

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF U.S. 60 WATER DISTRICT )  
OF SHELBY AND FRANKLIN COUNTIES, KENTUCKY )  
FOR A CERTIFICATE OF PUBLIC CONVENIENCE ) NO. \_\_\_\_\_  
AND NECESSITY TO CONSTRUCT PURSUANT TO )  
THE PROVISIONS OF KRS 278.020 AND KRS 278.300 )

A P P L I C A T I O N

1. The Applicant is a water district created and existing under and by virtue of KRS 74.010 whose full name is U.S. 60 Water District of Shelby and Franklin Counties, Kentucky.
2. The mailing address of the Applicant is:  
  
U.S. 60 Water District  
P.O. Box 97  
Bagdad, Kentucky 40003  
  
The electronic mail address of the Applicant is:  
  
nswcus60@bellsouth.net
3. The Applicant, pursuant to KRS 278.020 and KRS 278.300, requests a Certificate of Public Convenience and Necessity permitting the Applicant to construct a waterworks construction project, consisting of extensions, additions, and improvements (the "Project") to the existing waterworks system of the Applicant. The Project consists of the construction of a 750,000 gallon elevated water storage tank to provide additional storage capacity. The Applicant currently uses approximately 500,000 gallons of water per day, with current storage capacity of 360,000 gallons (one 100,000 gallon elevated tank and three standpipes). More than one half of the total storage is reserved in standpipes and cannot be utilized to their full extent. The proposed tank will replace two 50-year-old tanks totaling 150,000 gallons that have reached the end of their useful life and will be de-commissioned upon completion of the Project. The proposed tank will increase the Applicant's storage capacity to 960,000 gallons, a nearly two-day supply. The Project also consists of the construction of approximately 1,133 linear feet of 12-inch ductile iron pipe connecting the existing system to this new water tank. No new easements are required for the pipeline.
4. This application does not seek a franchise.

5. There are no franchises or permits from any public authority for the Project except for an encroachment permit for US Highway 60 (Frankfort Road) attached hereto as Exhibit 1.
6. The Project is located at the intersection of U.S. Highway 60 and Peytona Beach Road in Shelby County, Kentucky, where the tank will be constructed on land donated by Shelby County. A copy of the deed is attached as Exhibit 2.
7. There are not any public utilities, corporations or persons with whom the Project is likely to compete.
8. Attached to this Application as Exhibit 3 is a copy of a map to suitable scale showing the location and a copy of the plans, specifications and drawings of the proposed tank. One additional paper copy and one copy in electronic format are also being submitted with this Application. There are no like facilities owned by others anywhere near the Project area.
9. Attached to this Application as Exhibit 4 is a copy of a map to suitable scale showing the location and a copy of the plans, specifications and drawings of the proposed pipeline. One additional paper copy and one copy in electronic format are also being submitted with this Application. There are no like facilities owned by others anywhere near the Project area.
10. The Applicant proposes to finance the construction of the Project through a \$1,300,000 twenty-year loan at an interest rate of 1.75% issued by the Kentucky Infrastructure Authority ("KIA") Revolving Loan Fund B and \$400,000 in District funds without a rate increase. A copy of the executed KIA Revolving Loan Fund Conditional Commitment Letter is attached as Exhibit 5.
11. The cost of the Project increased from the Project budget contained in the KIA Commitment Letter because the construction bids were higher. The Applicant therefore increased its cash contribution to the Project in the amount of \$100,000 to have adequate funds to fully fund the construction of the Project.
12. Attached hereto as part of Exhibit 5 is an estimated annual cost of operation after the proposed facilities are placed into service.
13. The Applicant's property presently consists of four elevated storage tanks, various pump stations and distribution water mains located in Franklin, Shelby, Spencer and Anderson Counties, Kentucky.
14. The original cost to Applicant of Applicant's property was \$9,414,467.00.
15. The amount and terms of the proposed KIA bond are set forth in Exhibit 5.
16. The Applicant will not issue any stock.


17. All of the proceeds from the KIA loan will be used for construction of the elevated water storage tank and connecting 12-inch water main.
18. A detailed description of the contemplated construction and extension is included in Exhibits 6 and 7.
19. Copies of the two proposed construction contracts are attached hereto as Exhibits 6 and 7.
20. There is no proposal to discharge or refund obligations.
21. Written notification to the state local debt officer regarding the proposed bond issuance is attached hereto as Exhibit 8.
22. The Financial Exhibit of the Applicant is attached hereto as Exhibit 9
23. There are no existing or proposed mortgages or trust deeds
24. A copy of the bid tabulation for the construction of the elevated storage tank is attached hereto as Exhibit 10. The Applicant has accepted the bid of Caldwell Tanks, Inc. in the amount of \$1,410,000, subject to PSC approval of the Project.
25. A copy of the bid tabulation for the 12-inch water main is attached hereto as Exhibit 11. The Applicant has accepted the bid of Twin State Utilities, Inc in the amount of \$84,186, subject to PSC approval of the Project.
26. A copy of the letter from Applicant's accountant confirming Applicant has \$400,000 in funds to contribute to the Project cost is attached as Exhibit 12.
27. Attached hereto as Exhibit 13 is a copy of the Final Engineering Report.
28. Attached hereto as Exhibit 14 is a copy of the division of Water approval letter.
29. The foregoing constitutes the documents necessary to obtain the approval of the Public Service Commission in accordance with Section 278.020 and 278.300 of the Kentucky Revised Statutes and in accordance with 807 KAR 5:001 § 12, 14, 15 and 17.



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Donald T. Prather  
Counsel for Applicant  
500 Main Street, Suite 5  
Shelbyville, Kentucky 40065  
Telephone Number: (502) 633-5220

The undersigned, William Eggen, being duly sworn, deposes and states that he is Chairman of the District, Applicant in the above proceedings; that he has read the foregoing Application and has noted the contents thereof; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.

  
\_\_\_\_\_  
William Eggen

STATE OF KENTUCKY        )  
COUNTY OF SHELBY        )

Subscribed and sworn to before me by William Eggen, Chairman of the District, on this the 18~~th~~ day of March, 2014.

  
\_\_\_\_\_  
Notary Public  
I.D. #: 434455  
Commission Expires: 2/1/15



Kentucky Transportation Cabinet  
Department of Highways  
Permits Branch

TC 99-1 (A)  
8/2012  
Page 1 of 4

APPLICATION FOR ENCROACHMENT PERMIT

<b>Permittee Information</b>		KYTC No. <u>05-2013-D1045</u>	
Name <u>U.S. 60 WATER DISTRICT</u>	<b>Permit Information</b>		
Address <u>P.O. Box 97</u>	Address <u>75 PEYTONA BEACH ROAD</u>		
	City <u>WADDI</u>		
City <u>BAGDAD</u>	State <u>KY</u>	Zip <u>40016</u>	
State <u>KY</u>	Zip <u>40003</u>	County <u>SHELBY</u>	
Phone# <u>(502) 747-8942</u>	Route No. <u>U.S. 60</u>	Mile-Point <u>19.81</u>	
Contact <u>PETE HEDGES, MANAGER</u>	Longitude (X) <u>85.05996</u>		
Phone <u>(502) 747-8942</u> Cell <u>(502) 220-0169</u>	Latitude (Y) <u>38.17527</u>		
Email	<b>Information below to be filled out by KYTC</b>		
Contact <u>WARNER BROUGHMAN, ENGINEER</u>	<input type="checkbox"/> Air Right	<input type="checkbox"/> Entrance	
Phone <u>(859) 271-1778</u> Cell <u>(859) 229-1924</u>	<input checked="" type="checkbox"/> Utilities	<input type="checkbox"/> Other:	
Email <u>wab@prodigy.net</u>			
<b>RECEIVED</b>			
DEC 14 2013			
<b>General Description of Work:</b>			
<b>D-5</b>			
<b>Traffic &amp; Permits</b>			
<p>TRANSVERSE CROSSING OF U.S. 60 AT PEYTONA BEACH ROAD WITH A 12" DIP CARRYING WATER CASING PIPE TO BE BORED. CASING TO BE 20" STIFF.</p>			
<p>THE UNDERSIGNED PERMITTEE(S) (being duly authorized representative(s) or owner(s)) DO AGREE TO ALL TERMS AND CONDITIONS ON THE TC 99-1 (A)</p>			
<p><u>Warner Broughman</u></p>		<p><u>12/10/13</u></p>	
Signature		Date	

This is not a permit unless and until the permittee(s) receives an approved TC 99-1(B) from KYTC. This application will become void if not approved by the cancellation date. The cancellation date will be one year from the date the permittee submits their application.



**APPLICATION FOR ENCROACHMENT PERMIT**

1045

**TERMS AND CONDITIONS**

1. The permit, including this application and all related and accompanying documents and drawings making up the permit, remains in effect and is binding upon the Applicant/Permittee, its successors and assigns, as long as the encroachment(s) exists and also until the permittee is finally relieved by the Department of Highways from all its obligations.
2. Applicant shall meet all requirements of the Clean Water Act if the project will disturb one acre or more, the applicant shall obtain a KPDES KYR10 Permit from the Kentucky Division of Water. All disturbed areas shall meet the requirements of the Department of Highway's Standard Specifications, Sections 212 and 213, as amended
3. **INDEMNITY:**
  - A. **PERFORMANCE BOND:** The permittee shall provide to the Department a performance bond according to the Permits Manual, Section PE-203 as a guarantee of conformance with the Department's Encroachment Permit requirements.
  - B. **PAYMENT BOND:** At the discretion of the department, a payment bond will be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
  - C. **LIABILITY INSURANCE:** Liability insurance will be required of the permittee (in an amount approved by the department) to cover all liabilities associated with the encroachment
  - D. It shall be the responsibility of the permittee, its successors and assigns, to maintain all indemnities in full force and effect until the permittee is authorized to release the indemnity by the Department.
4. A copy of this application and all related documents making up the approved permit will be given to the applicant and shall be made readily available for review at the work site at all times.
5. Perpetual maintenance of the encroachment is the responsibility of the permittee, its successors and assigns, with the approval of the Department as required, unless otherwise stated.
6. Permittee, its successors and assigns, shall comply with and agrees to be bound by the requirements and terms of (a) this application and all related documents making up the approved permit, (b) by the Department's Permits Manual, and (c) by the Manual on Uniform Traffic Control Devices, both manuals as revised to and in effect on the date of issuance of the permit, all of which documents are made a part thereof by this reference. Compliance by the permittee, its successors and assigns, with subsequent revisions to applicable provisions of either manual or other policy of the Department may be made a condition of allowing the encroachment to persist under the permit
7. Permittee agrees that this and any encroachment may be ordered removed by the Department at any time, and for any reason, upon thirty days written notice to the last known address of the applicant or to the address at the location of the encroachment. The permittee agrees that the cost of removing and of restoring the associated right-of-way is the responsibility of the permittee, its successors and assigns.
8. Permittee, its successors and assigns, agree that if the Department determines that motor vehicular safety deficiencies develop as a result of the installation or use of the encroachment, the permittee, its successors and assigns, shall provide and bear the expenses to adjust, relocate, or reconstruct the facilities, and/or add signs, auxiliary lanes, or other corrective measures reasonably deemed necessary by the Department within a reasonable time after receipt of a written notice of such deficiency. The period within which such adjustments, relocations, additions, modifications, and/or other corrective measures must be completed will be specified in the notice



**APPLICATION FOR ENCROACHMENT PERMIT**

1045

9. Where traffic signals are required as a condition of granting the requested permit or are thereafter required to correct motor vehicular safety deficiencies, as determined by the Department, the costs for signal equipment and installation(s) shall be borne by the permittee, its successors and assigns, and/or the Department in its reasonable discretion and only in accordance with the Department's current policy set forth in the Traffic Operations Manual and Permits Manual. Any modifications to the permittee's entrance necessary to accommodate signalization (including necessary easement(s) on private property) shall be the responsibility of the permittee, its successors and assigns, at no expense to the Department.

10. The requested encroachment shall not infringe on the frontage rights of an abutting owner without their written consent as hereinafter described. Each abutting owner shall express their consent, which shall be binding on their successors and assigns, by the submission of a notarized statement as follows, "I (we), \_\_\_\_\_, hereby consent to the granting of the permit requested by the applicant along Route \_\_\_\_\_, which permit does affect frontage rights along my (our) adjacent real property." By signature(s) \_\_\_\_\_, subscribed and sworn by \_\_\_\_\_, on this date \_\_\_\_\_

11. The permit, if approved, is subject to the agreement that it shall not interfere with any similar rights or permit(s) previously granted to any other party, except as otherwise provided by law

12. Permittee shall include documentation which describes the facilities to be constructed. Permittee, its successors and assigns, agrees as a condition of the granting of the permit to construct and maintain any and all permitted facilities or other encroachments in strict accordance with the submitted and approved permit documentation and the policies and procedures of the Department. Permittee, its successors and assigns, shall not use facilities authorized herein in any manner contrary to that prescribed by the approved permit. Only normal usage as contemplated by the parties and by this application and routine maintenance are authorized by the permit.

13. Permittee, its successors and assigns, at all times from the date permitted work is commenced until such time as all permitted facilities or other encroachments are removed from the right-of-way and the right-of-way restored, shall defend, protect, indemnify and save harmless the Department from any and all liability claims and demands arising out of the work, encroachment, maintenance, or other undertaking by the permittee, its successors and assigns, related or undertaken pursuant to the granted permit, due to any claimed act or omission by the permittee, its servants, agents, employees, or contractors. This provision shall not inure to the benefit of any third party nor operate to enlarge any liability of the Department beyond that existing at common law or otherwise if this right to indemnity did not exist.

14. Upon a violation of any provision of the permit, or otherwise in its reasonable discretion, the Department may require additional action by the permittee, its successors and assigns, up to and including the removal of the encroachment and restoration of the right-of-way. In the event additional actions required by the Department under the permit are not undertaken as ordered and within a reasonable time, the Department may in its discretion cause those or other additional corrective actions to be undertaken and the Department may and shall recover the reasonable costs of those corrective actions from the permittee, its successors and assigns.

15. Permittee, its successors and assigns, shall use the encroachment premises in compliance with all requirements of federal law and regulation, including those imposed pursuant to Title VI of the Civil Right Act of 1964 (42 U.S.C. § 2000d et seq.) and the related regulations of the U.S. Department of Transportation in Title 49 C.F.R Part 21, all as amended.



Kentucky Transportation Cabinet  
 Department of Highways  
 Permits Branch

TC 99-1 (B)  
 1/2012  
 Page 1 of 1

**ENCROACHMENT PERMIT**

KEPTS No : 05-2013-01045

Permittee: U.S. 60 WATER DISTRICT

Latitude: 38.17527

Longitude: -85.05996

Completion Date: 1/1/2015

Coordinates provided on the TC 99-1(B) are the approved location for this permit.

Indemnities		
Type	Amount Required	Tracking Number
Performance Bond	\$1,000.00	
Payment Bond		
Liability Insurance		

*12/20/2013*

This permit has been:

APPROVED  DENIED

Jason Richardson TB Supervisor  
 NAME TITLE

Jason Richardson 12/20/13  
 SIGNATURE DATE

The TC 99-1(B), including the application TC-99 1(A) and all related and accompanying documents and drawings make up the permit. It is not a permit unless both the TC 99-1(A) and TC 99-1(B) are both present.





## ENCROACHMENT PERMIT GENERAL NOTES & SPECIFICATIONS

Permit No. \_\_\_\_\_ - \_\_\_\_\_

### I. SAFETY

#### A. General Provisions

- All signs and control of traffic shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition, Part VI, and safety requirements shall comply with the Permits Manual.
- All work necessary in shoulder or ditch line areas of a state highway shall be scheduled to be promptly completed so that hazards adjacent to the traveled way are kept to an absolute minimum.
- No more than one (1) traveled-lane shall be blocked or obstructed during normal working hours. All signs and flaggers during lane closure shall conform to the Manual on Uniform Traffic Control Devices.
- When necessary to block one (1) traveled-lane of a state highway, the normal working hours shall be as directed by the Department. No lanes shall be blocked or obstructed during adverse weather conditions (rain, snow, fog, etc.) without specific permission from the Department. Working hours shall be between 9:00 am and 3:00 pm
- The traveled-way and shoulders shall be kept clear of mud and other construction debris at all times during construction of the permitted facility.
- No nonconstruction equipment or vehicles or office trailers shall be allowed on the right of way during working hours.
- The right of way shall be left free and clear of equipment, material, and vehicles during non-working hours.

#### B. Explosives

- No explosive devices or explosive material shall be used within state right of way without proper license and approval of the Kentucky Department of Mines and Minerals, Explosive Division.

#### C. Other Safety Requirements

- Permit does not relieve the applicant of the obligations of item 6, TC 99-1 page 2 or item A TC 99-21, page 1 of 6. Any Traffic Loops damaged during installation shall be repaired by the contractor immediately.

### II. UTILITIES \*Applies to Fully Controlled Access Highways ONLY

- \*All work necessary within the right of way shall be performed behind a temporary fence erected prior to a boring operation.
- \*The temporary woven wire fence shall be removed immediately upon completion of work on the right of way, and the control of access immediately restored to original condition, in accordance with applicable Kentucky Department of Highways Standard Drawings.
- \*All vents, valves, manholes, etc., shall be located outside of the right-of-way.
- \*Encasement pipe shall extend from right-of-way line to right-of-way line and shall be one continuous run of pipe. The encasement pipe shall be welded at all joints.
- The boring pit and tail ditch shall extend past the existing toe of slope or bottom of ditch line and shall be a minimum of 42 inches deep

Permit No. \_\_\_\_\_

**IV. RIGHT OF WAY RESTORATION**

All disturbed portions of the right of way shall be restored to grass as per Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition). A satisfactory turf, as determined by the Department, shall be established by the permittee prior to release of indemnity. Sodding or seeding shall be as follows:

Lawn or High Maintenance Situation	70% Lawn Fescue (e.g., variety - Falcon) 30% Bluegrass or
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70% Lawn Rye (e.g., variety - Derby) 30% Bluegrass
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Right of Way Lawn Maintenance Situation	70% KY 31 Fescue 30% Perennial Rye Grass or
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100% KY Fescue
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Two tons of clean straw mulch per acre of seeding.

Prior to seeding, the ground shall be prepared in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).

Substitutes for sod such as artificial turf, rocked mulch, or paved areas may be acceptable if they are aesthetically pleasing.

All ditch-flow lines and all ditch-side slopes shall be sodded.

Existing concrete right of way markers shall not be disturbed, but if damaged in any way, they shall be entirely replaced by the permittee, with new concrete markers to match the original markers, in accordance with Kentucky Department of Highways Standard Drawings. Markers that are entirely removed shall be re-established in the proper locations by the permittee and to the satisfaction of the Department.

Other right of way restoration requirements are as follows:

Ditchline shall be maintained throughout the project at all times. Upon completion of the project, all culverts and crossdrains shall be cleaned, and ditches graded to drain. All disturbed areas of right of way shall be sodded or seeded and covered with approved erosion control blanket.

**V. DRAINAGE**

All pipe shall be laid in a straight alignment, to proper grades, and with all materials and methods of installation including bedding and joint seating in accordance with Department Standard Specifications for Road and Bridge Construction (latest edition). Pipe shall not be covered until inspected by the Department and express permission obtained to make backfill.

All gutter lines at the base of new curbs shall be on continuous grades, and pockets of water along with curbs or in entrance areas or other paved areas within the right of way shall not be acceptable

All drainage structures and appurtenances (manholes, catch basins, curbing, inlet basins, etc.) shall conform to Department specifications and shall be constructed in accordance with the Department Standard Drawings. Type required:

\_\_\_\_\_  
\_\_\_\_\_

Permit No. \_\_\_\_\_

**VIII. DENSE GRADED SHOULDERS**

- Any existing dense-graded aggregate shoulders in the entire frontage within the construction area, which have been disturbed or damaged or on which dirt has been placed or mud has been deposited or tracked, shall be restored to original condition by removal of all contaminated material and replaced to proper grade with new dense-graded aggregate.
- All new aggregate shoulders as specified in the plan shall consist of 5 inches of compacted dense-graded aggregate, 2<sup>1</sup>/<sub>2</sub> pounds per square yard of calcium chloride
- All dense-graded aggregate shoulders shall slope away from the new edge of pavement at the rate of 3/4 inch per foot.

**IX. CURBING**

**A. Bituminous Curbs**

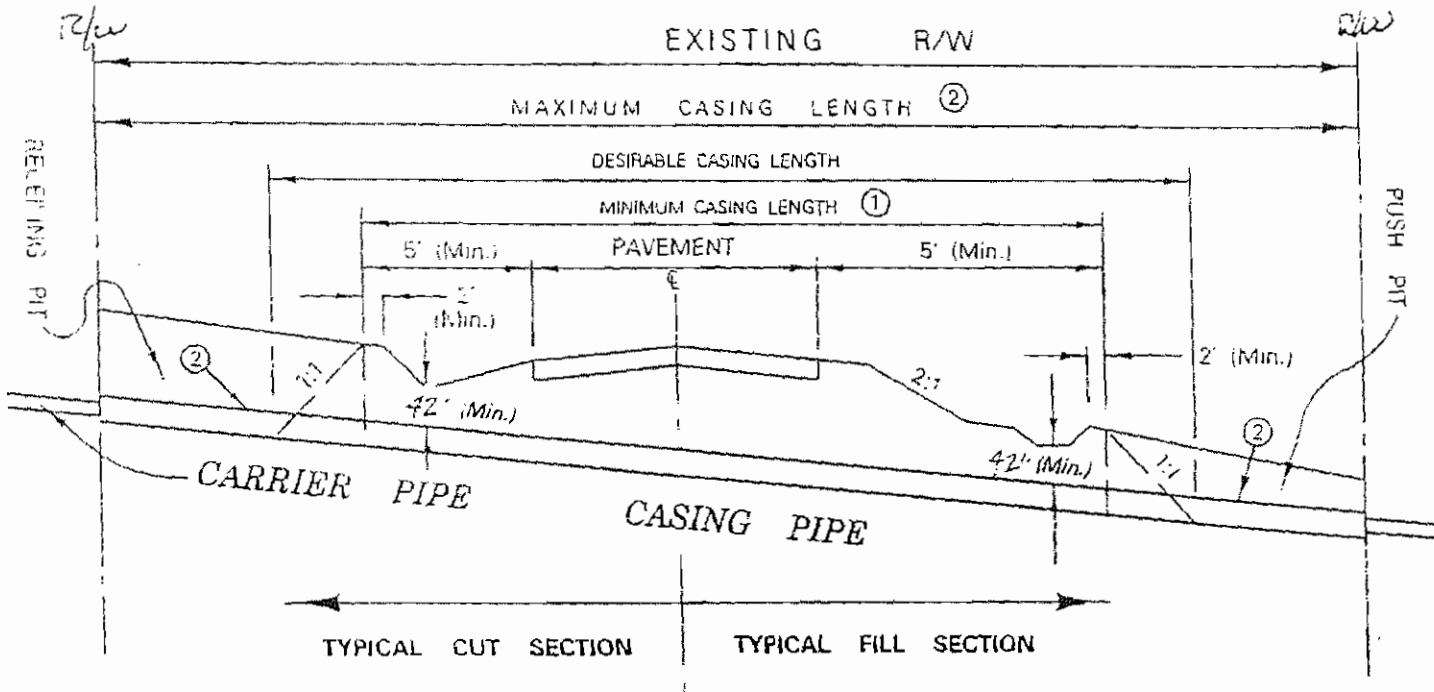
- Bituminous concrete curbs shall be given a paint coat of asphalt emulsion.
- The surface under the bituminous concrete curb shall be tacked with asphalt emulsion.
- All bituminous concrete curbs shall be constructed of a Class I bituminous concrete mixture as specified by official Department of Highways specifications.
- All bituminous curbs shall be rolled curb, with a minimum base width of 8 inches and a minimum height of \_\_\_\_\_ inches. The top of the curb shall be constructed in such a manner as to guarantee a uniform rolled effect throughout the entire run.

**B. Concrete Curbs**

- All curbs or curb and gutter shall be constructed of Class A concrete (3,500 p.s.i. test) and shall be uniform in height, width, and alignment, true to grade, and satisfactory in finish and appearance as determined by the Department. All materials and methods of construction, including curing, shall be in accordance with Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- All concrete curbs shall be 6 inches in width, extend \_\_\_\_\_ inches above finished grade and 12 inches below finished grade, with all visible edge rounded to 1/2 inch radii.
- All concrete curbs shall have expansion joints constructed at intervals of not more than 30 feet, and 1/2 inch premolded expansion joint material (cut to conform to the curb or to the curb and gutter section) shall be used in each expansion joint.
- The last \_\_\_\_\_ feet of all concrete curbs are to be tapered down to finished grade.

- ① MAY REQUIRE VERTICAL SHEETING
- ② MAY BE REQUIRED UNDER CERTAIN CONDITIONS.

Permit No. 05-2013-01045  
 Route No. US 60  
 Pavement Width 12 FT

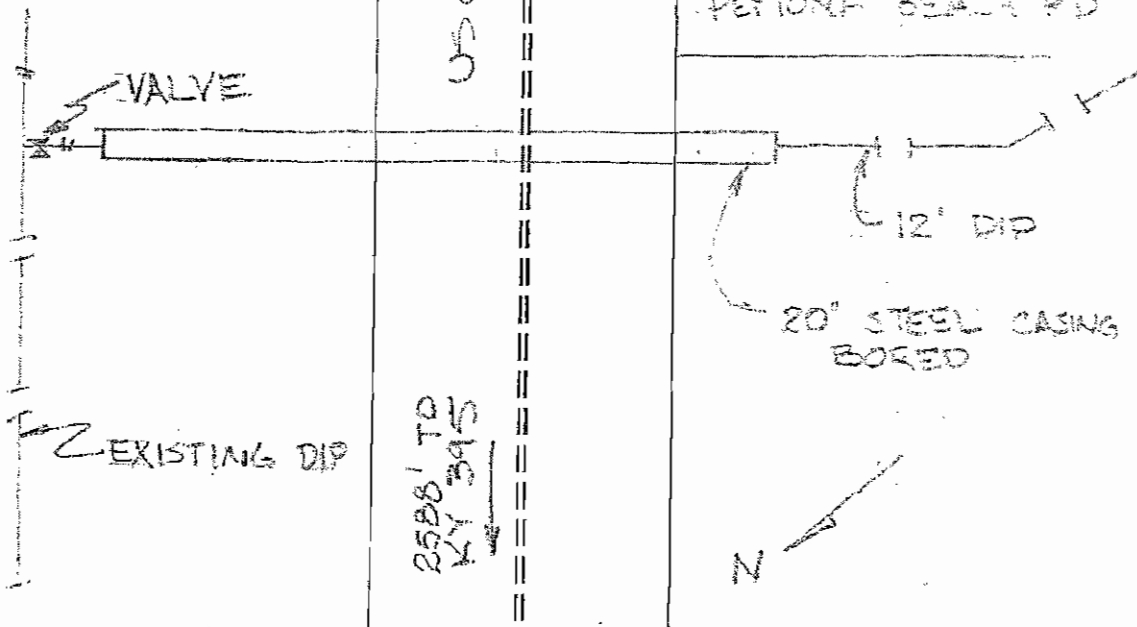


1. Push Pit and Receiving Pit to be backfilled and thoroughly compacted.
2. All Ditch Lines to be left open.
3. Seed and straw all areas disturbed by this work.
4. The Boring Pit and Tail Ditch shall not extend past the existing toe of slope or bottom of ditch line (from the right-of-way).
5. Services over 2" to be encased or exempt under Chapter 2 of the Permits Guidance Manual.
6. Control of Access Projects, Encasement pipe shall extend from Right of Way to Right of Way and shall be one continuous run of pipe.

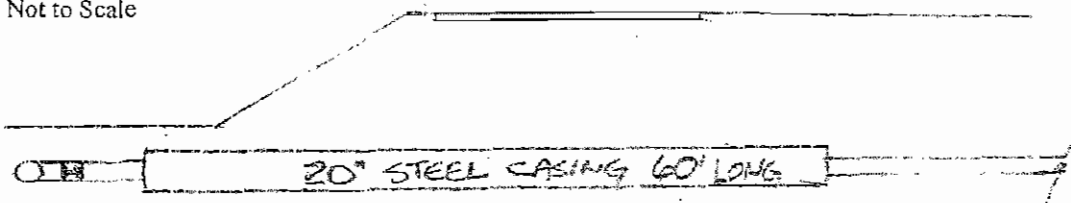
COMMONWEALTH OF KENTUCKY TRANSPORTATION CABINET  
 DEPARTMENT OF HIGHWAYS  
 DIVISION OF TRAFFIC  
 TYPICAL HIGHWAY BORING CROSSING DETAIL  
 PROPOSED UNDERGROUND CROSSING FOR EXISTING ROADWAY

TC 921  
 REV II  
 REV I  
 REV 4

PLAN  
VIEW  
Not to Scale



TYPICAL  
CROSSSECTION  
Not to Scale



STATE HIGHWAY ENCROACHMENT PERMIT  
US 60 WATER DISTRICT

County: SHELBY

Road: U.S. 60 (FRANKFORT RD)

Distance & Direction From  
Landmark:  
7588 Feet S.E. KY 395

Landmark Description:  
INTERSECTION OF U.S. 60  
& KY 395

U.S. 60 WATER DISTRICT  
(Name)

P.O. BOX 99  
(Address)

BAGDAZ, KY 40003  
(Address)

This Permit Submitted By:

Warner A. Broughman III  
and Associates

SHELBY COUNTY  
**D570 PG440**

**GENERAL WARRANTY DEED**

**THIS GENERAL WARRANTY DEED** is made and entered into this 1<sup>st</sup> day of April, 2013 by and between **SHELBY COUNTY FISCAL COURT**, a political subdivision of the Commonwealth of Kentucky, whose mailing address is 419 Washington Street, Shelbyville, Kentucky 40065 (the "Grantor"), and **U.S. 60 WATER DISTRICT**, whose mailing address is P.O. Box 97, Bagdad, Kentucky 40003 ("Grantee").

