

also attached). The District is financing the project with a \$1,545,000 loan from the Kentucky Infrastructure Authority DWSRF.

5. The construction is in the public interest and is required to allow East Casey County to continue to provide adequate service to additional residents of the county.. The District serves most of Casey County and a small area of Lincoln County, with the exception of the City of Liberty. The purpose of this project is to provide water service to sparsely populated, rural areas of Casey County which have been un-served by previous projects. These residents currently depend on wells, springs and cisterns for their water supplies. These supplies are not reliable or safe due to the mineral and fecal coli form levels. These supplies dry up during the hot, dry summer months and freeze up during the coldest winter period. Overall, the residents to be served by the proposed project are in need of a safe, dependable source of drinking water. The project will provide 35 un-served households and 2,500 underserved households with treated water.

The District presently meets the water needs of its customers by purchasing an average of 650,000 GPD from 5 suppliers. The City of Liberty provides 75% of the treated water to the District and has sufficient capacity to provide the additional potable water necessary for this project. The other water providers are Russell Springs, Eubank, Campbellsville and Adair County. The project, its cost, need and other details are contained in Exhibit A.

6. The total project cost is approximately \$1,545,000, see Exhibits B and D.

7. Easements and rights of way have been acquired, see Exhibit A.

8. This service will not compete with any other utility in the area.

9. The proposed project, identified in Exhibit A, is scheduled to begin construction upon PSC approval. Construction period is approximately 6 months. Bid information is

included with Exhibit B. Bids were opened on March 11, 2013 and are valid for 90 days from that date.

10. No new franchises are required. The DOW and encroachment permits are attached as Exhibit C.

11. Construction descriptions are in Exhibit A and Bid Documents, Exhibit D. Facts relied on to justify the public need are included in the project descriptions in Exhibit A.

12. Maps of the area showing location of the proposed facilities are in Exhibit A.

13. The construction costs will be funded as previously described.

14. Estimated operating costs for operation and maintenance, depreciation and debt service after construction to the extent that there are any are shown in Exhibit A.

15. A description of the facilities and operation of the system are in Exhibit A.

16. A full description of the route, location of the project, description of construction and related information is in Exhibit A.

17. The start date for construction; proposed in-service date; and total estimated cost of construction at completion are included in Exhibits A and B.

18. CWIP at end of test year is listed in the Annual Report.

19. Plant retirements are listed in the Annual Report. No salvage values are included as booked.

20. The use of the funds and need for the facilities is justified based on a the engineering report included as Exhibit A

21. No rate adjustment is being proposed.

22. The following information is provided in response to 807 KAR 5:001 (14)(2):

a. Articles of Incorporation – None. East Casey County is a statutorily created water district under KRS Chapter 74;

23. The following information is supplied pursuant to 807 KAR 5:001(15):

a. Facts relied upon to show that the application is in the public interest: See Exhibit A.

24. The following information is provided as required by 807 KAR 5:001 (17):

a. A general description of the property is contained in the Annual Report.

b. No stock is to be issued; No bonds are to be issued in this case.

c. There is no refunding or refinancing. A separate application for refinancing of bonds has been submitted See Case No. 2013-00104.

d. The proceeds of the financing are to construct the property described in Exhibit A.

e. The par value, expenses, use of proceeds, interest rates and other information is not applicable because no bonds are being issued at this time.

25. The following exhibits are provided pursuant to 807 KAR 5:001 (17)(2):

a. There are no trust deeds. All notes, indebtedness and mortgages are included in the financial information provided with the Application of East Casey Water District for Approval of a Lease Agreement and Refinancing, Case No. 2013-00104, which is incorporated by reference.

b. Property is to be constructed is described in Exhibit A.

26. The following information is provided pursuant to 807 KAR 5:001(12):

a. No stock is authorized.

b. No stock is issued.

c. There are no stock preferences.

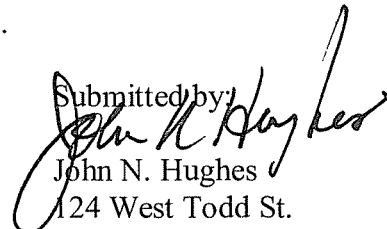
- d. Mortgages are listed in Case 2013-00104.
- e. Bonds are listed in Case 2013-00104.
- f. Notes are listed in Case 2013-00104.
- g. Other indebtedness is listed in Case 2013-00104.
- h. No dividends have been paid.
- i. Current balance sheet; income statement and debt schedule are listed in

Case No. 2013-00104.

27. Plant additions will be classified according to USoA "Water Utility Plant Accounts": 311; 330 and 331.

28. East Casey moves for a deviation pursuant to 807 KAR 5:001(21) for use of financial information greater than 90 days old, for incorporation by reference of the financial information identified as being submitted and which may be subsequently submitted in Case No. 2013-00104 and for any other filing requirement not essential for the review and approval of the application.

For these reasons, East Casey County requests an order approving financing, the certificate and other authorizations that may be required.

Submitted by:

John N. Hughes
124 West Todd St.
Frankfort, KY 40601
(502) 227 7270
jnhughes@fewpb.net
Attorney for East Casey
Water District

Section 14(1)	Full name and post office address of applicant and a reference to the particular provision of law requiring Commission approval.	Application
Section 14(2)	The original and 10 copies of the application with an additional copy for any party named therein as an interested party.	yes
Section 14(3)	If applicant is a corporation, a certified copy of the Articles of Incorporation and all amendments thereto <u>or</u> if the articles were filed with the PSC in a prior proceeding, a reference to the style and case number of the prior proceeding.	n/a
Section 15(2)	(a) The facts relied upon to show that the proposed new construction is or will be required by public convenience or necessity.	Exhibit A
	(b) Copies of franchises or permits, if any, from the proper public authority for the proposed new construction or extension, if not previously filed with the commission.	Exhibit C
	(c) A full description of the proposed location, route, or routes of the new construction or extension, including a description of the manner in which same will be constructed, and also the names of all public utilities, corporations, or persons with whom the proposed new construction or extension is likely to compete.	Exhibit A
	(d) Three (3) maps to suitable scale (preferably not more than two (2) miles per inch) showing the location or route of the proposed new construction or extension, as well as the location to scale of any like facilities owned by others located anywhere within the map area with adequate identification as to the ownership of such other facilities.	Exhibit A
	(e) The manner, in detail, in which it is proposed to finance the new construction or extension.	Exhibits A, B
	(f) An estimated cost of operation after the proposed facilities are completed.	Exhibit A

THE FOLLOWING ITEM IS NOT REQUIRED TO BE FILED WITH AN APPLICATION FOR A CERTIFICATE TO CONSTRUCTION TO BE FILED WITH THE APPLICATION TO EXPEDITE ITS PROCESSING:

KRS 322.340	Engineering plans, specifications, plats and report for the proposed construction. The engineering documents prepared by a registered engineer, requires that they be signed, sealed, and dated by an engineer registered in Kentucky.	Exhibit A
-------------	--	-----------

Section 14(1)	Full name and post office address of applicant and a reference to the particular provision of law requiring Commission approval.	Application
Section 14(2)	The original and 10 copies of the application with an additional copy for any party named therein as an interested party.	yes
Section 14(3)	If applicant is a corporation, a certified copy of the Articles of Incorporation and all amendments thereto <u>or</u> if the articles were filed with the PSC in a prior proceeding, a reference to the style and case number of the prior proceeding.	n/a
KRS 278.300(2)	Every financing application shall be made under oath, and shall be signed and filed on behalf of the utility by its president, or by a vice president, auditor, comptroller or other executive officer having knowledge of the matters set forth and duly designated by the utility.	Application
807 KAR 5:001: Section 17(1)(a)	Description of applicant's property. Statement of original cost of applicant's property and the cost to the applicant, if different.	2013-00104
Section 17(1)(b)	If stock is to be issued: and kinds to be issued.	none
	--Description of amount and kinds to be issued.	
	--If preferred stock, a description of the preferences.	none
	If Bonds or Notes or Other Indebtedness is proposed:	2013-00104
	--Description of the amount(s)	
--Full description of all terms		
--Interest rates(s)		
--Whether the debt is to be secured and if so a description of how it's secured.		
Section 17(1)(c)	Statement of how proceeds are to be used. Should show amounts for each type of use (i.e., property, debt refunding, etc.)	Exhibit A
807 KAR 5:001:		

Section 17(1)(d)	If proceeds are for property acquisition, give a full description thereof. Supply any contracts.	n/a
Section 17(1)(e)	If proceeds are to refund outstanding obligations, give:	n/a
	--Par value	
	--Amount for which actually sold	
	--Expenses and application of proceeds	
	--Date of obligations	
	--Total amount	
	--Time held	
	--Interest rate	
	--Payee	
Section 17(2)(a)	Financial Exhibit (see below)	
Section 17(2)(b)	Copies of all trust deeds or mortgages. If previously filed, state case number.	2013-00104
Section 17(2)(c)	If Property to be acquired:	
	--Maps and plans of property.	Exhibit A
Section 17(2)(c)	--Detailed estimates by USOA account number.	Application

ALL INFORMATION BELOW IN SECTIONS 6(1) THROUGH 6(9) SHOULD COVER THE PERIOD ENDING NOT MORE THAN 90 DAYS PRIOR TO DATE ON WHICH APPLICATION WAS FILED:

807 KAR 5:001		
Section 12(1)	Amount and types of stock authorized.	none
Section 12(2)	Amount and types of stock issued and outstanding.	none
Section 12(3)	Detail of preference terms of preferred stock.	none
Section 12(4)	<u>Mortgages:</u>	
	--Date of Execution	2013-00104
	--Name of Mortgagor	
	--Name of Mortgagee or Trustee	

	--Amount of Indebtedness Secured	
	--Sinking Fund Provisions	
Section 12(5)	<u>Bonds</u>	2013-00104
	--Amount Authorized	
	--Amount Issued	
	--Name of Utility Who Issued	
	--Description of Each Class Issued	
	--Date of Issue	
	--Date of Maturity	
	--How Secured	
	--Interest Paid in Last Fiscal Year	
Section 12(6)	<u>Notes Outstanding:</u>	2013-00104
	--Date of Issue	
	--Amount	
	--Maturity Date	
	--Rate of Interest	
	--In Whose Favor	
	--Interest Paid in Last Fiscal Year	
Section 12(7)	<u>Other Indebtedness:</u>	
	--Description of Each Class	
	--How Secured	
	--Description of Any Assumption of Indebtedness by Outside Party (i.e., any transfer)	
	--Interest Paid in Last Fiscal Yr.	none

Section 12(8) Rate and amount of dividends paid during the five (5) previous fiscal years and the amount of capital stock on which dividends were paid each year.

Section 12(9) Detailed income statement and balance sheet.

none
2013-00104

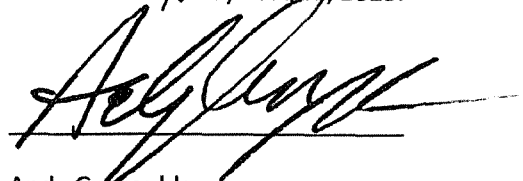
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COMMONWEALTH OF KENTUCKY

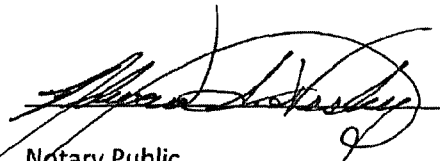
COUNTY OF CASEY

Andy Greynolds, after being sworn, states that he is General Manager of East Casey Water District, that he is authorized to file this application and the statements in the application are true and correct to the best of his knowledge.

Sworn, acknowledged and subscribed before me the 18 day of April, 2013.



Andy Greynolds



Notary Public

Edward A. Wesley
Notary State of Kentucky
My Commission Expires June 6, 2013

My commission expires: _____



EXHIBIT A

(Maps, Plans and Specifications filed separately)

Full Name of Applicant

Organization - East Casey County Water District
Street/P.O. - Box 690 South Wallace Wilkinson Boulevard/ P.O. Box 56
City & Zip Code -- Liberty, Kentucky 42539
County -- Casey
Name -- Andy Greynolds
Title -- Manager
Telephone -- 606 787-9961
Email Address -- Agreynolds@windstream.net

PUBLIC CONVENIENCE OR NECESSITY

The project will provide safe and reliable potable water service to approximately 35 unserved and 2,500 underserved customers. Many of the 35 new customers currently rely on contaminated wells for their potable water source. Use of water from these wells for domestic consumption can pose serious health hazards and economic burdens as residents must rely on alternate water sources such as bottled water or purchasing expensive filtering systems.

Construction Required by Public Convenience or Necessity



Lake Cumberland District Health Department

A Healthy Today for a Brighter Tomorrow

Lake Cumberland District Health Department

500 Bourne Avenue - P.O. Box 800 - Somerset, Kentucky 42502 - Phone 606-678-4761 - Fax 606-678-2708
Hard of Hearing, Speech Impaired, or Deaf users, call the Kentucky Relay Service at (800) 648-6056.
Give the Communications Assistant our phone number to contact us.

June 13, 2011

To:

Chris N. Jones, P.E.
Kenvirons, Inc.
452 Versailles Rd.
Frankfort, Ky. 40601

Regarding:

The East Casey County Water District Project

Private water supplies such as wells, springs and cisterns are not reliable source for drinking water and are likely unsafe due to the mineral and fecal coli form levels often found in them. These supplies often dry up during the dry summer months and sometimes freeze during the winter period. It is our opinion the residents are in need of a safe, dependable source of drinking water and would be better served by the proposed project.

Sincerely,

Daniel Bell, R.S.
Senior Environmentalist

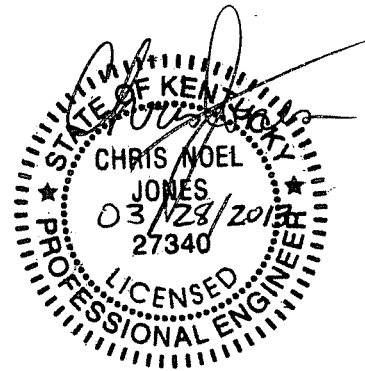
FINAL ENGINEERING REPORT

FOR

EAST CASEY COUNTY WATER DISTRICT

**DWL12046 – VARIOUS WATERLINE EXTENSIONS
AND 200,000 GALLON WATER STORAGE TANK**

WX21045012



PROJECT No. 2010105

MARCH 2013

A Preliminary Engineering Report dated February 2011 describes, in detail, the scope and need for this project. The report is included herewith by reference.

Bids were received on March 11, 2013. The project was bid in two (2) contracts. The number of bids submitted for each contract is as follows:

- DWL 12046 – Various Waterline Extensions (9)
- DWL 12046 – 200,000 Gallon Water Storage Tank (2)

The low bidder for DWL 12046 – Various Waterline Extensions was Cumberland Pipeline, LLC, Russell Springs, Kentucky in the amount of \$767,202. The low bidder for DWL 12046 – 200,000 Gallon Water Storage Tank was Kentucky Glass Lined Tank Systems, Inc., Lexington, Kentucky in the amount of \$268,491. A copy of the certified bid tabulations is included in this report.

The project funding, per the Drinking Water State Revolving Fund (DWSRF) Loan Agreement, is \$1,545,000. The funding source available for this project is as follows:

DWSRF Loan	\$1,545,000
Applicant Contribution	<u>0.00</u>
Total per DWSRF Loan Agreement	\$1,545,000

The construction bids for this project are within the project funding budget. A revised project cost breakdown is as follows:

<u>BUDGET ITEM</u>	<u>ESTIMATED BUDGET</u>	<u>AS-BID BUDGET</u>
Development	\$1,169,300	\$1,044,693
Administrative Expenses	25,000	25,000
Land & Rights	10,000	0.00
Legal & Administrative	17,500	17,500
Engineering	199,600	172,900 ⁽¹⁾
Miscellaneous	20,000	0.00
Contingencies	<u>103,600</u>	<u>284,907</u>
	\$1,545,000	\$1,545,000

⁽¹⁾ ENGINEERING

Design (8.80%)	\$ 91,900
Construction Observation (5.56%)	58,100
Preliminary Engineering Report	15,000
Environmental:	
Archaeological Survey	1,500
Environmental Assessment	<u>6,400</u>
	\$ 172,900

RECOMMENDATIONS

1. The bid amounts for the project are in the acceptable range for the types of work involved. The contractors that submitted the low bids have completed projects for Kenvirons in the past and are experienced and capable of performing the work.
2. Cumberland Pipeline, LLC, was low bidder for the Various Waterline Extensions project with a bid of \$767,202. After contacting several references, Cumberland Pipeline has shown they are capable of completing this type of project, but it became evident that the contractor has a history of not completing projects within the contractual time. It is recommended that the Various Waterline Extensions project be awarded to Cumberland Pipeline only if the District is willing to assess liquidated damages to cover additional costs if the contractor exceeds the contracted calendar days set forth in the Agreement.
3. It is recommended that the 200,000 Gallon Water Storage Tank project be awarded to Kentucky Glass Lined Tank Systems, Inc. in the amount of \$268,491.
4. Proceed with the application to the Public Service Commission for authority to construct the facilities.

KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

BID TABULATIONS
 PROJECT: DWL12046 Various Waterline Extensions
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

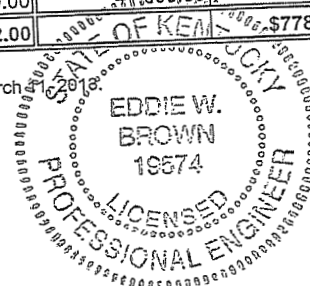
Base Bid

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	Cumberland Pipeline, LLC P.O. Box 277 Russell Springs, KY 42642		Packs' Inc. 75 Baldrige Road Morehead, KY 40351		Salmon Construction, Inc. P.O. Box 97 Mt. Washington, KY 40047	
				UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
1	6" PVC, SDR 21 Pipe	LF	2,350	\$9.90	\$23,265.00	\$9.40	\$22,090.00	\$10.40	\$24,440.00
2	4" PVC, SDR 17 Pipe	LF	6,500	6.45	41,925.00	9.00	58,500.00	8.20	53,300.00
3	4" Ductile Iron Class 350 Pipe	LF	1,000	22.50	22,500.00	25.00	25,000.00	19.20	19,200.00
4	3" PVC, SDR 17 Pipe	LF	50,000	5.63	281,500.00	5.99	299,500.00	5.30	265,000.00
5	Bore and Case for 3" Pipe	LF	40	66.45	2,658.00	65.00	2,600.00	66.34	2,653.60
6	Open Cut Steel Encasement for 3" Pipe	LF	220	57.90	12,738.00	50.00	11,000.00	40.00	8,800.00
7	Directional Bore Creek Crossing	LS	7	5,540.00	38,780.00	500.00	3,500.00	4,570.00	31,990.00
8	Creek Crossing for 3" Pipe	LF	230	101.00	23,230.00	10.00	2,300.00	100.00	23,000.00
9	4" Gate Valve	EA	1	502.00	502.00	850.00	850.00	644.00	644.00
10	3" Gate Valve	EA	17	460.00	7,820.00	750.00	12,750.00	600.00	10,200.00
11	Air Release Valve	EA	4	612.00	2,448.00	675.00	2,700.00	462.00	1,848.00
12	6" x 3" Tapping Sleeve and Valve	EA	1	1,477.00	1,477.00	1,700.00	1,700.00	1,200.00	1,200.00
13	4" x 3" Tapping Sleeve and Valve	EA	1	1,452.00	1,452.00	1,500.00	1,500.00	1,009.00	1,009.00
14	3" Blow Off Assembly	EA	9	950.00	8,550.00	950.00	8,550.00	917.00	8,253.00
15	5/8" x 3/4" Meter Setting	EA	44	660.00	29,040.00	900.00	39,600.00	538.00	23,672.00
16	3/4" Service Tubing	LF	2,640	6.00	15,840.00	5.25	13,860.00	3.85	10,164.00
17	Pavement Replacement								
	17.1 Concrete	LF	50	20.00	1,000.00	20.00	1,000.00	25.00	1,250.00
	17.2 Light Duty Bituminous	LF	300	25.00	7,500.00	15.00	4,500.00	20.00	6,000.00
	17.3 Gravel	LF	100	6.00	600.00	10.00	1,000.00	10.00	1,000.00
18	KY 70 Pump Station w/ Access Road	LS	1	94,860.00	94,860.00	86,600.00	86,600.00	103,786.00	103,786.00
19	Sand Knob Pneumatic Tank Building w/ Access Road	LS	1	61,335.00	61,335.00	61,000.00	61,000.00	71,375.00	71,375.00
20	Sand Knob Pump Station w/ Access Road	LS	1	86,682.00	86,682.00	77,000.00	77,000.00	88,758.00	88,758.00
21	Access Road to Tank Site	LS	1	10,500.00	10,500.00	41,000.00	41,000.00	58,000.00	58,000.00
TOTAL BASE BID					\$776,202.00		\$778,100.00		\$815,542.60

THE ABOVE IS A TRUE AND COMPLETE TABULATION OF BIDS RECEIVED UNTIL 2:30 P.M. Local Time on March 11, 2013

BY: Eddie Brown
 Eddie Brown, P.E.

3-18-13
 DATE



KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

BID TABULATIONS
 PROJECT: DWL12046 Various Waterline Extensions
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

Base Bid				Akins Excavating Company, Inc. 182 Busy Lane Corbin, KY 40701		Cleary Construction, Inc. 2006 Edmonton Road Tompkinsville, KY 42167		United Pipeline, Inc. 4627 Gamaliel Road Tompkinsville, KY 42167	
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
1	6" PVC, SDR 21 Pipe	LF	2,350	\$10.50	\$24,675.00	\$8.65 *	\$20,327.50	\$13.00	\$30,550.00
2	4" PVC, SDR 17 Pipe	LF	6,500	7.00	45,500.00	6.90	44,850.00	9.00	58,500.00
3	4" Ductile Iron Class 350 Pipe	LF	1,000	25.00	25,000.00	20.00	20,000.00	30.00	30,000.00
4	3" PVC, SDR 17 Pipe	LF	50,000	6.00	300,000.00	6.00	300,000.00	6.25	312,500.00
5	Bore and Case for 3" Pipe	LF	40	118.00	4,720.00	83.00	3,320.00	95.00	3,800.00
6	Open Cut Steel Encasement for 3" Pipe	LF	220	25.00	5,500.00	56.00	12,320.00	60.00	13,200.00
7	Directional Bore Creek Crossing	LS	7	2,950.00	20,650.00	3,500.00	24,500.00	3,400.00	23,800.00
8	Creek Crossing for 3" Pipe	LF	230	27.00	6,210.00	125.00	28,750.00	70.00	16,100.00
9	4" Gate Valve	EA	1	760.00	760.00	730.00	730.00	900.00	900.00
10	3" Gate Valve	EA	17	665.00	11,305.00	680.00	11,560.00	700.00	11,900.00
11	Air Release Valve	EA	4	675.00	2,700.00	600.00	2,400.00	850.00	3,400.00
12	6" x 3" Tapping Sleeve and Valve	EA	1	2,150.00	2,150.00	1,480.00	1,480.00	1,400.00	1,400.00
13	4" x 3" Tapping Sleeve and Valve	EA	1	2,100.00	2,100.00	1,480.00	1,480.00	1,700.00	1,700.00
14	3" Blow Off Assembly	EA	9	900.00	8,100.00	1,000.00	9,000.00	800.00	7,200.00
15	5/8" x 3/4" Meter Setting	EA	44	560.00	24,640.00	500.00	22,000.00	600.00	26,400.00
16	3/4" Service Tubing	LF	2,640	5.00	13,200.00	5.00	13,200.00	5.00	13,200.00
17	Pavement Replacement								
	17.1 Concrete	LF	50	36.00	1,800.00	25.00	1,250.00	60.00	3,000.00
	17.2 Light Duty Bituminous	LF	300	26.00	7,800.00	25.00	7,500.00	60.00	18,000.00
	17.3 Gravel	LF	100	18.00	1,800.00	10.00	1,000.00	30.00	3,000.00
18	KY 70 Pump Station w/ Access Road	LS	1	123,000.00	123,000.00	115,000.00	115,000.00	115,800.00	115,800.00
	Sand Knob Pneumatic Tank Building w/ Access Road	LS	1	70,000.00	70,000.00	69,000.00	69,000.00	75,000.00	75,000.00
19	Sand Knob Pump Station w/ Access Road	LS	1	106,000.00	106,000.00	114,000.00	114,000.00	116,300.00	116,300.00
20	Access Road to Tank Site	LS	1	20,000.00	20,000.00	9,000.00	9,000.00	10,000.00	10,000.00
TOTAL BASE BID					\$827,610.00		* \$832,667.50		\$895,650.00

* DENOTES AN ARITHMETIC ERROR WAS MADE ON BASE BID, AMOUNT HAS BEEN CORRECTED TO REFLECT UNIT PRICE SUBMITTED ON BASE BID.

KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

BID TABULATIONS
 PROJECT: DWL12046 Various Waterline Extensions
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time


Base Bid				Clay Pipeline 70 Fox Hollow Road Manchester, KY 40962		Weddle Enterprises, Inc. 25 Shane's Lane Somerset, KY 42501		Lagco, Inc. P.O. Box 12510 Lexington, KY 40583	
				UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
				\$10.20	\$23,970.00	\$12.06	\$28,341.00	\$26.00	\$61,100.00
1	6" PVC, SDR 21 Pipe	LF	2,350	8.10	52,650.00	8.96	58,240.00	21.00	136,500.00
2	4" PVC, SDR 17 Pipe	LF	6,500	22.25	22,250.00	22.09	22,090.00	57.00	57,000.00
3	4" Ductile Iron Class 350 Pipe	LF	1,000	6.25	312,500.00	8.23	411,500.00	19.00	950,000.00
4	3" PVC, SDR 17 Pipe	LF	50,000	75.00	3,000.00	69.00	2,760.00	218.00	8,720.00
5	Bore and Case for 3" Pipe	LF	40	42.40	9,328.00	43.20	9,504.00	77.60	17,072.00
6	Open Cut Steel Encasement for 3" Pipe	LF	220	3,365.00	23,555.00	3,750.00	26,250.00	8,693.00	60,851.00
7	Directional Bore Creek Crossing	LS	7	56.30	12,949.00	84.00	19,320.00	51.00	11,730.00
8	Creek Crossing for 3" Pipe	LF	230	735.00	735.00	481.00	481.00	667.00	667.00
9	4" Gate Valve	EA	1	658.00	11,186.00	408.00	6,936.00	645.00	10,965.00
10	3" Gate Valve	EA	17	645.00	2,580.00	565.50	2,262.00	860.00	3,440.00
11	Air Release Valve	EA	4	1,405.00	1,405.00	1,523.00	1,523.00	1,694.00	1,694.00
12	6" x 3" Tapping Sleeve and Valve	EA	1	1,785.00	1,785.00	1,834.00	1,834.00	1,471.00	1,471.00
13	4" x 3" Tapping Sleeve and Valve	EA	1	1,090.00	9,810.00	1,885.00	16,965.00	854.00	7,686.00
14	3" Blow Off Assembly	EA	9	520.00	22,880.00	548.00	24,112.00	418.25	18,403.00
15	5/8" x 3/4" Meter Setting	EA	44	1.25	3,300.00	8.90	23,496.00	5.90	15,576.00
16	3/4" Service Tubing	LF	2,640						
17	Pavement Replacement								
	17.1 Concrete	LF	50	63.00	3,150.00	46.00	2,300.00	31.96	1,598.00
	17.2 Light Duty Bituminous	LF	300	32.00	9,600.00	26.50	7,950.00	25.00	7,500.00
	17.3 Gravel	LF	100	10.00	1,000.00	7.80	780.00	4.83	483.00
18	KY 70 Pump Station w/ Access Road	LS	1	167,850.00	167,850.00	184,146.00	184,146.00	169,454.00	169,454.00
19	Sand Knob Pneumatic Tank Building w/ Access Road	LS	1	96,225.00	96,225.00	103,312.00	103,312.00	78,656.00	78,656.00
20	Sand Knob Pump Station w/ Access Road	LS	1	137,180.00	137,180.00	155,641.00	155,641.00	140,356.00	140,356.00
21	Access Road to Tank Site	LS	1	8,000.00	8,000.00	20,000.00	20,000.00	32,875.00	32,875.00
TOTAL BASE BID					\$936,888.00		\$1,129,743.00		\$1,793,797.00

KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

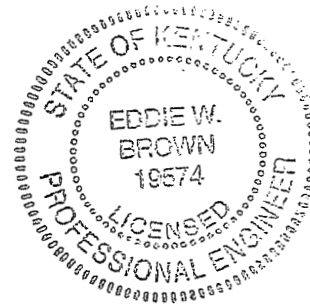
BID TABULATIONS
 PROJECT: DWL12046 200,000 Gallon Water Storage Tank
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

Base Bid				Kentucky Glass Lined Tank Systems, Inc. P.O. Box 13370 Lexington, KY 40583		Caldwell Tanks, Inc. P.O. Box 35770 Louisville, KY 40232	
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	CGST
1	200,000 Gallon Water Storage Tank	LS	1	\$154,264.00	\$154,264.00	\$174,000.00	\$174,000.00
2	Earthwork	LS	1	3,333.00	3,333.00	21,500.00	21,500.00
3	Foundation	LS	1	60,400.00	60,400.00	31,500.00	31,500.00
4	Painting	LS	1				
5	Yard Work including Channel Lining & Site Restoration	LS	1	3,000.00	3,000.00	5,000.00	5,000.00
6	Yard Piping	LS	1	8,166.00	8,166.00	23,000.00	23,000.00
7	Check Valve Station	LS	1	24,156.00	24,156.00	15,000.00	15,000.00
8	Access Road	LS	1	1,866.00	1,866.00	5,500.00	5,500.00
9	Mixing System	LS	1	13,306.00	13,306.00	15,500.00	15,500.00
TOTAL BASE BID					\$268,491.00		\$291,000.00

THE ABOVE IS A TRUE AND COMPLETE TABULATION OF BIDS RECEIVED UNTIL 2:30 P.M. Local Time on March 11, 2013.

BY: 
 Eddie Brown, P.E.

3-18-13
 DATE

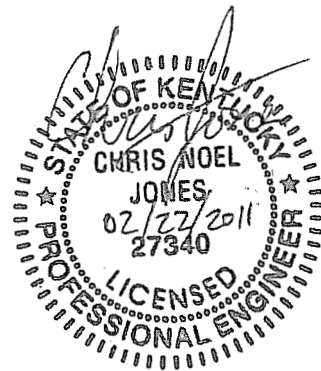


PRELIMINARY ENGINEERING REPORT

FOR

EAST CASEY COUNTY WATER DISTRICT

Various Waterline Extensions (WX21045012)



PROJECT NO. 2010105

FEBRUARY, 2011

1.0 INTRODUCTION

The East Casey County Water District (ECCWD) serves virtually all of Casey County and a small area of Lincoln County, with the exception of the City of Liberty. The purpose of this project is to provide water service to sparsely populated, rural areas of Casey County which have been unserved by previous projects. These residents currently depend on wells, springs and cisterns for their water supplies. These supplies are not reliable or safe due to the mineral and fecal coli form levels. These supplies simply dry up during the hot, dry summer months and freeze up during the coldest winter period. Overall, the residents to be served by the proposed project are in need of a safe, dependable source of drinking water.

