMSA Counties:	
1140 Bradenton, FL	15.9
FL Manatee.	
2700 Fort Myers, FL	
15.3	
FL Lee.	
3980 Lakeland - Winter Haven, FL	18.0
FL Polk	
7510 Sarasota, FL	10.5
FL Sarasota.	
8280 Tampa - St. Petersburg, FL	17.9
FL Hillsborough, FL Pasco; FL Pinellas	
Non-SMSA Counties	17.1
FL Charlotte; FL Citrus; FL Collier, FL Desoto; FL Hardee; FL Hernando; FL Highlands.	
045 Tallahassee. FL:	
SMSA Counties:	
8240 Tallahassee, FL	24.3
FL Leon; FL Wakulla.	
Non-SMSA Counties:	29.5
FL Calhoun; FL Franklin; FL Gadsden; FL Jack son; FL Jefferson: FL Liberty;	
FL Madison; FL Taylor.	
046 Pensacola - Panama City, FL	
SMSA Counties:	
8615 Panama City, FL	14.1
FL Bay.	
6080 Pensacola, FL	18.3
FL Escambia; FL Santa Rosa.	
Non-SMSA Counties	15.4
FL Gulf, FL Holmes; FL Okaloosa; FL Walton; FL Washington.	
Kentucky:	
056 Paducah, KY:	
Non-SMSA Counties	5.2
IL Hardin; IL Massac; IL Pope; KY Ballard; KY Caldwell; KY Calloway. KY Carlisle;	
KY Crittenden; KY Fulton; KY Graves; KY Hickman; KY Livingston; KY Lyon. KY	
McCracken; KY Marshall.	
057 Louisville, KY:	
SMSA Counties:	
4520 Louisville, KY-IN	11.2
IN Clark; IN Floyd; KY Bullitt; KY Jefferson; KY Oldham.	
Non-SMSA Counties	9.6
IN Crawford; IN Harrison; IN Jefferson; IN Orange; IN Scott; IN Washington;	
KY Breckinridge; KY Grayson; KY Hardin; KY Hart; KY Henry; KY Larue; KY Marion;	
KY Meade; KY Nelson; KY Shelby; KY Spencer; KY Trimble; KY Washington.	
058 Lexington, KY	
SMSA Counties	

4280 Lexington-Fayette, KY
KY Bourbon; KY Clark; KY Fayette; KY Jessamine; KY Scott; KY Woodford.

10.8

Non-SMSA Counties

7.0

KY Adair KY Anderson; KY Bath; KY Boyle; KY Breathitt; KY Casey; KY Clay;
KY Estill; KY Franklin- KY Garrard; KY Green; KY Harrison- KY Jackson; KY Knott;
KY Lee; KY Leslie; KY Letcher; KY Lincoln; KY Madison; KY Magoffin; KY Menifee;
KY Mercer; KY Montgomery; KY Morgan. KY Nicholas; KY Owsley; KY Perry;
KY Powell; KY Pulaski; KY Rockcastle; KY Russell; KY Taylor; KY Wolfe.

Mississippi:

112 Jackson, MS:

SMSA Counties;

3560 Jackson, MS

30.3

MS Hinds; MS Rankin.

Non-SMSA Counties

32.0

MS Attala; MS Choctaw; MS Choctaw; MS Clarke; MS Copiah;
MS Covington; MS Franklin; MS Holmes; MS Humphreys; MS Issaquena;
MS Jasper; MS Jefferson; MS Jefferson Davis; MS Jones; MS Kemper;
MS Lauderdale; MS Lawrence; MS Leake; MS Lincoln; MS Lowndes;
MS Madison; MS Neshoba; MS Newton; MS Noxubee,- MS Oktibbeha;
MS Scott; MS Sharkey; MS Simpson; MS Smith; MS Warren; MS Wayne;
MS Winston; MS Yazoo.

North Carolina:

024 Rocky Mount - Wilson - Greenville NC:

Non-SMSA Counties

31.7

NC Beaufort; NC Carteret; NC Craven,- NC Dare; NC Edgecombe; NC Greene; NC
Halifax; NC Hyde; NC Jones; NC Lenoir', NC Martin; NC Nash; NC Northampton; NC
Pamlico; NC Pitt; NC Tyrrell; NC Washington; NC Wayne; NC Wilson

025 Wilmington, NC:

SMSA Counties:

9200 Wilmington, NC

20.7

NC Brunswick; NC New Hanover.

Non-SMSA counties

3.5

NC Columbus; NC Duplin; NC Onslow; NC Pender.

026 Fayetteville, NC:

SMSA Counties:

2560 Fayetteville, NC

26.2

NC Cumberland.

Non-SMSA Counties

33.5

NC Bladen; NC Hoke; NC Richmond; NC Robeson; NC Sampson; NC Scotland.

027 Raleigh - Durham, NC.

SMSA Counties:

6640 Raleigh - Durham

22.8

NG Durham; NC Orange; NC Wake.

Non-SMSA Counties

24.7

NC Chatham; NC Franklin; NC Granville; NC Harnett; NC Johnston; NC Lee; NC Person;
NC Vance; NC Warren.

028 Greensboro - Winston Sale m - High Point, NC:

SMSA Counties:

1300 Burlington, NC

16.2

NC Alamance.

3120 Greensboro - Winston Salem - High Point NC

16.4

NC Davidson; NC Forsyth; NC Guilford,- NC Randolph; NC Stokes; NC Yadkin.

Non-SMSA Counties

15.5

NC Alleghany; NG Ashe; NC Caswell; NC Davie; NC Montgomery; NC Moore; NC Rockingham; NC Surry; NC Watauga; NC Wilkes.

029 Charlotte, NC:

SMSA Counties:

1520 Charlotte - Gastonia, NC

18.5

NC Gaston; NC Mecklenburg; NC Union.

Non-SMSA Counties

15.7

NC Alexander; NC Anson; NC Burke; NG Cabarrus; NC Caldwell; NC Catawba; NC Cleveland; NC Ire dell; NC Lincoln; NC Rowan; NC Rutherford; NC Stanley; SC Chester; SC Lancaster SC York.

030 Asheville, NC

Non-SMSA Counties:

0480 Asheville, NC

8.5

NC Buncombe; NC Madison.

Non-SMSA Counties

6.3

NC Avery,- NC Cherokee; NC Clay; NC Graham; HC Heywood, NC Henderson; NC Jackson; NC McDowell; NC Macon; NC Mitchell; NC Swain; NC Transylvania; NC Yancey.

South Carolina:

031 Greenville -Spartanburg, SC:

SMSA Counties:

316b Greenville -Spartanburg, SC

16.0

SC Greenville; SC Pickens; SC Spartanburg.

Non-SMSA Counties

17.8

SC Polk; SC Abbeville; SC Anderson; SC Cherokee', SC Greenwood; SC Laurens; SC Oconee; SC Union.

032 Columbia, SC

SMSA Counties:

1760 Columbia, SC

23.4

SC Lexington; SC Richland.

Non-SMSA Counties

32.0

SC Calhoun SC Clarendon; SC Fairfield; SC Kershaw; SC Lee; SC Newberry; SC Orangeburg; SC Saluda; SC Sumter

033 Florence, SC

Non-SMSA Counties

33.0

SC Chesterfield; SC Darlington; SC Dillon; SC Florence; SC Georgetown; SC Horry; SC Marion; SC Marlboro; SC Williamsburg.

034 Charleston - North Charleston, SC

SMSA Counties

30.0

1440 Charleston - North Charleston, SC

SC Berkeley; SC Charleston; SC Dorchester.

Non-SMSA Counties

30.7

SC Collection

Tennessee:

051 Chattanooga, TN:

SMSA Counties

1560 Chattanooga, TN - GA

12.6

GA Catoosa; GA Dade; GA Walker; TN Hamilton; TN Marion; TN Sequatchie.

Non-SMSA Counties

8.6

AL De Kalb; AL Jackson; GA Chattooga; GA Murray; GA Whitfield;
 TN Bledsoe; TN Bradley; TN Grundy; TN McMinn; TN Meigs; TN Monroe;
 TN Polk; TN Rhea.

052 Johnson City - Kingsport - Bristol, TN-VA:
 SMSA Counties' 2.6
 3660 Johnson City - Kingsport - Bristol. TN – VA
 TN Carter; TN Hawkins- TN Sullivan; TN Unicoi; TN Washington; VA Scott;
 VA Washington; VA Bristol.

Non-SMSA Counties 3.2
 TN Greene; TN Hancock; TN Johnson; VA Buchanan; VA Dickenson; VA Lee;
 VA Russell; VA Smyth; VA Tazewell; VA Wise; VA Norton; WV McDowell, WV Mercer.

053 Knoxville, TN
 SMSA Counties:
 3840 Knoxville, TN 6.6
 TN Anderson; TN Blount; TN Knox; TN Union.

Non-SMSA Counties 4.5
 KY Bell; KY Harlan; KY Knox; KY Laurel; KY McCreary; KY Wayne; KY Whitley; TN
 Campbell; TN Claiborne; TN Cooke; TN Cumberland; TN Fentress; TN Grainger,
 TN Hamblen; TN Jefferson; TN Loudon; TN Morgan; TN Roane; TN Scott;
 TN Sevier.

054 Nashville, TN:
 SMSA Counties:
 1660 Clarksville - Hopkinsville, TN - KY 18.2
 KY Christian; TN Montgomery.
 5360 Nashville - Davidson, TN 15.8
 TN Cheatham, TN Davidson; TN Dickson; TN Robertson; TN Rutherford; TN Sumner;
 TN Williamson; TN Wilson.

Non-SMSA Counties 12.0
 KY Allen; KY Barren; KY Butler; KY Clinton; KY Cumberland; KY Edmonson;
 KY Logan; KY Metcalfe; KY Monroe; KY Simpson; KY Todd; KY Trigg; KY Warren;
 TN Bedford; TN Cannon; TN Clay; TN Coffee; TN DeKalb; TN Franklin; TN Giles;
 TN Hickman; TN Houston; TN Humphreys; TN Jackson; TN Lawrence; TN Lewis;
 TN Macon; TN Marshall; TN Maury; TN Moore; TN Overton; TN Perry; TN Pickett;
 TN Putnam; TN Smith,, TN Stewart; TN Trouslale; TN Van Buren; TN Warren;
 TN Wayne; TN White.

055 Memphis, TN:
 SMSA Counties:
 4920 Memphis, TN-AR-MS 32.3
 AR Critteriden; MS Do Soto; TN Shelby; TN Tipton.

Non-SMSA Counties 26.5
 AR Clay; AR Craighead; AR Cross; AR Greene; AR Lawrence; AR Lee;
 AR Mississippi; AR Phillips- AR. Poinsett; AR Randolph; AR St. Francis; MS Alcorn,
 MS Benton; MS Bolivar; MS Calhoun; MS Carroll; MS Chickasaw, MS Clay;
 MS Coahoma; MS Grenada; MS Itawamba; MS Lafayette; MS Lee; MS Leflore;
 MS Marshall; MS Monroe; MS Montgomery; MS Panola; MS Pontotoc; MS Prentiss;
 MS Quitman; MS Sunflower; MS Tallahatchie; MS Tate; MS Tippah; MS Tishomingo;
 MS Union; MS Washington; MS Webster. MS Yalobusha; MO Dunklin;
 MO New Madrid; MO Perniscot; TN Benton; TN Carroll; TN Chester; TN Crockett;
 TN Decatur; TN Dyer; TN Fayette; TN Gibson; TN Hardeman; TN Hardin;
 TN Haywood; TN Henderson- TN Henry; TN Lake; TN Lauderdale; TN McNairy;
 TN Madison; TN Obion; TN Weakley.

**CHECK LIST OF EEO DOCUMENTATION FOR BIDDERS
ON GRANT/LOAN CONSTRUCTION
(Required by Executive Order 11246 as amended)**

The low, responsive responsible bidder must forward the following items, in duplicate, to the owner no later than ten (10) days after bid opening. The owner shall have one (1) copy available for inspection by the Office of Federal Contracts Compliance within 14 days after the bid opening. The web site for the OFCC is http://www.dol.gov/esa/ofcp_org.htm.

1. Project Number. Project Location. Type of Construction.
2. Proof of registration with the Joint Reporting Commission. (See Attachment Number 8.)
3. Copy of Affirmative Action Plan of contractor. Indicate company official responsible for EEO.
4. List of current construction contracts, with dollar amount. List contracting Federal Agency, if applicable.
5. Statistics concerning company percent workforce, permanent and temporary, by sex, race, trade, handicapped, and age. 40 CFR Part 7.
6. List of employment sources for project in question. If union sources are utilized, indicate percentage of minority membership within the union crafts.
7. Anticipated employment needs for this project, by sex, race and trade, with estimate of minority participation in specific trades.
8. List of subcontractors (name, address and telephone) with dollar amount and duration of subcontract. Subcontractor contracts over \$10,000 must submit items 1- 8. The following information must be provided for all supplier contracts regardless of contract size: name of company, contact person, address, telephone number, dollar value of the contract, and a list of the materials to be supplied to the prime contractor.
9. List of any subcontract work yet to be committed with estimate of dollar amount and duration of contract.
10. Contract Price. Duration of prime contract.
11. DBE Documents - See special instructions regarding use of Minority, and Women Owned, and Small Businesses.

Employer Information Report EEO-1

Under the direction of the US Equal Employment Opportunity Commission, the Joint Reporting Committee is responsible for the full-length, multi-phase processing of employment statistics collected on the Employer Information Report EEO-1. This report, also termed Standard Form 100, details the sex and race/ ethnic composition of an employer's work force by job category.

The Employer Information EEO-1 survey is conducted annually under the authority of Public Law 88-352, Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972. All employers with 15 or more employees are covered by Public Law 88-352 and are required to keep employment records as specified by Commission regulations. Based on the number of employees and federal contract activities, certain large employers are required to file an EEO-1 Report on an annual basis.

The EEO-1 Report must be filed by:

(A) All private employers who are: (1) subject to Title VII of the Civil Rights Act of 1964 (as amended by the Equal Employment Opportunity Act of 1972) with 100 or more employees EXCLUDING State and local governments, primary and secondary school systems, institutions of higher education, Indian tribes and tax-exempt private memberships clubs other than labor organizations; OR (2) subject to Title VII who have fewer than 100 employees if the company is owned or affiliated with another company, or there is centralized ownership, control or management (such as central control of personnel policies and labor relations) so that the group legally constitutes a single enterprise and the entire enterprise employs a total of 100 or more employees.

(B) All federal contractors (private employers), who: (1) are not exempt as provided for by 41 CFR 60-1.5, (2) have 50 or more employees, and (a) are prime contractors or first-tier subcontractors, and have a contract, subcontract, or purchase order amounting to \$50,000 or more; or (b) serve as depository of Government funds in any amount, or (c) is a financial institution which is an issuing an paying agent for U.S. Savings Bonds and Notes.

Only those establishments located in the District of Columbia and the 50 states are required to submit the EEO-1 Report. No Reports should be filed for establishments in Puerto Rico, the Virgin Islands or other American Protectorates.

When filing for the EEO-1 Report for the first time, go to the web site at: <http://www.mimdms.com/jrc.html> and select "Filing for the first time" from the box labeled INFORMATION. File out the electronic questionnaire to enter your company into Joint Reporting Committee (JRC) system. Once you have completed the registration process, you will be contacted on how to proceed with the EEO-1 Report. If you have previously registered with the JRC, follow their instructions to update your information.

Labor Standards Provisions For Federally Assisted Construction

Labor standards provisions applicable to contracts covering federally financed and assisted construction (29 CFR 5.5, Contract Provisions and Related Matters) that apply to EPA Special Appropriations Projects grants are:

(a)(4)(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(a)(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(a)(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5 (a) (1) through (10) and such other clauses as the U.S. Environmental Protection Agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(a)(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(b) Contractor Work Hours and Safety Standards Act. The Administrator, EPA shall cause or require the contracting officer to insert the following clauses set forth in paragraph (b)(1),(2),(3), and (4) of this section in full in any contract subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by *Section 5.5(a) of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any work week in which he or she is employed on such work to in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b) (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for unliquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The U.S. Environmental Protection Agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the

contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally- assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in section 5.1, the Administrator of EPA shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly worked, deductions made, and actual wages paid. Further, the Administrator of EPA shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the U.S. Environmental Protection Agency and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job. (Approved by the Office of Management and Budget under OMB control numbers 1215-0140 and 1215-0017.)

CERTIFICATIONS

Debarred Firms

All prime Construction Contractors shall certify that Subcontractors have not and will not be awarded to any firm that is currently on the EPA Master List of Debarred, Suspended and Voluntarily Excluded Persons in accordance with the provisions of 40 CFR 32.500(c). Debarment action is taken against a firm for noncompliance with Federal Law.

All bidders shall complete the attached certification (Attachment Number 10) and submit to the owner with the bid proposal.

Anti-lobbying Certification

All prime Construction Contractors must certify (Attachment Number 11) that no appropriated funds were or will be expended for the purpose of lobbying the Executive or Legislative Branches of the Federal Government or Federal Agency concerning this contract (contract in excess of \$100,000). If the Contractor has made or agreed to make payment to influence any member of Congress in regard to award of this contract, a Disclosure Form must be completed and submitted to the owner with the bid proposal.

All prime Contractors must require all Subcontractors to submit the certification, which must also be submitted to the owner.

**CERTIFICATION REGARDING DEBARMENT,
SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(A) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

I am unable to certify to the above statements. My explanation is attached.

CERTIFICATION REGARDING LOBBYING
Certification for Contracts, Grants,
Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

TYPED NAME & TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

____ I am unable to certify to the above statements. My explanation is attached.

UTILIZATION OF SMALL, MINORITY AND WOMEN'S BUSINESSES

The provisions of PL 102-389 and EPA's implementing regulation 40 CFR 31.36(e) require recipients of Federal assistance to award a fair share of sub-agreements to small, small rural, minority and women's businesses on contracts and sub-agreement performed under EPA Assistance Agreements.

The following procedures are to be followed for procurement under EPA Assistance Agreements.

The successful bidder must submit to the grantee within 10 days after bid opening, evidence of the positive steps taken to utilize small, minority and women's businesses. Information should include the following:

EPA Project Number. Project Location. Type of Construction.

List of current construction contracts, with dollar amount. List contracting Federal Agency, if applicable.

List of subcontractors (name, address and telephone) with dollar amount and duration of subcontract.

List of any subcontract work yet to be committed with estimate of dollar amount and duration of contract.

Contract Price. Duration of prime contract.

Such positive efforts shall include:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;

(4) Establishing delivery schedules, where the requirement perm its, which encourage participation by small and minority business, and women's business enterprises;

(5) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and

(6) Requiring each party to a sub-agreement to take the affirmative steps listed in paragraphs 1 through 5 of this section.

For purposes of clarification:

" This requirement applies to any EPA Financially assisted procurement.

" This requirement mandates three responsibilities. Separate solicitations must be made of small, small rural, minority and women's businesses enterprises.

" A minority business is a business, at least 51 percent of which is owned and controlled by minority group members (Black; Hispanic; Asian American; American Indian; and any other designations approved by the Office of Management and Budget that are U.S. citizens. Any specific clarification concerning the ownership and/or control issues will be provided by the EPA Regional Office.

" A women's business is a business, at least 51 percent of which is owned and controlled by one or more women who are U.S. citizens.

" The control determination will revolve around the minority or women owner's involvement in the day-to-day management of the business enterprise.

" Solicitation should allow adequate time for price analysis; EPA recommends that contact be made no later than 15 days before bid opening.

" Efforts taken to comply with this requirement must be documented in detail; maintain records of firms contacted, including any negotiation efforts to reach competitive price levels, and awards to the designated firms.

" Any proposed changes from the approved Minority/Women/Small business participation after EEO/MBE approval shall be reported to EPA prior to initiation of the action, with the reason for the proposed deviation.

" The EPA recommends that the grantee as well as the prime contractor utilize the services of the following agencies to find information on certified Minority/Women/Small business. Use of these services does not absolve the prime contractors from pursuing additional efforts to comply with this requirement.

Minority Business Development Service Centers These Centers are funded by the U.S. Department of Commerce to provide technical, financial and contracting assistance to minority, women's and small rural business enterprises. The locations of the Centers are available by selecting the appropriate Minority Business Development Agency regional office from: <http://www.mbda.gov/>.

U.S. Small Business Administration Central Contractor Registration (procurement marketing and access network) at <http://www.ccr.gov/>.

U.S. Small Business Administration (SBA) Online Women's Business Center. For the Women's Business Center nearest you, go to: <http://www.onlinewbc.gov/> and select Women's Business Centers.

For additional information on listings of certified MBE/WBE contractors and subcontractors in the States of Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee, contact Rafael Santamaria in EPA Region 4 at 404 562-8312.

**MINORITY AND WOMEN'S BUSINESS ENTERPRISE PARTICIPATION POLICY
MBE/WBE DATA SHEET II**

PROJECT NAME: _____ **BID DATE:** _____

1. Contractor's Name/Address:

2. Contact Person Name & Phone Number:

3. Total contract amount:

4. Total dollar amount/percent of contract of MBE participation:

5. Total dollar amount/percent of contract of WBE participation:

6. Certifications or self-certification* for each subcontractor enclosed: Yes No
7. Subcontracts or letters of intent signed by both parties enclosed: Yes No
8. **List of MBE Subcontractors:**
Name: _____
Address: _____
Phone: _____
Contact Person: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

Name: _____
Address: _____
Phone: _____
Contact Person: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____
9. **List of WBE Subcontractors:**
Name: _____
Address: _____
Phone: _____
Contact Person: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

Name: _____
Address: _____
Phone: _____
Contact Person: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

Attach Additional Sheets, If Necessary

*Self-certification: The subcontractor's attorney certifies on his/her letterhead that the subcontractor is a MBE, WBE or both. Call our office at (502) 564-2225, extension 562 if there are any questions.

MINORITY AND WOMEN'S BUSINESS ENTERPRISE PARTICIPATION POLICY

MBE/WBE DATA SHEET III

PROJECT NAME: _____ **BID DATE:** _____

1. Information concerning the efforts for obtaining subcontractor(s)

Name: _____
Address: _____
Phone: _____
Contact Person: _____
Contract Amount: _____
Amount of subcontract work: _____
Type of work to be subcontracted: _____

2. Information to be submitted by the bidder concerning good fair efforts taken

a. **Announcement:** List each publication in which an announcement or notification was placed and attach the tear sheet of each announcement from each publication

Name of publication: _____

Address: _____

Dates of announcement: _____

Specific subcontract areas announced: _____

b. List all Minority and Women Business Associations and/or offices contacted for assistance (i.e.: Minority Affairs Office, Louisville Minority Business Development Center).
(Attach a copy of each notification letter)

c. **Minority and Women's Business:** List each Minority and Women's Business construction firm or supplier to which a letter of solicitation was sent or with whom negotiations were held.

Company name and phone number: _____

Area of Minority and Women's Business Expertise: _____

Date of any follow-up call and person spoke to: _____

d. Copies of returned envelopes.

e. Copies of certified mail return receipts.

f. Copies of letters from solicited firms declining offer.

**REGION 4 DISADVANTAGED BUSINESS ENTERPRISE (DBE) NEGOTIATED
RATES (Subject to change - refer to grant award for specific fair share objectives)**

KENTUCKY

SRF Construction:
(both programs)

3% MBE and 5% WBE

Equipment:

1.5% MBE and 6.4% WBE

Services:

4% MBE and 1.8% WBE

Supplies:*

2% MBE and 5% WBE

BONDS AND INSURANCE

Bonding requirements for contracts of \$100,000 or less are contained in 40 CFR 31.36(h).

Bond requirements for contracts in excess of \$100,000 are:

Bid guarantee equivalent to five percent of the bid price. The bid guarantee shall consist of a firm commitment such as a certified check or bid bond submitted with the bid;

Performance bond equal to 100 percent of the contract price, and

Payment bond equal to 100 percent of the contract price. Bonds must be obtained from companies holding Certificates of Authority as acceptable sureties, issued by the U.S. Treasury.

Insurance requirements are contained in the General Conditions of the contract. In addition to the other required insurance, the owner or the contractor, as appropriate, must acquire any flood insurance made available by the Federal Emergency Management Agency as required by 44 CFR Parts 59-79, if construction will take place in a flood hazard area identified by the Federal Emergency Management Agency. The owner's requirements on Flood Insurance are contained in the Special Conditions Section of the Contracts Documents.

OUTLAY MANAGEMENT

The contractor must provide a contract progress schedule of percentage of work in place and costs against time; and a schedule of projected payments (cumulative) for construction and for the architectural/engineering contract when the contract is awarded. The payment schedule must be submitted, in a format similar to the attached sample, to the owner for forwarding to the State when the contract is awarded, and whenever actual payments on a project vary beyond -5 percent and +10 percent from the schedule, as determined by the grantee.

Contractor will be required to review each of these contract schedules during the month of June and to submit revised schedules, as necessary, no later than July 1st of each year.

CONSTRUCTION AND OUTLAY SCHEDULE

Project No.: _____

Applicant: _____

Contract Identification: _____

Description of Contract: _____

(INSTRUCTIONS FOR USE ON REVERSE SIDE)

SCHEDULE I - CONSTRUCTION SCHEDULE

Date for Advertisement: _____

Date for Opening Bids: _____

Pre-Construction Conference Date: _____

Date of Contract Award: _____

Contract Period: _____ days Projected Contract Completion Date: _____

Total Eligible Contract Amount: _____

Work Order Date: _____

Start Construction Date: _____

Contract Completed: _____

SCHEDULE II - CUMULATIVE OUTLAY SCHEDULE (55% EPA Share) - Projection
only for quarters that remain in the fiscal year (FY) plus cumulative
annual amount for the next FY.

Cum EPA Amount thru 1 st Qtr. Oct./Dec.:	\$ _____
Cum EPA Amount thru 2 nd Qtr. Jan./Mar.:	\$ _____
Cum EPA Amount thru 3 rd Qtr. Apr./June:	\$ _____
Cum EPA Amount thru 4 th Qtr. July/Sept.:	\$ _____
Cum EPA Amount for Next Fiscal Year:	\$ _____

INSTRUCTIONS (Construction and Outlay Schedules)

To insure timely achievement of the grant objectives the owner (grantee) must provide EPA with a grants activities schedule, contract construction schedules and corresponding payment outlay schedules for the grant and each contract under the grant. One copy of information similar to that showing the Construction and Outlay Schedule Form will be submitted for the grant schedule with the grant acceptance. A separate form will accompany each contract at time of contract award.

- A. The grant activities schedule shall depict the period from grant award through grant closeout and cover all major milestone date. The grant activities schedule shall include Schedule I information items as well as other appropriate items necessary to monitor the grant. Schedule II shall be filled out to estimate the cumulative (all construction and architectural/engineering contracts) payment schedule to be requested by the grantee from EPA during the grant period, and whenever actual outlays vary beyond -5% and +10% from the schedule.
- B. Individual contractor's construction schedules for each contract will be submitted to support the grant activities schedule. The Schedule I shall be submitted prior to date of advertisement of each contract and Schedule II along with the contractor's construction schedule shall be submitted seven (7) calendar days prior to the dates of the pre-construction conference. The contractor's construction schedule shall depict the contractor's plan for completing all contract requirements and show work placement in dollars versus contract time. Schedule II shall depict the contract payment outlay by month or quarter. The contract schedule will be coordinated with all parties at the pre-construction conference.

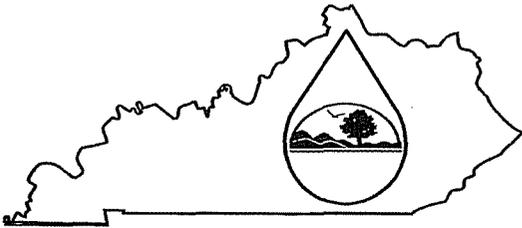
The grants activities schedule, contractor construction schedules, will be the basis for monitoring progress towards completion of the project. The schedules shall be maintained at the available for inspection and updated at least monthly. The schedules shall be revised to incorporate approved change orders as they occur.

All of the schedules will be submitted to the State Division of Water.

NOTICE OF INTENT

All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The contractor must complete and submit the attached form at least 48 hours prior to start of construction to the address below:

Section Supervisor
Inventory and Data Management Section
KPDES Branch
Kentucky Division of Water
14 Reilly Road, Frankfort Office Park
Frankfort, Kentucky 40601



Kentucky Pollutant Discharge Elimination System
(KPDES)
Notice of Intent (NOI)
for Storm Water Discharges
Associated with Industrial Activity Under the
KPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

II. Facility Operator Information

Name:		Phone:	
Address:		Status of Owner/Operator:	
City, State, Zip Code:			

I. Facility/Site Location Information

Name:			
Address:			
City, State, Zip Code:			
County:			
Site Latitude: (degrees/minutes/seconds)		Site Longitude: (degrees/minutes/seconds)	

III. Site Activity Information

MS4 Operator Name:				
Receiving Water Body:				
Are there existing quantitative data?	Yes <input type="checkbox"/>	If Yes, submit with this form.		
	No <input type="checkbox"/>			
SIC or Designated Activity Code Primary	2 nd	3 rd	4 th	
If this facility is a member of a Group Application, enter Group Application Number:				
If you have other existing KPDES Permits, enter Permit Numbers:				

V. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:		Completion Date:	
Estimated Area to be disturbed (in acres):			
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:			
Signature:		Date:	

Kentucky Pollutant Discharge Elimination System (KPDES)

Instructions

Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity
To Be Covered Under The KPDES General Permit

WHO MUST FILE A NOTICE OF INTENT (NOI) FORM

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the Storm Water Contact, Industrial Section, Kentucky Division of Water at (502) 564-3410.

WHERE TO FILE NOI FORM

NOIs must be sent to the following address:

Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601

COMPLETING THE FORM

Type or print legibly in the appropriate areas only. If you have any questions regarding the completion of this form call the Storm Water Contact, Industrial Section, at (502) 564-3410.

SECTION I - FACILITY OPERATOR INFORMATION

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility.

F = Federal M = Public (other than federal or state)
S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code.

SECTION III - SITE ACTIVITY INFORMATION

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges.

If data is available submit with this form.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section II of this application.

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other KPDES permits presently issued for the facility or site listed in Section II, list the permit numbers.

SECTION IV - ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION ACTIVITIES ONLY

Construction activities must complete Section IV in addition of Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION V - CERTIFICATION

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

WAGE RATES

Federal Davis-Bacon rates are not applicable for these funds. This determination applies only to the grant/loan portion of this project. Please contact the other funding sources, if applicable, for their requirements pertaining to federal wage rates. You must contact the Kentucky Labor Cabinet for determination of applicable state wages.

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GENERAL CONDITIONS OF THE CONTRACT

1. DEFINITIONS

Wherever used in the Contract Documents, the following terms or expressions or pronouns used instead shall have the meanings indicated which shall be applicable to both the singular and plural thereof.