**WITNESSETH:**

That for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Grantor does hereby grant, sell and convey to Grantee, to have and hold in fee simple, with covenant of **GENERAL WARRANTY**, all of its right, title and interest in and to the following described property located in Shelby County, Kentucky (the "Property"):

**SEE ATTACHED EXHIBIT A:**

The Grantor hereby covenants that it is lawfully seized of the estate hereby conveyed, that the Grantor has full right and power to convey same and that the Property conveyed hereby is free and clear of all liens and encumbrances except (i) applicable rules and regulations imposed by any applicable planning or zoning commission, (ii) any and all future real estate taxes and assessments, and (iii) any and all easements, restrictions and stipulations of record affecting the Property.

The Grantor and Grantee hereby swear and affirm under penalty of perjury, pursuant to Section 382.135 of the Kentucky Revised Statutes, at the transfer herein is for nominal consideration. The estimated fair cash value of the Property is \$5,000.00.

The Grantee hereby agrees that it shall permit the Grantor to install emergency equipment on the Property if deemed necessary by the Grantor. The parties acknowledge and agree that this shall be a covenant that runs with the Property and this covenant shall be binding upon all future owners.

The in-care-of address to which the property tax bill may be sent is P.O. Box 97, Bagdad, Kentucky 40003.

SHELBY COUNTY  
D570 PG441

IN TESTIMONY WHEREOF, witness the signatures of the Grantor and the Grantee, as  
of the date and year first above written.

~~SHELBY COUNTY FISCAL COURT:~~

BY:   
ROB ROTHENBURGER  
SHELBY COUNTY JUDGE-EXECUTIVE

(the "Grantor")

U.S. 60 WATER DISTRICT:

BY:   
BILL EGGEN, CHAIRMAN

(the "Grantee")

COMMONWEALTH OF KENTUCKY )  
  ) SS:  
COUNTY OF SHELBY                 )

The foregoing Deed, including the certificate of consideration, was subscribed, sworn to and  
acknowledged before me on April 19, 2013, by Rob Rothenburger, Shelby County Judge-  
Executive, to be his free and voluntary act and deed on behalf of Shelby County Fiscal Court.

My commission expires: 5-14-14

  
Notary Public, State-at-Large, Kentucky



EXHIBIT "A"

SHELBY COUNTY LEGAL & EASEMENT DESCRIPTION FOR LAND TRACT NEAR PEYTONA

Tract IB Description

Being the southern portion of a parcel of land recorded in Deed Book #465-Page 58 in the Shelby County Clerk's Office that is owned by Shelby County and located in Shelby County, Kentucky and more particularly described as follows: Beginning at a set "iron pin" capped W.H.B., LPLS 221, corner to William L. & Christopher Perry property and recorded in Deed Book #405-Page 344 in the Shelby County Clerk's Office and also a corner to the William L. & Christopher Perry property and recorded in Deed Book #252-Page 1; Thence N 22 Degrees 36 Minutes 44 Seconds E for a distance of 150.00 Feet to a set "iron pin" capped W.H.B., LPLS 221 in the line of the William L. & Christopher Perry property and recorded in Deed Book #252-Page 1 in the Shelby County Clerk's Office; Thence on a new line S 88 Degrees 00 Minutes 07 Seconds E for a distance of 345.48 Feet to a set "iron pin" capped W.H.B., LPLS 221 in the line of Jerry L. & Janice B. Hurst property as described in Deed Book #518-Page 618 and recorded in the Shelby County Clerk's Office; Thence along the Hurst property line S 20 Degrees 45 Minutes 00 Seconds W for a distance of 150.00 feet to an existing "iron pin" with no cap in the Hurst line and corner to William L. & Christopher Perry property as recorded in Deed Book #405-Page 344 in the Shelby County Clerk's Office; Thence along the Perry Line N 87 Degrees 45 Minutes 00 Seconds W for a distance of 350 feet to the Point of Beginning and containing 1.126 acres, more or less, as Surveyed by W. H. Brown, Licensed Professional Surveyor #221 on March 18, 2013.

Easement Description

This 15 feet wide easement is for the purpose of ingress and egress for Tract #IB's access through Tract #1A to Old US 60 Road: Tract #1A plus Tract #IB together were formerly the tract described in Deed Book #465-Page 58 in the Shelby County Clerk's Office. This easement runs parallel to the eastern line of the tract described in Deed Book #465-Page 58 and recorded in the Shelby County Clerk's Office. The following description is for the centerline of said easement Beginning at a point that is 7.93 feet from the intersection of the southeast corner of Tract 1A and the northeast corner of Tract IB and in the common boundary of the two tracts; Thence along the centerline of said 15 feet wide easement and parallel to the east boundary of Tract 1A, N 20 Degrees 45 Minutes 00 Seconds E for a distance of 986.69 feet to a point in the north boundary of Tract 1A that is 8.55 feet from the intersection of the East and North boundaries of Tract 1A.

I HEREBY CERTIFY THAT THESE DESCRIPTIONS WERE MADE UNDER MY PERSONAL DIRECTION AND THAT THE ANGULAR AND LINEAR MEASUREMENTS, AS WITNESSES BY THE MONUMENTS DESCRIBED ABOVE, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THESE DESCRIPTIONS ARE SUBJECT TO EASEMENTS APPARENT AND OF RECORD AND ARE VALID ONLY TO THE ORIGINAL CLIENT WITH LIABILITY LIMITED TO THE COST OF THE ORIGINAL SURVEY PLUS SURVEYING, LEGAL, AND RECORDING COSTS FOR ANY DEEDS OF CORRECTION IF NEEDED

The above described Tract IB being part of the same property conveyed to Shelby County, Kentucky, a/k/a Shelby County Fiscal Court, by deed dated December 30, 2004, of record in Deed Book 465, Page 58, in the Shelby County Clerk's Office. And recorded in Plat Cab#8 Slide #285.



SHELBY COUNTY  
D570 PG443

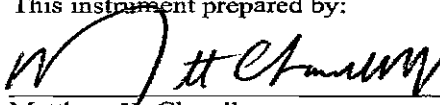
COMMONWEALTH OF KENTUCKY )  
COUNTY OF SHELBY ) SS:

The foregoing Deed, including the certificate of consideration, was subscribed, sworn to and acknowledged before me on April 2nd 2013, by Bill Eggen, Chairman, to be his free and voluntary act and deed on behalf of the U.S. 60 Water District

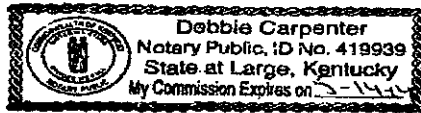
My commission expires: 5-14-14

  
Notary Public, State-at-Large, Kentucky

This instrument prepared by:



Matthew H. Chandler  
Assistant Shelby County Attorney  
501 Main Street  
Shelbyville, KY 40065  
502-633-5850



TITLE NOT CERTIFIED

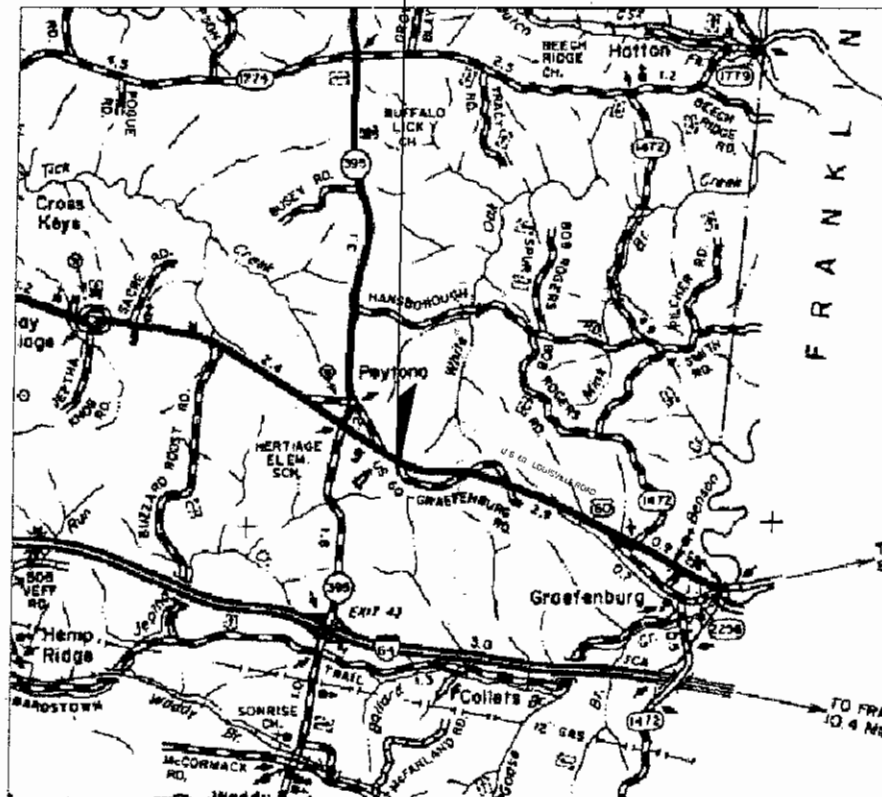
DOCUMENT NO: 391392  
RECORDED: April 16, 2013 03:25:00 PM  
TOTAL FEES: \$20.00  
TRANSFER TAX: \$0.00  
COUNTY CLERK: SUE CAROLE PERRY  
DEPUTY CLERK: THERESA BRAVETT  
COUNTY: SHELBY COUNTY  
BOOK: D570 PAGES: 440 - 443

INDEX OF SHEETS	
SHEET	DESCRIPTION
COVER	TITLE, INDEX, & VICINITY MAP
1	TANK ELEVATION DETAIL
2	FOUNDATION ELEVATION & NOTES
3	SITE PLAN

# U.S. 60 WATER DISTRICT

WATER TANK & APPURTENANCES  
JULY 2013

Site Location

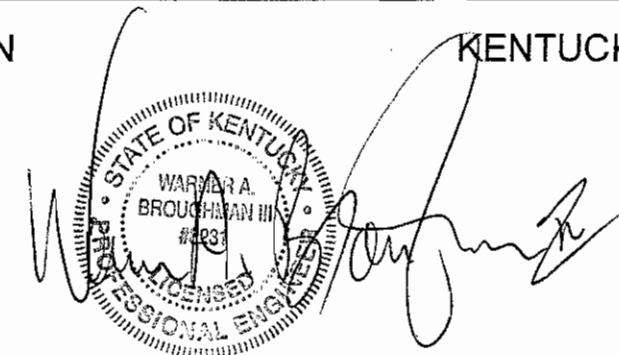


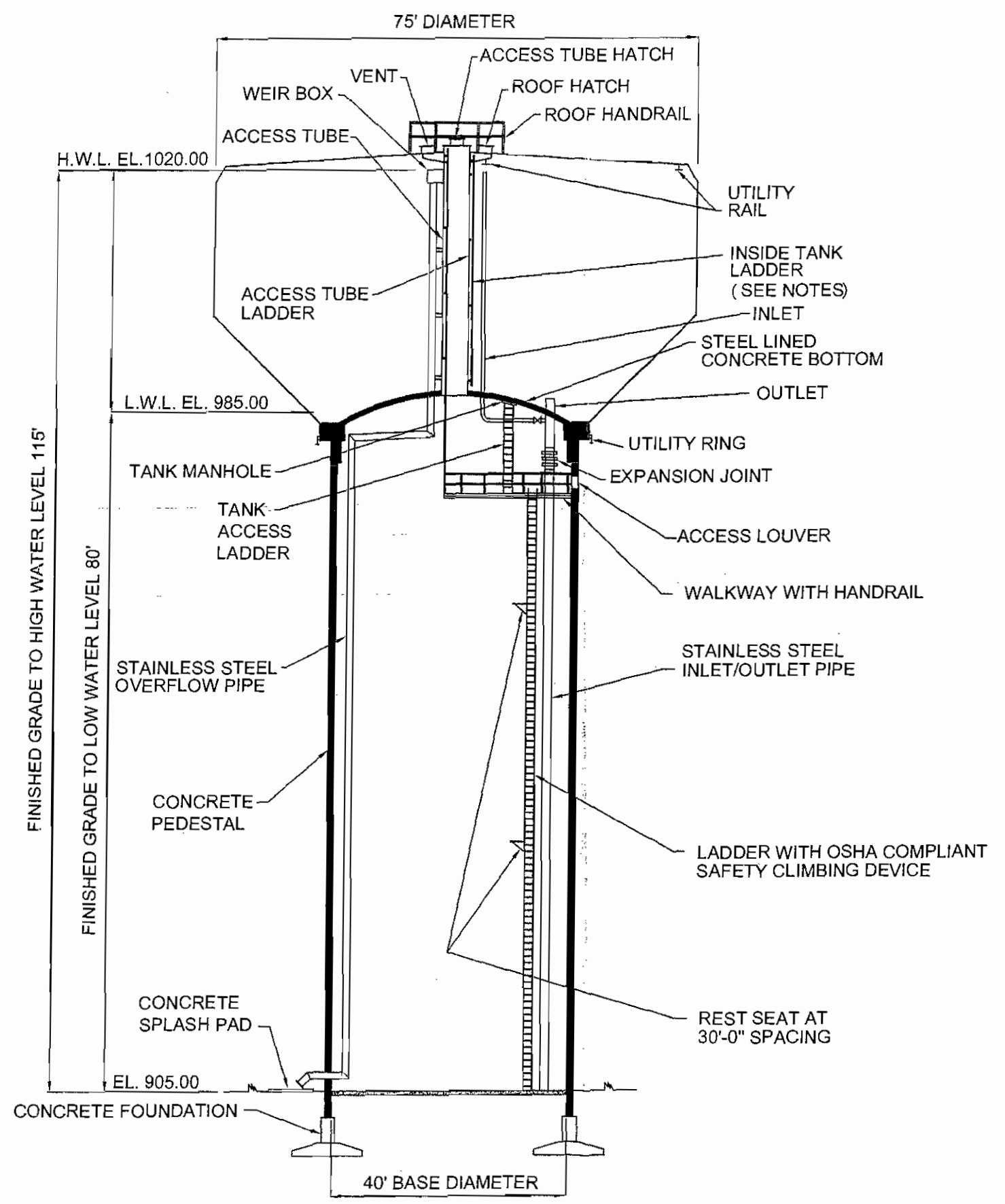
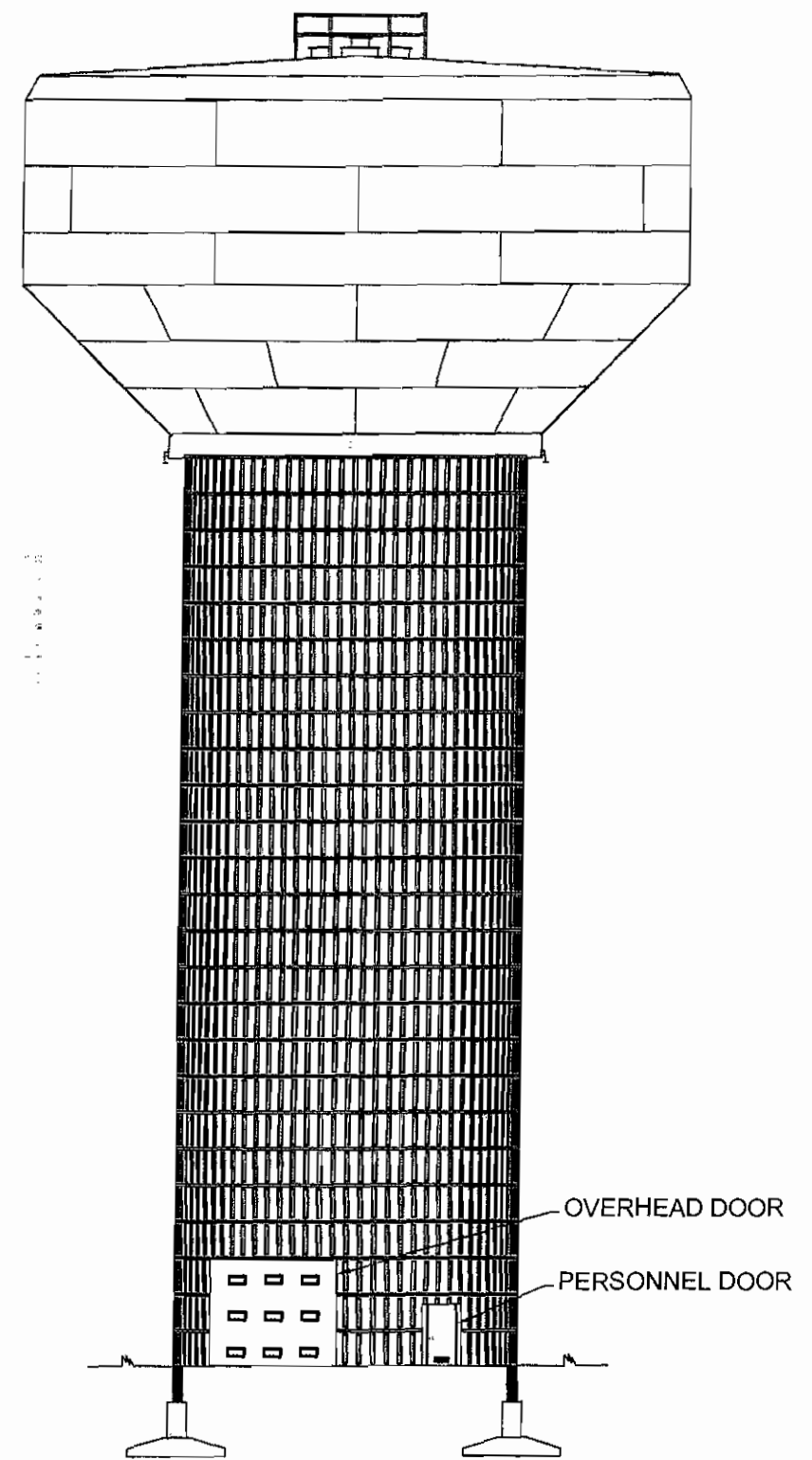
VICINITY MAP

Warner A. Broughman III  
and Associates

LEXINGTON

KENTUCKY



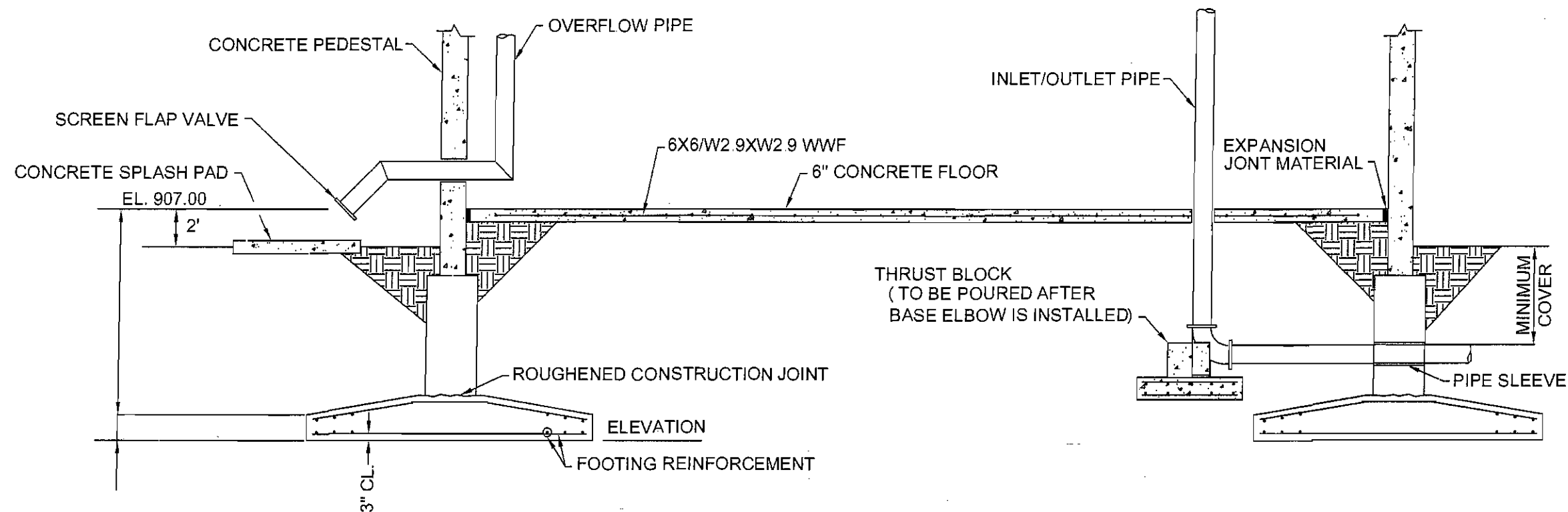


Warner A. Broughman III  
and Associates

Concept WAB  
Drawn BJC  
Checked  
File 05-12

U.S. 60 WATER DISTRICT  
COMPOSITE WATER TANK

TANK ELEVATION DETAIL



**NOTES:**

- FOUNDATION CONSTRUCTION SHALL COMPLY WITH A.C.I. 318-99, A.C.I. 301-96, AWWA D100-96, AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS AND THE PROJECT SOILS REPORT.
- FOUNDATION DESIGN WILL BE THE RESPONSIBILITY OF THE TANK CONTRACTOR.
- PEDESTAL AND FOOTING DIMENSIONS AND CONCRETE REINFORCEMENT SHALL BE DETERMINED BY THE TANK CONTRACTOR
- MINIMUM FOUNDATION CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 P.S.I. AT 28 DAYS. REINFORCEMENT SHALL CONFORM TO ASTM A615 GR 60.
- CONSTRUCTION JOINTS SHALL BE ROUGHENED ACROSS ENTIRE FACE WITH 1/4" MINIMUM DEPTH INDENTATIONS.
- THE TOP OF THE RINGWALL SHALL BE LEVEL WITHIN ( $\pm$ ) 1/8" IN 30 FEET WITH A MAXIMUM DIFFERENTIAL OF ( $\pm$ ) 1/4" BETWEEN ANY TWO POINTS ON THE CIRCUMFERENCE
- PROVIDE 1/2" THICK EXPANSION JOINT MATERIAL BETWEEN FLOOR AND WALL AND AT ALL PIPING PENETRATIONS.

**NOTES:**

**DESIGN:**

THE TANK AND CONCRETE SUPPORT PEDESTAL SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH AWWA D100-96, A.C.I. 318-99, A.C.I. 301-96 AND PROJECT SPECIFICATIONS

THE EXTERIOR OF THE CONCRETE PEDESTAL SHALL INCORPORATE VERTICAL AND HORIZONTAL RUSTICATIONS TO CREATE AN ARCHETECTURAL PATTERN.

THE INTERIOR SURFACES SHALL HAVE A SMOOTH AS-CAST FINISH.

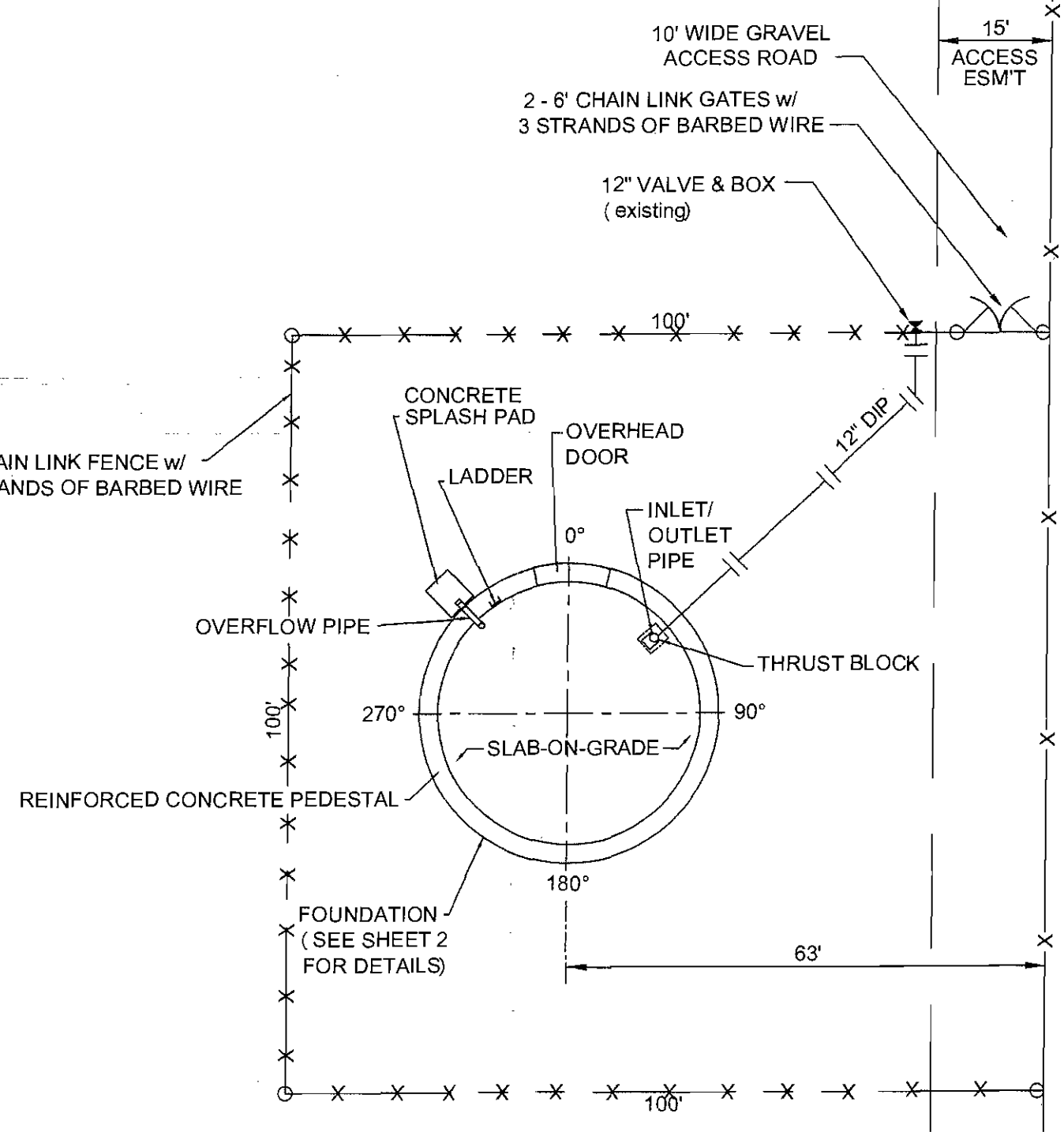
**MATERIAL:**

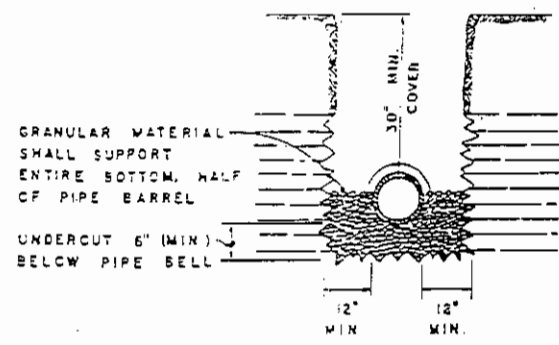
- STEEL PLATE: ASTM A283 GR C/A36
- STRUCTURAL STEEL SHAPES: ASTM A36
- LADDER RUNGS: ASTM A706
- PIPING: TYPE 304 STAINLESS STEEL

**GENERAL:**

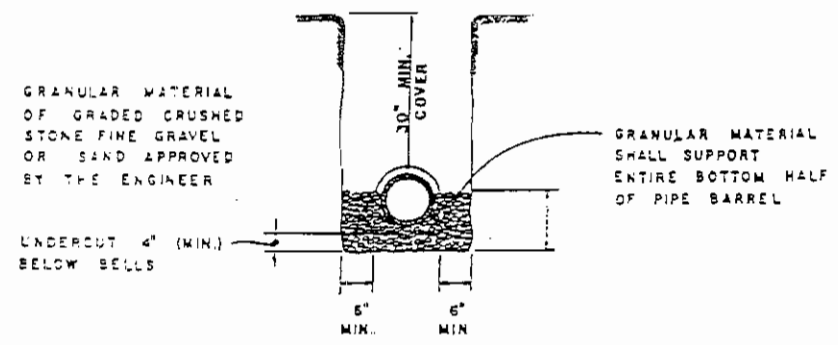
- ACCESSORIES SHOWN ON ELEVATION DRAWINGS ARE ROTATED FOR CLARITY
- ALL HANDRAILS, PLATFORM LANDINGS, WALKWAYS, LADDERS AND SAFETY CLIMB DEVICES SHALL CONFORM WITH CURRENT OSHA STANDARDS.
- ALL LADDERS, LANDINGS AND ASSOCIATED COMPONENTS INSTALLED INSIDE THE CONCRETE PEDESTAL SHALL BE HOT-DIP GALVANIZED.
- SEE PROJECT SPECIFICATIONS FOR SHOP AND FIELD PAINT REQUIREMENTS FOR THE STEEL TANK.
- STERILIZE TANK IN ACCORDANCE WITH AWWA C652-92 AND PROJECT SPECIFICATIONS
- LADDERS SHALL HAVE SWING-OUT REST SEATS AT 30'-0" MAXIMUM SPACING
- FOR TANKS LOCATED IN REGIONS WHERE FREEZING CONDITIONS MAY OCCUR, CONSIDERATION SHALL BE MADE TO ROUTE OVERFLOW PIPE INSIDE ACCESS TUBE AND OMIT INSIDE TANK LADDER.