The entire project will improve service to 2,500 existing customers and provide service to 35 new customers. Almost all of these residents have expressed an urgent desire to receive water service. In response to continued demand, the ECCWD has expressed their intention to serve everyone who has requested water as soon as funds are available.

The District presently meets the water needs of its customers by purchasing an average of 650,000 GPD from 5 suppliers. The City of Liberty alone provides 75% of the treated water to the East Casey County Water District and has sufficient capacity to provide the additional potable water necessary for this project. The other water providers are Russell Springs, Eubank, Campbellsville and Adair County. The existing storage and distribution system of the ECCWD contains adequate capacity to accommodate the new line extensions.

The ECCWD Commission meets monthly to make decisions relating to the every day operations of the water utility. At meetings, residents of the unserved areas have asked the Water District to explore every means possible to help them obtain safe, dependable, potable drinking water. It is a goal of this Commission to provide safe, dependable water to every resident of Casey County. Therefore, the Commissioners are actively pursuing every financial means possible to accomplish this goal.

2.0 PROJECT PLANNING AREA

The areas to be served by the proposed project are scattered throughout Casey County and primarily consist of roads near the ends of previous projects – areas which were not feasible to serve in the past. The terrain in these areas generally consists of mostly rocky, hilly pasture lands. The project which lies entirely within the boundaries of the East Casey Water District, will be designed to follow existing roadways within the project area. Figure 1, a general highway map of Casey County, offers a highlight of the areas to be served by the proposed project.

The proposed project is located in the foothills of the Appalachian Mountains; an area extensively drilled for oil and gas in the 1960's albeit with little success. In the present, the quarry of limestone rock, timber harvesting, gate manufacturing and farming are the major occupations of the area. The proposed project is intended to serve residents living in some of the rural-most areas of Casey County. Figures 2.A through 2.F are USGS topographical maps showing the proposed waterline extensions.

The only sources of water available to some residents are wells, springs and cisterns. Contamination of wells and springs has been thoroughly documented on previous projects and a number of wells tested in the district's service area have been judged unfit for human consumption. The health and welfare of the county residents depend on a good water supply. Extensions of water lines into presently unserved areas will abate any existing potential health hazard.

3.0 EXISTING FACILITIES

The water distribution system of the East Casey County Water District consists of approximately 400 miles of 3-inch through 10-inch water lines, ten water storage tanks and eight booster pump stations which serve to fill the water storage tanks insuring adequate pressures throughout the system.

The East Casey County Water District was established in 1982 with 265 rural water customers and one maintenance person with billing operations conducted through the office of the Casey County Judge Executive. In 1988, the system began efforts to expand service to additional customers; therefore becoming a viable entity. The District now provides water to over 4,200 customers and employs full-time employees to maintain the system's operation on a daily basis. In 2004, Contract 14 – Water System Extension Project began construction and ultimately provided service to the remaining densely populated areas of Casey County. Remaining projects will primarily consist of supplying water to the less populated areas which were unable to be served due to hydraulic difficulties that have been alleviated by various system improvements throughout the District.

Water supply for the East Casey County Water District is provided the City of Liberty, Russell Springs, Eubank, Campbellsville and Adair County. These suppliers have adequate capacity and are positioned to supply the East Casey County Water District with additional water as system expansion requires.

Since the oldest portion of the East Casey County Water District distribution system is less than 30 years old, the system is in good operating condition and few major capital expenses are anticipated in the near future. The system is presently operating within the State Division of Water and Federal Safe Drinking

Water Standards. The existing rates for ECCWD have been included in the following table:

TABLE 1

First	2,000	Gallons	\$16.28	Minimum Bill
Next	3,000	Gallons	\$6.94	Per 1,000 Gallons
Next	5,000	Gallons	\$6.64	Per 1,000 Gallons
Next	5,000	Gallons	\$6.34	Per 1,000 Gallons
Next	5,000	Gallons	\$6.04	Per 1,000 Gallons
Over	20,000	Gallons	\$5.44	Per 1,000 Gallons

* Date Effective: September 21, 2007

4.0 WATER SYSTEM OPERATION

Preliminary hydraulic analysis utilizing computer modeling has been done to determine line sizes and need for other hydraulic elements. The system was designed and sized to meet the anticipated peak demand conditions and to allow for normal growth. The maps in the back of this report show all water lines recommended as a part of this construction project. The system has been designed so that water pressures at the meters of individual customers will not be less than 30 psi at peak flow conditions. Where static pressures exceed 150 psi, individual pressure regulators will be required to protect fixtures from high pressure.

Storage tanks are used in the water system to stabilize the pressure throughout the system, to provide sufficient water to take care of instantaneous peak requirements, to provide water in the event of temporary failure of the source and to provide water during peak days if the water demand exceeds the capacity of the source. The tanks must be of sufficient elevation to maintain a minimum of 30 psi pressure in the zone they serve and to provide for at least a one day water requirement under average conditions. The existing tanks are filled by booster pump stations equipped with duplicate pumps which run alternately to maintain an adequate operating level inside the tank. This procedure provides adequate pressure stabilization throughout the system.

5.0 NEED FOR THE PROJECT

Since the East Casey County Water District has experienced tremendous growth in the last decade and management of the system has dramatically improved, most residents of the county now want to become a part of this safe, dependable, water supply. The only sources of water available to many of these potential customers are wells, springs and cisterns. The Lake Cumberland District Health Department has conducted sampling and analysis of these sources throughout the system and found many of them unfit for human consumption. It can be

safely assumed that the residential wells and cisterns in the areas of the proposed project are as highly contaminated as the wells and cisterns within the existing water system boundaries. The health and welfare of the county residents is paramount to the East Casey County Water District and the proposed extensions into unserved areas will alleviate many potential health hazards.

6.0 ALTERNATIVE

The alternative for providing public water to the proposed project area is to allow the residents to continue drinking potentially unsafe water from wells, springs and cisterns. There is no other source of treated water in these areas and ECCWD is the only source for distributing safe drinking water throughout most of Casey County.

7.0 PROPOSED PROJECT

The goal of the proposed project is to extend approximately 48,500 L.F. of 3 PVC waterline to approximately 35 customers along various roads in Casey County. The new tank and pumping facilities will help ensure a reliable source of water to approximately 2,500 customers. The project may require the installation of a small pneumatic pump station to insure a minimum dynamic pressure of at least 30 pounds per square inch at each individual customer meter. The proposed project will supply a minimum of 185 gallons per day per customer, which will be provided by the new and existing network of water storage tanks. Approval of plans and specifications for the proposed project will be obtained from the Kentucky Division of Water prior to construction.

The proposed project will increase the District's ability to provide safe, reliable drinking water to its customers. The Opinion of Probable Cost for the entire project is approximately \$1,545,000. Itemized estimates for the construction costs, Table 2, and non-construction costs, Table 3, are shown on the following page. Table 4 on the proceeding page shows the anticipated project funding.

TABLE 2

Item No.	Item Description	Unit	Quantity	Unit Price	Item Price
1	3" PVC SDR-17 Pipe	LF	48,500	\$7.00	\$339,500.00
2	Bored Steel Encasement for 3" Pipe	LF	40	\$80.00	\$3,200.00
3	Open Cut Steel Encasement for 3" Pipe	LF	160	\$40.00	\$6,400.00
4.1	Creek Crossing for 3" Pipe	LF	210	\$50.00	\$10,500.00
4.2	Directional Bore for Creek Crossing	LS	6	\$8,000.00	\$48,000.00
5	3" Gate Valve	EA	16	\$500.00	\$8,000.00
6	Tie-In to Existing 3" Blow-Off Assembly	EA	1	\$1,400.00	\$1,400.00
7	Tie-In To Eubank Master Meter	EA	1	\$1,500.00	\$1,500.00
8	6" x 3" Tapping Sleeve and Valve	EA	2	\$1,800.00	\$3,600.00
9	4" x 3" Tapping Sleeve and Valve	EA	1	\$1,500.00	\$1,500.00
10	3" Blow Off Assembly	EA	8	\$800.00	\$6,400.00
11	5/8" X 3/4" Meter Setting	EA	35	\$500.00	\$17,500.00
12	3/4" Service Tubing	LF	1,280	\$5.00	\$6,400.00
13	Pavement Replacement				
13.1	Concrete	LF	50	\$50.00	\$2,500.00
13.2	Heavy Duty Bituminous	LF	90	\$35.00	\$3,150.00
13.3	Light Duty Bituminous	LF	210	\$25.00	\$5,250.00
13.4	Gravel	LF	450	\$10.00	\$4,500.00
14	Pump Replacement	LS	1	\$40,000.00	\$40,000.00
15	Pneumatic Pump w/ Bladder Tanks	LS	1	\$60,000.00	\$60,000.00
16	200,000 Gallon Water Storage Tank	LS	1	\$600,000.00	\$600,000.00
Total Construction Cost					\$1,169,300.00

TABLE 3

Project Cost

Total Construction Cost	1,169,300.00
Contingency	103,600.00
Interest During Construction	20,000.00
Engineering Design	101,100.00
Construction Observation	63,500.00
Preliminary Engineering Report	15,000.00
Environmental Survey	10,000.00
Geotechnical Observation	10,000.00
Bond Counsel	12,000.00
Local Counsel	5,500.00
Land and Rights	10,000.00
Administration	25,000.00

TOTAL PROJECT COST

\$1,545,000.00

TABLE 4

PROJECT FUNDING

RD Loan	\$1,081,500.00
RD Grant	<u>463,500.00</u>
TOTAL PROJECT FUNDING	\$1,545,000.00

*NOTE: Specific funding is to be arranged. The funding is an estimate and grant amounts are to be arranged based on availability.

8.0 LAND, WATER AND OTHER RIGHTS AND PERMITS

Land

There is one (1) tank and one (1) pump station in this project for which land will need to be acquired.

Water

ECCWD purchases all of its water from the City of Liberty, Russell Springs, Eubank, Campbellsville and Adair County. The estimated demand for the 35 potential customers located along the proposed extensions is approximately 6,500 GPD. The capacity of these water providers is adequate to provide the additional demand proposed by this project.

Other Rights and Permits

The tank, booster pump station, and a majority of all transmission mains will be constructed on highway right-of-way or permanent easements which will be obtained by ECCWD. A Kentucky Division of Water permit will be necessary before construction commences on this project.

9.0 PROJECT FUNDING

The scope and cost of this project will require several funding sources. A Rural Development loan and grant will be requested. State grant funds will also be requested.

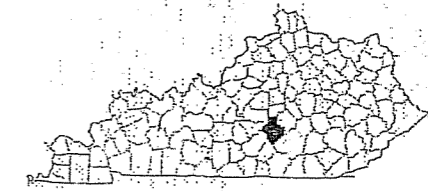
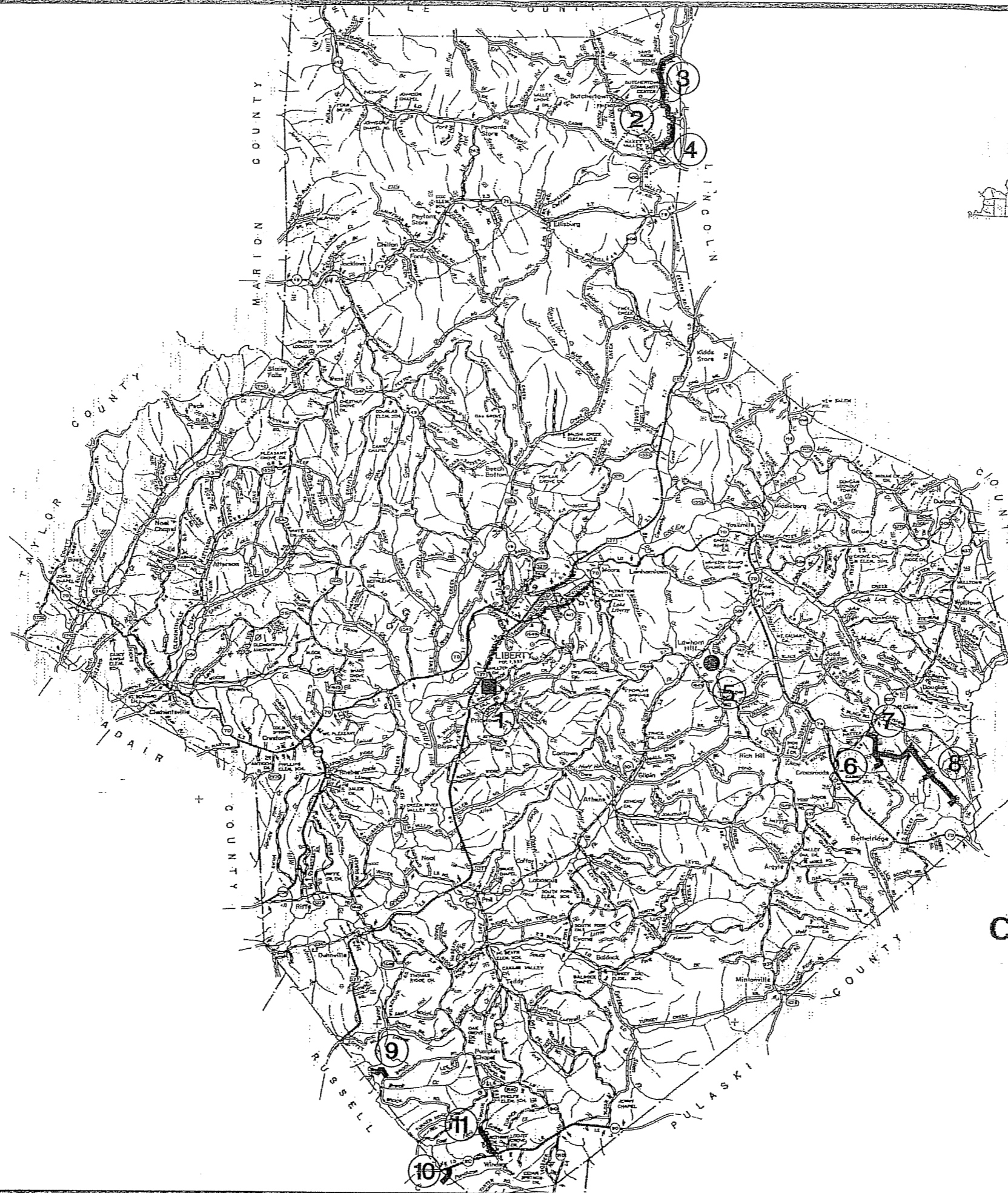
10.0 CONCLUSIONS AND RECOMMENDATIONS

The final conclusions and recommendations of this report are based upon the following:

- * Residents in Casey County have a history of contaminated water sources.
- * The Commissioners of the East Casey County Water District have set a goal of serving every resident of Casey County with water.
- * The Commonwealth of Kentucky has set a goal of insuring a safe, potable supply of water to every resident in Kentucky by the year 2020.
- * Residents have submitted requests and petitions for water.
- * Low interest loans are available to allow for affordable rates.

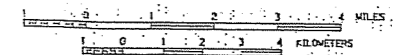
Based upon the information available, it is our recommendation that East Casey County Water District proceed with its applications for financial assistance on this project, and preparation of the final plans and specifications for Kentucky Division of Water approval.

- ① SHUGARS HILL ROAD
- ② BUTCHERTOWN ROAD
- ③ SAND KNOB ROAD
- ④ GORDON LICK ROAD
- ⑤ RANCE CAIN ROAD
- ⑥ QUINCY BASTIN ROAD
- ⑦ HOLLIS JUDD ROAD
- ⑧ BROWN RIDGE ROAD
- ⑨ TROUTSTREAM ROAD
- ⑩ PUNCHEON CAMP ROAD
- ⑪ WINDSOR ROAD



1999 EDITION
 GENERAL HIGHWAY MAP
CASEY COUNTY
 KENTUCKY

PREPARED BY THE
 KENTUCKY TRANSPORTATION CABINET
 DEPARTMENT OF HIGHWAYS
 DIVISION OF PLANNING
 IN COOPERATION WITH THE
 U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION



EAST CASEY COUNTY WATER DISTRICT
 VARIOUS WATERLINE EXTENSIONS (WX21045013)
 CASEY COUNTY, KENTUCKY

DRAWN BY: MPW
 CHECKED BY: JJP
 CHECKED BY: EWB
 DATE: 08/10
 SCALE: NTS
 REV:

KENVIRONS, INC.
 FRANKFORT, KENTUCKY



PROJECT NO.
 2010105

SHEET NO.
 Fig. 1

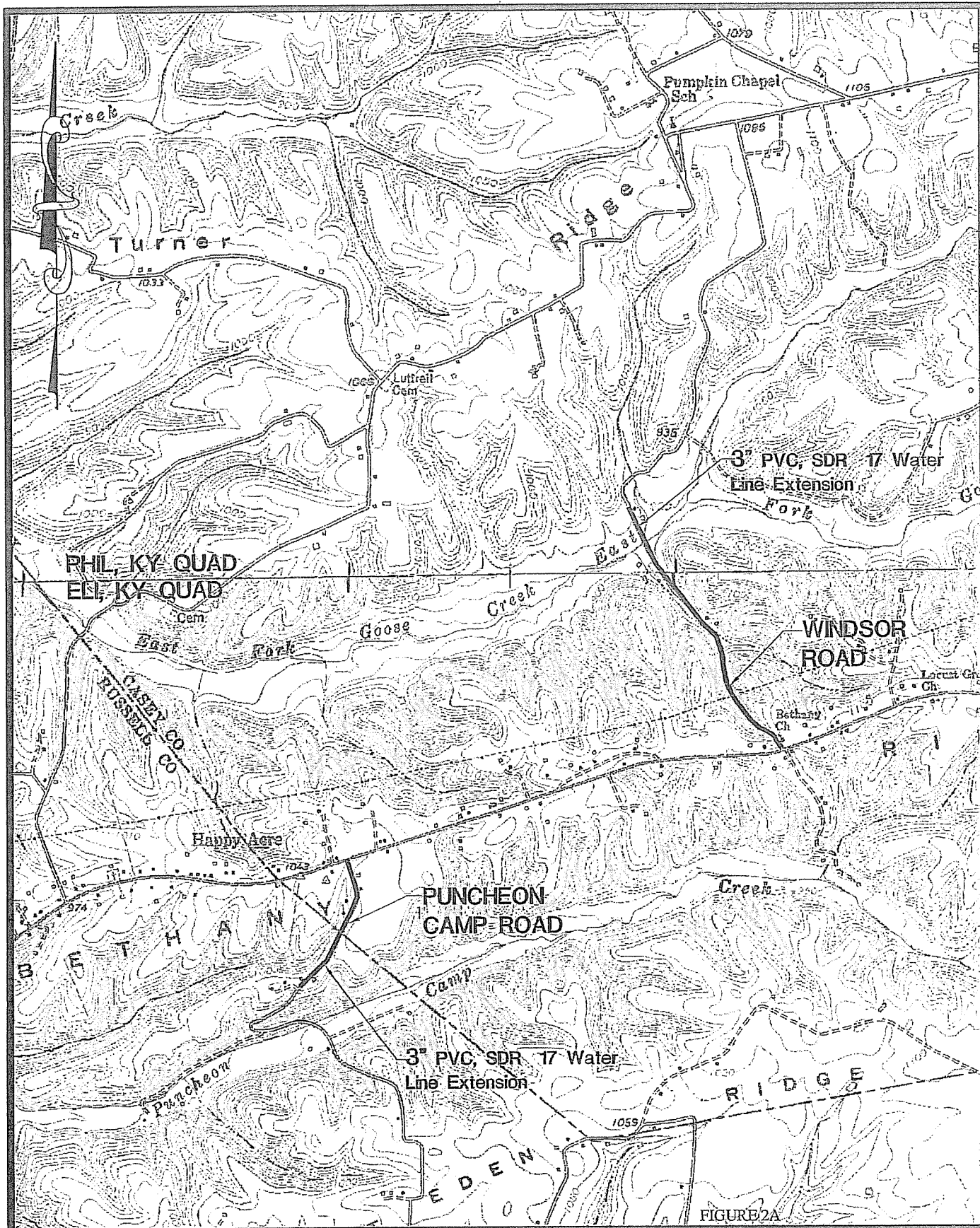
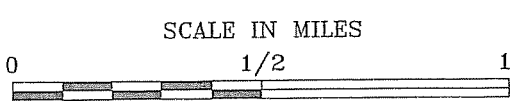


FIGURE 2A

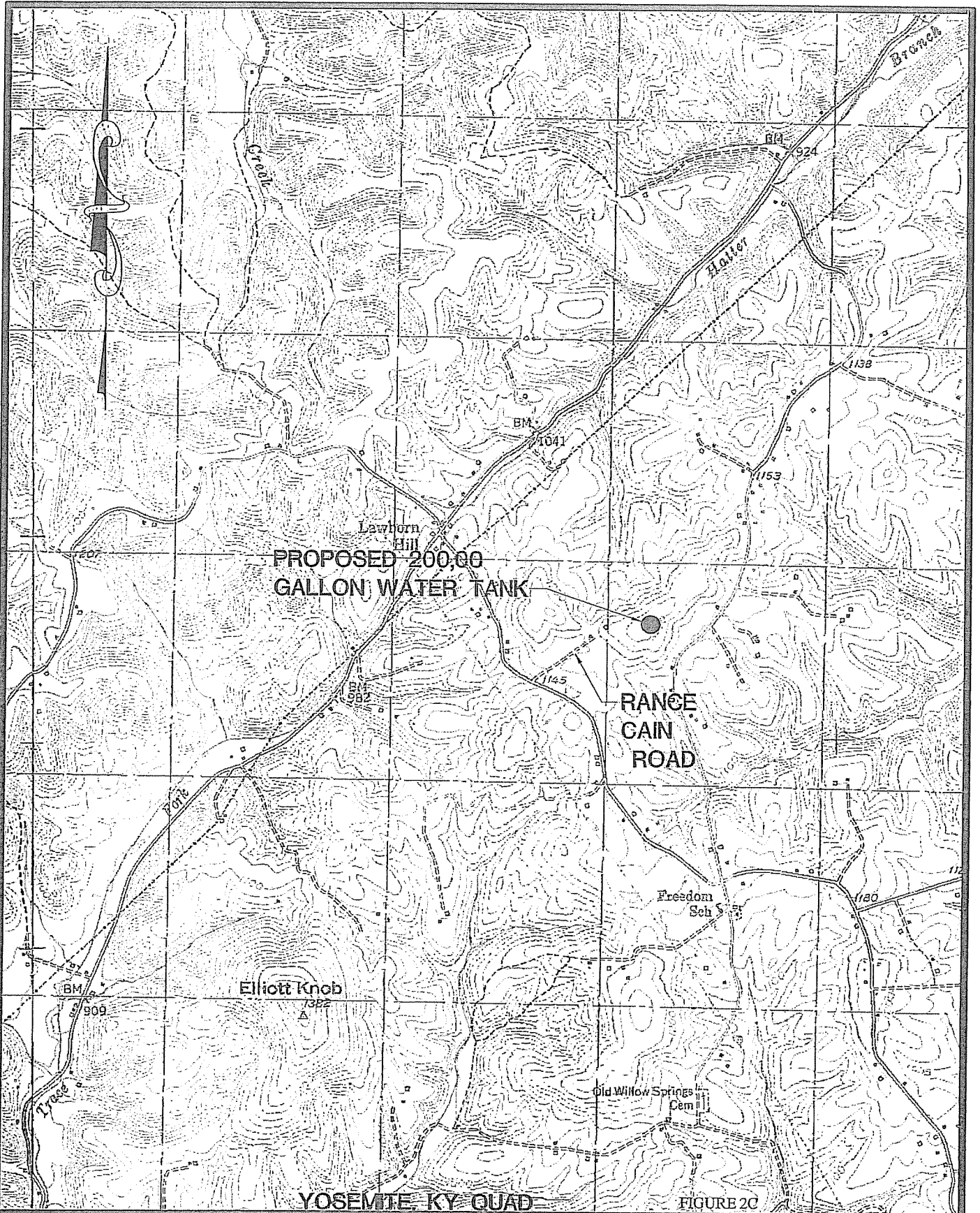
PUNCHEON CAMP ROAD/WINDSOR ROAD

EAST CASEY COUNTY WATER DISTRICT
 WATER SYSTEM EXTENSIONS CASEY
 COUNTY, KY



KENVIRONS, INC.

452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
 (502) 695-4357



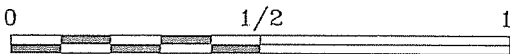
YOSEMITE, KY QUAD

FIGURE 2C

RANCE CAIN ROAD

EAST CASEY COUNTY WATER DISTRICT
 WATER SYSTEM EXTENSIONS CASEY
 COUNTY, KY

SCALE IN MILES



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EUBANK, KY QUAD

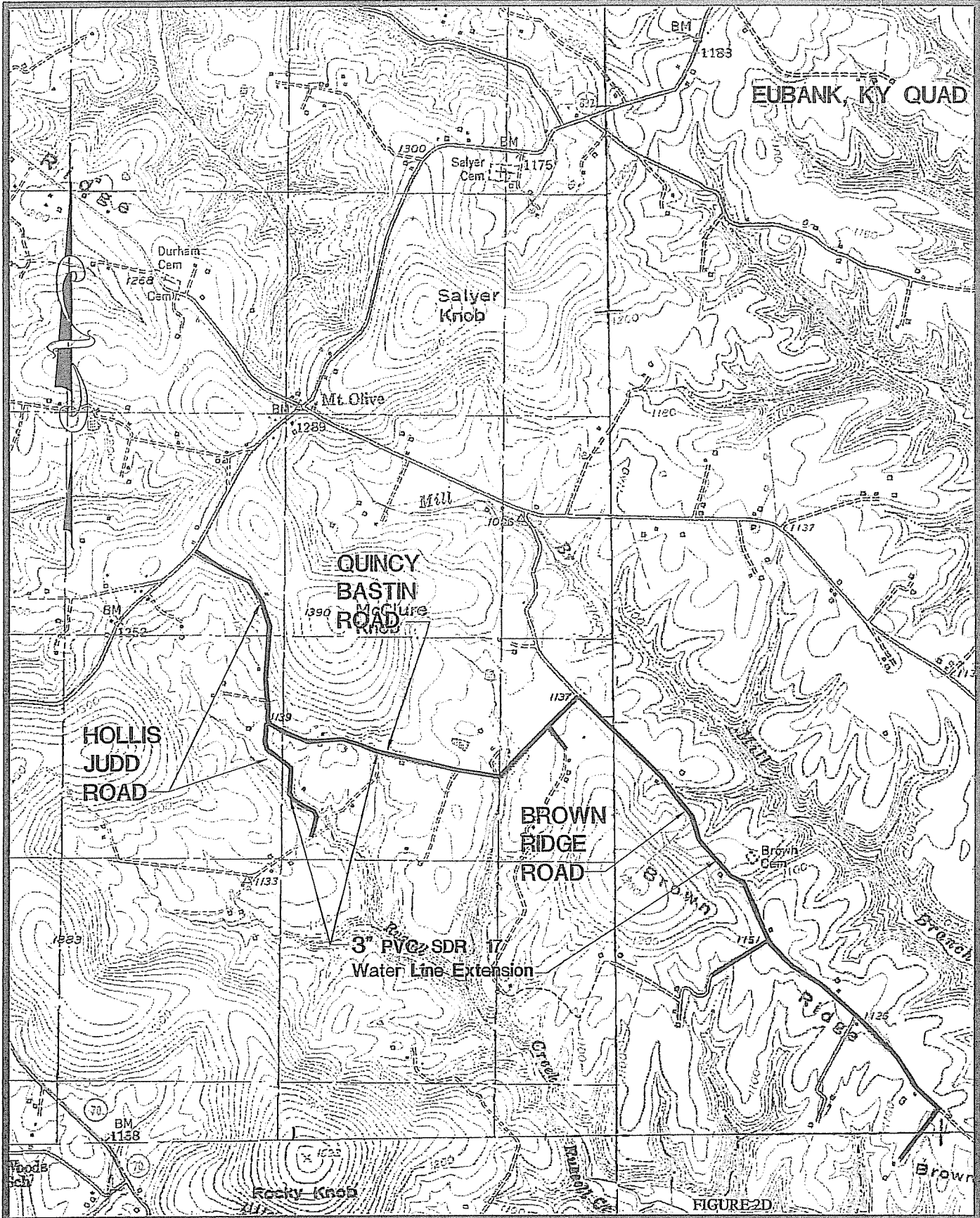
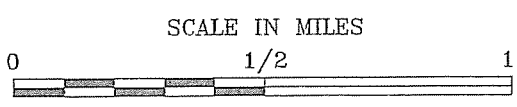


FIGURE 2D

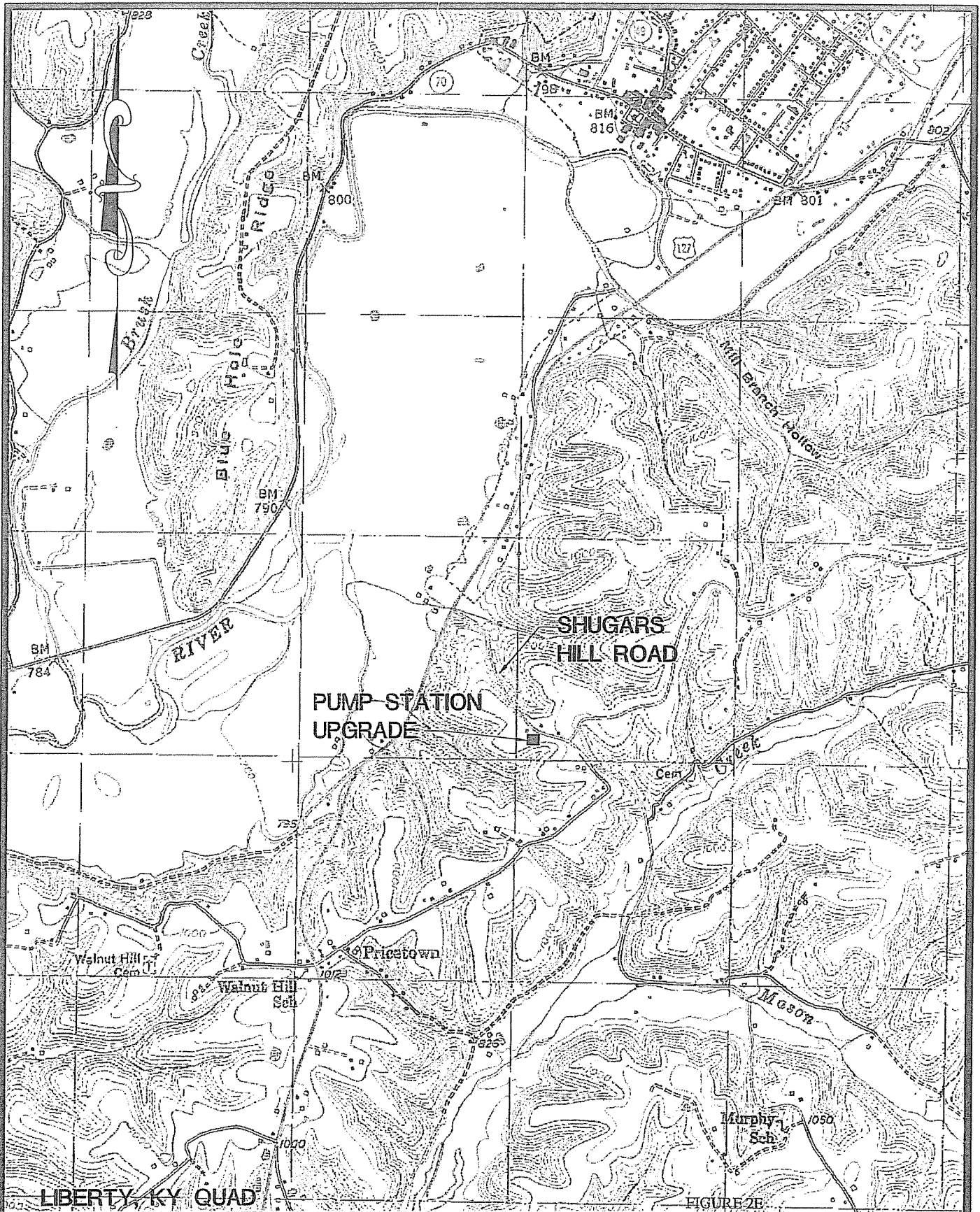
QUINCY BASTIN ROAD

EAST CASEY COUNTY WATER DISTRICT
WATER SYSTEM EXTENSIONS CASEY
CASEY COUNTY, KY



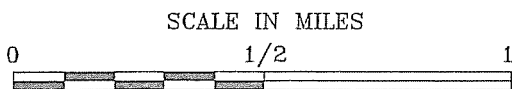
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SHUGARS HILL ROAD