- 1.1 "As directed," "as permitted," "reviewed," "acceptable," "approved," or words of similar import mean the direction, requirements, permission, approval, or acceptance of the Engineer, unless stated otherwise.
- 1.2 "As shown," "as indicated," "as detailed," or words of similar import refer to the Contract Drawings unless stated otherwise.
- 1.3 "Bidder" -- any person, partnership, corporation, association, or affiliation submitting a bid for the work.
- 1.4 "Change order" -- a written order to the Contractor authorizing an addition, deletion or revision in the work within the general scope of the Contract Documents or authorizing an adjustment in the Contract Price or Contract Time.
- 1.5 "Contract" -- the Contract Documents referred to in the General Conditions of the Contract covering the performing of the work and the furnishing of all labor, equipment, materials, and other property required for the doing of the work and covering the doing of all other things required by said Contract Documents.
- 1.6 "Contract Drawings" or "Plans" -- drawings which have been prepared by or on behalf of the Owner, as a basis for bids, when duly made a part of this Contract by incorporation or reference. Drawings submitted in pursuance of the terms of this contract by the successful bidder with his bid and by the Contractor to the Owner if and when approved by the Engineer. Drawings submitted by the Engineer to the Contractor during the progress of the work as provided for in the Contract.
- 1.7 "Contractor" -- the person, partnership, corporation, association, or affiliation with whom the Owner has executed the agreement.
- 1.8 "Date of award" -- the date formal Notice of Award of the Contract, signed by the Owner, has been delivered to the successful bidder or mailed to him by registered mail (return receipt) at the business address shown in his bid by some officer or agent of the Owner duly authorized to give such notice.
- 1.9 "Day" -- calendar day.
- 1.10 "Engineer" -- the firm of Water Management Services, LLC, Nashville, Tennessee, acting through its authorized representatives.
- 1.11 "Final acceptance" -- the date when the construction of the project is complete in accordance with the Contract Documents so that the entire project can be utilized for the purposes for which it is intended and all monies due the Contractor have been paid him in the final payment estimate.
- 1.12 "Inspector" -- the engineering or technical inspector duly authorized or appointed by the Engineer or by the Owner, limited to the particular duties entrusted to him.
- 1.13 "Owner" -- Green River Valley Water District, Cave City, Kentucky.
- 1.14 "Project" -- the undertaking to be performed as provided in the Contract Documents.
- 1.15 "Provide" -- means "furnish and install"
- 1.16 "Subcontractor" -- a person, partnership, corporation, association, or affiliation other than the Contractor supplying labor and materials or labor only at the site of the work.

- 1.17 "Substantial completion" -- the date as certified by the Engineer when the construction of the project or a specified part thereof is sufficiently completed in accordance with the Contract Documents so that the project or specified part can be utilized for the purposes for which it is intended.
- 1.18 "Suppliers" -- any person or organization who supplies materials or equipment for the work, including that fabricated to special design, but who does not perform labor at the site.
- 1.19 "Work" -- all labor necessary to produce the construction required by the Contract Documents and all material and equipment incorporated or to be incorporated in the project.

2. CONTRACT DOCUMENTS

2.1 General

The Contract Documents comprise the following general classifications of documents, including all additions, deletions, and modifications incorporated therein before the execution of the Agreement.

Bidding documents
Contractual documents
Conditions of the Contract
Specifications
Drawings

2.2 Bidding Documents

The bidding documents issued by the Owner to assist bidders in preparing their bids include:

- 2.2.1 Invitation to Bid bound herewith.
- 2.2.2 Instructions to Bidders bound herewith.
- 2.2.3 The bid which, is the offer of a bidder to perform the work described in the Contract Documents, made out and submitted on the prescribed bid form bound herewith, properly signed and guaranteed.
- 2.2.4 Any addenda issued during the time of bidding or forming a part of the Contract Documents used by the bidder for the preparation of his bid shall be covered in the bid and shall be made a part of the Contract. Receipt of each addendum shall be acknowledged in the bid.

2.3 Contractual Documents

2.3.1 Agreement

The Agreement covers the performance of the work described in the Contract Documents, including all supplemental addenda thereto and all general and special provisions pertaining to the work or materials therefore.

2.3.2 Bonds

The Contractor shall, at the time of his execution of the Agreement, furnish bonds payable to the Owner in the form of bonds set forth herein, secured by a surety company acceptable to the Owner, as follows:

- 2.3.2.1 Faithful performance bond in an amount equal to 100 percent of the total Contract amount, conditioned upon the faithful performance of all covenants and stipulations under the Contract and holding good for a period of one year after the final acceptance of the work to protect the Owner against the results of defective materials, workmanship, and equipment during that time.

- 2.3.2.2 Payment bond in an amount equal to 100 percent of the total Contract amount for the payment of all persons, companies, or corporations who perform labor upon or furnish material to be used in the work under this Contract.
- 2.3.2.3 It is the responsibility of the Contractor to notify all Surety companies and other signers of any of the bonds listed above to familiarize themselves with all of the conditions and provisions of this Contract. All Surety companies and other signers shall waive their right of notification by the Owner of any change or modification of this Contract, or of decreased or increased work, or of the cancellation of this Contract, or of other acts by the Owner or its authorized employees or agents under the terms of this Contract. The waiver by the Surety companies and other signers shall in no way relieve the Surety companies and other signers of their obligations under this Contract.

2.4 Conditions of Contract

- 2.4.1 Special Conditions of the Contract which shall supplement or amplify the General Conditions of the Contract and which are bound herewith.
- 2.4.2 General Conditions of the Contract bound herewith and of which this paragraph is a part.
- 2.4.3 Federal laws and regulations applicable to this Contract and bound herewith.

2.5 Specifications and Drawings

- 2.5.1 Contract Specifications bound herewith, which are listed in the Table of Contents for these Contract Documents.
- 2.5.2 Contract Drawings including, but not limited to, those listed in Volume II of the Contract Documents.

2.6 Discrepancies

Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, who shall promptly correct such inconsistencies or ambiguities in writing. Any work done by the Contractor after such findings, until authorized, will be done at the Contractor's risk.

2.7 Interpretation of Specifications and Drawings

The Contract Specifications and the Contract Drawings are intended to be explanatory of each other. Any work indicated on the Contract Drawings and not in the Contract Specifications, or vice versa, is to be executed as if indicated in both. In the event of any doubt or question arising respecting the true meaning of the Contract Specifications or Drawings, reference shall be made to the Engineer and his decision thereon shall be final.

2.8 Dimensions

Finished surfaces, in all cases, shall conform with the lines, grades, cross-sections, and dimensions shown on the Contract Drawings. Deviations from the Contract Drawings, as may be required by the exigencies of construction, will in all cases be determined by the Engineer and authorized in writing by the Engineer or Owner. If additional dimensions are required, they shall be requested from the Engineer.

2.9 Titles and Headings

- 2.9.1 The titles and subheadings printed on the Contract Drawings, in the General Conditions, in the Contract Specifications, and elsewhere in the Contract Documents are inserted for the convenience of reference only and shall not be taken or considered as having any bearing on the interpretation thereof.
- 2.9.2 Separation of the Contract Specifications into Divisions and Sections shall not operate to make the Engineer an arbiter to establish limits of work between the Contractor and Subcontractors or between trades.

2.10 Additional Drawings and Instructions

2.10.1 The Contract Drawings and Specifications are intended to be comprehensive and to indicate, in more or less detail, the scope of the work. Should it appear that the work to be done or any of the matters relative thereto is not sufficiently detailed or explained in these Contract Documents including the Contract Drawings, the Contractor shall apply to the Engineer for such further explanations as may be necessary and shall conform thereto as part of this Contract, so far as may be consistent with the terms of the Contract.

2.10.2 In addition to these explanations, the Engineer may furnish additional drawings and instructions from time to time during the progress of the work to clarify or to define in greater detail the intent of the Contract Specifications and Contract Drawings, and the Contractor shall make his work conform to all such additional drawings and instructions.

2.11 Copies Furnished

2.11.1 The Owner will furnish to the Contractor, free of charge, 5 copies of Drawings and documents.

2.11.2 Additional sets desired will be furnished at printing cost, based upon commercial printing rates.

3. OWNER-CONTRACTOR-ENGINEER RELATIONS

3.1 Rights-of-Way

The Owner will provide all rights-of-way and easements for the work to be constructed by the Contractor under this Contract.

3.2 Surveys and Staking

The Contractor shall be responsible for establishing all construction lines, grades and measurements necessary for the proper prosecution and control of the work contracted for under these Specifications based on monuments and control points shown on the Contract Drawings. The Contractor shall furnish the Engineer "cut-sheets" for all lines showing plan grade, centerline grade, centerline cut, offset grade, and offset cut at manholes prior to excavation and/or drilling operations. The review of the "cut-sheets" by the Engineer does not relieve the Contractor of the responsibility for any errors therein or of proper line and grade in the prosecution of the work.

3.3 Suspension of Work

The Owner may at any time suspend the work, or any part thereof, by giving reasonable notice to the Contractor. The work shall be resumed by the Contractor on the date fixed in a written notice from the Owner to the Contractor. If suspension of the work is due to no fault of the Contractor and not otherwise authorized by other provisions of the Contract Documents, the Owner will reimburse the Contractor for such expense, if any, which is incurred by the Contractor in connection with the work under this Contract as a result of such suspension which would not have been incurred or reasonably required if there had not been such suspension; provided that there shall be no reimbursement if the period of suspension occurs after expiration of the time allowed for completion of the work, exclusive of any extension of time because of avoidable delays.

3.4 Right of Owner to Terminate Agreement

3.4.1 The Owner shall have the right to terminate his agreement with the Contractor after giving five days written notice of termination to the Contractor in the event of any default by the Contractor.

3.4.2 It shall be considered a default by the Contractor whenever he shall:

3.4.2.1 Declare bankruptcy, become insolvent, or assign his assets for the benefit of his creditors.

3.4.2.2 Disregard or violate provisions of the Contract Documents or fail to prosecute the work according to the agreed schedule of completion, including extensions thereof.

3.4.2.3 Fail to provide a qualified superintendent, competent workmen or subcontractors, or proper materials, or fail to make prompt payment therefore.

3.4.3 In the event of termination of the Agreement by the Owner because of default by the Contractor, the Owner may take possession of the work and of all materials and equipment thereon and may finish the work by whatever method and means he may select.

3.5 Emergency Protection

3.5.1 In case of an emergency which threatens loss, damage, or injury to persons or property and which requires immediate action to remedy, in the absence of the Contractor's personnel, then and in that event, the Owner, with or without notice to the Contractor or his Surety, may provide suitable protection to the said property and persons by causing such work to be done and such material to be furnished as shall provide such protection as the Owner may consider necessary and adequate. The cost and expense of such work and material so furnished shall be borne by the Contractor and, if the same shall not be paid on presentation of the bills therefore, then such costs shall be deducted from any amounts due or to become due the Contractor.

3.5.2 The performance of such emergency work under the direction of the Owner shall in no way relieve the Contractor from any damages which may occur during or after such precaution has been taken by the Owner.

3.6 Archaeological Finds

Notwithstanding anything to the contrary herein, in the event any archaeological artifacts within the project are discovered during the course of the work, the Owner shall have and retain all right, title, and interest to such artifacts and shall have the further right during the course of the Contract to examine or cause to have examined, the site of the work for any such artifacts and to perform or have performed archaeological excavations and all other related work to explore for, discover, recover and remove such artifacts from the site of the work. In the event the work of archaeological examination and related work delays the Contractor's work, he shall be entitled to an extension of time to complete the work equal to the number of days he is thus delayed.

3.7 Office of Contractor at Site

NOT A REQUIREMENT OF THIS PROJECT.

3.8 Attention to Work

The Contractor shall supervise the work to the end that it shall be prosecuted faithfully, and he shall at all times be represented by a competent superintendent or foreman who shall be present at the work and who shall receive and obey all instructions or orders given under this Contract; and who shall have full authority to execute the same, and to supply materials, tools and labor without delay; and who shall be the legal representative of the Contractor. The Contractor shall be liable for the faithful observance of any instructions delivered to him or to his authorized representative.

3.9 Protection of Existing Structures

Unless otherwise indicated on the Contract Drawings or unless otherwise taken care of by the Owner thereof, all utilities and all structures of any nature, whether below or above ground, that may be affected by the work shall be protected and maintained by the Contractor and shall not be disturbed or damaged by him during the progress of the work.

Should the Contractor disturb, disconnect, or damage any utility or any structure, all expenses of whatever nature arising from such disturbance or the replacement or repair thereof shall be borne by the Contractor.

3.10 Protection of Contractor's Work and Property

3.10.1 The Contractor shall protect his work, supplies, and materials from damage due to the nature of the work, the action of the elements, trespassers, or any cause whatsoever until the completion and acceptance of the work.

3.10.2 Neither the Owner nor any of its officers, employees, or agents assumes any responsibility for collecting indemnity from any persons or person causing damage to the work of the Contractor.

3.11 Surveys

3.11.1 The Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, and elevations.

3.11.2 The Contractor shall carefully preserve all bench marks, reference points, and stakes established by the Engineer and, in case he causes damage or disturbance, he will be charged for the cost of replacement and shall be responsible for any mistakes that may be caused by their loss.

3.12 Location of Utilities

3.12.1 The elevation and location of all utilities shown on the Contract Drawings were taken from public records. It shall be the duty of the Contractor to make final and exact determination of the location and extent of these utilities, and he will be liable for any expense resulting from damage to them.

3.12.2 Any expenses incurred by the Contractor for repair of damage, relocation, or removal of underground on-site piping and utilities not shown on the Contract Drawings or which cannot be reasonably inferred from visible above ground features will be assumed by the Owner, providing that the Contractor uses reasonable care in his discovery and repair operations. The Contractor shall immediately notify the Engineer of any facility discovered while performing work required by the Contract and which has not been identified on the Contract Drawings.

3.12.3 Because of the nature of the work, minor adjustments may be required in new construction to meet existing conditions. Adjustments, which may be accomplished without expense to the Contractor, shall be made without additional cost to the Owner.

3.13 Subcontractors

3.13.1 No Subcontractor will be recognized as such; and all persons engaged in the work of construction will be considered as employees of the Contractor and he will be held responsible for their work which shall be subject to the provisions of the Contract.

3.13.2 The Contractor shall perform with his own organization and with the assistance of workmen under his immediate supervision work of a value not less than thirty percent of the value of all work embodied in this Contract, except that furnishing and installing items of major equipment will be exempted from this requirement.

3.13.3 The Contractor shall notify the Owner in writing of the names of all Subcontractors he proposes to employ on the Contract and shall not employ any Subcontractors until the Owner's approval in writing covering such Subcontractors has been obtained.

3.13.4 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the Owner. It shall be further understood that the Owner will have no direct relations with any Subcontractor. Any such necessary relations between Owner and Subcontractor shall be handled by the Contractor.

3.13.5 Should any Subcontractor fail to perform in a satisfactory manner the work undertaken by him, such subcontract shall be terminated immediately by the Contractor upon notice from the Owner.

3.14 Liability of Contractor

3.14.1 The mention of any specific duty or liability imposed upon the Contractor shall not be construed as a limitation or restriction of any general or other liability or duty imposed upon the Contractor by this Contract, said reference to any specific duty or liability being made merely for the purpose of explanation.

3.14.2 The Contractor shall be responsible to the Owner for the acts and omissions of all his employees and all Subcontractors, their agents and employees, and all other persons performing any of the work under an agreement with the Contractor.

3.15 Assumption of Risks

Until the completion and final acceptance by the Owner of all of the work under or implied by this Contract, except those portions which are under beneficial use by the Owner, all work shall be under the Contractor's care and charge and he shall be responsible therefor. The Contractor shall rebuild, replace, repair, restore, and make good all injuries, damages, re-erection, and repairs occasioned or rendered necessary by causes of any nature whatsoever to all or any portions of the work, except as otherwise stipulated.

3.16 Responsibility for Damage

3.16.1 The Contractor shall assume the defense of and indemnify and save harmless the Owner and each and every officer, employee, and agent thereof, and the Engineer from any and all loss, liability, or damage and from all suits, actions, damages, or claims of every name and description, to which the Owner or any of its officers, employees, or agents or the Engineer may incur or be subjected to put by reason of injury to persons or property in the execution of the work resulting from negligence or carelessness on the part of the Contractor, his employees, subcontractor, or agents in the delivery of materials and supplies; or by or on account of any act or omission of the Contractor, his employees, subcontractors, or agents including, but not limited to, any failure to fulfill the terms of or comply with all laws and regulations which apply to this Contract; and said Owner shall have the rights to estimate the amount of such damage and pay the same, and the amount so paid for such damage shall be deducted from the money due the Contractor under this Contract, or the whole or so much of the money due or to become due the Contractor under this Contract, as may be considered necessary by the Owner, shall be retained by the Owner until such suits or claims for damages shall have been settled or otherwise disposed of, and satisfactory evidence to that effect furnished to the Owner.

3.16.2 The rights of the Owner under this Contract in the control of the quality and completeness of the work shall not make the Contractor an agent of the Owner, and the liability of the Contractor for all damages to persons or to public or private property arising from the Contractor's execution of the work shall not be lessened because of the existence, exercise, or non-exercise of such rights.

3.17 Acceptance of Contractor's Plans

The acceptance by the Engineer of any drawing or any method of work proposed by the Contractor shall not relieve the Contractor of any of his responsibility for any errors therein and shall not be regarded as any assumption of risk or liability by the Owner or any officer or employee thereof; and the Contractor shall have no claim under the Contract on account of the failure or partial failure or inefficiency of any plan or method so accepted. Such acceptance shall be considered to mean merely that the Engineer has no objection to the Contractor's using, upon his own full responsibility, the plans or method proposed.

3.18 Suggestions to Contractor

Any plan or method of work suggested by the Engineer to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor, and the Engineer and the Owner shall assume no responsibility therefore.

3.19 Cooperation with Owner and Other Contractors

Any difference or conflict which may arise between the Contractor and other Contractors who may be performing work on behalf of the Owner or between the Contractor and workmen of the Owner in regard to their work shall be adjusted and determined by the Engineer. If the work of the Contractor is delayed because of any acts or omissions of any other Contractor of the Owner, the Contractor shall on that account have no claim against the Owner other than for an extension of time.

3.20 Authority of the Engineer

All work done under this Contract shall be done in accordance with the Contract Documents and in a good workmanlike manner. To prevent disputes and litigation, the Engineer shall, in all cases, determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this Contract. The Engineer shall decide all questions relative to the true construction, meaning, and intent of the Contract Specifications and the Contract Drawings; shall decide all questions which may arise relative to the classifications and measurements of quantities and materials and the fulfillment of this Contract; and shall have the power to reject work or material which does not conform to the terms of this Contract. His estimate and decision in all matters shall be a condition precedent to an appeal to the Owner or the right of the Contractor to receive, demand, or claim any money or other compensation under this Contract and a condition precedent to any liability on the part of the Owner to the Contractor on account of this Contract. Whenever the Engineer shall be unable to act, in consequence of absence or any other cause, then such person as the Engineer or the Owner shall designate shall perform any and all of the duties and be vested with any or all of the powers herein given to the Engineer.

3.21 Inspection

Properly authorized and accredited inspectors shall be considered to be the representatives of the Owner with the duties and powers entrusted to them as provided herein but limited by paragraphs 5.11 and 5.12 of this Section. It will be their duty to inspect materials and workmanship of those portions of the work to which they are assigned, either individually or collectively, under instructions of the Engineer and to report any and all deviations from the Contract Drawings, Contract Specifications, and other Contract provisions which may come to their notice.

3.22 Observation of Completed Work

3.22.1 If any work is covered up without being inspected by the Engineer, it must, if required by the Engineer in writing, be uncovered for examination and properly restored at the Contractor's expense.

3.22.2 Re-examination of any work may be ordered by the Engineer and, if so ordered in writing, the Contractor shall remove or uncover such portions of the completed work as may be directed by the Engineer at any time before acceptance of the work. After examination, the Contractor shall restore the work to the standard required by the Contract Documents. Should the work thus exposed or examined prove acceptable, the uncovering or removing and the restoring of the work shall be paid for as extra work but, should the work exposed or examined prove unacceptable, the uncovering, removing, and restoring of the work shall be at the Contractor's expense.

4. MATERIALS, EQUIPMENT, AND WORKMANSHIP

4.1 General Quality of Materials

Materials and equipment shall be new and of a quality equal to that specified.

4.2 Quality in Absence of Detailed Specifications

Whenever under this Contract it is provided that the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required, with due consideration in either situation of the use to which they are to be put. In general, the work performed shall be in full conformity and harmony with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

4.3 Materials and Equipment Specified by Name

Any material or equipment indicated or specified by brand or trade name also lists at least one additional brand or trade name of comparable quality or utility and is followed by the words "or equal" except for those items of material or equipment which may be required by Contract Specifications to match others in use in an existing facility. The Contractor may offer any material or equipment which shall be equal in every respect to that specified, but written acceptance of such equipment or material shall be obtained from the Engineer or the Owner. The decision of the Engineer or Owner shall be final.

4.4 Approval of Materials and Equipment

All materials and equipment offered to be furnished or furnished for the work are subject to inspection and approval or rejection by the Engineer. Insofar as practicable, approval shall be obtained prior to purchase and delivery of materials and equipment to the site of the work.

4.5 Removal of Condemned Materials, Structures, and Work

The Contractor shall remove from the site of the work, without delay, all rejected materials, structures, or work of any kind brought to or incorporated in the work and, upon his failure to do so, or to make satisfactory progress in so doing within two working days after the service of a written notice from the Engineer, the rejected material or work may be removed by the Owner and the cost of such removal shall be taken out of the money that may be due or may become due the Contractor on account of or by virtue of this Contract. No such rejected material shall again be offered for use by the Contractor under this Contract.

4.6 Sunday, Holiday, and Night Work

No work shall be done between the hours of six o'clock P.M. and seven o'clock A.M. nor on Saturdays, Sundays or legal holidays except such work as is necessary for the proper care and protection of work already performed or except in case of emergency and, in any case, only with the permission of the Engineer. It is understood, however, that night work may be established as a regular procedure by the Contractor if he first obtains the written permission of the Engineer and that such permission may be revoked at any time by the Engineer if the Contractor fails to maintain at night adequate force and equipment for reasonable prosecution and to justify inspection of the work.

4.7 Records of Employees

The Contractor and each Subcontractor shall keep an accurate record showing the name, place of residence, occupation, per diem pay, and actual hours worked each day and each calendar week by each person employed in connection with the work. The records shall be available at any time to the Engineer or his duly authorized representative.

4.8 Final Guarantee

- 4.8.1 All work shall be guaranteed by the Contractor for a period of one year from and after the date of acceptance of the work by the Owner.

- 4.8.2 If, within the guarantee period, repairs or changes are required in connection with guaranteed work which, in the opinion of the Engineer, is rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Owner and without expense to the Owner, do the following:
- 4.8.2.1 Place in satisfactory condition in every particular all of such guaranteed work and correct all defects therein.
- 4.8.2.2 Make good all damage to the building, or site, or equipment, or contents thereof which, in the opinion of the Engineer, is the result of the use of materials, equipment, or workmanship which are inferior, defective or not in accordance with terms of the Contract.
- 4.8.2.3 Make good any work or material, or the equipment and contents of building, structure, or site disturbed in fulfilling any such guarantee.
- 4.8.2.4 Submit a work schedule showing the dates of starting and completing the repair work.
- 4.8.3 If the Contractor, after notice, fails within 10 days to proceed to comply with the terms of this guarantee, the Owner may have the defects corrected, and the Contractor and his Surety shall be liable for all expense incurred; provided, however, that in case of an emergency where, in the opinion of the Owner, delay would cause loss or damage, repairs may be started without notice being given to the Contractor and the Contractor shall pay the cost thereof.
- 4.8.4 If minor repairs are made by the Owner without notice to the Contractor or if the Owner's personnel are used to assist the Contractor or an equipment supplier in making repairs to defective work, the Contractor will be billed for and shall pay the costs of the minor repairs and the cost associated with the use of Owner's personnel.
- 4.8.5 If, in order to make required repairs, it is considered necessary by the Contractor or the manufacturer that the repairs be made at the manufacturer's factory, the Contractor shall pay the cost of removing, crating, shipping, repairing, and reinstalling the equipment.
- 4.8.6 All special guarantees or warranties applicable to specific parts of the work as may be stipulated in the Contract Specifications or other papers forming a part of this Contract shall be subject to the terms of this paragraph during the first year of the life of each such guarantee. All special guarantees and manufacturers' warranties shall be assembled by the Contractor and delivered to the Engineer along with a summary list thereof before the acceptance of the work.

5. INSURANCE, LEGAL RESPONSIBILITY, AND SAFETY

5.1 Insurance

The Contractor shall take out, pay for, and maintain throughout the duration of, and specifically for this Contract the following insurance coverage.

5.1.1 Public Liability and Property Damage Insurance

5.1.1.1 For Contractor

This insurance shall protect the Contractor from claims for bodily injury and property damage (except automotive equipment) which may arise because of the nature of the work or from operations under this Contract.

5.1.1.2 For Owner and Engineer

This separate policy of insurance shall name the Owner, the Engineer, their partners, officers, agents and employees with respect to said work. Both bodily injury and property damage insurance must be on an occurrence basis, and said policy shall provide that the coverage afforded thereby shall be primary coverage to the full limit of liability stated in the declarations and, if said Owner, the Engineer, and their partners, officers, agents and employees have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only. No exclusions shall be permitted by endorsement with the exception of preparation or approval of maps and plans, opinions, reports, surveys, designs, or specifications.

5.1.1.3 Amount of Coverage

Each of the above public liability and property damage policies of insurance shall provide coverage in the following minimum limits of liability:

1.	General Aggregate	\$ 2,000,000
2.	Products/Completed Operations	\$ 2,000,000
3.	Each Occurrence	\$ 1,000,000
4.	Fire/Legal	\$ 100,000
5.	Medical Payments	\$ 5,000

5.1.1.4 Subcontractors

The public liability and property damage insurance shall not be deemed to require the Contractor to have his Subcontractors named as co-insureds in his policy of public liability and property damage, but the policy shall protect him from contingent liability which may arise from operations of his subcontractors. Also, the Contractor shall secure certificates of insurance as evidence that each Subcontractor carries insurance to provide coverage under this Contract to the same limits as is required by the Contractor. The Contractor shall submit copies of his Subcontractors insurance certificates to the Owner and the Engineer as evidence of insurance coverage.

5.1.1.5 Included Coverage

The above public liability and property damage insurance shall also include the following coverage's:

Premises - Operations - Escalators.

Contractor's protective (Subcontractors to the Contractor).

Products - Completed Operations.

Personal Injury (false arrest, libel, wrongful eviction, etc.).

Broad Form Property Damage.

XCU (explosion, collapse, underground damage). Exclusions deleted when applicable to operations performed by the Contractor or his Subcontractors.

Builders Risk

5.1.1.6 Comprehensive Automobile Liability

This insurance shall cover owned, hired, and other non-owned automobiles as shall protect the Contractor from claims for bodily injury or property damage which may arise from the use of motor vehicles engaged in various operations under this Contract. The automobile insurance shall provide minimum limits of liability for bodily injury of \$500,000 for each person and \$1,000,000 each occurrence, and \$500,000 of property damage each occurrence.

5.1.1.7 Umbrella Policy

At the option of the Contractor, primary limits may be less than required with an umbrella policy providing the additional limits needed. This form of insurance will be acceptable provided that the primary and umbrella policies both provide the insurance coverages herein required, and further provide that the umbrella policy minimum limits of coverage are \$1,000,000 per occurrence and \$2,000,000 aggregate. The umbrella coverage shall not apply to the Owner's and Engineer's protective policy.

5.1.2 Workmen's Compensation Insurance

Before beginning the work, the Contractor shall furnish to the Owner satisfactory proof that he has taken out, for the period covered by the work under this Contract, full Workmen's Compensation insurance for all persons whom he may employ in carrying out the work contemplated under this Contract. In the event that the work of this Contract falls within the jurisdiction of the United States Longshoremen and Harbor Workers Compensation Act and liability under Admiralty and Railroad Employees Federal Liability Act, the Contractor shall extend his Workmen's Compensation insurance to provide and maintain in full force and effect during the period covered by this Contract insurance coverage under one or both of these Acts.

5.1.3 Workman's Occupational Diseases Insurance

Workman's occupational diseases insurance shall be taken out covering all persons whom the Contractor may employ in carrying out the work contemplated under this Contract.

5.2 Certificate of Insurance

The Contractor shall, at the time of execution of his Contract, file with the Owner a Certificate of Insurance in the form set forth herein, and copies of the policies covering all his insurance as required herein, and the policy or policies of insurance covering said Owner, the Engineer, and their partners, officers, agents, and employees. In those states where use of the preprinted Certificate of Insurance form is prohibited, the Contractor shall submit an approved form of Certificate of Insurance providing the coverages herein required. Each such policy and certificate shall be satisfactory to the Owner and shall bear an endorsement precluding cancellation, reduction, or change in coverage without giving the Owner at least 30 days prior notice thereof in writing. (The term "will endeavor to mail" shall not be acceptable.) Nothing contained in the insurance requirements shall be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operations under this Contract.

5.3 Notification of Insurance Companies

It is the responsibility of the Contractor to notify all insurance companies to familiarize themselves with all of the conditions and provisions of this Contract. The insurance companies shall waive their right of notification by the Owner of any change or modification of this Contract, or of decreased or increased work, or of the cancellation of this Contract, or of any other acts by the Owner or its tract. The waiver by the insurance companies shall in no way relieve the insurance companies of their obligations under this Contract.

5.4 Hold Harmless Agreement

Contractor shall indemnify and save harmless the Owner, the Engineer, and all of their partners, officers, agents, and employees from all suits, actions, or claims of any character brought for or on account of any injuries to or death of or damages received by any person, persons, or property resulting from the operations of the Contractor or any of his Subcontractors in prosecuting the work under this Contract, except only such damage, injury, or death as shall have been occasioned by the sole negligence of the Owner or Engineer.

5.5 Injury or Illness Reports

The Contractor shall file with the Engineer three copies of employer's first report of injury or illness immediately following any incident requiring the filing of said report during the prosecution of the work under this Contract. The Contractor shall also furnish to the Engineer three copies of the employer's first report of injury or illness involving any Subcontractor on this project.

5.6 Patents

5.6.1 Except as otherwise provided in these Contract Documents, the Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the Owner, the Engineer, and their duly authorized representatives or employees from all suits at law, or actions of every nature for, or on account of the use of any patented materials, equipment, devices, or processes.

5.6.2 Should the Contractor, his agents, servants, or employees, or any of them be enjoined from furnishing or using any invention, article, material, or appliance supplied or required to be supplied or used under this Contract, the Contractor shall promptly offer other articles, materials, or appliances in lieu thereof, of equal efficiency, quality, finish, suitability, and market value for review by the Engineer. If Engineer should disapprove the offered substitutes and should elect, in lieu of a substitution, to have supplied and to retain and use any such invention, article, material, or appliance as may by this Contract be required to be supplied, the Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for the Owner and officers, agents, and employees, or any of them to use such invention, article, material, or appliance without being disturbed or in any way interfered with by a proceeding in law or equity on account thereof.

Should the Contractor neglect or refuse to make any approved substitution promptly or to pay such royalties and secure such licenses as may be necessary, then, in that event, the Engineer shall have the right to make such substitution or the Owner may pay such royalties and secure such licenses and charge the cost thereof against any money due the Contractor from the Owner, or recover the amount thereof from him and his Sureties notwithstanding that final payment under this Contract may have been made.

5.6.3 Except as otherwise provided in these Contract Documents, Contractor shall pay all such royalties or other monies required to be paid as aforesaid.