6' CHAIN LINK FENCE w/  
3 STRANDS OF BARBED WIRE



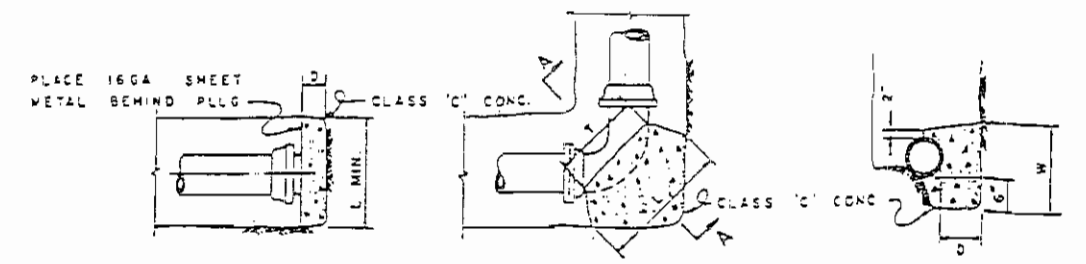


ROCK CUT



EARTH CUT

PIPE BEDDING REQUIREMENTS



PLUGS  
PLAN VIEW

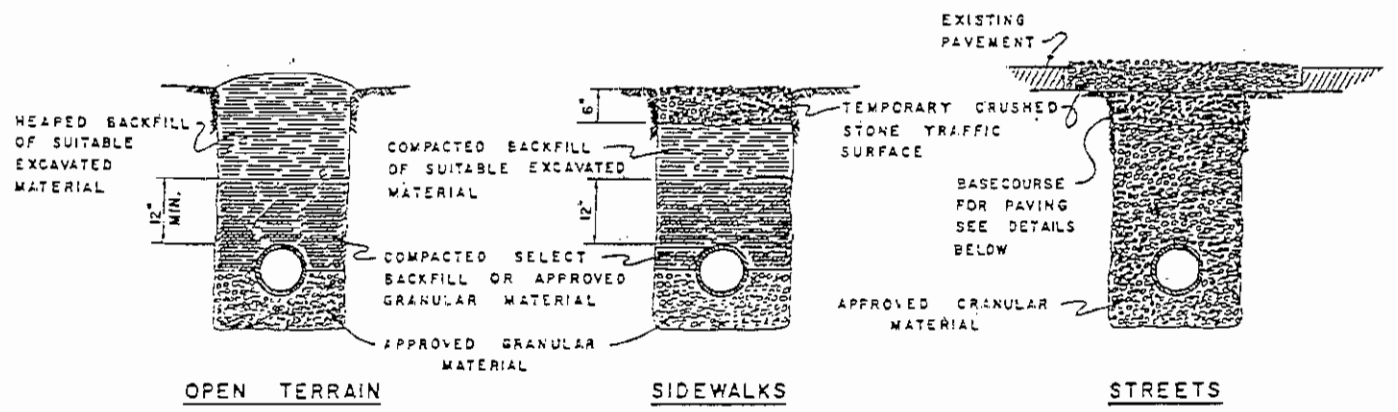
BENDS  
PLAN VIEW

SECTION A-A

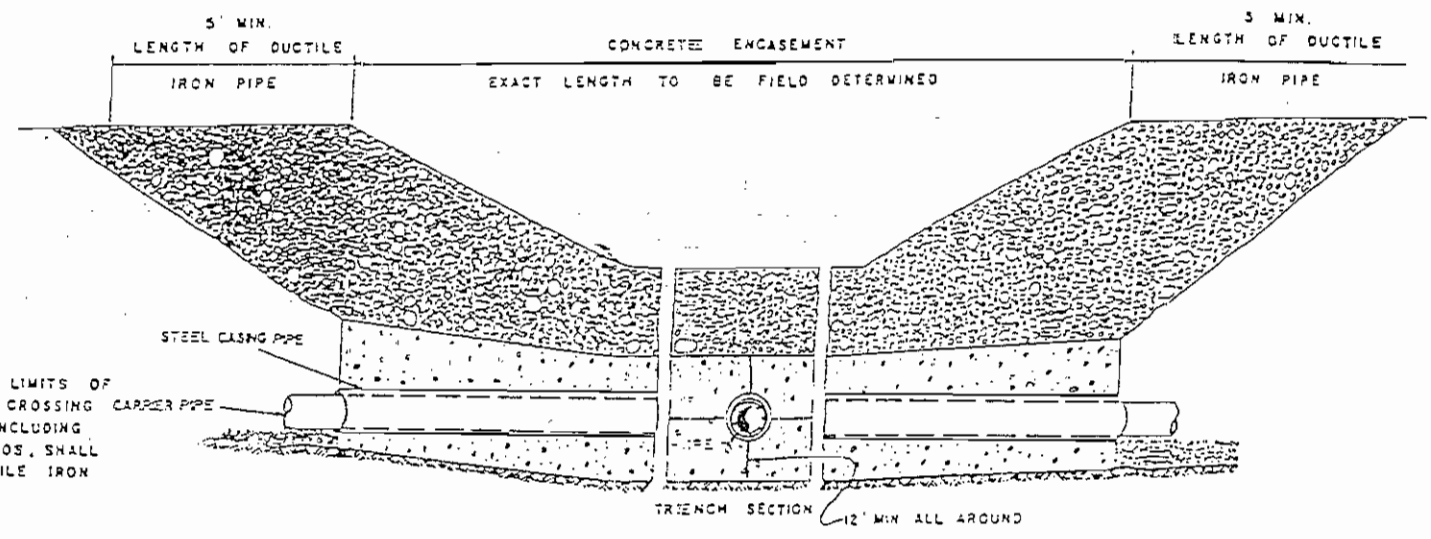
SIZE DIA.	PLUGS								45° BENDS								90° BENDS															
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D	6	8	6	8	10	12	14	18	6	8	6	8	8	8	10	8	10	12	12	16	20	20	6	8	10	12	12	16	20	20		
L	20	22	24	24	32	36	40	48	18	20	22	24	34	40	45	52	24	27	30	34	48	51	54	70	16	18	20	22	36	40	44	50
T									16	18	18	18	26	33	37	46	16	18	20	22	36	40	44	50								
W	20	22	24	24	32	36	40	48	12	14	16	16	22	25	28	32	12	16	20	24	28	34	40	44								

DIMENSIONS GIVEN IN INCHES

THRUST BLOCKS

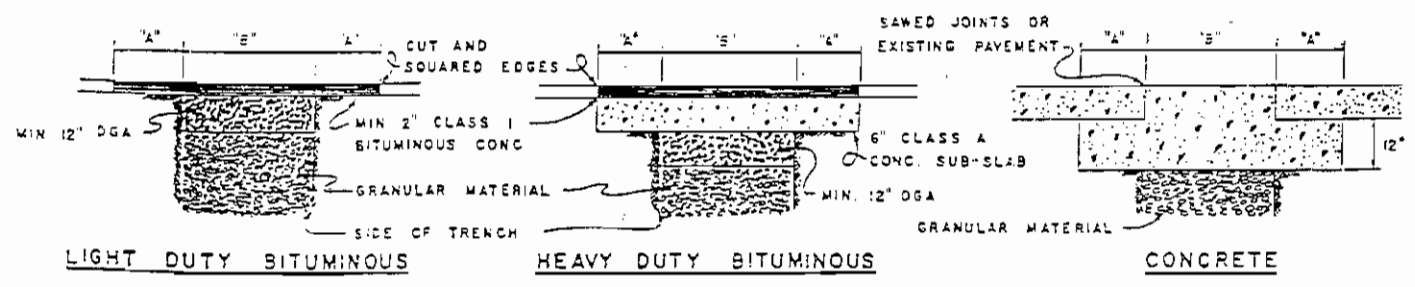


BACKFILLING



STREAM CROSSING DETAIL

NO SCALE



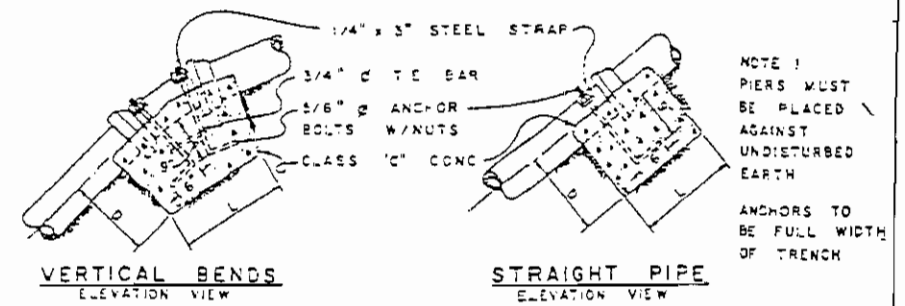
PAVEMENT RESTORATION

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

MAX. PAY WIDTH SCHEDULE

PIPE SIZE	4"	6"	WIDTH OF REPLACEMENT
4" THRU 12"	12"	30"	4'-6"
14" THRU 18"	12"	36"	5'-0"
20" THRU 24"	12"	42"	5'-6"
26" THRU 36"	12"	54"	6'-6"

PAY SCHEDULE



VERTICAL BEND & STRAIGHT PIPE

SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	15"	15"	18"	18"	21"	21"	24"	24"
L	24"	24"	30"	30"	36"	36"	36"	42"

ANCHOR BLOCKS

Warner A. Broughman III  
and Associates  
LEXINGTON KENTUCKY

Concept WAB  
Drawn CR 5/1/77  
Checked  
File

U. S. 60 Water District  
BAGDAD, KENTUCKY

WATER SYSTEM DETAILS

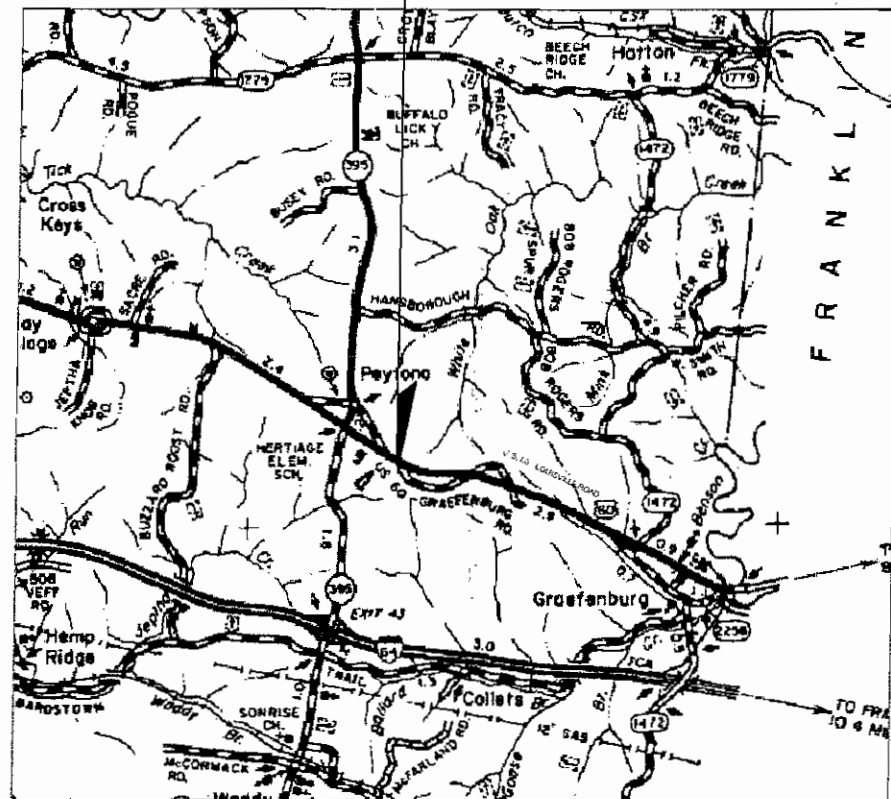
Sheet No.  
**W-1**

INDEX OF SHEETS	
SHEET	DESCRIPTION
COVER	TITLE, INDEX, & VICINITY MAP
1	PIPELINE LOCATION
W-1	DETAILS
W-2	DETAILS

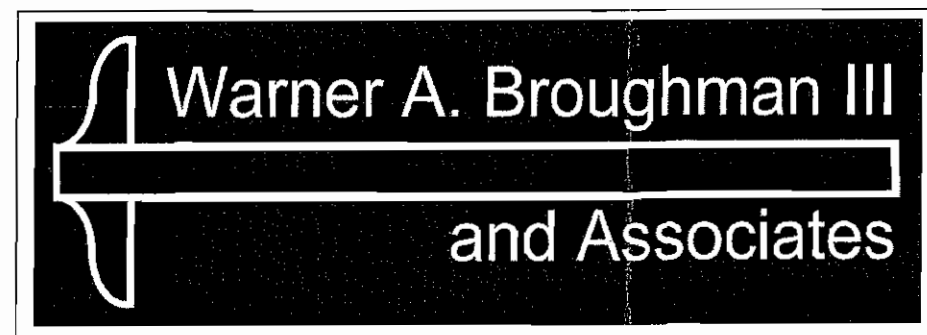
# U.S. 60 WATER DISTRICT

PIPELINE & APPURTENANCES  
JULY 2013

Site Location

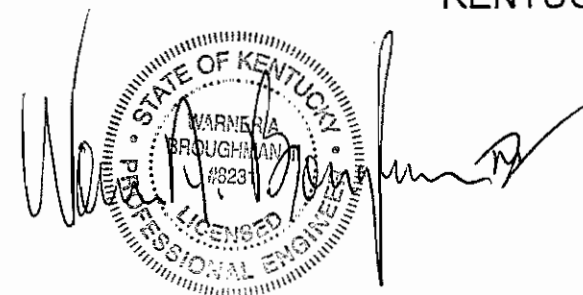


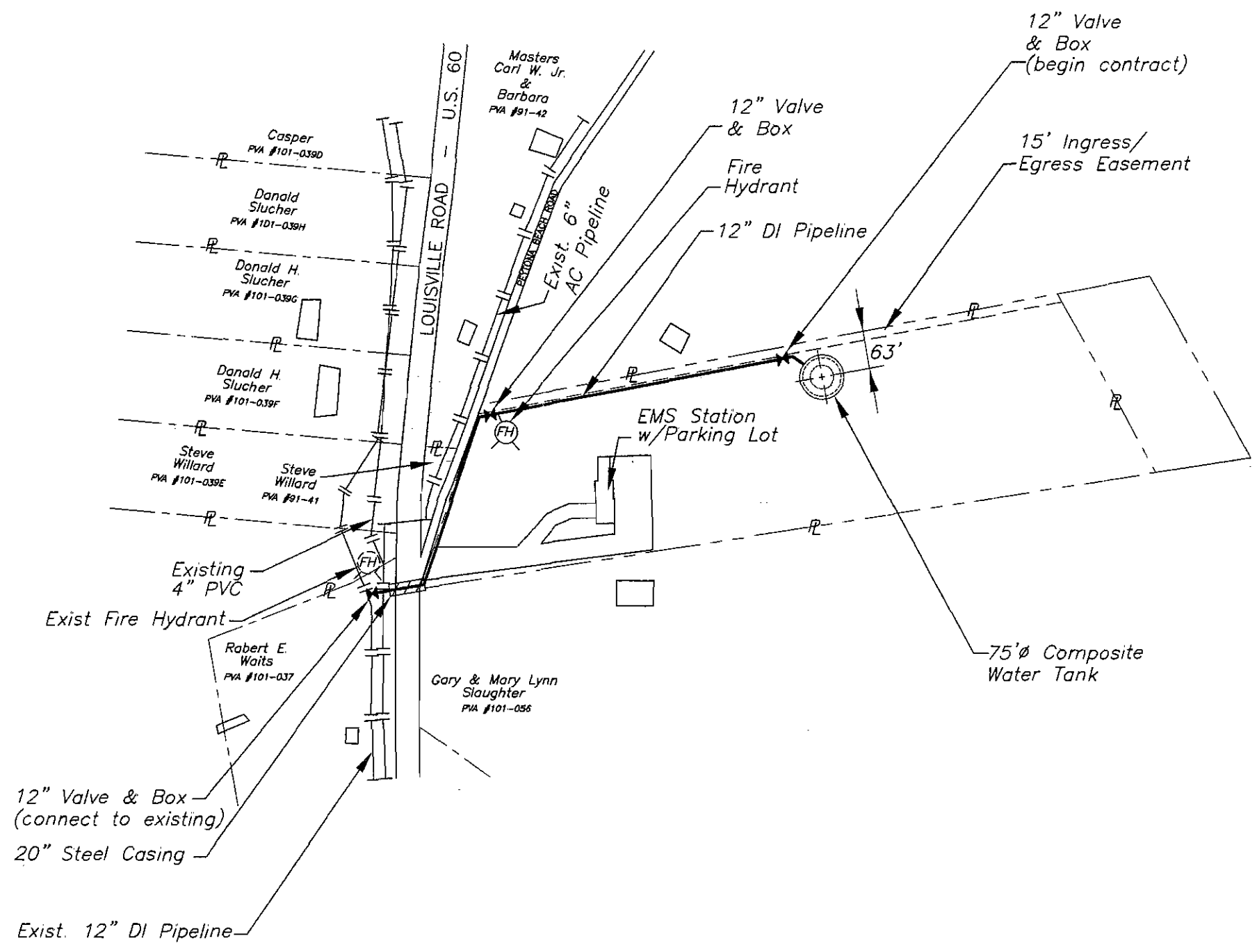
VICINITY MAP



LEXINGTON

KENTUCKY

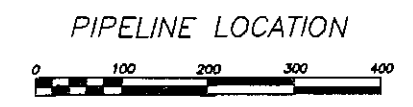




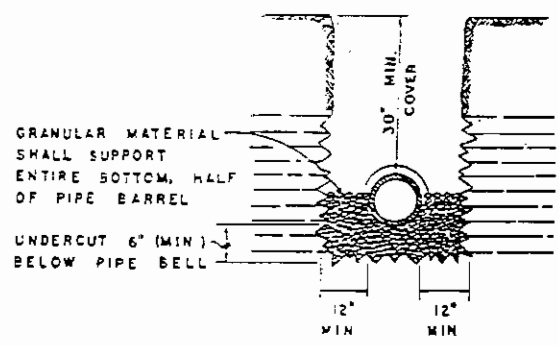
Warner A. Broughman III  
and Associates

Concept WAB  
Drawn BJC  
Checked \_\_\_\_\_  
File 05-12

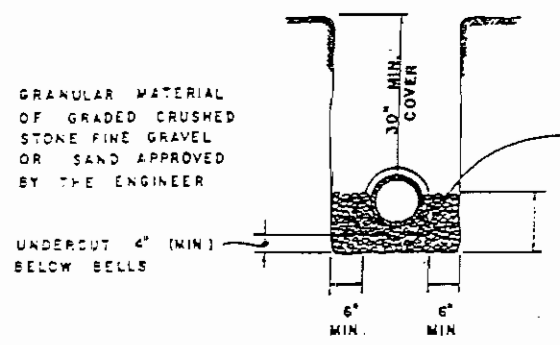
**US 60 WATER DISTRICT**  
Old U.S. 60 Tank Location Plan





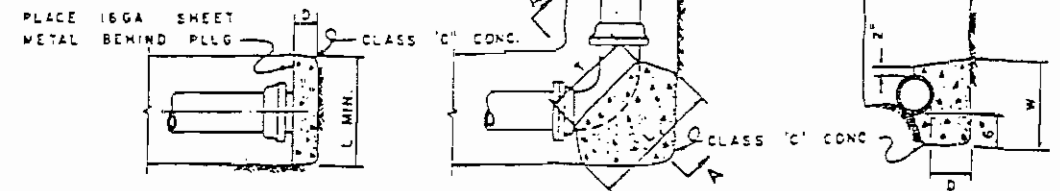


ROCK CUT



EARTH CUT

**PIPE BEDDING REQUIREMENTS**



PLUGS  
PLAN VIEW

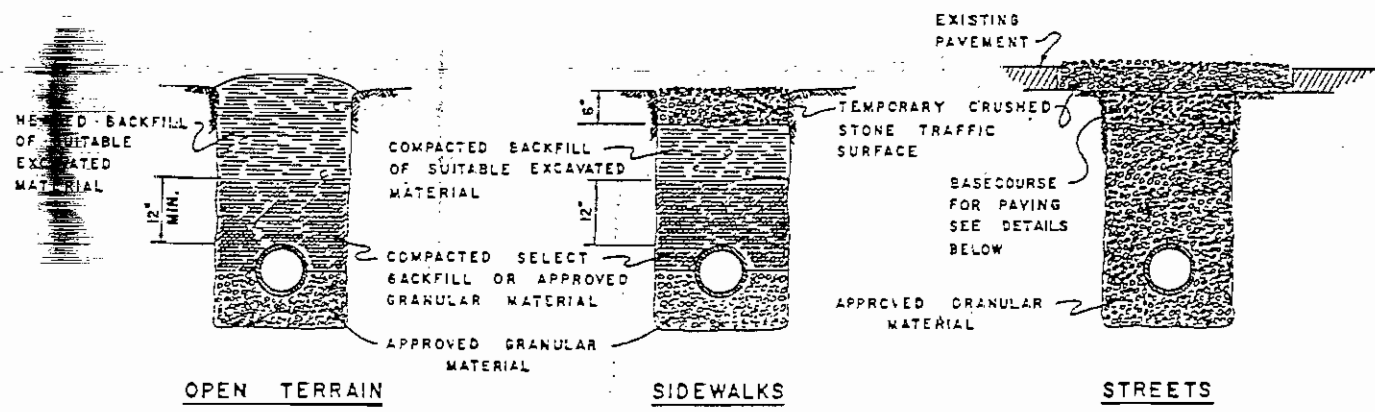
BENDS  
PLAN VIEW

SECTION A-A

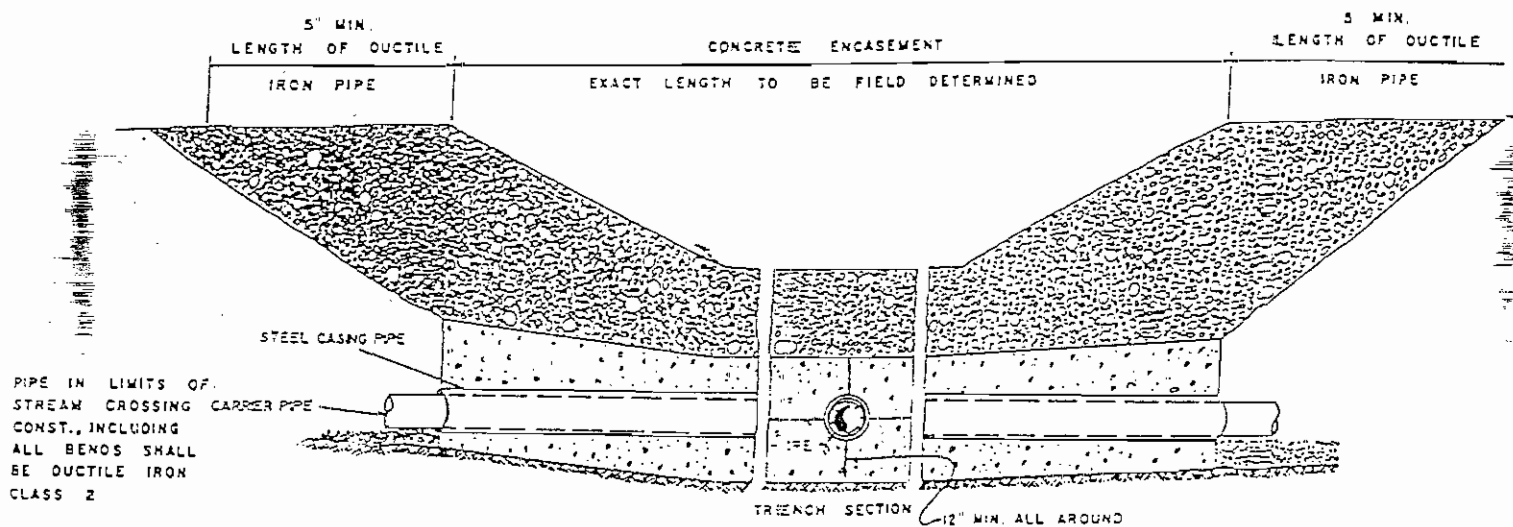
PIPE SIZE	PLUGS								45° BENDS								90° BENDS															
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D	6	6	6	6	10	12	14	18	6	6	6	6	6	8	8	10	8	10	12	12	16	20	20	6	6	6	6	10	12	14	18	
L	20	22	24	24	32	36	40	48	18	20	22	24	34	40	45	52	24	27	30	34	48	51	54	70	16	16	18	18	28	33	37	46
T			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

DIMENSIONS GIVEN IN INCHES

**THRUST BLOCKS**

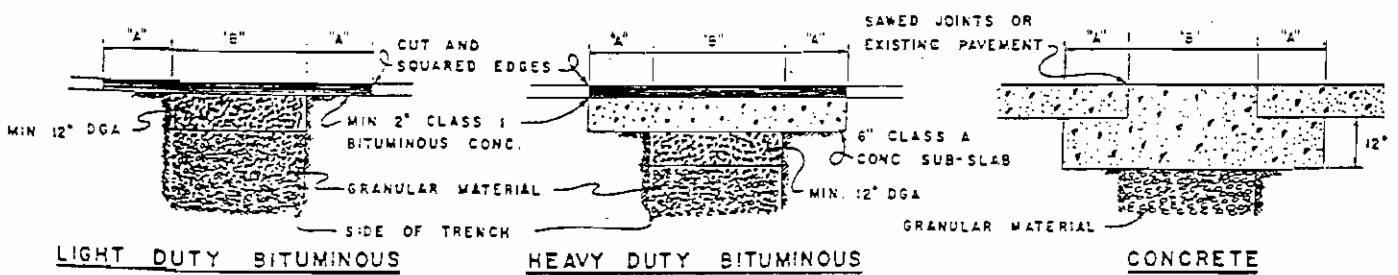


**BACKFILLING**



**STREAM CROSSING DETAIL**

NO SCALE

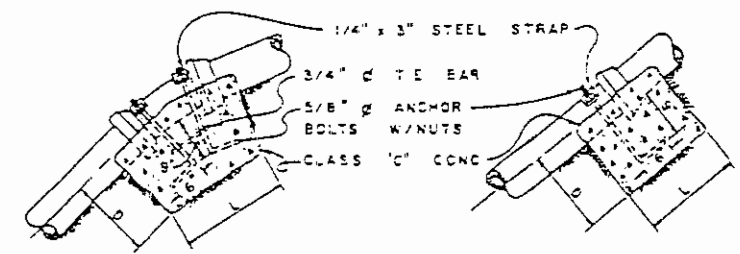


**PAVEMENT RESTORATION**

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

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

**PAY SCHEDULE**



NOTE: PIERS MUST BE PLACED AGAINST UNDISTURBED EARTH

ANCHORS TO BE FULL WIDTH OF TRENCH

SIZE	6"	8"	10"	12"	16"	18"	20"	24"
O	15"	15"	18"	18"	21"	21"	24"	24"
L	24"	24"	30"	30"	36"	36"	42"	42"

**ANCHOR BLOCKS**

Warner A. Broughman III  
and Associates  
LEXINGTON KENTUCKY

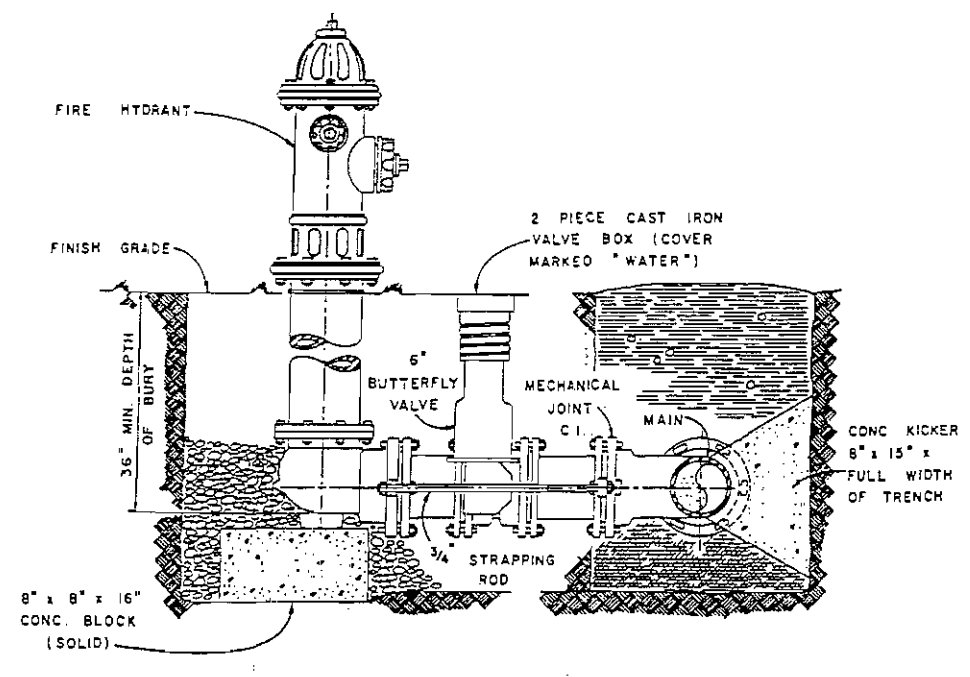
Concept WAB  
Drawn CR 5/5/77  
Checked  
File

**U. S. 60 Water District**  
BAGDAD, KENTUCKY

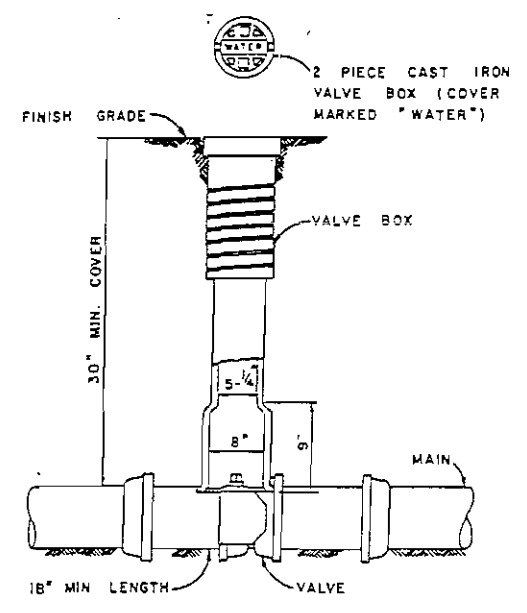
WATER SYSTEM DETAILS

Sheet No  
**W-1**

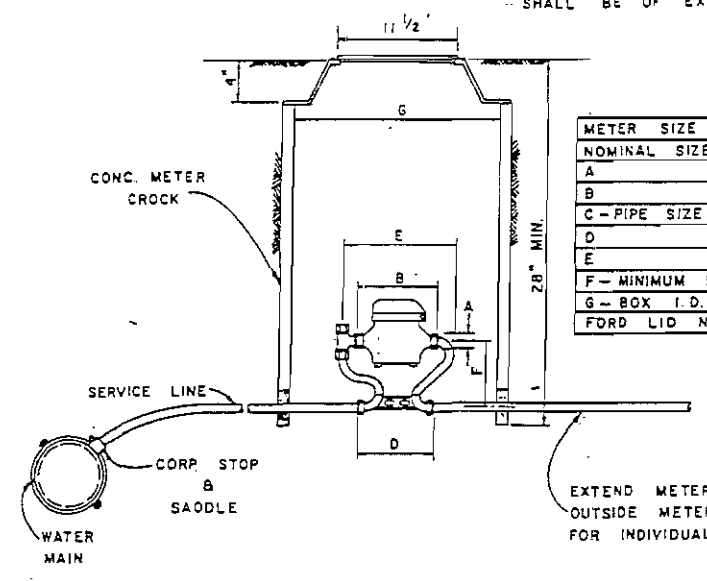
COVER SHALL BE TYPE C CAST IRON SINGLE LID COVER MANUFACTURED BY THE FORD METER BOX CO., WABASH, IND. - COVERS IN AREAS SUBJECT TO VEHICULAR TRAFFIC SHALL BE OF EXTRA HEAVY CONSTRUCTION.