EAST CASEY COUNTY WATER DISTRICT
 WATER SYSTEM EXTENSIONS CASEY
 COUNTY, KY



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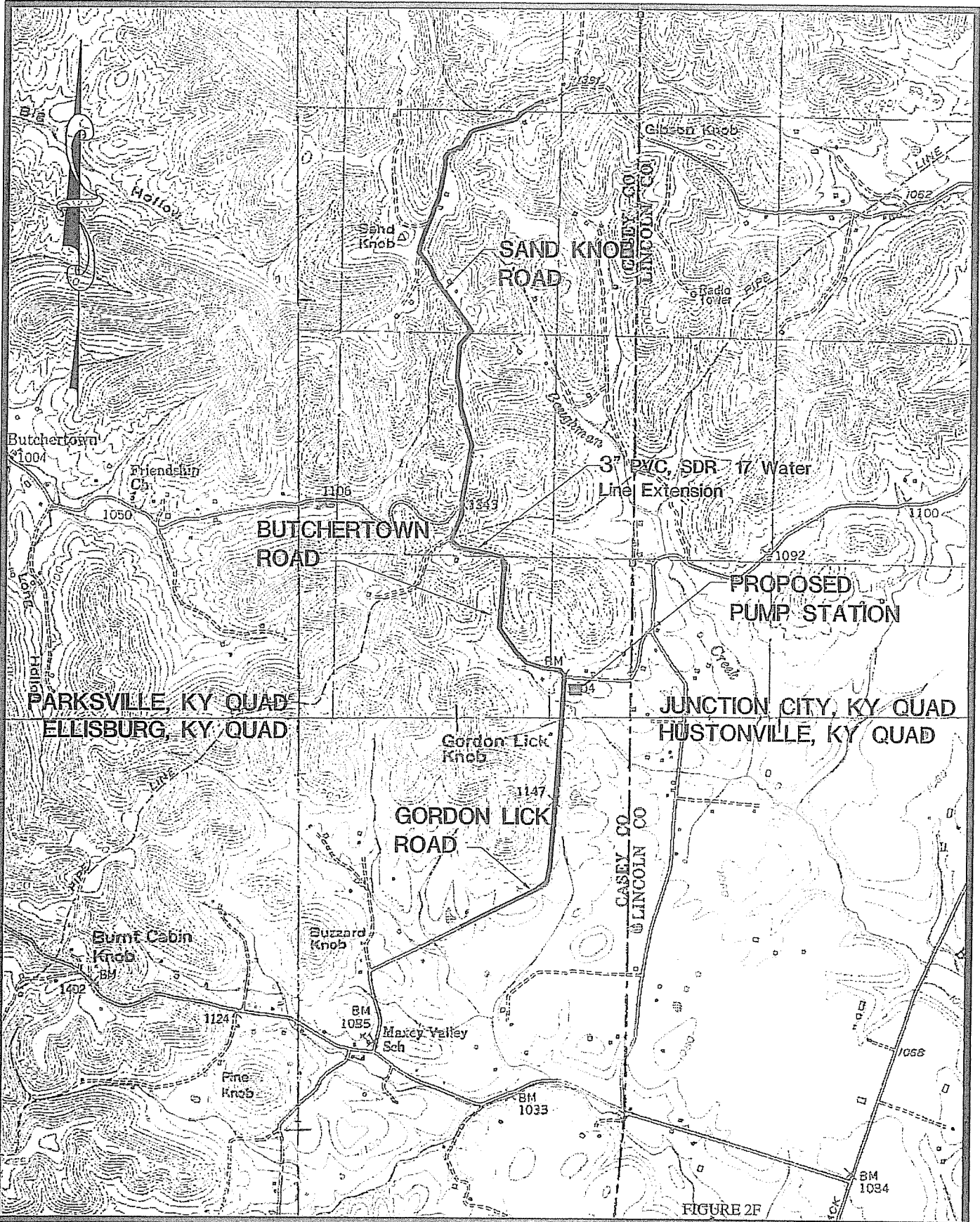
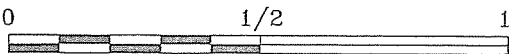


FIGURE 2F

GORDON LICK ROAD

EAST CASEY COUNTY WATER DISTRICT
 WATER SYSTEM EXTENSIONS CASEY
 COUNTY, KY

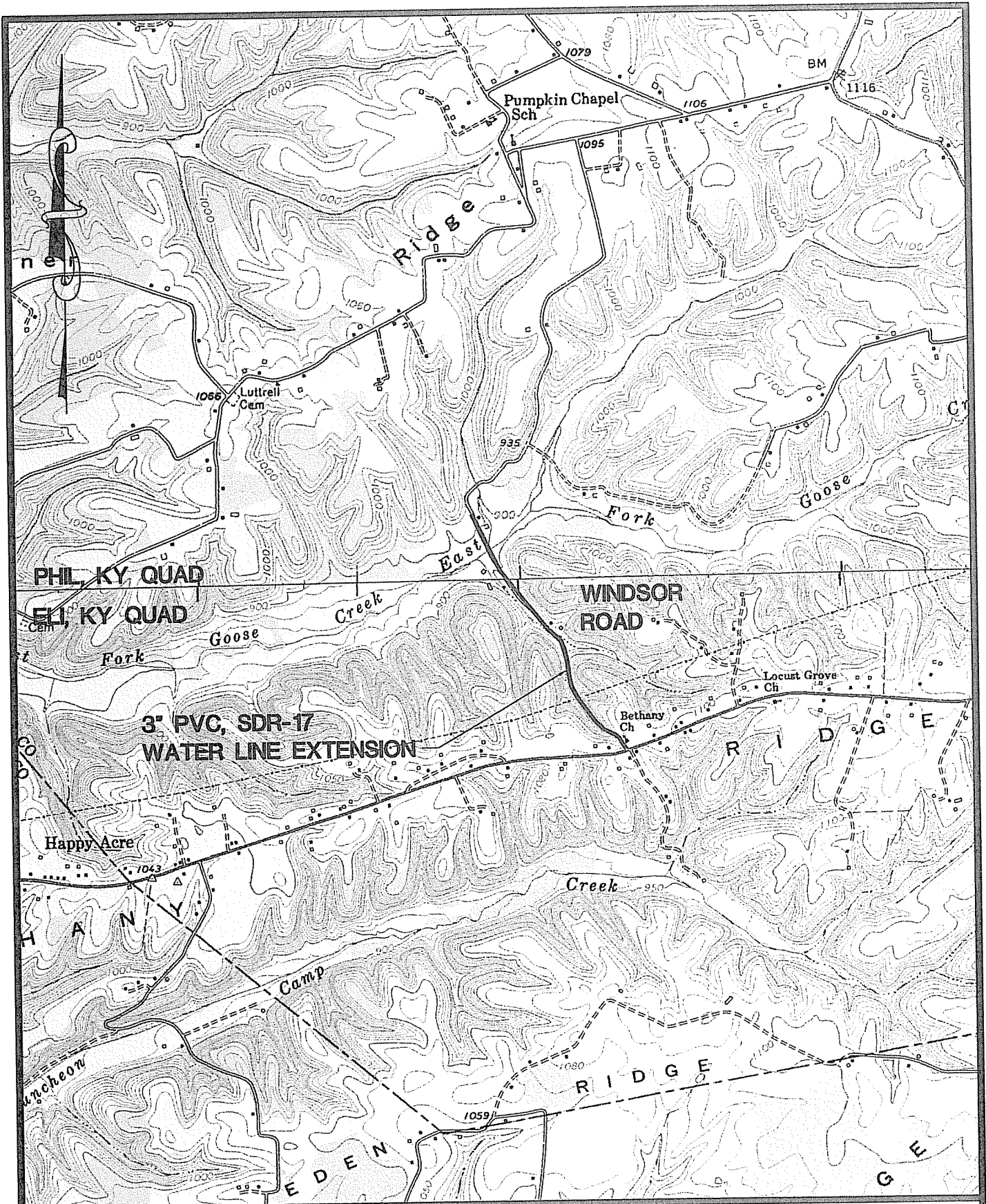
SCALE IN MILES



KENVIRONS, INC.

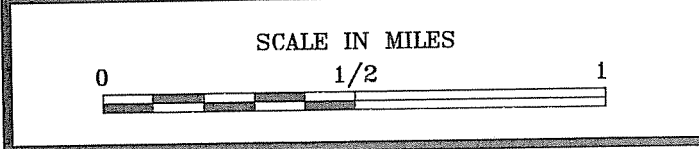
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 (502) 695-4357


Location Maps

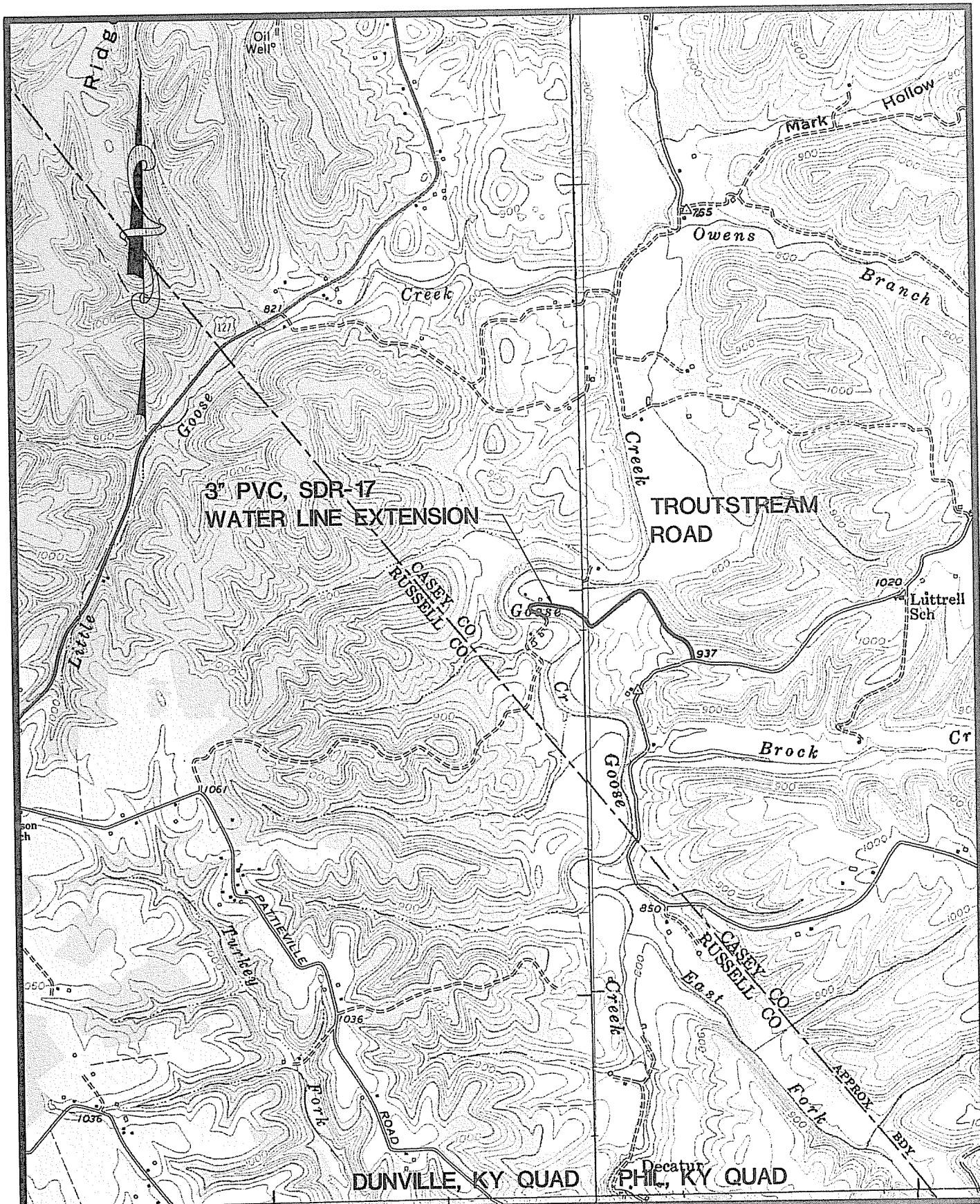


PUNCHEON CAMP ROAD/WINDSOR ROAD

**EAST CASEY COUNTY WATER DISTRICT
VARIOUS WATERLINE EXTENSIONS
CASEY COUNTY, KY**



 **KENVIRONS, INC.**
452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 695-4357



**3" PVC, SDR-17
WATER LINE EXTENSION**

**TROUTSTREAM
ROAD**

**CASEY CO.
RUSSELL CO.**

**CASEY CO.
RUSSELL CO.**

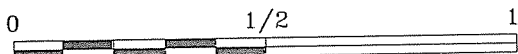
DUNVILLE, KY QUAD

PHIL, KY QUAD

TROUTSTREAM ROAD

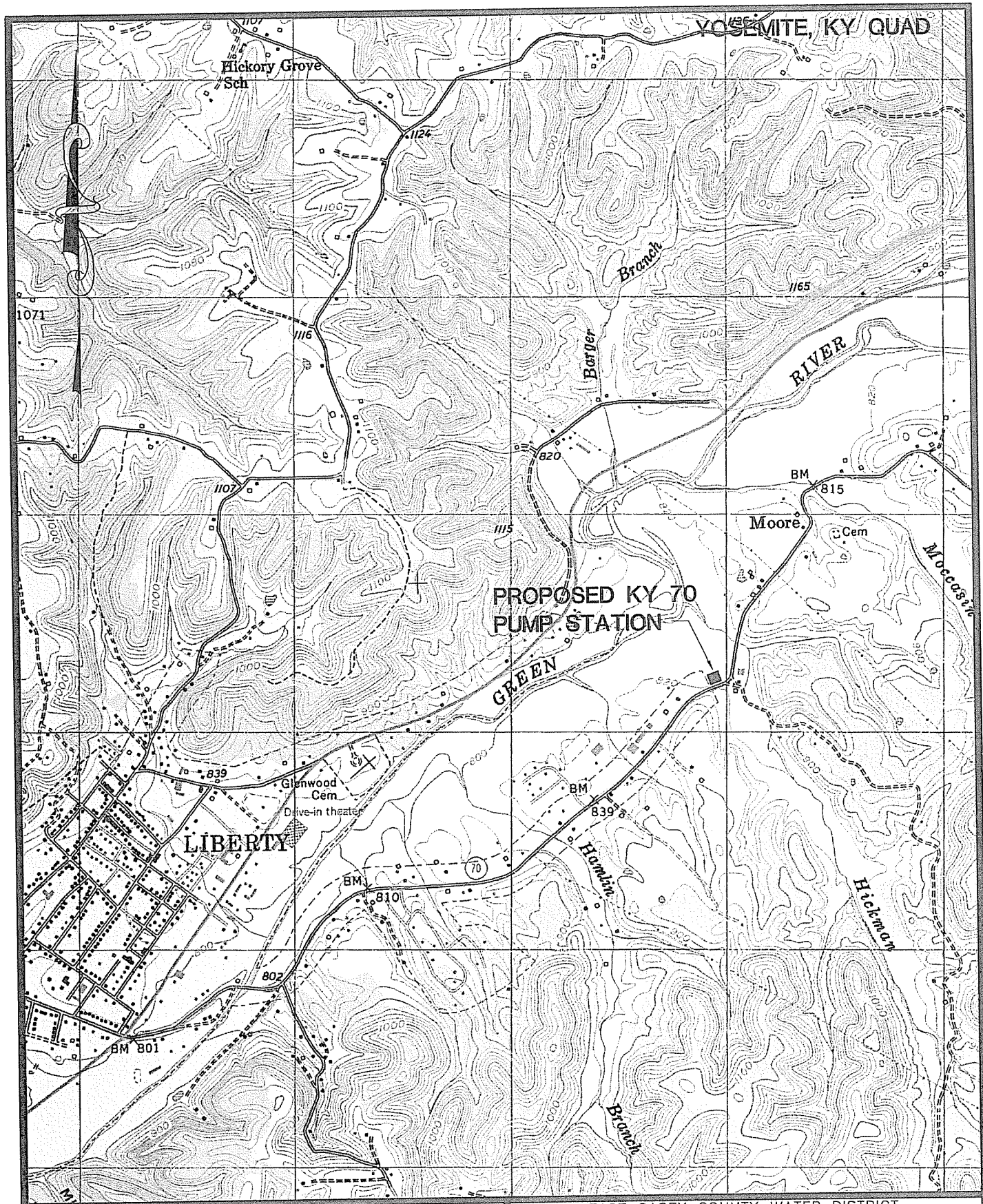
**EAST CASEY COUNTY WATER DISTRICT
VARIOUS WATERLINE EXTENSIONS
CASEY COUNTY, KY**

SCALE IN MILES



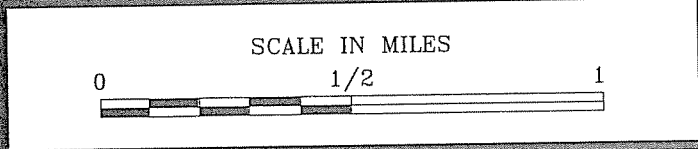
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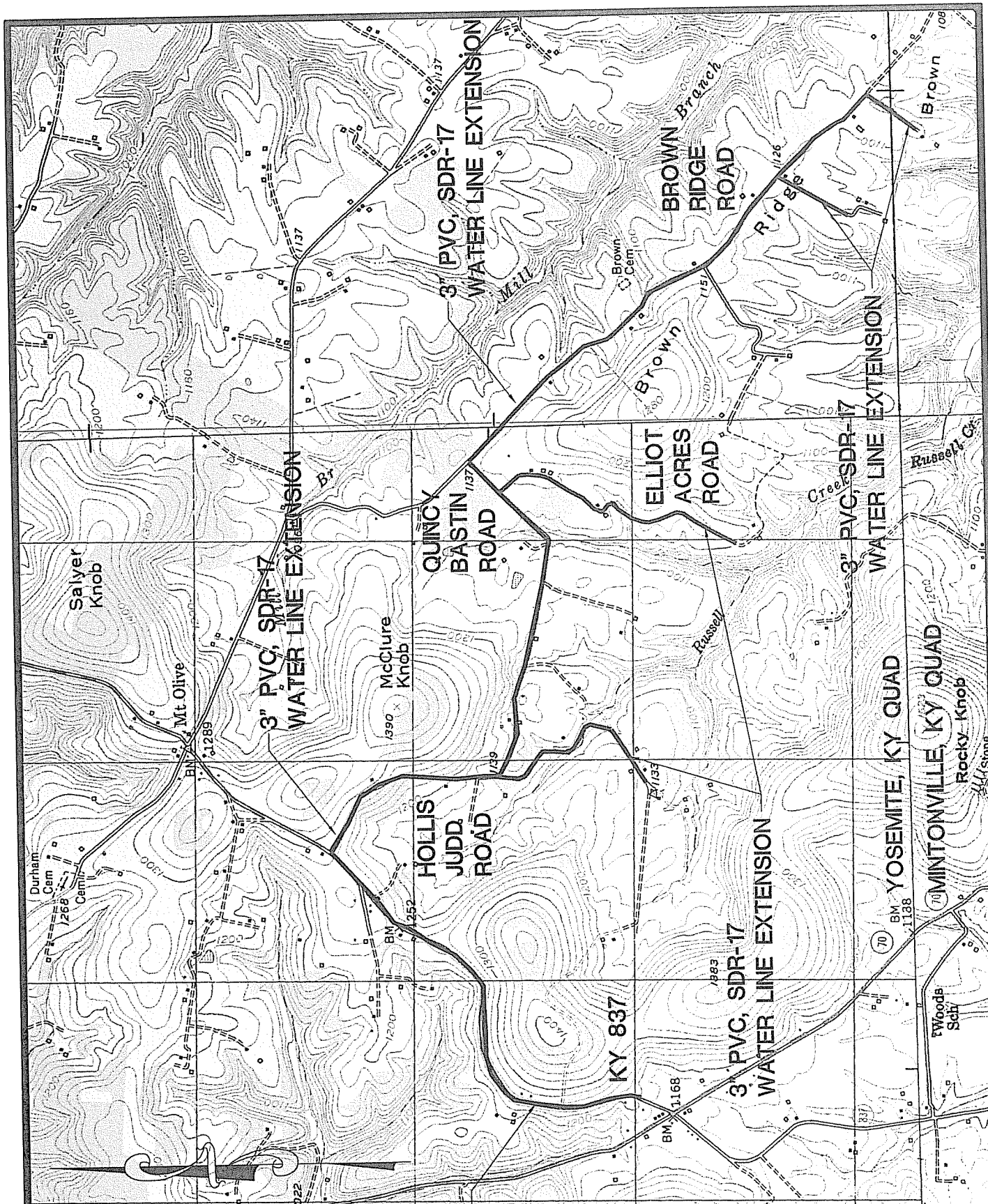


KY 70 PUMP STATION

**EAST CASEY COUNTY WATER DISTRICT
VARIOUS WATERLINE EXTENSIONS
CASEY COUNTY, KY**



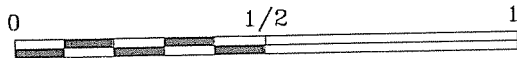
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(502) 695-4357



QUINCY BASTIN ROAD

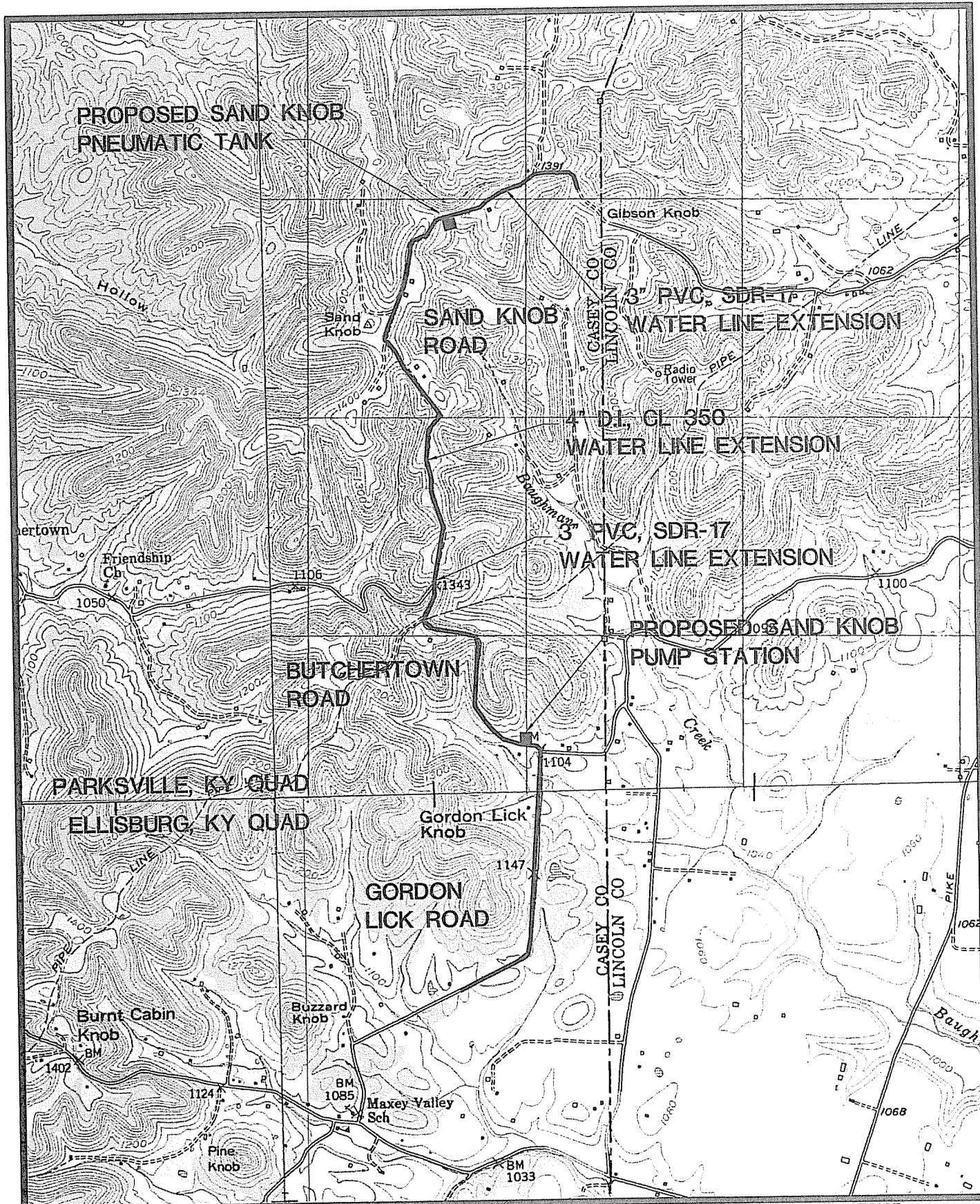
EAST CASEY COUNTY WATER DISTRICT
 VARIOUS WATERLINE EXTENSIONS
 CASEY COUNTY, KY

SCALE IN MILES



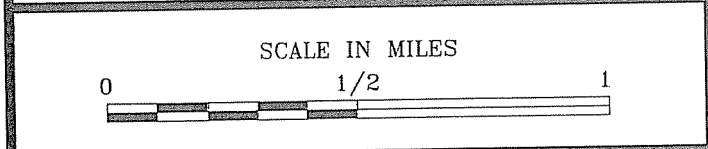
KENVIRONS, INC.


452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
 (502) 695-4357

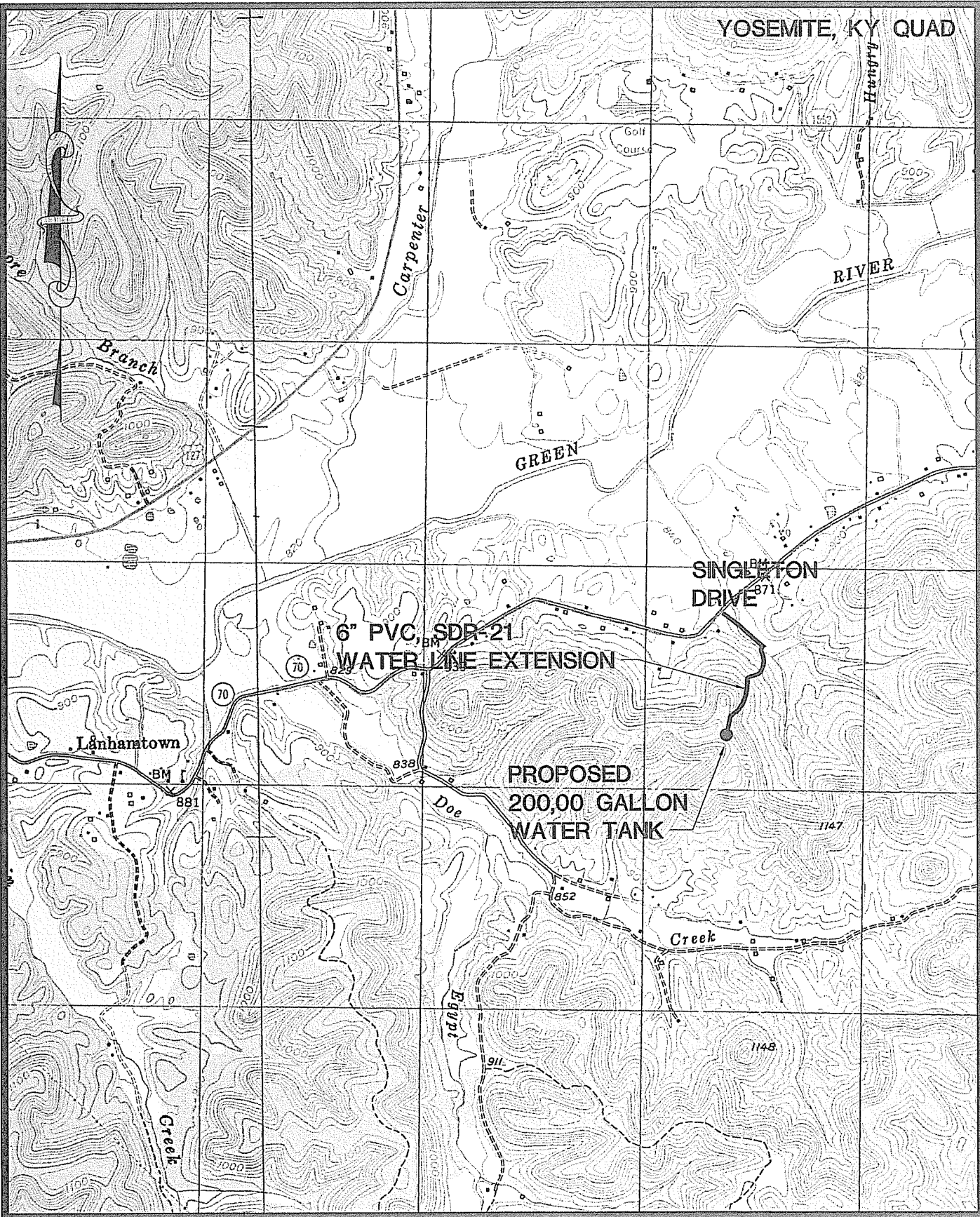


GORDON LICK ROAD

**EAST CASEY COUNTY WATER DISTRICT
VARIOUS WATERLINE EXTENSIONS
CASEY COUNTY, KY**



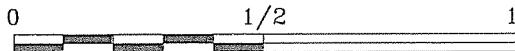
 **KENVIRONS, INC.**
452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 685-4357



SINGLETON DRIVE

EAST CASEY COUNTY WATER DISTRICT
VARIOUS WATERLINE EXTENSIONS
CASEY COUNTY, KY

SCALE IN MILES



KENVIRONS, INC.

452 VERSAILLES ROAD, FRANKFORT, KENTUCKY
(502) 695-4357

EXHIBIT B

**Bid Tabs, Engineer's Letter of Recommendation,
Project Cost (As Bid Budget)**



Kenvirons, Inc.