5.7 Laws to be Observed

The Contractor shall keep himself fully informed of all existing and future federal, state, county, and municipal laws, ordinances, and regulations which in any manner affect those engaged or employed in the work or the materials used in the work or the conduct of the work or the rights, duties, powers, or obligations of the Owner or of the Contractor or which otherwise affect the Contract, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. He shall at all times observe and comply with and shall cause all his agents, subcontractors, and employees to observe and comply with all such laws, ordinances, regulations, orders and decrees and shall protect and indemnify the Owner and all of its officers, agents, and employees, and the Engineer against any claim, loss, or liability arising or resulting from or based upon the violation of any such law, ordinance, regulation, order or decree, whether by himself or by his agents, subcontractors, or employees.

5.8 Provisions of Law

It is specifically provided that this Contract is subject to all the provisions of law regulating and controlling the performance of work for the Owner, and that the rules of law shall prevail over any provision contained in any of the Contract Documents which may be in conflict thereto or inconsistent therewith. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein and the Contract Documents shall be read and enforced as though it were included herein and, if, through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then upon application of either party, the Contract Documents shall forthwith be physically amended to make such insertion or correction.

5.9 Deliveries to Contractor

Delivery by Owner or any of its agents or representatives to Contractor of any drawings, samples, notices, letters, communications, or other things may be made by personal delivery to Contractor; by personal delivery to Contractor's foreman or superintendent at the site of the work; by delivery to the Contractor's business address specified in the bid or specified in a written notice of changed address delivered to Owner; or by delivery to the Contractor's office at the site of the work. Delivery to the Contractor's above-mentioned business address or to Contractor's office at the site of the work may be made either by personal delivery to such address or office or by depositing the thing to be delivered in the United States mail, postage prepaid, addressed to such address or office.

5.10 Assignment of Contract

This Contract may not be assigned in whole or in part except upon the written consent of the Owner. Any assignment agreement shall be subject to review and approval by the Owner.

5.11 Protection of Persons and Property

5.11.1 The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The Contractor shall furnish such watchmen, guards, fences, warning signs, lights, and walkways and shall take all other precautions as shall be necessary to prevent damage to persons or property. All structures and improvements in the vicinity of the work shall be protected by the Contractor, his employees, subcontractors, or agents and it shall be restored to a condition as good as when he entered upon the work.

5.11.2 The duty of the Engineer to conduct construction inspection of the Contractor's performance does not include any review of the adequacy of the Contractor's safety measures in, on, or near the construction site or sites. The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences, or procedures required for the Contractor to perform his work.

5.12 Liability of Owner's Representatives and Officials

No official or employee of the Owner, nor the Engineer, nor any authorized assistant or agent of any of them shall be personally responsible for any liability arising under this Contract. The Engineer shall not be responsible for construction means, methods, techniques, sequences and procedures, time of performance, or for safety precautions and programs in connection with the construction work. The Engineer shall not be responsible for the Contractor's failure to carry out the work in accordance with the construction Contract. The Engineer shall not be responsible for acts or omissions of the Contractor, any Subcontractors, or any of their agents or employees, or any other persons performing any of the work.

6. PROGRESS AND COMPLETION OF WORK

6.1 Notice of Starting Work

The Contractor shall notify the Owner in writing 48 hours before starting work at the site of the work of his intentions to do so. In case of a temporary suspension of work, he shall give reasonable notice before resuming work.

6.2 Time of Completion

The Contractor shall promptly begin the work and prosecute the same until the work under this Contract shall be completed and ready for full use within the time specified in the Agreement.

6.3 Equipment and Methods

The work under this Contract shall be prosecuted with all materials, tools, machinery, apparatus, and labor, and by such methods as are necessary to complete the execution of everything described, shown, or reasonably implied in the Contract Documents. If at any time before the beginning or during the progress of the work, any part of the Contractor's plant or equipment or any of his methods of execution of the work appear to the Engineer to be inefficient or inadequate to ensure the required quality or rate of progress of the work, he may request and the Owner may order the Contractor to increase or improve his facilities or methods and the Contractor shall comply promptly with such orders, but neither compliance with such orders nor failure of the Owner to issue such orders shall relieve the Contractor from his obligation to secure the quality of the work and the rate of progress required. The Contractor alone shall be responsible for the safety, adequacy, and efficiency of his equipment and methods.

6.4 Unfavorable Weather and Other Conditions

During unfavorable weather and other unfavorable conditions, the Contractor shall pursue only such portions of the work as shall not be damaged thereby. No portions of the work whose satisfactory quality or efficiency will be affected by an unfavorable condition shall be constructed while these unfavorable conditions exist unless, by special means or precautions, the Contractor shall be able to overcome them.

6.5 Alterations, Deletions, and Extra Work

6.5.1 The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Owner and, also, to make such alterations or deviations, additions to, or deletions from the work or the Contract Drawings and Specifications as may be determined during the progress of the work to be necessary and advisable for the proper completion thereof. Upon written order of the Owner, the Contractor shall proceed with the work as increased, decreased, or altered. Such work shall be considered a part of and subject to all terms and requirements of the Contract Documents.

6.5.2 The Engineer is authorized to order on behalf of the Owner minor changes in the work which do not involve extra cost to Owner and which do not change the character of the work. He is not authorized to order any other changes, alterations, deletions, additions, or extra work unless they are approved in a Contract Supplement properly authorized in writing by the Owner.

6.5.3 No claim of the Contractor for extra compensation because of any change, alteration, deletion, addition, or extra work will be paid or be payable unless a written order for such change, alteration, deletion, addition, or extra work is signed by the authorized representative of the Owner. All adjustments, if any, in the Contract Price to be paid to Contractor because of any such change, alteration, deletion, addition, or extra work shall be made only to the extent and in the manner provided under the paragraph, "Payment For Extra Work and Work Deleted" in these General Conditions. Such alterations shall in no way affect, vitiate, or make void this Contract or any part thereof, except that which is necessarily affected by such alterations and is clearly the evident intention of the parties to this Contract.

6.5.4 In case of neglect or refusal by the Contractor to perform any extra work which may be authorized by the Owner or to make satisfactory progress in its execution, the Owner may employ any person or persons to perform such work and the Contractor shall not in any way interfere with or molest the person or persons so employed.

6.5.5 When any changes decrease the amount of work to be done, such changes shall not constitute a basis or reason for any claim by Contractor for extra compensation or damages on account of any anticipated profits which he thereby loses on the omitted work, and Contractor shall not be entitled to any compensation or damages therefore.

6.6 Delays.

6.6.1 Avoidable Delays

6.6.1.1 Avoidable delays in the prosecution or completion of the work shall include all delays which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of the Contractor.

6.6.1.2 Delays in the prosecution of parts of the work which may, in themselves, be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work nor the completion of the whole work within the time herein specified; reasonable loss of time resulting from the necessity of submitting drawings to the Engineer for approval and from the making of surveys, measurements, and inspections; and such interruptions as may occur in the prosecution of the work on account of the reasonable interference of other contractors employed by the Owner, which do not necessarily prevent the completion of the whole work within the time herein specified, will be deemed avoidable delays within the meaning of this Contract.

6.6.2 Unavoidable Delays

Unavoidable delays in the prosecution or completion of the work under this Contract shall include all delays which may result through causes beyond the control of the Contractor and which he could not have provided against by the exercise of care, prudence, foresight, or diligence. Orders issued by the Owner changing the amount of work to be done, the quantity of material to be furnished, or the manner in which the work is to be prosecuted; failure of the Owner to provide rights-of-way; and unforeseen delays in the completion of the work of other contractors under contract with the Owner will be considered unavoidable delays, so far as they necessarily interfere with the Contractor's completion of the whole of the work.

6.6.3 Notice of Delays

6.6.3.1 Whenever the Contractor foresees any delay in the prosecution of the work and, in any event, immediately upon the occurrence of any delay, he shall notify the Engineer in writing of the probability of the occurrence of such delay and its cause in order that the Engineer may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the work are to be delayed thereby.

6.6.3.2 After the completion of any part or the whole of the work, the Engineer, in approving the amount due the Contractor, will assume that any and all delays which have occurred in its prosecution and completion have been avoidable delays, except such delays as shall have been called to the attention of the Engineer at the time of their occurrence and later found by him to have been unavoidable. The Contractor will make no claims that any delay not called to the attention of the Engineer at the time of its occurrence has been an unavoidable delay.

6.7 Extension of Time

6.7.1 For Unavoidable Delays

For delays which are unavoidable, as determined by the Owner, the Contractor will be allowed, if he applies for the same, an extension of time beyond the time specified for completion, proportionate to such unavoidable delay or delays within which to complete the Contract, and Contractor will not be charged, because of any extension of time for such unavoidable delay, any engineering and inspection costs as are charged in the case of extensions of time for avoidable delays.

6.7.2 For Avoidable Delay

6.7.2.1 If the work called for under this Contract is not finished and completed by the Contractor, in all parts and in accordance with all requirements, within the time specified for completion elsewhere in these Contract Documents, including extensions of time granted because of unavoidable delay; or, if at any time prior to the expiration of said time, it should appear to Owner that Contractor will be unable to finish and complete said work as aforesaid within said time; and, if Contractor's failure or inability to finish and complete said work as aforesaid within said time should be due, as determined by Owner, to avoidable delay or delays, then, in that event, the Owner, if it finds such to be for the best interests of the Owner may, but will not be required to, grant to Contractor an extension or extensions of time within which to finish and complete all said work.

6.7.2.2 In addition, if the time limit be so extended, the Owner shall charge to Contractor, and may deduct from the final payment for the work, all engineering and inspection expenses incurred by Owner in connection with the work during the period of such extension or extensions, except that the cost of final surveys and preparation of final estimates will not be included in such charges. Such expenses of Owner shall be computed on the basis of the hourly schedule of charges set forth in these General Conditions of the Contract.

6.7.3 Effect of Extension of Time

The granting of any extension of time on account of delays, which in the judgment of the Owner are avoidable delays, shall in no way operate as a waiver on the part of the Owner of its rights under this Contract.

6.8 Proof of Compliance with Contract

In order that the Engineer may determine whether the Contractor has complied with those requirements of this Contract with which compliance is not readily ascertainable through inspection and tests of the work and materials, the Contractor shall, at any time requested, submit to the Engineer properly authenticated documents or other satisfactory evidence as proof of his compliance with such requirements.

7. PAYMENTS TO CONTRACTOR

7.1 Progress Estimates and Payments

7.1.1 The Contractor shall on the 25th day of each calendar month, together with a representative of the Engineer, make an estimate of the value of the work performed in accordance with this Contract since the last preceding estimate was made. The Contractor shall then prepare and submit the estimate to the Engineer on the periodical estimate for partial payment forms. Payment forms will be supplied by the Owner. The number of copies to be submitted will be determined by the Engineer after construction has started.

7.1.2 Upon presentation of certified copies of purchase bills and freight bills, the Owner will permit inclusion in such monthly estimates payment for materials that will eventually be incorporated in the project, providing that such material is suitably stored on the site at the time of submission of the estimate for payment. At the time the next following monthly estimate is submitted, certified copies of receipted purchase and freight bills for the stored materials included in the monthly payment estimate submitted two months previously shall be submitted. If the Contractor fails to submit proof of payment with the monthly payment estimate, those items of stored materials for which no proof of payment has been submitted will be deleted from the current payment estimate. Such materials when so paid for by the Owner will become the property of the Owner and, in case of default on the part of the Contractor, the Owner may use or cause to be used by others these materials in construction of the project. However, the Contractor shall be responsible for safeguarding such materials against loss or damage of any nature whatsoever and, in case of any loss or damage, the Contractor shall replace such lost or damaged materials at no cost to the Owner.

- 7.1.3 Except as otherwise provided in the immediately preceding paragraph, the first estimate shall be of the value of the work done and of materials proposed and suitable for permanent incorporation in the work, delivered, and suitably and safely stored at the site of the work since the Contractor shall have begun the performance of this Contract; and every subsequent estimate, except the final estimate, shall be of the value of the work done and materials delivered and suitably stored at the site of the work since the last preceding estimate was made.
- 7.1.4 No estimate shall be required to be made when, in the judgment of the Engineer, the total value of the work done and materials incorporated into the work under this Contract since the last preceding estimate amount to less than \$5,000.
- 7.1.5 The estimates shall be signed by the Engineer and approved by the Owner and, after such approval, the Owner, subject to the foregoing provisions, will pay or cause to be paid an amount equal to the estimated value of the work performed less a retained amount in accordance with the following schedule.
- 7.1.5.1 Five percent until construction is substantially complete. The Contractor's attention is directed to provisions in the Special Conditions to the Contract for additional withholding of payments to the Contractor relating to timely property restoration and final clean-up.
- 7.1.5.2 When the project is substantially complete (operational or beneficial use as determined by the Engineer), the retained amount will be only that necessary to assure completion of the Contract Work.

7.2 Unit Price Items

- 7.2.1 Unit price items listed in the Bid Form and in the Agreement Form may be of two types, "Unit price construction items," and "Unit price work items ordered by the Engineer during construction." For all unit price items, quantities as set forth are the best estimates which can be made during design since actual quantities cannot be determined until construction is underway. If any of said quantities is exceeded by not more than 15 percent of the quantity listed, no Contract Supplement for the additional work will be required. If any one of said quantities exceeds the quantity listed by more than 15 percent a Contract Supplement for any work greater than 115 percent will be required before payment for such additional work will be made. Unit prices for quantities in excess of 115 percent are subject to renegotiation of the Contract unit price.
- 7.2.2 If any work under a unit price item is not performed or if only a small percentage of the quantity listed is used, the Contractor shall not make any claims for not using said item or for higher unit prices because of the small percentage of quantity used.
- 7.2.3 The Contractor shall study carefully the Specifications to determine the extent and scope of the work included under lump sum items in the Contract. It may be that work under some unit price items is in addition to similar work to be performed under lump sum items and paid for thereunder.
- 7.2.4 **Unit Price Construction Items**
- Unit price construction items will be used to pay for work not included under a lump sum item but required by the Contract.
- 7.2.5 **Unit Price Work Items Ordered by the Engineer During Construction**
- These unit price items will be used to pay for designated work not shown on the Contract Drawings when ordered by the Engineer in writing during construction.

7.3 Payment for Extra Work and Work Deleted

7.3.1 Whenever corrections, additions or modifications in the work under this Contract change the amount of work to be done or the amount of compensation due the Contractor except as provided for unit price items, the Owner will prepare a Contract Supplement setting forth the extra work to be performed or work to be omitted. Such a Contract Supplement will also set forth the method of computing the added or reduced compensation to be due the Contractor. The method of computing the added or reduced compensation will be determined under one or more of the following methods as selected by the Owner.

7.3.1.1 By unit prices contained in the Contractor's original bid and incorporated in this construction Contract.

7.3.1.2 By negotiated unit prices for items not included in the Contractor's original bid.

7.3.1.3 By an acceptable lump sum price proposal by the Contractor.

7.3.1.4 By force-account.

7.4 Force-Account Payment

7.4.1 When work is to be paid for on a force-account basis the Contractor will be paid the actual cost of labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work plus an amount to be agreed upon to cover the cost of general overhead and profit to be negotiated.

7.4.2 It is understood that labor, materials, and equipment may be furnished by the Contractor or by a Subcontractor or by others on behalf of the Contractor. When the work is performed by forces other than the Contractor's organization, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the Owner for such work and no additional payment therefore will be made by the Owner.

7.4.3 The costs for labor, materials, and equipment will be determined as provided in the following paragraphs.

7.4.4 Labor

7.4.4.1 The actual wages in performing the work, whether the employer is the Contractor, Subcontractor, or other forces, will be the amount paid to workmen including foremen and superintendents devoting their exclusive attention to the work in question. The actual wages shall include payments to, or on behalf of, workmen for health and welfare, pension, vacation, and similar purposes.

7.4.4.2 To the actual wages will be added 15 percent, which percentage shall constitute full compensation for all payments imposed by state and federal laws, for Workmen's Compensation, for public liability and property damage insurance, and for all other payments made to, or on behalf of, the workmen other than actual wages.

7.4.5 Materials

7.4.5.1 Only materials incorporated in the work will be paid for, the cost of which will be the cost to the purchaser, whether Contractor, Subcontractor, or other forces, from the supplier thereof. If the Contractor does not furnish satisfactory evidence of the cost of such materials from the supplier thereof or if the cost of such materials is excessive in the opinion of the Engineer, then the cost of such materials shall be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned delivered to the job site, less any discounts.

7.4.5.2 The Owner reserves the right to furnish such materials as it deems advisable, and the Contractor shall have no claims for costs and profit on such materials.

7.4.6 Equipment

- 7.4.6.1 The Contractor will be paid for the use of equipment at the rental rates established as provided in the following paragraphs, which rates shall include the cost of fuel, depreciation, storage, insurance, and all incidentals. Operators of rented equipment will be paid for as provided under "Labor."
- 7.4.6.2 Unless otherwise specified, manufacturer's rating shall be used to classify equipment for the determination of applicable rental rates.
- 7.4.6.3 For the use of any equipment normally required for the Contract regardless of whether the equipment is already on the work or is to be delivered to the work and regardless of ownership and any rental or other agreement entered into by the Contractor for the use of such equipment, the Contractor will be paid as provided herein at the current local rental rates used by established distributors or equipment rental agencies.
- 7.4.6.4 Individual pieces of equipment not listed and having a replacement value of 50 dollars or less shall be considered to be tools or small equipment and no payment will be made for their use on the work.
- 7.4.6.5 In computing the hourly rental of equipment, less than 30 minutes shall be considered 1/2 hour except that the minimum rental time to be paid per day shall be one hour. Rental time will not be allowed while equipment is inoperative due to breakdowns or non-working days.
- 7.4.6.6 The rental time of equipment to be paid for shall be the time the equipment is in operation on the force-account work being performed and, in addition, shall include the time required to move the equipment to the site of such force-account work and return it to its original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the force-account work on other than the force-account work. Loading and transporting costs will be allowed when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site of the force-account work on other than the force-account work. For the use of equipment not required under the Contract and moved in on the work and used exclusively for force-account work, the Contractor will be paid as provided above, except that the rental period shall begin at the time the equipment is unloaded at the site of the force-account work and shall terminate at the end of the day on which the order to discontinue the force-account work is given to the Contractor by the Engineer. The minimum total rental time to be paid for shall be eight hours.

7.4.7 Reporting and Invoicing

All force-account work shall be reported daily and signed by the Contractor and the Engineer, which daily reports shall thereafter be considered the true record of force-account work done. Completely detailed invoices covering the force-account work shall be submitted for payment not later than 15 days after the completion of the work. The charges for work performed by the Contractor, by a Subcontractor, and by an employee of a Subcontractor shall be reported separately. Substantiating invoices from suppliers, vendors and Subcontractors shall be included with the Contractor's invoices. The Contractor shall permit examination of accounts, bills, and vouchers relating to the force-account work when requested by the Engineer.

7.5 Owner's Right to Withhold Certain Amounts

- 7.5.1 The Owner may withhold from payments to the Contractor, in addition to the retained percentage, such an amount or amounts as may be necessary to cover:
- 7.5.1.1 Payments that may be earned or due for just claims for labor or materials furnished in and about the work.
- 7.5.1.2 Defective work not remedied.
- 7.5.1.3 Failure of the Contractor to make proper payments to a Subcontractor.

- 7.5.1.4 Reasonable doubt that this Contract can be completed for the balance then unpaid.
- 7.5.1.5 Damage to another Contractor, where there is evidence thereof.
- 7.5.1.6 Excess cost of field engineering, inspection, and other expenses.
- 7.5.2 The Owner will disburse and shall have the right to act as agent for the Contractor in disbursing such funds as have been withheld pursuant to this paragraph to the party or parties who are entitled to payment therefrom. The Owner will render to the Contractor a proper accounting of all such funds disbursed in behalf of the Contractor.
- 7.5.3 The Owner also reserves the right, even after full completion and acceptance of the work, to refuse payment of the final amount due the Contractor until it is satisfied that all Subcontractors, material suppliers, and employees of the Contractor have been paid in full.
- 7.6 Excess Cost of Engineering and Inspection for Time Extension

These General Conditions of the Contract provide for the payment by Contractor to the Owner of certain engineering and inspection expenses in the event Owner should grant to Contractor an extension or extensions of time because of avoidable delay. The amount of said engineering and inspection expenses shall be computed and determined on the basis of the per hour schedule of charges for a 40-hour straight time work week as shown in Column 1 of the following schedule. For any overtime beyond the regular 40-hour work week and for any time worked on Sunday or holidays, the charges for such personnel will be as shown in Column 2 of the following schedule:

	<u>Straight Time for each hour</u>	<u>Overtime for each hour</u>
Resident Engineer	\$43.00	\$64.50
Inspectors	\$30.50	\$45.75

The method of payment for these excess engineering and inspection expenses shall be in the form of deductions from the Contractor's periodical and final payment requests.

7.7 Payment for Uncorrected Work

If any portion of the work done or material furnished under this Contract proves defective and not in accordance with the Contract Documents; and if the imperfection in the same is not of sufficient magnitude or importance to make the work dangerous or wholly undesirable; or if the removal of such work is impracticable or will create conditions which are dangerous or undesirable, the Engineer shall have the right and authority to retain such work instead of requiring the imperfect work to be removed and reconstructed, but he shall recommend to the Owner such deductions therefore in the payments due or to become due the Contractor as may be just and reasonable, and Owner may make such deductions as are just and reasonable.

7.8 Payment for Work by the Owner Following Termination of the Contract

Upon termination of the Contract by the Owner in accordance with "Right of Owner to Terminate Agreement," no further payments shall be due the Contractor until the work is completed. If the unpaid balance of the Contract Amount shall exceed the cost of completing the work, including all overhead costs, the excess shall be paid to the Contractor. If the cost of completing the work shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The cost incurred by the Owner, as herein provided, and the damage incurred through the Contractor's default shall be certified by the Owner.

7.9 Acceptance

Any part of the work may be accepted in writing by the Owner when it shall have been completed in accordance with the terms of the Contract Documents as determined by the Owner and its official representatives. When the work is substantially completed, the Contractor shall notify the Owner, in writing, that the work will be ready for final inspection and test on a definite date which shall be stated in such notice. The notice shall be given at least 10 days in advance of said date and shall be forwarded through the Engineer. The Owner shall cause an inspection to be made in order to determine whether the work has been completed in accordance with the terms of the Contract Documents.

7.10 Final Estimate and Payment

7.10.1 The Contractor shall, as soon as practicable after the final acceptance of the work by the Owner under this Contract, make a final estimate of the amount of work done thereunder and the value thereof. Such final estimate shall be checked, approved, and signed by the Engineer and by the official representative of the Owner after approval of the governing body of the Owner. After such approval, the Owner shall pay or cause to be paid to the Contractor, in the manner provided by law, the entire sum so found to be due hereunder after deducting therefrom all previous payments and such other amounts as the terms of this Contract prescribe.

7.10.2 Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete release of all claims or liens arising out of this Contract or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the release and receipts include all the labor and materials for which a lien or claim could be filed, but the Contractor may, if a Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner to indemnify the Owner against any claim or lien (in cases where such payment is already guaranteed by surety bond). If any claim or lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

AGREEMENT WITH THE
GREEN RIVER VALLEY WATER DISTRICT
CAVE CITY, KENTUCKY

EPA FUNDED WATER MAIN EXTENSIONS

THIS AGREEMENT made this _____ day of _____, 200__,
by and between the Green River Valley Water District, hereinafter called the "Owner," and
_____, hereinafter called the "Contractor."

WITNESSETH:

WHEREAS, Owner has heretofore solicited bids for all the work and improvements and for the doing of all things included within the hereinafter specified improvements; and

WHEREAS, Owner did on the _____ day of _____, 200__ find that Contractor was the lowest responsible bidder for the hereinafter specified construction work and did award Contractor a Contract for said construction work;

NOW, THEREFORE, for and in consideration of their mutual promises, covenants, undertakings and agreements, the parties hereto do hereby agree as follows:

ARTICLE I - WORK TO BE DONE BY CONTRACTOR

Contractor agrees, at his own cost and expense, to do all the work and furnish all the labor, materials, equipment and other property necessary to do, construct, install, and complete all the work and improvements required for the EPA Funded Water Main Extensions project all in full accordance with and in compliance with and as required by the hereinafter specified Contract Documents, including any and all Addenda for said work, and to do, at his own cost and expense, all other things required of the Contractor by said Contract Documents of said work.

ARTICLE II - CONTRACT DOCUMENTS

The Contract Documents herein named include all of the following component parts, all of which are as fully a part of this Contract as if herein set out verbatim or, if not attached, as if hereto attached:

1. Invitation to Bid
2. Instructions to Bidders
3. Proposal
4. Special Conditions of Contract
5. General Conditions of Contract
6. Agreement
7. Contract Specifications
8. Contract Drawings
9. All Bonds, Insurance Certificates and Insurance Policies mentioned or referred to in the foregoing documents
10. Any and all other documents or papers included or referred to in the foregoing documents
11. Any and all Addenda to the foregoing

ARTICLE III - CONTRACT AMOUNT

The Contractor agrees to receive and accept the unit prices stated in the Contractor's Proposal included in the Contract Documents and made a part of this Agreement as full compensation for furnishing all materials and equipment and for doing all the work contemplated and embraced in this Contract; also for all loss or damage arising out of the nature of the work aforesaid or from the action of the elements or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the Owner, and for all risks of every description connected with the work; also for well and faithfully completing the work, and the whole thereof, in the manner and according to and in compliance with the Contract Documents and the requirements of the Engineer under them; also for any and all other things required by the Contract Documents.

The quantities and totals on unit price items and the Total Contract Amount are approximate only, being inserted for the purpose of establishing the face amount of bonds to be provided by the Contractor. Payment of work covered by the unit price items will be made only on the basis of actual quantities of work complete in place as authorized and as measured as provided in the Contract Documents.

<u>Item No.</u>	<u>Description</u>	<u>Est. Qty.</u>	<u>Unit</u>	<u>Price Per Unit</u>	<u>Total</u>
A. Unit Price Construction Items for Water Mains					
1	4" Class 200 (SDR 21) PVC water main with detection tape and trace wire, under roadway	105	LF	\$ _____	\$ _____
2	4" Class 200 (SDR 21) PVC water main with detection tape and trace wire, outside roadway	5,660	LF	\$ _____	\$ _____
3	4" Class 200 (SDR 21) PVC water main with restrained pipe joints with detection tape and trace wire, under and/or outside roadway	275	LF	\$ _____	\$ _____
4	4" Class 200 (SDR 21) PVC water main inside 8" - 0.25" wall (solid weld) bore or directional bore under roadway	40	LF	\$ _____	\$ _____
5	3" Class 200 (SDR 21) PVC water main with detection tape and trace wire, under roadway	1,745	LF	\$ _____	\$ _____
6	3" Class 200 (SDR 21) PVC water main with detection tape and trace wire, outside roadway	64,300	LF	\$ _____	\$ _____
7	3" Class 200 (SDR 21) PVC water main with restrained pipe joints with detection tape and trace wire, under and/or outside roadway	2,250	LF	\$ _____	\$ _____
8	3" Class 200 (SDR 21) PVC water main inside 6" - 0.25" wall (solid weld) bore or directional bore under roadway	250	LF	\$ _____	\$ _____
9	4" resilient seat gate valve including box	3	EA	\$ _____	\$ _____
10	3" resilient seat gate valve including box	35	EA	\$ _____	\$ _____
11	Miscellaneous DIP fittings (Refer to Proposal regarding additional costs for restrained joints)	5,500	LBS	\$ _____	\$ _____

<u>Item No.</u>	<u>Description</u>	<u>Est. Qty.</u>	<u>Unit</u>	<u>Price Per Unit</u>	<u>Total</u>
12	Air release valve in 4" pre-cast manhole structure with JBS #1155 valve manhole assembly – Type A	2	EA	\$ _____	\$ _____
13	Air release valve and 24" concrete pipe with JBS #1155 valve box assembly – Type B	24	EA	\$ _____	\$ _____
14	4" Terminal blow-off assembly with concrete dead-man anchor	1	EA	\$ _____	\$ _____
15	3" Terminal blow-off assembly with concrete dead-man anchor	11	EA	\$ _____	\$ _____
16	Gravel driveway replacement	1,400	LF	\$ _____	\$ _____
17	Asphalt driveway and/or parking lot replacement	150	LF	\$ _____	\$ _____
18	Asphalt pavement replacement, Type "A"	320	LF	\$ _____	\$ _____
19	Topsoil and seeding of trenches	72,400	LF	\$ _____	\$ _____

B. Unit Price Construction Items for Water Mains Ordered by the Engineer

20	Bituminous (temporary) cold mix	30	Tons	\$ _____	\$ _____
21	Concrete for cradle, blocking, encasement, etc.	180	CY	\$ _____	\$ _____
22	Water valve / water line markers	60	EA	\$ _____	\$ _____
23	Unclassified excavation for undercuts	100	CY	\$ _____	\$ _____
24	Crushed stone backfill for undercuts	100	CY	\$ _____	\$ _____
25	Plain stone rip-rap streambank stabilization	450	SY	\$ _____	\$ _____
26	Grouted rubble rip-rap streambank stabilization	100	SY	\$ _____	\$ _____

C. Lump Sum Construction Items for Water Mains

27	Tie-ins and connections to existing 6", 4", and/or 3" water mains without tapping sleeve and valves	4	LS/EA	\$ _____	\$ _____
28	6"x3" tapping sleeve and valve with valve box and connection to existing 6" water mains	3	LS/EA	\$ _____	\$ _____
29	4"x4" tapping sleeve and valve with valve box and connection to existing 4" water mains	1	LS/EA	\$ _____	\$ _____
30	4"x3" tapping sleeve and valve with valve box and connection to existing 3" water mains	5	LS/EA	\$ _____	\$ _____
31	3"x3" tapping sleeve and valve with valve box and connection to existing 3" water mains	2	LS/EA	\$ _____	\$ _____
32	Chestnut Grove Cemetery Road Extension Package Water Booster Station and appurtenances at Station on Plan Sheet No. 34 of 36	1	LS	\$ _____	\$ _____

Item No. Description	Est. Qty.	Unit	Price Per Unit	Total
33 Buckner Hill Road Extension Package Water Booster Station and appurtenances at on Plan Sheet No. 33 of 36	1	LS	\$ _____	\$ _____

TOTAL\$ _____

ARTICLE V - CONFLICT BETWEEN COMPONENT PARTS OF CONTRACT

In the event that any provision in any of the following component parts of this Contract conflicts with any provision in any other of the following component parts, the provision in the component part first enumerated below will govern over any other component part which follows it numerically, except as may be otherwise specifically stated. Said component parts are the following:

1. Addendum Nos. _____, _____, _____, and _____.
2. Special Conditions of Contract
3. General Conditions
4. Contract Specifications
5. Contract Drawings
6. Instructions to Bidders
7. Invitation to Bid
8. Contractor's Proposals
9. This Instrument

This Contract is intended to conform in all respects to applicable statutes of the state in which the work is to be constructed and, if any part or provision of this Contract conflicts therewith, the said statute shall govern.

ARTICLE VI - STARTING AND COMPLETION

The Contractor shall, and agrees to, commence work at the site within 15 calendar days after the issuance by the Owner of a written Notice to Proceed, and to fully complete all work to the point of final acceptance by the Owner, and to complete doing all other things required of him by the Contract Documents on or before and not later than 300 consecutive calendar days therefrom. Contractor shall, and agrees to, furnish and deliver to Owner within fifteen (15) days after date of award of this Contract, the Performance Bond, Payment Bond, and the insurance certificates and policies of insurance required of him by the provisions of the Conditions of the Contract, and to do, prior to starting work, all other things which are required of him by the Contract Documents as a prerequisite of starting work.