**FIRE HYDRANT INSTALLATION**  
NO SCALE



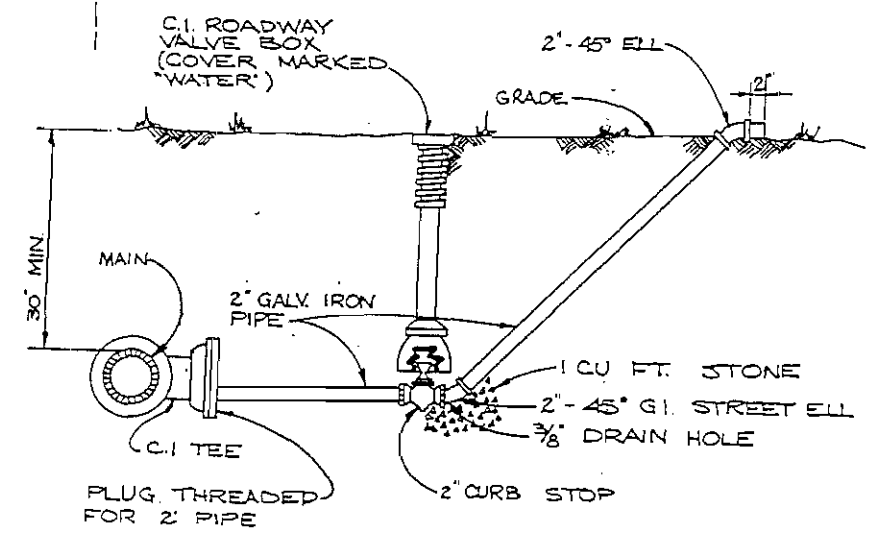
**VALVE INSTALLATION**  
NO SCALE



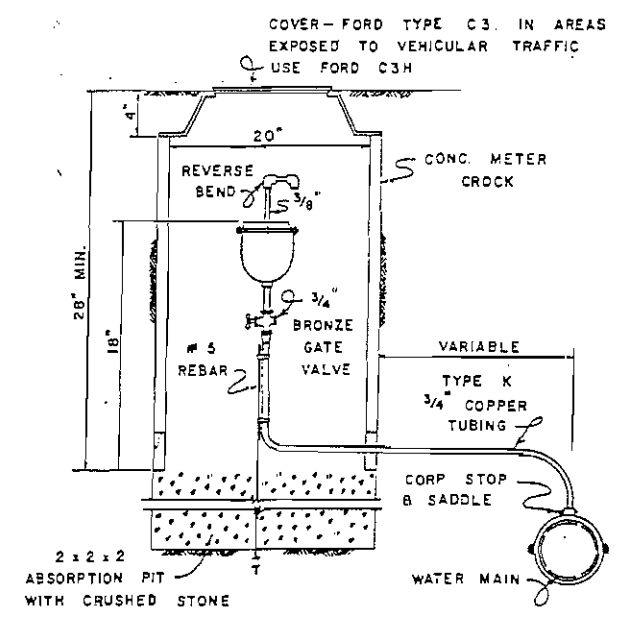
METER SIZE	3/4"	1"	1 1/4"	1 1/2"
NOMINAL SIZE OF I.P. THREAD METER SPUD	3/4"	1"	1 1/4"	1 1/2"
A	1-1/16"	1-5/16"	1-5/16"	1-5/8"
B	7-1/8"	7-1/8"	9-3/8"	11-1/8"
C - PIPE SIZE INLET AND OUTLET	3/4"	3/4"	3/4"	1"
D	9-1/2"	9-1/2"	11"	12-3/4"
E	12"	12"	14-1/4"	17-1/4"
F - MINIMUM HEIGHT	7"	7"	8"	10"
G - BOX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

\* REQUIRES FORD NO 2 EXTENSION RING

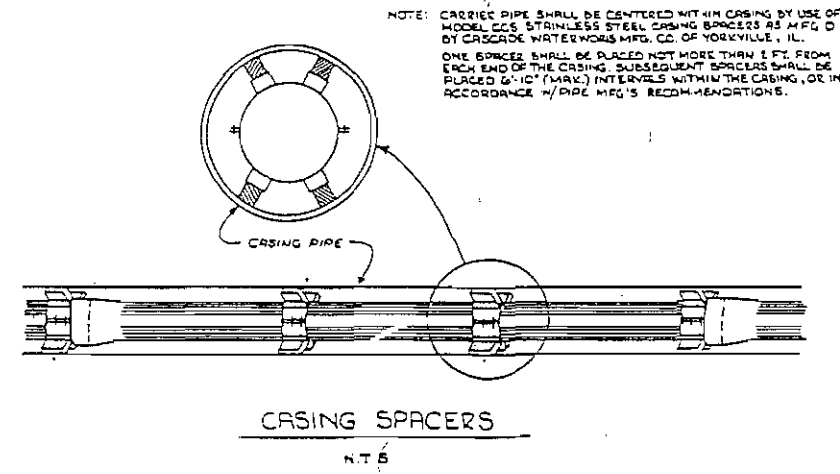
**TYPICAL METER SETTING**  
NO SCALE



**BLOWOFF INSTALLATION**  
NO SCALE



**AIR RELEASE VALVE**  
NO SCALE



**CASING SPACERS**  
N.T.S.



CL

**Steven L. Beshear**  
Governor

**KENTUCKY INFRASTRUCTURE AUTHORITY**

1024 Capital Center Drive, Suite 340  
Frankfort, Kentucky 40601  
Phone (502) 573-0260  
Fax (502) 573-0157  
<http://kia.ky.gov>

**John E. Covington III**  
Executive Director

September 6, 2013

Mr. Bill Eggen, Chairman  
US 60 Water District  
PO Box 97  
Bagdad, KY 40003

**KENTUCKY INFRASTRUCTURE AUTHORITY  
INFRASTRUCTURE REVOLVING LOAN FUND  
CONDITIONAL COMMITMENT LETTER (B14-003)**

Dear Mr. Eggen:

The Kentucky Infrastructure Authority ("the Authority") commends your efforts to improve public service facilities in your community. On September 5, 2013, the Authority approved your loan for the Peytona Tank Project subject to the conditions stated below. The total cost of the project shall not exceed \$1,605,810 of which the Authority loan shall provide \$1,300,000 of the funding. Other anticipated funding for the project is reflected in Attachment A. The final loan amount will be equal to the Authority's portion of estimated project cost applied to the actual project cost. Attachment A incorporated herein by reference fully describes the project.

An Assistance Agreement will be executed between the Authority and the US 60 Water District upon satisfactory performance of the conditions set forth in this letter. A period of twelve months from the date of this letter (9/6/2014) will be allowed for you to meet the conditions set forth in this letter and enter into an Assistance Agreement. A one-time extension of up to six months may be granted for applicants that experience extenuating circumstances. Funds will be available for disbursement only after execution of the Assistance Agreement.

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

1. The Authority project loan shall not exceed \$1,300,000.
2. The loan shall bear interest at the rate of 1.75% per annum commencing with the first draw of funds.

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

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

1. Upon completion of final design of the facilities in the attached project description, favorable approval shall be obtained of such design by all appropriate parties as required by Kentucky statute or administrative regulation.
2. Applicant must provide certification from their legal counsel stating that they have prepared construction specifications in accordance with all applicable state or federal wage rate laws, and that the procurement

procedures, including those for construction, land, equipment and professional services that are a part of the project, are in compliance with applicable federal, state and local procurement laws.

3. Documentation of final funding commitments from all parties other than the Authority as reflected in the Attachment A description shall be provided prior to preparation of the Assistance Agreement and disbursement of the loan monies. Rejections of any anticipated project funding or any new sources of funding not reflected in Attachment A shall be immediately reported and may cause this loan to be subject to further consideration.
4. Upon receipt of construction bids a tabulation of such bids and engineer's recommendations on compliance with bid specifications and recommendation for award, shall be forwarded to the Authority for final approval and sizing of this loan and the project.
5. Based on the final "as bid" project budget, the community must provide satisfactory proof, based on then existing conditions, that the revenue projections in the attached descriptions are still obtainable and that the projections of operating expenses have not materially changed. The "as bid" project budget shall be reviewed and approved by your consultant engineer
6. Any required adjustment in utility service rates shall be adopted by ordinance, municipal order or resolution by the appropriate governing body of the Borrower. Public hearings as required by law shall be held prior to the adoption of the service rate ordinance, order, or resolution. Any required approvals by the Kentucky Public Service Commission shall be obtained.
7. All easements or purchases of land shall be completed prior to commencement of construction. Certification of all land or easement acquisitions shall be provided to the Authority.
8. The loan must undergo review by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the state's execution of the Assistance Agreement. The committee meets monthly on the third Tuesday. At this time we know of no further submission required for their review; however, they may request information as needed.

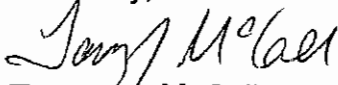
Mr. Bill Eggen  
September 6, 2013  
Page 4

9. Documentation of Clearinghouse Endorsement and Clearinghouse Comments.
10. The Borrower must complete and return to the Authority the attached "Authorization For Electronic Deposit of Vendor Payment" Form.
11. Implement the Kentucky Uniform System of Accounting (KUSoA), or an alternative approved by the Authority and assure that rates and charges for services are based upon the cost of providing such service.
12. Final Design Plans in an AutoCAD Drawing File Format (DWG), referenced to the appropriate (North, South or Single) Kentucky State Plane Coordinate System (NAD83-Survey Feet) on a Compact Disc (CD). If there is a significant deviation from the Final Design Plan during construction, As-built plans shall also be provided to the Authority in the same format.

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

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

Sincerely,

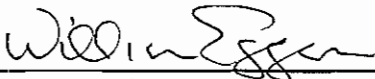


Tammy J. McCall  
Financial Analyst

Attachments

cc: Warner Broughman, Broughman & Associates  
Dirk Bedarff, Peck, Shaffer & Williams LLP  
State and Local Debt Office, DLG  
Borrower File - US 60 Water District - B14-003

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



Accepted

11-22-13

Date

**AUTHORIZATION FOR ELECTRONIC DEPOSIT  
OF BORROWER PAYMENT  
KENTUCKY INFRASTRUCTURE AUTHORITY  
(FUND B14-003)**

**Borrower Information:**

Name: US 100 Water District  
Address: 4596 Bagdad Rd.  
City: Bagdad State: KY Zip: 40003  
Federal I.D. # 161-06663648  
Contact Name: David Hedges Telephone: 747-8942  
Email: \_\_\_\_\_

**Financial Institution Information:**

Bank Name: Citizens Union Bank  
Branch: Main Phone No: \_\_\_\_\_  
City: Shelbyville State: KY Zip: 40065  
Transit / ABA No.: 083901621  
Account Name: US 100 - Construction Ext.  
Account Number: B-359-3

I, the undersigned, authorize payments directly to the account indicated above and to correct any errors which may occur from the transactions. I also authorize the Financial Institution to post these transactions to that account.

Signature:  Date: 11-26-13  
Name Printed: David Hedges Job Title: General Manager

Please return completed form to: **Kentucky Infrastructure Authority**  
1024 Capital Center Drive, Suite 340  
Frankfort, KY 40601  
phone: 502-573-0260  
fax: 502-573-0157

**ATTACHMENT A**

**US 60 Water District  
B14-003**



**ATTACHMENT A**

**US 60 Water District  
B14-003**

<b>EXECUTIVE SUMMARY</b>		Reviewer	Brandi Armstrong	
<b>KENTUCKY INFRASTRUCTURE AUTHORITY</b>		Date	September 5, 2013	
<b>FUND B, INFRASTRUCTURE</b>		KIA Loan Number	B14-003	
<b>REVOLVING LOAN FUND</b>		WRIS Number	WX21211033	
<b>BORROWER</b>	US 60 WATER DISTRICT SHELBY COUNTY			
<b>BRIEF DESCRIPTION</b>				
This project includes construction of a new 750,000 gallon elevated water tower. The project will increase storage capacity from less than one day of water demand to approximately two days of demand.				
<b>PROJECT FINANCING</b>		<b>PROJECT BUDGET</b>		
Fund B Loan	\$1,300,000	RD Fee %	Actual %	
Water District Funds	305,810	Administrative Expenses		\$6,500
		Legal Expenses		5,000
		Planning		4,330
		Eng - Design	8.9%	6.7%
		Eng - Constr / Insp	5.6%	6.9%
		Construction		1,400,000
<b>TOTAL</b>	<b>\$1,605,810</b>	<b>TOTAL</b>		<b>\$1,605,810</b>
<b>REPAYMENT</b>	Rate	1.75%	Est. Annual Payment	\$79,918
	Term	20 Years	1st Payment	6 Mo. after first draw
<b>PROFESSIONAL SERVICES</b>	Engineer	Broughman & Associates		
	Bond Counsel	Peck, Shaffer, & Williams		
<b>PROJECT SCHEDULE</b>	Bid Opening	Oct-13		
	Construction Start	Dec-13		
	Construction Stop	Jul-14		
<b>DEBT PER CUSTOMER</b>	Existing	\$704		
	Proposed	\$1,204		
<b>OTHER DEBT</b>	See Attached			
<b>OTHER STATE-FUNDED PROJECTS LAST 5 YRS</b>	See Attached			
<b>RESIDENTIAL RATES</b>		<u>Users</u>	<u>Avg. Bill</u>	
	Current	2,370	\$33.35 (for 4,000 gallons)	
	Additional	0	\$33.35 (for 4,000 gallons)	
<b>REGIONAL COORDINATION</b>	This project is consistent with regional planning recommendations.			
<b>CASHFLOW</b>	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2010	350,279	174,274	176,005	2.0
Audited 2011	318,120	199,243	118,877	1.6
Audited 2012	366,386	156,671	209,715	2.3
Projected 2013	358,758	154,851	203,907	2.3
Projected 2014	350,718	137,406	213,312	2.6
Projected 2015	404,586	198,601	205,985	2.0
Projected 2016	396,262	199,144	197,118	2.0
Projected 2017	457,746	199,696	258,050	2.3

Reviewer: Jeff Abshire  
Date: September 5, 2013  
Loan Number: B14-003

**KENTUCKY INFRASTRUCTURE AUTHORITY  
INFRASTRUCTURE REVOLVING LOAN FUND (FUND "B")  
U.S. 60 WATER DISTRICT, SHELBY COUNTY  
PROJECT REVIEW  
WX21211033**

**I. PROJECT DESCRIPTION**

The U.S. 60 Water District ("District") is requesting a Fund "B" loan in the amount of \$1,300,000 for the Peytona Tank Project. The project will construct a 750,000 gallon elevated water tower to provide additional storage capacity. The District currently uses approximately 526,000 gallons of water per day, with current storage capacity of 360,000 gallons (one 100,000 elevated tank and three standpipes). More than half of the total storage is reserved in standpipes that cannot be utilized to their full extent. The proposed tank will replace two fifty year old tanks that have reached the end of their useful life and will be decommissioned upon completion of the project. The proposed tank will increase the District's storage capacity to 960,000 gallons, a nearly two day supply.

The District serves rural portions of Shelby, Franklin and Spencer Counties and is regulated by the Public Service Commission. The District purchases approximately 170 million gallons of water per year from the Frankfort Plant Board.

**II. PROJECT BUDGET**

	<u>Total</u>
Administrative Expenses	\$ 6,500
Legal Expenses	5,000
Planning	4,330
Engineering Fees - Design	93,744
Engineering Fees - Const / Inspection	96,236
Construction	<u>1,400,000</u>
<b>Total</b>	<b>\$ 1,605,810</b>

**III. PROJECT FUNDING**

	<u>Amount</u>	<u>%</u>
Fund B Loan	\$ 1,300,000	81%
Water District Funds	<u>305,810</u>	<u>19%</u>
<b>Total</b>	<b>\$ 1,605,810</b>	<b>100%</b>

#### IV. KIA DEBT SERVICE

Construction Loan	\$ 1,300,000
Interest Rate	1.75%
Loan Term (Years)	20
Estimated Annual Debt Service	\$ 77,318
Administrative Fee (0.20%)	2,600
<b>Total Estimated Annual Debt Service</b>	<b>\$ 79,918</b>

#### V. PROJECT SCHEDULE

Bid Opening	October 2013
Construction Start	December 2013
Construction Stop	July 2014

#### VI. RATE STRUCTURE

##### A. Customers

Customers	Current
Residential	2,370
Commercial	0
Industrial	0
Total	2,370

##### B. Rates

	Current	Prior
Date of Last Rate Increase	04/01/13	04/01/12
Minimum (1,000 gallons)	\$13.49	\$13.37
Next 2,000 (per 000)	7.04	6.92
Next 2,000 (per 000)	5.78	5.66
Over 5,000 Gallons (per 000)	5.17	5.05
Cost for 4,000 gallons	\$33.35	\$32.87
Increase %	1.5%	
Affordability Index (Rate/MHI)	0.7%	0.7%

#### VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2007-2011, the County's population was 41,671 with a Median Household Income (MHI) of \$56,417. The median household income for the Commonwealth is \$42,248. The project will qualify for a 1.75% interest rate because the utility is a regional service provider.

## **VIII. FINANCIAL ANALYSIS (See Exhibit 1)**

Financial information was obtained from the audited financial statements for the years ended December 31, 2010 through 2012.

### **HISTORY**

Revenues increased 5% from \$1,028,480 in 2010 to \$1,080,925 in 2012. Customer growth was 1% during the period with the balance of the increase being due to volume fluctuations and rate adjustments that resulted from purchased water cost increases. Purchased water expense increased 2%. Unit cost increases of about 11% were offset by a decrease in volume purchased. Operating expenses increased 4% from 2010 to 2012. The debt coverage ratio was 2.0, 1.6 and 2.3, respectively, for 2010 through 2012.

The balance sheet reflects a current ratio of 22.6 and a debt to equity ratio of 0.3. The collection period was forty days and the number of months of operating expenses in unrestricted cash was twenty-six.

### **PROJECTIONS**

Projections are based on the following assumptions:

- 1) Revenues will increase annually 0.5% for customer growth
- 2) Rates will be adjusted every other year for inflation beginning in 2015. If rates are not adjusted the debt coverage ratio will still remain above 1.0.
- 3) Purchased water cost will increase for volume growth. Any unit costs increases will be immediately incorporated into the rate structure.
- 4) Operating expenses will increase 3% per year for inflation and volume.
- 5) Debt service coverage is 2.0 in 2015 when principal and interest repayments begin.

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

### **REPLACEMENT RESERVE**

The annual replacement cost is \$3,300 and will be funded for ten years, or until the balance reaches \$33,000, and will be maintained for the life of the loan.

**IX. DEBT OBLIGATIONS**

	<u>Outstanding</u>	<u>Maturity</u>
Bond Payable Issued 1986	\$ 257,000	2025
Bond Payable Issued 1992	233,800	2032
Bond Payable Issued 1998	386,700	2038
Bond Payable Issued 2008A	140,300	2047
Bond Payable Issued 2008B	599,000	2047
KIA (C91-15)	52,500	2014
<b>Total</b>	<b>\$ 1,669,300</b>	

**X. OTHER STATE OR FEDERAL FUNDING IN PAST FIVE YEARS**

<u>Project Title</u>	<u>Funding Source</u>	<u>Amount</u>	<u>Type</u>
US 60 Upgrade	RD	764,000	Loan / Grant

**XI. CONTACTS**

<b>Legal Applicant</b>	
Name	US 60 Water District
Address	PO Box 97 Bagdad, KY 40003
County	Shelby
Authorized Official	Bill Eggen (Chairman)
Phone	(502) 747-8942
Email	ekueggen@aol.com

<b>Project Contact – Applicant / Administrator / Engineer</b>	
Name	Warner Broughman
Representing	Broughman & Associates
Address	3161 Custer Dr Suite 6 Lexington, KY 40517
Phone	(859) 271-1778
Email	wabiii@prodigy.net

**XII. RECOMMENDATIONS**

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

US 60 WATER DISTRICT  
BALANCE SHEETS (DECEMBER YEAR END)

ASSETS	Audited	Audited	Audited	Upon
	2010	2011	2012	Completion 2014
<b>Current Assets</b>				
Cash	1 308,164	1,402,495	1,589,951	1 771 300
Accounts Receivable	123 837	112,197	117 745	118 900
Interest Receivable	1,723	535	528	500
Prepaid	4,492	4,898	6,017	6,000
<b>Total Current Assets</b>	<b>1 438,216</b>	<b>1 520 123</b>	<b>1 714,241</b>	<b>1 888 700</b>
<b>Restricted Assets</b>				
Bond and Interest Sinking Account	178,837	190 010	192 037	200 000
Depreciation Account	225,158	234 677	243,375	275,000
Customer Deposits	114,664	115,733	117,019	122,500
Construction Accounts	113 942	20,414	8,290	8 290
Interest Receivable	914	927	663	0
<b>Total Restricted Assets</b>	<b>633,513</b>	<b>561,761</b>	<b>561,384</b>	<b>605 790</b>
<b>Utility Plant</b>				
Land, System, Building and Equipment	9,100,112	9 434 478	9 414 467	11,020 277
Less Accumulated Depreciation ( )	(2,885,343)	(3,120,602)	(3,356,833)	(3,869,333)
<b>Net Fixed Assets</b>	<b>6 214 769</b>	<b>6,313,876</b>	<b>6 057 634</b>	<b>7 150 944</b>
<b>Other Assets</b>				
Bond Issuance Costs	15,286	10,378	5,470	0
<b>Total Other Assets</b>	<b>15,286</b>	<b>10,378</b>	<b>5 470</b>	<b>0</b>
<b>Total Assets</b>	<b>8,301,784</b>	<b>8,406,138</b>	<b>8,338,729</b>	<b>9,653,434</b>
<b>LIABILITIES</b>				
<b>Current Liabilities</b>				
Accounts Payable	65,988	87,419	72,118	77 500
Accounts Payable-Construction	0	36,589	0	0
Retainage Payable-Construction	0	5 946	0	0
Accrued Payroll Tax/Withholding	971	1 071	1 055	1 100
Utility and Sales Tax Payable	2,672	2,433	2,598	2,500
<b>Total Current Liabilities</b>	<b>89,631</b>	<b>133,456</b>	<b>75 771</b>	<b>81 100</b>
<b>Liabilities Payable - Restricted Assets</b>				
Notes and Bonds Payable	69 700	65 900	67 700	38,500
Lease Obligations	5,000	0	0	0
Accrued Interest Payable	38,456	37,851	36,976	33,000
<b>Total Liabilities Payable - Restricted Assets</b>	<b>113 156</b>	<b>103,751</b>	<b>104,676</b>	<b>71,500</b>
<b>Long Term Liabilities</b>				
Revenue Refunding Bonds	1,647,200	1 616,800	1 584 100	1 514,800
Notes Payable - KIA	87,500	52 500	17,500	0
Capital Lease Obligations	30,000	0	0	0
Customer Deposits Less Current Portion	114 664	115 733	117 019	122 500
Proposed KIA Loan	0	0	0	1,300,000
<b>Total Long Term Liabilities</b>	<b>1 879 364</b>	<b>1 785,033</b>	<b>1 718 619</b>	<b>2 937 300</b>
<b>Total Liabilities</b>	<b>2,082,151</b>	<b>2,022,242</b>	<b>1,899,066</b>	<b>3,089,900</b>
<b>Retained Earnings:</b>				
Invested in Capital Assets Net of Related Debt	4 390,655	4 589 054	4 393,804	4,297 644
Restricted	481 432	366 700	408 464	605,790
Unrestricted	1,347,546	1,428,142	1,637,395	1,660,100
<b>Total Retained Earnings</b>	<b>6 219,633</b>	<b>6 383 896</b>	<b>6 439,663</b>	<b>6,563,534</b>
<b>Total Liabilities and Equities</b>	<b>8,301,784</b>	<b>8,406,138</b>	<b>8,338,729</b>	<b>9,653,434</b>
<b>Balance Sheet Analysis</b>				
Current Ratio	16.0	11.4	22.6	23.4
Debt to Equity	0.3	0.3	0.3	0.5
Days Sales in Accounts Receivable	43.9	40.6	39.8	39.7
Months Operating Expenses in Unrestricted Cash	22.3	23.9	26.4	28.3

**EXHIBIT 1  
US 60 WATER DISTRICT  
CASH FLOW ANALYSIS (DECEMBER YEAR END)**

	Audited 2010	% Change	Audited 2011	% Change	Audited 2012	Projected 2013	Projected 2014	Projected 2015	Projected 2016	Projected 2017
<b>Operating Revenues</b>										
Water Revenues	990,253	-2%	975,228	7%	1,039,657	1,044,900	1,050,100	1,118,400	1,124,000	1,197,100
Other	38,227	-13%	33,307	24%	41,268	41,500	41,700	44,400	44,600	47,500
<b>Total Revenues</b>	<b>1,028,480</b>	<b>-2%</b>	<b>1,008,535</b>	<b>7%</b>	<b>1,080,925</b>	<b>1,086,400</b>	<b>1,091,800</b>	<b>1,162,800</b>	<b>1,168,600</b>	<b>1,244,600</b>
<b>Operating Expenses</b>										
Purchased Water	328,444	-2%	321,476	4%	334,228	335,900	337,600	339,300	341,000	342,700
Operating Expenses	373,927	2%	382,537	2%	388,717	400,400	412,400	424,800	437,500	450,600
Depreciation	230,789	2%	235,259	0%	236,231	236,200	276,300	276,300	276,300	276,300
Replacement Reserve	0		0		0	0	0	3,300	3,300	3,300
<b>Total Expenses</b>	<b>933,160</b>	<b>1%</b>	<b>939,272</b>	<b>2%</b>	<b>959,176</b>	<b>972,500</b>	<b>1,026,300</b>	<b>1,043,700</b>	<b>1,058,100</b>	<b>1,072,900</b>
<b>Net Operating Income</b>	<b>95,320</b>	<b>-27%</b>	<b>69,263</b>	<b>76%</b>	<b>121,749</b>	<b>113,900</b>	<b>65,500</b>	<b>119,100</b>	<b>110,500</b>	<b>171,700</b>
<b>Non-Operating Income and Expenses</b>										
Interest Income	24,170	-44%	13,598	-38%	8,406	8,658	8,918	9,186	9,462	9,746
<b>Total Non-Operating Income &amp; Expenses</b>	<b>24,170</b>	<b>-44%</b>	<b>13,598</b>	<b>-38%</b>	<b>8,406</b>	<b>8,658</b>	<b>8,918</b>	<b>9,186</b>	<b>9,462</b>	<b>9,746</b>
<b>Add Non-Cash Expenses</b>										
Depreciation	230,789	2%	235,259	0%	236,231	236,200	276,300	276,300	276,300	276,300
<b>Cash Available for Debt Service</b>	<b>350,279</b>	<b>-9%</b>	<b>318,120</b>	<b>15%</b>	<b>366,386</b>	<b>358,758</b>	<b>350,718</b>	<b>404,586</b>	<b>396,262</b>	<b>457,746</b>
<b>Debt Service (enter as positive #'s)</b>										
Existing Principal	76,400		104,200		65,900	67,700	54,100	38,500	41,400	44,500
Existing Interest	97,874		95,043		90,771	87,151	83,306	80,183	77,826	75,278
Proposed KIA Loan	0		0		0	0	0	79,918	79,918	79,918
<b>Total Debt Service</b>	<b>174,274</b>		<b>199,243</b>		<b>156,671</b>	<b>154,851</b>	<b>137,406</b>	<b>198,601</b>	<b>199,144</b>	<b>199,696</b>
<b>Income After Debt Service</b>	<b>176,005</b>		<b>118,877</b>		<b>209,715</b>	<b>203,907</b>	<b>213,312</b>	<b>205,985</b>	<b>197,118</b>	<b>258,050</b>
<b>Debt Coverage Ratio</b>	<b>2.0</b>		<b>1.6</b>		<b>2.3</b>	<b>2.3</b>	<b>2.6</b>	<b>2.0</b>	<b>2.0</b>	<b>2.3</b>

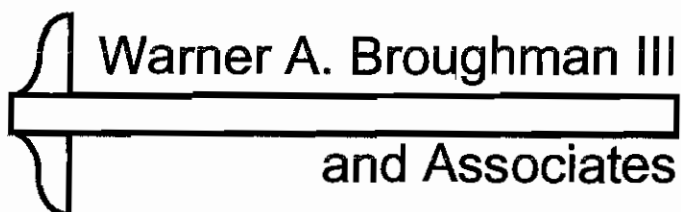


**U.S. 60  
WATER DISTRICT**

**WADDY, KENTUCKY**

**PEYTONA TANK**

**OCTOBER 2013**



**3161 Custer Drive, Suite 6  
Lexington, Kentucky 40517  
(859) 271-1778**

**PROJECT NO. 13-07**

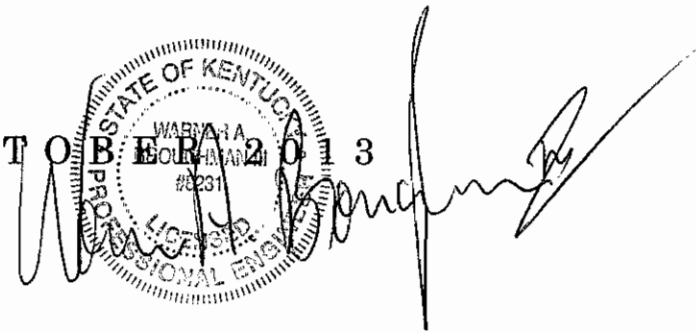
SPECIFICATIONS  
AND  
CONTRACT DOCUMENTS

for

PEYTONA TANK

U.S. 60 WATER COMPANY  
WADDY, KENTUCKY

OCTOBER 2013



The image shows a circular professional engineer seal for the State of Kentucky. The seal contains the text "STATE OF KENTUCKY" at the top, "WARNER A. BROUGHMAN III" in the center, and "LICENSED PROFESSIONAL ENGINEER" at the bottom. The license number "#8231" is also visible. A handwritten signature in black ink is written across the seal. The date "OCTOBER 2013" is printed in large, spaced-out letters across the middle of the seal.