452 Versailles Road • Frankfort, KY 40601 • Phone: (502) 695-4357 • Fax: (502) 695-4363
Civil & Environmental Engineering and Laboratory Services

April 1, 2013

East Casey County Water District
690 South Wallace Wilkinson Blvd.
Liberty, KY 42539

ATTN: Mr. Ricky Carman, Chairman

Re: DWL 12046 – 200,000 Gallon Water Storage Tank

Dear Mr. Carman:

The bid opening for the above referenced project was held on March 11, 2013 at 2:30 P. M. local time at the office of the East Casey County Water District. There were two (2) bidders that submitted a bid on this project. The bids are as follows:

Kentucky Glass Lined Tank Systems, Inc.	\$ 268,491.00
Caldwell Tanks, Inc.....	\$ 291,000.00

Please find attached a copy of the certified bid tabulation.

It is recommended that 200,000 Gallon Water Storage Tank project be awarded to Kentucky Glass Lined Tank Systems, Inc. subject to obtaining the necessary approvals from the Water District.

Please contact me if you have any questions.

Sincerely,

Chris N. Jones, P.E.
Project Manager



Kenvirons, Inc.

452 Versailles Road • Frankfort, KY 40601 • Phone: (502) 695-4357 • Fax: (502) 695-4363
Civil & Environmental Engineering and Laboratory Services

April 1, 2013

East Casey County Water District
690 South Wallace Wilkinson Blvd.
Liberty, KY 42539

ATTN: Mr. Ricky Carman, Chairman

Re: DWL 12046 – Various Waterline Extensions

Dear Mr. Carman:

The bid opening for the above referenced project was held on March 11, 2013 at 2:30 P. M. local time at the office of the East Casey County Water District. There were nine (9) bidders that submitted a bid on this project. The lowest three (3) bids are as follows:

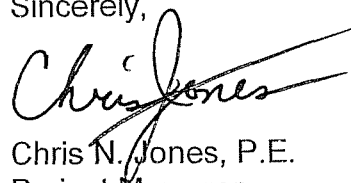
Cumberland Pipeline, LLC	\$ 776,202.00
Packs', Inc.....	\$ 778,100.00
Salmon Construction, Inc.....	\$ 815,542.60

Please find attached a copy of the certified bid tabulation.

It is recommended that the Various Waterline Extensions project be awarded to Cumberland Pipeline subject to obtaining the necessary approvals from the District and only if the District is willing to assess liquidated damages to cover additional costs if the contractor exceeds the contracted calendar days set forth in the Agreement.

Please contact me if you have any questions.

Sincerely,



Chris N. Jones, P.E.
Project Manager

Drinking Water SRF Project Cost Summary

Project Title: ECCWD Various Waterline Extensions, Tank and Pump Station Project

WRIS#: WX21045012

Project Budget: Estimated

As Bid

Revised

Cost Classification		DWSRF KIA Loan	Funding Source 1	Funding Source 2	Funding Source 3	Funding Source 4	Funding Source 5	Local Funds	Unfunded Costs	Total
1	Administrative Expenses	\$ 25,000								
2	Legal Expenses	\$ 17,500								
3	Land, Appraisals, Easements									
4	Relocation Expenses & Payments									
5	Planning	\$ 15,000								
6	Engineering Fees – Design	\$ 91,900								
7	Engineering Fees – Construction									
8	Engineering Fees – Inspection	\$ 58,100								
9	Engineering Fees – Other	\$ 7,900								
10	Construction	\$ 1,044,693								
11	Equipment									
12	Miscellaneous									
13	Contingencies	\$ 284,907								
	Total	\$ 1,545,000								

Funding Sources	Amount	Date Committed
1 SRF Loan	\$ 1,545,000	
2		
3		
4		
5		
Total	\$ 1,545,000	

Local Funding Sources	Amount	Date Committed
1		
2		
3		
Total		

Total Funding \$1,545,000

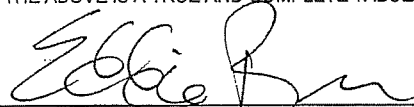
Cost Categories	Funding Source	Total Cost
Treatment		
Transmission and Distribution	SRF Loan	\$ 1,545,000
Source		
Storage		
Purchase of Systems		
Restructuring		
Land Acquisition		
Total Costs		

KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

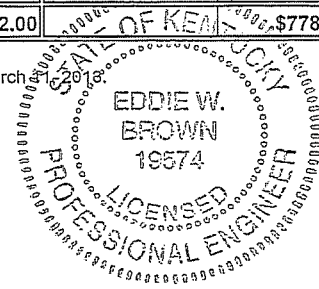
BID TABULATIONS
 PROJECT: DWL12046 Various Waterline Extensions
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

Base Bid				Cumberland Pipeline, LLC P.O. Box 277 Russell Springs, KY 42642		Packs' Inc. 75 Baldrige Road Morehead, KY 40351		Salmon Construction, Inc. P.O. Box 97 Mt. Washington, KY 40047	
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
1	6" PVC, SDR 21 Pipe	LF	2,350	\$9.90	\$23,265.00	\$9.40	\$22,090.00	\$10.40	\$24,440.00
2	4" PVC, SDR 17 Pipe	LF	6,500	6.45	41,925.00	9.00	58,500.00	8.20	53,300.00
3	4" Ductile Iron Class 350 Pipe	LF	1,000	22.50	22,500.00	25.00	25,000.00	19.20	19,200.00
4	3" PVC, SDR 17 Pipe	LF	50,000	5.63	281,500.00	5.99	299,500.00	5.30	265,000.00
5	Bore and Case for 3" Pipe	LF	40	66.45	2,658.00	65.00	2,600.00	66.34	2,653.60
6	Open Cut Steel Encasement for 3" Pipe	LF	220	57.90	12,738.00	50.00	11,000.00	40.00	8,800.00
7	Directional Bore Creek Crossing	LS	7	5,540.00	38,780.00	500.00	3,500.00	4,570.00	31,990.00
8	Creek Crossing for 3" Pipe	LF	230	101.00	23,230.00	10.00	2,300.00	100.00	23,000.00
9	4" Gate Valve	EA	1	502.00	502.00	850.00	850.00	644.00	644.00
10	3" Gate Valve	EA	17	460.00	7,820.00	750.00	12,750.00	600.00	10,200.00
11	Air Release Valve	EA	4	612.00	2,448.00	675.00	2,700.00	462.00	1,848.00
12	6" x 3" Tapping Sleeve and Valve	EA	1	1,477.00	1,477.00	1,700.00	1,700.00	1,200.00	1,200.00
13	4" x 3" Tapping Sleeve and Valve	EA	1	1,452.00	1,452.00	1,500.00	1,500.00	1,009.00	1,009.00
14	3" Blow Off Assembly	EA	9	950.00	8,550.00	950.00	8,550.00	917.00	8,253.00
15	5/8" x 3/4" Meter Setting	EA	44	660.00	29,040.00	900.00	39,600.00	538.00	23,672.00
16	3/4" Service Tubing	LF	2,640	6.00	15,840.00	5.25	13,860.00	3.85	10,164.00
17	Pavement Replacement								
17.1	Concrete	LF	50	20.00	1,000.00	20.00	1,000.00	25.00	1,250.00
17.2	Light Duty Bituminous	LF	300	25.00	7,500.00	15.00	4,500.00	20.00	6,000.00
17.3	Gravel	LF	100	6.00	600.00	10.00	1,000.00	10.00	1,000.00
18	KY 70 Pump Station w/ Access Road	LS	1	94,860.00	94,860.00	86,600.00	86,600.00	103,786.00	103,786.00
19	Sand Knob Pneumatic Tank Building w/ Access Road	LS	1	61,335.00	61,335.00	61,000.00	61,000.00	71,375.00	71,375.00
20	Sand Knob Pump Station w/ Access Road	LS	1	86,682.00	86,682.00	77,000.00	77,000.00	88,758.00	88,758.00
21	Access Road to Tank Site	LS	1	10,500.00	10,500.00	41,000.00	41,000.00	58,000.00	58,000.00
TOTAL BASE BID					\$776,202.00		\$778,100.00		\$815,542.60

THE ABOVE IS A TRUE AND COMPLETE TABULATION OF BIDS RECEIVED UNTIL 2:30 P.M. Local Time on March 11, 2013.

BY: 
 Eddie Brown, P.E.

3-18-13
 DATE



KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

BID TABULATIONS
 PROJECT: DWL12046 Various Waterline Extensions
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

Base Bid				Akins Excavating Company, Inc. 182 Busy Lane Corbin, KY 40701		Cleary Construction, Inc. 2006 Edmonton Road Tompkinsville, KY 42167		United Pipeline, Inc. 4627 Gamaliel Road Tompkinsville, KY 42167		
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST	
						\$8.65 *	\$20,327.50	\$13.00	\$30,550.00	
1	6" PVC, SDR 21 Pipe	LF	2,350	\$10.50	\$24,675.00					
2	4" PVC, SDR 17 Pipe	LF	6,500	7.00	45,500.00	6.90	44,850.00	9.00	58,500.00	
3	4" Ductile Iron Class 350 Pipe	LF	1,000	25.00	25,000.00	20.00	20,000.00	30.00	30,000.00	
4	3" PVC, SDR 17 Pipe	LF	50,000	6.00	300,000.00	6.00	300,000.00	6.25	312,500.00	
5	Bore and Case for 3" Pipe	LF	40	118.00	4,720.00	83.00	3,320.00	95.00	3,800.00	
6	Open Cut Steel Encasement for 3" Pipe	LF	220	25.00	5,500.00	56.00	12,320.00	60.00	13,200.00	
7	Directional Bore Creek Crossing	LS	7	2,950.00	20,650.00	3,500.00	24,500.00	3,400.00	23,800.00	
8	Creek Crossing for 3" Pipe	LF	230	27.00	6,210.00	125.00	28,750.00	70.00	16,100.00	
9	4" Gate Valve	EA	1	760.00	760.00	730.00	730.00	900.00	900.00	
10	3" Gate Valve	EA	17	665.00	11,305.00	680.00	11,560.00	700.00	11,900.00	
11	Air Release Valve	EA	4	675.00	2,700.00	600.00	2,400.00	850.00	3,400.00	
12	6" x 3" Tapping Sleeve and Valve	EA	1	2,150.00	2,150.00	1,480.00	1,480.00	1,400.00	1,400.00	
13	4" x 3" Tapping Sleeve and Valve	EA	1	2,100.00	2,100.00	1,480.00	1,480.00	1,700.00	1,700.00	
14	3" Blow Off Assembly	EA	9	900.00	8,100.00	1,000.00	9,000.00	800.00	7,200.00	
15	5/8" x 3/4" Meter Setting	EA	44	560.00	24,640.00	500.00	22,000.00	600.00	26,400.00	
16	3/4" Service Tubing	LF	2,640	5.00	13,200.00	5.00	13,200.00	5.00	13,200.00	
17	Pavement Replacement									
	17.1 Concrete	LF	50	36.00	1,800.00	25.00	1,250.00	60.00	3,000.00	
	17.2 Light Duty Bituminous	LF	300	26.00	7,800.00	25.00	7,500.00	60.00	18,000.00	
	17.3 Gravel	LF	100	18.00	1,800.00	10.00	1,000.00	30.00	3,000.00	
18	KY 70 Pump Station w/ Access Road	LS	1	123,000.00	123,000.00	115,000.00	115,000.00	115,800.00	115,800.00	
19	Sand Knob Pneumatic Tank Building w/ Access Road	LS	1	70,000.00	70,000.00	69,000.00	69,000.00	75,000.00	75,000.00	
20	Sand Knob Pump Station w/ Access Road	LS	1	106,000.00	106,000.00	114,000.00	114,000.00	116,300.00	116,300.00	
21	Access Road to Tank Site	LS	1	20,000.00	20,000.00	9,000.00	9,000.00	10,000.00	10,000.00	
TOTAL BASE BID						\$827,610.00		* \$832,667.50		\$895,650.00

*- DENOTES AN ARITHMETIC ERROR WAS MADE ON BASE BID, AMOUNT HAS BEEN CORRECTED TO REFLECT UNIT PRICE SUBMITTED ON BASE BID.

KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363

BID TABULATIONS
 PROJECT: DWL12046 Various Waterline Extensions
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

Base Bid				Clay Pipeline 70 Fox Hollow Road Manchester, KY 40962		Weddle Enterprises, Inc. 25 Shane's Lane Somerset, KY 42501		Lagco, Inc. P.O. Box 12510 Lexington, KY 40583	
ITEM NO	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	COST	UNIT COST	COST
1	6" PVC, SDR 21 Pipe	LF	2,350	\$10.20	\$23,970.00	\$12.06	\$28,341.00	\$26.00	\$61,100.00
2	4" PVC, SDR 17 Pipe	LF	6,500	8.10	52,650.00	8.96	58,240.00	21.00	136,500.00
3	4" Ductile Iron Class 350 Pipe	LF	1,000	22.25	22,250.00	22.09	22,090.00	57.00	57,000.00
4	3" PVC, SDR 17 Pipe	LF	50,000	6.25	312,500.00	8.23	411,500.00	19.00	950,000.00
5	Bore and Case for 3" Pipe	LF	40	75.00	3,000.00	69.00	2,760.00	218.00	8,720.00
6	Open Cut Steel Encasement for 3" Pipe	LF	220	42.40	9,328.00	43.20	9,504.00	77.60	17,072.00
7	Directional Bore Creek Crossing	LS	7	3,365.00	23,555.00	3,750.00	26,250.00	8,693.00	60,851.00
8	Creek Crossing for 3" Pipe	LF	230	56.30	12,949.00	84.00	19,320.00	51.00	11,730.00
9	4" Gate Valve	EA	1	735.00	735.00	481.00	481.00	667.00	667.00
10	3" Gate Valve	EA	17	658.00	11,186.00	408.00	6,936.00	645.00	10,965.00
11	Air Release Valve	EA	4	645.00	2,580.00	565.50	2,262.00	860.00	3,440.00
12	6" x 3" Tapping Sleeve and Valve	EA	1	1,405.00	1,405.00	1,523.00	1,523.00	1,694.00	1,694.00
13	4" x 3" Tapping Sleeve and Valve	EA	1	1,785.00	1,785.00	1,834.00	1,834.00	1,471.00	1,471.00
14	3" Blow Off Assembly	EA	9	1,090.00	9,810.00	1,885.00	16,965.00	854.00	7,686.00
15	5/8" x 3/4" Meter Setting	EA	44	520.00	22,880.00	548.00	24,112.00	418.25	18,403.00
16	3/4" Service Tubing	LF	2,640	1.25	3,300.00	8.90	23,496.00	5.90	15,576.00
17	Pavement Replacement								
	17.1 Concrete	LF	50	63.00	3,150.00	46.00	2,300.00	31.96	1,598.00
	17.2 Light Duty Bituminous	LF	300	32.00	9,600.00	26.50	7,950.00	25.00	7,500.00
	17.3 Gravel	LF	100	10.00	1,000.00	7.80	780.00	4.83	483.00
18	KY 70 Pump Station w/ Access Road	LS	1	167,850.00	167,850.00	184,146.00	184,146.00	169,454.00	169,454.00
19	Sand Knob Pneumatic Tank Building w/ Access Road	LS	1	96,225.00	96,225.00	103,312.00	103,312.00	78,656.00	78,656.00
20	Sand Knob Pump Station w/ Access Road	LS	1	137,180.00	137,180.00	155,641.00	155,641.00	140,356.00	140,356.00
21	Access Road to Tank Site	LS	1	8,000.00	8,000.00	20,000.00	20,000.00	32,875.00	32,875.00
TOTAL BASE BID					\$936,888.00		\$1,129,743.00		\$1,793,797.00

KENVIRONS, INC.
 452 VERSAILLES ROAD
 FRANKFORT, KENTUCKY 40601
 TEL (502) 695-4357
 FAX (502) 695-4363


BID TABULATIONS

PROJECT: DWL12046 200,000 Gallon Water Storage Tank
 LOCATION: Casey County, Kentucky - East Casey County Water District
 BID DATE: March 11, 2013 at 2:30 P.M. Local Time

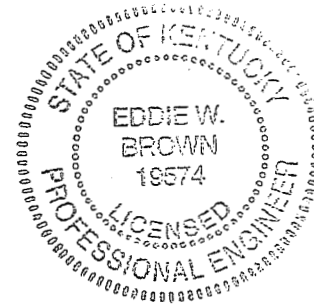
Base Bid

Base Bid				Kentucky Glass Lined Tank Systems, Inc. P.O. Box 13370 Lexington, KY 40583		Caldwell Tanks, Inc. P.O. Box 35770 Louisville, KY 40232	
ITEM NO	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	UNIT COST	COST
1	200,000 Gallon Water Storage Tank	LS	1	\$154,264.00	\$154,264.00	\$174,000.00	\$174,000.00
2	Earthwork	LS	1	3,333.00	3,333.00	21,500.00	21,500.00
3	Foundation	LS	1	60,400.00	60,400.00	31,500.00	31,500.00
4	Painting	LS	1				
5	Yard Work including Channel Lining & Site Restoration	LS	1	3,000.00	3,000.00	5,000.00	5,000.00
6	Yard Piping	LS	1	8,166.00	8,166.00	23,000.00	23,000.00
7	Check Valve Station	LS	1	24,156.00	24,156.00	15,000.00	15,000.00
8	Access Road	LS	1	1,866.00	1,866.00	5,500.00	5,500.00
9	Mixing System	LS	1	13,306.00	13,306.00	15,500.00	15,500.00
TOTAL BASE BID					\$268,491.00		\$291,000.00

THE ABOVE IS A TRUE AND COMPLETE TABULATION OF BIDS RECEIVED UNTIL 2:30 P.M. Local Time on March 11, 2013.

BY: 
 Eddie Brown, P.E.

3-18-13
 DATE



Final Engineering Report

EXHIBIT C

P.O. Box 332
690 S. Wallace Wilkinson Blvd.
Liberty, Ky. 42539
606-787-9961

.....

East Casey Co. Water District

April 1, 2013

Chris Jones
Kenvirons Inc.
452 Versailles Rd.
Frankfort, KY 40601

RE: Various Waterline Extensions (WX21045012)
Casey County, Kentucky

Dear Chris:

The East Casey Co. Water District has easement to place water lines for the Various Water Line Extension Project, the easements have been granted by private land owners, as well as the Casey Co. Fiscal Court, and the KY Transportation Cabinet where appropriate..

Please feel free to contact me If you should have any questions or need additional information

Sincerely,



Andy Greyholds
Manager

.....

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

November 16, 2012

Mr. Andy Greynolds
East Casey County Water District
690 S. Wallace Wilkinson Blvd.
P.O. Box 332
Liberty, KY 42539

RE: East Casey County Water District
AI # 33855, APE20120001
PWSID # 0230556-12-001
East Casey County Contracts 18A & 18B
Casey County, KY

Dear Mr. Greynolds:

We have reviewed and approved the plans and specifications for the above referenced project with respect to sanitary features of design. At this time the project may proceed. The following information and requirements relate to the Drinking Water State Revolving Loan Fund (SRF) process:

1. A set of approved plans should be made available at the project site at all times. If modifications are made to the plans and specifications prior to bidding, then four (4) complete sets of revised plans and specifications shall be submitted to the Division of Water for approval. Our notice of approval will be issued at a later date by separate correspondence.
2. Clear site certificates of all involved properties must be submitted to the Division of Water prior to construction.
3. You are hereby authorized to advertise for bids to construct this project. In addition to other notices, you shall advertise the bid for seven (7) to twenty-one (21) days prior to the Bid Opening date in the newspaper with the largest circulation in your area.
4. A set of AS-BID plans and specifications (with any APPROVAL conditions addressed) and a copy of the Advertisement shall be submitted to the Division of Water when the project is advertised. These items will be reviewed as part of the Authority to Award process.
5. The attached Project Review and Cost Summary form is to be completed and signed after bids have been received and then submitted along with the supporting documents indicated on the form. Your signature on this form will certify that all the information to be retained by the recipient has been secured and is available for review by the Division at the pre-construction conference. The complete bid package should be submitted to the Division of Water within fourteen (14) days after the bid opening.
6. Upon approval of the bid documents, the Division of Water will authorize you to award the construction contract, and arrange for a pre-construction conference. Division of Water staff must be present at this pre-construction conference.

East Casey County Water District
AI # 33855, APE20120001
PWSID # 0230556-12-001
East Casey County Contracts 18A & 18B
Casey County, KY
November 16, 2012
Page 2 of 2

7. You are cautioned that the advertisement and award of this contract will be subject to the laws and regulations that govern the DWSRF process and the conditions of your KIA loan agreement.
8. Please be advised that the construction contract is subject to the Equal Employment Opportunity requirements contained in Executive Order 11246. Equal Employment opportunity affirmative action by the prime contractor and all subcontractors is mandated throughout the duration of the contract. Documentation of efforts to comply with Executive Order 11246, Equal Employment Opportunity in accordance with the EPA Special Notice to Bidders is required.
9. Documentation of compliance with the DBE Fair Share Policy in accordance with 40 CFR 31.36(e) is required and must be submitted to the Division of Water within fourteen (14) days of the bid opening.
10. If sanitary features of the approved plans are to be changed during construction, the engineer shall submit the revision to the Division of Water for approval prior to implementation of the modification. Written approval from the Division of Water must be granted prior to on-site work dedicated to the adjustment.
11. When this project is completed, the owner shall submit a written certification to the Division of Water that the above referenced water facilities have been constructed and tested in accordance with the approved plans. Such certification shall be signed by a licensed professional engineer.
12. When this project is completed, the engineer shall submit as-built drawings to the Division of Water.

If you have any questions concerning this project, please contact William Wright at (502) 564-3410 ext. 4829.

Sincerely,



Mark Rasche, P.E.
Supervisor, Engineering Section
Drinking Water Branch
Division of Water

MR:WW

Enclosures
Project Review and Cost Summary Form
SRF Eligible and Ineligible Items List

C: Kenvirons, Inc.
Casey County Health Department
Kentucky Infrastructure Authority
Public Service Commission

Distribution-Major Construction

East Casey Co Water District
Facility Requirements

Activity ID No.: APE20120001

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GACT0000000019 (East Casey County Contracts 18A & 18B) 46,250 linear feet of 3 inch PVC and 2,350 linear feet of 6 inch PVC, 200,000 gallon water storage tank, :

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new or relocated water line(s). Take samples at connection points to existing lines, at 1 mile intervals, and at dead ends without omitting any branch of the new or relocated water line. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7), 401 KAR 8:150 Section 4, Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-2	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new storage structure(s). With at least 1 sample taken at least 24 hours after the first construction complete sample(s), take 2 or more samples from the yard hydrant, the outlet piping from the storage structure, or a sample tap directly connected to the storage structure. Sample bottles shall be clearly identified as "special" construction tests. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:150 Section 4] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-3	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new pump(s). If the pump(s) are independent of (not directly connected to) the new or relocated lines, take at least 1 sample at the discharge side pitcock. Otherwise, no additional sampling beyond the sampling required for new or relocated lines shall be required in association with the pump(s). Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

Submission/Action Requirements:

Coliform:

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

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GACT0000000019 (continued):

Submittal/Action Requirements:

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

Narrative Requirements:

Additional Limitations:

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

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

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Narrative Requirements:

Condition No.	Condition
T-4	Final approval of facility. Upon completion of construction, the person who presented the plans shall certify in writing that the project has been completed in accordance with the "approved" plans and specifications. The public water supply shall operate the facility consistent with the approved plans and specifications. Any proposed change to the approved plan shall be submitted to the cabinet for approval. The public water supply shall not implement any change to the approved plan without the prior written approval of the cabinet. [401 KAR 8:100 Section 401 KAR 8:100(1)(8)]
T-5	During construction, a set of approved plans and specification shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 1(7)(a)]

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GTSP0000000002 (East Casey County Contracts 18A & 18B) 44 gpm at 425 tdh booster pump station, 200 gpm at 200 tdh booster pump station:

Limitation Requirements:

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

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GTSP0000000002 (continued):

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Limitation Requirements:

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

Narrative Requirements:

Additional Limitations:

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

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GTSP0000000002 (continued):

Narrative Requirements:

Additional Limitations:

Condition
No.

Condition

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

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GTSP0000000002 (continued):

Narrative Requirements:

Additional Limitations:

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

Distribution-Major Construction

East Casey Co Water District

Facility Requirements

Activity ID No.: APE20120001

GTSP0000000002 (continued):

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-24	<p>Additional Limitations: Pumps shall</p> <ul style="list-style-type: none">a) have ample capacity to supply the peak demand against the required distribution system pressure without dangerous overloading,b) be driven by prime movers able to meet the maximum horsepower condition of the pumps,c) be provided readily available spare parts and tools, andd) be served by control equipment that is properly protected against temperatures to be encountered. [Recommended Standards for Water Works 6.3]
T-25	<p>Additional Limitations: Pumps, their prime movers and accessories shall be controlled in such a manner that they will operate at rated capacity without dangerous overload. [Recommended Standards for Water Works 6.6.5]</p>
T-26	<p>Additional Limitations: Pump stations shall be located or controlled so that a bypass is available. [Recommended Standards for Water Works 6.4.e]</p>
T-27	<p>Additional Limitations: Pump stations shall contain indicating and totalizing metering of the total water pumped. Each pump shall have</p> <ul style="list-style-type: none">a) a standard pressure gauge on its discharge line andb) a compound gauge on its suction line. <p>Each pump should have a means for measuring the instantaneous volume per time discharge. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.4.2, Recommended Standards for Water Works 6.6.3]</p>
T-28	<p>Additional Limitations: Pumps shall be adequately valved to permit satisfactory operation, maintenance and repair of the equipment. Each pump shall have a positive-acting check valve on the discharge side between the pump and the shut-off valve. [Recommended Standards for Water Works 6.6.1]</p>

Distribution-Major Construction

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Activity ID No.: APE20120001

GTSP0000000002 (continued):

Narrative Requirements:

Additional Limitations:

Condition

No. Condition

T-29

Additional Limitations:

Piping for pumps shall, in general,

- 1) be designed so that the friction losses will be minimized,
- 2) not be subject to contamination,
- 3) have watertight joints,
- 4) be protected against surge or water hammer,
- 5) be provided with restraints where necessary, and
- 6) a) be such that each pump has an individual suction line or
- 6) b) be manifolded such that the lines insure similar hydraulic and operating conditions. [Recommended Standards for Water Works 6.6.2]

T-30

Additional Limitations:

To ensure continuous service when the primary power is interrupted, power supplied to pump stations shall be

- a) from at least 2 independent sources or
- b) from a primary source with a standby or auxiliary source provided.

If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination.
[Recommended Standards for Water Works 6.6.6]

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PORT0000000023 (East Casey County Contracts 18A & 18B) 46,250 linear feet of 3 inch PVC and 2,350 linear feet of 6 inch PVC:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a Depth ≥ 6 in below the bottom of the pipe. [Recommended Standards for Water Works 8.5.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-2	Depth	All water lines shall be covered to a Depth ≥ 30 in to prevent freezing. [Recommended Standards for Water Works 8.5.3, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Diameter	All new and existing water lines serving fire hydrants or where fire protection is provided shall have Diameter ≥ 6 in. [Recommended Standards for Water Works 8.1.2] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Diameter	All water lines shall have Diameter ≥ 3 in. [Recommended Standards for Water Works 8.1.4] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Diameter	Water lines with Diameter < 6 in shall not have fire hydrants. [Recommended Standards for Water Works 8.1.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-6	Distance	Water lines shall have a sufficient quantity of valves so that inconvenience and sanitary hazards will be minimized during repairs. A valve spacing Distance ≤ 800 feet should be utilized in non-commercial districts. Alternatively, non-commercial districts should utilize a valve spacing Distance ≤ 1 block. Commercial districts should utilize a valve spacing Distance ≤ 500 ft. [Recommended Standards for Water Works 8.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-7	Distance	Hydrant drains shall not be connected to sanitary sewers or storm drains and shall be located a Distance > 10 ft from sanitary sewers and storm drains. [Recommended Standards for Water Works 8.3.4] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

Distribution-Major Construction

East Casey Co Water District

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PORT0000000023 (continued):

Limitation Requirements:

Condition No.	Parameter	Condition
L-8	Distance	<p>Except when not practical, water lines shall be laid a horizontal Distance ≥ 10 ft from any existing or proposed sewer. The distance shall be measured edge to edge.</p> <p>In cases where it is not practical to maintain a 10 foot separation, water lines may be installed closer to a sewer provided that the water lines shall be laid in a separate trench or on an undisturbed shelf located on one side of the sewer at such an elevation that the bottom of the water line is at least 18 inches above the top of the sewer. [Recommended Standards for Water Works 8.6.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-9	Distance	<p>When water lines and sewers cross,</p> <ol style="list-style-type: none">1) water lines shall be laid such that either<ol style="list-style-type: none">a) the the top of the water line is a vertical Distance ≥ 18 in below the bottom of the sewer line orb) the bottom of the water line is a vertical Distance ≥ 18 in above the top of the sewer line,2) 1 full length of the water pipe shall be located so that both joints of the water pipe will be as far from the sewer as possible, and3) special structural support for the water and sewer pipes may be required. [Recommended Standards for Water Works 8.6.3] <p>This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-10	Distance	<p>The open end of an air relief pipe from automatic valves shall be extended a Distance ≥ 1.0 ft above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve shall be extended to the top of the pit. Use of manual air relief valves is recommended wherever possible. [Recommended Standards for Water Works 8.4.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-11	Distance	<p>Water lines shall have a sufficient quantity of valves so that inconvenience and sanitary hazards will be minimized during repairs. A valve spacing Distance ≤ 800 feet should be utilized in non-commercial districts. Alternatively, non-commercial districts should utilize a valve spacing Distance ≤ 1 block. Commercial districts should utilize a valve spacing Distance ≤ 500 ft. [Recommended Standards for Water Works 8.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-12	Pressure	<p>Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure ≥ 20 psi under all conditions of flow. [Recommended Standards for Water Works 8.1.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>

Distribution-Major Construction

East Casey Co Water District
Facility Requirements

Activity ID No.: APE20120001

PORT0000000023 (continued):

Limitation Requirements:

Condition No.	Parameter	Condition
L-13	Pressure	Pressure \geq 30 psi must be available on the discharge side of all meters. [401 KAR 8:100 Section 4(2)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
L-14	Residual Disinfection	New or relocated water lines shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect the new or relocated lines use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection \geq 25 ppm at the end of 24 hours. Follow the line disinfection with thorough flushing and place the lines into service if, and only if, Coliform monitoring applicable to the line does not show the presence of Coliform. If Coliform is detected, repeat flushing of the line and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:150 Section 4(1), Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-15	Velocity	Each blow-off or fire hydrant shall be sized so that Velocity \geq 2.5 ft/sec can be achieved in the water main served by the blow-off or hydrant during flushing. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-16	Velocity	Each blow-off or flush hydrant shall be sized so that Velocity \geq 2.5 ft/sec can be achieved in the water main served by the blow-off or hydrant during flushing. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

Monitoring Requirements:

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

Distribution-Major Construction

East Casey Co Water District

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Activity ID No.: APE20120001

PORT000000023 (continued):

Narrative Requirements:

Asbestos (Friable):

Condition No.	Condition
T-1	Asbestos (Friable): If the existing water line to be tapped is asbestos concrete, then the contractor shall conform to OSHA regulations governing the handling of hazardous waste during the process of tapping the asbestos concrete line. Pieces of asbestos concrete resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill. [401 KAR 8:100 Section 1(7)]
T-2	Asbestos (Friable): If the existing water line to be tapped is asbestos concrete, then the contractor shall conform to OSHA regulations governing the handling of hazardous waste during the process of tapping the asbestos concrete line. Pieces of asbestos concrete resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill. [401 KAR 8:100 Section 1(7)]

Additional Limitations:

Condition No.	Condition
T-3	Additional Limitations: Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1]
T-4	Additional Limitations: Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]
T-5	Additional Limitations: At high points in water lines, where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. [Recommended Standards for Water Works 8.4.1]
T-6	Additional Limitations: All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.5.4]
T-7	Additional Limitations: A fire hydrant or blow-off shall be required at the end of each dead end line. [Recommended Standards for Water Works 8.1.6]

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PORT0000000023 (continued):

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-8	<p>Additional Limitations: For each fire hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]</p>
T-9	<p>Additional Limitations: No flushing device, blow-off, or air relief valve shall be directly connected to any sewer. Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any storm drain or sanitary sewer. Such chambers, pits or manholes shall be drained to absorptions pits underground or to the surface of the ground where they are not subject to flooding by surface water. [Recommended Standards for Water Works 8.1.6, Recommended Standards for Water Works 8.4.3]</p>
T-10	<p>Additional Limitations: If water lines are installed or replaced in areas of organic contamination or in areas within 200 ft of underground or petroleum storage tanks, ductile iron or other nonpermeable materials shall be used in all portions of the water line installation or replacement. [401 KAR 8:100 Section 1(5)(d)6, Recommended Standards for Water Works 8.0.2]</p>
T-11	<p>Additional Limitations: No water pipe shall pass through or come in contact with any part of a sewer manhole. [Recommended Standards for Water Works 8.6.6]</p>
T-12	<p>Additional Limitations: If a fire sprinkler system is to be installed, a double check detector assembly approved for backflow prevention shall be utilized. The double check detector assembly of the system shall be accessible for testing. [401 KAR 8:100 Section 1(7)]</p>
T-13	<p>Additional Limitations: If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact the Water Quality Certification Supervisor of the Water Quality Branch at (502) 564-2225. [401 KAR 8:100 Section 1(7)]</p>
T-14	<p>Additional Limitations: Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]</p>
T-15	<p>Additional Limitations: A flush hydrant or blow-off shall be required at the end of each dead end line. [Recommended Standards for Water Works 8.1.6]</p>

Distribution-Major Construction

East Casey Co Water District
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Activity ID No.: APE20120001

PORT0000000023 (continued):

Narrative Requirements:

Additional Limitations:

Condition
No.