NOTE: The Contractor's attention is directed to the provisions for liquidated damages as provided in Paragraph 13 of the Special Conditions.

The Contractor hereby agrees to commence work on this Project on or before a date to be specified in a written "Notice to Proceed" issued by the Owner and to fully complete the project within 300 consecutive calendar days as stipulated in the Special Conditions. Bidder further agrees to pay as liquidated damages the sum of \$200.00 per day for each consecutive calendar day thereafter as provided in Paragraph 13 of the Special Conditions

ARTICLE VII - PAYMENTS TO CONTRACTOR

The Owner agrees with said Contractor to employ, and does hereby employ, the said Contractor to provide the materials and do all the work and do all other things hereinabove mentioned according to the terms and conditions hereinabove contained or referred to for the prices aforesaid, and hereby contracts to pay the same at the time, in the manner and upon the conditions set forth or referred to in the Contract Documents; and the said parties for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of the covenants herein contained.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in four original counterparts the day and year first above written.

(SEAL)

CONTRACTOR

ATTEST:

BY _____

BY _____

TITLE _____

TITLE _____

ATTEST:

GREEN RIVER VALLEY WATER DISTRICT

BY _____

BY _____

Manager

TITLE _____

APPROVED AS TO FORM AND LEGALITY

By: _____

Attorney for the Owner

IMPORTANT

NOTE: If the Contractor is a corporation, the legal name of the corporation shall be set forth above together with a signature of the officer or officers authorized to sign Contracts on behalf of the corporation; if Contractor is a partnership, the true name of the firm shall be set forth above together with the signatures of all the partners; and if Contractor is an individual, his signature shall be placed above. If signature is by an agent other than an officer of a corporation or a member of a partnership, a power-of-attorney must be attached hereto. Signature of Contractor shall also be acknowledged before a Notary Public or other person authorized by law to execute such acknowledgment.

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called
(corporation, partnership or individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the Green River Valley Water District, PO Box 399, Cave City, Kentucky, hereinafter called Owner, in the total aggregate penal sum of _____ Dollars (\$_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain Contract with the Owner dated the _____ day of _____, 200__, a copy of which is hereto attached and made a part hereof for the construction of the EPA Funded Water Main Extensions project.

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

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

PROVIDED, FURTHER, that it is expressly agreed that the bond shall be deemed amended automatically and immediately, without formal and separate amendments thereto, upon amendment to the Contract not increasing the Contract price more than 20 percent, so as to bind the Principal and the Surety to the full and faithful performance of the contract as so amended. The term "amendment," wherever used in this bond, and whether referring to this bond, the Contract or the Loan Documents shall include alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the Owner and the Principal shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The Owner is the only beneficiary hereunder.

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the _____ day _____, 200__.

ATTEST:

Principal Secretary

Principal

(SEAL)

BY _____

(Address)

Witness as to Principal

(Address)

Surety

ATTEST:

Witness to Surety

BY _____
Attorney-in-fact

Address

Address

NOTE: Date of Bond must not be prior to date of Contract.

If Contractor is partnership, all partners should execute Bond.

Approved as to Form and Legality

By _____
Attorney for the Owner

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called
(corporation, partnership or individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the Green River Valley Water District, PO Box 399, Cave City, Kentucky, hereinafter called Owner, for labor and/or materials furnished by any and all persons, firms, partnerships, associations, or corporations interested in the total aggregate penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain Contract with the Owner dated the _____ day of _____, 200__, a copy of which is hereto attached and made a part hereof for the construction of the EPA Funded Water Main Extensions project.

NOW, THEREFORE, if the Principal shall promptly make payment to all person, firms, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such Contract, and any authorized extensions or modifications thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and for all labor cost incurred in such work including that by a subcontractor, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the subcontractors, and persons, firms and corporations having a direct Contract with the Principal or its subcontracts.

PROVIDED, FURTHER, that no suit or action shall be commenced hereunder by any claimant: (a) unless claimant, other than one having a direct Contract with the Principal, shall have given written notice to any two of the following: The Principal, the Owner or the Surety above named within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration of one (1) year following the date of the Principal ceased work on said Contract, it being understood, however, that if any limitation embodied in the Bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that the bond shall be deemed amended automatically and immediately, without formal and separate amendments thereto, upon amendment to the Contract not increasing the Contract price more than 20 percent, so as to bind the Principal and the Surety to the full and faithful performance of the Contract as so amended. The term "amendment," wherever used in this bond, and whether referring to this bond, the Contract, or the Loan Documents shall include alteration, addition, extension, or modification of any character whatsoever.

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the _____ day _____, 200__.

ATTEST:

Principal Secretary

Principal

(SEAL)

BY _____

Witness as to Principal

(Address)

(Address)

Surety

ATTEST:

Witness to Surety

BY _____

Attorney-in-fact

Address

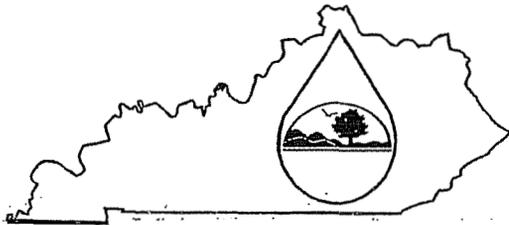
Address

NOTE: Date of Bond must not be prior to date of Contract.

If Contractor is partnership, all partners should execute Bond.

Approved as to Form and Legality

By _____
Attorney for the Owner



Kentucky Pollutant Discharge Elimination System
(KPDES)
Notice of Intent (NOI)
for Storm Water Discharges
Associated with Industrial Activity Under the
KPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:	David Paige - Manager	Phone:	2707732135
Address:	PO Box 399	Status of Owner/Operator:	M
City, State, Zip Code:	Cave City, Kentucky 42127		

II. Facility/Site Location Information

Name:	Green River Valley Water District		
Address:	PO Box 399		
City, State, Zip Code:	Cave City, Kentucky 42127		
County:	Hart, Larue, & Green		
Site Latitude: (degrees/minutes/seconds)	37° 21' 15"	Site Longitude: (degrees/minutes/seconds)	85° 50' 35"

III. Site Activity Information

MS4 Operator Name:				
Receiving Water Body:	Green River, Bacon Creek, Lynn Camp Creek			
Are there existing quantitative data?	Yes <input type="checkbox"/> If Yes, submit with this form. No <input checked="" type="checkbox"/>			
SIC or Designated Activity Code Primary	2nd	3rd	4th	
If this facility is a member of a Group Application, enter Group Application Number:				
If you have other existing KPDES Permits, enter Permit Numbers:				

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:	April 2009	Completion Date:	June 2010
Estimated Area to be disturbed (in acres):	17 acres		
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:	David Paige, Manager - Green River Valley Water District		
Signature:	<i>David Paige</i>	Date:	3/9/09

CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)

PRODUCER

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY A

LETTER

COMPANY B

LETTER

COMPANY C

LETTER

COMPANY D

LETTER

COMPANY E

LETTER

INSURED

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENTS, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NO.	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	ALL LIMITS IN THOUSANDS
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCURRENCE <input type="checkbox"/> OWNERS & CONTRACTORS PROTECTIVE				GENERAL AGGREGATE \$ PRODUCTS-COMP/OPS AGGREGATE \$ PERSONAL & ADVERTISING INJURY \$ EACH OCCURRENCE \$ FIRE: DAMAGE (ANY ONE FIRE) \$ MEDICAL EXPENSE (ANY ONE PERSON) \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON - OWNED AUTOS <input type="checkbox"/> GARAGE LIABILITY				CSL \$ BODILY INJURY PER PERSON \$ PROPERTY DAMAGE \$
	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE \$ AGGREGATE \$
	WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY				STATUTORY \$ EACH ACCIDENT \$ DISEASE-POLICY LIMIT \$ DISEASE-EACH EMPLOYEE
	OTHER				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / RESTRICTIONS / SPECIAL ITEMS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY SHALL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT.

AUTHORIZED REPRESENTATIVE

WATER MANAGEMENT SERVICES, LLC
2 INTERNATIONAL PLAZA, SUITE 401
NASHVILLE, TENNESSEE 37217

Sheet ____ of ____

Owner: _____

Project Name: _____

Location: _____

Contractor: _____

Contract Supplement No. _____

Date: _____

I. DESCRIPTION OF CHANGES INVOLVED

A.

B.

II. ADJUSTMENTS IN AMOUNT OF CONTRACT

- | | |
|--|----------|
| 1. Amount of Original Contract | \$ _____ |
| 2. Net (Addition) (Reduction) due to all previous Contract Supplements | \$ _____ |
| 3. Amount of Contract including all previous Contract Supplements | \$ _____ |
| 4. (Addition) (Reduction) to Contract due to this Contract Supplement | \$ _____ |
| 5. Amount of Contract including this Contract Supplement | \$ _____ |

III. CONTRACT SUPPLEMENT CONDITIONS

1. The Contract completion date established in the Original Contract or as modified by previous Contract Supplements is hereby _____.
2. Any additional work to be performed under this Contract Supplement shall be carried out in compliance with the specifications included in the preceding Description of Changes Involved, with the supplemental contract drawings, and under the provisions of the Original Contract, including compliance with applicable Equipment Specifications and Project Specifications for the same type of work.

3. This Contract Supplement, unless otherwise provided herein, does not relieve the Contractor from strict compliance with the guarantee provisions of the Original Contract, particularly those pertaining to performance and operation of equipment.
4. The Contractor expressly agrees that he will place under coverage of his Performance and Payment Bonds and Contractor's Insurance all work covered by this Contract Supplement. The Contractor will furnish to the Owner evidence of increased coverage of his Performance and Payment Bonds for the accrued value of all Contract Supplements which exceeds the Original Contract Price by twenty percent (20%).

RECOMMENDED FOR ACCEPTANCE:

WATER MANAGEMENT SERVICES, LLC

ACCEPTED: CONTRACTOR:

CONTRACTOR

BY: _____

OWNER:

GREEN RIVER VALLEY WATER DISTRICT

BY: _____
Manager

Approved as to Form and Legality

By: _____
Attorney for the Owner

NOTICE OF AWARD

TO: _____

Project Description: _____

The Owner has considered the Bid submitted by you for the above described work in response to its Advertisement for Bids dated _____, 200__, and Instructions to Bidders.

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

You are required by the Instructions to Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Payment Bond and Certificate of Insurance within fifteen (15) days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said bonds within fifteen (15) days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

Dated this _____ day of _____, 200__.

Owner

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by _____

_____ this the _____ day of _____, 200__.

By: _____

Title: _____

NOTICE TO PROCEED

TO: _____

Date: _____

Project: _____

You are hereby notified to commence work in accordance with the Agreement dated _____, 200__, on or before _____, 200__, and you are to complete the work within _____ calendar days thereafter. The date of completion of all work is, therefore, _____, 200__.

Owner

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by _____,

_____ this the _____ day of _____, 200__.

By: _____

Title: _____

Employer Identification Number

CONTRACT SPECIFICATIONS

DIVISION A - GENERAL REQUIREMENTS

TABLE OF CONTENTS
FOR
DIVISION A
GENERAL REQUIREMENTS

<u>SECTION</u>		<u>PAGE</u>
1	SUMMARY OF WORK	1-2
2	SUBMITTALS	1-3

GENERAL REQUIREMENTS

SECTION 1

SUMMARY OF WORK

1. WORK COVERED BY CONTRACT DOCUMENTS

The Work to be performed is as described in the Invitation to Bid.

2. CONTRACTOR'S DUTIES

2.1 Except as specifically noted, provide and pay for:

Labor, materials, and equipment;

Tools, construction equipment, and machinery;

Samples, shipping costs, and tests;

Necessary utilities, such as water supply, electrical power, telephones, roads, fences, and sanitary facilities, including maintenance thereof;

Other facilities and services necessary for proper execution and completion of the Work.

2.2 Pay legally required sales, consumer, and use taxes.

2.3 Secure and pay for legally required permits, licenses, and government fees.

2.4 Give required notices.

2.5 Employ workmen and foremen with sufficient knowledge, skill, and experience to perform the work assigned to them.

2.6 Comply with the codes, laws, ordinances, rules, regulations, orders, and other legal requirements. Any necessary changes will be adjusted as provided in the Contract for changes in the Work.

Comply with OSHA (P.L. 91-576) and the Contract Work Hours and Safety Standards Act (P.L. 91-54).

2.7 Submit written notice to Engineer of observed variance of Contract Documents from legal requirements. Any necessary changes will be adjusted as provided in the Contract for changes in the Work.

2.8 Enforce discipline and good order among Contractor and Subcontractor employees. Any person employed by Contractor or Subcontractors who does not perform his work in a skillful manner, is incompetent, or acts in a disorderly or intemperate manner shall, at the written request of Owner, be removed from the project immediately and shall not be employed again in any portion of the Work without the approval of Owner.

2.9 Provide at all times facilities for access and inspection of the Work by representatives of Owner and of official governmental agencies designated by Owner as having the right to inspect the work.

2.10 Cooperate with other contractors who may be performing work for Owner and with Owner's employees working in the vicinity of the Work done under this Contract.

3. CONTRACTOR'S USE OF PREMISES

3.1 Confine operations at site to areas permitted by law, ordinances, permits, and the Contract Documents.

3.2 Do not load or permit any part of a structure to be subjected to any force that will endanger its safety.

3.3 Comply with and enforce Owner's instructions regarding signs, advertisements, fires, and smoke.

3.4 Assume responsibility for protection and safekeeping of products stored on premises.

3.5 Do not discharge smoke, dust, or other contaminants into the atmosphere, or fluids or materials into any waterway as will violate regulations of any legally constituted authority.

4. EXISTING FACILITIES

4.1 The existing facilities will be in continuous operation during the construction period.

4.2 ~~Plan and conduct construction operations to avoid disturbing existing utilities, piping, equipment, and services in any manner which will interrupt or impair operations, except as approved by Engineer.~~

4.3 Submit for approval a construction sequence and detailed drawings and written explanations of the temporary facilities and appurtenances intended to be used in maintaining the uninterrupted operation of the existing water and sewer facilities.

5. PARTIAL OWNER OCCUPANCY

5.1 Owner, at its discretion, may place into service certain portions of the completed Work.

5.2 Provide proper access to Owner's personnel for this purpose.

5.3 Use and operation of a completed portion by Owner will constitute acceptance of that work.

5.4 Liability of Contractor for defects due to facility construction will extend for one year after the Work is placed in service.

GENERAL REQUIREMENTS

SECTION 2

SUBMITTALS

1. PROGRESS SCHEDULE

- 1.1 Prepare a detailed Progress Schedule in graphic form showing proposed dates of starting and completing each major division of the Work.
- 1.2 The schedule shall be consistent with the time and order of work requirements of the Specifications and shall be the basis of Contractor's operations.
- 1.3 Submit 3 copies to Engineer within 14 days after Notice to Proceed.
- 1.4 At the end of every month, submit a revised schedule showing the current status of the Work as compared to the projected status. The current application for a progress payment will not be processed until the revised schedule is delivered to Engineer.

2. BREAKDOWN OF CONTRACT AMOUNT

- 2.1 Submit a typewritten breakdown of major lump sum items for use in computing and checking periodical payment estimates.
- 2.2 No payment will be made until the breakdown has been submitted and accepted by Engineer and Owner.
- 2.3 The breakdown shall establish amounts for each division of work such as excavation, concrete, piping, electrical, process equipment, backfill, restoration, etc.

3. SHOP DRAWINGS, PROJECT DATA, AND SAMPLES

3.1 General

- 3.1.1 Submit to Engineer shop drawings, project data, and samples required by the Specifications.

3.2 Shop Drawings

- 3.2.1 Shop drawings are original drawings prepared by the Contractor, subcontractors, suppliers, or distributors which illustrate some portion of the Work and show fabrication, layout, setting, or erection details of equipment, materials, and components.
- 3.2.2 Unless otherwise instructed, submit to Engineer for review and approval 5 prints of each plan.

3.3 Project Data

- 3.3.1 Project data are manufacturers' standard schematic drawings, catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data.

- 3.3.2 Modify drawings to delete information not applicable and to add information applicable to the project.
- 3.3.3 Mark copies of printed material to identify pertinent materials, products, or models.
- 3.3.4 Show dimensions and clearances required, performance characteristics and capacities, and wiring diagrams and controls.
- 3.3.5 Submittal procedures shall be the same as for shop drawings.

3.4 Contractor Responsibilities

- 3.4.1 Review and approve shop drawings, project data, and samples before submitting them.
- 3.4.2 Verify field measurements, field construction criteria, catalog numbers, and similar data.
- 3.4.3 Coordinate each submittal with the requirements of the Contract Documents.
- 3.4.4 Submit shop drawings for major equipment items in one package to permit checking complete installation details.
- 3.4.5 In a clear space above the title block or on the back, hand stamp the following and enter the required information:

Specification Section

This document has been checked for accuracy of content and for compliance with the Contract Documents and is hereby approved. The information contained herein has been coordinated with all involved contractors.

Contractor

Signed

- 3.4.6 Contractor's responsibility for errors, omissions, and deviations from requirements of the Contract Documents in submittals is not relieved by Engineer's review.
- 3.4.7 Notify Engineer, in writing at time of submittal, of deviations in submittals from requirements of the Contract Documents.
- 3.4.8 Do not install materials or equipment which require submittals until the submittals are returned with Engineer's stamp and initials or signature indicating approval.
- 3.4.9 Revise returned shop drawings as required and resubmit until final approval is obtained. Indicate on the Drawings any changes which have been made other than those requested by Engineer.
- 3.4.10 Submit new project data and samples when the initial submittal is returned disapproved.

3.4.11 No claim will be allowed for damages or extension of time because of delays in the work resulting from rejection of material or from revision and resubmittal of shop drawings, project data, or samples.

3.5 Engineer's Duties

3.5.1 Engineer will review submittals for compliance with the Contract Documents and with the design concept of the project.

3.5.2 Review of a separate item does not constitute acceptance of an assembly in which the item functions.

3.5.3 Engineer will affix a stamp to the returned copy of each submittal. The stamp will be marked to indicate whether the submittal is "Reviewed," "Furnish as Corrected," or "Revise and Resubmit," and an explanation will be given if the submittal is unsatisfactory. The stamp will be initialed or signed certifying the submittal review.

4. OPERATING AND MAINTENANCE MANUALS

4.1 Furnish 5 copies of manuals of instructions for operation and maintenance of each item of equipment and valves furnished.

4.2 Include instructions for all components of the equipment, whether manufactured by the supplier or not, including valves, controllers, and other miscellaneous components.

4.3 Included Material as follows:

- Parts lists.
- Exploded or sectional views.
- Recommended lubrication and maintenance procedures.
- Internal wiring and piping diagrams.
- Detailed description of process, where applicable.
- Operating procedures.
- Other pertinent information of value to obtain peak performance.

4.4 Equipment Maintenance Schedule

4.4.1 In addition to the equipment operation and maintenance manuals, an equipment maintenance schedule shall be prepared for each piece of equipment. The schedule shall list routine preventive maintenance recommended by the equipment manufacturer. The schedule shall be listed as daily, weekly, monthly, quarterly, semiannually and annually.

4.4.2 The items listed in the schedule shall be those maintenance functions that Contractor and equipment suppliers expect the plant operating personnel to follow in order to meet warranty provisions, when the equipment is turned over to Owner.

4.4.3 The schedule for each piece of equipment shall be prepared in the same format. No photocopies or reproductions of the various equipment operation and maintenance manuals will be permitted.

DIVISION H - WATER MAINS AND APPURTENANCES

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DIVISION H
WATER MAINS AND APPURTENANCES

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WATER MAINS AND APPURTENANCES

SECTION 1

GENERAL REQUIREMENTS

1. GENERAL

1.1 Scope of Work

The water mains and appurtenances required on this Contract shall be furnished in full compliance with the Contract Specifications and the Contract Drawings.

Work to be performed under the Unit Price Items described subsequently herein shall include for each item all excavation (including rock excavation, if any) the removal of existing pavements, curb and gutter, sidewalks, driveways, brush and timber, structures and piping to be relocated or abandoned; also sheeting, diking, well pointing, bailing, dewatering; the furnishing and placing of bulkheads, the restoration of any utilities, parkways, trees, shrubbery, culverts, fences, and other items not covered under subsequent items disturbed by construction operations; backfilling and removal of excess excavated materials; and testing.

The cost of all such work and the cost of other work necessary for the complete water installation not specifically included for payment under the Item of unit price payment Nos. described herein shall be merged with the various unit prices for the Unit Price Construction Items.

1.2 Standards

Where material and methods are indicated in the Specifications as being in conformance with the standard specification, it shall refer in all cases to the latest edition of the specifications and shall include all interim revisions. Listing of a standard specification without further reference indicates that the particular material or method shall conform with such listed specification.

2. WORK INCIDENTAL TO CONSTRUCTION

2.1 Work to be performed under this heading includes all the work designated as "Incidental to Construction" and shall be done in compliance with the Contract Drawings. The Contractor is hereby referred to the Agreement, General and Special Conditions Sections of these Specifications and the Contract Drawings. All work wherein there are not specified pay items shall be considered as "Incidental to Construction" and no additional compensation will be allowed.

2.2 In addition to the above referenced requirements, and unless otherwise noted the below listed work shall be considered incidental to construction.

2.3 Public and Private Utilities

Utilities. Where any utilities, such as water, sewer, telephone, power, oil and gas transmission or any other, either public or private, are encountered, the Contractor shall provide adequate protection for them and will be held responsible for any damage to such utility from his operations. When it is apparent that construction operations may endanger the foundation of any utility conduit, pole, or the support of any structure, the Contractor shall notify the utility owner of this possibility and shall take such steps as may be required to provide temporary bracing or support of conduits, poles, or structures.

The cost of any bracing or support of conduits, poles of structures as shown on the Contract Drawings shall be merged into the unit price per linear foot of water main.

When, in order to carry out the work, a pole (power or telephone) must be removed to a new location or moved and replaced after construction, the Contractor shall arrange for the moving of such pole or poles and lines thereof.

Where it is the policy of any utility owner to make his own repairs to damaged conduit, or other structures, the Contractor shall cooperate to the fullest extent with the utility owner and he shall see that his operations interfere as little as possible with the utility owner's operations.

Existing Water, Sewer and Drain Facilities. In some instances, existing water, sewer, or drains may be encountered along the line of work. In all such cases, the Contractor shall perform his operations in such manner that such service will not be interrupted, and shall, at his own expense, make all temporary provisions to maintain such services.

Where it is necessary to cut, remove and/or replace existing storm sewers and drain tiles, the Contractor shall make specific arrangements to maintain the flow of water and shall not place permanent bulkheads in any conduit. Temporary earth dams may be used to confine and/or channel the flow and shall be removed upon completion of the crossing.

The Contractor shall receive no extra compensation for replacement of drains encountered or for re-laying same at a new grade or line.

Existing Water Facilities. Where existing water mains are encountered in the work they shall be maintained in operation to the extent that water service is not interrupted.

Existing Gas Facilities. Where existing gas mains shown on the Contract Drawings are encountered, the Contractor shall arrange with the gas utility for any necessary re-laying.

The Contractor will give adequate notice to the gas utility to allow their location of gas lines ahead of the proposed construction with paint or stakes. The Contractor will be required to expose the gas mains prior to dynamiting and excavation, where crossing pipeline installations. Track drill operations will be ceased short of the gas main and will resume on the other side of the main. The material under the gas line will be removed with hand drills and/or jack hammers. The selective use of "pop-shooting" with dynamite, which must be strictly controlled by the Contractor, may be allowed only at the discretion of the gas utility. The Contractor shall contact the gas utility for restrictions.

Before backfilling any trench in which a gas main has been exposed, the Contractor shall notify the gas utility to inspect the exposed main and perform any protective measures deemed necessary.

When the proposed construction is completed on a particular street, the Contractor and/or the gas utility will check each particular street with natural gas detectors.

Existing Underground Electric and Telephone Facilities. Where existing underground electric or telephone facilities are encountered, the Contractor shall arrange with the electric company or telephone company for any necessary re-laying.

2.4 Dewatering

The Contractor shall perform all pumping, well pointing, ditching and any other necessary procedure to keep the excavation clear of groundwater, stormwater, or sewage during the progress of the work and until the completed work is safe from injury.

The Contractor shall maintain dewatering operations such that no groundwater, stormwater, or sewage will be allowed to build up over any concrete and/or masonry at manholes or structures for a period of 6 hours. This time period will be adjusted by the Engineer should temperature and curing conditions warrant.

All water pumped or drained from the work shall be disposed of in a manner satisfactory to the Engineer without damage to adjacent property or to other work under construction. The Contractor shall not dispose of storm or surface water through new or existing sanitary sewerage facilities.

It shall be the Contractor's responsibility to take all necessary precautions to protect all construction against flooding and/or flotation from hydrostatic uplift.

All dewatering procedures and maintenance thereof shall be considered an integral part of pipe laying and manhole construction operations and no separate payment will be allowed therefore.

Dewatering operations for structure construction shall be such that the groundwater or surface water is not being pulled over, around, or through the freshly placed concrete or masonry. The use of multiple pumps placed on each side of the manhole and/or at points in the trench down stream might be required. When required to protect the freshly placed concrete and/or masonry, timber or plywood forms will be positioned around the concrete or masonry so that the dewatering operations will not cause a separation of cement and aggregate. The cost of these dewatering and/or protection procedures shall be merged into the appropriate structure bid items.

2.5 Barricades and Warning Signs

The Contractor shall furnish, erect, and maintain such barricades, fences, lights, and danger signals and take other precaution measures that will ensure the protection of persons, property and the work.

2.6 Maintenance and Access of Traffic

Portions of the work are located in developed areas requiring the access for fire and other departments to be provided for and at least one free lane shall be available for all traffic. Contractors are to arrange operations in these areas to meet these requirements and secure approval of operating procedures from Green River Valley Water District, Hart County or Kentucky Department of Highways as the case may be.

Where water mains are constructed under paved roadway surfaces, within public rights-of-way, the Contractor will restore the asphalt or crushed stone pavement and/or shoulders between shoulder lines. It shall be the responsibility of the Contractor, upon completion of the water main installation, to regrade the street with pug mix to the template that existed prior to construction. This regrading shall be satisfactory to Green River Valley Water District, Hart County or Kentucky Department of Highways before the street is released for paving operations.

The Contractor shall further be responsible for the maintenance of disturbed streets until repaving operations have been completed.

The Contractor shall restore all curbs, gutters, sidewalks, ramps and private driveways or parking lots. Compensation for this work is detailed in other portions of this document and any item which must be removed as was evidence and necessary for the installation of the proposed water main, for which there is no specific pay item(s) shall be considered as incidental to the construction of the proposed water main and, therefore, no additional compensation will be allowed for the restoration of this (these) item(s).

The Contractor shall also be required to restore, at his own expense, all pavements disturbed by his operations where the water main was not constructed under the pavements. He shall further be required to replace at his own expense all pavements disturbed in the correction of water main deficiency discovered after restorations have been completed.

3. MATERIAL AND EQUIPMENT

Materials, products and equipment shall be properly containerized, packaged, boxed and protected to prevent damage during transportation and handling. Provide suitable temporary weathertight storage facilities as may be required for materials or equipment which will be damaged by storage in the open. Protect from damage all materials delivered at the site. Do not use damaged material on the work.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the respective manufacturers unless directed otherwise by the provisions of these Specifications.

4. SPECIAL CONDITIONS

The Contractor's attention is called to the special conditions indicated on the Drawings and described in this Section of the Specifications. The Drawings and Specifications reflect the type of construction that is anticipated in the various locations requiring special attention, but it shall be the responsibility of the Contractor to contact the various agencies including the State Highway Department, the gas company, telephone company, railroad company, Corps of Engineers, and other utilities and/or entities involved when working in areas where they will be concerned, and for coordinating construction with their requirements in such a way to avoid conflicts, damage or interruptions in service.

- (a) The Contractor shall perform his work in such a manner that normal service on existing water lines and service to customers is maintained to the maximum extent possible. Such service shall be disrupted at such times and in such a manner as approved by the Engineer.

- (b) The Contractor shall submit a work schedule to the Engineer for approval prior to beginning work. The schedule shall establish the planned sequence of line installation, service switch-over if required and property restoration for the project.
- (c) The Contractor shall maintain access to businesses and residences to the maximum extent possible.
- (d) Easement Restrictions - The Contractor upon request will be furnished with plans showing easements obtained for the construction of water mains and appurtenances. The Contractor shall exercise due care in staying within the easement indicated, and will be held strictly accountable for violations thereof. Any desired access points not shown on the Drawings must be acquired by the Contractor by negotiation with the property owner involved.

5. TESTING

The Specifications for materials designate the testing applicable for materials incorporated in the work. Testing shall be done by the manufacturer in accordance with the applicable ASTM specification. Manufacturer shall furnish the Engineer with three (3) certified copies of the test results.

The Owner may, at his option, elect to have an independent testing laboratory test materials to be furnished for incorporation in the work. Such testing, when done, shall be in accordance with provisions of the Specifications for Materials.

Acceptance testing for installed water line will be limited to visual testing and pressure testing unless directed otherwise by the Engineer.

6. SUBMITTALS

Submittals for this work include: pipe supplier with information on pipe to be used including the joint design, recommended laying methods and material test reports; manufacturer's data on valves, valve boxes, fire hydrants, casing pipe and/or tunnel liner plate, and pea gravel to be used. Such submittals are to be made for approval by Engineer prior to incorporation of any materials into the work.

7. TEMPORARY FACILITIES/UTILITIES

Note: Field office for the Contractor is not required on this project.

Contractor shall be required to maintain suitable sanitary facilities for his workers.

8. WARRANTY

The work to be performed under this Contract shall be guaranteed against defects in materials or workmanship for a period of one year following the date of formal acceptance of the project. In the event defects in materials or workmanship should appear, the Contractor shall promptly make the necessary correction. When the defects are not of an emergency nature, the Contractor will be notified and will be given a period of two weeks in which to make the necessary corrections. Should the defect be of an emergency nature which in the opinion of the Owner or the Engineer requires immediate correction, the Contractor will be notified and requested to make the necessary repairs immediately. Should this be impractical, or if the Contractor should fail to respond to the request for corrective action within the specified period, the Owner may proceed to have the defects corrected and shall bill the Contractor for all charges in connection therewith.

including labor, materials, and equipment rental. Such charges may be deducted from amounts due the Contractor if any of the Contractor's money has been withheld. In the event the Contractor fails, refuses, or neglects to pay the Owner, the Surety shall be liable for such charges.

9. MAINTENANCE OBLIGATION

The Contractor shall be fully responsible for maintenance of any and all portions of the work which he performs under this Contract for a period of 30 days. This maintenance obligation shall begin upon formal acceptance of the project and is intended to place a limit upon the Contractor's responsibility for normal maintenance required for the routine operation of the system. This 30-day obligation shall not be construed as relieving the Contractor of the responsibility for maintenance or repair work resulting from defective materials or workmanship during the warranty period.

10. PROJECT CLOSE-OUT

The premises and the job site shall be maintained in a reasonably neat and orderly condition and kept free from an accumulation of waste materials and rubbish during the entire construction period. Remove crates, cartons and other flammable waste materials or trash from the work areas at the end of each working day.

When the Contractor requests a Final Inspection, Engineer will inspect the work for completeness in accordance with the Contract Documents. Any deficiencies shall be promptly corrected by the Contractor.