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

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**U.S. 60 WATER COMPANY  
WADDY, KENTUCKY**

**COMMISSIONERS**

William Eggen, Chairman

Steve Miller, Secretary

Pat Hargadon, Treasurer

Hobert Hearn, Commissioner

John Roberts, Commissioner

**ATTORNEY**

Don Prather

**Manager**

Pete Hedges

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## ADVERTISEMENT FOR BIDS

U.S. 60 WATER DISTRICT  
P.O. Box 97  
Bagdad, KY 40003

Separate sealed BIDS for the construction of the

**CONTRACT 1. PEYTONA TANK, A 750,000 GALLON ELEVATED, COMPOSITE WATER STORAGE TANK TOGETHER WITH ALL APPURTENANCES AND**

**CONTRACT 2. PEYTONA TANK CONNECTION CONSISTING OF APPROXIMATELY 720 LINEAR FEET OF 12-INCH DUCTILE IRON PIPE, ONE HIGHWAY CROSSING, ONE ROAD CROSSING, AND ONE FIRE HYDRANT, TOGETHER WITH ALL APPURTENANCES.**

will be received by U.S. 60 WATER DISTRICT at the DISTRICT OFFICE, 4596 Bagdad Road, Bagdad, KY until 11 A.M., October 18, 2013 and then at said office publicly opened and read aloud.

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

**WARNER A. BROUGHMAN III & ASSOCIATES**  
**3161 CUSTER DRIVE, SUITE 6**  
**LEXINGTON, KENTUCKY 40517**  
e-mail: wabiii@prodigy.net

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

## INFORMATION FOR BIDDERS

BIDS will be received by **U.S. 60 WATER DISTRICT** (herein called the "OWNER"), at the **DISTRICT OFFICE**, 4596 Bagdad Road, Bagdad, KY and then at said office publicly opened and read aloud.

If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the **U.S. 60 Water District, P.O. Box 97, Bagdad, KY 40003**. Each sealed envelope containing a BID must be plainly marked on the outside as **BID FOR PEYTONA TANK** and the envelope should bear on the outside the name of the BIDDER, his address, his license number, if applicable, and the name of the project for which the BID is submitted. All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required.

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

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

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

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

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

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

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

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

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

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

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

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

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.



***WAB III - Information for Bidders***

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

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

## GENERAL CONDITIONS

- 1 Definitions
- 2 Additional Instructions and Detail Drawings
- 3 Schedules, Reports and Records
- 4 Drawings and Specifications
- 5 Shop Drawings
- 6 Materials, Services and Facilities
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- 29 Guaranty
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- 31 Taxes

### 1. DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.23 SUPPLEMENTAL GENERAL CONDITIONS—

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

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

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

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

## 2 ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

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

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

## 3 SCHEDULES, REPORTS AND RECORDS

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

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

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

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

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

## 4 DRAWINGS AND SPECIFICATIONS

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

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

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

## 5 SHOP DRAWINGS

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

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

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

## 6 MATERIALS, SERVICES AND FACILITIES

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

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

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

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

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

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

## 7. INSPECTION AND TESTING

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

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

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

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

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

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

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

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

## 8. SUBSTITUTIONS

8.1 Whenever a material, article or piece of equip-

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

## 9. PATENTS

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

## 10. SURVEYS, PERMITS, REGULATIONS

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

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

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

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

#### 11. PROTECTION OF WORK, PROPERTY AND PERSONS

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

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

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

#### 12. SUPERVISION BY CONTRACTOR

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

#### 13. CHANGES IN THE WORK

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

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

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

#### 14. CHANGES IN CONTRACT PRICE

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

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

#### 15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

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

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

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

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

15.4.1 To any preference, priority or allocation

order duly issued by the OWNER

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

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

## 16. CORRECTION OF WORK

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

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

## 17. SUBSURFACE CONDITIONS

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

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

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

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

## 18. SUSPENSION OF WORK, TERMINATION AND DELAY

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

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

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

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

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

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

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

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

### 19. PAYMENTS TO CONTRACTOR

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

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

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

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

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

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

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

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

20 ACCEPTANCE OF FINAL PAYMENT AS  
RELEASE

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

21 INSURANCE

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

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

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

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

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

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

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

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

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

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

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

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

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

22 CONTRACT SECURITY

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



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

#### 23. ASSIGNMENTS

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

#### 24. INDEMNIFICATION

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

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

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

#### 25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other con-

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

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

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

#### 26. SUBCONTRACTING

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

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

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

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

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

#### 27. ENGINEER'S AUTHORITY

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

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

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

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

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

#### 28. LAND AND RIGHTS-OF-WAY

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

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

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

#### 29. GUARANTY

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

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

#### 30. ARBITRATION

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

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

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

#### 31. TAXES

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

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# GENERAL SPECIFICATIONS

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

## 1. MATERIALS FOR WATER PIPELINES

### 1.1 DUCTILE IRON PIPE AND FITTINGS

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

#### 1.1.1 Markings

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

#### 1.1.2 Interior Lining

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

#### 1.1.3 Exterior Coating

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

#### 1.1.4 Fittings

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

## 1.2 PLASTIC PIPE AND FITTINGS

Plastic pipe and fittings shall meet the following standards:

### 1.2.1 Material

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

### 1.2.2 Dimensions

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

### 1.2.3 Pressure Rating

Pressure ratings of the pipe shall not be less than:

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### **1.2.2 Dimensions**

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

### **1.2.3 Pressure Rating**

Pressure ratings of the pipe shall not be less than:

200 psi @ 73.4 degrees F. (Class 200)

350 psi @ 73.4 degrees F. (Class 100)

### **1.2.4 Seal**

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

### **1.2.5 Joints**

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

### **1.2.6 Fittings**

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

## **1.3 COVER PIPE**

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

### **1.3.1 Highway Crossing**

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

**Cover Pipe Thickness for Highway Crossing:**

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

**1.3.2 Railroad Crossing**

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

**Cover Pipe Thickness for Railroad Crossing:**

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

**1.4 GRANULAR MATERIALS**

Granular materials shall be as follows:

**1.4.1 Fine Aggregate**

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

**1.4.2 Coarse Aggregate**

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

**1.5 CONCRETE**

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

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

## ***WAB III - General Specifications***

### **2. TESTING OF MATERIALS**

#### **2.1 GENERAL**

##### **2.1.1 Approval of Testing Agencies**

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

##### **2.1.2 Selection of Testing Agencies**

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

##### **2.1.3 Cost of Tests**

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

###### **2.1.3.1 Contractor**

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

###### **2.1.3.2 Owner**

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

##### **2.1.4 Prior Inspection and Test Reports**

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

### **2.2 DUCTILE IRON PIPE AND FITTINGS**

#### **2.2.1 Where less than 200 tons are required:**

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

#### **2.2.2 Where 200 or more tons are required:**

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

### **2.3 PLASTIC PIPE AND FITTINGS**

#### **2.3.1 Where less than 5,000 feet are required:**

Visual inspection at the site per ASTM or other designated specifications

**2.3.2 Where 5,000 or more feet are required:**

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

**2.4 COVER PIPE**

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

**3. EQUIPMENT**

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

**4. EXCAVATION**

**4.1 GENERAL**

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

**4.1.1 Construction Methods**

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

**4.1.1.1 Rock, Shale, Clay, Hardpan, Etc.**

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

**4.1.1.2 Breakage and Undercutting**

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



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### **4.2 CLASSIFICATIONS OF EXCAVATION**

#### **4.2.1 Earth Excavation**

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

#### **4.2.2 Solid Rock Excavation**

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

#### **4.2.3 Unclassified Excavation**

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

### **4.3 LINES AND GRADES**

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

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

### **4.4 CLEARING AND GRUBBING**

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

#### **4.4.1 Scope of Work**

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

#### **4.4.2 Timber**

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

#### **4.4.3 Grubbing: Required**

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

#### **4.4.4 Grubbing: Not Required**

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

### **4.5 TRENCH EXCAVATION**

#### **4.5.1 Depth**

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

#### **4.5.2 Earth**

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

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

##### **4.5.2.1 Rock**

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

#### **4.5.3 Width**

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

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

### **4.5.4 Excavated Material**

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

### **4.5.5 Opening**

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

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

## **4.6 BLASTING**

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

### **4.6.1 Material Storage**

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

### **4.6.2 Covering Shots**

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

### **4.6.3 Drilling**

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

## **4.7 SHORING AND BRACING**

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

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

#### **4.7.1 Adjacent Buildings**

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

#### **4.7.2 Material**

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

#### **4.7.3 Procedure**

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

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

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

### **4.8 DISPOSITION OF EXCAVATED MATERIAL**

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

### **4.9 REMOVAL OF WATER**

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

### **4.10 UNAUTHORIZED EXCAVATION**

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

## **5. PIPE INSTALLATION**

### **5.1 GENERAL**

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

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### **5.2 PIPE BEDDING**

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

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

#### **5.2.1 Paring Method**

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

#### **5.2.2 Undercutting Method**

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

#### **5.2.3 Yielding and Mucky Subgrades**

##### **5.2.3.1 Securing Pipe**

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

##### **5.2.3.2 Removing Subgrade**

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

### **5.3 LAYING PIPE**

#### **5.3.1 Depth**

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

#### **5.3.2 Bell Placement**

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

#### **5.3.3 Fittings**

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

#### **5.3.4 Pipe Inspection**

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

#### **5.3.5 Subgrade Irregularities**

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

#### **5.3.6 Pipe Interior**

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

#### **5.3.7 Backfilling**

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

### **5.4 JOINTING PIPE**

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

### **5.5 PLACING CONCRETE**

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

### **5.6 BORED OR JACKED CROSSINGS**

#### **5.6.1 Highway and Railroad**

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

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

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### **5.6.2 Driveways**

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

### **5.7 INSPECTION**

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

## **6. BACKFILLING**

### **6.1 GENERAL**

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

### **6.2 OPEN TERRAIN**

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

#### **6.2.1 Lower Portion of Trench**

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

#### **6.2.2 Upper Portion of Trench**

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

### **6.3 SIDEWALKS AND UNPAVED DRIVEWAYS**

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

#### **6.3.1 Lower Portion of Trench**

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

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approved mechanical methods. Upon approval of the ENGINEER, crushed stone, fine gravel, sand or dust may be used as backfill in lieu of compacted earth. Tamping or compaction, or materials used in lieu of same, is not a separate pay item.

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

**6.3.2 Middle Portion of Trench**

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

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

**6.3.3 Upper Portion of Trench**

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

**6.4 STREETS, ROADS AND PAVED DRIVEWAYS**

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

**6.4.1 Lower Portion of Trench**

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

**6.4.2 Upper Portion of Trench**

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



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**6.5 STREAMS & WETLANDS**

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

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

**6.6 SETTLEMENT OF TRENCHES**

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

**7. TESTING AND DISINFECTION**

**7.1 TESTING WATER MAINS**

**7.1.1 Hydrostatic Test**

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

**7.1.2 Leakage**

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

**ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE (GPH)**

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

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

### **7.1.3 Defective Pipes & Fittings**

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

### **7.1.4 Pipe Failure**

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

## **7.2 DISINFECTION OF WATER LINES**

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

### **7.2.1 Chlorination Test**

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

### **7.2.2 Bacteriological Test**

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

## **8. RESTORATION OF SURFACE**

### **8.1 OPEN TERRAIN**

#### **8.1.1 Seeding**

Unless otherwise specified or shown on the DRAWINGS, all graded areas shall be left smooth and thickly sown with a mixture of grasses as specified by the ENGINEER, at a rate of not less than one pound of seed per 1,000 square feet. Unless otherwise specified, the mixture shall consist of 60 percent Italian Rye Grass, 20 percent Kentucky Fescue #31 and 20 percent Kentucky Bluegrass by weight. When the final grading has been completed, the entire area to be seeded shall be fertilized with ammonium nitrate at the rate of five pounds per 1,000 square feet and approved commercial

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

### **8.1.2 Sodding**

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

### **8.1.3 Landscaping**

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

## **8.2 BITUMINOUS REPLACEMENT**

### **8.2.1 Removal**

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

### **8.2.2 Backfilling**

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

### **8.2.3 Base Course**

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

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

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

### **8.2.4 Replacement**

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

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

### **8.3 CONCRETE REPLACEMENT**

#### **8.3.1 Highways, Streets and Driveways**

##### **8.3.1.1 Removal**

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

##### **8.3.1.2 Base Course**

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

##### **8.3.1.3 Replacement**

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

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

#### **8.3.2 Sidewalks**

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

##### **8.3.3 Removal**

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

##### **8.3.4 Base Course**

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

##### **8.3.5 Replacement**

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

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

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

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

### **8.3.6 Curbs and Gutters**

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

### **8.4 CLEAN-UP**

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

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### **1. SCOPE AND SPECIAL PROVISIONS**

#### **1.1 SCOPE OF WORK**

The WORK to be accomplished under these SPECIFICATIONS consists of one 750,000 composite elevated storage tank, together with all appurtenances, as shown on the DRAWINGS and as further specified herein.

##### **1.1.1 GENERAL LOCATION**

Location of the WORK is in Shelby County, Kentucky.

###### **1.1.1.1 Specific Location**

The elevated water tank site is located along Peytona Beach Road east from KY 395.

#### **1.2 DESIGNATION OF PARTIES**

##### **1.2.1 "OWNER"**

All reference in the SPECIFICATIONS, CONTRACT DOCUMENTS and DRAWINGS to "OWNER" shall mean the U.S. 60 Water District.

##### **1.2.2 "ENGINEER"**

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

#### **1.3 GOVERNING SPECIFICATIONS**

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

#### **1.4 CONTRACTOR'S DRAWINGS AND SPECIFICATIONS**

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

##### **1.4.1 DRAWINGS On Site**

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

##### **1.4.2 DRAWINGS/SPECIFICATIONS Discrepancy**

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



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ENGINEER when such corrections are necessary for the proper fulfillment of their intention as construed by him.

### **1.4.3 DRAWINGS/SPECIFICATIONS Omissions**

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

### **1.5 UTILITIES REQUIRED BY CONTRACTOR**

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

### **1.6 TRAFFIC**

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

### **1.7 FENCES**

All fences removed or disturbed during the construction shall be replaced in as good or better condition as found, with particular attention being given to the existence of cattle or other animals in adjoining properties. Integrity of the property boundaries shall be maintained at all times and it is the responsibility of the CONTRACTOR to provide such temporary fencing as is required or directed by the ENGINEER.

### **1.8 EXECUTION AND COORDINATION OF THE WORK**

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

#### **1.8.1 Shutdowns**

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

**1.9 SAFETY**--The Contractor shall strictly comply with all applicable statutes, regulations, orders, rules, requirements and standards of all governmental authorities

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having jurisdiction with respect to the project, including without limitation, federal, state, and local OSHA and health regulations as well as the latest professional practices.

The Contractor shall, at its own expense, protect its employees and other persons from risk of injury, bodily harm, or death arising out of or in any way connected with work preformed.

Prior to commencing work, all personnel on the jobsite will have a minimum ten (10) hours of OSHA safety training within the previous year.

### **1.10 SITE VIDEOTAPING**

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

## **2.0 SITE WORK**

### **2.1 YARD PIPING**

2.1.1 The work covered by this section of the specifications consist of furnishing all labor, equipment and materials, and performing all operations in connection with the installation of the yard piping specified herein, in strict accordance with the specifications and applicable drawings. Yard piping shall include all pipe, fittings and valves shown on the plans which are not inside or buried under the floors of structures.

2.1.2 The yard piping shall be ductile iron and all pipes and fittings shall meet the standards outlined in Section 1 of the General Specifications.

2.1.3 Trenches in which pipes are to be laid shall be excavated in accordance with Part IV of the General Specifications to the depths shown on the plans or as specified by the ENGINEER.

### **2.2 GRAVEL ACCESS ROAD AND PARKING AREA**

2.2.1 The new gravel access road shall be constructed in accordance with the layout shown on the drawings and as specified herein.

The road shall be constructed of crushed, KYDOT No. 57 limestone, furnished and placed to a depth of at least eight inches.

Before the construction of an aggregate base is begun, the subgrade shall be prepared to the full width of the widest course plus one foot of additional width beyond each edge except when otherwise limited by existing structures.

The mixture shall be placed, spread to a string line, and shaped without segregation by the use of power equipment operated so as to produce the desired compacted depth to the depth to the line grade, and cross-section as specified herein.

The compacting equipment shall be of an approved type and shall be capable of producing the specified density throughout the depth of each layer of base material placed. Unless otherwise provided or permitted by the engineer, the compacted depth of each layer shall not be less than 3 inches or greater than 6-1/2 inches. Layer thicknesses greater than 6-1/2 inches of compacted depth may be permitted by the ENGINEER upon proof by test that the

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compacting equipment is capable of consistently producing the specified density throughout the full depth of the layer. Wetting of the base course during compaction may be required when deemed necessary by the ENGINEER.

Each layer shall be maintained to a uniform grade and cross-section during compaction; and, if during compaction or upon final completion the base course varies from the line, grade, or cross-section, the material shall be reshaped with additional material added where and as needed to produce the completed base course without segregation and true to line, grade, and cross section.

### **3.0 COMPOSITE ELEVATED WATER STORAGE TANK**

#### **3.1 DESCRIPTION OF WORK**

3.1.1 The work to be performed under this section consists of the furnishing of all materials, tools, equipment, labor and incidentals necessary for the design, manufacture, delivery, erection, painting disinfection and testing of a composite elevated storage tank. The tank is to be complete with all accessories specified herein, and is to be erected on foundations to be designed and constructed by the Tank Contractor. The tank shall meet all requirements of AWWA D107 Standard for Composite Elevated Water Storage Tank.

3.1.2 The contracting company shall own their fabrication facilities. Divided responsibilities between erection and fabrication will not be allowed.

3.1.3 A qualified supervisor employed by the Contractor shall be on site at all times during construction of the concrete support structure and water tank.

3.1.4 The Contractor shall have completed at least five (5) composite elevated tanks with a minimum capacity of 1,000,000 gallons.

#### **3.2 SUBMITTALS**

3.2.1 Each bidder shall submit with his proposal, a design sketch of the tank and foundation they propose to furnish. The general plan of the structure must show all major dimensions including the tank diameter, the height to low and high water levels, the sizes of all principal and secondary members, thickness of all plates, arrangements of members and size of the tank foundation, including quantities of concrete and rebar.

3.2.2 The successful bidder must submit shop drawings for all proposed work to include the tank foundation, concrete support structure, concrete mix design, tank structure showing size of plates, members, details of all connections, special details and member loads, piping, valves, painting and other pertinent information as required per the project plans and specifications. These drawings shall be sealed by a Professional Engineer in the State of Kentucky.

#### **4.3 FOUNDATIONS**

4.3.1 FOUNDATION DESIGN--Foundation design shall be based on the soil bearing pressure provided in the Geotechnical Report in Section 4 (4.5). The Owner shall retain the services of a testing firm to confirm that the design conditions are in conformance with design recommendations. The design of the foundation shall be in accordance with the requirement of ACI 301, 318, and Section 4 (4.5). Minimum concrete compressive strength shall be 3,000 psi at 28 days.

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**4.3.2 TANK FOUNDATIONS--** The Tank Contractor shall furnish and install all materials, labor, and equipment necessary to complete the tank foundation, complete with anchor bolts, reinforcing steel and concrete.

The Tank Contractor shall design and prepare construction plans and details for the foundations in accordance with the requirements of the specifications. The foundation construction drawings shall be sealed by a registered Professional Engineer in the state of Kentucky and submitted to the Engineer for review and final approval.

All testing of materials concerning the foundations and support structure shall be performed by an independent testing laboratory satisfactory to the Engineer.

## **5.0 – TANK DESIGN AND MATERIALS**

### **5.1 GOVERNING SPECIFICATIONS**

Material, design, welding, shop fabrication, erection, testing, and inspection of the proposed elevated water storage tank shall be in compliance with the latest revision of the American Water Works Association Standard AWWA D107 for “Composite Elevated Tanks for Water Storage” American Concrete Institute Standard ACI 318.

The composite elevated tank shall consist of the following components: foundation, reinforced concrete support structure and a welded steel water tank. The support structure shall extend vertically from the foundation as a circular concrete wall. A reinforced concrete dome or concrete slab, as detailed by tank manufacturer shall be provided as structural support for the steel tank within the perimeter of the wall. A reinforced concrete ring beam shall connect the steel tank, concrete dome or slab and concrete support wall. The elevated tank shall be in accordance with the shape, dimensions and details required by these specifications.

The following design parameters shall apply, and the structure shall safely withstand the following loads acting separately or in combination:

1. Weight of the structure.
2. Weight of the water in the tank.
3. The structure shall be designed to withstand wind velocities in accordance with AWWA D107.
4. Seismic Design in accordance with AWWA D107.
5. Snow load in accordance with AWWA D107.
6. Minimum thickness of plates in contact with water: ¼ in.

All steel in the structure shall be manufactured, rolled or shaped in accordance with the current AWWA D100.

### **5.2 CONCRETE SUPPORT STRUCTURE**

The concrete support structure shall have a minimum thickness of eight (8) inches exclusive of any architectural relief. The minimum reinforcing steel shall be 0.20% horizontally and 0.15% vertically. The reinforcing steel shall be placed in two layers. A

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minimum of 0.75% vertical reinforcement shall be provided in the top 6 feet. of the wall extending into the concrete ring beam. Minimum concrete cover of interior/exterior faces shall be 1 inch and 1-1/2 inches, respectively.

The structural concrete dome or slab tank bottom shall have a minimum thickness of eight (8) inches. A steel dome will not be allowed. Minimum total reinforcement in orthogonal directions shall be 0.40%. The reinforcing steel shall be placed in two layers.

The concrete ring beam shall have a nominal width and height of at least two times the support wall thickness. Minimum radial and circumferential reinforcement shall be 0.25%.

The effects of openings shall be subjected to an analysis taking into account the stress concentrations and the diminished lateral support that exist in the vicinity of such openings. A minimum of 120% of the reinforcing steel cut by the opening shall be placed around the opening with one half of this amount placed on each side. Openings eight (8) feet wide and greater shall be strengthened by means of an internal buttress located on each side of the opening. The ring beam design shall consider unbalanced forces from the steel tank cone and concrete dome, load conditions varying with water level, eccentricity of loads resulting from design geometry and allowance for variations due to construction imperfections and tolerance. The geometry of the interface shall provide for positive drainage and not allow condensate of precipitation to accumulate at the top of the concrete wall or ring beam. Design calculations and drawings will be provided, stamped by a Professional Engineer in the state of Kentucky.

**Finishes**--A smooth form finish in accordance with ACI is required on the outside form surface. This includes patching of tie holes and defects, and removal of fins. Hand rubbing is not required. Patching materials shall be selected to closely match the color of the concrete.

A rough form finish in accordance with ACI is required on the inside form surface. This includes patching of tie holes and defects, and removal of fins.

Minimum concrete pedestal diameter shall be 24 feet. The pedestal diameter may be increased as required by manufacturer's standard geometry.

### **5.3 ELEVATED STORAGE TANK**

Preference shall be given to designs of good appearance with operating characteristics which give a constant pressure on the mains as is consistent with the manufacturer's standards and economics of design.

The tank shall have a **capacity of 750,000 gallons**.

The tank shall have an **operating head range of 30 ft.** between low and high water levels.

The high water level (HWL) shall be **115 ft.** with an **elevation of 1020 ft.**

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### 5.6 ACCESSORIES

- A. **Steel Access Tube:** A steel pipe not less than 42 in. diameter located on the vertical centerline of the tank as shown on appended drawings. Access tube shall provide access from the top of the concrete tower to the tank roof. A ladder with safety device shall be provided within the tube.
- B. **Inlet – Outlet Connection:** Provide a 12 in. diameter inlet/outlet pipe indicated on the project drawings. Inlet and outlet pipe shall extend from the base of the pedestal to the tank floor elevation. Provide a minimum of a 6 in. high removable silt stop where the inlet/outlet pipe enters the tank. Inlet and outlet pipes shall be carbon steel pipe.

The inlet and outlet pipe shall be designed to support all related static and dynamic loads. Suitable steel brackets, guides and hangers shall be provided on the pedestal and tank floor at a minimum of 20-foot intervals.

The inlet/outlet pipe shall be designed and constructed to accommodate any differential movement caused by settlement and by thermal expansion and contraction over the range of extreme temperature differences expected for the pedestal and pipe.

The inlet/outlet connection shall be designed to allow incoming flow to be at elevation 1014 ft. The outlet and associated check valve shall allow water to flow from the bottom of the bowl into the system.

**Overflow (AWWA D100, Sec. 5.3):** The overflow shall be a minimum 8 in. diameter tower supported by carbon steel pipe. The overflow pipe shall run vertically beside the central access tube and extend through the tank floor at which point it shall be routed over to the pedestal wall. The overflow shall be brought down to discharge into the junction box indicated on the project drawings. A flap valve will be located at the discharge point to prevent the ingress of birds and insects. The overflow shall be connected to the outlet pipe as indicated on the project drawings, to allow for tank draining. The tank manufacturer shall verify that overflow pipe and intake shall have a capacity to handle a **1,000 gpm** fill rate with a maximum water level not more than 6 inches above the top of overflow.

**Roof openings (AWWA D100, Sec. 5.6):** Provide two 30 in. diameter weatherproof steel access hatches on the roof of the tank above the high water level. One hatch shall provide egress from the access tube to the roof. The second hatch, located adjacent to the first, shall provide access to the interior of the tank. The second shall have a minimum 4 in. curb.

Roof handrails, mid rails and toe plates shall be provided on the roof. Four mounts for antennas shall be installed on the roof.

**Tank Vent (AWWA D100, Sec. 5.7):** One 24 in. diameter vent located near the center of the tank roof to permit the maximum flow rate of water, either entering or leaving the tank, excessive pressure will not be developed. The overflow pipe shall not be considered a tank

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vent. The vent will be designed to prevent the ingress of birds, insects, or animals and minimize condensation on the underside of the roof. There should be provisions in the vent design to release differential pressures caused by clogging of the vent screen.