Condition

T-16 Additional Limitations:
For each flush hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]

T-17 Additional Limitations:
If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact the Water Quality Certification Supervisor of the Water Quality Branch at (502) 564-2225. [401 KAR 8:100 Section 1(7)]

Subfluvial Pipe Crossings:

Condition
No.

Condition

T-18 Subfluvial Pipe Crossings:
For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met.
1) No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings.
2) Crossing trenches shall be backfilled as closely as possible to the original contour.
3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.
4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing.
5) For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least 6 inches of concrete with all pipe or conduit points in the crossing at least 6 inches below the original contour of the channel. [401 KAR 8:100 Section 1(7)]

T-19 Subfluvial Pipe Crossings:
For subfluvial pipe crossings greater than 15 feet in width,
1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and
2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair.
Valves shall
a) be easily accessible,
b) not be subject to flooding, and
c) if closest to the supply source, be in a manhole with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes. [Recommended Standards for Water Works 8.7.2]

EXHIBIT D



Steven L. Beshear
Governor

KENTUCKY INFRASTRUCTURE AUTHORITY

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Frankfort, Kentucky 40601
Phone (502) 573-0260
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John E. Covington III
Executive Director

November 14, 2011

Mr. Andy Greynolds, Manager
East Casey County Water District
690 South Wallace Wilkinson Blvd, P.O. Box 56
Liberty, KY 42539

**KENTUCKY INFRASTRUCTURE AUTHORITY
FEDERALLY ASSISTED DRINKING WATER REVOLVING LOAN FUND
CONDITIONAL COMMITMENT LETTER (F11-11)**

Dear Mr. Greynolds:

The Kentucky Infrastructure Authority ("the Authority") commends your efforts to improve public service facilities in your community. On November 10, 2011, the Authority approved your loan for the Various Waterline Extensions Project subject to the conditions stated below. The total cost of the project shall not exceed \$1,545,000 of which the Authority loan shall provide \$1,545,000 of the funding. The final loan amount will be equal to the Authority's portion of estimated project cost applied to the actual project cost. Attachment A incorporated herein by reference fully describes the project.

An Assistance Agreement will be executed between the Authority and the East Casey County Water District upon satisfactory performance of the conditions set forth in this letter.

A period of twelve months from the date of this letter (11/14/2012) 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 \$1,545,000.

2. The loan shall contain principal forgiveness in the amount of 35%. Actual amortized loan and forgiveness amounts will be based on actual project costs drawn from the Authority.
3. The loan shall bear interest at the rate of 1% per annum commencing with the first draw of funds.
4. The loan shall be repaid over a period not to exceed 20 years from the date the loan is closed.
5. Interest shall be payable on the unforgiven 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.
6. Full principal payments will commence on the appropriate June 1 or December 1 within twelve months from initiation of operation. Full payments will be due each six months thereafter until the loan is repaid.
7. A loan servicing fee of 0.25% of the annual outstanding loan balance shall be payable to the Authority as a part of each interest payment.
8. Loan funds will be disbursed after execution of the Assistance Agreement as project costs are incurred.
9. The Authority loan funds must be expended within six months of the official date of initiation of operation.
10. Fund "F" loan funds are considered to be federal funds. OMB Circular A-133, "Audits of States, Local Governments and Non-Profit Organizations, requires that all recipients and subrecipients **expending \$500,000 or more in a year in federal awards must have a single or program-specific audit conducted for that year** in accordance with the Circular. If the federal amount expended plus all other federal funds expended exceeds the threshold, you are required to arrange for an A-133 audit to be performed by an independent, licensed CPA, or in special cases, the Auditor of Public Accounts of the Commonwealth of Kentucky. The Authority requires an annual audit to be preformed for the life of the loan.

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. The Authority to Award (bid) package must be submitted to the Division of Water for approval within 14 days of bid opening.
2. The Assistance Agreement must be executed within six (6) months from bid opening.
3. The Borrower must agree to expend all Authority loan funds within six months of the date of initiation of operation.
4. Documentation of final funding commitments from all parties other than the Authority as reflected in the credit analysis shall be provided prior to preparation of the Assistance Agreement and disbursement of the loan monies. Rejections of any anticipated project funding shall be immediately reported and may cause this loan to be subject to further consideration.
5. The loan must undergo review by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the state's execution of the Assistance Agreement. The committee meets monthly on the third Tuesday. At this time we know of no further submission required for their review; however, they may request information as needed.
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 Division of Water.
8. The Borrower must complete and return to the Authority the attached "Authorization For Electronic Deposit of Vendor Payment" Form.
9. The Authority to Award Package documentation shall be submitted to and approved by DOW.

Mr. Andy Greynolds
November 14, 2011
Page 4

10. An environmental review shall be conducted by the Division of Water for all construction projects receiving DWSRF funds, within the term of this binding commitment and prior to project bid.
11. Technical plans and specifications and a complete DWSRF specifications checklist shall be approved by the Division of Water prior to project bid.
12. A clear site certificate shall be obtained and DOW representatives shall be notified for attendance of the pre-construction conference.
13. Project changes or additions shall require a complete environmental and change order review before they can be included in the DWSRF loan project.

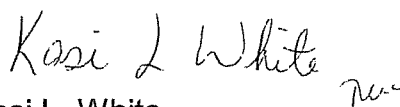
The following is a list of additional conditions to be satisfied prior to execution of the Assistance Agreement or incorporated in the Assistance Agreement. Any required documentation must be submitted to the party designated.

1. The Borrower shall require all contractors to pay wages pursuant to applicable prevailing wage rates (federal or state) for all work relating to the subject Project. The Borrower shall, if applicable, comply with all Davis Bacon related monitoring and reporting.
2. The project shall comply with the reporting requirements of the Transparency Act, and shall complete the attached Transparency Act Reporting Information Form and provide to the Authority no later than 30 days after the KIA Board approval date of your loan.
3. If the project has a "Green Reserve" component, the Borrower must submit a Business Case, if required.

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

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

Sincerely,


Kasi L. White
Financial Analyst

Estimated Cost of Operation

EXECUTIVE SUMMARY		Reviewer:	Kasi White	
KENTUCKY INFRASTRUCTURE AUTHORITY		Date:	November 10, 2011	
FUND F, FEDERALLY ASSISTED DRINKING WATER		KIA Loan Number:	F11-11	
REVOLVING LOAN FUND		WRIS Number	WX21045012	
BORROWER:	EAST CASEY COUNTY WATER DISTRICT			
	CASEY COUNTY			
BRIEF DESCRIPTION:	<p>This project consists of the installation of approximately 48,500 linear feet of three inch waterline, a pump station upgrade, one pneumatic pump station and tank, one water storage tank and all necessary appurtenances. The project will serve approximately 2,500 customers located throughout the County. Thirty-five new customers will be added. The project will provide water service to sparsely populated areas that currently rely on wells, springs and cisterns. These supplies are not reliable or safe due to the mineral and fecal coliform levels.</p>			
PROJECT FINANCING:	PROJECT BUDGET			
Fund F Loan	\$ 1,545,000	Administrative Expenses	\$	25,000
		Legal Expenses		17,500
		Land, Easements		10,000
		Engineering Fees		199,600
		Construction		1,169,300
		Contingency		103,600
		Other		20,000
TOTAL	\$ 1,545,000	TOTAL	\$	1,545,000
REPAYMENT			Est. Annual	
	Rate	1.0%	Payment	\$ 58,037
	Term	20 years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	Kenvirons, Inc.		
	Bond Counsel	Peck, Shaffer, & Williams		
PROJECT SCHEDULE				
	Bid Opening:	February 7, 2012		
	Construction Start:	April 9, 2012		
	Construction Stop:	October 9, 2012		
DEBT PER CUSTOMER	Existing:	\$ 730		
	Proposed:	\$ 1,063		
OTHER DEBT	See Attached			
OTHER STATE-FUNDED PROJECTS LAST 5 YRS	See Attached			
RESIDENTIAL RATES		<u>Users</u>	<u>Avg. Bill</u>	
	Current	4,353	\$ 30.16	(for 4,000 gallons)
	Additional	35	\$ 30.16	(for 4,000 gallons)
REGIONAL COORDINATION	This project is consistent with regional planning recommendations.			
CASHFLOW	Cash Available for	Income after Debt		
	Debt Service	Debt Service	Service	Coverage Ratio
Audited 2007	417,113	154,813	262,300	2.7
Audited 2008	501,710	127,390	374,320	3.9
Audited 2009	452,339	237,819	214,520	1.9
Audited 2010	32,306	207,214	(174,908)	0.2
Projected 2011	711,276	208,550	502,726	3.4
Projected 2012	365,932	207,702	158,230	1.8
Projected 2013	341,668	267,774	73,894	1.3
Projected 2014	314,996	266,102	48,894	1.2
Projected 2015	287,000	265,836	21,164	1.1

**KENTUCKY INFRASTRUCTURE AUTHORITY
DRINKING WATER STATE REVOLVING FUND (FUND "F")
EAST CASEY COUNTY WATER DISTRICT, CASEY COUNTY
PROJECT REVIEW
WX21045012**

I. PROJECT DESCRIPTION

The East Casey County Water District is requesting \$1,545,000 in DWSRF funds for the Waterline Extensions project. This project consists of the installation of approximately 48,500 linear feet of three inch waterline, a pump station upgrade, one pneumatic pump station and tank, one water storage tank and all necessary appurtenances. The project will serve approximately 2,500 customers located throughout the County. Thirty-five new customers will be added. The project will provide water service to sparsely populated areas that currently rely on wells, springs and cisterns. These supplies are not reliable or safe due to the mineral and fecal coli form levels.

The District purchases water from the Cities of Liberty, Russell Springs and Eubank, from the Columbia / Adair Utilities District and from the Campbellsville Water and Sewer system. The District is regulated by the Kentucky Public Service Commission.

II. PROJECT BUDGET

	<u>Total</u>
Administrative Expenses	\$ 25,000
Legal Expenses	17,500
Land, Easements	10,000
Engineering Fees	199,600
Construction	1,169,300
Contingency	103,600
Other	20,000
Total	\$ 1,545,000

III. PROJECT FUNDING

	<u>Amount</u>	<u>%</u>
Fund F Loan	\$ 1,545,000	100%
Total	\$ 1,545,000	100%

IV. KIA DEBT SERVICE

Construction Loan	\$ 1,545,000
Less: Principal Forgiveness (35%)	\$ 540,750
Amortized Loan Amount	\$ 1,004,250
Interest Rate	1.0%
Loan Term (Years)	20
Estimated Annual Debt Service	\$ 55,526
Administrative Fee (0.25%)	\$ 2,511
Total Estimated Annual Debt Service	\$ 58,037

V. PROJECT SCHEDULE

Bid Opening: February 7, 2012
Construction Start: April 9, 2012
Construction Stop: October 9, 2012

VI. CUSTOMER COMPOSITION AND RATE STRUCTURE

A) Customers

Customers	Current	Proposed	Total
Residential	4,284	35	4,319
Commercial	69	0	69
Industrial	0	0	0
Total	4,353	35	4,388

B) Rates

The monthly charge for water utility service is:

	Current
Date of Last Rate Increase	9/21/2007
Minimum (first 2,000 gallons)	\$16.28
Next 3,000 Gallons	6.94
Next 5,000 Gallons	6.64
Next 5,000 Gallons	6.34
Next 5,000 Gallons	6.04
Over 20,000 Gallons	5.44
Cost for 4,000 gallons	\$30.16
Affordability Index (Rate/MHI)	1.4%

VII. DEMOGRAPHICS

In 2011, the County's population was 16,306 with a Median Household Income (MHI) of \$26,079. The median household income for the Commonwealth is \$41,197. The loan qualifies for a 1% interest rate because is below 80% of the State MHI.

VIII. 2011 CAPITALIZATION GRANT EQUIVALENCIES

- 1) Green Project Reserve - This project does not qualify for Green Project Reserve (GPR) funding.
- 2) Additional Subsidization – This project qualifies for additional subsidization in the amount of \$540,750 (35% of the assistance amount).

IX. FINANCIAL ANALYSIS (See Exhibit 1)

Financial information was obtained from the audited financial statements for the years ended December 31, 2008 through 2010. Amounts for the current year are estimated.

HISTORICAL

Revenues have increased about 2% due to customer additions. Customer growth has averaged about 2% per year since 2006, however average water consumption has declined by about 5%. Purchased water costs and operating expenses have increased 5% and 9%, respectively. During 2010 the District incurred expenses of approximately \$320,000 related to a severe flood in May. Reimbursement of \$321,165 was recorded however none was received during fiscal 2010. The receipt of these funds is included in the 2011 cash flow projection.

PROJECTIONS

Projections are based on the following assumptions:

1. Revenues will increase by 1% per year for customer growth (inclusive of the customers that will be added by this proposed project).
2. Purchased water expenses will increase by 2% per year while other operating expenses will increase by 4% per year.
3. There will be no materially adverse impact on the financial statements from what has previously been recorded in relation to the May 2010 flood.

The new debt service is estimated at \$58,037 annually and will increase overall annual debt service to \$266,102 in 2014. Debt service coverage is 1.2 in 2014, which is the first full year of principal and interest payments.

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

REPLACEMENT RESERVE

The annual replacement cost is \$3,863. This amount should be added to the replacement account each December 1 until the balance reaches \$38,630 and maintained for the life of the loan.

X. DEBT OBLIGATIONS

	<u>Outstanding</u>	<u>Maturity</u>
Series 1987 Bonds	\$ 201,000	2025
Series 1990 Bonds	368,000	2028
Series 1993 Bonds	319,000	2031
Series 1997 Bonds	450,000	2035
Series 2000 Bonds	536,500	2038
Series 2004 Bonds	383,000	2042
Series 2007 Bonds	979,000	2045
Total	\$ 3,236,500	

XI. OTHER STATE OR FEDERAL FUNDING IN PAST FIVE YEARS

<u>Project Title</u>	<u>Funding Source</u>	<u>Amount</u>	<u>Type</u>
Waterline Extensions	RD	410,000	Grant
Waterline Extensions	CDBG	581,000	Grant
Waterline Extensions	HB269	750,000	Grant

XII. CONTACTS

Applicant	
Name	East Casey County Water District
Address	690 South Wallace Wilkinson Blvd, P.O. Box 56 Liberty, KY 42539
County	Casey
Contact	Andy Greynolds
Phone	(606) 787-9961
Email	agreynolds@windstream.net

Applicant Contact

Name Lake Cumberland Area Development District
Address 2384 Lakeway Drive, P.O. Box 1570
Russell Springs, KY 42642
Contact Jim Brown
Phone (270) 866-4200
Email jim@lcadd.org

Engineer

Name Eddie Brown, P.E.
Firm Kenvirons, Inc.
Address 452 Versailles Road
Frankfort, KY 40601
Phone (502) 695-4357
Email ebrown@kenvirons.com

XIII. RECOMMENDATIONS

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

EXHIBIT 1													
EAST CASEY COUNTY WATER DISTRICT													
CASH FLOW ANALYSIS (DECEMBER YEAR END)													
	Audited	%	Audited	%	Audited	%	Projected	Projected	Projected	Projected	Projected	Projected	Projected
	2008	Change	2009	Change	2010	Change	2011	2012	2013	2014	2015	2016	2017
Operating Revenues	1,539,693	-2%	1,502,865	3%	1,545,829	2%	1,576,746	1,592,513	1,608,438	1,624,522	1,640,767	1,657,175	1,673,747
Water Revenues	44,040	2%	45,052	2%	46,003	2%	46,923	47,392	47,866	48,345	48,828	49,316	49,809
Late Charges	41,201	-27%	30,071	6%	31,816	2%	32,452	32,777	33,105	33,436	33,770	34,108	34,449
Other												16,205	66,503
Total Revenues	1,624,934	-3%	1,577,988	3%	1,623,648	2%	1,656,121	1,672,682	1,689,409	1,706,303	1,723,365	1,756,804	1,824,508
Operating Expenses	576,904	-2%	565,877	7%	605,678	0%	605,000	617,100	629,442	642,031	654,872	667,969	681,328
Water Purchases	655,341	-1%	649,442	62%	1,048,997	-32%	716,010	744,650	774,436	805,413	837,630	871,135	905,980
Operating Expenses	211,182	25%	263,493	0%	262,820	5%	275,000	275,000	315,000	315,000	315,000	315,000	315,000
Depreciation									3,863	3,863	3,863	3,863	3,863
Replacement Reserve	1,443,427	2%	1,478,812	30%	1,917,495	-17%	1,596,010	1,636,750	1,722,741	1,766,307	1,811,365	1,857,967	1,906,171
Total Expenses													
Net Operating Income	181,507	-45%	99,176	-396%	(293,847)	-120%	60,111	35,932	(33,332)	(60,004)	(88,000)	(101,163)	(81,663)
Non-Operating Income and Expenses													
Interest Income	48,853		32,293		24,102		15,000	15,000	20,000	20,000	20,000	20,000	20,000
FEMA Reimbursement	0		0		0		321,165	0	0	0	0	0	0
Other	60,168		57,377		39,231		40,000	40,000	40,000	40,000	40,000	40,000	40,000
Total Non-Operating Income & Expenses	109,021	-18%	89,670	-29%	63,333	494%	376,165	55,000	60,000	60,000	60,000	60,000	60,000
Add Non-Cash Expenses													
Depreciation	211,182	25%	263,493	0%	262,820	5%	275,000	275,000	315,000	315,000	315,000	315,000	315,000
Cash Available for Debt Service	501,710	-10%	452,339	-93%	32,306	2102%	711,276	365,932	341,668	314,996	287,000	273,837	293,337
Debt Service (enter as positive #'s)													
Existing Principal	45,000		85,991		58,000		61,500	63,500	68,500	70,000	73,000	84,200	106,800
Existing Interest	82,390		151,828		149,214		147,050	144,202	141,237	138,065	134,799	131,600	128,500
Proposed KIA Loan									58,037	58,037	58,037	58,037	58,037
Total Debt Service	127,390		237,819		207,214		208,550	207,702	267,774	266,102	265,836	273,837	293,337
Income After Debt Service	374,320		214,520		(174,908)		502,726	158,230	73,894	48,894	21,164	0	0
Debt Coverage Ratio	3.9		1.9		0.2		3.4	1.8	1.3	1.2	1.1	1.0	1.0

EAST CASEY COUNTY WATER DISTRICT
BALANCE SHEETS (DECEMBER YEAR END)

ASSETS	Audited <u>2008</u>	Audited <u>2009</u>	Audited <u>2010</u>	Projected <u>2011</u>	Upon Completion <u>2012</u>
Current Assets					
Cash and Investments	1,406,898	1,479,111	1,320,540	1,798,266	1,931,496
Accounts Receivable	136,756	129,367	137,413	140,200	141,600
Grant Receivable	114,966	280,195	451,555	0	0
Accrued Interest Receivable	5,807	4,823	3,480	2,500	2,500
Total Current Assets	1,664,427	1,893,496	1,912,988	1,940,966	2,075,596
Restricted Assets					
Investments	457,446	452,404	513,262	538,262	563,262
Total Restricted Assets	457,446	452,404	513,262	538,262	563,262
Utility Plant					
Land, System, Building and Equipment	15,514,459	15,546,834	15,703,114	17,199,039	18,744,039
Construction in Progress	0	293,070	1,044,370	0	0
Total	15,514,459	15,839,904	16,747,484	17,199,039	18,744,039
Less Accumulated Depreciation ()	(3,881,214)	(4,131,423)	(4,394,243)	(4,669,243)	(4,944,243)
Net Fixed Assets	11,633,245	11,708,481	12,353,241	12,529,796	13,799,796
Total Assets	13,755,118	14,054,381	14,779,491	15,009,024	16,438,654
LIABILITIES					
Current Liabilities					
Accounts Payable	208,643	85,847	265,345	100,000	100,000
Taxes	4,570	3,656	4,330	4,500	4,750
Construction Payable	114,965	293,070	85,631	75,000	75,000
Customer Deposits	28,950	24,851	26,121	27,500	27,500
Accrued Interest	98,887	96,851	94,908	93,100	92,500
Deferred Revenue	0	0	0	0	0
C.P. Long Term Debt	85,991	58,000	61,500	63,500	68,500
Total Current Liabilities	542,006	562,275	537,835	363,600	368,250
Long Term Liabilities					
Bonds Payable	3,294,500	3,236,500	3,175,000	3,113,500	3,050,000
Proposed KIA Loan	0	0	0	0	1,545,000
Total Long Term Liabilities	3,294,500	3,236,500	3,175,000	3,113,500	4,595,000
Total Liabilities	3,836,506	3,798,775	3,712,835	3,477,100	4,963,250
Retained Earnings:					
Invested in Capital Assets Net of Related Debt	8,252,754	8,413,981	9,116,741	9,352,796	9,136,296
Restricted	457,446	452,404	513,262	538,262	563,262
Unrestricted	1,208,412	1,389,221	1,436,653	1,640,866	1,775,846
Total Retained Earnings	9,918,612	10,255,606	11,066,656	11,531,924	11,475,404
Total Liabilities and Equities	13,755,118	14,054,381	14,779,491	15,009,024	16,438,654
Balance Sheet Analysis					
Current Ratio	3.1	3.4	3.6	5.3	5.6
Debt to Equity	0.4	0.4	0.3	0.3	0.4
Working Capital	1,122,421	1,331,221	1,375,153	1,577,366	1,707,346
Percent of Total Assets in Working Capital	8.2%	9.5%	9.3%	10.5%	10.4%
Days Sales in Accounts Receivable	30.7	29.9	30.9	30.9	30.9

Case No. 2013-00155

CONTAINS

LARGE OR OVERSIZED

MAP(S)

RECEIVED ON: April 18, 2013

**CONTRACT DOCUMENTS AND TECHNICAL
SPECIFICATIONS**

East Casey County Water District

**DWL12046 - 200,000 Gallon Water Storage Tank
Casey County, Kentucky**

FOR

**EAST CASEY COUNTY WATER DISTRICT
690 South Wallace Wilkinson Boulevard
Liberty, Kentucky 42539**

PREPARED BY:

**KENVIRONS, INC.
452 VERSAILLES ROAD
FRANKFORT, KY 40601**

PROJECT NO. 2010105

February 2013

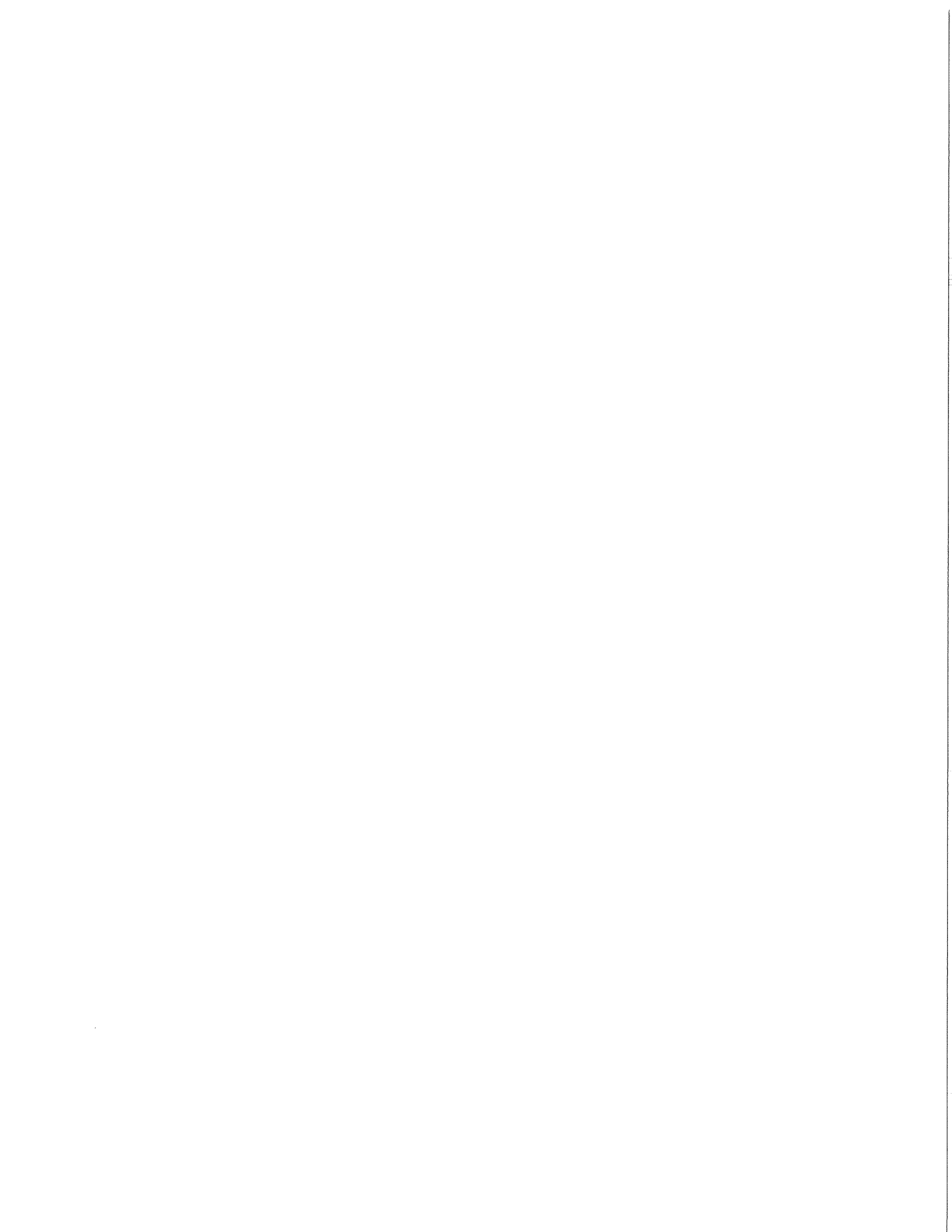


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**Section 00100
Advertisement For Bids**

**DWL12046 200,000 Gallon Water Storage Tank
East Casey County Water District
Casey County, Kentucky**

Separate Sealed BIDS for the construction of the 200,000 Gallon Water Storage Tank will be received by East Casey County Water District at 690 South Wallace Wilkinson Boulevard, Liberty, KY 42539 until March 11, 2013 at 2:30 P.M. and then publicly opened and read aloud.

This Contract consists of a new 200,000 Gallon Water Storage Tank and appurtenances.

The CONTRACT DOCUMENTS may be examined at the following locations:

EAST CASEY COUNTY WATER DISTRICT, 690 SOUTH WALLACE WILKINSON
BOULEVARD, LIBERTY, KY 42539

KENVIRONS, INC., 452 VERSAILLES ROAD, FRANKFORT, KY 40601

F. W. DODGE/AGC, 950 CONTRACT STREET, LEXINGTON, KY 40505

Copies of the CONTRACT DOCUMENTS may be obtained from Lynn Imaging, 328 Old Vine Street, Lexington, KY 40507 (859-226-5850) and www.lynnimaging.com upon payment of a nonrefundable price of \$150.00 for each set plus any shipping charges.

Each Bidder must accompany his bid with a Bid Bond in amount of not less than five (5) percent of the base bid. No Bidder may withdraw his bid for a period of ninety (90) days. The Bidder awarded the contract shall execute a 100% Performance Bond and a 100% Payment Bond and shall furnish insurance as required, in the General Conditions. This contract shall be completed within 210 calendar days after date of authorization to start work. Liquidated damages will be \$500 per calendar day.

Bidders must comply with the President's Executive Order Nos. 11246 and 11375, which prohibit discrimination in employment regarding race, creed, color, sex, or national origin. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

Bidders must comply with Section 3, Section 109, Title VI of the Civil Rights Act of 1964, the Anti-Kickback Act and the contract Work Hours Standard Act. Bidders must certify that they do not, and will not, maintain or provide for their employees any facilities that are segregated on a basis of race, color, creed, or national origin.

Bidders must make positive efforts to secure small or minority owned business enterprise participation in this Project. See Attachment #12 Supplemental General Conditions regarding the EPA Disadvantaged Business Enterprise Program.

Any bid that is obviously unbalanced may be rejected. The East Casey County Water District reserves the right to reject any and all bids and waive informalities.

Small, minority and women's businesses and labor surplus area firms are encouraged to bid this project.