Final acceptance cannot be made until the Contractor furnishes to the Owner a notarized certification in a form suitable to the Owner that all labor and material costs for the work have been paid by the Contractor and that there are no liens against the work.

Payment in full of the Final Application for Payment shall constitute acceptance of the work by the Owner subject to conditions of the Contract Documents.

WATER MAINS AND APPURTENANCES

SECTION 2

MATERIALS

1. GENERAL

All materials to be incorporated in the project shall be first quality, new and undamaged material conforming to all applicable portions of these Specifications.

2. CONCRETE

Cement - Cement shall be Portland cement of a brand approved by the Engineer and shall conform to "Standard Specifications for Portland Cement", Type 1, ASTM Designation C-150, latest revision. Cement shall be furnished in undamaged 94 pound, one cubic foot sacks, and shall show no evidence of lumping.

Concrete Fine Aggregate - Fine aggregate shall be clean, hard uncoated natural sand conforming to ASTM Designation C-33, latest revision, "Standard Specifications for Concrete Aggregate."

Concrete Coarse Aggregate - Coarse aggregate shall consist of clean, hard, dense particles of stone or gravel conforming to ASTM Designation C-33, latest revision, "Standard Specifications for Concrete Aggregate". Aggregate shall be well graded between 1-1/2-inch and #4 sieve sizes.

Water - Water used in mixing concrete shall be clean and free from organic matter, pollutants and other foreign materials.

Ready-Mix Concrete - Ready-mix concrete shall be secured only from a source approved by the Engineer, and shall conform to ASTM Designation C-94, latest revision, "Specifications for Ready-Mix Concrete." Before any concrete is delivered to the job site, the supplier must furnish a statement of the proportions of cement, fine aggregate and coarse aggregate to be used for each mix ordered, and must receive the Engineer's approval of such proportions.

Class "A" Concrete - Class "A" concrete shall have a minimum compressive strength of 4,000 pounds per square inch in 28 days and shall contain not less than 5.5 sacks of cement per cubic yard.

Class "C" Concrete - Class "C" concrete shall have a minimum compressive strength of 2,000 pounds per square inch in 28 days and shall contain no less than 4.5 sacks of cement per cubic yard.

Metal Reinforcing - Reinforcing bars shall be intermediate grade steel conforming to ASTM Designation A-615, latest revision, "Standard Specifications for Billet Steel Bars for Concrete Reinforcement." Bars shall be deformed with a cross-sectional area at all points equal to that of plain bars of equal nominal size.

3. CRUSHED STONE

Crushed stone for pipe bedding shall meet the quality requirements of ASTM D-692 and the grading requirements of AASHTO M-43 for Size 57.

Crushed stone for backfill shall meet the quality requirements of ASTM D-692 and the grading requirements of AASHTO M-43, size 57.

4. DUCTILE IRON PIPE

Ductile iron pipe for water shall be manufactured in accordance with USA Standard A21.51 for centrifugally case ductile iron pipe. The pipe shall be manufactured of iron having acceptance values of 60-42-10. Minimum allowable wall thickness shall be in accordance with the following table. Heavier pipe will be required where designated on the Drawings or required by Section 3 of these Specifications.

<u>Nominal Dia., In.</u>	<u>Minimum Wall Thickness, In.</u>	<u>Minimum Thickness Class</u>
4	0.29	52
6	0.31	52
8	0.33	52
10	0.35	52
12	0.34	51
16	0.37	51
18	0.38	51
20	0.39	51
24	0.41	51
30	0.43	51

Pipe shall be furnished in lengths of 18 feet to 20 feet and, unless otherwise indicated, shall be provided with a compression type slip joint equal to the Fastite joint as manufactured by American. Gaskets and lubricants shall be furnished with the pipe.

Pipe shall be furnished with standard thickness cement lining on the inside with a bituminous steel coat and a bituminous coating on the outside. Cement lining shall conform to USA Standard A21.4. The exterior of the pipe shall be clearly marked to indicate the manufacturer, date of manufacture, the pipe class and weight. Exterior markings shall also positively identify the pipe as being Ductile Iron.

5. PVC WATER PIPE

PVC pipe for water shall be manufactured in accordance with ASTM D-2241 and have NSF approval. The pipe shall be Class 200 polyvinyl chloride plastic (PVC 1120) SDR 21. The following tests shall be run for each machine on each size and type of pipe being produced, as specified below:

Flattening Test: Once per shift in accordance with ASTM D-2412. Upon completion of the test, the specimen shall not be split, cracked or broken.

Acetone Test (Extrusion Quality Test): Once per shift in accordance with ASTM D-2152. There shall be no flaking, peeling, cracking, or visible deterioration on the inside or outside surface after completion of the tests.

Quick Burst Test: Once per 24 hours in accordance with ASTM 5199.

<u>SDR</u>	<u>Pressure Rating</u>	<u>Minimum Bursting Pressure, psi</u>
21	200	800

Impact Tests: 6-inch and smaller, once each 2 hours in accordance with ASTM D-2444.

Wall Thickness and Outside Dimensions Test: Once per hour in accordance with ASTM D-2122.

Bell Dimensions Test: Once per hour in accordance with ASTM D-3139.

If any specimen fails to meet any of the above mentioned tests, all pipe of that size and type manufactured between the test period must be scrapped and a full set of tests rerun.

Furnish a certificate from the pipe manufacturer stating that he is fully competent to manufacture PVC pipe of uniform texture and strength and in full compliance with these specifications and further stating that he has manufactured such pipe and done so in sufficient quantities to be certain that it will meet all normal field conditions. In addition, the manufacturer's equipment and quality control facilities must be adequate to ensure that each extrusion of pipe is uniform in texture, dimensions, and strength. Also furnish a certificate from the manufacturer certifying that the pipe furnished for this project meets the requirements of these Specifications.

All pipe shall be manufactured in the United States of America. All pipe for any one project shall be made by the same manufacturer.

The pipe may be furnished in the manufacturer's standard laying lengths of 20 feet. The Contractor's methods of storing and handling the pipe shall be approved by the Engineer. All pipe shall be supported within 5 feet of each end; in between the end supports, there shall be additional supports at least every 5 feet. The pipe shall be stored away from heat or direct sunlight. The practice of stringing pipes out along the proposed water line routes will not be allowed.

Certain information shall be applied to each piece of pipe. At the least, this shall consist of:

- Nominal size
- Type of material
- SDR or class
- Manufacturer
- NSF Seal of Approval

Pipe that fails to comply with the requirements set forth in these Specifications shall be rejected.

Detectable tape shall be 3 inches wide and shall be an inert, bonded layer plastic with a metalized foil core and shall be highly resistant to alkalis, acids, or other destructive chemical components likely to be encountered in soils. The tape shall be blue in color and shall bear the imprint "CAUTION - WATER LINE BURIED BELOW". This detection tape shall be placed over the water main at a level of 15 inches below the finished ground surface.

NOTE: The Contractor's attention is directed to the requirement of the Owner for the furnishing and installation of #14 insulated copper trace wire for water pipe on this project. This trace wire shall be stubbed up at all valve boxes for use by the Owner.

Prior to ordering water pipe or detectable tape the Contractor shall submit proposed materials to the Engineer for approval.

6. Polyethylene (PE) WATER PIPE AND FITTINGS (IF REQUIRED)

Pipe and fittings required or shown on the Contract Drawings shall conform to AWWA C906, latest revision; ASTM D- 1248, latest revision; and ASTM D-3350, latest revision.

Material used for the manufacturer of pipe and fittings shall meet the following latest requirements of ASTM and the Plastics Pipe Institute.

<u>Property</u>	<u>Unit</u>	<u>Procedure</u>	<u>Requirements</u>
Material Designation	-	PPI/ASTM	PE 3408
PPI Material Listing	-	PPI	PLEXCE P34CH
Material Classification	-	D-1248	III Driscopipe Series 4000
Cell Classification	-	D-3350	345434C
Density (3)	gm/cm ³	D-1505	0.955
Melt Flow (4)	gm/10 min.	D-1238	0.4 max
Flexural Modulus (5)	psi	D-790	133,000
Tensile Strength (4)	psi	D-638	3,500
ESCR (3)	Failure % Hrs.	D-1693	F ₀ 5000
HDB (4)	psi	D-2837	1600
UV Stabilizer (C)	% Carbon Black	D-1603	2 to 3
Elastic Modulus	psi	D-638	110,000
Brittleness Temperature	°F	D-746	-180
Vicat Softening Temperature	°F	D-1525	255
Thermal Expansion	in/in/°F	D-696	8 x 10 ⁻⁵
Hardness	Shore D	D-2240	64
Molecular Weight Category	-		Extra High
Molecular Weight	-	GPC	330,000
HDB @ 73.4 °F	psi	D-2837	1600
HDB @ 140 °F	psi	D-2837	800
Heat joining of thermoplastic pipe	-	ASTM D-2657	-

Pipe and fittings shall be manufactured from identical materials meeting the above requirements. The pipe manufacturer shall furnish a certificate stating that he is fully competent to manufacture PE pipe of uniform texture and strength and in full compliance with these Specifications and further stating that he has manufactured such pipe and done so in sufficient quantities to be certain that it will meet all normal field conditions. In addition, the manufacturer's equipment and quality control facilities must be adequate to ensure that pipe and fittings are uniform in texture, dimensions, and strength. Also furnish a certificate from the manufacturer certifying that the pipe furnished for this project meets the requirements of these Specifications.

Testing and inspection of all pipe shall be done at the factory with a certified copy of test results furnished to the Engineer prior to any pipe being installed. Tests shall be done in accordance with ASTM D-2837 and validated in accordance with latest revision of PPI TR-3. The Owner may take random samples and have them tested by an independent laboratory. Samples that fail to comply with the requirements set forth in these Specifications shall be rejected.

Pipe and fittings shall be manufactured in accordance with ASTM F-714. Pipe and fittings unless otherwise indicated on the Contract Drawings shall be butt fusion type meeting the requirements of ASTM D-3261. All fittings shall be pressure rated to match the system piping and the outside diameter and minimum wall thickness shall meet the outside diameter and minimum wall thickness specification of ASTM F-714.

The joining method shall be done in strict accordance with the pipe manufacturer's written instructions. The pipe manufacturer shall provide a minimum of 16 hours of instruction time to observe and instruct the Contractor's personnel in the proper pipe joining method and installation of the pipe system. In addition, the pipe manufacturer shall provide a minimum of 8 hours of observation time throughout the duration of the pipe laying operation of the project. The pipe manufacturer shall provide a written report to the Contractor and to the Engineer of his observation including comments on proper procedure being followed.

Pipe and fittings shall be stored and handled in accordance with the manufacturer's recommendations. At a minimum, pipe and fitting shall be stored on clean, level ground to prevent damage. Any sections found to have cuts or gouges shall not be installed and such sections shall be removed from the project.

The polyethylene pipe and fittings shall be not less than the DR class or pressure class listed below. This is based on hydrostatic design basis at 73.4 degrees F.

<u>Nominal Pipe Size</u>	<u>O.D. of Polyethylene</u>	<u>DR and Pressure</u>
4"	4.80"	DR-9: 200 PSI
6"	6.90"	DR-9: 200 PSI
8"	9.05"	DR-9: 200 PSI
12"	13.20"	DR-9: 200 PSI

*Note: Unless otherwise indicated on the Contract Drawings.

Fittings for PE piping shall be molded (PE) (or fabricated if molded not available) with electrofusion couplings in accordance with manufacturer's recommendations.

All fittings shall be pressure rated to match the piping.

Detectable tape shall be 3 inches wide and shall be an inert, bonded layer plastic with a metalized foil core and shall be highly resistant to alkalis, acids, or other destructive chemical components likely to be encountered in soils. The tape shall be blue in color and shall bear the imprint "CAUTION - WATER LINE BURIED BELOW". This detection tape shall be placed over the water main at a level of 15 inches below the finished ground surface.

NOTE: The Contractor's attention is directed to the requirement of the Owner for the furnishing and installation of #14 insulated copper trace wire for water pipe on this project. This trace wire shall be stubbed up at all valve boxes for use by the Owner.

Prior to ordering water pipe, fittings, or detectable tape, the Contractor shall submit proposed materials to the Engineer for approval.

7. FITTINGS

All fittings shall be compact ductile iron, cement lined, bituminous coated, manufactured in accordance with USA Standards A21.53-84, latest revision, unless otherwise indicated or directed. Minimum pressure rating shall be 350 psi. Unless indicated otherwise on the Drawings, mechanical joint fittings shall be used.

Fitting manufacturer shall furnish certificates that fittings were manufactured in compliance with ANSI A21.53-84, latest revision.

Restrained joints for PVC water pipe shall be EBBA Iron Series 6500 Bell Restraint Harness for SDR-17 and SDR-21 PVC water pipe, or Engineer approved equal.

8. GATE VALVES

All gate valves shall be iron body bronze mounted, double disc valves with non-rising stems. Valves shall be furnished with mechanical joint ends in accordance with USA Standard A21.11 unless otherwise shown or directed. Valves shall be suitable for installation in approximately vertical position in buried pipe lines. Stem seal shall consist of O-ring seals. All valves shall be open to the left (counterclockwise), and shall be provided with a 2-inch square operating nut. Valve supplier shall furnish two standard stem iron wrenches for turning nut operated valves.

Valves shall be for working pressures up to 200 psi and shall be equal to latest specifications of AWWA C500 in all respects. Valves shall be equal to Mueller A-2380-20, unless shown otherwise on Drawings.

9. RESILIENT SEAT GATE VALVES

Resilient seat gate valves shall be iron body, machined surface, modified wedge disc, resilient rubber seat ring type valves with non-rising stems (NRS). Resilient seat gate valves shall have the bronze stem nut cast integrally with the cast iron valve disc. The valve shall have machined seating surface and capable of being installed and operated in either direction. Valves shall be furnished with mechanical joint ends in accordance with USA Standard A21.11 unless otherwise shown or directed. Valves shall be suitable for installation in approximately vertical position in buried pipe lines. Stem seal shall consist of O-ring seals. All valves shall open to the left (counterclockwise), and shall be provided with a 2-inch square operating nut. All underground gate valves which have nuts deeper than 30 inches below the valve box top shall have extended stems with nuts located within one foot of the valve box cap.

Valves shall be for working pressures up to 200 psi and shall be equal to latest specifications of AWWA C509 in all respects. Valves shall be equal to Mueller A-2370-20, unless shown otherwise on Drawings.

Iron body resilient seat gate valves shall be as manufactured by Mueller, or equal.

10. TAPPING SLEEVES AND VALVES

Tapping sleeves shall consist of a mechanical joint tapping sleeve Mueller H-615, or approved equal, and a valve with mechanical joint outlet Mueller H-667, or approved equal. The valve shall conform to all applicable specifications for gate valves. The Contractor shall provide tapping machine and perform tap for this project.

Valves shall be of similar construction to APCO 200A or approved equal. Inlet size shall be 1 inch in diameter.

11. VALVE BOX FRAMES AND COVERS

Valve box frames and covers shall be made of heavy cast iron and shall meet the requirements of ASTM A-48, Class 30.

All castings shall be made accurately to the required dimensions and shall be sound, smooth, clear and free of blemished or other defects. Defective castings which have been plugged or otherwise treated to remedy defects shall be rejected.

The valve box frames and covers shall be screw type as manufactured by John Bouchard & Sons Company, Nashville, Tennessee, No. 461-S or 562-S (old #8004), as required by depth, traffic duty, or approved equal. The cover shall be marked "WATER".

A minimum 2-foot diameter concrete collar shall be placed around the top of the valve box in non-paved areas to provide support of the box. The collar shall be a minimum of 4 inches thick and sloped to drain away from the box (see the Standard Detail for Gate Valve on Drawings).

12. SERVICE CLAMPS

Where designated on the Drawings or required by the Engineer, service clamps shall be used for all taps made to the water line. Service clamps shall be all bronze construction with neoprene gasket.

13. PIPELINE DETECTION TAPE

Detectable pipeline location tape shall be plastic composition film containing one layer of metalized foil laminated between two layers of inert plastic film specifically formulated for prolonged use underground. Tape shall be minimum 5.5 mils thickness, blue in color, and continuously printed in permanent ink to indicate caution for a buried water main. This detection tape shall be placed over the water main at a level of 15 inches below the finished ground surface.

Tape shall be a minimum of 3 inches in width with a minimum tensile strength of 5,000 psi. Tape shall be Terra-Tape as manufactured by Reef Industries, Inc., or approved equal.

In addition to detectable tape described above, a tracer wire shall also be installed by taping to the top of the water main. This tracer wire shall be #14 copper wire. All splices shall be by the solder or compression fitting methods. Wire nuts are not permitted.

14. TRACER WIRE

The tracer wire shall also be installed by taping to the top of the water main. This tracer wire shall be 14-gauge insulated copper wire. All splices shall be by the solder or compression fitting methods. Wire nuts are not permitted.

15. SERVICE LINE ITEMS

Service lines shall consist of a corporation cock, bronze service clamp as per Contract Drawings, 3/4-inch SDR 9; Cl. 200 3408 P.E. tubing, curb stop, meter box and meter as described herein or shown on the Contract Drawings.

Bronze fittings shall be Mueller as indicated or approved equal.

16. FIRE HYDRANTS

Fire hydrants shall be iron bodied, fully bronze mounted hydrants manufactured to equal or exceed AWWA Specification C502 latest revision. Hydrants shall be suitable for 150 psi working pressure and shall be subjected to a test pressure of 300 psi. Inlet connection shall be 6-inch mechanical joint unless noted otherwise on Drawings. Main hydrant valve shall be compression type, closing with the pressure, with 5¼-inch valve opening.

All hydrants shall be equipped with two 2½-inch hose nozzles, one 4½-inch pumper nozzle, breakable safety flange and safety stem coupling. Bronze nozzles shall be securely locked to prevent them from blowing off. Hose threads and pumper nozzle threads shall be National Standard. Nozzle caps shall be equipped with non-kink chains.

Hydrants shall be of the "dry head" type with an oil reservoir and provision for automatic lubrication of stem threads and bearing surfaces each time the hydrant is operated. Double O-ring seals shall be provided to keep water out of the hydrant top. Operating nut shall be 1½-inch pentagon, opening to left, and shall be equipped with a weather cap.

Hydrants shall be provided with automatic multiport drain ports arranged to momentarily flush water pressure each time hydrant is operated. A positive stop shall be provided on the operating stem to prevent over travel when operating valve.

Fire hydrant shall be supplied with a bituminous coating for buried portion of hydrant and a red enamel finish for above ground portions of the hydrant. Hydrants shall be equal to Mueller A-423 unless shown otherwise on the Drawings.

Minimum bury shall be 36 inches.

Fire hydrant manufacturer shall furnish certificates that all fire hydrants were tested and manufactured in compliance with AWWA C502 in all respects.

Locking tees shall be used at all locations where possible. At all other locations restrained joints shall be used.

17. RIP-RAP

Rip-rap stone material shall be sound, durable, free from cracks, pyrite intrusion and other structural defects. Wear shall not exceed sixty by the Los Angeles Method. When crushed aggregate is subjected to five alternations of the sodium sulfate soundness test, the weighted percentage of loss shall not be more than fifteen. At least 90 percent of the stone shall not be less than 8 inches wide by 12 inches long by 12 inches deep and shall be approximately rectangular in shape.

18. CASING PIPE

Where noted on the Drawings or required by these Specifications, roadway, railroad or other crossings shall be made utilizing carrier pipe within a casing pipe. Sizes of carrier pipe and casing pipe shall be as noted on the Drawings or described in these Specifications. Casing pipe and joints shall be of leak proof construction. The steel casing pipe shall have a minimum yield strength of 35,000 psi and shall have the minimum wall thickness shown in the following table or as shown on the Drawings.

The minimum size of the steel casing pipe shall be large enough to allow the use of casing chocks described below. The Contractor may utilize a larger casing pipe size, if desired, as long as the carrier is properly secured to the satisfaction of the Owner / Engineer.

TABLE OF MINIMUM WALL THICKNESS FOR STEEL CASING PIPE
(COOPER E-80 LOADING)

Casing Diameter, <u>inches</u>	Wall Thickness with approved protective <u>coating, inches</u>	Wall Thickness without approved protective <u>coating, inches</u>
Under 14	0.188	0.251
14 & 16	0.219	0.282
18	0.250	0.313
20	0.281	0.344
22	0.312	0.375
24	0.344	0.407
26	0.375	0.438
30	0.406	0.469
36	0.469	0.532
42	0.500	0.563

Casing shall extend to the points indicated on the Drawings.

Note: In situations where the bore method is utilized with a steel casing pipe, the carrier pipe shall be secured inside the steel casing pipe with casing chocks (minimum three per joint) as manufactured by Powerseal Pipeline Products Corporation of Wichita Falls, Texas, or Engineer approved equal. Where casing chocks are used inside steel casing pipes, the requirement for sand or pea gravel backfill can be eliminated. Additionally, the ends of the steel casing pipe shall be sealed with casing pipe "End Seals", "Link-seal", or Engineer approved equal.

CSX Railroad does not require vents on casings with water mains.

19. VALVE MARKERS

Where indicated on the Contract Drawings, markers for valves shall be one piece for driving or settling in the ground. Marker units shall be weather resistant with identifying color and permanently affixed marker identifying Water Main Valve and shall be a minimum of 62 inches in length. Units shall be flexible and resistant to damage by vehicles, animals, or vandals. Marker units shall be Carsonite Utility Marker, manufactured by Carsonite International, Carson City, Nevada, or approved equal.

20. AIR RELEASE VALVE

See standard details on the Contract Drawings

21. BLOW-OFF / FLUSH HYDRANT (IF REQUIRED)

Special flush type hydrants shall be #77 Mainguard Hydrants with locking capability minimum size shall be 2-inch as manufactured by the Kupferie Foundry Company of St. Louis, Missouri, or Engineer-approved equal. The locking cover on the flush hydrant shall be modified by the Contractor and/or material supplier to accommodate the standard lock size of the Green River Valley Water District.

WATER MAINS AND APPURTENANCES

SECTION 3

CONSTRUCTION

1. PRELIMINARY WORK

1.1 Location of Lines - The streets, roads and easements in which lines shall be placed have been indicated on the Drawings. Final location of the pipe lines within these locations shall be made by the Engineer at the time of construction.

1.2 Location and Protection of Underground Utilities - Prior to trenching, the Contractor shall determine, insofar as possible, the actual location of all under ground utilities in the vicinity of this operation and shall clearly mark their locations so that they may be avoided by equipment operators. Where such utility lines or services appear to lie in the path of construction they shall be uncovered in advance to determine the exact location and depth and to avoid damage due to trenching operations. Existing facilities shall be protected during construction or removed and replaced in equal condition, as necessary.

Should any existing utility line or service be damaged during, or as a result of the Contractor's operations, the Contractor shall take such emergency measures as may be necessary to minimize damage and shall immediately notify the utility involved. The Contractor shall then repair the damage to the satisfaction of the utility or shall pay the utility for making the repairs. In all cases, the restoration and/or repair shall be such that the damaged structure will be in as good or better condition as before the damage occurred.

1.3 Removal of Obstructions - The Contractor shall be responsible for the removal, safeguarding and replacement of fences, walls, structures, culverts, street signs, billboards, shrubs, mailboxes, or other obstructions which must be moved to facilitate construction. Such obstructions must be restored to at least their original condition.

1.4 Clearing and Grubbing - The Contractor shall be responsible for cutting, removing and disposing of all trees, brush, stumps, roots and weeds within the construction area. Disposal shall be by means of chippers, landfills, or other approved method and not in conflict with state or local ordinances.

Care shall be taken to avoid unnecessary cutting or damage to trees not in the construction area. The Contractor will be responsible for loss or damage to trees outside the permanent easement or rights-of-way.

2. EXCAVATION

2.1 General - The Contractor shall perform all required excavation and backfilling incidental to the installation of the water lines, air release valve installations, and other appurtenances under this Contract. Excavation shall be carried to the depths indicated on the Drawings or as necessary to permit the installation of pipe, bedding, structures or appurtenances. Care shall be taken to provide a firm, undisturbed, uniform surface in the bottoms of trenches and excavations for structures.

Where the excavation exceeds the required depth, the Contractor shall bring the excavation to proper grade through the use of an approved incompressible backfill material (generally crushed stone or fill concrete, depending upon the nature of the facility to be placed thereon). In the event unstable soil conditions are encountered at

the bottom of the excavation, the Engineer may direct the Contractor to continue the excavation to firm soil or to provide pilings or other suitable special foundations.

The Contractor shall take such precautions as may be necessary to avoid endangering personnel, pavement, adjacent utilities or structures through cave-ins, slides, settlement or other soil disturbance resulting from his operations.

The Contractor shall saw-cut pavements prior to excavation procedures.

The Contractor shall be responsible for storage of excavated material, disposal of surplus excavated material, trench dewatering and other operations incidental to excavation and backfilling operations.

- 2.2 Classification of Excavation - Excavation shall be unclassified and the cost of excavation shall be merged into the price per foot for the water main. No distinction will be made between rock and earth excavation and no separate payment will be allowed thereof.
- 2.3 Pavement Removal - Where existing paved streets, roads, parking lots, drives or sidewalks must be disturbed during construction of the project the Contractor shall take the necessary steps to minimize damage. Permanent type pavement shall be cut or sawed in a straight line before removal and care shall be taken during excavation to avoid damage to adjacent pavement. Where trucks or other heavy equipment must cross curbs or sidewalks, such areas shall be suitably protected.
- 2.4 Trench Excavation - Trenches shall be excavated in a neat and workmanlike manner, maintaining proper alignment except where necessary to make deviations to miss obstructions. Trenching for installation of water distribution piping shall be such that the pipe will have a minimum cover of 48 inches for 12-inch to 16-inch water mains and 30 inches for 10-inch and smaller water mains except as noted on Drawings. The bottom of trenches must be shaped by hand and bell holes must be dug so that full length of pipe is resting on trench bottom. Blocking shall not be used.

Note: In many cases the water main shall be required to have more than 48 or 30 inches of cover to get under existing utilities or to satisfy other requirements. This additional depth, when required, shall be merged into the unit price bid per foot of water main.

Trenches shall be opened up far enough ahead of pipe laying to reveal obstructions, but in general shall not include more than 300 feet of continuous open trench at any time. The Contractor will be required to follow up trenching operations promptly with pipe laying, backfill and clean-up, and in event of failure to do so, may be prohibited from opening additional trench until such work is completed.

The Contractor shall plan his operations so as to cause a minimum of inconvenience to property owners and to traffic. No road, street or alley may be closed unless absolutely necessary, and then only if the following conditions are met:

1. Permit is secured from appropriate, State, County or Municipal authorities having jurisdiction.
2. Fire and Police Departments are notified before road is closed.
3. Suitable detours are provided and are clearly marked.

No driveways shall be cut or blocked without first notifying the occupants of the property. Every effort shall be made to schedule the blocking of drives to suit to occupants' convenience and, except in case of emergency, drives shall not be blocked for a period of more than 8 hours.

The Contractor shall furnish and maintain barricades, signs, flashing lights, and other warning devices as necessary for the protection of public safety. Flagman shall be provided as required on heavily traveled streets to avoid traffic jams or accidents.

Trench width shall be held to a minimum consistent with proper working space for assembly of pipe. Maximum trench width up to a point one foot above top of pipe shall be limited to the outside pipe diameter plus 16 inches. Boulders, large stone, shale and rock shall be removed to provide clearance of 6 inches below and on each side of the pipe. Trench walls shall be kept as nearly vertical as possible with due consideration to soil conditions encountered and, when necessary, sheeting or bracing shall be provided to protect life and property.

Where unstable soil conditions are encountered at the trench bottom, the Contractor shall remove such additional material as may be directed by the Engineer and replace the excavated material with approved backfill.

The Contractor shall excavate by hand wherever necessary to protect existing structures or utilities from damage or to prevent overdepth excavation in the trench subgrade.

Excavated material shall be stored safely away from the edge of trench and in such a way as to avoid encroachment of private property.

- 2.5 Excavation for Structures - Excavation for air release valve installations, metering pits or other appurtenance shall be only as large as may be required for the structure of appurtenance and for working room around the same. In earth, excavation shall generally extend to the outer limits of the structure at the bottom, and shall slope outward at such angle as may be required for stability of excavated face. In rock, excavation shall be carried to a point 6 inches outside the structure so that no rock is left within 6 inches of the finished structure or appurtenance.

Care shall be taken as the excavation approaches the desired grade to avoid overdepth excavation and provide a firm and undisturbed soil surface on which footings, slabs or foundations are to be placed. Should the Contractor excavate below the desired grade level, the excavation shall be brought to grade by the use of Class C concrete at the expense of the Contractor. The use of tamped earth backfill under foundations, footings, or slabs will not be acceptable.

Where structures rest partially upon rock, the rock shall be excavated to a point 6 inches below bottom of structure and compacted crushed stone shall be used to bring the excavation back to grade. Where the structure will rest completely on sound solid rock, the rock shall be excavated to a point 4 inches below bottom of structure and compacted crushed stone shall be used to bring the excavation back to grade.

Should the material found at the desired subgrade appear to be unstable or otherwise unsuitable for support of the structure, such condition shall be immediately called to the attention of the Engineer. The Engineer may direct that such unsuitable material be removed and replaced with concrete, he may modify the foundation design to suit the condition, or he may determine that the bearing capacity of the material for the load to be supported, but in any case shall provide written instructions to the Contractor as to the procedure to be followed.

- 2.6 Rock Excavation - Rock excavation shall consist of loosening, removing and disposing of all rock larger than 9 cubic feet in volume, which in the opinion of the Engineer can only be removed by blasting or other equivalent methods. Such materials to be classified as solid rock shall include boulders, bed rock, or solid concrete but shall not include pavement or shaley materials that can be loosened by other methods.

Where rock excavation is encountered in trenches the excavation shall be carried to a depth of 6 inches below the bottom of the pipe. The rock shall also be removed to a width of at least 6 inches beyond the outside of the pipe on each side so that no rock is left within 6 inches of the outside wall of the pipe. Where rock is excavated in the bottom of the trench, the trench shall be brought back to grade by the use of crushed stone which shall be compacted to form a stable base for the pipe laying operation.

The Contractor shall exercise all necessary precautions in blasting operations. Suitable blasting mats shall be provided and utilized as required. Blasting shall be done only by experienced men. Careless shooting, resulting in the ejection of stones or other debris during blasting, shall be corrected immediately by the Contractor's representative.

No blasting shall be done unless the Contractor shall have taken out the necessary insurance to fully protect the Owner from all possible damages resulting from the blasting operations. The blasting shall be done in accordance with all recognized safety precautions and in accordance with regulations of authorities having jurisdiction. In addition the Contractor shall exercise the necessary care to safeguard the stores of blasting materials on the property.

Where rock is encountered in the immediate vicinity of gas mains, telephone cables, building footings, gasoline tanks, or other hazardous areas the Contractor shall remove the rock in a manner that will ensure protection of these structures. Care shall be taken in blasting operations to see that pipe or other structures previously installed are not damaged by blasting. In general, blasting shall not be done within 25 feet of the completed pipeline or any existing structure.

All excavation on this project is on an unclassified basis. Rock excavation is not a separate pay item.