The vent shall be designed to allow the attachment of an exhaust fan for ventilation during painting.

**Pedestal Vent:** Ventilation shall comply with the governing building code requirements, based on occupancy classification. At a minimum, one removable 24"x36" vent shall be provided at the top of the pedestal. This vent shall be accessible from the upper platform and may also be designed to provide access to the exterior rigging rails located at the tank/pedestal intersection. Vents shall be accessible from the interior ladders, platforms or floors provided.

A 5-ft. wide upper platform shall be located at the top of the pedestal to provide access from the pedestal ladder to the roof access ladder located on the interior of the access tube. Platforms shall be provided with handrails, midrails and toe plates in accordance with OSHA requirements. Grating shall be used for the walking surface.

**Ladders (AWWA D100, Sec. 5.4):** Ladders shall be provided from the floor inside the base of the pedestal to the upper platform located below the tank floor. A tank floor manhole shall be provided with ladder access from the upper platform. A ladder shall extend from the upper platform, through the access tube interior, to the roof. Ladder shall be designed in accordance with OSHA standards. Ladders that terminate at platforms or landings shall extend a minimum of 48 in. beyond the platform elevations. Landings shall be at 30 ft intervals inside the pedestal.

**Safety Devices (AWWA D100, Sec. 5.5):** All ladders and safety devices shall comply with OSHA Standards. One climbing belt and clamp assembly approved by OSHA will be provided.

#### **Rigging and Painters Rails:**

A minimum 24-in. diameter opening shall be provided at the top of the pedestal. This opening shall be accessible from a platform and shall provide access to the exterior rigging rail located at the tank/pedestal Intersection. The access opening may also serve as the pedestal ventilation.

A minimum 24 in. diameter opening shall be provided on the tank roof to provide access to the tank interior rigging rails. This access opening may be combined a pressure/vacuum relief mechanism.

**Tank Floor Manhole:** Provide a 24 in. diameter manhole through the tank floor. The manhole shall be operable from a ladder located on the upper platform and shall be designed to withstand the pressure of the tank contents without leakage.

**Personnel Door:** Provide one 36 in. wide X 80 in. high access door. Door frames shall be 16-gauge with concealed reinforcement at hardware locations. Expansion type anchors for

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existing openings shall be installed near the top, bottom and intermediate point of each jamb to rigidly secure the frame. Doors shall be 1-3/4 inch thick insulated, reinforced, full, flush type with 18-gauge face sheets and concealed reinforcement at hardware locations. All edges shall be finished flush with watertight seams. Shop applied finish for the frame and door shall be baked on rust inhibitive primer. Field finish shall be compatible with the tank exterior. Standard hardware shall be stainless steel and include three 4-1/2 in. hinges, industrial duty closer and lockset. Location of personnel door shall be shown on the drawings.

A manually operated overhead steel rolling door shall be located in the base of the tower. The door frame shall be fabricated of steel plate, fastened and reinforced on the interior face of the pedestal tower. The curtain shall be formed of 22-gauge steel interlocking slats designed for a wind loading of 20 psf. A 24-gauge steel hood shall be provided with a weather seal to protect the assembly. The door shall be galvanized. The dimensions shall be 10'-0" x 10'-0" minimum, and the location shall be as indicated on the drawings.

A tank identification plate shall be mounted on the tank pedestal adjacent to the doorway. The identification plate shall contain the following information:

1. Tank contractor name.
2. Year erected.
3. Tank capacity in US gallons.
4. Tank head range.
5. Tank style.
6. Contractor's serial number or project number.
7. Tank contractor's erection foreman.

## **6.0 TANK AND SUPPORT STRUCTURE CONSTRUCTION**

### **6.1 ERECTION OF TANK**

All parts forming the structure shall be built in accordance with approved drawings. Welding procedures and general welding requirements shall be in accordance with AWWA D100, Section 8, "Welding". Welding shall only be performed by ASME qualified welders. Records of these qualification tests shall be available to the Engineer. The work at all times shall be open to the Engineer or his representative.

Upon completion of the tank erection, the Tank Contractor will remove or dispose of all rubbish and other unsightly material caused by its operation, and will leave the premises in good appearance.

### **6.2 SUPPORT STRUCTURE**

#### **A. General**

Comply with the minimum requirements of Section 03300, ACI 318 and the applicable requirements of ACI 347, except as modified in this section.

Formwork system design and concrete practice required by this section shall be strictly enforced to ensure concrete of the highest practicable structural and architectural standards.



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Formwork systems shall be designed with the provision of ties and bracing such that concrete components conform to the correct dimensions, shape, alignment and elevation without leakage and mortar and excessive deflection. Formwork systems shall be designed to safely support all loading conditions. Embedded items shall be properly positioned and secured. Form surfaces shall be cleaned of foreign materials and coated with a release agent prior to placing reinforcement.

### B. Support Wall

The pedestal wall shall be constructed using a jump form process. The form system shall use curved, prefabricated form segments of the largest practical size to minimize panel joints. Concrete pour height shall be a minimum of 6 ft and a maximum of 12 ft. Form panels shall extend the full height of the concrete pour using only vertical panel joints. Formwork shall be secured using bolts through the wall prior to concrete placement. Panels shall be designed for lateral pressures associated with full height plastic concrete head, and support and bracing shall be provided for construction related impact loads and wind loads. Working platforms shall allow safe access for inspection and concrete placement shall be provided. Form facing material shall be metal, or plywood faced with plastic or fiberglass.

The form system shall incorporate a uniform pattern of vertical and horizontal rustifications to provide architectural relief to the exterior wall surface. Construction joints and panel joints shall be located in rustifications. Vertical panel joints shall be sealed using closures which combine with the form pattern to prevent grout leakage and panel joint lines. The top of the each concrete placement shall be finished with a grade strip. The vertical and horizontal rustifications shall be proportioned and combined to impart a symmetrical architectural pattern to the complete structure. Form ties shall be located so as to impart a uniform patterned effect. No architectural form treatment is required on the interior surface.

Wall forms shall not be disturbed or removed until the concrete has attained sufficient strength such that forming operations and construction loads do not cause surface damage or excessive stress to the sections. The minimum concrete strength shall be established by the Contractor, based on reasonable analysis of foreseeable loads and stresses at critical stages throughout the forming and concrete operations.

Support wall concreting operations shall occur a maximum of once per day. Multiple form movements and concrete placements within a day is not permitted.

Support wall concrete shall utilize a high range water reducer.

Drop chutes or tremies shall be used in walls and columns to prevent free-fall of the concrete over 5 ft and to allow the concrete to be placed through the cage of reinforcing steel. These shall be moved at short intervals to prevent stacking of concrete.

## WAB III - Detailed Specifications

### C. Tank Floor

The formwork system for the concrete dome or concrete slab structural floor shall be designed to support all construction loads. Adequate shoring and bracing shall be provided to transfer loads from the pedestal to the ground without appreciable movements. Form surfaces shall be steel, plastic or fiberglass coated materials.

### D. Dimensional Tolerances

#### Variation in thickness:

Wall.....	-3.0% to + 5.5%
Dome.....	-6.0% to +10.0%

#### Support wall variation from plumb:

In any 5 feet of height.....	3/8 inch
In any 50 feet of height.....	1½ inches
Maximum in total height.....	3 inches

#### Support wall diameter variation.....

0.4%

Not to exceed..... 3 inches

#### Dome floor radius variation.....

1.0%

#### Level alignment variation:

From specified elevation.....	1 inch
From horizontal plane.....	½ inch

### E. Finishes

Tie holes shall be plugged using grout on the interior and manufactured plugs on the exterior which match the color of the cured concrete as closely as possible.

## 7.0 TESTING

### 7.1 HYDROSTATIC TESTING

After tank construction has been completed and the tank painted, the tank shall be hydrostatically tested by filling with water which will be furnished by the Owner. Any leaks shall be repaired and the structure made watertight. No repair work will be done on any point unless the water level in the tank is at least two feet below the joint being repaired.

### 7.2 RADIOGRAPHIC TESTING

In addition, the Tank Contractor shall test the weld joints by means of radiographic testing. All testing shall be done in accordance with the latest revisions of AWWA D100, Section 11. The radiographic film test results will become the property of the Owner.

## **WAB III - Detailed Specifications**

### **7.3 DISINFECTION**

The CONTRACTOR shall disinfect the tank as outlined herein prior to placing it in service. The tank shall be filled with enough water (containing a free chlorine concentration of at least 250 mg./l.) to spray all inside tank surfaces twice. All inside tank surfaces shall be sprayed thoroughly with the chlorinated water. The tank shall be drained at no less than 30 minutes from the end of the second spraying before it is filled for use. Once disinfection is accomplished, the tank may be flushed and placed in service.

Disinfection of the tank shall meet all current requirements of the Kentucky Department of Natural Resources and Environmental Protection, current AWWA requirements for Disinfection of Water Storage Tanks and shall be accomplished to the satisfaction of the ENGINEER. The CONTRACTOR shall furnish the disinfectant and accomplish the disinfection of the tank. All reasonably necessary water will be furnished by the OWNER.

## **8.0 COATING TYPES & PROCEDURES**

### **8.1 INSIDE SURFACE PREPARATION**

All inside surfaces shall be cleaned and all rust and mill scale shall be removed as specified in SSPC Surface Preparation Specification No. 10 Near White Blast Cleaning. All areas shall be painted the same day as sandblasting is carried out.

All surfaces to be coated shall be in the proper condition to receive the specified coatings before any coatings are applied. Do not sandblast any more surface than can be primed within the same working day that the sandblasting is done. Round off all sharp edges and rough welds. Remove all burrs and weld spatter. Remove oil, grease and heavy deposits of surface contaminants by solvent or detergent cleaning. All surfaces shall be clean, dry and free of any dirt, dust, grease, oils, salts, and other deleterious substances before coatings are applied.

### **8.2 INSIDE PAINT SYSTEM**

**Prime:** All interior surfaces shall receive one full prime coat of Induron Perma-Clean 100 ceramic epoxy applied at a rate to achieve 15.0 dry mils. Color: Tan

**Seam Treatment:** Following prime coat, all weld seams, ladders, sharp edges, and any other difficult to coat areas shall receive one coat of Induron Perma-Clean 100 ceramic epoxy applied by brush, at a rate to achieve 15.0 dry mils. Color: Gray.

**Finish:** After proper cure of the prime coat all interior surfaces shall receive one full coat of Induron Perma-Clean 100 ceramic epoxy applied at a rate to achieve 15.0-20.0 dry mils with a dry film thickness of 4.0-6.0 mils. Color: Pool Blue

All paint shall be as manufactured by Induron Protective Coatings, Birmingham, Alabama, or approved equal.

The CONTRACTOR shall apply the inside paint system in strict accordance to the current requirements of AWWA D-102 "Standard for Painting and Re-painting Steel Tanks, Standpipes, Reservoirs and Elevated Tanks for Water Storage" and the manufacturer's instructions.

## **WAB III - Detailed Specifications**

### **8.3 EXTERIOR SURFACE PREPARATION**

The CONTRACTOR shall clean all exterior surfaces by SSPC-SP10 near white blast.

### **8.4 EXTERIOR PAINT SYSTEM**

The CONTRACTOR shall apply the exterior paint system in strict accordance with the current requirements of AWWA D-102 "Standards for Painting and Repainting Steel Tanks, Standpipes, Reservoirs and Elevated Tanks for Water Service" and the manufacturer's instructions. All exterior surfaces that have been cleaned to bare metal shall be spot primed with one coat of Induron Induramastic 85 applied at a rate to achieve 3.0 to 5.0 dry mils. After the spot prime has been properly installed, all exterior surfaces shall receive one full prime coat of Induron Induramastic 85 applied at a rate to achieve 3.0 to 5.0 dry mils.

The exterior finish paint shall be one coat of Induron Perma-Clean II High Gloss Epoxy high gloss applied at a rate to achieve 6.0 dry mils per coat. Color to be white bowl with blue bottom and blue stripe around top of bowl. Lettering to be blue. The wording is to be: U.S. 60 WATER DISTRICT in two places. Top coat to be Perma-Clear Fluorourethane high gloss coating. Paint shall be as manufactured by Induron Protective Coatings, Birmingham, Alabama or approved equal.

Lettering, colors, stripes shall be 2 coats of Induron Perma-Clear Fluorourethane high gloss coating applied to achieve 3.0 to 6.0 dry mils per coat.

### **8.5 GENERAL COATING WORK**

All coating work shall meet the requirements of the coating manufacturer.

Coat all interior and exterior weld seams surfaces by the brush method on prime coat and intermediate coats.

Coatings shall be applied in such a manner to produce as uniform a thickness of coat and as complete coverage as possible, free of lap marks.

Each coat shall have air-drying period of at least 24 hours.

The dry film thickness specified shall be obtained. Additional coats shall be applied at the Contractor's expense, if required to achieve the specified dry film thickness.

Only good, clean brushes and equipment shall be used. Clean all brushes, rollers, buckets and spray equipment at the end of each coating period.

Do not start filling the coated tank with water before the coatings have properly dried or cured. The minimum drying or curing time allowed shall be not less than seven days at 75 F.

### **8.6 PAINTING INSPECTIONS**

The Engineer or an outside inspection service representing the Engineer will make inspections shown in this Article. Additional inspections will be made if required. It shall be the responsibility of the Contractor to request an inspection by at least the end of the second day preceding the inspection day. Should the Engineer be summoned to inspect a completed phase of construction and find the work incomplete and therefore, not ready for inspection, the Contractor shall bear the cost of inspection. It is not the intent to charge the Contractor for an inspection if discrepancies are found in the completed phase of construction as long as the discrepancies do not necessitate additional inspection trips.

## WAB III - Detailed Specifications

### 8.6.1 INSPECTIONS TO BE MADE

#### 8.6.1.1 Interior Surface Preparation Inspection

After uncoated surfaces in the interior of a tank have been sandblasted and before coatings are applied, the uncoated surfaces in the exterior of a tank, tower, and appurtenances shall be sandblasted and primed immediately; however, if the inspector removes any field primer, over sandblasted or shop primed areas and finds evidence of improper sandblasting and cleaning, the inspector may order all questionable coatings removed by sandblasting and the cleaned areas reprimed at no cost to the Owner.

#### 8.6.1.2 Coating Work Inspection

After all coating work has been completed; at this time, the total required mil thickness, lack of "holidays", and aesthetic acceptability will be checked by the Engineer.

The Contractor shall furnish the following for purposes of inspection by the Engineer:

1. Pictorial surface preparation standards as provided by the Steel Structures Painting Council (SSPC - Vis 1) or the American Society for Testing and Materials (ASTM D2200);
2. Wet film thickness measurement gauge;
3. Dry film thickness measurement gauge;
4. Certified thickness calibration standards;
5. Steel temperature gauges;
6. Wet bulb and dry bulb temperature-measuring equipment and psychometric tables;
7. Low voltage wet sponge instrument; and
8. "Tooke" gauge.

Additionally, the Contractor shall provide any necessary rigging to facilitate the inspection of all tank areas. Proper coordination with the Engineer is intended to prevent extensive re-rigging by the Contractor. Therefore, it is the responsibility of the Contractor to keep the Engineer fully informed on the status of the painting operation.

#### 8.6.1.3 One Year Inspection

Additionally, a first anniversary inspection shall be made at approximately one year's time after the painting work has been completed to determine whether any repair work is necessary. The Owner shall establish the date for the inspection and shall notify the Contractor at least 30 days in advance. If an inspection date has not been established within 13 months after final acceptance of the painting work by the Owner, the first anniversary inspection shall be considered to be waived. The Owner shall drain the tank, and the Contractor shall provide all lighting, ventilation and other equipment necessary to complete the inspection.

Any location where coats of paint have peeled off, bubbled or cracked and any location where rusting is evident shall be considered to be a failure of the paint system. The Contractor shall make repairs at no cost to the Owner at all points where failures are observed by removing the deteriorated coating, cleaning the surface and recoating with the same paint system. If the areas of failures exceed 25 percent of the area of a portion of the tank surface, then for that portion, the entire paint system shall be removed and re-painted.

## WAB III - Detailed Specifications

For purposes of determining the need for complete re-painting, the inside roof, shell and floor and the outside roof, shell and floor shall be considered separately.

The Contractor shall prepare and deliver to the Owner an inspection report covering the first anniversary inspection, setting forth the number and type of failures observed, the percentage of the surface area where failure has occurred, and the names of the persons making the inspection. Color photographs illustrating each type of failure shall be included in the report.

### 9.0 ELECTRICAL

#### 9.1 SCOPE OF THE ELECTRICAL WORK

The CONTRACTOR shall furnish all labor, materials, equipment and apparatus for the complete installation of the electrical work as shown on the plans and specified herein as follows:

- a) Provide all conduit, panelboards, conduit fittings, outlet boxes, wires and cables, receptacles, switches, and plates for the interior wiring.
- b) Make all electrical connections to equipment furnished and installed by others, including the final disconnect means as required.
- c) Provide interior lighting system including fixtures and lamps.
- d) Provide sleeves and chases as required.
- e) Furnish shop drawings and samples of materials as required.
- f) Provide tests and inspections as required.
- g) Obtain all permits that are required by local and state authorities.
- h) Provide all exhaust fans and electrical heaters.
- i) Provide spare fuses.
- j) Provide all cutting and patching required for electrical work.
- k) Provide service equipment.
- l) Provide temporary lighting and power required for construction.
- m) Provide all electric work required in conjunction with plant controls.

##### 9.1.1 CONDUCTORS (WIRES AND CABLES)

- a) All conductors shall be of the AWG (American Wire Gauge) noted on the plans.
- b) All conductors #8 AWG and larger shall be stranded.
- c) Wires connecting motors or other vibrating equipment shall be extra-flexible standard.
- d) *Unless* otherwise noted, conductors shall not be smaller than #12 AWG.
- e) All conductors shall be copper.
- f) All conductors shall be color-coded in accordance with N.E.C. requirements. Equipment grounds shall be green color "THW".
- g) All building wires and cables shall be Type "THW".

##### 9.1.2 GROUNDING

All metallic conduit, cabinets, equipment and services shall be grounded in accordance with the latest issue of the National Electrical Code.

## **WAB III - Detailed Specifications**

All ground clamps shall be mechanical pressure type. The use of strap type ground clamps will not be approved.

The motor control center shall have a grounding bus to which each electrical conduit and motor control center section shall be bonded. This bus shall be bonded by means of #2/0 AWE bare, soft drawn, copper cable terminated as shown on the plans.

### **9.1.2.1 ELECTRICAL SERVICES AND METERING**

The CONTRACTOR shall provide the meter base and disconnect for underground electrical service.

### **9.1.2.2 LIGHT FIXTURES**

Lighting fixtures shall be furnished and installed complete with lamps, as scheduled on the drawings. Manufacturer's name listed on the drawings are intended to designate type and standard of quality only and are not intended to limit equal manufacturers from bidding material.

Fixtures shall be securely fastened to steel outlet boxes. Outlet boxes are to have fixture studs and hangers.

Fixtures shall have specified color finish. Where not specified, it shall be selected during construction by the ENGINEER from standard finishes and colors.

Recessed or surface mounted fixtures which are rated above 60°C. shall be wired according to either Section 410-65, Paragraph B-1, or B-2 of the National Electric Code (requiring proper temperature rated wiring). All suspended fixtures rated above 60°C. shall be wired from the junction box to and through fixture with proper temperature rated wire.

*One exterior red aircraft warning light shall be installed on the top of the tank.*

## **10.0 FENCING**

### **10.1 CHAIN LINK FENCE**

**10.1.1** The fencing shall be woven wire, chain link type, and shall be 7' high overall. Fabric shall be 6' high with an additional one foot of height of three-strand barbed wire overhanging outside at a 45° angle. Layouts of fences and gates are shown on the drawings. Shop drawings and descriptive literature shall be submitted to the ENGINEER for review, prior to use of materials.

All fittings necessary to make a complete installation shall be malleable iron, pressed steel, aluminum or forging. All ferrous material shall be thoroughly galvanized by the hot-dip method.

The fabric shall be aluminum coated steel composed of individual wire pickets, helically wound and interwoven from No. 9 W. & M. gauge steel wire to form a continuous chain link fabric having a 2" mesh. Both the top and bottom edges shall have a twisted and barbed finish. Basic steel shall conform to the following: Carbon .18-.31; Manganese .60-.90; Phosphorous .040 maximum; and Sulphur .050 maximum. Aluminum coating shall not be less than 0.40 ozs. Per square foot of wire surface. The aluminum coated wire shall have a tensile strength of at least 80,000 lbs. per square inch.

Fabric ties shall be aluminum strip or wire of No. 6 gauge on 24" centers on top rail and 14" centers on top rail and 14" centers on line posts.

### **WAB III - Detailed Specifications**

Line posts shall be H-section or wing channel design, approximately 7/8" wide by 2-1/4" deep, rolled of high carbon steel, or 2-1/2" outside diameter high carbon seamless steel pipe, weight approximately 3.65 lbs per foot; hot galvanized. Posts shall be spaced not more than 10' on centers and shall extend 3' into the ground below fence.

Gate and end posts shall extend high enough for barbed wire attachment by tension bands and be capped with heavy malleable iron top, of bullet type construction to exclude moisture.

End, corner, gate and pull posts shall be hot galvanized, 3" outside diameter seamless pipe weighting approximately 5.8 lbs. per foot and shall extend 3' into the ground below fence.

Bracing of end, gate, and corner posts shall be with horizontal compression members of 1-5/8" outside diameter seamless steel pipe weighing approximately 2.3 lbs. per foot, securely attached to the terminal and first line posts with malleable iron fittings and beveled edge bands, truss braced from first line post to bottom of terminal post with 3/8" rod and turnbuckle. Corner posts shall be braced in each direction.

Barbed wire extension arms for intermediate and corner posts shall be of pressed steel riveted to malleable iron base, at 45° angle, carrying 3 strands of barbed wire. Barbed wire attached to the arm in angle slot shall be automatically locked in place by tension. Arms shall be hot galvanized after fabrication. The intermediate arm shall have provision for passing top rail and corner arm casting equipped with set screw.

Top rail shall be 1-5/8" outside diameter seamless steel tubing, weighing approximately 2.3 lbs. per foot, hot galvanized in random lengths averaging not less than 20', joined with extra long pressed steel sleeves, hot galvanized rigid but allowing for expansion and contraction.

Barbed wire shall be 3-strand each of two No. 12-1/2 W. & M. gauge twisted cooper bearing steel line wires, hot galvanized after weaving with No. 14 W. & M. gauge aluminum 4-point barbs, spaced not more than 4" apart.

Brace and tension bands shall be unclimbable beveled edge type with 3/8" diameter square shouldered aluminum or hot dip galvanized carriage bolts and nuts, non-removable from outside of the fence, one for each foot of fabric height.

Tension bars for attaching fabric to terminal posts shall be 3/16" by e/4" high carbon steel attached to terminal post by beveled edge bands.

Swing gate frames shall be 2" outside diameter galvanized seamless steel pipe weighing approximately 2.7 lbs. per foot, corners fitted with rigid water tight heavy Malleable iron castings or electrically welded joints. Internal bracing shall be of 1-5/8" outside diameter galvanized seamless steel pipe weighing approximately 2.3 lbs. per foot. Gate filler fabric shall be the same as that used in the fence.

Gate hinges shall be double clamping offset type allowing gates to swing back parallel with the line of the fence. They shall be of malleable iron and forged steel heavily galvanized.

Gate latches shall be of eccentric double locking type which engage strikes securely bolted to either gate frame or gate post at both top and bottom, and in the case of double gates, also engage a heavy malleable iron non-freezing gate stop anchored in concrete footing. Latches shall be readily locked with a padlock.

Gate keepers shall be furnished with each gate frame to automatically engage gate frame when swung to open position.



## **WAB III - Detailed Specifications**

All fence posts shall be set 10' or less on centers, 3' deep, in bell shaped concrete footings, 10" diameter for line posts, 12" diameter for terminal, gate, and corner posts, with concrete crowned at top to shed water. All posts shall be accurately lined, plumbed, and rigidly braced before concreting, and again lined and plumbed before concrete has set. Ground along lie of fence shall be graded to fit limits of fence before work is started.

The top rail shall next run through the openings in the line post topes. The chain link fabrics are then tied loosely in pace with tie wires.

A stretcher bar shall be run through the fabric from top to bottom, in the last link of mesh, at either end of the sections to be joined. Two sets of blocks shall be used, hooked into the stretcher bars. The fabric shall be drawn taut by pulling evenly from opposite directions. Care must be taken that the tie wires holding the fabric up do not catch and pull the line posts out of plumb. While fabric is still held in the joining position by the blocks, a loose picket link shall be spiraled down through the meshing links of the two ends to make a perfect joining. The blocks then are released and the stretcher bars removed. The tension shall hold the joining securely, making one continuous tightly knit section held rigidly in place by tension. The top selvage shall be dressed above the top rail and the fabric secured with tie wires specified to top rail and to line posts.

Block and tackle and come along shall be used to string barbed wire which shall be placed in the openings, provided in the arms and locked in place by sliding the locking wire down inside the U-channel and over the barbed wire.

### **11.0 CLEAN-UP**

Upon completion of the work, the CONTRACTOR shall remove all debris and excess material from the site.

### **12.0 GUARANTEE**

The Contractor shall guarantee the structure against any defects in material or workmanship for a period of one (1) year from the date of substantial completion. If any defect is discovered and reported to the Contractor during the guarantee period, the Contractor shall make the necessary repairs without charge to the Owner.

# BASIS OF MEASUREMENT AND PAYMENT TABLE OF CONTENTS

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# **BASIS OF MEASUREMENT AND PAYMENT**

## **1. SCOPE**

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

## **2. WATER STORAGE TANK**

Payment for furnishing and installing the composite water storage tank shall be made at the contract lump sum price, complete in place, which shall include compensation for furnishing materials, hauling, excavation, foundation setting, erection and disinfection of the storage tank as well appurtenances.

## **3. SITE VIDEOTAPING**

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

## **3. PAY ITEMS**

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

# BID

Proposal of \_\_\_\_\_ (hereinafter called "BIDDER"), organized and existing under the laws of the State of \_\_\_\_\_ doing business as \_\_\_\_\_ to the U.S. 60 Water District (hereinafter called "OWNER").

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

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

BIDDER hereby agrees to commence WORK under this contract on or before a date specified in the NOTICE TO PROCEED and to fully complete the PROJECT within **two hundred seventy (270)** consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of **\$150.00** for each consecutive calendar day thereafter as provided in Section 15 of the GENERAL CONDITIONS.

BIDDER acknowledges receipt of the following ADDENDUM:

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BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sum:  
 NOTE: BIDS shall include sales tax and all other applicable taxes and fees.

**BID SCHEDULE**

**U.S. 60 WATER DISTRICT  
 PEYTONA WATER STORAGE TANK**

Item No.	Description	Amount	Unit	Unit Price	Total Price
1.	750,000 Gallon Elevated Composite Water Storage Tank, Complete in Place	1	L.S.	\$ _____	\$ _____
2.	Site Videotaping, Delivered to Engineer Prior to Work		EACH	\$ _____	\$ _____
3.					
4.					
5.					
6.					

TOTAL BID \$ \_\_\_\_\_

Respectfully submitted,  
 Type or Print Name and Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: / /

Address: \_\_\_\_\_

ATTEST: \_\_\_\_\_ Employer ID Number: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Cellular Number: \_\_\_\_\_

E-Mail: \_\_\_\_\_

# BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,  
\_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are  
hereby held and firmly bound unto **U.S. 60 Water District** as OWNER in the penal sum of  
\_\_\_\_\_ for the payment of which, well and truly to be made, we hereby  
jointly and severally bind ourselves, successors and assigns.

Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 2013. The Conditions of the above obligation is  
such that whereas the Principal has submitted to \_\_\_\_\_ a certain BID, attached hereto and hereby made  
a part hereof to enter into a contract in writing, for the

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NOW, THEREFORE,

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

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

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

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

By: \_\_\_\_\_

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

# NOTICE OF AWARD

TO: CALDWELL TANKS, INC.

\_\_\_\_\_  
\_\_\_\_\_

**PROJECT Description: PEYTONA TANK**

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

You are hereby notified that your Bid has been accepted for items in the amount of \$1,410,000.00.

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

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

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

Dated this \_\_\_\_ day of \_\_\_\_\_, 2013.

**U.S. 60 WATER DISTRICT**

By \_\_\_\_\_

Owner

Title CHAIRMAN

## ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by \_\_\_\_\_,  
this the \_\_\_\_ day of \_\_\_\_\_, 2013.

**CALDWELL TANKS, INC.**

By \_\_\_\_\_

Contractor

Title: \_\_\_\_\_

# AGREEMENT

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between U.S. 60 WATER DISTRICT, hereinafter called "OWNER" and CALDWELL TANKS, INC doing business as a CORPORATION hereinafter called "CONTRACTOR".