East Casey County Water District

By: Andy Greynolds
Manager

SECTION 00200

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

- A. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement for Bids may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

- A. The Owner may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein in a timely manner. Conditional bids will not be accepted.
- B. Bidder and any subcontractors the bidder uses must be acceptable to the Owner and have current eligibility for federal programs.
- C. Approval of any proposed subcontract award can not be given by the Owner unless and until the proposed subcontractor has submitted the Certifications and/or other evidence showing that it has fully complied with any reporting requirements to which it is or was subject.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions identify:
 - 1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
 - 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 Hazardous Environmental Condition

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

- 4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.
- 4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.
- 4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.
- 4.07 It is responsibility of each Bidder before submitting a Bid to:
- A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
 - B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
 - C. Become familiar with and satisfy Bidder as to all Federal, State, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
 - D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
 - E. Obtain and carefully study (or accept consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
 - F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding;

- G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
 - H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - I. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

- 5.01 A pre-Bid conference will be held at 2:00 P.M. local time on May 10, 2011 at Mt. Vernon City Hall. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

- 6.01 The Site is identified in the Bidding Documents. Easement for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 % of Bidder's maximum Bid price and in the form of a certified check or a Bid bond (EJCDC No. C-430, 2002 Edition) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.
- 8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

- 9.01 The number of days within which, or the date by which, the Work is to be substantially completed. Upon substantial completion, if necessary, a date for final completion and payment should be determined between the Owner, Contractor, and Engineer based on remaining work, market, and weather conditions.

ARTICLE 10 - LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed substitute or "or-equal" item. No item of material or equipment will be considered by Engineer as a substitute or equal until after the bids have been opened and the contract has been awarded. The burden of proof of the merit of the proposed item, and cost for review of a proposed substitute item, is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. Bidders shall not rely upon approvals made in any other manner. Any reduction made in contract price due to approval of a substitute item or equal, will be subtracted from the bidders contract and placed into contingency funds for the project.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has

reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner and Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.
- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 12.04 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 6.06.

ARTICLE 13 - PREPARATION OF BID

- 13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- 13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. If required by State where work is to be performed, the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporation business address and state of incorporation shall be provided on the Bid Form.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The business address of the partnership shall be provided on the Bid Form.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the business address of the firm must be provided on the Bid Form.
- 13.06 A Bid by an individual shall show the Bidder's name and business address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The business address of the joint venture must be provided on the Bid Form.
- 13.08 All names shall be typed or printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid form.
- 13.10 The address and telephone number for communication regarding the Bid shall be shown.

- 13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid Form.

ARTICLE 14 - BASIS OF BID; COMPARSION OF BIDS

14.01 Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all bid prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 Bid Form is to be completed and submitted with all the attachments required.
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." When using the mail or other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid. A mailed Bid shall be addressed to Owner at address in Article 1.01 of Bid Form.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid or negotiated, that Bidder will be disqualified from further bidding on the Work. This provision to withdraw a Bid without forfeiting the Bid security does not apply to Bidder's errors in judgment in preparing the Bid.

ARTICLE 17 - OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for 90 days.

ARTICLE 19 - EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the contract Documents.
- 19.06 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is lowest in price and in the best interest of the Owner by considering other factors such as work history, recommendations, etc.

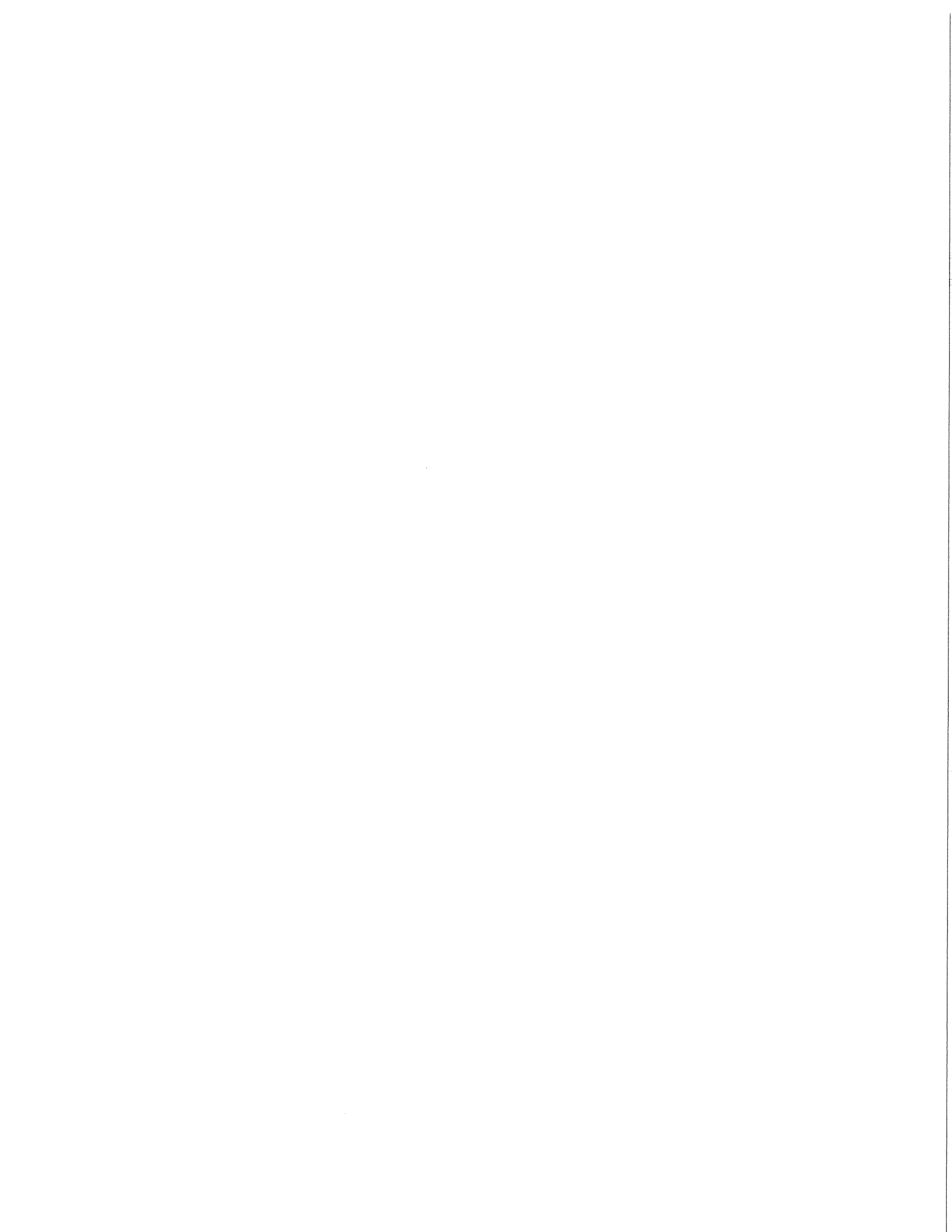
ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by such bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

- 21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within ten (10) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.
- 21.02 This Contract is expected to be funded in part with funds provided by the United States Environmental Protection Agency. Refer to Article 18 of the General Conditions for information on the Federal Requirements.

21.03 This Contract is expected to be funded in part with funds administered by the Kentucky Infrastructure Authority.



SECTION 00410

BID FORM

Project Identification: DWL12046 - 200,000 Gallon Water Storage Tank

Contract Identification and Number: N/A

ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid Is Submitted To: East Casey County Water District, 690 South Wallace Wilkinson Boulevard, Liberty, KY 42539
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in the Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

Addendum No. Addendum Date

 - B. Bidder has visited the Site and became familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Bidder is familiar with and is satisfied as to all Federal, State, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of a Hazard Environmental Condition, if any, which has been identified in SC-4.06.
 - E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any

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aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by the Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the State where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4 – FURTHER REPRESENTATIONS

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on the behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

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ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Note: Bids shall include sales tax and all other applicable taxes.

BASE PROJECT

Construction Completion Time: 210 days

Item No.	Item	Unit	Quantity	Unit Price	Item Price
1	200,000 Gallon Water Storage Tank	LS	1	_____	_____
2	Earthwork	LS	1	_____	_____
3	Foundation	LS	1	_____	_____
4	Painting	LS	1	_____	_____
5	Yard Work including Channel Lining & Site Restoration	LS	1	_____	_____
6	Yard Piping	LS	1	_____	_____
7	Check Valve Station	LS	1	_____	_____
8	Access Road	LS	1	_____	_____
9	Mixing System	LS	1	_____	_____
Total Base Project					\$ _____

- A. Unit Prices have been computed in accordance with paragraph 11.03.A of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the contract Documents.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete in accordance with paragraph 14.04 of the General Conditions on or before the date, or within the number of calendar days, indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the work within the Contract Time.

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ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are attached to and made a condition of the Bid:
- A. Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided);
 - B. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in paragraph 18.10 of the General Conditions;
 - C. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, and other Responsibility Matters;
 - D. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans. Refer to paragraph 18.11 of the General Conditions;
 - E. Certification Regarding Lobbying;
 - F. Disadvantaged Enterprise Participation Policy;
 - G. Bidders List Form;
 - H. Disadvantaged Business Enterprise Subcontractor Participation Form, EPA 6100-2;
 - I. Disadvantaged Business Enterprise Subcontractor Performance Form, EPA 6100-3;
 - J. Disadvantaged Business Enterprise Subcontractor Utilization Form, EPA 6100-4;

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with the initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

-Continued on next page-

00410-4

ARTICLE 9 – BID SUBMITTAL

9.01 This Bid Submitted by:

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

Bidders Business address:

Business Phone No. (____) _____

Business FAX No. (____) _____

Business E-Mail Address _____

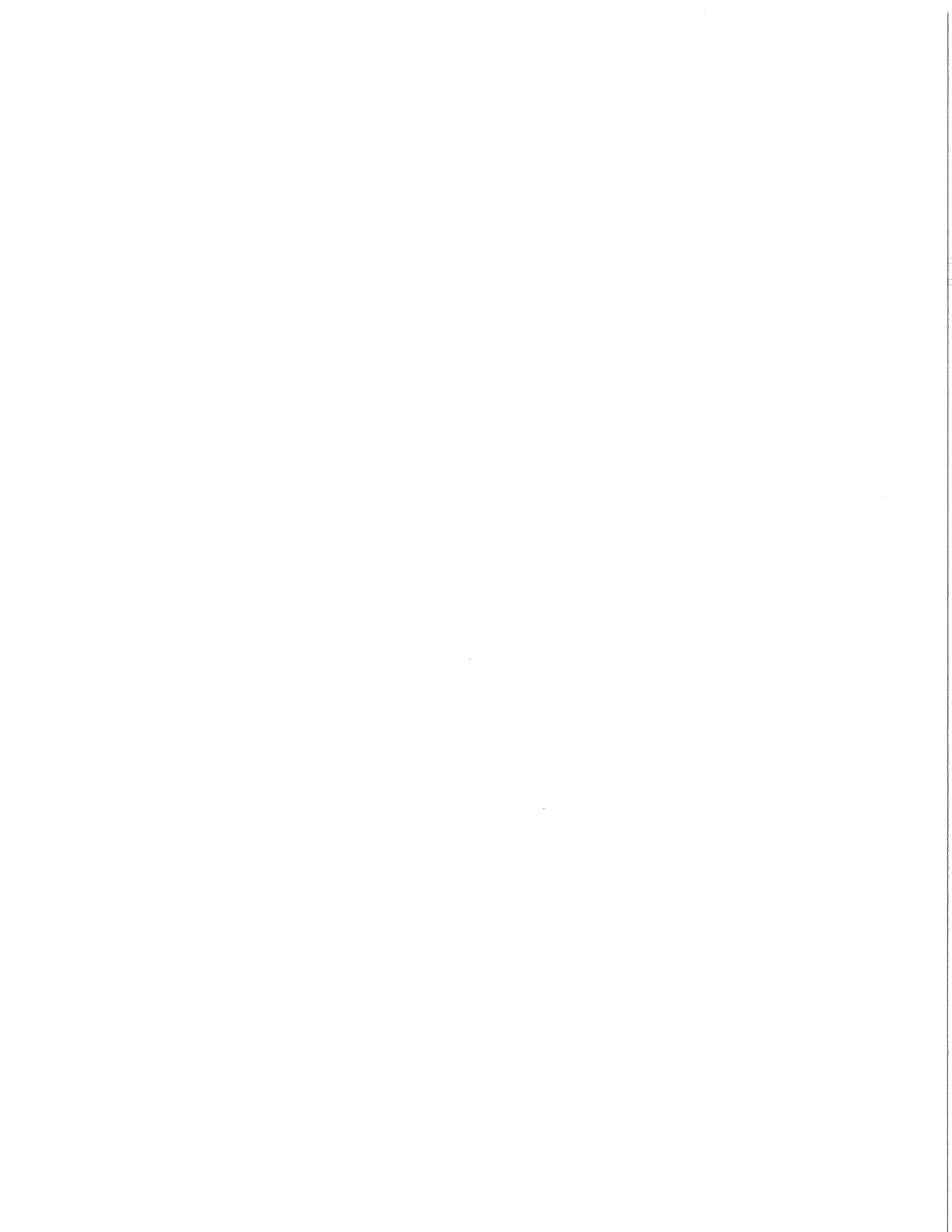
State Contractor License No. _____ . (If applicable)

Employer's Tax ID No. _____

Phone and FAX Numbers, and Address for receipt of official communications, if different from
Business contact information:

9.02 Bid Submitted on _____, 20__.

SEAL, if required



BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

East Casey County Water District
690 South Wallace Wilkinson Boulevard
Liberty, Kentucky 42539

BID

Bid Due Date:

Project (Brief Description Including Location):

DWL12046 - 200,000 Gallon Water Storage Tank
Casey County, Kentucky

BOND

Bond Number:

Date (Not later than Bid due date):

Penal sum

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

(Seal
)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety's liability.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. I have have not, participated in a previous contract or subcontract subject to Executive 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I have, have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

If the proposed contract is for \$50,000 or more and I have 50 or more employees, I also represent that:

3. I have, have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, I have, have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the RHS, RBS or RUS, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods): (See Reverse).

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays the valid OMB control number. The valid OMB control number for this information collection is 0575-0018. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR
CERTIFICATIONS OF NON-SEGREGATED FACILITIES**

A certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, may 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$ 10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Date _____

(Signature of Bidder or Prospective Contractor)

Address (including Zip Code)

U.S. DEPARTMENT OF AGRICULTURE

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY
AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name(s) and Title(s) of Authorized Representative(s)

Signature(s)

Date

Instructions for Certification

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transactions," "debarred," "suspended," "ineligible," "lower tier covered transactions," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

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

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

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

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

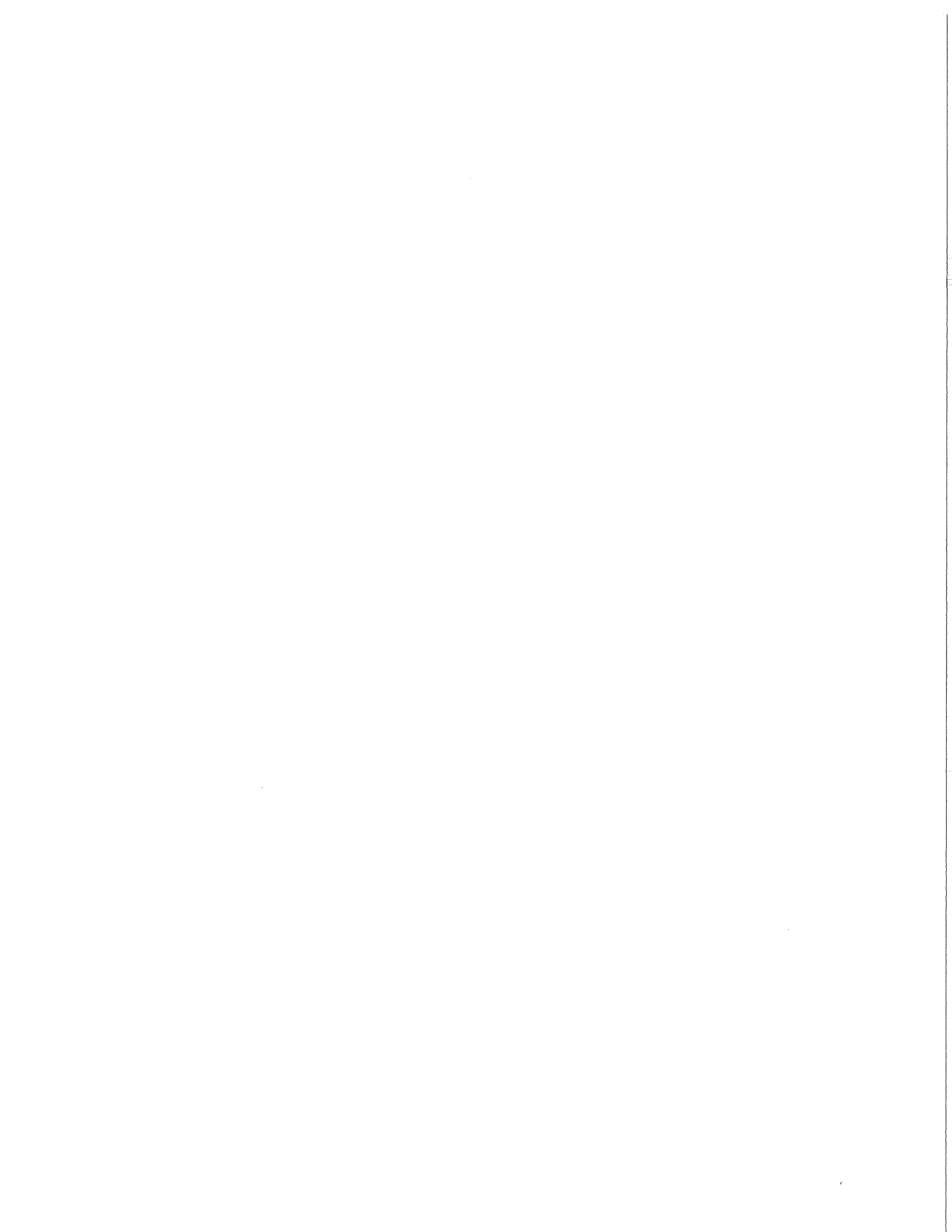
This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to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

(name)

(date)

(title)

oOo



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

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

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

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

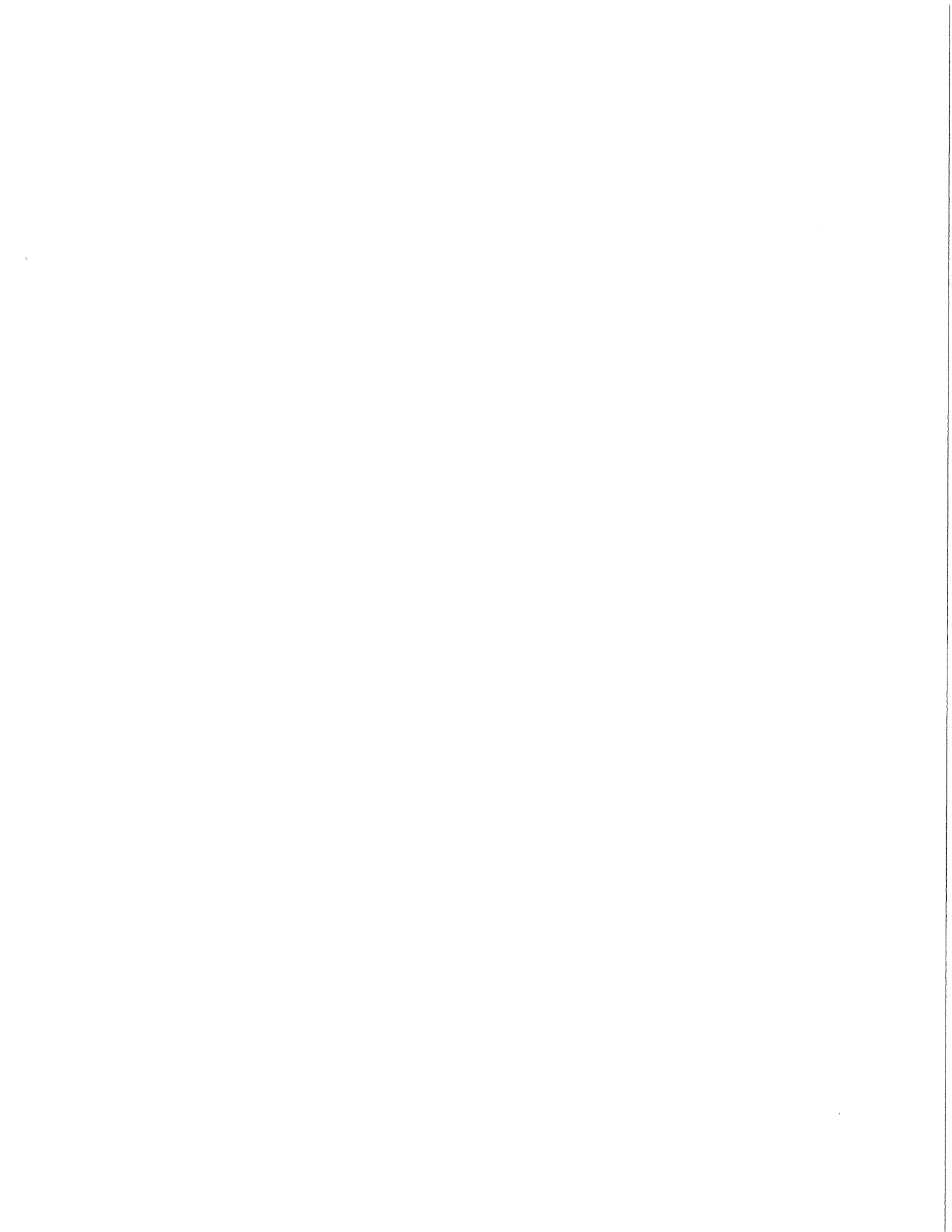
(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

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

TYPED NAME & TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

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



DISADVANTAGED ENTERPRISE PARTICIPATION POLICY

PROJECT NAME: _____ **BID DATE:** _____

1. Name, address and telephone number of contact person on all DBE matters:

Prime Contractor's Name: _____
Contact Person: _____
Address: _____
Phone: _____
Cell Phone: _____
Email: _____
Total Contract Amount: _____

5. Total dollar amount/percent of contract of MBE participation:

6. Total dollar amount/percent of contract of WBE participation:

7. Certifications* for each subcontractor enclosed: Yes No

8. Subcontracts or letters of intent signed by both parties enclosed: Yes No

9. **List of MBE Subcontractors:**

Name: _____
Contact Person: _____
Address: _____
Phone: _____
Cell Phone: _____
Email: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

10. **List of WBE Subcontractors:**

Name: _____
Contact Person: _____
Address: _____
Phone: _____
Cell Phone: _____
Email: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

Attach Additional Sheets, If Necessary

*Self-certification: Self certification of MBE/WBE/DBE firms will NOT be accepted as a valid form of certification of MBE/WBE/DBE status.

Information concerning the efforts for obtaining subcontractor(s)

11. Information to be submitted by the bidder concerning good faith efforts taken

- a. Advertisements, etc.: List each publication in which an announcement or notification was placed and attach the tear sheet of each announcement from each publication

Name of publication: _____

Address: _____

Dates of advertisement: _____

Specific subcontract areas announced: _____

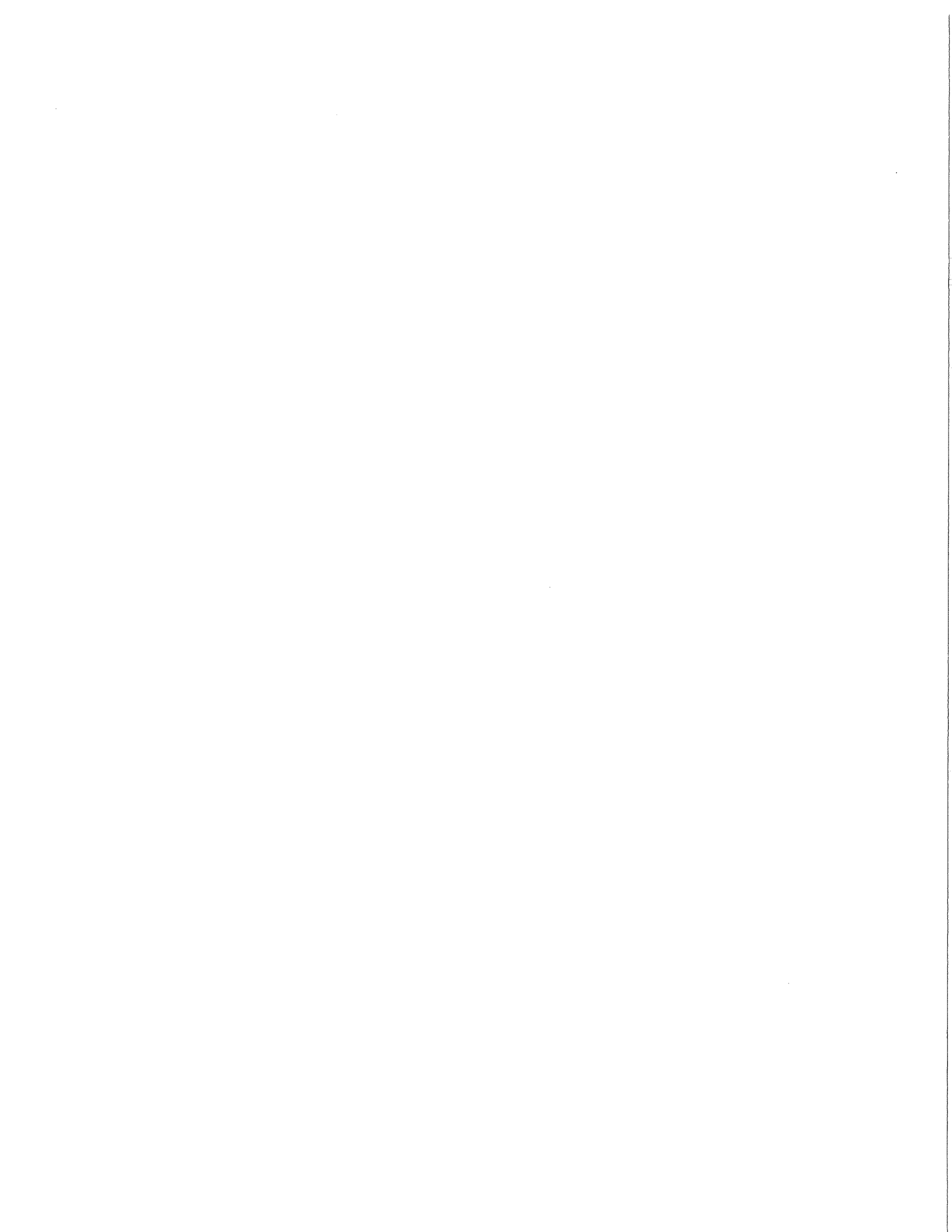
- b. List each DBE construction firm or supplier to which a letter of solicitation was sent or with whom negotiations were held.

Company name and phone number: _____

Area of Work Expertise: _____

Date of any follow-up call and person spoke to: _____

- c. Copies of returned envelopes.
- d. Copies of faxes sent.
- e. Copies of certified mail return receipts.
- f. Copies of letters or e-mails from solicited firms declining offer.
- g. Copy of bidders list (see sheet below):





Environmental
Protection Agency

OMB Control No: _____
Approved: _____
Approval Expires: _____

**Disadvantaged Business Enterprise Program
DBE Subcontractor Participation Form**

NAME OF SUBCONTRACTOR ¹	PROJECT NAME
ADDRESS	CONTRACT NO.
TELEPHONE NO.	E-MAIL ADDRESS
PRIME CONTRACTOR NAME	

Please use the space below to report any concerns regarding the above EPA-funded project (e.g., reason for termination by prime contractor, late payment, etc.).

CONTRACT ITEM NO.	ITEM OF WORK OR DESCRIPTION OF SERVICES RECEIVED FROM THE PRIME CONTRACTOR	AMOUNT SUBCONTRACTOR WAS PAID BY PRIME CONTRACTOR

_____	_____
Subcontractor Signature	Title/Date

¹Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental
Protection Agency

OMB Control No: _____
Approved: _____
Approval Expires: _____

Disadvantaged Business Enterprise Program DBE Subcontractor Participation Form

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Participation Form to this address.



Environmental
Protection Agency

OMB Control No: _____
Approved: _____
Approval Expires: _____

**Disadvantaged Business Enterprise Program
DBE Subcontractor Performance Form**

NAME OF SUBCONTRACTOR ¹		PROJECT NAME
ADDRESS		BID/PROPOSAL NO.
TELEPHONE NO.		E-MAIL ADDRESS
PRIME CONTRACTOR NAME		
CONTRACT ITEM NO.	ITEM OF WORK OR DESCRIPTION OF SERVICES BID TO PRIME	PRICE OF WORK SUBMITTED TO PRIME CONTRACTOR
Currently certified as an MBE or WBE under EPA's DBE Program? <input type="checkbox"/> Yes <input type="checkbox"/> No		
_____ Signature of Prime Contractor		_____ Date
_____ Print Name		_____ Title
_____ Signature of Subcontractor		_____ Date
_____ Print Name		_____ Title

¹Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental
Protection Agency

OMB Control No: _____
Approved: _____
Approval Expires: _____

Disadvantaged Business Enterprise Program DBE Subcontractor Performance Form

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Performance Form to this address.



Environmental
Protection Agency

OMB Control No: _____
Approved: _____
Approval Expires: _____

**Disadvantaged Business Enterprise Program
DBE Subcontractor Utilization Form**

BID/PROPOSAL NO.	PROJECT NAME
NAME OF PRIME BIDDER/PROPOSER	E-MAIL ADDRESS
ADDRESS	
TELEPHONE NO.	FAX NO.

The following subcontractors ¹ will be used on this project:			
COMPANY NAME, ADDRESS, PHONE NUMBER, AND E-MAIL ADDRESS	TYPE OF WORK TO BE PERFORMED	ESTIMATED DOLLAR AMOUNT	CURRENTLY CERTIFIED AS AN MBE OR WBE?

I certify under penalty of perjury that the forgoing statements are true and correct. In the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302(c).

_____ Signature Of Prime Contractor	_____ Date
_____ Print Name	_____ Title

¹Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental
Protection Agency

OMB Control No: _____
Approved: _____
Approval Expires: _____

Disadvantaged Business Enterprise Program DBE Subcontractor Utilization Form

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Utilization Form to this address.

NOTICE OF AWARD

To: _____

PROJECT

Description: DWL12046 - 200,000 Gallon Water Storage Tank

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

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

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

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

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

Dated this ___th day of _____, 2012.

East Casey County Water District
Owner

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this the _____ day of 2012.

By: _____

Title: _____

**SUGGESTED FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)
FUNDING AGENCY EDITION**

THIS AGREEMENT is by and between _____ East Casey County Water District _____ (“Owner”) and

_____ (“Contractor”).

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

DWL12046 - 200,000 Gallon Water Storage Tank

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

DWL12046 - 200,000 Gallon Water Storage Tank

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Kenvirons, Inc. (Engineer), who is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Days to Achieve Substantial Completion and Final Payment

The Work will be substantially completed within 210 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment at a date determined by Owner, Contractor and Engineer after substantial completion, based on remaining work, weather and market conditions.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence on this Project and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions allowed in

accordance with Article 12 of the General Conditions. Accordingly, Contractor shall pay Owner \$500 for each day that expires after the time specified in Paragraph 4.02 until the Work is substantially complete. After Substantial Completion, retainage shall be reduced to an amount agreed upon by Owner, Contractor and Engineer. It should be no less than 150% of the amount required for the completion and ready for final payment. Liquidated damages may not be assessed after substantial completion has been achieved.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A, below:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:
 - a. 95 percent of Work completed (with the balance being retainage); and
 - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, plus any reduction in retainage that has been agreed upon by Owner, Contractor and Engineer.