2.7 ~~Disposal of Surplus Excavated Material - Excavated material that is unsuitable or unnecessary for backfilling shall be hauled to sites as directed by the Engineer for use as fill on the project. No surplus excavated material may be disposed of except as provided herein unless specifically authorized by the Engineer. Any material which is not suitable or not required for the fill on the project shall be disposed of by the Contractor.~~

2.8 Subsurface Obstructions - In excavating, backfilling, and laying pipe, care must be taken not to remove, disturb or injure other pipes, conduits, or structures, without the approval of the Engineer. If necessary, the Contractor, at his own expense, shall sling, shore up and maintain such structures in operation, and within a reasonable time shall repair any damage done thereto. Repairs to these facilities shall be made to the satisfaction of the Engineer.

The Contractor shall give sufficient notice to the interested utility of his intention to remove or disturb any other pipe, conduit, etc. and shall abide by their regulations governing such work. In the event subsurface structures are broken or damaged in the prosecution of the work, the Contractor shall immediately notify the proper authorities and shall be responsible for any damage to persons or property caused by such breaks.

When pipes or conduits providing service to adjoining buildings are broken during the progress of the work, the Contractor shall have them repaired at once. Delays, such as would result in buildings being without service overnight or for needlessly long periods during the day, will not be tolerated, and the Owner reserves the right to make repairs at the Contractor's expense without prior notification. Should it become necessary to move the position of a pipe, conduit, or structure, it shall be done by the Contractor in strict accordance with instructions given by the Engineer or the utility involved.

The Owner or Engineer will not be liable for any claim made by the Contractor based on underground obstructions being different than that indicated on the Drawings. Where ordered by the Engineer, the Contractor shall uncover subsurface obstructions in advance of construction so that the method of avoiding same may be determined before pipe laying reaches the obstructions.

The Contractor shall be governed by instructions of the Engineer regarding the laying of pipe along State Highways and the latter will determine whether the pipe shall be laid over, under, or along the end of various drainage structures encountered.

- 2.9 Special Conditions - Special care must be exercised in excavation under or near State Highways, railroads, or other areas as designated on the Drawings in order to avoid or minimize delays or injuries resulting there from. Where it is necessary to cross beneath state highways, railroads, or other designated areas, the Contractor shall make such installations as shown on the Drawings and/or as directed in Section 6 - Special Construction Items.

3. INSTALLATION OF WATER LINE AND APPURTENANCES

- 3.1 General - The Contractor shall use only experienced men in the final assembly of pipe in the trench, and all pipe shall be laid in accordance with these Specifications and the recommended practice of the pipe manufacturer. Trench bottoms shall be carefully prepared and shall be free of water.

Care shall be exercised to ensure that pipe of the proper strength or classification meeting the specifications in every respect is provided at the site of pipe laying operations. Recommended tools, equipment, lubricant and other accessories needed for proper assembly or installation of the pipe shall be provided at the site of the work. Any damaged or defective pipe discovered during the pipe laying operations shall be discarded and removed from the site of the pipe laying operations.

The Contractor shall exercise care in the storage and handling of pipe, both on the storage yard and at the site of laying operations. Suitable clamps, slings, or other lifting devices shall be provided for handling pipe and fittings. Pipe and fittings shall be carefully lowered into the trench piece by piece. Pipe and fittings shall be carefully inspected for defects and for dirt or other foreign material immediately before placing them in the trench. Suitable swabs shall be available at the site of laying operations, and any dirt or foreign material shall be removed from the pipe before it is lowered into the trench.

Bell holes for bell and spigot and mechanical joint pipe shall be dug in trench to allow entire length of pipe barrel to be bedded and to allow proper jointing of pipe. Alignment of pipe shall be as true as possible in order to avoid air pockets. When work is suspended either for the night or for any other reason, open ends of the pipe shall be securely plugged to prevent the entrance of foreign materials. Dead ends of the pipe and unused branches of crosses, tees, valves, etc. shall be closed with plugs suitable to the type of pipe in use.

Dead ends of the pipe and unused branches of crosses, tees, valves, etc. shall be closed with plugs suitable to the type of pipe in use.

Cutting of pipe shall be done in a neat, workmanlike manner without damage to pipe, coatings and linings and so that a smooth end remains at right angles to axis of pipe.

- 3.2 Removal of Water - The Contractor shall be responsible for handling run-off, ground water, and sewage in such a way as to maintain trenches and excavations in a dry condition until the work is completed. Pumps, piping, well points, labor, fuel, and other facilities necessary to control, intercept, remove and/or dispose of water shall be provided by the Contractor at his own expense. Water removed from trenches or holes shall be discharged to natural drains in such a way as to avoid danger or damage to adjacent property owners or sewers. No pipe shall be laid with water in the bells.

Where the Contractor fails, refuses, or neglects to control water in trenches or other excavations, and corrective work is deemed by the Engineer to be necessary as a consequence thereof, such work shall be at the Contractor's expense.

- 3.3 Ductile Iron Pipe - Provision of AWWA Specifications C600, latest revision, "AWWA Standard for Installation of Gray and Ductile Cast Iron Water Mains" shall apply. Laying conditions shall be Type 2 (flat bottom trench without blocks) with tamped backfill.

Joints shall be an approved slip-on type or mechanical joint. Unless otherwise indicated on Drawings, lines laid below ground shall have approved slip-on joints, lines laid above ground shall have mechanical joints. Flanged joints shall be used only where designated on Drawings. Cement joints will not be permitted.

Mechanical joint and slip-on type or mechanical joint. Unless otherwise indicated on Drawings, lines laid below ground shall have approved slip-on joints; lines laid above ground shall have mechanical joints. Flanged joints shall be used only where designated on Drawings. Cement joints will not be permitted.

Mechanical joint and slip-on type water line shall be jointed together in trench according to recommendations of pipe manufacturer. Inside of bell and outside of spigot end shall be thoroughly cleaned to remove oil, grit, excess coating and other foreign matter. Circular rubber gasket shall be flexed inward and inserted in gasket recess of bell socket. Thin film of gasket lubricant shall be applied to inside surface of gasket or spigot end of pipe or both. Gasket lubricant shall be as supplied by pipe manufacturer and approved by Engineer. Spigot end of pipe shall be inserted into socket, with care used to keep joint end to bottom of socket with forked tool, jack-type tool, or other device approved by Engineer. Pipe not furnished with depth mark shall be marked before assembly to assure that spigot and is inserted to full depth of joint. Field cut pipe lengths shall be filled or ground to resemble spigot end as manufactured.

Whenever it is desirable to deflect slip-on joint pipe in order to form long-radius curve, amount of deflection shall not to exceed maximum limits as follows:

<u>Diameter</u>	<u>Joint Length</u>	<u>Deflection</u>
4" thru 12"	18 ft.	18 in.
14" thru 30"	18 ft.	10 in.

- 3.4 Polyvinyl Chloride Pipe (Class 200; SDR 21 PVC) - Installation of polyvinyl chloride pipe shall conform to ASTM 2321 and AWWA C900, latest revision. Pipe shall be bedded in compacted granular material to centerline of pipe and compacted granular material to a point 8 inches over pipe. Type 5 Trench Condition as set forth in AWWA C600-87. The bedding material shall be shaped to provide continuous support for the PVC pipe throughout its length except at bells. Blocking shall not be used to bring the pipe to grade.

Whenever it is necessary to cut a joint of pipe in order to fit the trench conditions, the cutting may be made with either hand or mechanical saws or plastic pipe cutters. The cut shall be square and perpendicular to the pipe axis. The cut end shall be beveled as specified by the pipe manufacturer.

Assemble all joints in accordance with recommendations of the manufacturer.

Note: For installation of PVC water main materials, the Contractor shall provide and install 3-inch detection tape as per specifications. This detection tape shall be placed over the newly installed water main at a level of 15 inches below the finish ground surface.

Additionally, the Contractor shall provide and install a 14-gauge insulated copper wire directly on top of the newly installed water main. This copper wire shall be stubbed up into each valve box along the water main alignment. This stub-up shall be suitably secured in the valve box to be readily attached to pipe-locating equipment. Any splices of this wire shall be performed in a manner approved by the Engineer.

- 3.5 Installation of Fittings - Fittings in pipe lines shall be firmly secured to prevent the fitting from being blown off the line when under pressure. When connections are made between the new work and existing mains, the connections shall be made using specials and fittings to suit the actual conditions.

All tees, caps, plugs, bends or other fittings subjected to unbalanced forces tending to pull the joints apart shall be protected with concrete thrust blocks. Thrust blocks shall be provided in accordance with details shown on Drawings and must bear against an undisturbed trench face. Thrust blocks must be used unless written permission is obtained from the Engineer to use special locked-joint fittings, anchoring fittings, or pipe clamps with tie rods.

Fittings shall be placed in locations indicated on Drawings or designated by Engineer and shall be installed in accordance with provisions of these Specifications dealing with laying of Ductile Iron Pipe. Joints shall be as designated under Section 2, Materials.

Before being placed in trench, all fittings shall be subjected to inspection by Engineer; and any defective, unsound or damaged fittings shall be rejected and Contractor shall remove at once from work area.

- 3.6 Installation of Valves, Valve Boxes - Valves shall be placed in the locations indicated on the Drawings or at locations designated by the Engineer. All valves shall be set vertically. Before being placed in the trench, all valves shall be carefully examined by the Contractor and Engineer to see that they are in good working order.

Over each valve shall be placed a valve box. All valves which, when properly set, have operating nuts deeper than 30 inches below the top of the valve box shall have extension stems with operating nuts located within one foot of the valve box cap.

See Special Detail on Contract Drawings concerning the pipeline trace wire stub-ups at all valve boxes.

The valve box shall not come in contact with valve, valve stem, extension, or operating nut at any point. Backfill around boxes shall be tamped to maintain centered and plumbed alignment of box.

Box shall be installed with top set flush with finished surface in paved areas and to 2 inches above natural ground level in unpaved areas.

Upon completion of project, the Contractor shall operate all buried valves in the presence of the Engineer to verify proper operation.

- 3.7 Installation of Fire Hydrants - Hydrants shall be located generally as shown on the Drawings subject to review and approval by the Fire Department. Location shall provide complete accessibility and minimize possibility of damage from vehicles or injury to pedestrians.

Hydrants shall stand plumb (vertically) with pump nozzle facing street or public rights-of-way. Hydrants shall be set so that groundline, as indicated on hydrant barrel, is within 4 inches of finished grade. Hydrants with out ground lines marked on barrel shall be set so that barrel flange is no more than 2 inches below finished grade. Hydrant barrels shall be minimum bury of 36 inches. Greater bury depths might be required to accomplish the above described grade setting. It is desired to accomplish the proper grade setting without the use of barrel extensions. All cost for barrel extensions and greater depth of bury shall be included in the unit price bid for the fire hydrant assemblies.

A hydrant drain consisting of at least 7 cubic feet of clean, washed gravel or crushed stone shall be placed around base of hydrant. After installation is complete, hydrant will be tested for drainage and Contractor must correct situation if hydrant does not drain satisfactorily.

Concrete thrust block shall be poured at base of hydrant with care taken not to plug hydrant drains. Blocks must be poured in addition to retained glands, locked joint base fittings, anchoring fittings, or pipe clamps and tie rods.

Painting of hydrants after installation shall be required if factory finish is not satisfactory or has been damaged. All hydrants shall be red unless otherwise directed by the Engineer.

In case of damaged or otherwise unsatisfactory paint, Contractor shall apply two (2) coats of approved enamel.

Hydrant installation shall conform to details in Contract Drawings.

4. BACKFILL

- 4.1 General - Backfilling shall be carried out as expeditiously as possible, but shall not be undertaken until the Engineer has been given the opportunity to inspect the work. The Contractor must carry out all backfilling operations with due regard to: the protection of pipes, structures and appurtenances; the use of prescribed backfill materials; and procedures to obtain the desired degree of compaction. No equipment may be used which will result in damage to or misalignment of the pipe.

- 4.2 Acceptable Backfill Material - All backfill material shall be free from cinders, ashes, refuse, vegetable or organic material, boulders, rocks or stones, or other material that in the opinion of the Engineer is unsuitable. From one foot above top of pipe to within twelve inches of finished grade in unpaved areas, back fill may contain stones up to six inches in their greatest dimension, unless otherwise specified. Backfill containing rock must contain enough dirt to fill voids between rock.

When backfill material is not specified on Project Drawings or elsewhere in these Specifications, Contractor may backfill with the excavated material provided material consists of loam, clay, sand, gravel, or other materials that, in opinion of Engineer, are suitable for backfilling.

Backfilling shall not be done in freezing weather and it shall not be made with frozen material. No fill shall be made where material already in trench is frozen. Backfill shall not be made with material which, in Engineer's opinion, is too wet.

Where crushed stone backfill is required the crushed stone shall be No. 57 size as designated by the Kentucky Department of Highways Standards for crushed stone used in road surfacing.

Select Excavated Material for use as pipe bedding and envelope from 12 inches under the pipe to a point 12 inches above the pipe in outside roadway areas shall be identified as select clay soil material excavated from the trench, or select tailings from a rock trencher, or select material brought in from off-site, provided all such materials are free of deleterious substances such as rocks (larger than 1-½ inches), roots, stumps, humus material, frozen earth, other organic material and any other objectionable material around the pipe. The envelope shall be placed and compacted around the pipe as set forth in Paragraph 3.4 for Type 5 Trench Condition for PVC pipe in accordance with AWWA-C-600-87. Consolidation by jetting will not be allowed. The furnishing and installation of the select material bedding and select material envelope shall be considered as an integral part of the job and its cost merged into the unit price bid for water main pipe. No separate payment shall be allowed.

- 4.3 Backfilling Under Pipe - All trenches shall be backfilled by hand from bottom of trench to centerline of pipe. Approved backfill material (Select Excavated Material or Crushed Stone No. 57) shall be placed in 6-inch layers and thoroughly compacted by hand tamping. Backfill material shall be deposited in trench for its full width on each side of pipe, fittings and appurtenances simultaneously. Care must be taken to compact fill along sides of pipe and appurtenances adjacent to pipe wall.
- 4.4 Backfilling Under Pipe in Rock - Where trench is excavated in rock or shale, a 6-inch space below pipe shall be backfilled with approved bedding material (Select Excavated Material or Crushed Stone No. 57) firmly compacted to form a cushion for pipe and appurtenances.
- 4.5 Backfilling Over Pipe - From centerline of pipe, fittings and appurtenances to a depth of 1 foot above top of pipe, trench shall be backfilled by hand or by approved mechanical methods of 6-inch layers and thoroughly compacted by hand tamping or by approved mechanical methods. Contractor shall use special care in placing this portion of backfill in order to avoid injuring or moving pipe.

After the backfill has been placed to a depth of at least 12 inches above top of pipe, additional backfill may be placed by means of front end loaders, bulldozers or other suitable mechanical equipment subject to a 9-inch limitation of maximum thickness of layers placed before compaction.

- 4.6 In Areas Subject to Vehicular Traffic or Under Sidewalks - Where excavation is made through pavement, curbs, driveways, sidewalks, road shoulders, or other areas subject to vehicular traffic or supporting permanent structures or where such areas, items or structures are undercut by excavation, entire backfill shall be crushed stone (No. 57) which shall be placed in layers or lifts not exceeding 9 inches in thickness.

After placing in layers, crushed stone shall be carefully compacted to maximum density or minimum volume. Such backfill, placed where called for on the Drawings or as directed by the Engineer, shall be designated as Crushed Stone Backfill.

Where excavation is made through permanent pavements, backfill shall be placed as described above to subgrade elevation only. Remainder of backfill shall be crushed stone placed as directed to finished pavement grade to serve as temporary pavement.

The last 8 to 10 inches of backfill shall be compacted pug mix to stabilize trench cut.

From time that backfilling is complete until time permanent pavement surface is replaced or, in absence of pavement replacement, until job is accepted, the Contractor shall, at direction of the Engineer, water streets, roads, etc. to settle dust where excessive dust has, in opinion of the Engineer, been caused by the Contractor's operations. If the Contractor refuses or delays unnecessarily to obey direction of the Engineer, the Owner shall, after 24 hours written notice through the Engineer, be permitted to proceed with such work with cost to be billed to the Contractor.

The Contractor's attention is directed to the fact that water main items on this project are established as "under" and "outside" of roadway. Therefore, crushed stone backfill for pipe indicated to be under roadway shall not be a separate pay item.

In Areas Not Subject to Vehicular Traffic - Where excavation is made in areas not subject to vehicular traffic or supporting permanent structures and where settlement is not as critical, the Contractor may backfill trench from 1 foot above top of pipe to top of trench with approved excavated material using hand or approved methods. Backfill material shall be brought up to the original ground level in layers and walked in with suitable equipment. More restrictive compaction of this backfill material will not be required, however, the Contractor shall be responsible for bringing in such additional fill material as may be required from time to time during the one year warranty period to fill in areas where excessive settlement has occurred.

5. COMPLETING INSTALLATION OF LINES, STRUCTURES, ETC.

- 5.1 General - The Contractor shall not, without the permission of the Engineer, remove from the line of work any earth excavated therefrom which may be suitable for backfilling or surfacing until the excavation has been refilled and surfaced.

As soon as the backfilling of any excavation is completed and when in areas of existing development, the Contractor must at once begin the removal of all surplus dirt except that actually necessary to provide for the settlement of the fill. He shall also remove all the pipe and other material placed or left on the street by him except material needed for the replacement of paving, and the street shall be opened up and made passable for traffic. Following the above work, the repairing and complete restoration of the street surfaces, bridges, crossings, and all places affected by the work shall be done as promptly as possible.

All excavated material shall be cleared from adjacent street surfaces, gutters, sidewalks, parkways, railroads, grass plots, yards, etc., and the whole work shall be left in tidy and acceptable condition. Contractor will be required to regrass lawns or neutral grounds where trenches are excavated in these locations or where Contractor has damaged lawns or neutral grounds by his operations.

The Engineer shall be sole authority in determining time in which rough and final clean-up shall be prosecuted. Rough clean-up shall consist of removal of large rocks, grading of excess backfill material over pipe line or removal of said material, opening of any drainage device, restoration of any street or roadway to condition so that traffic may safely and conveniently use street or roadway, restoration of pedestrian ways to condition where pedestrians may safely and conveniently use same. Rough clean-up shall, in general, be prosecuted no later than 1 day after pipe laying and backfilling or no farther behind pipe laying operations than 1,000 feet; whichever time limit is shortest shall govern. Final clean-up consisting of pavement replacement, sidewalk replacement, removal of rocks, handraking with seeding, strawing, etc., of lawns and neutral grounds, adjusting grade of ground over pipeline, property repairs, and other items shall be prosecuted as soon as is practical after pipe has been laid and backfilled. In general, this would be no later than 2 to 3 weeks after completion of backfilling.

5.2 Final Grading and Seeding - Final clean-up shall consist of, among other items, final grading of disturbed areas and seeding of areas where grass growth was damaged or destroyed by the Contractor's operation. In areas of established lawns no rock shall be left in the top 6 inches of soil and the finished grade shall be that which existed before construction began. In all cases, lawn areas shall be left neat and in a condition so that hand mowing is as easy and convenient as before construction began. The lawn areas and other areas disturbed by the Contractor's activities shall have ground cover restored at least equal to the condition which existed before construction began. In established lawn areas new grass shall be of the same type as originally present. Grass and other ground cover shall be properly applied, fertilized, strawed, and watered as necessary and required to establish a good stand of grass.

5.3 Pavement types shall be designated by Engineer for installation in specific location where such designation is not shown on Drawings. All street pavements, unless otherwise noted herein or directed by the Engineer, which have water mains installed parallel with the road, across streets, driveways or parking lots, shall be restored by the following:

The Contractor shall be responsible for replacing all crushed stone surfacing damaged by his operation with measurement and payment to be described in these Specifications. The Contractor shall be responsible for maintaining temporary patches during construction and shall promptly repair any defects. Upon completion of the work, the paved surfaces shall be left in as good or better condition than before the start of construction.

5.4 Sodding or Sprigging - Where shown on the Drawings or directed by the Engineer, the Contractor shall install sodding or sprigging in lieu of seeding in order to establish ground cover. Normally this would be done in areas subject to erosion in soils that are difficult to hold.

Such sodding or sprigging when authorized by the Engineer as a necessary part of the work and not elected to be used by the Contractor in lieu of seeding shall be a separate pay item if identified separately on the Bid Form.

Prior to sodding or sprigging, soil shall be properly prepared and fertilized. The top 3± inches of soil shall be pulverized to remove roots, sticks, etc. and smooth the surface. Area shall be fertilized at a minimum rate of 500 pounds per acre. Fertilizer shall be mixed into the top 3 inches of soil by raking, disking, or other acceptable method. Do not overfertilize areas in order to avoid damaging growth. Fertilizer shall be "Vertigreen," "Vigaro," or approved equal. It shall contain not less than 5% nitrogen, 10% phosphorus, and 4% potash. If the area soil requires, by test, adjustment of the pH for proper growth of ground cover, ground limestone shall be applied to bring the pH into the proper range.

Sod shall be at least 8 inches wide and 12 inches long with at least 3 inches of dirt on the roots. It shall be placed on the prepared surfaces with edges in close contact and, as just as is practicable, in a position to break joints. Each section shall be pounded into place with wooden tamps or other approved implements. Sod shall be maintained moist from the time of its removal until reset and shall be reset as soon as practicable after removal. Immediately after placing, it shall be rolled or hand tamped to the satisfaction of the Engineer. On steep slopes, pinning or pegging will be required to hold the sod in place.

Sprigs shall be placed in a random manner at spacing suitable for optimum growth and cover as recommended by the supplier.

Immediately prior to sodding or sprigging, the area shall be sprinkled until saturated to at least a 1-inch depth and kept moist until sodding or sprigging is completed. Sprigs or sod shall be watered as required after setting (normally through a 14-day period). Contractor shall not allow any equipment or material on any planted area and shall erect barricades and guards if necessary to prevent his equipment, labor or the public from traveling on any planted area until satisfactory growth is established.

6. SPECIAL CONSTRUCTION ITEMS

- 6.1 Roadway Crossings - Roads, streets or highways will be crossed at locations and in the manner as designated by the Drawings. State Highway crossings will be subject to the requirements of the crossing permit obtained from the Kentucky Department of Highways.

When working in or near lines of traffic, the Contractor shall provide warning signals or flagmen as required by the Kentucky Department of Highways.

- 6.3 Maintaining Traffic while Crossing Streets and Highways - At various locations on this project (in addition to what might be specifically shown on the Contract Drawings) the nature of construction and traffic conditions will require that the Contractor utilize and maintain heavy steel plates to facilitate traffic. These steel plates shall be of sufficient size and thickness to be utilized for varying trenching conditions.

All costs associated with furnishing, placing, maintaining and using these steel plates shall be merged into the Contractor's unit price bid for water mains.

- 6.4 Water Mains in Bores - All bore crossings underneath railroads or highways shall be performed in accordance with the requirements of the parties or agencies having jurisdiction of these locations. The Contractor shall contact these parties or agencies prior to starting work and shall meet all requirements of these parties or agencies in regard to methods of construction and safety precautions to be taken in performing the bore work. All costs involved in meeting these requirements shall be paid for by the Contractor and no additional compensation will be allowed.

Excavation for all bores on this project shall be unclassified and no distinction made between rock and other materials excavated, with the cost of excavation merged into the unit price per foot of pipe in bore. Refer to casing pipe specifications in Materials.

7. SLOPE PROTECTION AND EROSION CONTROL

This section shall consist of temporary control measures as shown in the Drawings or directed by the Engineer or as required by the Commonwealth of Kentucky Division of Natural Resources during the life of the Contract to control erosion and water pollution through the use of hay bales and other control devices.

The temporary pollution control provisions contained herein shall be coordinated with the permanent erosion control features to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.

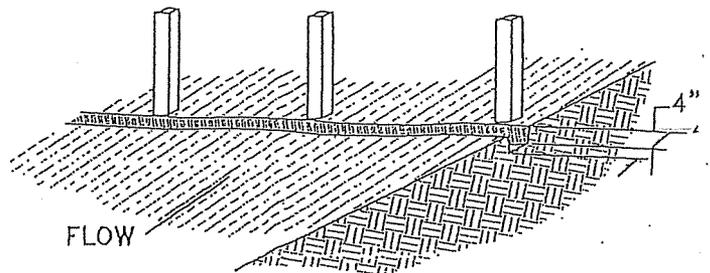
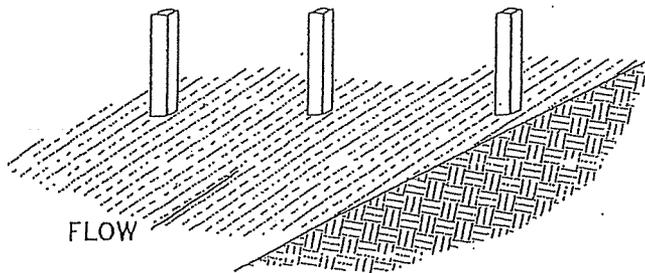
- a. Baled hay or straw erosion checks are temporary measures to control erosion and prevent siltation. Bales shall be either hay or straw containing five (5) cubic feet or more of material.

Baled hay or straw checks shall be used where the existing ground slopes in ditches or other areas where siltation erosion or water run-off is a problem.

- b. Baled hay or straw erosion checks - Hay or straw erosion checks shall be embedded in the ground 4 to 6 inches to prevent water flowing under them. The bales shall also be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales can remain in place until they rot or can be removed after they have served their purpose, as determined by the Engineer. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris clean-out will be considered routine maintenance.
- c. Temporary silt fences - Silt fences utilizing posts, filter cloth (burlap or plastic filter fabric, etc.) or other approved materials are temporary measures for erosion control. These fences shall be installed to retain suspended silt particles in the run-off water.
- d. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or permanent erosion control methods are installed. Any materials removed shall become the property of the Contractor.

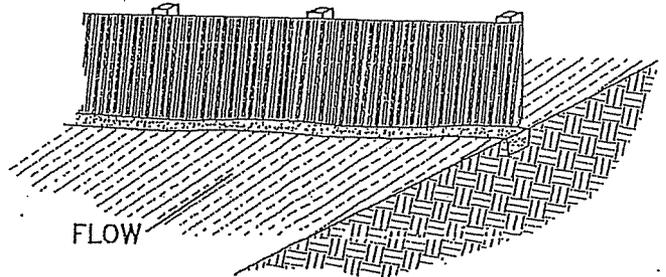
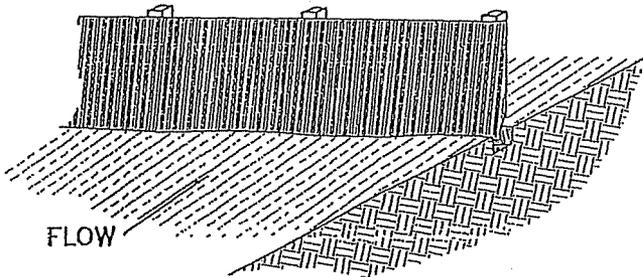
In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense.

- e. Erosion control outside project area - Temporary pollution control shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads and equipment storage sites. Bid price in such cases shall include all necessary clearing and grubbing, construction incidentals, maintenance, and site restoration when no longer needed.
- f. No separate measurement and payment will be made for this work. It will be considered a subsidiary obligation of the Contractor under other bid items to which it reflects.

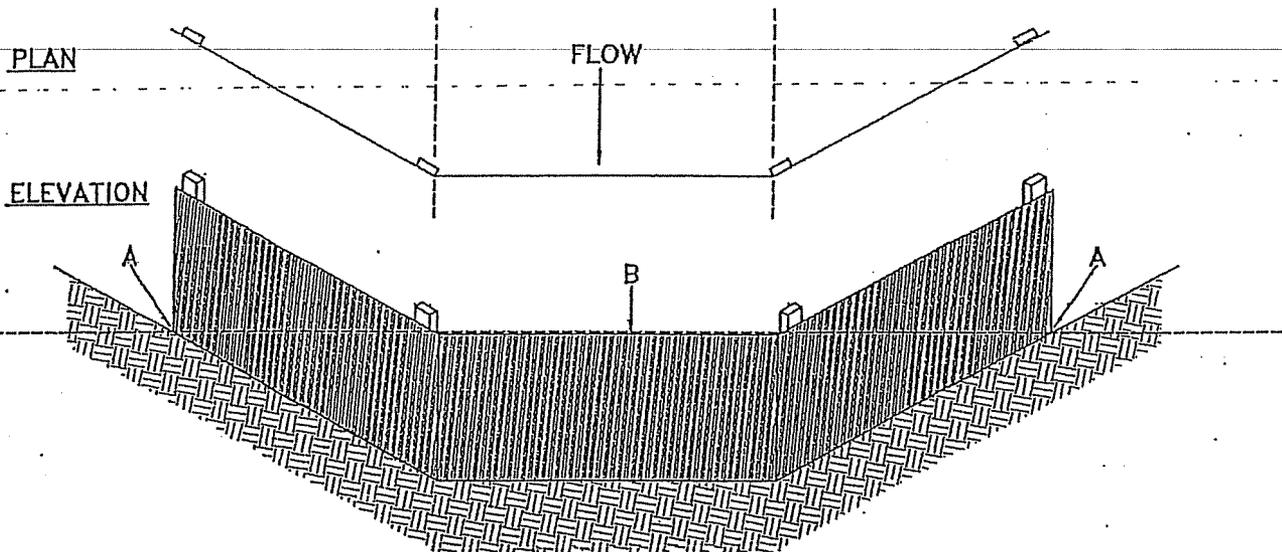


3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



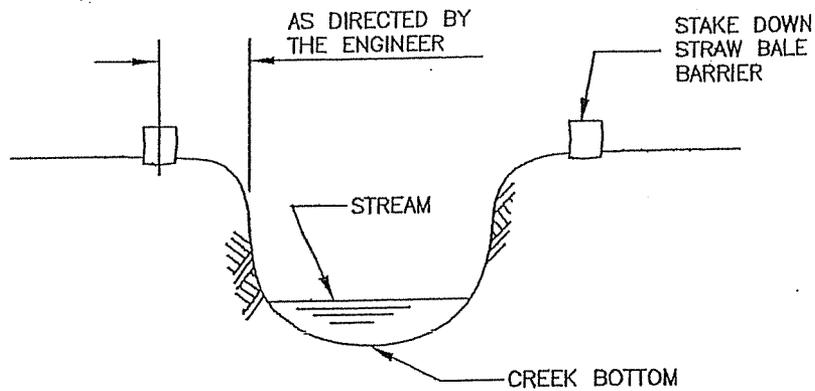
CONSTRUCTION OF A FILTER BARRIER



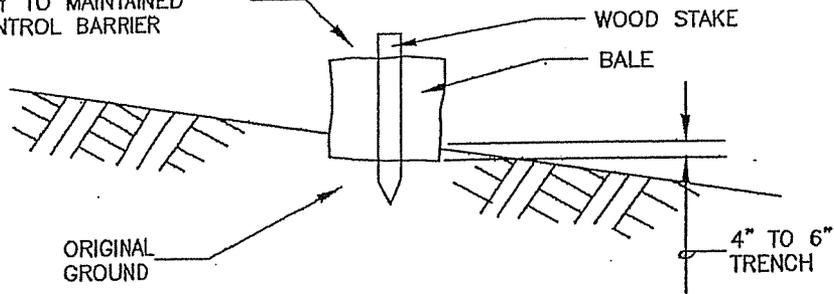
POINTS "A" SHOULD BE HIGHER THAN POINT "B".

PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

SILTATION FENCE



PLACE AND MAINTAINED CONTINUOUSLY AS NECESSARY TO MAINTAINED SEDIMENT CONTROL BARRIER



STRAWBALE SEDIMENT CONTROL BARRIER DETAIL

SCALE: NONE

WATER MAINS AND APPURTENANCES

SECTION 4

TESTING AND ACCEPTANCE

1. GENERAL

Upon completion of the construction work the Contractor shall conduct the necessary pressure and leakage tests, and shall disinfect the completed water mains and appurtenances. The Contractor shall furnish all labor, tools, equipment and materials for making the tests. In the event that the pressure or leakage test is unsatisfactory, or bacteriological tests indicate that disinfection is incomplete, the Contractor shall take corrective measures and shall repeat the tests until satisfactory results are obtained. Tests shall be made in the presence of an authorized representative of the Engineer.

2. PRESSURE AND LEAKAGE TESTS

Each section of the completed water line shall be subjected to a pressure test. The section to be tested shall be valved off after having been filled with water, and a positive displacement test pump shall be used to pump clean water into the section to build up a test pressure of 200 psi at the point of maximum pressure in the test section. Each valved section of pipe shall be slowly filled with water and the specified test pressure, based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure. The system shall be allowed to stabilize at the test pressure before conducting any leakage test. The test pump shall then be valved off from the system and the pressure shall be observed over a period of at least 2 hours.

Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, the contractor shall install corporation cocks at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged or left in place at the discretion of the Owner.

Any exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damage or defective pipe, fittings, valves, hydrants, or joints that are discovered following the pressure test shall be repaired or replaced with sound material, and the test shall be repeated until it is satisfactory to the Owner.

No pipe installation will be accepted if the leakage is greater than that established in AWWA C600. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe or any valved section thereof to maintain pressure within 5 psi of the specified test pressure after the pipe has been filled with water and the air has been expelled. Leakage shall not be measured by a drop in pressure in a test section over a period of time.

A drop in pressure of 5 psi or more during the one hour test shall be taken as an indication of leakage. In the event leaks are found and corrected, the Contractor shall repeat the pressure test using the same procedure described above. Should the Contractor be unable to obtain a satisfactory pressure test over a duration of at least 2 hours, he shall then be required to perform a leakage test using a water tap and standard water meter to measure the leakage in the test section at system pressure over a period of 24 hours. Leakage during the 24-hour period must not exceed the allowable leakage for mechanical or push-on joints as shown in Table 7 of AWWA C600, latest revision, and reproduced on the following page. Should the system fail to pass the leakage test, the Contractor will be required to locate and correct the leaks and to retest the system until satisfactory results can be obtained.

The Contractor shall provide suitable first quality pressure gauges with 5 lb. or smaller graduations and a standard 5/8" x 3/4" water meter in the event the meter is required for the leakage test. Pressure gauges and water meter shall be in good condition and shall be subject to such tests for proof of accuracy as the Engineer may require.

Allowable Leakage per 1,000 feet (305 m) of Pipeline* - gph+

Avg. Test Pressure psi (Bar)	Nominal Pipe Diameter - in.															
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54
450 (31)	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60
400 (28)	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50	5.41	6.31	7.21	8.11
350 (24)	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58
300 (21)	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90	4.68	5.46	6.24	7.02
275 (19)	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99	3.73	4.48	5.23	5.98	6.72
250 (17)	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70	6.41
225 (16)	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.05	4.73	5.41	6.03
200 (14)	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.46	5.09	5.73
175 (12)	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98	3.58	4.17	4.77	5.36
150 (10)	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76	3.31	3.86	4.41	4.97
125 (9)	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03	4.53
100 (7)	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60	4.05

* If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size.

+ To obtain leakage in liters/hour, multiply the values in the table by 3.785

Copied from AWWA C600.

3. DISINFECTION

All water line extensions and appurtenances shall be disinfected upon completion. After the lines have been flushed or otherwise suitably cleaned to remove dirt or debris which may have been introduced into the lines during construction, disinfection shall be accomplished in accordance with the provisions of AWWA Standard for Disinfecting Water Mains: AWWA C651, latest revision.

The basic disinfection procedure consists of: (1) Preventing contaminating materials from entering water lines and appurtenances during storage, construction or repair; (2) Removing, by flushing or other means, those materials that may have entered the water lines and appurtenances; (3) Chlorinating any residual contamination that may remain and flushing the chlorinated water from the lines; and (4) Determining the bacteriological quality by laboratory testing after disinfection.

3.1 Preventing Contamination During Construction

Heavy particulate matter and debris generally contain bacteria and can prevent even very high chlorine concentrations from contacting and killing such organisms. It is, therefore, essential that the Contractor utilize procedures to assure that the water lines and appurtenances are thoroughly clean for the final disinfection by chlorination. Toward that end, it is important for the Contractor to prevent contamination of water lines and appurtenances during storage and installation.

All openings in the pipelines shall be closed with watertight plugs when pipe laying is stopped for any reason. Rodent proof plugs may be used when it is determined that watertight plugs are not practicable, where their use could result in pipe flotation if water enters the trench, or where thorough cleaning will be performed by flushing or other means. Workmen need to routinely check the pipeline for contaminating material and keep the pipeline as clean as practicable.

Joints of all pipe in the trench shall be completed before work is stopped. If water accumulates in the trench, the plugs shall remain in place until the trench is dry enough to prevent trench water from entering the pipeline. All jointing material and lubricates shall be as recommended by the pipe manufacturer and shall be suitable for use in potable water lines. Trench water shall be kept out of the pipelines, if possible, by the use of plugs or other suitable means. Protect the jointing material and lubricates from contamination. Lubricates shall be delivered to the Project site in closed containers and shall be kept clean.

3.2 Flushing or Cleaning by Other Means

If dirt or debris does find its way into the pipeline and it is likely that it will not be removed by flushing, the interior of the pipe shall be cleaned by mechanical means and then shall be swabbed with one (1) percent hypochlorite disinfecting solution. Cleaning with a swab, pig or similar device should be undertaken only when it has been determined that such operation will not force mud or debris into pipe joint spaces where removal is difficult or impossible.

Velocities of about 2.5 feet per second (fps) or higher are generally required to adequately flush a pipeline. The Contractor is cautioned that the flow rate necessary to reach these velocities is not always practical or even possible. Other methods of cleaning must be employed, and it is even more important to take extra precautions to keep the pipeline clean during the pipe laying operation. This is especially true of large diameter pipes. The following tabulation shows the approximate gallons per minute required to reach a velocity of 2.5 fps for various pipe diameters.

<u>Pipe Diameter, Inches</u>	<u>Gallons per Minute Required</u>
4	100
6	200
8	400
10	600
12	900
16	1,600
20	2,500
24	3,500
30	5,500
36	7,900
42	10,800
48	14,100

When flushing is used to clean pipelines, the Contractor must use care and caution concerning the disposal of water flushed from the lines.

3.3 Chlorination for Disinfection

The forms of chlorine that may be used for disinfection are: (1) liquid chlorine; (2) sodium hypochlorite solution; and (3) calcium hypochlorite granules or tablets. Liquid chlorine must meet the requirements of AWWA B301 and sodium and calcium hypochlorites must meet the requirements of AWWA B300.

Three methods are approved for use under the AWWA standard: (1) the tablet method; (2) the continuous feed method; and (3) the slug method. Each has its advantages under certain situations. The method to be used on this project must be approved by the Engineer before implementation by the Contractor. The continuous feed method is suitable for general application. The slug feed method is suitable for use in large diameter lines where the volume of chlorinated water which must be flushed to waste is of concern and where chemical costs are a consideration. The tablet method is generally more suitable for small diameter pipelines; but the line must be kept dry during installation, preliminary flushing for cleaning is not possible, and the chlorine concentration tends to be less uniform.

(a) The Tablet Method - This method consists of placing granules or tablets in the pipeline as it is being installed and filling the pipeline with potable water when the installation is completed. Only use this method if the pipes and appurtenances are kept clean and dry during construction.

Granules - during construction, granules are placed at the upstream end of the first section of pipe, then at the upstream end of each branch pipeline, and along the pipeline at intervals of 500 feet. The quantity shall be as shown in AWWA C651 and as approved by the Engineer. Do not use this method on solvent-weld plastic or on screwed-joint steel pipe because of the danger of fire or explosion from a reaction of the joint compounds with the calcium hypochlorite.

Tablets - During construction, 5 gram calcium hypochlorite tablets shall be placed in each section of pipe and also one such tablet in each fire hydrant, fire hydrant branch and other appurtenances. The number of tablets shall be as required in AWWA C651 and as approved by the Engineer. The tablets shall be attached by an adhesive such as Permatex No. 1, or approved equal. there shall be no

adhesive on the tablet except on the broad side attached to the surface of the pipe. Attach all tablets to the inside of the pipe at the top with approximately an equal number of tablets at each end of a given pipe length. Make sure the tablets end up at the top of the pipe as installed in the trench.

Filling and Contact - when pipe installation is complete, the pipeline shall be filled with potable water at such a rate that the water within the pipeline will flow at a velocity no greater than one foot per second (1 fps). Precautions shall be taken to assure that air pockets are eliminated. This water shall remain in the pipeline for at least 24 hours. If the temperature is less than 41 degrees F (5 degrees C), the water shall remain in the pipeline at least 48 hours. During this period of contact, all valves and hydrants in the treated section shall be operated to ensure disinfection of these appurtenances. Valves shall be positioned so that the strong chlorine solution in the treated pipeline will not flow into pipelines in active service

(b) Continuous Feed Method - This method consists of placing calcium hypochlorite granules in the pipeline during construction (Contractor's option), completely filling the pipeline with potable water in order to remove all air pockets, flushing the completed pipeline if necessary to remove particulates, then filling the pipeline with potable water chlorinated so that after 24 hour holding period in the pipeline there will be free chlorine residual of not less than 10 milligrams per liter (mg/l).

Placing Hypochlorite Granules - This procedure shall be as outlined under "Tablet Method" above and is at the Contractor's option. Its purpose is to provide a strong chlorine concentration in the first flow of flushing water passing through the pipeline.

Preliminary Flushing - Before being chlorinated, the pipeline shall be filled to eliminate air pockets and shall be flushed to remove particulates. The flushing velocity shall not be less than 2.5 fps. Part 3.2 above contains a table showing the rates of flow required to produce this velocity in pipelines of various sizes. Flushing is no substitute for keeping the pipeline clean during construction because some contaminants resist removal by flushing at any feasible velocity. For pipelines of 24-inch diameter and larger, broom sweeping and careful removal of all debris, silt and other contaminants is an acceptable alternative to flushing.

Chlorinating the Pipeline and Appurtenances - Water from existing distribution system or other approved source shall be made to flow at a constant, measures rate of flow into the newly laid pipeline. The regulation of this rate of flow is important and shall be as approved by the Engineer.

At a point not more than 10 feet downstream from the beginning of the new pipeline, water entering this line shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 25 mg/l free chlorine. To assure that this concentration is provided, the concentration shall be measured at regular intervals in accordance with procedures established in AWWA C651.

The devices and methods used to measure rates of flow, apply the chlorine solution and test the concentration shall be as approved by the Engineer and in accordance with AWWA C651.

During the application of chlorine, valves shall be positioned so that the strong chlorine solution in the pipeline being treated will not flow into water lines in active service. Chlorine application shall not cease until the entire pipeline is filled with heavily chlorinated water. The chlorinated water shall be retained in the pipeline for at least 24 hours, during which time all valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hour period, the treated water in all portions of the pipeline shall have a residual of not less than 10 mg/l free chlorine.

(c) Slug Method - This method differs from the Continuous Feed Method described above in that the disinfection is accomplished by a slug of water containing highly concentrated chlorine (100 mg/l) flowing slowly through the length of the pipeline. The slow flow ensures that all parts of the pipeline and the appurtenances will be exposed to the highly chlorinated water for a period of not less than 3 hours.

For the execution of this method, refer to Part 3.3(b) above for all procedures except as described below.

Chlorinating the Pipeline and Appurtenances - At a point not more than 10 feet downstream from the beginning of the new pipeline, water entering the new pipeline shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 100 mg/l free chlorine. To ensure that this concentration is provided, the chlorine concentration should be measured at various intervals. The chlorine shall be applied continuously and for a sufficient period to develop a solid column, or "slug", of chlorinated water that will, as it moves through the pipeline, expose all surfaces to a concentration of approximately 100 mg/l for at least 3 hours.

The free chlorine residual shall be measured in the slug as it moves through the pipeline. If at any time it drops below 50 mg/l, the flow shall be stopped, chlorination equipment shall be located to the head of the slug; and, as flow is resumed, chlorine shall be applied to restore the free chlorine in the slug to not less than 100 mg/l.

As the chlorinated water flows past fittings and valves, these valves, hydrants and other appurtenances shall be operated so as to disinfect these items.

(d) Final Flushing - After the applicable retention period (contact time), heavily chlorinated water should not remain in prolonged contact with the pipeline or appurtenances. To prevent damage to the pipe lining, the pipe itself or to appurtenances, the heavily chlorinated water shall be flushed from the pipeline until chlorine measurements show that the concentration in the water leaving the pipeline is no higher than that generally prevailing in the water system or is acceptable for domestic water use.

Disposal of Heavily Chlorinated Water - The environment to which the chlorinated water will be discharged shall be inspected. If there is any question that discharge of the water flushed from the pipeline will cause damage to the environment, then a reducing agent shall be applied to the water to be wasted in order to neutralize the chlorine residual remaining in the water. Where necessary, federal, state or local regulatory agencies should be contacted to determine specific provisions for the disposal of heavily chlorinated water. The procedure used for disposal shall be subject to review and approval by the Engineer prior to initiating any disposal.

3.4 Bacteriological Testing

upon completion of the disinfection and flushing procedures, samples of the water from the treated pipeline shall be taken using methods in accordance with AWWA C651 and as approved by the Engineer. Samples shall show the absence of coliform organisms before the testing is considered complete and the new pipeline put in service.

In the event that the samples show the presence of coliform bacteria or an excessive total count, the disinfection procedure shall be repeated by the Contractor until samples of satisfactory bacteriological quality are obtained.

The Contractor shall furnish all equipment, material (except for the sample bottles which will be furnished to the Contractor by the Owner at no cost to the Contractor) and labor necessary for this testing procedure and shall perform the sampling. The samples shall be turned over to the Owner for testing at a laboratory designated by the Owner.

(a) Procedures - All sampling and testing shall be done in accordance with AWWA C651 and Standard Methods for the Examination of Water and Wastewater.

At least one sample shall be collected from the new pipeline and one from the branch. In the case of long pipelines, samples shall be taken along its length as well as at its end. Sample spacing shall generally not exceed 2,500 feet.

If, during construction, trench water has entered the pipeline or excessive quantities of dirt or debris have entered the pipeline, bacteriological samples shall be taken at intervals of approximately 200 feet and shall be identified by location. In these cases, samples shall not be taken until water has stood in the pipeline for at least 16 hours after completion of the flushing.

Samples shall be collected in sterile bottles furnished by the Owner for the purpose of bacteriological sampling (treated with sodium thiosulfate).

No hose or fire hydrant shall be used in the collection of the samples. A corporation cock installed in the pipeline with a copper tube gooseneck assemble, or other arrangement as approved by the Engineer, may be used.

(b) Redisinfection - If the initial disinfection fails to produce satisfactory bacteriological samples, the pipeline may be reflashed and shall be resampled. If check samples show the presence of coliform organisms, the pipeline shall be rechlorinated by the continuous feed method or by the slug feed method until satisfactory results are obtained.

3.5 Acceptance

When testing of the samples shows that there is no presence of coliform organisms or, in the case of the standard plate count, there is not an excessive total count, the disinfection procedure is considered successful and the pipeline and appurtenances may be put in service provided all other Contract provisions, necessary or required for putting the pipeline in service, have been met.

4. TESTING OF VALVES and OTHER APPURTENANCES

Upon completion of installation, all valves, fire hydrants, service connections, meters, and other appurtenances shall be operated in the presence of the Engineer to verify proper operation.

5. TESTING OF WATER SERVICES

The Contractor shall test all new water services at the same time that the water main is tested or the Contractor shall expose all connections, taps, curb cocks, unions, and any other fittings when the system water pressure is restored to the meter. These fittings shall be inspected by the Contractor in the presence of the Engineer. If any leaks are found, these leaks shall be repaired in a manner approved by the Engineer.

WATER MAINS AND APPURTENANCES

SECTION 5

MEASUREMENT AND PAYMENT

1. GENERAL

The Contractor shall furnish all labor, tools, equipment and materials to construct the proposed improvements complete as shown on the Drawings and described in these Specifications. The work shall be measured for payment in accordance with applicable provisions of these Specifications and payment shall be made on the basis of the unit prices or lump sum prices bid. The sum of the payments for eligible pay items contained in the Proposal Form shall be the compensation to be paid for the completed project; provided however, that changes in the work covered by written change orders, properly executed, may result in additions or deductions from the Contract price.

The Contractor's attention is called to the fact that although the pay items shown shall be the basis for establishing the Contract price, the description of the pay items do not necessarily reflect the extent of work to be performed. The cost of the incidental work such as clearing and grubbing, trenching, backfilling, testing, curbs, curb and gutters, sidewalks, etc. which is necessary but which is not specifically listed as one of the pay items, shall be included in the prices bid for the pay items to which the incidental work is most closely related.

2. WATER MAINS

- A. Measurement - Water mains shall be measured for payment the centerline of the pipe to the nearest 0.1 foot as shown on the Drawings.
- B. Payment - Water mains shall be paid for on the basis of the respective unit prices bid per linear foot for pipe of the various sizes.

Payment for furnishing and installing the water mains shall constitute compensation in full for furnishing all labor, tools, equipment and materials and installing the water mains complete, including incidental work such as location and protection of existing utilities, clearing, excavation (including rock), dewatering trenches, bedding with crushed stone or approved "Select Excavated Material" in accordance with Contract Drawings and Project Specifications, 3-inch detection tape and trace wire, backfilling, testing, disposal of surplus excavated material, the removal of existing pavements, curb and gutter, sidewalks, driveways, brush and timber, structures and piping to be relocated or abandoned; also sheeting, diking, well pointing, bailing, dewatering; the furnishing and placing of bulkheads, the restoration of any utilities, parkways, trees, shrubbery, culverts, fences, and other items not covered under subsequent items and testing.

Backfill shall be in accordance with Section 3 (Construction), Paragraph 4. Water main pipe shall be classified as under roadway if the waterline is under or within three feet of the edge of the pavement. Any water line located more than three feet from the edge of the pavement shall be classified as outside roadway.

Pavement for water lines under roadway shall include backfill with crushed stone (No. 57) as per specifications.

Payment for water mains in bore shall be on the basis of linear foot measured from face of bore to face of bore. No payment for additional footage over the established quantity shall be made without prior approval of the Engineer.

3. FITTINGS

- A. Measurement - Pipe fittings for water mains shall be compact ductile iron pipe fittings and will be measured for payment by multiplying the number of fittings in each classification by the standard weight of the fitting as shown in appropriate tables of ANSI/AWWA CI 53/A21.53-84 "Ductile Iron Compact Fittings 3" Through 12" for Water and Other Liquids." Pipe fittings for larger sizes may be Cast Iron or Ductile Iron and will be measured for payment based on appropriate weight tables of USA Specification A21.53-84, "American Standard for Cast Iron Fittings 3" through 48" for Water and Other Liquids". Weights of fittings shall be inclusive of bolts, gaskets, or other appurtenances and shall be as shown in the above specification rather than actual invoice weights.
- B. Payment - Payment for furnishing and installing compact ductile iron pipe fittings complete in accordance with these Specifications will be made on the basis of contract unit price bid per pound for pipe fittings and shall constitute compensation in full for furnishing and installing the fittings together with all incidental and related work except as specifically covered by other pay items.

4. VALVE AND BOX (Gate Valves)

- A. Measurement - Valves and boxes will be measured by actual count on each size and type of valve installed in the completed system.
- B. Payment - Payment for furnishing and installing valves and boxes of the various sizes and classifications, together with any necessary joint accessories, retainer glands, adapters, extension stems (when required) and concrete support pad shall be made on the basis of the Contract unit price bid. Such payment shall constitute full compensation for furnishing and installing the valves and boxes complete in full in accordance with the Drawings and Specifications.

5. CONNECTIONS AND/OR TAPPING SLEEVE AND VALVE CONNECTIONS

- A. Measurement - The tapping sleeve and valve connections will be measured by actual count each for each size and type installed and connected for a completed system.
- B. Payment - Payment for furnishing, installing, connections, and/or connecting tapping sleeve and valves together with any necessary joint accessories, tapping machine, tapping, adapters, retainer glands, valve boxes, extension stems, and all other labor, materials, and work to complete the connection with the existing water main. Such payment shall constitute full compensation for furnishing and installing the tapping sleeve and valve connections and tie-ins in full compliance with the Drawings and Specifications.

6. SERVICE LINE AND/OR RECONNECTION ITEMS

- A. Measurement - Service line taps on the water mains will be measured by the actual count of each size tap installed. Service lines shall be measured by the linear foot from the center of the water main along a line perpendicular to the water main to the inside edge of the meter box, or to a point as designated by the Engineer.
- B. Payment - Payment for taps shall be made at the unit price bid and shall be full compensation for all labor and materials required to complete the installation. No separate payment shall be made for curb stops or meter boxes on this project.

7. FIRE HYDRANT ASSEMBLY INSTALLATION

- A. Measurement - The fire hydrant assembly installation shall be measured by actual count of each installed in the completed system. The 6-inch gate valve shown in the standard detail will be measured and paid under a separate item in this Contract.
- B. Payment - Payment for furnishing and installing the fire hydrant assembly shall be based on the Contract unit price bid for each installation. The unit price bid shall include all labor, materials, including extensions and rodding or retainer glands as required, equipment necessary to complete the fire hydrant installation as shown on the Drawings (including the hydrant, increased bury depths exceeding 42 inches when required, excavation, stone, concrete backfill and other necessary work incidental for a complete installation).

8. ROADWAY MAINTENANCE, DRIVEWAY AND ROADWAY REPLACEMENT

1. DRIVEWAY REPLACEMENT

- A. Measurement - Measurement for asphalt driveway or parking lot patch replacement, gravel driveway or concrete driveway or concrete ramp replacement shall be made by the linear foot along the centerline of the water main for the actual quantity placed.
- B. Payment - Payment for these items shall be made at the unit prices bid per linear foot and shall include the cost of all labor and materials necessary to construct these items at the locations and to the details shown on the Contract Drawings.

2. ROADWAY REPLACEMENT

- A. Measurement - Measurement for Type "A" asphalt pavement replacement shall be made by the linear foot along the centerline of the water main for the actual quantity placed.
- B. Payment - Payment for roadway replacement items shall be made at the unit prices bid and shall include the cost of all labor and materials necessary to construct these items at the locations and to the details shown on the Contract Drawings.

NOTE: Payment for pavement replacement shall be made on the basis of the unit prices bid for various classifications of pavement as indicated in the Proposal Form. Such payment shall constitute the furnishing of all labor, materials, and equipment and replacing the damaged pavement, including the crushed stone base as required. The

Contractor is advised that, although the limits of payment shall be as described under paragraph A. above, he shall be responsible for replacing all pavement damaged during construction, so that the paved area is left in a condition as good as or better than before the start of the construction.

All new and existing gas valves, water valves, and manholes will be adjusted to the final surface elevations by the Contractor. Cost for this work is to be merged into unit price construction items for pavement replacement.

9. TOPSOIL AND SEEDING OF TRENCHES

- A. Measurement - Measurement for topsoil and seeding of trenches will be made by the linear foot of trench along the centerline of the water main.
- B. Payment - Payment shall be made at the unit price bid and shall include all costs of labor and materials (including fine grading, mulching) for the completion of this item.

10. CLASS C CONCRETE THRUST BLOCKS AND/OR ENCASEMENT

- A. Measurement - Class C concrete used in thrust blocks, encasement, or caps will be measured by computing the theoretical volume of concrete required to construct the item in accordance with Standard Detail Drawings shown on the Construction Drawings. The length shall be the actual length of such concrete as installed at the Engineer's direction. Measurement for Class C concrete used in pads, low piers, or blocks shall be placed on the theoretical volume required for the dimensions of the structure as shown on the Drawings or as directed by the Engineer.
- B. Payment - Payment for Class C concrete shall be made on the basis of the unit price bid per cubic yard, and shall constitute full compensation for excavation, forming, furnishing and placing the concrete and other incidental work required to complete the project.

11. AIR RELEASE VALVE AND MANHOLE

- A. Measurement - The air release manhole installation will be measured by actual count of each size and type valve installation installed in the completed system.
- B. Payment - Payment for furnishing and installing the Air Release Manhole shall be based on the contract unit price bid for each type installation. The unit price bid shall include all labor, materials and equipment necessary to complete the valve installation as shown on the Drawings (including the valve(s) and connecting piping, 1-inch test valve, manhole with flat top, cover, crushed stone, excavation, backfill, and incidental work necessary for a complete installation).

12. WATER VALVE / WATER LINE MARKERS

- A. Measurement - Measurement shall be by actual count of water valve / water line markers installed.
- B. Payment - Payment for water valve / water line markers shall be on the basis of the unit price bid per each (EA) water valve / water line marker and shall constitute payment in full for furnishing and installing the water valve / water line marker(s) as described in the Specifications and Contract Drawings.

13. UNCLASSIFIED EXCAVATION FOR UNDERCUTS

- A. Measurement - In areas where directed by the Engineer to remove unsuitable material below grade this item shall be measured by the formula $(4/3 \text{ pipe O.D.} + 24)/12 \times \text{length} \times \text{depth}$ divided by 27 for sewer mains and outside diameter plus 36 inches $\times \text{depth}$ divided by 27 for manholes.
- B. Payment - Payment shall be made at the unit price bid and no distinction shall be made between rock and earth excavation as far as payment is concerned.

14. CRUSHED STONE REFILL FOR UNDERCUTS

- A. Measurement - In areas (other than areas specifically designated by these Specifications) where directed by the Engineer to refill with crushed stone an undercut where the Engineer has directed that unsuitable material be removed, this item shall be measured for payment by the formula $(4/3 \text{ O.D.} + 24/12)$ (length (ft)) (depth (ft)) divided by 27.
- B. Payment - Payment for crushed stone refill shall be at the unit price bid per cubic yard and such payment shall constitute complete compensation for all extra labor, materials, and equipment necessary to furnish, haul, place and compact the crushed stone backfill.

Note: This payment is only for refill. All bedding and backfill required is to be merged into the unit price bid for water main and/or water main under roadway.

15. PLAIN STONE RIP-RAP

- A. Measurement - Measurement for plain stone rip-rap shall be made by the square yard as measured in place.
- B. Payment - Payment shall be made at the unit price bid and shall include the cost of labor and materials necessary to construct the item at the locations on the Contract Drawings or as directed by the Engineer.

16. LUMP SUM BID ITEMS

Lump Sum Construction Items shall be paid under established items and shall include all related work as set forth in the Proposal Section and as indicated on the Contract Drawings.

DIVISION J - ELECTRICAL

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DIVISION J

ELECTRICAL

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ELECTRICAL MATERIAL SPECIFICATIONS

A. GENERAL PROVISIONS

1. Provide all labor, equipment, materials, tools, and service for a complete electrical installation as specified herein and indicated on the Drawings.
2. Electrical installation shall be in accordance with the latest edition (including locally adopted amendments or revisions) of the National Electrical Code as well as any local or state adopted codes or standards.
3. Electrical work includes, but is not limited to, complete distribution system for power including necessary branch circuits, grounding, control circuits, etc.
4. All material and equipment used in carrying out these specifications shall be new and bear the UL labels when such labels are available.
5. Visit site prior to bidding and be informed of conditions under which work must be performed.
6. **Obtain permits and certificates of approval from all authorities having jurisdiction of the installation and pay all fees required.**
7. Equipment shall be installed in accordance with the manufacturer's recommendations.
8. Electrical drawings are diagrammatic. Do not scale for exact sizes or locations. Drawings are not intended to disclose absolute or unconditional knowledge of actual field conditions. Be prepared to relocate any outlet or device 6 feet in any direction without additional charge to the Owner.
9. Provide any necessary trenching and backfilling and provide sheathing, shoring, dewatering and cleaning necessary to keep trenches and their grades in proper condition for work to be performed.
10. Seal conduits which pass through slabs or walls with concrete grout or other material approved for use by Engineer.
11. Install complete electrical system entirely free from improper grounds and short and open circuits. Make all required tests on conductors before energizing circuit. Make test to ensure that entire system is in proper operating condition and that adjustments and setting of apparatus (circuit breakers, fuses, control equipment, etc.) have been made. Correct defects discovered during tests.
12. Provide, maintain, and remove after construction is completed temporary power for all trades.
13. Work of this Division also includes those items not specifically mentioned or described, but which are obviously necessary to conform to the design intent, applicable codes, and to produce a complete electrical system that functions properly.

B. CONDUIT

1. Provide a complete conduit system with associated couplings and fittings.

2. Conduit shall be galvanized rigid except where noted herein and as manufactured by Allied, Wheatland, or Republic.
3. Use Sealtite flex in damp or wet locations as manufactured by International Metal Hose, Triangle, or equal.

C. WIRE AND CABLE

1. All conductors shall be 98 percent conductivity copper with 600-volt minimum insulation.
2. All conductors No. 10 and smaller shall have Type THHN/THWN insulation. Use stranded, type THWN for feeder and power circuits #8 and larger. Conductors for branch circuit wiring smaller than #12 are not acceptable.
3. Conductors shall be as manufactured by Cablec, General Cable, Habirshaw, Okonite, Rome, Triangle, or Southwire unless noted otherwise.
4. Make all splices or connections only at outlet or junction boxes.
5. Use only approved (Soapstone or Yellow 77) or other lubricant where required.
6. Use approved Scotchlock or T&B connectors for intended application where connectors are required.
7. Conductors are to be color coded with a different color for each phase, neutral, and ground per NEC recommendations for various voltages. Also provide color coded wire for control circuits.

D. OUTLET AND JUNCTION BOXES

1. Outlet and junction boxes shall be steel type as manufactured by National, Appleton, General Electric, Raco, or Steel City, 1½-inch deep minimum.
2. Use boxes of sufficient cubic capacity to accommodate the number of conductors to be installed in accordance with the National Electrical Code.
3. Install boxes so that covers will be accessible at all times.

E. SERVICE DISTRIBUTION SYSTEM AND GROUNDING

1. Furnish service entrance conduit, wire, and miscellaneous hardware.
2. Ground clamps and other grounding hardware as manufactured by "OZ" Electrical Manufacturing Company, Type "CG", or equal by Steel City, or Appleton. Provide 5/8-inch by 10-foot grounding rods as manufactured by Copperweld or equal.
3. System shall commence at power company pole-mounted transformer with 240 volts, 1-phase, secondary as indicated on Drawings and continue through power company overhead service drop to Contractor-provided riser pole at which point service shall transition to underground. Provide overhead service entrance to main switch continuing through feeder circuit to utilization equipment.
4. Metering will be mounted on riser pole. Final connections at transformer secondary will be by power company.

5. Ground electrical system in accordance with NEC 250 and requirements of local authorities having jurisdiction.
6. Pull a green insulated copper wire in each piece of flexible conduit and screw to conduit system with lugs at both ends.
7. Install code size green grounding conductors in all feeder and branch circuits feeding receptacles, motors or other permanently wired fixed electrical utilization equipment.
8. Test main service ground using "Biddle" or similar test. Grounding test results must indicate no greater than 10-ohms resistance before service is accepted.