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

1. The CONTRACTOR will commence and complete the construction of **PEYTONA TANK**
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within **10** calendar days after the date of the NOTICE TO PROCEED and will complete the same within **270** calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of **\$1,410,000.00**, or as shown in the BID schedule.
5. The term "CONTRACT DOCUMENTS" means and includes the following:
  - (A) Advertisement For BIDS
  - (B) Information For BIDDERS
  - (C) BID
  - (D) BID BOND
  - (E) Agreement
  - (F) General Conditions
  - (G) SUPPLEMENTAL GENERAL CONDITIONS
  - (H) General Specifications
  - (I) Detailed Specifications
  - (J) Basis of Measurement and Payment
  - (K) Payment BOND
  - (L) Performance BOND
  - (M) NOTICE OF AWARD
  - (N) NOTICE TO PROCEED
  - (O) CHANGE ORDER
  - (P) DRAWINGS prepared by Warner A. Broughman III & Associates numbered Cover through W-2, and dated \_\_\_\_\_, 2013.
  - (Q) SPECIFICATIONS prepared or issued by Warner A. Broughman III & Associates dated \_\_\_\_\_, 2013.
  - (R) ADDENDA:
    - No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_\_
    - No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_\_
    - No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_\_



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

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

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

OWNER:

**U.S. 60 WATER DISTRICT**

By: \_\_\_\_\_

Name: **WILLIAM EGGEN**

Title: **CHAIRMAN**

(SEAL)

ATTEST:

\_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

CONTRACTOR:

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

(SEAL)

ATTEST:

\_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

# PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that \_\_\_\_\_ a \_\_\_\_\_, hereinafter called PRINCIPAL, and \_\_\_\_\_, hereinafter called SURETY, are held and firmly bound unto **U.S. 60 WATER DISTRICT**, hereinafter called OWNER, in penal sum of \_\_\_\_\_ Dollars, \$(\_\_\_\_\_) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2013, a copy of which is hereto attached and made a part hereof for the construction of: **PEYTONA TANK**.

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

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

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

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 2013.

ATTEST:

\_\_\_\_\_  
(Principal) (Secretary if Corp.)

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Principal)

By \_\_\_\_\_

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

By \_\_\_\_\_

(Attorney-in-Fact)

\_\_\_\_\_  
(Address)

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

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

# PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that \_\_\_\_\_ a \_\_\_\_\_, hereinafter called PRINCIPAL, and \_\_\_\_\_ hereinafter called SURETY, are held and firmly bound unto **U.S. 60 WATER DISTRICT**, hereinafter called OWNER, in penal sum of \_\_\_\_\_ Dollars, \$(\_\_\_\_\_) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, a copy of which is hereto attached and made a part hereof for the construction of: **PEYTONA TANK**.

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

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

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

*WAB III - Performance Bond*

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_ day of \_\_\_\_\_, 2013.

ATTEST:

\_\_\_\_\_  
(Principal)      (Secretary if Corp.)

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Principal)

By \_\_\_\_\_

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

By \_\_\_\_\_

(Attorney-in-Fact)

\_\_\_\_\_  
(Address)

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

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

# NOTICE TO PROCEED

To: CALDWELL TANKS, INC.  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_, 2013  
Project: 750,000 GALLON ELEVATED  
WATER STORAGE TANK

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_, 20\_\_\_\_, on or before \_\_\_\_\_, 20\_\_\_\_, and you are to complete the WORK within 270 consecutive calendar days thereafter. The date of completion of all WORK is therefore \_\_\_\_\_, 20\_\_\_\_\_.

**U.S. 60 WATER DISTRICT**

Owner

By \_\_\_\_\_

Title **CHAIRMAN**

## ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by CALDWELL TANKS, INC., this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

**CALDWELL TANKS, INC.**

By \_\_\_\_\_

Title \_\_\_\_\_

# CHANGE ORDER

Order No. \_\_\_\_\_  
Date \_\_\_\_\_  
Agreement Date \_\_\_\_\_

NAME OF PROJECT: \_\_\_\_\_

OWNER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

THE FOLLOWING CHANGES ARE HEREBY MADE TO THE CONTRACT DOCUMENTS:

\_\_\_\_\_

\_\_\_\_\_

Justification: \_\_\_\_\_

## CHANGE TO CONTRACT PRICE

Original Contract Price: \$ \_\_\_\_\_

Current Contract Price adjusted by previous Change Order \$ \_\_\_\_\_

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

THE NEW CONTRACT PRICE INCLUDING THIS CHANGE ORDER WILL BE

\$ \_\_\_\_\_.

## CHANGE TO CONTRACT TIME

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

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

## APPROVALS REQUIRED

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

Requested by: \_\_\_\_\_

Recommended by: \_\_\_\_\_

Ordered by: \_\_\_\_\_

Accepted by: \_\_\_\_\_

Federal Agency Approval (where applicable):

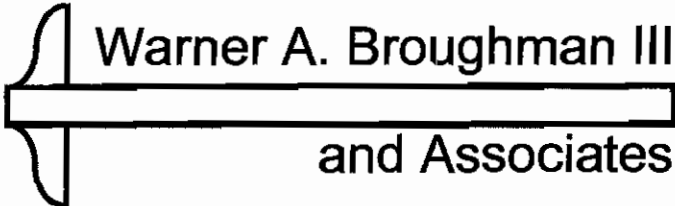
\_\_\_\_\_

**U.S. 60  
WATER DISTRICT**

**WADDY, KENTUCKY**

**PEYTONA TANK  
CONNECTION**

**OCTOBER 2013**

**Warner A. Broughman III  
and Associates**

**3161 Custer Drive, Suite 6  
Lexington, Kentucky 40517  
(859) 271-1778**

**PROJECT NO. 12-05**



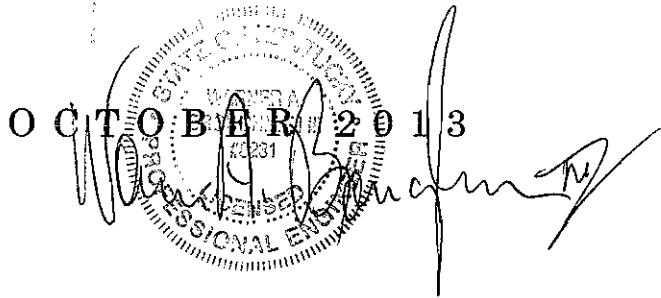
SPECIFICATIONS  
AND  
CONTRACT DOCUMENTS

for

PEYTONA TANK  
CONNECTION

U.S. 60 WATER COMPANY  
WADDY, KENTUCKY

OCTOBER 2013

A circular professional engineer seal for the State of Kentucky is stamped over the date. The seal contains the text "STATE OF KENTUCKY" at the top, "PROFESSIONAL ENGINEER" at the bottom, and "1231" in the center. A handwritten signature in black ink is written across the seal and extends to the right.

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

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**U.S. 60 WATER COMPANY  
WADDY, KENTUCKY**

**COMMISSIONERS**

William Eggen, Chairman

Steve Miller, Secretary

Pat Hargadon, Treasurer

Hobert Hearn, Commissioner

John Roberts, Commissioner

**ATTORNEY**

Don Prather

**Manager**

Pete Hedges

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## ADVERTISEMENT FOR BIDS

U.S. 60 WATER DISTRICT

P.O. Box 97

Bagdad, KY 40003

Separate sealed BIDS for the construction of the

**Contract 1, PEYTONA TANK, a 750,000 gallon elevated, composite water storage tank together with all appurtenances AND**

**Contract 2, PEYTONA TANK CONNECTION consisting of approximately 720 LINEAR FEET OF 12-INCH DUCTILE IRON PIPE, ONE HIGHWAY CROSSING, ONE ROAD CROSSING, AND ONE FIRE HYDRANT, together with all appurtenances,**

will be received by U.S. 60 WATER DISTRICT at the DISTRICT OFFICE, 4596 Bagdad Road, Bagdad, KY until 11 A.M., October 18, 2013 and then at said office publicly opened and read aloud.

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

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

e-mail: [wabiii@prodigy.net](mailto:wabiii@prodigy.net)

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

## INFORMATION FOR BIDDERS

BIDS will be received by **U.S. 60 WATER DISTRICT** (herein called the "OWNER"), at the **DISTRICT OFFICE**, and then at said office publicly opened and read aloud.

If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the **U.S. 60 Water District, P.O. Box 97, Bagdad, KY 40003**. Each sealed envelope containing a BID must be plainly marked on the outside as **BID FOR PEYTONA TANK CONNECTION** and the envelope should bear on the outside the name of the BIDDER, his address, his license number, if applicable, and the name of the project for which the BID is submitted. All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required.

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

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

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

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

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

### ***WAB III - Information for Bidders***

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

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

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

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

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

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

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.

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

***WAB III - Information for Bidders***

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



## GENERAL CONDITIONS

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

### 1 DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.23 SUPPLEMENTAL GENERAL CONDITIONS—

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

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

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

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

## 2 ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

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

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

## 3 SCHEDULES, REPORTS AND RECORDS

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

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

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

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

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

## 4 DRAWINGS AND SPECIFICATIONS

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

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

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

## 5 SHOP DRAWINGS

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

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

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

## 6 MATERIALS, SERVICES AND FACILITIES

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

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

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

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

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

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

## 7 INSPECTION AND TESTING

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

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

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

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

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

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

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

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

## 8 SUBSTITUTIONS

8.1 Whenever a material, article or piece of equip-

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

## 9 PATENTS

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

## 10 SURVEYS, PERMITS, REGULATIONS

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

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

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

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

#### 11. PROTECTION OF WORK, PROPERTY AND PERSONS

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

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

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

#### 12. SUPERVISION BY CONTRACTOR

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

#### 13 CHANGES IN THE WORK

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

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

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

#### 14 CHANGES IN CONTRACT PRICE

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

(a) Unit prices previously approved.

(b) An agreed lump sum.

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

#### 15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

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

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

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

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

15.4.1 To any preference, priority or allocation

order duly issued by the OWNER.

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

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

## 16. CORRECTION OF WORK

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

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

## 17. SUBSURFACE CONDITIONS

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

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

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

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

## 18. SUSPENSION OF WORK, TERMINATION AND DELAY

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

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

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

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

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

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

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

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

#### 19. PAYMENTS TO CONTRACTOR

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

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

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

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

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

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

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

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

20 ACCEPTANCE OF FINAL PAYMENT AS  
RELEASE

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

21. INSURANCE

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

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

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

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

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

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

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

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

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

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

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

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

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

22. CONTRACT SECURITY

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

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

#### 23. ASSIGNMENTS

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

#### 24. INDEMNIFICATION

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

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

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

#### 25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other con-

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

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

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

#### 26. SUBCONTRACTING

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

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

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

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

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

#### 27. ENGINEER'S AUTHORITY

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



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

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

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

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

## 28 LAND AND RIGHTS-OF-WAY

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

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

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

## 29. GUARANTY

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

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

## 30. ARBITRATION

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

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

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

## 31. TAXES

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

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# GENERAL SPECIFICATIONS

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

## 1. MATERIALS FOR WATER PIPELINES

### 1.1 DUCTILE IRON PIPE AND FITTINGS

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

#### 1.1.1 Markings

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

#### 1.1.2 Interior Lining

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

#### 1.1.3 Exterior Coating

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

#### 1.1.4 Fittings

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

## 1.2 PLASTIC PIPE AND FITTINGS

Plastic pipe and fittings shall meet the following standards:

### 1.2.1 Material

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

### 1.2.2 Dimensions

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

### 1.2.3 Pressure Rating

Pressure ratings of the pipe shall not be less than:

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## **1.2.2 Dimensions**

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

## **1.2.3 Pressure Rating**

Pressure ratings of the pipe shall not be less than:

200 psi @ 73.4 degrees F. (Class 200)

350 psi @ 73.4 degrees F. (Class 100)

## **1.2.4 Seal**

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

## **1.2.5 Joints**

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

## **1.2.6 Fittings**

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

## **1.3 COVER PIPE**

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

### **1.3.1 Highway Crossing**

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

#### **Cover Pipe Thickness for Highway Crossing:**

<u>Nominal Pipe Diameter (inches)</u>	<u>Outside Pipe Diameter (inches)</u>	<u>Metal Thickness (.025")</u>
6	6.000	0.250
8	8.000	0.250
10	10.000	0.250
12	12.000	0.375
16	16.000	0.375
20	20.000	0.375
24	24.000	0.500
30	30.000	0.500
36	36.000	0.500
42	42.000	0.625
48	48.000	0.625
54	54.000	0.625

**1.3.2 Railroad Crossing**

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

**Cover Pipe Thickness for Railroad Crossing:**

<u>Nominal Pipe Diameter (inches)</u>	<u>Outside Pipe Diameter (inches)</u>	<u>Metal Thickness (0.25")</u>
12 and under	12 000	0 188
14	14 000	0 250
16	16 000	0 281
18	18 000	0 312
20	20 000	0 344
22	22 000	0 344
24	24 000	0 375
26	26 000	0 406

**1.4 GRANULAR MATERIALS**

Granular materials shall be as follows:

**1.4.1 Fine Aggregate**

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

**1.4.2 Coarse Aggregate**

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

**1.5 CONCRETE**

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

<u>Class</u>	<u>Minimum Cement Factor</u>		<u>Minimum 28-Day Compressive Strength PSI</u>	<u>Slump in inches</u>
	<u>Bbls/Cu. Yd.</u>	<u>Bags/ Cu. Yd.</u>		
AA	1.55	6 2	4000	1-3
A	1.45	5.8	3500	1-3
BB	1.35	5.4	3000	2-4
B	1.25	5.0	2500	3-5
C	1 15	4.6	2000	3-6

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### **2. TESTING OF MATERIALS**

#### **2.1 GENERAL**

##### **2.1.1 Approval of Testing Agencies**

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

##### **2.1.2 Selection of Testing Agencies**

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

##### **2.1.3 Cost of Tests**

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

###### **2.1.3.1 Contractor**

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

###### **2.1.3.2 Owner**

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

##### **2.1.4 Prior Inspection and Test Reports**

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

### **2.2 DUCTILE IRON PIPE AND FITTINGS**

#### **2.2.1 Where less than 200 tons are required:**

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

#### **2.2.2 Where 200 or more tons are required:**

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

### **2.3 PLASTIC PIPE AND FITTINGS**

#### **2.3.1 Where less than 5,000 feet are required:**

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

**2.3.2 Where 5,000 or more feet are required:**

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

**2.4 COVER PIPE**

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

**3. EQUIPMENT**

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

**4. EXCAVATION**

**4.1 GENERAL**

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

**4.1.1 Construction Methods**

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

**4.1.1.1 Rock, Shale, Clay, Hardpan, Etc.**

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

**4.1.1.2 Breakage and Undercutting**

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

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### **4.2 CLASSIFICATIONS OF EXCAVATION**

#### **4.2.1 Earth Excavation**

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

#### **4.2.2 Solid Rock Excavation**

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

#### **4.2.3 Unclassified Excavation**

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

### **4.3 LINES AND GRADES**

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

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

### **4.4 CLEARING AND GRUBBING**

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

#### **4.4.1 Scope of Work**

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

#### **4.4.2 Timber**

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



#### **4.4.3 Grubbing: Required**

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

#### **4.4.4 Grubbing: Not Required**

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

### **4.5 TRENCH EXCAVATION**

#### **4.5.1 Depth**

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

#### **4.5.2 Earth**

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

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

##### **4.5.2.1 Rock**

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

#### **4.5.3 Width**

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

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

### **4.5.4 Excavated Material**

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

### **4.5.5 Opening**

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

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

## **4.6 BLASTING**

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

### **4.6.1 Material Storage**

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

### **4.6.2 Covering Shots**

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

### **4.6.3 Drilling**

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

## **4.7 SHORING AND BRACING**

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

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

#### **4.7.1 Adjacent Buildings**

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

#### **4.7.2 Material**

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

#### **4.7.3 Procedure**

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

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

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

### **4.8 DISPOSITION OF EXCAVATED MATERIAL**

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

### **4.9 REMOVAL OF WATER**

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

### **4.10 UNAUTHORIZED EXCAVATION**

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

## **5. PIPE INSTALLATION**

### **5.1 GENERAL**

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

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### **5.2 PIPE BEDDING**

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

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

#### **5.2.1 Paring Method**

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

#### **5.2.2 Undercutting Method**

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

#### **5.2.3 Yielding and Mucky Subgrades**

##### **5.2.3.1 Securing Pipe**

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

##### **5.2.3.2 Removing Subgrade**

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

### **5.3 LAYING PIPE**

#### **5.3.1 Depth**

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

#### **5.3.2 Bell Placement**

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

#### **5.3.3 Fittings**

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

### **5.3.4 Pipe Inspection**

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

### **5.3.5 Subgrade Irregularities**

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

### **5.3.6 Pipe Interior**

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

### **5.3.7 Backfilling**

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

## **5.4 JOINTING PIPE**

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

## **5.5 PLACING CONCRETE**

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

## **5.6 BORED OR JACKED CROSSINGS**

### **5.6.1 Highway and Railroad**

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

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

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### **5.6.2 Driveways**

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

### **5.7 INSPECTION**

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

## **6. BACKFILLING**

### **6.1 GENERAL**

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

### **6.2 OPEN TERRAIN**

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

#### **6.2.1 Lower Portion of Trench**

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

#### **6.2.2 Upper Portion of Trench**

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

### **6.3 SIDEWALKS AND UNPAVED DRIVEWAYS**

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

#### **6.3.1 Lower Portion of Trench**

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

approved mechanical methods. Upon approval of the ENGINEER, crushed stone, fine gravel, sand or dust may be used as backfill in lieu of compacted earth. Tamping or compaction, or materials used in lieu of same, is not a separate pay item.

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

### **6.3.2 Middle Portion of Trench**

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

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

### **6.3.3 Upper Portion of Trench**

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

## **6.4 STREETS, ROADS AND PAVED DRIVEWAYS**

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

### **6.4.1 Lower Portion of Trench**

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

### **6.4.2 Upper Portion of Trench**

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

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### **6.5 STREAMS & WETLANDS**

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

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

### **6.6 SETTLEMENT OF TRENCHES**

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

## **7. TESTING AND DISINFECTION**

### **7.1 TESTING WATER MAINS**

#### **7.1.1 Hydrostatic Test**

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

#### **7.1.2 Leakage**

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

**ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE (GPH)**

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



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

### **7.1.3 Defective Pipes & Fittings**

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

### **7.1.4 Pipe Failure**

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

## **7.2 DISINFECTION OF WATER LINES**

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

### **7.2.1 Chlorination Test**

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

### **7.2.2 Bacteriological Test**

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

## **8. RESTORATION OF SURFACE**

### **8.1 OPEN TERRAIN**

#### **8.1.1 Seeding**

Unless otherwise specified or shown on the DRAWINGS, all graded areas shall be left smooth and thickly sown with a mixture of grasses as specified by the ENGINEER, at a rate of not less than one pound of seed per 1,000 square feet. Unless otherwise specified, the mixture shall consist of 60 percent Italian Rye Grass, 20 percent Kentucky Fescue #31 and 20 percent Kentucky Bluegrass by weight. When the final grading has been completed, the entire area to be seeded shall be fertilized with ammonium nitrate at the rate of five pounds per 1,000 square feet and approved commercial

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

#### **8.1.2 Sodding**

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

#### **8.1.3 Landscaping**

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

### **8.2 BITUMINOUS REPLACEMENT**

#### **8.2.1 Removal**

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

#### **8.2.2 Backfilling**

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

#### **8.2.3 Base Course**

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

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

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

#### **8.2.4 Replacement**

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

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

### **8.3 CONCRETE REPLACEMENT**

#### **8.3.1 Highways, Streets and Driveways**

##### **8.3.1.1 Removal**

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

##### **8.3.1.2 Base Course**

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

##### **8.3.1.3 Replacement**

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

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

#### **8.3.2 Sidewalks**

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

##### **8.3.3 Removal**

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

##### **8.3.4 Base Course**

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

##### **8.3.5 Replacement**

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

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

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

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

#### **8.3.6 Curbs and Gutters**

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

#### **8.4 CLEAN-UP**

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

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### **1. SCOPE AND SPECIAL PROVISIONS**

#### **1.1 SCOPE OF WORK**

The WORK to be accomplished under these SPECIFICATIONS consists of approximately 5,500 linear feet of 8-inch water mains, tapping valves, gate valves, fire hydrants and bores, together with all appurtenances, as shown on the DRAWINGS and as further specified herein.

##### **1.1.1 General Location**

Location of the WORK is in Shelby County, Kentucky.

##### **1.1.1.1 Specific Location**

Water mains and services are located along Peytona Beach Road east from KY 395.

### **1.2 DESIGNATION OF PARTIES**

#### **1.2.1 "OWNER"**

All reference in the SPECIFICATIONS, CONTRACT DOCUMENTS and DRAWINGS to "OWNER" shall mean the U.S. 60 Water District.

#### **1.2.2 "ENGINEER"**

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

### **1.3 GOVERNING SPECIFICATIONS**

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

### **1.4 CONTRACTOR'S DRAWINGS AND SPECIFICATIONS**

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

#### **1.4.1 DRAWINGS On Site**

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

#### **1.4.2 DRAWINGS/SPECIFICATIONS Discrepancy**

The DRAWINGS and SPECIFICATIONS are intended to be explanatory to each other, but should any discrepancy appear or any misunderstanding arise as to the import of anything contained in either, the ENGINEER shall make the necessary interpretation. Corrections or

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errors or omissions in the DRAWINGS and SPECIFICATIONS may be made by the ENGINEER when such corrections are necessary for the proper fulfillment of their intention as construed by him.

### **1.4.3 DRAWINGS/SPECIFICATIONS Omissions**

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

### **1.5 UTILITIES REQUIRED BY CONTRACTOR**

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

### **1.6 TRAFFIC**

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

### **1.7 FENCES**

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

### **1.8 EXECUTION AND COORDINATION OF THE WORK**

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

#### **1.8.1 Shutdowns**

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

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### **1.9 SITE VIDEOTAPING**

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

## **2. WATER MAINS AND APPURTENANCES**

### **2.1 PIPE AND FITTINGS**

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

### **2.2 TRACER WIRE**

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

### **2.3 GATE VALVES AND BOXES**

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

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

#### **2.3.1 Valve Operators**

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

#### **2.3.2 Gate Valve Installation**

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

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

### **2.4 FIRE HYDRANT AND VALVE**

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



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### **2.4.1 Fire Hydrant**

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

### **2.4.2 Valve**

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

## **2.5 STREET CROSSINGS**

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

### **2.5.1 Steel Casing Pipe: Bored**

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

### **2.5.2 Steel Casing Pipe: Open Cut**

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

## **2.6 TAPPING VALVES AND SLEEVES**

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

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

### **2.6.1 Valve Operators**

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

### **2.6.2 Tapping Sleeve**

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

### **2.6.3 Valve Installation**

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

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

## **2.7 CONCRETE CRADLES, ANCHORS AND ENCASEMENT**

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

## **2.9 BITUMINOUS REPLACEMENT**

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

## **2.10 CRUSHED STONE**

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

## **2.11 OBSTRUCTIONS**

In cases where sewers, utilities or other underground obstructions are encountered, they shall not be displaced or molested unless necessary, in which case they shall be replaced in as good a condition as found as quickly as possible. All such lines or underground structures damaged or molested in the construction for the work under this Contract shall be replaced

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at the CONTRACTOR'S expense, unless in the opinion of the ENGINEER such damage was caused through no fault of the CONTRACTOR.

### **2.12 EXCAVATION CLASS**

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

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2.6 STREET CROSSINGS	1
2.6.1 <i>Steel Cover Pipe: Bored</i>	1
2.6.2 <i>Steel Cover Pipe: Opencut</i>	2
2.7 CONCRETE FOR CRADLES, ANCHORS OR ENCASEMENT	2
2.8 CRUSHED STONE	2
2.9 ASPHALT	2
2.10 SITE VIDEOTAPING	2
<b>3. PAY ITEMS</b>	<b>2</b>

# **BASIS OF MEASUREMENT AND PAYMENT**

## **1. SCOPE**

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

## **2. WATER MAINS AND APPURTENANCES**

### **2.1 PIPE AND FITTINGS**

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

### **2.2 TRACER WIRE**

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

### **2.3 GATE VALVES AND BOXES**

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

### **2.4 TAPPING VALVES AND SLEEVES**

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

### **2.5 FIRE HYDRANT AND VALVES**

Payment for furnishing and installing fire hydrant assemblies which includes a hydrant, valve, box, tee, and all other appurtenances will be made at the CONTRACT unit price per each, complete in place, which shall include compensation for furnishing, hauling, trenching (including rock excavation), bedding, installing, and backfilling.

### **2.6 STREET CROSSINGS**

#### **2.6.1 Steel Cover Pipe: Bored**

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

**2.6.2 Steel Cover Pipe: Opencut**

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

**2.7 CONCRETE FOR CRADLES, ANCHORS OR ENCASEMENT**

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

**2.8 CRUSHED STONE**

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

**2.9 ASPHALT**

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

**2.10 SITE VIDEOTAPING**

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

**3. PAY ITEMS**

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

# BID

Proposal of \_\_\_\_\_ (hereinafter called "BIDDER"), organized and existing under the laws of the State of \_\_\_\_\_ doing business as \_\_\_\_\_ to the U.S. 60 Water District (hereinafter called "OWNER").

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

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

BIDDER hereby agrees to commence WORK under this contract on or before a date specified in the NOTICE TO PROCEED and to fully complete the PROJECT within ninety (90) consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of \$100.00 for each consecutive calendar day thereafter as provided in Section 15 of the GENERAL CONDITIONS.

BIDDER acknowledges receipt of the following ADDENDUM:

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

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

**BID SCHEDULE**

**U.S. 60 WATER DISTRICT  
PEYTONA TANK CONNECTION**

Item No.	Description	Amount	Unit	Unit Price	Total Price
1.	12-inch Ductile Iron Pipe, Complete in Place	720	L.F.	\$_____	\$_____
2.	12-inch Gate Valve & Box, Complete in Place	2	L.F.	\$_____	\$_____
3.	12-inch Tapping Valve & Box, Complete in Place	1	EACH	\$_____	\$_____
4.	Fire Hydrant, Valve & Box, Complete in Place	1	EACH	\$_____	\$_____
5.	20" Steel Casing Pipe, Open Cut, Complete in Place	20	L.F.	\$_____	\$_____
6.	20" Steel Casing Pipe, Bored, Complete in Place	60	L.F.	\$_____	\$_____
7.	Class C Concrete, Complete in Place	10	C.Y.	\$_____	\$_____
8.	Crushed Stone, Complete in Place	50	TN	\$_____	\$_____
9.	Asphalt, Complete in Place	10	TN	\$_____	\$_____
10.	Site Videotaping, Delivered to Engineer Prior to Work	1	L.S.	\$_____	\$_____

TOTAL BID \$\_\_\_\_\_

Respectfully submitted,

Type or Print Name and Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: / /2013

Address: \_\_\_\_\_

ATTEST: \_\_\_\_\_

Employer ID Number: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Cellular Number: \_\_\_\_\_

E-Mail: \_\_\_\_\_



# BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are hereby held and firmly bound unto **U.S. 60 Water District** as OWNER in the penal sum of \_\_\_\_\_ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_. The Conditions of the above obligation is such that whereas the Principal has submitted to **U.S. 60 Water District** a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the **Peytona Tank Connection**.

NOW, THEREFORE,

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

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

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

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

By: \_\_\_\_\_

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

# NOTICE OF AWARD

TO: TWIN STATES UTILITIES, INC.

\_\_\_\_\_

\_\_\_\_\_

**PROJECT Description: PEYTONA TANK CONNECTION**

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for BIDS dated OCTOBER 24, 2013, and Information for Bidders.

You are hereby notified that your Bid has been accepted for items in the amount of \$84,186.00.

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

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

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

Dated this \_\_\_\_ day of \_\_\_\_\_, 2013.

**U.S. 60 WATER DISTRICT**

By \_\_\_\_\_

Owner

Title CHAIRMAN

## ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

\_\_\_\_\_, this the \_\_\_\_ day of \_\_\_\_\_, 2013.

**TWIN STATES UTILITIES, INC.**

By \_\_\_\_\_

Contractor

Title \_\_\_\_\_

# AGREEMENT

**THIS AGREEMENT**, made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between **U.S. 60 WATER DISTRICT**, hereinafter called "OWNER" and TWIN STATES UTILITIES, INC. doing business as a CORPORATION hereinafter called "CONTRACTOR".

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

1. The CONTRACTOR will commence and complete the construction of **PEYTONA TANK CONNECTION**.
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within **10** calendar days after the date of the NOTICE TO PROCEED and will complete the same within **90** calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of **\$84,186**, or as shown in the BID schedule.

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

- (A) Advertisement For BIDS
- (B) Information For BIDDERS
- (C) BID
- (D) BID BOND
- (E) Agreement
- (F) General Conditions
- (G) SUPPLEMENTAL GENERAL CONDITIONS
- (H) General Specifications
- (I) Detailed Specifications
- (J) Basis of Measurement and Payment
- (K) Payment BOND
- (L) Performance BOND
- (M) NOTICE OF AWARD
- (N) NOTICE TO PROCEED
- (O) CHANGE ORDER
- (P) DRAWINGS prepared by Warner A. Broughman III & Associates numbered Cover through W-2, and dated JUNE, 2013.
- (Q) SPECIFICATIONS prepared or issued by Warner A. Broughman III & Associates dated OCTOBER, 2013.
- (R) ADDENDA:
  - No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_
  - No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_
  - No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_

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

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

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (5) five copies each of which shall be deemed an original on the date first above written.

**OWNER:**

**U.S. 60 WATER DISTRICT**

By: \_\_\_\_\_

Name: **WILLIAM EGGEN**

Title: **CHAIRMAN**

(SEAL)

ATTEST:

\_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**CONTRACTOR:**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

(SEAL)

ATTEST:

\_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

# PAYMENT BOND

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

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2013, a copy of which is hereto attached and made a part hereof for the construction of: **PEYTONA TANK CONNECTION.**

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

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

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

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_ day of \_\_\_\_\_, 2013.

ATTEST:

\_\_\_\_\_  
(Principal) (Secretary if Corp.)