6.03 Final Payment

A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay Contractor as provided in Paragraph 14.07 of the General Conditions the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages.

ARTICLE 7 – INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum legal rate.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.
- E. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- G. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 1. This Agreement (pages 1 to 6, inclusive).
 2. Performance bond (pages 1 to 2, inclusive).
 3. Payment bond (pages 1 to 2, inclusive).

4. Other bonds (pages _____ to _____, inclusive).
 - a. _____ (pages _____ to _____, inclusive).
 - b. _____ (pages _____ to _____, inclusive).
 - c. _____ (pages _____ to _____, inclusive).
 5. General Conditions (pages 1 to 57, inclusive).
 6. Supplementary Conditions (pages 1 to 66, inclusive).
 7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings consisting of __ sheets with each sheet bearing the following general title: 200,000 Gallon Water Storage Tank.
 9. Addenda (numbers _____ to _____, inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages _____ to _____, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).
 - c. _____.
 11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed (pages _____ to _____, inclusive).
 - b. Work Change Directives.
 - c. Change Order(s).
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

- A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

- continued on next page -

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in four copies. One counterpart each has been delivered to Owner, Contractor, Engineer, and Agency. All portions of the Contract Documents have been signed, initialed, or identified by Owner and Contractor or identified by Engineer on their behalf.

This Agreement is dated _____. This Agreement shall not be effective unless and until Agency's designated representative concurs.

OWNER: East Casey County Water District

CONTRACTOR: _____

By: _____

By: _____

Title: _____

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

690 South Wallace Wilkinson Boulevard

Liberty, Kentucky 42539

Agent for service of process:

(If Contractor is a corporation or a partnership, attach evidence of authority to sign.)

Agency Concurrence:

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency: _____

By: _____

Date: _____

Title: _____

NOTICE TO PROCEED

TO: _____ DATE: _____

Project: DWL12046 -

200,000 Gallon Water Storage Tank

East Casey County Water District

You are hereby notified to commence WORK in accordance with the Agreement dated _____, on or before _____, and you are to complete the WORK within 210 consecutive calendar days thereafter. The date of completion of all WORK is therefore _____.

East Casey County Water District
Owner

By _____
Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED

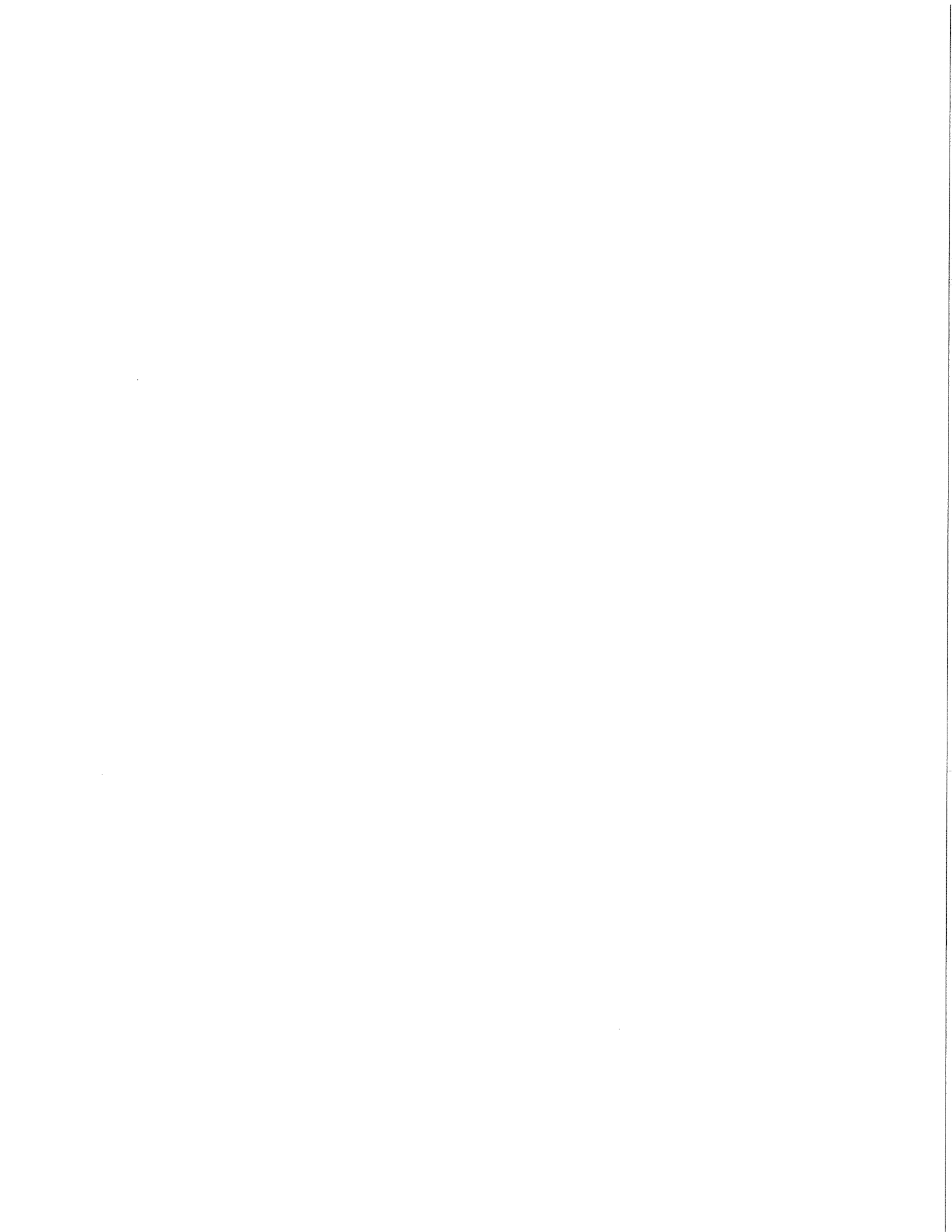
is hereby acknowledged by _____.

this the ___th day of _____, 2012.

By _____

Title _____

Employer Identification
Number _____



PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

East Casey County Water District
690 South Wallace Wilkinson
Liberty, Kentucky 42539

CONTRACT

Date:

Amount:

Description (Name and Location):

DWL12046 - 200,000 Gallon Water Storage Tank
Casey County, Kentucky

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: _____ (Seal)

Name and Title:

(Seal)

Surety's Name and Corporate Seal

By:

Signature and Title

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest:

Signature and Title

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: _____ (Seal)

Name and Title:

(Seal)

Surety's Name and Corporate Seal

By:

Signature and Title

(Attach Power of Attorney)

Attest:

Signature and Title:

EJCDC No. C-610 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

00610-1

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1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.
2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
 - 3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and
 - 3.3. Owner has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract;
 2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
 - 4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
 - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
 - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
 2. Deny liability in whole or in part and notify Owner citing reasons therefor.
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
 - 6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;
 - 6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and
 - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.
7. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.
8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
 - 12.1. Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
 - 12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
 - 12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
 - 12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone
 Surety Agency or Broker
 Owner's Representative (engineer or other party)

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

East Casey County Water District
690 South Wallace Wilkinson Boulevard
Liberty, Kentucky 42539

CONTRACT

Date:

Amount:

Description (Name and Location):

DWL12046 - 200,000 Gallon Water Storage Tank
Casey County, Kentucky

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: _____ (Seal)

Name and Title:

(Seal)

Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: _____ (Seal)

Name and Title:

(Seal)

Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

EJCDC No. C-615 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

00615-1

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1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
 - 6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. DEFINITIONS
 - 15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
 - 15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
 - 15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker:
Owner's Representative (engineer or other party):

Certificate of Substantial Completion

Project: 200,000 Gallon Water Storage Tank	Owner: East Casey County Water District	Owner's Contract No.:
Contract: DWL12046 - 200,000 Gallon Water Storage Tank		Date of Contract:
Contractor:		Engineer's Project No.: 2010105

This [tentative] [definitive] Certificate of Substantial Completion applies to:

- All Work under the Contract Documents:
 The following specified portions:

_____ Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [revised tentative] [definitive] list of items to be completed or corrected, is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

- Amended Responsibilities
 Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

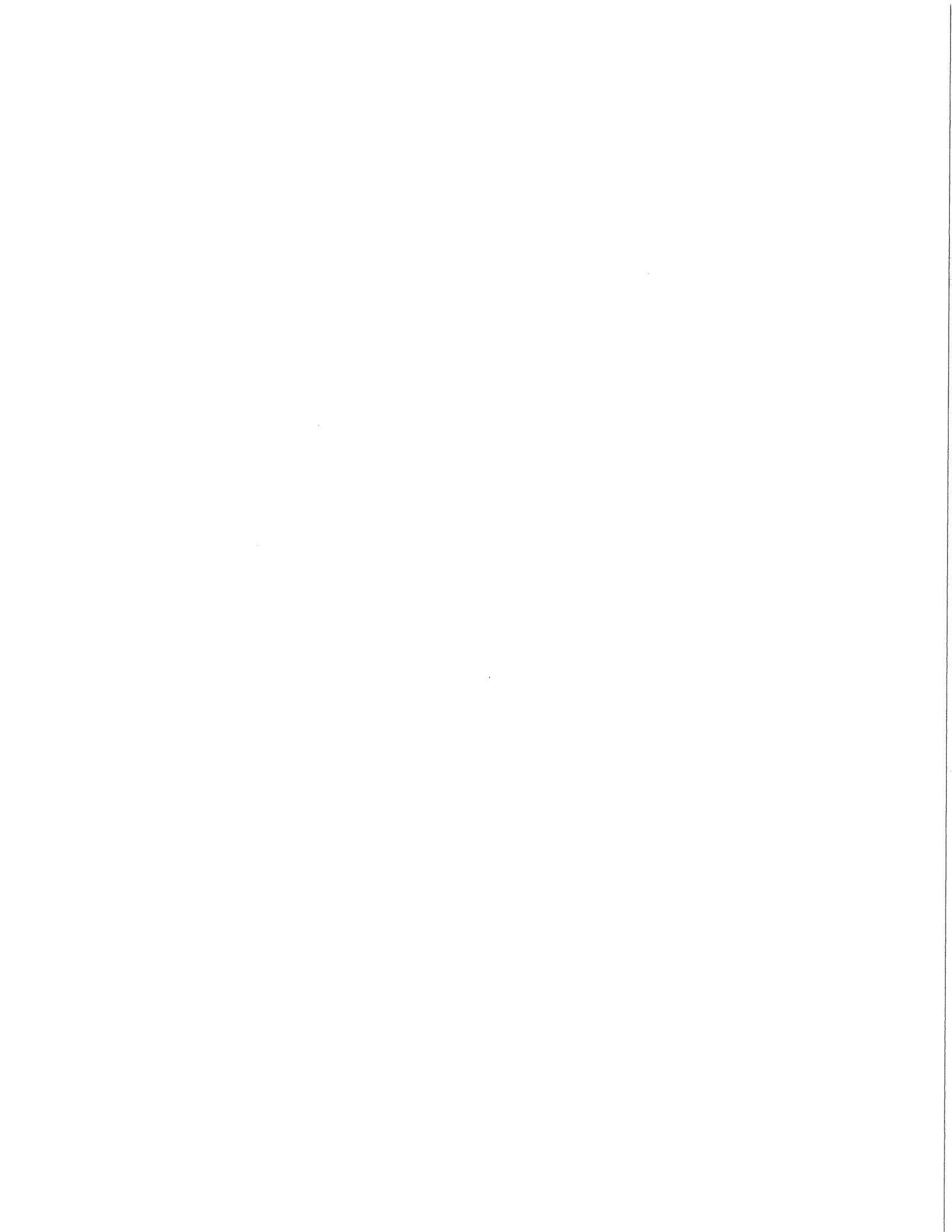
The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer _____ Date

Accepted by Contractor _____ Date

Accepted by Owner _____ Date



This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT FUNDING AGENCY EDITION

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES



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a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

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This document has been approved and endorsed by

The Associated General Contractors of America



and the

Construction Specification Institute



Knowledge for Creating
and Sustaining
the Built Environment

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Funding Agency Edition No. C-521 (2002 Edition). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001, 2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800, 2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda* – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agency* – The Federal or state agency named as such in the Agreement.
 3. *Agreement* – The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 4. *Application for Payment* – The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 5. *Asbestos* – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 6. *Bid* – The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 7. *Bidder* – The individual or entity who submits a Bid directly to Owner.
 8. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 9. *Bidding Requirements* – The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.
 10. *Change Order* – A document recommended by Engineer which is signed by Contractor and Owner and Agency and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 11. *Claim* – A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 12. *Contract* – The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
 13. *Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

14. *Contract Price* – The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
15. *Contract Times* – The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
16. *Contractor* – The individual or entity with whom Owner has entered into the Agreement.
17. *Cost of the Work* – See Paragraph 11.01.A for definition.
18. *Drawings* – That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
19. *Effective Date of the Agreement* – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
20. *Engineer* – The individual or entity named as such in the Agreement.
21. *Field Order* – A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
22. *General Requirements* – Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.
23. *Hazardous Environmental Condition* – The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.
24. *Hazardous Waste* – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
25. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
27. *Milestone* – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
28. *Notice of Award* – The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
29. *Notice to Proceed* – A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
30. *Owner* – The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
31. *PCBs* – Polychlorinated biphenyls.

32. *Petroleum* – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
33. *Progress Schedule* – A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
34. *Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
35. *Project Manual* – The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
36. *Radioactive Material* – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
37. *Related Entity* – An officer, director, partner, employee, agent, consultant, or subcontractor.
38. *Resident Project Representative* – The authorized representative of Engineer who may be assigned to the Site or any part thereof.
39. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
40. *Schedule of Submittals* – A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
41. *Schedule of Values* – A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
42. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
43. *Site* – Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
44. *Specifications* – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
45. *Subcontractor* – An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
46. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
47. *Successful Bidder* – The Bidder submitting a responsive Bid to whom Owner makes an award.

48. *Supplementary Conditions* – That part of the Contract Documents which amends or supplements these General Conditions.
49. *Supplier* – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.
50. *Underground Facilities* – All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
51. *Unit Price Work* – Work to be paid for on the basis of unit prices.
52. *Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
53. *Work Change Directive* – A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and Agency upon recommendation of the Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

- A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.
- B. *Intent of Certain Terms or Adjectives*
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.
- C. *Day*
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents, or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

- F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule;
2. a preliminary Schedule of Submittals; and
3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, Agency, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage

as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 - 1. A Field Order;
 - 2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3) or
 - 3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or
 - 2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.
- B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any,

of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and
 - 2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

- A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:
 - 1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
 - 2. is of such a nature as to require a change in the Contract Documents; or
 - 3. differs materially from that shown or indicated in the Contract Documents; or
 - 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb

such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data,
 - b. locating all Underground Facilities shown or indicated in the Contract Documents,

- c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

- A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 3. include completed operations insurance;
 4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.
 - a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (Contractor shall be responsible for any deductible or self-insured retention.). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
 2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.
- B. Contractor shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Contractor as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:
1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Contractor and made payable to Contractor as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Contractor shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof.
- B. Contractor as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Contractor's exercise of this power. If such objection be made, Contractor as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Contractor as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Contractor as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of

non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times, and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
 - b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
 - c. The procedure requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.
 - d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) will perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;
 - b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified , and
 - b) available engineering, sales, maintenance, repair, and replacement services;
 - 4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor
 - 2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain

that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work, Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved

Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract

Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:
 - a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;
 - c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and
 - d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. use or occupancy of the Work or any part thereof by Owner;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:
 1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.

- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

- A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, subject to written approval by Agency at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part,
 2. approve the Claim, or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.
 - 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 - 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 - 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
 - 4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
 - 5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressages, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

- C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. Cash Allowances
 - 1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*
 - 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
1. the Bid price of a particular item of Unit Price Work amounts to more than 5 percent of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. Contractor's Fee: The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.B.
 - 1. delays caused by or within the control of Contractor; or
- D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;

- b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. the Contractor's performance or furnishing of the Work is inconsistent with funding Agency requirements;
 - d. there are other items entitling Owner to a set-off against the amount recommended; or
 - e. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.
3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Agency, Contractor, and Engineer shall make a prefinal inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner, Agency, and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

- 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 Final Completion Delayed

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims. The remaining balance of any sum included in the final Application for Payment but held by OWNER for Work not fully completed and accepted will become due when the Work is fully completed and accepted.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),
 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by

Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Owner and Contractor may mutually request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
 - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
 - 2. agrees with the other party to submit the Claim to another dispute resolution process, or
 - 3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

ARTICLE 18 – FEDERAL REQUIREMENTS

18.01 *Agency Not a Party*

- A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

18.02 *Contract Approval*

- A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the following "Certificate of Owner's Attorney" (Exhibit GC-A) before Owner submits the executed Contract Documents to Agency for approval.
- B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

18.03 *Conflict of Interest*

- A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer.
- B. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

18.04 *Gratuities*

- A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.
- B. In the event this Contract is terminated as provided in paragraph 18.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an

amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

18.05 *Audit and Access to Records*

- A. For all negotiated contracts and negotiated modifications (except those of \$10,000 or less), Owner, Agency, the Comptroller General, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor, which are pertinent to the Contract, for the purpose of making audits, examinations, excerpts and transcriptions. Contractor shall maintain all required records for three years after final payment is made and all other pending matters are closed.

18.06 *Small, Minority and Women's Businesses*

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women's businesses on solicitation lists; (2) assuring that small, minority and women's businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women's businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women's businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

18.07 *Anti-Kickback*

- A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

18.08 *Clean Air and Pollution Control Acts*

- A. If this Contract exceeds \$100,000, Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 USC 7401 *et seq.*) and the Federal Water Pollution Control Act as amended (33 USC 1251 *et seq.*). Contractor will report violations to the Agency and the Regional Office of the EPA.

18.09 *State Energy Policy*

- A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

18.10 *Equal Opportunity Requirements*

- A. If this Contract exceeds \$10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
- B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment

Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

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

18.11 *Restrictions on Lobbying*

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

18.12 *Environmental Requirements*

- A. When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:
1. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
 2. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.
 3. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).
 4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

EXHIBIT GC-A

Certificate of Owner's Attorney

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows:

I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Date: _____

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

Project Name: ECCWD – 200,000 Gal. Water Storage Tank

Project Number: (WX21045012)

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

	<u>Attachment No.</u>
SRF Special Provisions	1
40 CFR 31.36 (Procurement)-grants only	2
KRS Chapter 45A-Kentucky Model Procurement Code-loans only	3
Equal Employment Opportunity (EEO) Documents:	
Notice of Requirement for Affirmative Action	4
Contract Specifications (Executive Order 11246)	5
EEO Goals for Region 4 Economic Areas	6
Special Notice #1 - Check List of EEO Documentation	7
Employer Information Report EEO-1 (SF 100)	8
Labor Standards Provisions for Federally Assisted Construction, EPA Form 5720-4	9
Certifications	
Debarment, Suspension and Other Responsibility Matters	10
Anti-lobbying	11
Region 4 Disadvantaged Business Enterprise (DBE)	12
Negotiated Rates as of October 1, 2010	13
Bonds and Insurance	14
Outlay Management Schedule	15
Storm Water General Permit	16
Davis Bacon Requirements	17
Wage Rate Requirements under FY 2012 Appropriations	18

SRF SPECIAL PROVISIONS

- (a) Line crossings of all roads and streets shall be done in accordance with the Kentucky Transportation Cabinet requirements as may be set forth in the Special Conditions.
- (b) Construction is to be carried out so as to prevent by-passing of flows during construction unless a schedule has been approved by the State or EPA, whichever is applicable. Siltation and soil erosion must be minimized during construction. All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The permit can be found at the following web address: <https://dep.gateway.ky.gov/eForms/default.aspx?FormID=7>.

If you have any questions regarding the completion of this form call the Surface Water Permits Branch at (502) 564-3410.
- (c) Restore disturbed areas to original or better condition.
- (d) Use of Chemicals: All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either DOW or EPA. Use of all such chemicals and disposal of residues shall be in conformance with instructions on the manufacturer's label.
- (e) The construction of the project, including the letting of contracts in connection therewith, shall conform to the applicable requirements of state, territorial, and local laws and ordinances to the extent that such requirements do not conflict with Federal laws and this subchapter.
- (f) The owner shall provide and maintain competent and adequate supervision and inspection.
- (g) The Kentucky Infrastructure Authority and Kentucky Division of Water shall have access to the site and the project work at all times.
- (h) In the event Archaeological materials (arrowheads, stone tools, stone axes, prehistoric and historic pottery, bottles, foundations, Civil War artifacts, and other types of artifacts) are uncovered during the construction of this project, work is to immediately cease at the location and the Kentucky Heritage Council shall be contacted. The telephone number is (502) 564-7005. Construction shall commence at this location until a written release is received from the Kentucky Heritage Council. Failure to report a find could result in legal action.
- (i) This procurement will be subject to DOW Procurement Guidance including the Davis-Bacon Act.
- (j) Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.
- (k) No wastewater bypassing will occur during construction unless a schedule has been approved by the Kentucky Division of Water.
- (l) Change orders to the construction contract (if required) must be negotiated pursuant to DOW/KIA Procurement Guidance for Construction and Equipment Contracts.

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

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

Subpart C--Post-Award Requirements

Sec. 31.36 Procurement.

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

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

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

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

(i) The employee, officer or agent,

(ii) Any member of his immediate family,

(iii) His or her partner, or

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

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

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

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

(7) Grantees and sub-grantees are encouraged to use value engineering clauses in contracts for construction projects of sufficient size to offer reasonable opportunities for cost reductions. Value engineering is a systematic and creative analysis of each contract item or task to ensure that its essential function is provided at the overall lower cost.

(8) Grantees and sub-grantees will make awards only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement. Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

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

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

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

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

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

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

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

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

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

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

(ii) Requiring unnecessary experience and excessive bonding,

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

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

(v) Organizational conflicts of interest,

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

(vii) Any arbitrary action in the procurement process.

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

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

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

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

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

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

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

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

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

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

(B) The cost is unreasonable;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(C) The awarding agency authorizes noncompetitive proposals; or

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

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

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

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

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

(2) Affirmative steps shall include:

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

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

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

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

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

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

(f) Contract cost and price.

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

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

(2) Grantees and sub-grantees will negotiate profit as a separate element of the price for each contract in which there is no price competition and in all cases where cost analysis is performed. To establish a fair and reasonable profit, consideration will be given to the complexity of the work to be performed, the risk borne by the contractor, the contractor's investment, the amount of subcontracting, the quality of its record of past performance, and industry profit rates in the surrounding geographical area for similar work.

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

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

(g) Awarding agency review.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(6) Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR part 5). (Construction contracts awarded by grantees and sub-grantees in excess of \$2000, and in excess of \$2500 for other contracts which involve the employment of mechanics or laborers)

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

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

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

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

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

(12) Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and sub-grants of amounts in excess of \$100,000)

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

(j) Payment to consultants.

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

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

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

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

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

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

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

(iii) The grantee attests that:

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

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

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

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

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

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

KRS Chapter 45A
Kentucky Model Procurement Code

45A.075 Methods of awarding state contracts.

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

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

Effective: June 24, 2003

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

45A.080 Competitive sealed bidding.

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

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

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

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

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

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

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

Effective: July 14, 2000

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

45A.085 Competitive negotiation.

(1) When, under administrative regulations promulgated by the secretary or under KRS 45A.180, the purchasing officer determines in writing that the use of competitive sealed bidding is not practicable, and except as provided in KRS 45A.095 and 45A.100, a contract may be awarded by competitive negotiation.

(2) Adequate public notice of the request for proposals shall be given in the same manner and circumstances as provided in KRS 45A.080(3).

(3) Contracts other than contracts for projects utilizing an alternative project delivery method under KRS 45A.180 may be competitively negotiated when it is determined in writing by the purchasing officer that the bids received by competitive sealed bidding either are unreasonable as to all or part of the requirements, or were not independently reached in open competition, and for which each competitive bidder has been notified of the intention to negotiate and is given reasonable opportunity to negotiate.

(4) Contracts for projects utilizing an alternative project delivery method shall be processed in accordance with KRS 45A.180.

(5) The request for proposals shall indicate the relative importance of price and other evaluation factors.

(6) Award shall be made to the responsible offerer whose proposal is determined in writing to be the most advantageous to the Commonwealth, taking into consideration price and the evaluation factors set forth in the request for proposals.

(7) Written or oral discussions shall be conducted with all responsible offerers who submit proposals determined in writing to be reasonably susceptible of being selected for award. Discussions shall not disclose any information derived from proposals submitted by competing offerers. Discussions need not be conducted:

(a) With respect to prices, where the prices are fixed by law or administrative regulation, except that consideration shall be given to competitive terms and conditions;

(b) Where time of delivery or performance will not permit discussions; or

(c) Where it can be clearly demonstrated and documented from the existence of adequate competition or prior experience with the particular supply, service, or construction item, that acceptance of an initial offer without discussion would result in fair and reasonable best value procurement, and the request for proposals notifies all offerers of the possibility that award may be made on the basis of the initial offers.

Effective: June 24, 2003

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

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

(1) In the event that all bids submitted pursuant to competitive sealed bidding under KRS 45A.080 result in bid prices in excess of the funds available for the purchase, and the chief purchasing officer determines in writing:

(a) That there are no additional funds available from any source so as to permit an award to the responsive and responsible bidder whose bid offers the best value; and

(b) The best interest of the state will not permit the delay attendant to a resolicitation under revised specifications, or for revised quantities, under competitive sealed bidding as provided in KRS 45A.080, then a negotiated award may be made as set forth in subsections (2) or (3) of this section.

(2) Where there is more than one (1) bidder, competitive negotiations pursuant to KRS 45A.085(3) shall be conducted with the three (3) (two (2) if there are only two (2)) bidders determined in writing to be the most responsive and responsible bidders, based on criteria

contained in the bid invitation. Such competitive negotiations shall be conducted under the following restrictions:

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

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

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

Effective: June 24, 2003

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

45A.095 Noncompetitive negotiation.

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

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

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

(c) For library books;

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

(e) For interests in real property;

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

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

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

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

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

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

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

Effective: July 15, 2002

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

45A.100 Small purchases.

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

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

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

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

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

Effective: July 15, 2002

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

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

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

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

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

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

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

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

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

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

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

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

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

EEO Specifications

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

1. As used in these specifications:

(a) Covered Area means the geographical area described in the solicitation from which this contract resulted.

(b) Director means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority;

(c) Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

(d) Minority includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

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

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

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

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

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

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

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

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

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

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

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

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

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by

publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

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

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

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

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

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

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

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

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

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

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

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative actions obligations (7 a through p). The efforts of a contractor association, joint contractor-union, contractor-community, of other similar group of which the contractor is a member and

participant may be asserted as fulfilling any one or more of its obligations under 7 a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.

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

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

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

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

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

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

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

EEO Goals for Economic Areas in Region 4

Source: Appendix B-80 in 45 FR 65984 (October 3, 1980)

Kentucky:

056 Paducah, KY:	
Non-SMSA Counties	5.2
IL Hardin; IL Massac; IL Pope; KY Ballard; KY Caldwell; KY Calloway; KY Carlisle; KY Crittenden; KY Fulton; KY Graves; KY Hickman; KY Livingston; KY Lyon. KY McCracken; KY Marshall.	
057 Louisville, KY:	
SMSA Counties:	
4520 Louisville, KY-IN	11.2
IN Clark; IN Floyd; KY Bullitt; KY Jefferson; KY Oldham.	
Non-SMSA Counties	9.6
IN Crawford; IN Harrison; IN Jefferson; IN Orange; IN Scott; IN Washington; KY Breckinridge; KY Grayson; KY Hardin; KY Hart; KY Henry; KY Larue; KY Marion; KY Meade; KY Nelson; KY Shelby; KY Spencer; KY Trimble; KY Washington.	
058 Lexington, KY	
SMSA Counties	
4280 Lexington-Fayette, KY	10.8
KY Bourbon; KY Clark; KY Fayette; KY Jessamine; KY Scott; KY Woodford.	
Non-SMSA Counties	7.0
KY Adair KY Anderson; KY Bath; KY Boyle; KY Breathitt; KY Casey; KY Clay; KY Estill; KY Franklin- KY Garrard; KY Green; KY Harrison- KY Jackson; KY Knott; KY Lee; KY Leslie; KY Letcher; KY Lincoln; KY Madison; KY Magoffin; KY Meniffee; KY Mercer; KY Montgomery; KY Morgan. KY Nicholas; KY Owsley; KY Perry; KY Powell; KY Pulaski; KY Rockcastle; KY Russell; KY Taylor; KY Wolfe.	

**CHECK LIST OF EEO DOCUMENTATION FOR BIDDERS
ON GRANT/LOAN CONSTRUCTION
(Required by Executive Order 11246 as amended)**

The low, responsive responsible bidder must forward the following items, in duplicate, to the owner no later than ten (10) days after bid opening. The owner shall have one (1) copy available for inspection by the Office of Federal Contracts Compliance within 14 days after the bid opening. The web site for the OFCC is http://www.dol.gov/esa/ofcp_org.htm.

1. Project Number. Project Location. Type of Construction.
2. Proof of registration with the Joint Reporting Commission. (See Attachment Number 8.)
3. Copy of Affirmative Action Plan of contractor. Indicate company official responsible for EEO.
4. List of current construction contracts, with dollar amount. List contracting Federal Agency, if applicable.
5. Statistics concerning company percent workforce, permanent and temporary, by sex, race, trade, handicapped, and age. 40 CFR Part 7.
6. List of employment sources for project in question. If union sources are utilized, indicate percentage of minority membership within the union crafts.
7. Anticipated employment needs for this project, by sex, race and trade, with estimate of minority participation in specific trades.
8. List of subcontractors (name, address and telephone) with dollar amount and duration of subcontract. Subcontractor contracts over \$10,000 must submit items 1- 8. The following information must be provided for all supplier contracts regardless of contract size: name of company, contact person, address, telephone number, dollar value of the contract, and a list of the materials to be supplied to the prime contractor.
9. List of any subcontract work yet to be committed with estimate of dollar amount and duration of contract.
10. Contract Price. Duration of prime contract.
11. DBE Documents - See special instructions regarding use of Minority, and Women Owned, and Small Businesses.

Employer Information Report EEO-1

Under the direction of the US Equal Employment Opportunity Commission, the Joint Reporting Committee is responsible for the full-length, multi-phase processing of employment statistics collected on the Employer Information Report EEO-1. This report, also termed Standard Form 100, details the sex and race/ethnic composition of an employer's work force by job category.

The Employer Information EEO-1 survey is conducted annually under the authority of Public Law 88-352, Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972. All employers with 15 or more employees are covered by Public Law 88-352 and are required to keep employment records as specified by Commission regulations. Based on the number of employees and federal contract activities, certain large employers are required to file an EEO-1 Report on an annual basis.