DIVISION M - WATER BOOSTER STATIONS

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DIVISION M

SECTION 1

WATER BOOSTER STATION (WITH DUPLEX IN-LINE VERTICAL MULTI-STAGE PUMPS)

1. GENERAL

1.1 Work under this section includes, but is not limited to finishing and installation of a factory-built duplex variable speed booster station as indicated on the Drawings, herein specified, as necessary for proper and complete performance.

1.2 References

Publications listed below form part of this specification to extent reference in the text by basic designation only. Consult latest edition of publication unless otherwise noted.

- A. American National Std. Institute (ANSI)/American Water Works Assoc. (AWWA)
1. ANSI B16.1 Cast iron pipe flanges and flanged fittings.
 2. ANSI/AWWA C115/A21.15 Cast/ductile iron pipe with threaded flanges.
 3. ANSI 253.1 Safety Color Code for Marking Physical Hazards.
 4. ANSI B40.1 Gages, Pressure and Vacuum.
 5. ANSI S2.19,G6.3 Balancing, pump rotating assemblies.
 6. AWWA C508 Single Swing Check Valves.
- B. American Society for Testing and Materials (ASTM)
1. ASTM A-48 Gray Iron Castings.
 2. ASTM A-126 Valves, Flanges, and Pipe Fittings.
 3. ASTM A-307 Carbon Steel Bolts and Studs.
 4. ASTM A-36 Structural Steel.
 5. ASTM B-584-836 Die Cast Bronze
 6. ASTM B-505-927 Bronze Wear Ring
 7. ASTM B-148-954 Bronze Shaft Sleeve
- C. Institute of Electrical and Electronics Engineers (IEEE)
1. IEEE Std 100 Standard Dictionary of Electrical Terms.
 2. IEEE Std 112 Test Procedure for Polyphase Induction Motors.
 3. IEEE Std 242 Protection of Industrial and Control Power Systems.
- D. National Electric Code (NEC) / National Electrical Manufacturers Assoc. (NEMA)
1. NEC National Electrical Code.
 2. NEMA Std MG1 Motors and Generators.
- E. Miscellaneous References
1. Hydraulic Institute Std for Centrifugal, Rotary and Reciprocating Pumps.
 2. ISO 9001 International Organization for Standardization.

1.3. System Description

A. Design Requirements

1. Factory-built duplex pump station design, including materials of construction, pump features, valves and piping, and motor controls shall be in accordance with requirements listed under Part 2 - Products of this Section.
2. Contractor shall furnish and install one (1) factory-built above-ground, variable speed booster station. The station shall be complete with all equipment specified herein, factory assembled in a fiberglass reinforced polyester resin enclosure.
3. In addition to the station enclosure, principle items of equipment shall include two vertical in-line centrifugal pumps, motors, internal piping, valves, motor control panel, and internal wiring.

B. Performance Criteria

The vertical in-line multi-stage pumps shall have a rated capacity in GPM when operating against a TDH as shown on the Contract Drawings. The head-capacity curve shall have a steady rise in head from maximum to minimum flow within the operating range. The shut off head shall be a minimum 20% higher than the head at the best efficiency point.

C. Utility Power Requirements

Site power furnished to pump station shall be single phase, 60 hertz, 120 volts, 3 wire, maintained within industry standards. Voltage tolerance shall be plus or minus 10 percent.

1.4. Submittal

A. Product Data

1. Prior to fabrication, pump station manufacturer shall submit six (6) copies of submittal data for review and approval.
2. Submittal shall include shop drawings, electrical ladder logic drawings, and support data as follows: Catalog cuts sheets reflecting characteristics for major items of equipment, materials of construction, major dimensions, motor data, pump characteristic curves showing the design duty point capacity (GPM), head (FT), minimum suction pressure (PSI) and hydraulic brake horsepower (BHP). Electrical components used in the motor branch and logic control shall be fully described.

B. Shop Drawings

1. Shop drawings shall provide layout of mechanical equipment and anchor bolt locations for station. Pipe penetrations and station access clearances shall be dimensioned relative to the station centerline. The electrical ladder logic drawings shall illustrate motor branch and pressure control circuits to extent necessary to validate function and integration of circuits to form a complete working system.

C. Operations and Maintenance Manuals

1. Operation shall be in accordance with written instructions provided by the pump station manufacturer. Comprehensive instructions supplied at time of shipment shall enable personnel to properly operate and maintain all equipment supplied. Content and instructions shall assume operating personnel are familiar with pumps, motors, piping and valves, but lack experience on exact equipment supplied.
2. Documentation shall be specific to the pump station supplied and collated in functional sections. Each section shall combine to form a complete system manual covering all aspects of equipment supplied by the station manufacturer. Support data for any equipment supplied by others, even if mounted or included in overall station design, shall be provided by those supplying the equipment. Instructions shall include the following as a minimum:
 - a. Functional description of each major component, complete with operating instructions.
 - b. Instructions for operating pumps and pump controls in all modes of operation.
 - c. Calibration and adjustment of equipment for initial start-up, replacement of pressure control components, or as required for routine maintenance.
 - d. Support data for commercially available components not produced by the station manufacturer, but supplied in accordance with the specifications, shall be supported by literature from the prime manufacturer and incorporated as appendices.
 - e. Electrical schematic diagram of the pump station circuits shall be in accordance with NFPA 79. Schematics shall illustrate, to the extent of authorized repair, pump motor branch, control and alarm system circuits including interconnections. Wire numbers and legend symbols shall be shown. Schematic diagrams for individual components, not normally repairable by the station operator, need not be included. Details for such parts shall not be substituted for an overall system schematic. Partial schematics, block diagrams, and simplified schematics shall not be provided in lieu of an overall system diagram.
 - f. Mechanical layout drawing of the booster pump station and components, prepared in accordance with good commercial practice, shall provide installation dimensions and location of all pumps, motors, valves and piping.
3. Operation and maintenance instructions which rely on vendor cut-sheets and literature which include general configurations, or require operating personnel to selectively read portions of the manual shall not be acceptable. Operation and maintenance instructions must be specific to equipment supplied in accordance with these specifications.

1.5. Quality Assurance

A. Manufacturers Qualifications

1. The manufacturer of the pressure booster station shall have a quality management system in place and shall be ISO 9001 Certified.
2. Upon request from the Engineer, the pressure booster pump station manufacturer shall prove financial stability and ability to produce the station within the specified delivery schedules. Evidence of facilities, equipment and expertise shall demonstrate the manufacturer's commitment to long term customer service and product support.

B. Performance Certifications

1. Pump Performance

- a. Each pump shall undergo a certified hydrostatic test at 150% of the pressure developed at shut-off head.
- b. Certified performance tests shall be performed on each unit utilizing its specified drive. If variable frequency drives are specified, one drive of each rating shall be used to drive the appropriate pump in the system.
- c. All tests shall be performed in accordance with the Hydraulic Institute Test Standards for Centrifugal Pumps - 1.6 (1988).
- d. Six evenly spaced test points shall be taken and shall include conditions at shut-off (zero flow) and the operating points specified herein. Preliminary test data must be submitted to the owner seven days prior to the actual test date.

- 1) Liquid to be used for all tests shall be water.

C. Factory System Test

1. All internal components including the pumps, motors, valves, piping and controls will be tested as a complete working system at the manufacturer's facility. Tests shall be conducted in accordance with Hydraulic Institute Standards at the specified head, capacity, rated horsepower. Factory operational test shall simulate actual performance anticipated for the complete station.
2. Upon request from the Engineer, the operational test may be witnessed by the Engineer, and/or representatives of his choice, at the manufacturer's facility.

D. Manufacturer's Start-up Services

1. The manufacturer's technical representative shall inspect the completed installation, correct or supervise the correction of any defect or malfunction, and instruct operating personnel in the proper operation and maintenance of the equipment as described in Part 3 of this section. In addition, the manufacturer shall furnish a certificate stating the pumps and equipment were installed in accordance with the manufacturer's recommendation.

1.6. Manufacturer's Warranty

- A. All components of the pump station shall be manufactured, assembled and then tested as a unit by the supplier. The supplier must assume system responsibility. The complete pump station assembly must be warranted. Individual component warranties are desirable. However, individual warranties honored solely by the manufactures of each pump station component will not be acceptable.
- B. The pump station manufacturer shall warrant all equipment to be of quality construction, free of defects in material and workmanship. A written warranty shall include specific details described below.
 - 1. All equipment, apparatus, and parts furnished shall be warranted for a minimum of one (1) year, excepting only those items that are normally consumed in service, such as light bulbs, oils, grease, packing, gaskets, O-rings, etc. The pump station manufacturer shall be responsible for warranty of the station and all components.
 - 2. The pump shaft seal shall be warranted for a period of one-year after final acceptance. Should the seal fail within the first year, the manufacturer shall furnish and install a new seal, without charge to owner.
 - 3. Components failing to perform as specified by the Engineer, or as represented by the manufacturer, or as proven defective in service during the warranty period, shall be replaced, repaired, or satisfactorily modified by the manufacturer without cost of parts or labor to the owner.
- C. The warranty shall become effective upon the acceptance by the Owner.

2. PRODUCT

2.1. Product Responsibility

- A. The pumping station must be of standard design, warranted by the manufacturer.

2.2. Manufacturer

- A. The specifications and project drawings depict equipment and materials manufactured by The Grundfos Pumps Corporation. It is not intended, however, to eliminate other products of equal quality and performance. The Contractor shall prepare his bid based on the specified equipment for purposes of determining low bid. Award of the Contract shall constitute an obligation to furnish the specified equipment and materials.
- B. The Contractor may offer substitutions to the specified equipment for consideration. The equipment proposed for substitution must of equal construction and performance to that specified in the contract, and the quality must be demonstrated by a list of current users of the proposed equipment in similar installations.

2.3. Station Enclosure

- A. The station enclosure shall contain and protect all pumps, interior piping, valves and associated controls. Enclosure shall incorporate the following design and service features:

1. The station enclosure shall be constructed with rigid polyester resin and 30% chopped glass in 1-1/2 to 2 inch random partners of 1/8 to 3/16 inch thickness. The inside surface shall be insulated with 2 lb. density sprayed on polyurethane foam, producing an R-14 to R-19 composite value.
 2. Fiberglass components of the enclosure shall be warranted for a minimum of 5 years to resist UV damage, corrosion from moisture or corrosive soils, or physical failures under normal service, without the need for special protective coatings.
 3. All interior surfaces of the housing shall be gel-coated with a polyester resin. It shall be of suitable thickness and formulated to provide:
 - a. Maintenance-free service
 - b. Abrasion resistance
 - c. Protection from greases, oils, gasoline, and other common chemicals
 - d. Color fastness
 - e. Gloss retention
 4. Enclosure shall be of a flip top design with a 30 lb. spring-loaded hook and stainless steel hasp, and 4"x3" stainless steel hinges.
- B. A duplex ground fault indicating utility receptacle providing 115 volts, single phase, 60 hertz shall be mounted inside the pump station. Receptacle shall be a NEMA 5-15r configuration, heavy duty, specification grade and fitted with a weatherproof cover. The receptacle shall be protected by normal duty circuit breaker.
- C. A shuttered exhaust fan with a minimum capacity to change the air in the enclosure once every minute shall be mounted in one end wall. In the wall approximately opposite to this end panel shall be mounted an air intake. Both intake and exhaust opening shall be equipped with a screen and cowl suitably designed to prevent the entrance of rain, snow, rocks and other foreign material. Fan circuit shall be protected by a normal duty circuit breaker.

2.4 Pump Design

- A. The pumps shall be listed by Underwriters Laboratories Pumps and shall be of an, in-line vertical multi-stage design and shall be as listed below or approved equal. Performance criteria shall be in accordance with requirements listed under Part 1 - General of this Section.
- B. The packaged pump system shall be a standard product of a single pump manufacturer. The entire pump system including pumps and pump logic controller, shall be designed and built by the same manufacturer.
- C. Small Vertical In-Line Multi-Stage Pumps
 1. The pump impellers shall be secured directly to the pump shaft by means of a splined shaft arrangement.
 2. The suction/discharge base shall have ANSI Class 250 flange or internal pipe thread (NPT) connections as determined by the pump station manufacturer.

3. Pump Construction

- | | | |
|----|---|----------------------------|
| a. | Suction/discharge base, pump head, motor stool: | Cast Iron (Class 30) |
| b. | Impellers, diffuser chambers, outer sleeve: | 304 Stainless Steel |
| c. | Shaft: | 316 or 431 Stainless Steel |
| d. | Impeller wear rings: | 304 Stainless Steel |
| e. | Shaft journals and chamber bearings: | Silicon Carbide |
| f. | O-rings: | EPDM |

4. Shaft couplings for motor flange sizes 184TC and smaller shall be made of cast iron or sintered steel. Shaft couplings for motor flange sizes larger than 184TC shall be made of ductile iron (ASTM 60-40-18).

5. Optional materials for the suction/discharge base and pump head shall be cast 316 stainless steel (ASTM CF-8M) resulting in all wetted parts of stainless steel.

6. The shaft seal shall be a balanced O-ring cartridge type with the following features:

- | | | |
|----|----------------------------|---------------------|
| a. | Collar, Drivers, Spring: | 316 Stainless Steel |
| b. | Shaft Sleeve, Gland Plate: | 316 Stainless Steel |
| c. | Stationary Ring: | Silicon Carbide |
| d. | Rotating Ring: | Silicon Carbide |
| e. | O-rings: | EPDM |

The Silicon Carbide shall be imbedded with graphite.

7. Shaft seal replacement shall be possible without removal of any pump components other than the coupling guard, shaft coupling and motor.

D. Variable Frequency Drives

1. The VFD shall be of the PWM (Pulse Width Modulation) design using current IGBT (Insulated Gate Bipolar Transistor) technology.
2. The VFD shall convert incoming fixed frequency single phase power into a variable frequency and voltage for controlling the speed of motor. The motor current shall closely approximate a sine wave. Motor voltage shall be varied with frequency to maintain desired motor magnetization current suitable for centrifugal pump control and to eliminate the need for motor de-rating.
3. The VFD shall have a minimum of two skip frequency bands which can be field adjustable.
4. The VFD shall have internal solid-state overload protection designed to trip within the range of 125-150% of rated current.
5. The VFD shall include protection against input transients, phase imbalance, loss of AC line phase, over-voltage, under-voltage, VFD over-temperature, and motor over-temperature (when PTC thermistors are used).

6. The VFD shall have DC link reactors on both the positive and negative rails of the DC bus to minimize power line harmonics. VFDs without DC link reactors shall provide a minimum 3% impedance line reactor.
7. Protect VFD from sustained low voltage. The VFD shall provide full rated output with an input voltage as low as 90% of the nominal.
8. To prevent breakdown of the motor winding insulation, the VFD shall be designed to comply with IEC Part 34-17. Otherwise, the VFD manufacturer must ensure that inverter rated motors are supplied.
9. VFD shall catch a rotating motor operating forward or reverse up to full speed.
10. The VFD shall have, as a minimum, the following input/output capabilities:
 - a. Speed Reference Signal: 0-10 VDC, 4-20mA
 - b. Digital remote on/off
 - c. Fault Signal Relay (NC or NO)
11. The VFD's shall be stand alone VFD's in the control panel. So called integrated VFD's or VFD's located on the motor(s) shall not be accepted.
12. VFD's shall be manufactured by Danfoss or approved equal.

E. Motors

1. Motors are to be provided with the following basic features:
 - a. Designed for continuous duty operation, NEMA design B with a 1.15 service factor.
 - b. Size requirements specified on Contract Drawings.
 - c. Multi voltage squirrel cage induction motors with built in thermal protection.
 - d. Nameplate shall have, as a minimum, all information as described in NEMA Standard MG 1-20.40.1.
2. Motors shall have a NEMA C-Flange for vertical mounting.
3. Drive end bearings shall be adequately sized so that the minimum L10 bearing life is 17,500 hours at the minimum allowable continuous flow rate for the pump.

F. Pump System Controller

1. The pump system controller shall be a standard product developed and supported by the pump manufacturer.
2. The controller shall be microprocessor based. The controller user interface shall have a large display, minimum of 3-1/2" x 4-5/8", for easily viewing of system status parameters and for field programming of controller. Password protection of system settings shall be standard.

3. The controller shall display the following as status readings from single display on the controller:
 - Current value of the control parameter, (usually discharge pressure).
 - Latest current alarm, if any.
 - System status with current operating mode and current value of control parameter.
 - Status of all pumps with current operating mode and speed of pumps as percentage (%).

4. Pump system programming (field adjustable) shall include as a minimum the following:
 - Qty (7) closed loop programmable setpoints (usually Constant Pressure setpoints)
 - Qty (7) open loop programmable setpoints
 - Pressure Transducer supply/range
 - System time (reaction)
 - Backup pump designation
 - High system pressure shut-down
 - Low suction pressure shutdown
 - Low system pressure shutdown
 - Ethernet connection for field programming from a remote location

5. The system pressure set-point shall be capable of being automatically adjusted by using up to two external set-point influences in conjunction.

6. The system shall include an "Influence Function". Influence function allows user ability to determine relationship between the measuring parameter which is to influence the set-point and the desired influence as a percentage.

7. The controller shall be capable of receiving a remote analog set-point (4-20mA or 0-10 VDC) as well as a remote on/off (digital) signals.

8. The pump system controller shall store up to 24 warning and alarms in memory. The time, date and duration of each alarm shall be recorded. A potential-free relay shall be provided for alarm notification to the building management system. The controller shall display the following alarm conditions:

High System Pressure	Low system pressure
Low suction pressure	Individual pump failure
VFD trip/failure	Loss of sensor signal (4-20 mA)
Loss of remote set-point signal (4-20mA)	System power loss

9. The pump system controller shall be mounted in a NEMA 3R enclosure. The entire control panel shall be UL 508 listed as an assembly. The control panel shall include a main disconnect, circuit breakers for each pump and the control circuit and control relays for alarm functions.

Control panel options shall include, but not be limited to:

Pump Run Lights	Pump Alarm Lights
System Fault Light	Audible Alarm (80 db[A])
Surge Arrestor	Control Panel Internal Illumination
Emergency/Normal Operation Switches	Service Disconnect Switches

10. The controller shall be capable of using a redundant primary sensor to function as backup sensor to primary sensor.
12. The controller shall have a "Test Run" feature with settings of once every 24 hours, 48 hours or once a week for cycling pumps in periods of inactivity.
13. The controller shall be capable of providing a calculated flow rate.

G. Sequence of Operation

1. The system controller shall operate equal capacity variable speed pumps to maintain a constant discharge pressure (system set-point). The system controller shall receive an analog signal [4-20mA] from the factory installed pressure transducer on the discharge manifold, indicating the actual system pressure. As flow demand increases the pump speed shall be increased to maintain the system set-point pressure. When the operating pump(s) reach 96% of full speed (adjustable), an additional pump will be started and will increase speed until the system set-point is achieved. All pumps in operation will be running at the same speed to maintain the system set-point. As flow demand decreases the pump speed shall be reduced while system set-point pressure is maintained. When all pumps in operation are running at low speed the system controller shall switch off pumps when fewer pumps are able to maintain system demand.
2. The system controller shall be capable of switching pumps on and off to satisfy system demand without the use of flow switches, motor current monitors or temperature measuring devices.
3. If a no flow shut-down is required (periods of zero demand) a bladder type diaphragm tank shall be installed. The tank shall be piped to the discharge manifold or system piping downstream of the pump system. When zero flow is detected by the system controller, the remaining pump(s) shall be switched off. When the system pressure falls to 50% of ON/OFF band below the system set-point (flow begins after shut-down), a pump shall be switched on, increasing speed to maintain the system set-point pressure.
4. All pumps in the system shall alternate automatically based on demand, time and fault. If flow demand is continuous (no flow shut-down does not occur), the system controller shall have the capability to alternate the pumps every 24 hours. The time of the pump change-over shall be field adjustable.

H. System Construction

1. The suction and discharge manifolds shall be constructed of 316 stainless steel. Manifold connection sizes shall be 4 inch ANSI Class 150 rotating flanges.

2. Pump Isolation valves shall be provided on the suction and discharge of each pump. Isolation valve sizes 2 inch and smaller shall be nickel plated brass full port ball valves. Isolation valve sizes 3 inch and larger shall be a full lug style butterfly valve. The valve disk shall be of stainless steel. The valve seat material shall be EPDM and the body shall be cast iron, coated internally and externally with fusion-bonded epoxy.
3. A spring-loaded non-slam type check valve shall be installed on the discharge of each pump. The valve shall be a wafer style type fitted between two flanges. The head loss through the valve shall not exceed 5 psi at the pump design capacity. Check valves 2 inches and larger shall have a body material of stainless steel or epoxy coated iron (fusion bonded) with an EPDM or NBR resilient seat. Spring material shall be stainless steel. Disk shall be of stainless steel or leadless bronze.
4. A pressure transducer shall be factory installed on the discharge manifold (or field installed as specified on plans). Systems with positive inlet gauge pressure shall have a factory installed pressure transducer on the suction manifold for water shortage protection. Pressure transducers shall be made of 316 stainless steel. Transducer accuracy shall be +/- 1.0% full scale with hysteresis and repeatability of no greater than 0.1% full scale. The output signal shall be 4-20 mA with a supply voltage range of 9-32 VDC.
5. A bourdon tube pressure gauge, 2-1/2-inch diameter, shall be placed on the suction and discharge manifolds. The gauge shall be liquid filled and have copper alloy internal parts in a stainless steel case. Gauge accuracy shall be 2-1/2%. The gauge shall be capable of a pressure of 30% above it's maximum span without requiring recalibration.
6. The base frame shall be constructed of corrosion resistant 304 stainless steel. Rubber vibration dampers shall be fitted between each pump and baseframe to minimize vibration.
7. The control panel shall be mounted on its own base. (floor mounted with plinth)

2.5. Electrical Control Components

A. Branch Components

1. Motor branch components to be of highest industrial quality, secured to the sub-plate with machine screws and lock washers. Mounting holes shall be drilled and tapped; self-tapping screws shall not be used to mount any component.
2. Circuit Breakers and Operating Mechanisms
 - a. A properly sized heavy duty circuit breaker shall be furnished for each pump motor. The size of the circuit breaker shall be specified by the pump motor manufacturer.

- b. An operating mechanism installed on each motor circuit breaker shall penetrate the control panel door. A padlockable operator handle shall be secured on the exterior surface. Interlocks must prevent opening the door until circuit breakers are in "OFF" position.
3. An open frame, across-the-line, NEMA rated magnetic starter with under-voltage release, and overload protection on all three phases, shall be furnished for each pump motor. Starters of NEMA size 1 and above shall allow addition of at least two auxiliary contacts. Starters rated "0", "00", or fractional size are not acceptable. Power contacts to be double-break type made of cadmium oxide silver. Coils to be epoxy molded for protection from moisture and corrosive atmospheres. Contacts and coils shall be easily replaceable without removing the starter from its mounted position. Each starter shall have a metal mounting plate for durability.
 4. Overload relays to be block-type mounted to each motor starter having trip indication with trip free operation. Pressing the overload reset lever shall not actuate the control contact until after the overload spindle has reset. Resetting the overload reset lever will cause a snap-action control contact to reset, thus re-establishing a control circuit. Overload relays to be manual reset only. The overload relay shall provide NEMA class 10 trip times and will be selected in accordance with the actual motor nameplate data.
 5. An overload reset push-button, mounted through the control panel door, shall permit resetting the overload relays without opening the control panel door.

C. Control Circuit

1. A normal duty thermal-magnetic circuit breaker shall protect all control circuits by interrupting control power.
2. A duplex ground fault receptacle providing 115 VAC, 60 Hz, single phase current, will be mounted on the side of the control enclosure. Receptacle circuit shall be protected by a 15 ampere thermal-magnetic circuit breaker.
 - a. The pump station, as furnished by the manufacturer shall be completely wired, except for power feed lines to the branch circuit breakers and final connections to the remote alarm devices.
 - b. All wiring, workmanship, and schematic wiring diagrams shall comply with applicable standards and specifications of the National Electric Code (NEC).
 - c. All user serviceable wiring shall be type MTW or THW, 600 volts, color coded as follows:

1) Line and Load Circuits, AC or DC power	Black
2) AC Control Circuit Less Than Line Voltage	Red
3) DC Control Circuit	Blue
4) Interlock Control Circuit From External Source	Yellow
5) Equipment Grounding Conductor	Green
6) Current Carrying Ground	White
7) Hot With Circuit Breaker Open	Orange

- d. Control circuit wiring inside the panel, with exception of internal wiring of individual components, shall be 16 gauge minimum, type MTW or THW, 600 volts. Power wiring to be 14 gauge minimum. Motor branch wiring shall be 10 gauge minimum.
- e. Motor branch and other power conductors shall not be loaded above 60 degrees C temperature rating, on circuits of 100 amperes or less, nor above 75 degrees C on circuits over 100 amperes. Wires must be clearly numbered at each in conformance with applicable standards. All wire connectors in the control panel shall be ring tongue type with nylon insulated shanks. All wires on the sub-plate shall be bundled and tied. All wires extending from components mounted on door shall terminate at a terminal block mounted on the back panel. All wiring outside the panel shall be routed through conduit.
- f. Control wires connected to door mounted components must be tied and bundled in accordance with good commercial practice. Bundles shall be made flexible at the hinged side of the enclosure. Adequate length and flex shall allow the door to swing full open without undue stress or abrasion. Bundles shall be held on each side of hinge by mechanical fastening devices.

3. Conduit

- a. Factory installed conduit shall conform to the following requirements:
 - 1) All conduit and fittings to be U.L. listed.
 - 2) Liquid tight flexible metal conduit to be constructed of smooth, flexible, galvanized steel core with smooth abrasion resistant, liquid tight polyvinyl chloride cover.
 - 3) Conduit to be supported in accordance with articles 346, 347 and 350 of the National Electric Code.
 - 4) Conduit shall be sized according to the National Electric Code.

4. Grounding

- a. Station manufacturer shall ground all electrical equipment inside the pump station to the control panel back plate. All paint must be removed from the grounding mounting surface before making final connection.
- b. The contractor shall provide an earth driven ground connection to the pump station at the main grounding lug in accordance with the National Electric Code (NEC).

5. Equipment Marking

- a. Permanent corrosion resistant name plate(s) shall be attached to the control and include the following information:
 - 1) Equipment Serial Number
 - 2) Supply Voltage, Phase and Frequency
 - 3) Current Rating of the Minimum Main Conductor

- 4) Electrical Wiring Diagram Number
- 5) Motor Horsepower and Full Load Current
- 6) Motor Overload Heater Element
- 7) Motor Circuit Breaker Trip Current Rating
- 8) Name and Location of Equipment Manufacturer

- b. Control components shall be permanently marked using the same identification keys shown on the electrical diagram. Labels shall be mounted adjacent to device being identified.
- c. Switches, indicators and instruments mounted through the control panel door shall be labeled to indicate function, position, etc. Labels shall be mounted adjacent to, or above the device.

3. EXECUTION

3.1. Examination

- A. Contractor shall off-load equipment at installation site using equipment of sufficient size and design to prevent injury or damage. Station manufacture shall provide written instruction for proper handling. Immediately after off-loading, contractor shall inspect complete pump station and appurtenances for shipping damage or missing parts. Any damage or discrepancy shall be noted in written claim with shipper prior to accepting delivery. Validate all station serial numbers and parts lists with shipping documentation. Notify the manufacturers representative of any unacceptable conditions noted with shipper.

3.2. Installation

- A. Install, level, align, and lubricate pump station as indicated on project drawings. Installation must be in accordance with written instructions supplied by the manufacture at time of delivery.
- B. Fasteners at all pipe connections must be tight. Install pipe with supports and thrust blocks to prevent strain and vibration on pump station piping.
- C. Check motor and control data plates for compatibility to site voltage. Install and test the station ground prior to connecting line voltage to station control panel.
- D. Prior to applying electrical power to any motors or control equipment, check all wiring for tight connection. Verify that protective devices (fuses and circuit breakers) conform to project design documents. Manually operate circuit breakers and switches to ensure operation without binding. Open all circuit breakers and disconnects before connecting utility power. Verify line voltage, phase sequence and ground before actual start-up.

3.3. Field Quality Control

A. Operational Test

1. Prior to acceptance by owner, an operational test of all pumps, drives, and control systems shall be conducted to determine if the installed equipment meets the purpose and intent of the specifications. Tests shall demonstrate that all equipment is electrically, mechanically, structurally, and otherwise acceptable; it is safe and in optimum working condition; and conforms to the specified operating characteristics.

2. The contractor shall supply clear water volume adequate to operate station through several pumping cycles. Observe and record operation of pumps, suction and discharge gauge readings, ampere draw, pump controls, and pressure controls. Check calibration of all instrumentation equipment, test manual control devices, and automatic control systems. Be alert to any undue noise, vibration or other operational problems.

B. Manufacturers Start-up Services

1. Coordinate station start-up with manufactures technical representative. The representative or factory service technician will inspect the completed installation. He will calibrate and adjust instrumentation, correct or supervise correction of defects or malfunctions, and instruct operating personnel in proper operation and maintenance procedures. In addition, the manufacturer shall furnish a certificate stating the pumps and equipment were installed in accordance with the manufacturer's recommendation.

3.4. Cleaning

- A. Prior to acceptance, inspect interior and exterior of pump station for dirt, splashed material or damaged paint. Clean or repair accordingly. Remove from the job site all tools, surplus materials, scrap and debris.

3.5. Protection

- A. The pump station should be placed into service immediately. If operation is delayed, drain liquid from pumps and piping. Open motor circuit breakers and protect station controls and interior equipment from cold and moisture.

4. BOOSTER PUMP STATION ACCESSORIES

A. Station Heater:

1. Each pump station shall be provided with a 1300/1500 watt, 115 volt electric heater with cord and grounding plug. Ungrounded heaters shall not be acceptable.

B. Spare Parts Kit:

1. The following minimum spare parts shall be furnished with the pump station when vertical in-line pumps are installed:
 - a) One wear ring.
 - b) One spare pump mechanical seal (complete with shaft sleeve).
 - c) One shaft sleeve O-Ring.
 - d) One impeller screw, key and washer.
 - e) One volute gasket.
 - f) One Flinger.

C. Gauge Kit

1. Two gauges shall be installed on each pump with Petcocks for shut-off and piping so that each gauge is clearly visible from the discharge side of the station. Suction pressure must be monitored by a spring suspended movement type compound gauge, and discharge pressure by a spring

suspended movement type pressure gauge. Gauges to be at least 3-inches in diameter, graduated in inches of mercury and pounds per square inch. Compound gauge shall be graduated -30" Hg to 100 p.s.i. Pressure gauge to be graduated 0 to 200 p.s.i.

D. UL Label Requirement:

1. Pump station controls shall conform to third party safety certification. The panel shall bear a serialized UL label listed for "Enclosed Industrial Control Panels". The enclosure, and all components mounted on the sub panel or control cover shall conform to UL descriptions and procedures.

E. Transient Voltage Surge Suppressor:

1. The control panels shall be equipped with a transient voltage surge suppressor to minimize damage to the pump motors and control from transient voltage surges. The suppressor shall utilize silicon-oxide varistors encapsulated in a non-conductive housing. The arrestor shall have a current rating of 60,000 Amps, and a Joule rating of 1500.

F. Piping:

1. Manufacture shall supply all piping necessary to connect from booster station suction and discharge headers to 3-inch DIP water main.