\_\_\_\_\_  
(Principal)  
By \_\_\_\_\_

\_\_\_\_\_  
(SEAL)

\_\_\_\_\_  
(Address)  
\_\_\_\_\_

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(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

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

# PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that \_\_\_\_\_ a \_\_\_\_\_, hereinafter called PRINCIPAL, and \_\_\_\_\_ hereinafter called SURETY, are held and firmly bound unto **U.S. 60 WATER DISTRICT**, hereinafter called OWNER, in penal sum of \_\_\_\_\_ Dollars, \$(\_\_\_\_\_) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, a copy of which is hereto attached and made a part hereof for the construction of: **PEYTONA TANK CONNECTION**.

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

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

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

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

ATTEST:

\_\_\_\_\_

(Principal) (Secretary if Corp.)

(SEAL)

\_\_\_\_\_

(Witness as to Principal)

\_\_\_\_\_

(Address)

\_\_\_\_\_

ATTEST:

\_\_\_\_\_

(Witness as to Surety)

\_\_\_\_\_

(Address)

\_\_\_\_\_

\_\_\_\_\_

(Principal)

By \_\_\_\_\_

\_\_\_\_\_

(Address)

\_\_\_\_\_

\_\_\_\_\_

(Surety)

By \_\_\_\_\_

(Attorney-in-Fact)

\_\_\_\_\_

(Address)

\_\_\_\_\_

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

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



# NOTICE TO PROCEED

To: TWIN STATES UTILITIES, INC.  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_, 2013  
Project: PEYTONA TANK CONNECTION  
\_\_\_\_\_

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_, 20\_\_\_\_, on or before \_\_\_\_\_, 20\_\_\_\_, and you are to complete the WORK within **90** consecutive calendar days thereafter. The date of completion of all WORK is therefore \_\_\_\_\_, 20\_\_\_\_\_.

**U.S. 60 WATER DISTRICT**

Owner

By \_\_\_\_\_

Title **CHAIRMAN**

## ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by TWIN STATES UTILITIES, INC., this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
By \_\_\_\_\_  
Title \_\_\_\_\_

# CHANGE ORDER

Order No. \_\_\_\_\_  
Date \_\_\_\_\_  
Agreement Date \_\_\_\_\_

NAME OF PROJECT: \_\_\_\_\_

OWNER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

THE FOLLOWING CHANGES ARE HEREBY MADE TO THE CONTRACT DOCUMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
Justification: \_\_\_\_\_

## CHANGE TO CONTRACT PRICE

Original Contract Price: \$ \_\_\_\_\_

Current Contract Price adjusted by previous Change Order \$ \_\_\_\_\_

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

THE NEW CONTRACT PRICE INCLUDING THIS CHANGE ORDER WILL BE

\$ \_\_\_\_\_.

## CHANGE TO CONTRACT TIME

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

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

## APPROVALS REQUIRED

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

Requested by: \_\_\_\_\_

Recommended by: \_\_\_\_\_

Ordered by: \_\_\_\_\_

Accepted by: \_\_\_\_\_

Federal Agency Approval (where applicable):  
\_\_\_\_\_

MATHIS, RIGGS, PRATHER & RATLIFF, P.S.C.  
ATTORNEYS AT LAW  
500 MAIN STREET, SUITE 5  
SHELBYVILLE, KENTUCKY 40065

C. LEWIS MATHIS, JR.  
T. SHERMAN RIGGS  
DONALD T. PRATHER  
NATHAN T. RIGGS  
ERIN R RATLIFF

TELEPHONE: (502) 633-5220  
FAX: (502) 633-0667

E-MAIL: [dprather@iglou.com](mailto:dprather@iglou.com)

March 18, 2014

Tony Wilder, Commissioner  
Dept. for Local Government  
1024 Capital Center Drive, Ste. 340  
Frankfort, KY 40601

Re: U.S. 60 Water District

Dear Commissioner Wilder:

Please be advised the U.S. 60 Water District of Shelby and Franklin Counties, Kentucky, intends to incur bond debt in the amount of \$1,300,000.00 from the Kentucky Infrastructure Authority as detailed in the enclosed conditional commitment letter dated September 6, 2013 from KIA to Bill Eggen, Chairman of the District.

Please feel free to contact me if you have any questions.

Yours truly,

MATHIS, RIGGS & PRATHER, P.S.C.

By:   
Donald T. Prather

DTP/mew  
Enc.  
cc: William Eggen, Chairman

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF U.S. 60 WATER DISTRICT )  
 OF SHELBY AND FRANKLIN COUNTIES, KENTUCKY )  
 FOR A CERTIFICATE OF PUBLIC CONVENIENCE ) NO. \_\_\_\_\_  
 AND NECESSITY TO CONSTRUCT PURSUANT TO )  
 THE PROVISIONS OF KRS 278.020 AND KRS 278.300 )

FINANCIAL EXHIBIT

12. This Financial Exhibit is being furnished pursuant to 807 KAR 5:001 §

1. U.S. 60 Water District of Shelby and Franklin Counties, Kentucky (hereinafter the "District") does not have any stock authorized.
2. The District does not have any stock issued and outstanding.
3. The District does not have any preferred stock.
4. The District does not have any mortgages.
5. The District's existing bonds are as follows:

	<u>Outstanding</u>	<u>Maturity</u>	<u>Interest</u> <u>Rate</u>	<u>Interest</u> <u>Paid in Last</u> <u>Fiscal Year</u>
Bond Payable Issued 1986	\$ 257,000	2025	7.625%	\$19,215
Bond Payable Issued 1992	\$ 233,800	2032	6.125%	\$14,140
Bond Payable Issued 1998	\$ 386,700	2038	4.5%	\$17,219
Bond Payable Issued 2008A	\$ 140,300	2047	4.5%	\$ 6,275
Bond Payable Issued 2008B	\$ 599,000	2047	4.625%	\$27,542
Total:	\$1,584,100			

6. The District has one outstanding note issued in 1993 in the original amount of \$556,481 with a maturity date in June of 2014 payable to the Kentucky Infrastructure Authority bearing an interest rate of between 2.25% and 5.29%. \$2,865 interest was paid on this note during the last fiscal year.
7. The District does not have any indebtedness other than as specified in Items 5 and 6 above.
8. The District has not paid any dividends, nor does it have any capital stock.
9. Attached is a detailed income statement and balance sheet covering operations for a 12-month period, the period ending not more than 90 days prior to the date this application was filed.



Donald T. Prather  
Counsel for Applicant  
500 Main Street, Suite 5  
Shelbyville, Kentucky 40065  
Telephone Number: (502) 633-5220

The undersigned, William Eggen, being duly sworn, deposes and states that he is Chairman of U.S. 60 Water District of Shelby and Franklin Counties, Kentucky, Applicant in the above proceedings; that he has read the foregoing Financial Exhibit and has noted the contents thereof; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.



William Eggen, Chairman

STATE OF KENTUCKY        )  
COUNTY OF SHELBY        )

Subscribed and sworn to before me by William Eggen, Chairman of U.S. 60 Water District of Shelby and Franklin Counties, Kentucky on this the 18<sup>th</sup> day of March, 2014.



Notary Public

ID: 424455

My Commission Expires: 2/1/15

2:38 PM

01/10/14

Accrual Basis

**US 60 Water District of Shelby, Spencer & Franklin Counties**  
**Profit & Loss**  
January through December 2013

	<u>Jan - Dec 13</u>
<b>Ordinary Income/Expense</b>	
Income	
889 · Convenience Fee / Credit Card	3 268.95
883 · Sales Tax Discount	28.99
604 · Residential Customers	958,887.80
606 · Commercial Customers	50 248.06
608 · Educational Customers	8 282.70
610 · Governmental Customers	1 851.95
612 · Fire Protection Services	371.46
886 · Service Charge Income	33,573.17
884 · Interest Income	8 220.32
605 · Returned Check Fee Income	200.00
882 · Miscellaneous Income	0.54
<b>Total Income</b>	<u>1 064 933.94</u>
Cost of Goods Sold	
704 · Water Purchased	338,720.83
<b>Total COGS</b>	<u>338,720.83</u>
<b>Gross Profit</b>	726 213.11
Expense	
831 · Temporary Services	388.31
705 · Water Testing	6 052.50
711 · Rent to North Shelby	24 000.00
811 · Credit Card Fee	4,243.22
809 · Printing and Publication	2,815.38
819 · Meals and Entertainment	1 425.91
813 · Bid Advertisement	93.46
817 · Bank Charges	97.69
812 · Commission Member Fees	13,200.00
852 · Depreciation Expense	180,000.00
734 · Equipment Rental	59 562.13
814 · Insurance	9,477.60
902 · Interest - LT Debt	72 000.00
810 · Legal & Accounting	27 732.19
815 · Licenses & Fees	4,002.70
720 · Maintenance - Structures	240.00
722 · Maintenance - Pumping Equipment	5,161.00
724 · Maintenance - Dist. Mains	1 566.97
726 · Maintenance - Service & Meters	11 779.00
727 · Maintenance - Hydrants	640.00
730 · Meter Readings	31 137.98
818 · Misc General Expenses	3,099.85
820 · Misc - General Properties	180.00
804 · Office Supplies & Expense	1 931.06
732 · Operating Supplies	92.82
803 · Overhead Reimbursement	39 042.82
807 · Postage	8 489.07
710 · Power Pumping Equipment	30,652.12
818.1 · PSC Assessment Fee	1 932.83
828 · Taxes - Payroll	1 365.05
Wages & Salaries	
801 · Bonuses	2 400.00
802 · Office Salaries	34,120.00
808 · Management Salary	57,477.20
<b>Total Wages &amp; Salaries</b>	<u>93,997.20</u>
<b>Total Expense</b>	<u>636,398.86</u>
<b>Net Ordinary Income</b>	89,814.25

2:38 PM  
01/10/14  
Accrual Basis

**US 60 Water District of Shelby, Spencer & Franklin Counties**  
**Profit & Loss**  
January through December 2013

	<u>Jan - Dec 13</u>
Other Income/Expense	
Other Expense	
80000 - Ask My Accountant	53,854.51
Total Other Expense	<u>53,854.51</u>
Net Other Income	<u>-53,854.51</u>
Net Income	<u><u>35,959.74</u></u>

**US 60 Water District of Shelby, Spencer & Franklin Counties**  
**Balance Sheet**  
As of December 31, 2013

	Dec 31, 13
<b>ASSETS</b>	
<b>Current Assets</b>	
<b>Checking/Savings</b>	
208 - Business Savings	146,737.98
206 - Cash - Sinking Fund	4,067.13
331 - Investments-O & M # 34547	200,796.82
307 - Cash - Operations & Maintenance	1,071,643.27
303 - Cash - Revenue Fund	27,021.73
230 - Cash - Debt Service Fund	59,180.37
215 - Cash - Depreciation Account	108,648.74
209 - Cash - Construction Extension	89,789.72
202 - Investments - Debt Service #157	167,041.27
240 - Investments - O & M #34826	198,933.72
330 - Investments - O & M #'s 35557	141,713.89
250 - Business Money Market #1524526	142,589.86
<b>Total Checking/Savings</b>	2,358,164.50
<b>Accounts Receivable</b>	
350 - Accounts Receivable	88,635.17
349 - Unbilled Receivables	39,419.29
354 - Allowance for Uncollectibles	-7,753.24
<b>Total Accounts Receivable</b>	120,301.22
<b>Other Current Assets</b>	
352 - Inventory	29,202.85
379 - Interest Receivable	1,191.28
370 - Prepaid Insurance	6,393.43
378 - Unamortized Debt Discount	5,470.20
<b>Total Other Current Assets</b>	42,257.76
<b>Total Current Assets</b>	2,520,723.48
<b>Fixed Assets</b>	
105 - Structures & Improvements	24,234.00
107 - Standpipes	568,105.64
109 - Water Distribution Mains	7,774,808.70
110 - Services	257,941.58
111 - Meters	245,814.97
112 - Meter Installation	165,269.10
113 - Hydrants	66,249.44
115 - Pumping Station Equipment	303,949.57
117 - Other Plant	7,044.82
120 - Equipment	3,009.12
130 - Construction in Progress	188.00
140 - Accumulated Depreciation	-3,536,832.77
<b>Total Fixed Assets</b>	5,879,782.17
<b>TOTAL ASSETS</b>	<b>8,400,505.65</b>
<b>LIABILITIES &amp; EQUITY</b>	
<b>Liabilities</b>	
<b>Current Liabilities</b>	
<b>Accounts Payable</b>	
402 - Accounts Payable	61,127.11
<b>Total Accounts Payable</b>	61,127.11
<b>Other Current Liabilities</b>	
401 - Due To Others	-582.76
<b>Payroll Tax Liabilities</b>	
405 - Federal Withholding	156.00
404 - Social Security Withheld	464.74
421 - Accrued Payroll Taxes	541.13
406 - Ky Income Tax Withheld	73.69
407 - County Withheld	60.75
<b>Total Payroll Tax Liabilities</b>	1,296.31



2:33 PM

01/10/14

Accrual Basis

**US 60 Water District of Shelby, Spencer & Franklin Counties**  
**Balance Sheet**  
As of December 31, 2013

	<u>Dec 31, 13</u>
420 - Sales Tax Payable	112.91
School Tax Payable	
416 - Spencer Co. School Tax	289.11
417 - Anderson Co. School Tax	58.68
418 - Shelby Co. School Tax	1,717.63
419 - Franklin Co. School Tax	448.09
<b>Total School Tax Payable</b>	<b>2,513.51</b>
425 - Accrued Interest	106,067.22
426 - Accrued Interest - Customer Dep	1,075.38
450 - Membership Cert - Customer Dep	116,601.89
<b>Total Other Current Liabilities</b>	<b>227,084.46</b>
<b>Total Current Liabilities</b>	<b>288,211.57</b>
<b>Long Term Liabilities</b>	
394 - Bonds Payable RD 2008 B	599,000.00
393 - Bonds Payable RD 2008 A	140,300.00
390 - Bonds Payable	-694.28
392 - Note Payable - Berkadia	237,201.87
395 - Note Payable - FHA	539,603.51
400 - Note Payable - KY Infrastructur	29,376.24
<b>Total Long Term Liabilities</b>	<b>1,544,787.34</b>
<b>Total Liabilities</b>	<b>1,832,998.91</b>
<b>Equity</b>	
470 - Member Meter Tap On	938,371.23
472 - Member Hydrants	13,750.00
473 - Member Contributions	4,680.00
475 - Contributions in Aid of Const	2,025,622.97
474 - Grants	1,365,622.49
479 - Contributions - Crab Orchard	699.30
590 - Retained Earnings	2,182,801.01
Net Income	35,959.74
<b>Total Equity</b>	<b>6,567,506.74</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>8,400,505.65</b>

**Warner A. Broughman III**  
**and Associates**

**BID DATE: OCTOBER 24, 2013**  
**U.S. 60 WATER DISTRICT**

**PROJECT NAME: PEYTONA WATER STORAGE TANK (ELEVATED COMPOSITE)**  
**PROJECT NO.: 09-06**

**3161 CUSTER DR., LEXINGTON, KY 40517**  
**859-271-1778**

*Caldwell Tanks, Inc.*

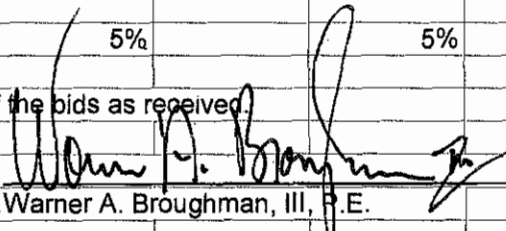
*Phoenix Fabricators, Inc.*

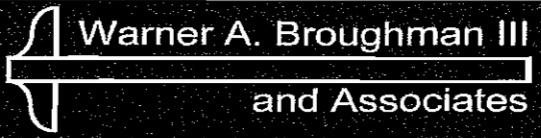
*Landmark Structures I, L.P.*

ITEM NO	ITEM	QUAN	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	750,000 Gallon Elevated Composite Water Storage Tank, CIP	1	L.S.	1409000	1409000.00	1841723.00	1841723.00	1972000	1972000.00
2	Site Videotaping, Delivered to Engineer Prior to Work	1	EACH	1000	1000.00	100.00	100.00	1000	1000.00
					<b>1410000.00</b>			<b>1841823.00</b>	<b>1973000.00</b>

Addendum	1	1	1
Bid Bond	5%	5%	5%

I hereby certify that the above is an accurate presentation of the bids as received.

  
 Warner A. Broughman, III, P.E.



**Warner A. Broughman III**

**and Associates**

**3161 CUSTER DR., LEXINGTON, KY 40517**  
**859-271-1778**

**BID DATE: OCTOBER 24, 2013**

**U.S. 60 WATER DISTRICT**

**PROJECT NAME: PEYTONA TANK CONNECTION**

**PROJECT NO.: 12-05**

**JRS**

**Twin States**

**Construction**

**Utilities, Inc.**

ITEM NO	ITEM	QUAN	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
1	12" Ductile Iron Pipe, CIP	1,133	LF	45	50985.00	42.00	47586.00
2	12" Gate Valve & Box, CIP	2	EACH	2400	4800.00	2100.00	4200.00
3	12" Tapping Valve & Box, CIP	1	EACH	5000.00	5000.00	5000.00	5000.00
4	Fire Hydrant, Valve & Box, CIP	1	EACH	3900.00	3900.00	4000.00	4000.00
5	20" Steel Casing Pipe, Bored, CIP	60	LF	90.00	5400.00	315.00	18900.00
6	Class C Concrete, CIP	10	C.Y.	10.00	100.00	125.00	1250.00
7	Crushed Stone, CIP	50	TN	10.00	500.00	20.00	1000.00
8	Asphalt, Complete in Place	10	TN	10.00	100.00	175.00	1750.00
9	Site Videotaping, Delivered to Engineer Prior to Work	1	L S	20000.00	20000.00	500.00	500.00
					<b>90785.00</b>		<b>84186.00</b>

~  
\*  
%

~ Unit Price Corrections  
 \* Form of Ownership unclear  
 % Amount of check insufficient after corrections

Addendum

0

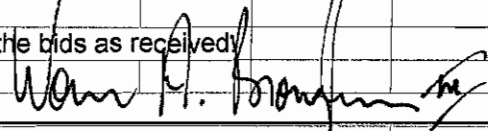
1

Bid Bond

4.60%

5%

I hereby certify that the above is an accurate presentation of the bids as received.

  
 Warner A. Broughman, III, F.E.

# MEMO

Date: December 11, 2013

To: Mr. Bill Eggen  
U.S. 60 Water District  
of Shelby and Franklin Counties  
Bagdad, Kentucky 40003

From: Dennis S. Raisor, CPA *DSR*  
Raisor, Zapp & Woods, PSC  
513 Highland Avenue  
Carrollton, Kentucky 41008

Re: Cash Available for a \$400,000 Construction Project

---

I have attached a copy of U.S. 60's interim financial statements as of October 31, 2013. The financial statements attached were prepared by staff members of the Water District. Raisor, Zapp and Woods has not audited these attached financial statements.

I have reviewed the audited financial statements as of December 31, 2012, and the Water District has \$1,637,395 of unrestricted funds. So, it's a Board decision, if they are o.k. with spending \$400,000 on the construction project. It would appear \$400,000 of funds would be available.

11:10 AM  
 12/11/13  
 Accrual Basis

**US 60 Water District of Shelby, Spencer & Franklin Counties**  
**Balance Sheet**  
 As of October 31, 2013

Oct 31, 13

**ASSETS**

**Current Assets**

**Checking/Savings**

208 Business Savings	146,645.55
206 Cash - Sinking Fund	4,066.45
331 Investments-O & M # 34547	200,796.82
307 Cash - Operations & Maintenance	1,052,898.22
303 Cash - Revenue Fund	32,714.65
230 Cash - Debt Service Fund	44,399.70
215 Cash - Depreciation Account	107,521.69
209 Cash - Construction Extension	89,789.72
202 Investments - Debt Service #157	167,041.27
240 Investments - O & M #34826	198,933.72
330 Investments - O & M #'s 33035	141,713.89
250 Business Money Market #1524526	142,504.48

Total Checking/Savings 2,329,026.16

**Accounts Receivable**

350 Accounts Receivable	88,720.90
349 Unbilled Receivables	39,419.29
354 Allowance for Uncollectibles	-7,753.24

Total Accounts Receivable 120,386.95

**Other Current Assets**

352 Inventory	26,769.66
379 Interest Receivable	1,191.28
353 Returned Checks	53.70
370 Prepaid Insurance	7,973.03
378 Unamortized Debt Discount	5,470.20

Total Other Current Assets 41,457.87

Total Current Assets 2,490,870.98

**Fixed Assets**

105 Structures & Improvements	24,234.00
107 Standpipes	568,105.64
109 Water Distribution Mains	7,774,808.70
110 Services	257,941.58
111 Meters	245,534.97
112 Meter Installation	165,269.10
113 Hydrants	66,249.44
115 Pumping Station Equipment	303,949.57
117 Other Plant	7,044.82
120 Equipment	3,009.12
130 Construction in Progress	188.00
140 Accumulated Depreciation	-3,506,832.77

Total Fixed Assets 5,909,502.17

**TOTAL ASSETS** 8,400,373.15

**LIABILITIES & EQUITY**

**Liabilities**

**Current Liabilities**

Accounts Payable	
402 Accounts Payable	61,127.11

Total Accounts Payable 61,127.11

**Other Current Liabilities**

401 Due To Others	22,998.68
-------------------	-----------

11:10 AM  
12/11/13  
Accrual Basis

US 60 Water District of Shelby, Spencer & Franklin Counties  
**Balance Sheet**  
As of October 31, 2013

	Oct 31, 13
Payroll Tax Liabilities	
405 Federal Withholding	30 00
404 Social Security Withheld	86 07
421 Accrued Payroll Taxes	107 97
406 Ky Income Tax Withheld	25 10
407 County Withheld	11.25
Total Payroll Tax Liabilities	260 39
420 Sales Tax Payable	99 01
School Tax Payable	
416 Spencer Co School Tax	294 45
417 Anderson Co. School Tax	55 79
418 Shelby Co School Tax	1,757 40
419 Franklin Co School Tax	474.72
Total School Tax Payable	2,582 36
425 Accrued Interest	94,067 22
426 Accrued Interest - Customer Dep	1,075 38
450 Membership Cert - Customer Dep	116 900.80
Total Other Current Liabilities	237 983 84
Total Current Liabilities	299 110 95
Long Term Liabilities	
394 Bonds Payable RD 2008 B	599 000 00
393 Bonds Payable RD 2008 A	140 300 00
390 Bonds Payable	-694 28
392 Note Payable - Berkadia	237 201 87
395 Note Payable - FHA	539 603 51
400 Note Payable - KY Infrastructur	31,250.82
Total Long Term Liabilities	1,546,661.92
Total Liabilities	1,845,772 87
Equity	
470 Member Meter Tap On	937 341 23
472 Member Hydrants	13 750 00
473 Member Contributions	4 680 00
475 Contributions in Aid of Const	2,025,622 97
474 Grants	1,365 622 49
479 Contributions - Crab Orchard	699 30
590 Retained Earnings	2,182,801 01
Net Income	24,083.28
Total Equity	6,554,600.28
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>8,400,373.15</b>

11:11 AM  
 12/11/13  
 Accrual Basis

**US 60 Water District of Shelby, Spencer & Franklin Counties**  
**Profit & Loss**  
 January through October 2013

	<u>Jan - Oct 13</u>
Ordinary Income/Expense	
Income	
889 Convenience Fee / Credit Card	3,003.00
883 Sales Tax Discount	23.28
604 Residential Customers	799,324.03
606 Commercial Customers	40,335.15
608 Educational Customers	7,039.53
610 Governmental Customers	1,526.74
612 Fire Protection Services	303.07
886 Service Charge Income	28,027.36
884 Interest Income	7,522.93
605 Returned Check Fee Income	150.00
882 Miscellaneous Income	0.54
<b>Total Income</b>	<b>887,255.63</b>
Cost of Goods Sold	
704 Water Purchased	286,273.33
<b>Total COGS</b>	<b>286,273.33</b>
<b>Gross Profit</b>	<b>600,982.30</b>
Expense	
831 Temporary Services	388.31
705 Water Testing	4,802.50
711 Rent to North Shelby	20,000.00
811 Credit Card Fee	3,854.60
809 Printing and Publication	2,815.38
819 Meals and Entertainment	780.50
817 Bank Charges	87.79
812 Commission Member Fees	10,650.00
852 Depreciation Expense	150,000.00
734 Equipment Rental	51,984.32
814 Insurance	7,898.00
902 Interest - LT Debt	60,000.00
810 Legal & Accounting	25,216.23
815 Licenses & Fees	1,949.25
720 Maintenance - Structures	240.00
722 Maintenance - Pumping Equipment	5,121.00
724 Maintenance - Dist. Mains	1,426.97
726 Maintenance - Service & Meters	9,459.00
727 Maintenance - Hydrants	640.00
730 Meter Readings	25,890.53
818 Misc General Expenses	953.85
820 Misc - General Properties	180.00
804 Office Supplies & Expense	1,931.06
732 Operating Supplies	92.82
803 Overhead Reimbursement	32,623.05
807 Postage	7,064.07
710 Power Pumping Equipment	25,360.49
818.1 PSC Assessment Fee	1,932.83
828 Taxes - Payroll	931.89
Wages & Salaries	
802 Office Salaries	29,190.00
808 Management Salary	47,760.49
<b>Total Wages &amp; Salaries</b>	<b>76,950.49</b>
<b>Total Expense</b>	<b>532,224.93</b>
<b>Net Ordinary Income</b>	<b>68,757.37</b>

11:11 AM  
12/11/13  
Accrual Basis

US 60 Water District of Shelby, Spencer & Franklin Counties  
**Profit & Loss**  
January through October 2013

	<u>Jan - Oct 13</u>
Other Income/Expense	
Other Expense	
80000 Ask My Accountant	44,674.09
Total Other Expense	<u>44,674.09</u>
Net Other Income	<u>-44,674.09</u>
Net Income	<u><u>24,083.28</u></u>



# US 60 WATER DISTRICT

## Peytona Tank

### Final Engineering Report

The project encompassed by the US 60 Water District is the construction of a 750,000 gallon elevated water storage tank and associated water lines. The water line is approximately 1133 linear feet of 12 inch ductile iron pipe. It connects the existing system to the new water tank. No new customers are resulting from this construction.

The low bidding contractor for the waterline is Twin States Utilities & Excavation, Inc. of Mt Hermon, KY with a winning bid of \$84,186. The low bidding contractor for the water tank is Caldwell Tanks, Inc. of Louisville, KY with a bid of \$1,410,000.

The project will be financed by a loan from KIA in the amount of \$1,300,000 and \$400,000 from Water District funds. The final estimate for the project is as follows:

Construction	\$1,494,186
Local Counsel	5,000
Engineering Design	123,270
Construction Inspection	76,203
Contingency	<u>1,341</u>
Total Project Cost	\$1,700,000

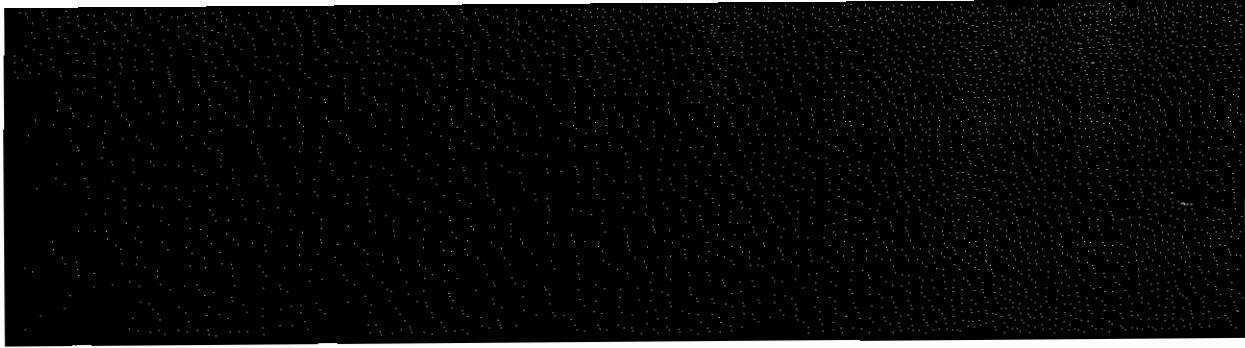
The District will not need to increase rates to finance this project. The following rates will be needed to maintain the District.

First 1,000 gallons	\$13.49(minimum bill)
Next 2,000 gallons	7.04
Next 2,000 gallons	5.78
Over 5,000 gallons	5.17



---

Warner A. Broughman, III PE



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](http://www.kentucky.gov)

March 3, 2014

Mr. Bill Eggen  
US 60 Water District  
P. O. Box 97  
Bagdad, KY 40003

RE: US 60 Water District  
AI # 34105, APE20130001  
PWSID # 1060436-13-001  
Peytona Tank Connection  
Shelby County, KY

Dear Mr. Eggen:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of a 750,000 gallon elevated storage tank and approximately 1,133 linear feet of 12 inch DI water line. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit.

If you have any questions concerning this project, please contact Daniel Kulik at 502-564-3410 extension 4828.

Sincerely,

Mark Rasche, P.E.  
Supervisor, Engineering Section  
Water Infrastructure Branch  
Division of Water

MR:DK

Enclosures

C: Broughman & Associates  
Shelby County Health Department  
Public Service Commission (by e-mail only)  
Division of Plumbing (by e-mail only)