The EEO-1 Report must be filed by:

(A) All private employers who are: (1) subject to Title VII of the Civil Rights Act of 1964 (as amended by the Equal Employment Opportunity Act of 1972) with 100 or more employees EXCLUDING State and local governments, primary and secondary school systems, institutions of higher education, Indian tribes and tax-exempt private memberships clubs other than labor organizations; OR (2) subject to Title VII who have fewer than 100 employees if the company is owned or affiliated with another company, or there is centralized ownership, control or management (such as central control of personnel policies and labor relations) so that the group legally constitutes a single enterprise and the entire enterprise employs a total of 100 or more employees.

(B) All federal contractors (private employers), who: (1) are not exempt as provided for by 41 CFR 60-1.5, (2) have 50 or more employees, and (a) are prime contractors or first-tier subcontractors, and have a contract, subcontract, or purchase order amounting to \$50,000 or more; or (b) serve as depository of Government funds in any amount, or (c) is a financial institution which is an issuing an paying agent for U.S. Savings Bonds and Notes.

Only those establishments located in the District of Columbia and the 50 states are required to submit the EEO-1 Report. No Reports should be filed for establishments in Puerto Rico, the Virgin Islands or other American Protectorates.

When filing for the EEO-1 Report for the first time, go to the web site at:

<http://www.mimdms.com/jrc.html> and select "Filing for the first time" from the box labeled INFORMATION. File out the electronic questionnaire to enter your company into Joint Reporting Committee (JRC) system. Once you have completed the registration process, you will be contacted on how to proceed with the EEO-1 Report. If you have previously registered with the JRC, follow their instructions to update your information.

Labor Standards Provisions for Federally Assisted Construction

Labor standards provisions applicable to contracts covering federally financed and assisted construction (29 CFR 5.5, Contract Provisions and Related Matters) that apply to EPA Special Appropriations Projects grants are:

(a)(4)(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(a)(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(a)(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5 (a) (1) through (10) and such other clauses as the U.S. Environmental Protection Agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(a)(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(b) Contractor Work Hours and Safety Standards Act. The Administrator, EPA shall cause or require the contracting officer to insert the following clauses set forth in paragraph (b)(1),(2),(3), and (4) of this section in full in any contract subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by *Section 5.5(a) of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any work week in which he or she is employed on such work to in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b) (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for unliquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The U.S. Environmental Protection Agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally- assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in section 5.1, the Administrator of EPA shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly worked, deductions made, and actual wages paid. Further, the Administrator of EPA shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the U.S. Environmental Protection Agency and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job. (Approved by the Office of Management and Budget under OMB control numbers 1215-0140 and 1215-0017.)

CERTIFICATIONS

Debarred Firms

All prime Construction Contractors shall certify that Subcontractors have not and will not be awarded to any firm that is currently on the EPA Master List of Debarred, Suspended and Voluntarily Excluded Persons in accordance with the provisions of 40 CFR 32.500(c). Debarment action is taken against a firm for noncompliance with Federal Law.

All bidders shall complete the attached certification (Attachment Number 10) and submit to the owner with the bid proposal.

Anti-lobbying Certification

All prime Construction Contractors must certify (Attachment Number 11) that no appropriated funds were or will be expended for the purpose of lobbying the Executive or Legislative Branches of the Federal Government or Federal Agency concerning this contract (contract in excess of \$100,000). If the Contractor has made or agreed to make payment to influence any member of Congress in regard to award of this contract, a Disclosure Form must be completed and submitted to the owner with the bid proposal.

All prime Contractors must require all Subcontractors to submit the certification, which must also be submitted to the owner.

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

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

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

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

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

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

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

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

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

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

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

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

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

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

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

TYPED NAME & TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

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

EPA DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

EPA's Disadvantaged Business Enterprise Program rule applies to contract procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. The rule is found at Federal regulation Title 40, Part 33. Specific responsibilities are highlighted below.

Grant recipient responsibilities:

- Conduct an Availability Analysis and negotiate fair share objectives with EPA (§ 33.411), or adopt the fair share objectives of the oversight state agency revolving loan fund for comparable infrastructure. (§ 33.405(b)(3)).
- Include the Appendix A term and condition in each contract with a primary contractor (§ 3.106). The term and condition is included in the EPA Region 4 contract specifications insert *FEDERAL REQUIREMENTS AND CONTRACT PROVISIONS FOR SPECIAL APPROPRIATION ACT PROJECTS US ENVIRONMENTAL PROTECTION AGENCY, Region III, June 2008*.
- Employ the six Good Faith Efforts during prime contractor procurement (§ 33.301).
- Require prime contractor to comply with the following prime contractor requirements of Title 40 Part 33:
 - To employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).
 - To provide EPA form 6100-2 – *DBE Subcontractor Participation Form* to all DBE subcontractors (§ 33.302(e)).
 - To submit EPA forms 6100-3 – *DBE Program Subcontractor Performance Form* and 6100-4 – *DBE Program Subcontractor Utilization Form* with bid package or proposal. (§ 33.302 (f) and (g)).
 - To pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§ 33.302(a)).
 - To notify recipient in writing by its prime contractor prior to any termination of a DBE subcontractor for convenience by the prime contractor (§ 33.302(b)).
 - To employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
 - To employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).

- Semiannually complete and submit to Charles Hayes, EPA Region 4 DBE Coordinator EPA form 5700-52A summarizing DBE participation achieved during the previous six months (§ 33.502).
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including documentation of its, and its prime contractors', good faith efforts (§ 33.501(a)).

Prime Contractor Responsibilities:

- Employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).
- Provide EPA form number 6100-2 – *DBE Program Subcontractor Participation Form* and form number 6100-3 – *DBE Program Subcontractor Performance Form* to each DBE subcontractor prior to opening of the contractor's bid or proposal (§ 33.302(e) and (f)).
- Complete EPA form number 6100-4 – *DBE Program Subcontractor Utilization Form* (§ 33.302(g)).
- Submit to recipient with its bid package or proposal the completed EPA form number 6100-4, plus an EPA form number 6100-3 for each DBE subcontractor used in the contractor's bid or proposal (§ 33.302(f) and (g)).
- Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§ 33.302(a)).
- Notify the recipient in writing prior to prime contractor termination of a DBE subcontractor for convenience (§ 33.302(b)).
- Employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
- Employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
- Semiannually inform recipient of DBE participation achieved (§ 33.502).
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including documentation of its, and its prime contractors', good faith efforts (§ 33.501(a)).

Subcontractor Responsibilities:

- May submit EPA form 6100-2 – *DBE Subcontractor Participation Form* to Charles Hayes, EPA Region 4 DBE Coordinator (§ 33.302(e)).
- Must complete EPA form 6100-3 – *DBE Program Subcontractor Performance Form*, and submit it to the prime contractor soliciting services from the subcontractor prior to the opening of bids for the prime contract.

SPAP Requirements:

Form	Requirement	Provided By:	Completed By:	Submitted To:
EPA Form 6100-2	Grant Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	EPA Region 4 DBE Coordinator Charles Hayes
EPA Form 6100-3	Grant Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	Grant Recipients as part of a bid or proposal package
EPA Form 6100-4	Grant Recipients required to have prime contractors complete the form	Grant Recipients	Prime Contractors	Grant Recipients as part of a bid or proposal package

SRF Requirements:

Form	Requirement	Provided By:	Completed By:	Submitted To:
EPA Form 6100-2	Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	DOW Project Administrator
EPA Form 6100-3	Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	Dow Project Administrator w/ ATA Package
EPA Form 6100-4	Recipients required to have prime contractors complete the form	Recipients	Prime Contractors	DOW Project Administrator w/ ATA Package
Pay Request DBE Form	Recipients required to have prime contractors complete the form	Recipients	Prime Contractors	DOW Project Administrator w/ EACH PAYMENT

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION POLICY

PROJECT NAME: _____

BID DATE: _____

1. Name, address and telephone number of contact person on all DBE matters:

Prime Contractor's Name: _____

Contact Person: _____

Address: _____

Phone: _____

Cell Phone: _____

Email: _____

Total Contract Amount: _____

2. Total dollar amount/percent of contract of MBE participation: _____

3. Total dollar amount/percent of contract of WBE participation: _____

4. Are certifications* for each MBE/WBE/DBE subcontractor enclosed; if no, please explain: Yes No _____

5. Are MBE/WBE/DBE subcontracts or letters of intent signed by both parties enclosed; if no, please explain: Yes No _____

6. List of MBE Subcontractors:

Name: _____

Contact Person: _____

Address: _____

Phone: _____

Cell Phone: _____

Email: _____

Type of Contract: _____

Work to be Done: _____

Amount: _____

7. List of WBE Subcontractors:

Name: _____

Contact Person: _____

Address: _____

Phone: _____

Cell Phone: _____

Email: _____

Type of Contract: _____

Work to be Done: _____

Amount: _____

Attach Additional Sheets, If Necessary

*Self-certification: Self certification of MBE/WBE/DBE firms will NOT be accepted as a valid form of certification of MBE/WBE/DBE status.

8. **Information and documentation concerning efforts taken to comply with EPA's "six good faith efforts"**

(i). Ensure DBE construction firms or material suppliers are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing DBEs on solicitation lists and soliciting them whenever they are potential sources. A good source for a list of DBEs is the Kentucky Transportation's website: <http://transportation.ky.gov/Civil-Rights-and-Small-Business-Development/Pages/Certified-DBE-Directory.aspx>.

The prime contractor certifies that a bidders list (see example sheet below) of qualified vendors, including DBEs, was developed for current and future solicitations and that the list will be maintained. *Submit a copy of the list as documentation.*

(ii). Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process; including, whenever possible, posting solicitation for bids or proposals for a sufficient amount of time as to receive a competitive bid or proposal pool.

The prime contractor certifies that every opportunity was provided to a number of DBEs to encourage their participation in the competitive process and that an adequate amount of time was provided for response.

a. List each DBE construction firm or material supplier to which a solicitation was attempted. *Submit copies of letters, emails, faxes, telecommunication logs, certified mail receipts, returned envelopes, certified mail return receipts, etc. as documentation.*

Company name and phone number: _____

Area of work expertise: _____

Date of any follow-ups and person spoke to: _____

b. Advertisements, if applicable: List each publication in which an announcement or notification was placed. *Submit a tear sheet of each announcement from each publication as documentation.*

Name of publication: _____

Date(s) of advertisement: _____

Specific subcontract areas announced: _____

c. Other, if applicable: List each notification method in which an announcement or outreach was used; list serve, public meeting, etc. *Submit applicable information to document effort.*

Method of notification: _____

Date(s) of notification: _____

(iii). Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs; including dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

The prime contractor certifies that the project was broken into its basic elements (i.e., dirt hauling, landscaping, painting, pipe installation, material supplies, etc.) and that a determination was made whether it's economically feasible to bid the elements separately and that the analysis of this effort was documented with a short memo to the project file.

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

The prime contractor certifies that they established delivery schedules which would allow DBEs to participate in the projects.

(v). Use the services and assistance of the Small Business Administration (SBA) and the Minority Business Development Agency (MBDA) of the U.S. Department of Commerce. The easiest way to utilize the services of SBA and MBDA is to visit their websites: www.sba.gov and www.mbda.gov and use the electronic tools available there or you may send the nearest SBA and MBDA office a certified letter that generally describes the solicitation, the dates it will be open, the types of vendors you are seeking and applicable SIC or NAIC codes if known. You may also use the services and assistance of the Kentucky Procurement Assistance Program (KPAP). The easiest way to utilize the services of KPAP is to send an email: ced.kpap@ky.gov and provide information on forthcoming opportunities available to DBEs.

The prime contractor certifies that the assistance of the SBA, MBDA, and/or KPAP was utilized. *Submit pages printed off the SBA and MBDA websites which evidence efforts to register a solicitation on those sites or submit copies of the letter sent and certified mail receipt as documentation; submit copies of emails with KPAP as documentation.*

(vi). If a subcontractor awards any subcontracts, require the subcontractor to take the steps in numbers (i) through (v) above.

The prime contractor certifies that subcontractors used for this project will be required to follow the steps of the "six good faith efforts" as listed above.

9. Signature and date:

To the best of my knowledge and belief, all "six good faith efforts" have been met and the information contained in this document is true and correct; the document has been duly authorized by the legal representative.

Signature

Print name and title

Date

REGION 4
DISADVANTAGED BUSINESS ENTERPRISE (DBE) NEGOTIATED RATES
(Subject to change - refer to grant award for specific fair share objectives)

KENTUCKY

Construction: (both programs)	4.10% MBE and 4.60% WBE
Equipment:	1.10% MBE and 1.20% WBE
Services:	10.8% MBE and 18.6% WBE
Supplies:*	3.40% MBE and 6.30% WBE

BONDS AND INSURANCE

The minimum requirements shall be as follows:

Bonding requirements for contracts of \$100,000 or less are contained in 40 CFR 31.36(h).

Bond requirements for contracts in excess of \$100,000 are:

- < Bid guarantee equivalent to five percent of the bid price. The bid guarantee shall consist of a firm commitment such as a certified check or bid bond submitted with the bid;
- < Performance bond equal to 100 percent of the contract price, and
- < Payment bond equal to 100 percent of the contract price. Bonds must be obtained from companies holding Certificates of Authority as acceptable sureties, issued by the U.S. Treasury.

Insurance requirements are contained in the General Conditions of the contract. In addition to the other required insurance, the owner or the contractor, as appropriate, must acquire any flood insurance made available by the Federal Emergency Management Agency as required by 44 CFR Parts 59-79, if construction will take place in a flood hazard area identified by the Federal Emergency Management Agency. The owners requirements on Flood Insurance are contained in the Special Conditions Section of the Contracts Documents.

OUTLAY MANAGEMENT

The contractor must provide a contract progress schedule of percentage of work in place and costs against time; and a schedule of projected payments (cumulative) for construction and for the architectural/engineering contract when the contract is awarded. The payment schedule must be submitted, in a format similar to the attached sample, to the owner for forwarding to the State when the contract is awarded, and whenever actual payments on a project vary beyond -5 percent and +10 percent from the schedule, as determined by the grantee.

Contractor will be required to review each of these contract schedules during the month of June and to submit revised schedules, as necessary, no later than July 1st of each year.

CONSTRUCTION AND OUTLAY SCHEDULE

Project No.: _____

Applicant: _____

Contract Identification: _____

Description of Contract: _____

(INSTRUCTIONS FOR USE ON REVERSE SIDE)

SCHEDULE I - CONSTRUCTION SCHEDULE

Date for Advertisement: _____

Date for Opening Bids: _____

Pre-Construction Conference Date: _____

Date of Contract Award: _____

Contract Period: _____ days Projected Contract Completion Date: _____

Total Eligible Contract Amount: _____

Work Order Date: _____

Start Construction Date: _____

Contract Completed: _____

SCHEDULE II - CUMULATIVE OUTLAY SCHEDULE (55% EPA Share) - Projection
only for quarters that remain in the fiscal year (FY) plus cumulative
annual amount for the next FY.

Cum EPA Amount thru 1 st Qtr. Oct./Dec.:	\$ _____
Cum EPA Amount thru 2 nd Qtr. Jan./Mar.:	\$ _____
Cum EPA Amount thru 3 rd Qtr. Apr./June:	\$ _____
Cum EPA Amount thru 4 th Qtr. July/Sept.:	\$ _____
Cum EPA Amount for Next Fiscal Year:	\$ _____

INSTRUCTIONS (Construction and Outlay Schedules)

To insure timely achievement of the grant objectives the owner (grantee) must provide EPA with a grants activities schedule, contract construction schedules and corresponding payment outlay schedules for the grant and each contract under the grant. One copy of information similar to that showing the Construction and Outlay Schedule Form will be submitted for the grant schedule with the grant acceptance. A separate form will accompany each contract at time of contract award.

- A. The grant activities schedule shall depict the period from grant award through grant closeout and cover all major milestone date. The grant activities schedule shall include Schedule I information items as well as other appropriate items necessary to monitor the grant. Schedule II shall be filled out to estimate the cumulative (all construction and architectural/engineering contracts) payment schedule to be requested by the grantee from EPA during the grant period, and whenever actual outlays vary beyond -5% and +10% from the schedule.
- B. Individual contractor's construction schedules for each contract will be submitted to support the grant activities schedule. The Schedule I shall be submitted prior to date of advertisement of each contract and Schedule II along with the contractor's construction schedule shall be submitted seven (7) calendar days prior to the dates of the pre-construction conference. The contractor's construction schedule shall depict the contractor's plan for completing all contract requirements and show work placement in dollars versus contract time. Schedule II shall depict the contract payment outlay by month or quarter. The contract schedule will be coordinated with all parties at the pre-construction conference.

The grants activities schedule, contractor construction schedules, will be the basis for monitoring progress towards completion of the project. The schedules shall be maintained at the available for inspection and updated at least monthly. The schedules shall be revised to incorporate approved change orders as they occur.

All of the schedules will be submitted to the State Division of Water.

NOTICE OF INTENT

All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The permit can be found at the following web address: **<https://dep.gateway.ky.gov/eForms/default.aspx?FormID=7>**.

If you have any questions regarding the completion of this form call the Surface Water Permits Branch, at (502) 564-3410.

DAVIS BACON REQUIREMENTS

Federal Davis-Bacon rates are applicable for these funds. This determination applies only to the loan portion of this project. Please contact the other funding sources, if applicable, for their requirements pertaining to federal wage rates. You must contact the Kentucky Labor Cabinet for determination of applicable state wages.

(a) The Agency head shall cause or require the contracting officer to insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in §5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, Provided, That such modifications are first approved by the Department of Labor):

(1) Minimum wages. (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in §5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise

the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The (write in name of Federal Agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records. (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as

the case may be, for transmission to the (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency), the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the (write the name of the agency) or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees —(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage

determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes

within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility. (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(b) Contract Work Hours and Safety Standards Act. The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by §5.5(a) or 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in §5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a). The subrecipient shall periodically interview, a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the subrecipient should conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c). The subrecipient shall conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on an assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date of the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

(d). The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/esa/contacts/whd/america2.htm>.

WAGE RATE REQUIREMENTS UNDER FY2011 APPROPRIATIONS

CWSRF: The recipient agrees to include in all agreements to provide assistance for the construction of treatment works carried out in whole or in part with such assistance made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.), or with such assistance made available under section 205(m) of that Act (33 U.S.C. 1285(m)), or both, a term and condition requiring compliance with the requirements of section 513 of that Act (33 U.S.C. 1372) in all procurement contracts and sub-grants, and require that loan recipients, procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions. All contracts and subcontracts for the construction of treatment works carried out in whole or in part with assistance made available as stated herein shall insert in full in any contract in excess of \$2,000 the contract clauses as set forth below entitled "Wage Rate Requirements Under FY 2010 Appropriations." This term and condition applies to all agreements to provide assistance under the authorities referenced herein, whether in the form of a loan, bond purchase, grant, or any other vehicle to provide financing for a project, where such agreements are executed on or after October 30, 2009 and before October 1, 2010.

DWSRF: The recipient agrees to include in all agreements to provide assistance for any construction project carried out in whole or in part with such assistance made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12), a term and condition requiring compliance with the requirements of section 1450(e) of the Safe Drinking Water Act (42 U.S.C.300j-9(e)) in all procurement contracts and sub-grants, and require that loan recipients, procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions All contracts and subcontracts for any construction project carried out in whole or in part with assistance made available as stated herein shall insert in full in any contract in excess of \$2,000 the contract clauses as set forth below entitled "Wage Rate Requirements Under FY 2010 Appropriations." This term and condition applies to all agreements to provide assistance under the authorities referenced herein, whether in the form of a loan, bond purchase, grant, or any other vehicle to provide financing for a project, where such agreements are executed on or after October 30, 2009 and before October 1, 2010.

Wage Rate Requirements Under FY 2010 Appropriations

Preamble

With respect to the Clean Water and Safe Drinking Water State revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Typically, the subrecipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman Numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the subrecipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

I. Requirements under FY 2010 Appropriations For Subrecipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY 2010 Appropriations with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact **Dorothy L. Rayfield, Chief, Grants, Finance and Cost Recovery Branch, Regional EPA DB contact at (404) 562-9278 or Rayfield.Dorothy@epa.gov** for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/esa/whd/recovery/>

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the FY 2010 Appropriation, Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the subrecipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2010 appropriation , the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to
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such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of

receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the

registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal

certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible

for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the subrecipient should conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractor's use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/esa/contacts/whd/america2.htm>.

II. Requirements under FY 2010 Appropriations Act For Subrecipients That Are Not Governmental Entities

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2010 Appropriations Act with respect to subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. If a State recipient needs guidance, the recipient may contact **Dorothy L. Rayfield, Chief, Grants, Finance and Cost Recovery Branch, Regional EPA DB contact at (404) 562-9278 or Rayfield.Dorothy@epa.gov** for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/esa/whd/recovery/>

Under these terms and conditions, the subrecipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the FY 2010 Appropriation, Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Subrecipient obtains its proposed wage determination, it must submit the wage determination to (insert contact information for State recipient DB point of contact for wage determination) for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official).

(b) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the subrecipient shall monitor www.wdol.gov on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.
- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency

to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2010 appropriation , the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate

(including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained

under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages

of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1)

of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a). The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the subrecipient should conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct

necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c). The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB . In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d). The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/esa/contacts/whd/america2.htm>.

KENVIRONS, INC.
FRANKFORT, KENTUCKY

Project No.
2010105

Change Order No.

CONTRACT CHANGE ORDER

Contract For
DWL12046 - 200,000 Gallon Water Storage Tank

County
Casey

Owner
East Casey County Water District

To _____
(Contractor)

You are hereby requested to comply with the following changes from the contract plans and specifications:

Description of Changes (Supplemental Plans and Specifications Attached)	DECREASE Contract Price	INCREASE Contract Price
TOTALS	\$ _____	\$ _____
NET CHANGE IN CONTRACT PRICE	\$ _____	\$ _____

JUSTIFICATION:

The amount of the Contract will be (Decreased) (Increased) by the sum of: _____
Dollars (\$) _____).

The Contract Total including this and previous Change Orders will be: _____
Dollars (\$) _____).

The Contract Period provided for completion will be (Increased) (Decreased) (Unchanged): _____

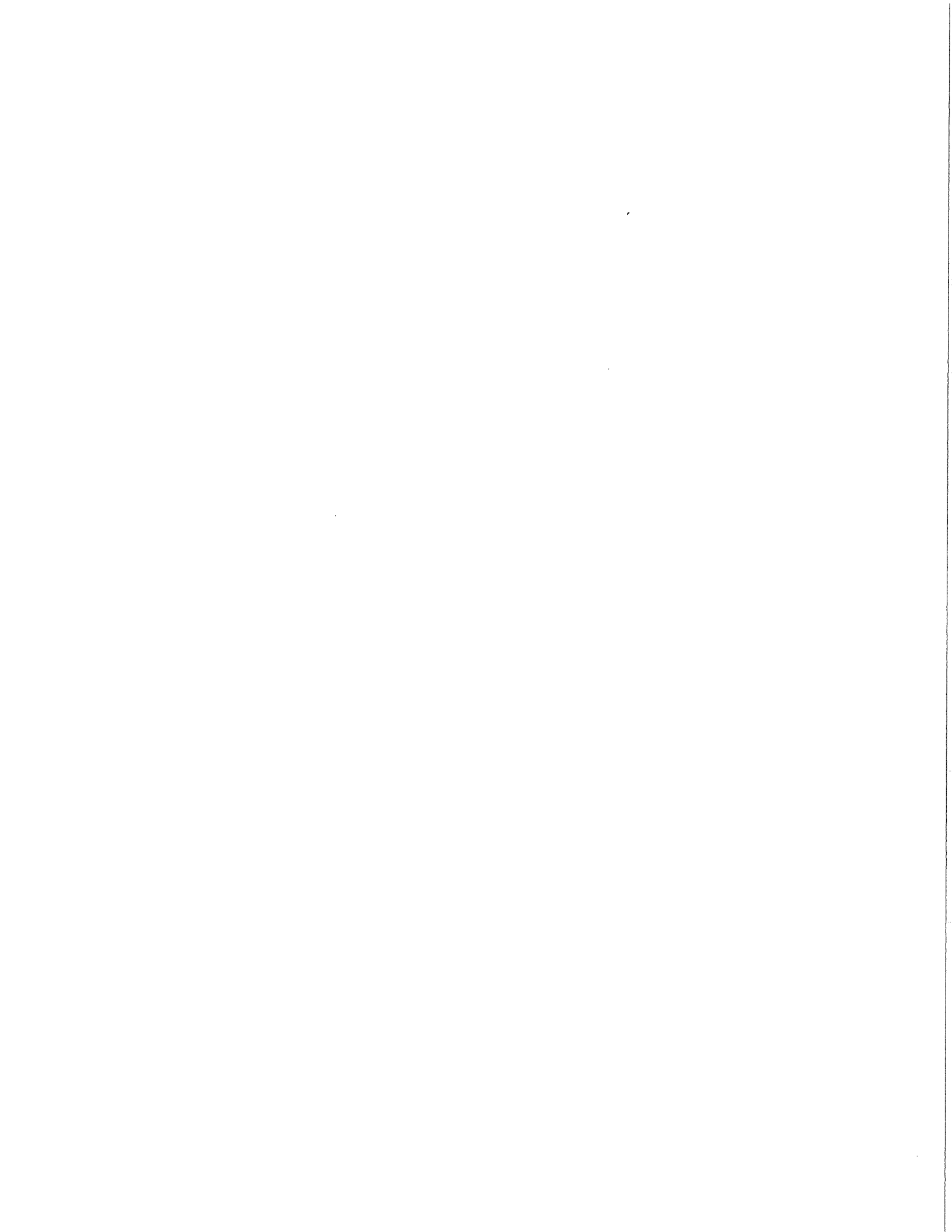
This document will become a supplement to the contract and all provisions will apply hereto.

Requested _____ (Owner) _____ (Date)

Recommended _____ (Owner's Architect/Engineer) _____ (Date)

Accepted _____ (Contractor) _____ (Date)

Approved _____ (Name and Title) _____ (Date)





Steven L. Beshear
Governor

KENTUCKY LABOR CABINET
DEPARTMENT OF WORKPLACE STANDARDS
DIVISION OF EMPLOYMENT STANDARDS,
APPRENTICESHIP & MEDIATION
1047 US Hwy 127 S - Suite 4
Frankfort, Kentucky 40601
Phone: (502) 564-3534
Fax (502) 696-1897
www.labor.ky.gov

Mark S. Brown
Secretary

Michael Donta
Deputy Commissioner

February 5, 2013

Jim Brown
LCADD
PO Box 1570
Russell Springs KY 42642

Re: East Casey County Water District, DWL-12046-Various Waterline Ext & Water Tank

Advertising Date as Shown on Notification: February 20, 2013

Dear Jim Brown:

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

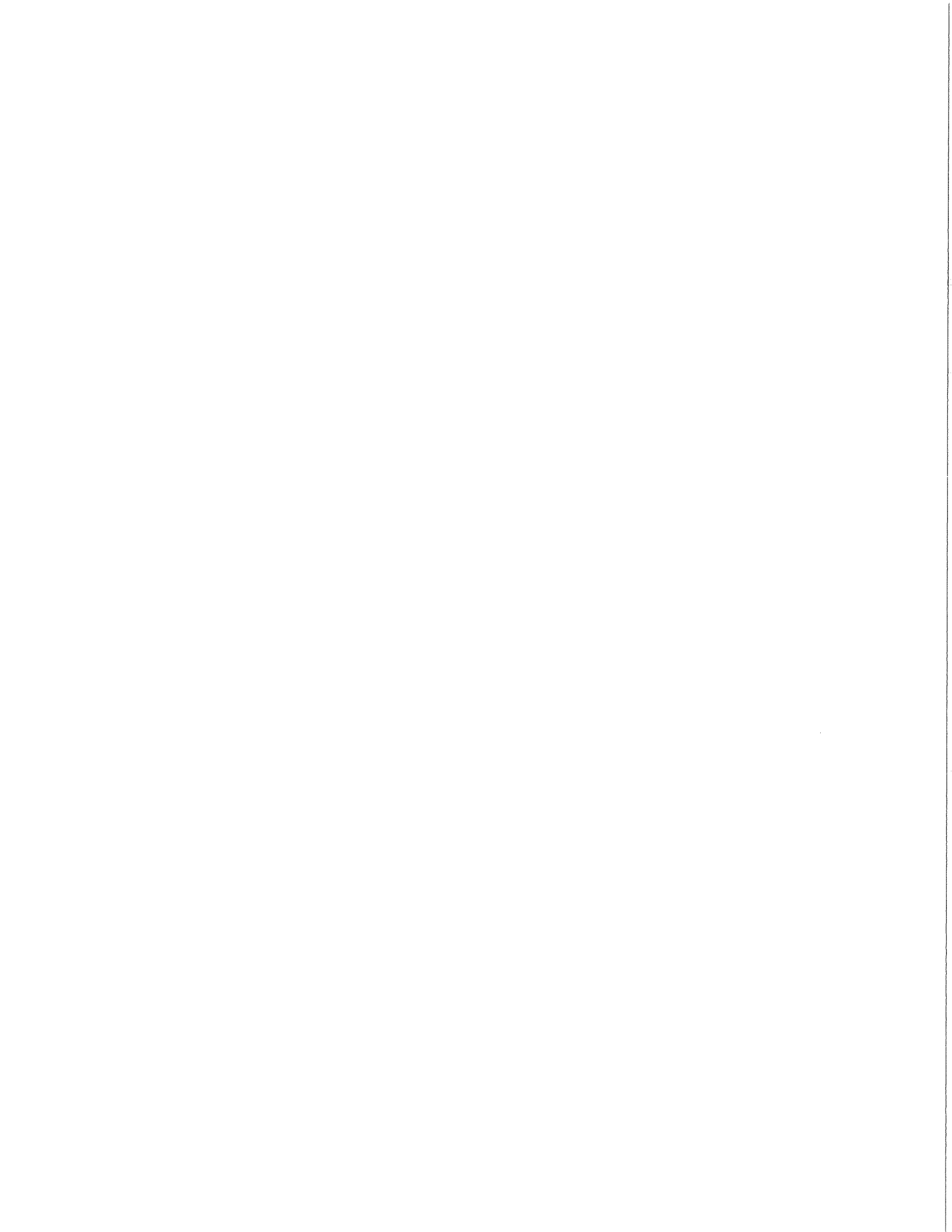
I am enclosing a copy of the current prevailing wage determination number CR 7-017, dated August 1, 2012 for CASEY County. This schedule of wages shall be attached to and made a part of the specifications for the work, printed on the bidding blanks, and made a part of the contract for the construction of the public works between the public authority and the successful bidder or bidders.

The determination number assigned to this project is based upon the advertising date contained in your notification. There may be modifications to this wage determination prior to the advertising date indicated. In addition, if the contract is not awarded within 90 days of this advertising date or if the advertising date is modified, a different set of prevailing rates of wages may be applicable. It will be the responsibility of the public authority to contact this office and verify the correct schedule of the prevailing rates of wages for use on the project. Your project number is as follows: 023-H-00044-12-7, Heavy/Highway

Sincerely,

Michael Donta
Deputy Commissioner





KENTUCKY LABOR CABINET
PREVAILING WAGE DETERMINATION
CURRENT REVISION
LOCALITY NO. 017

Determination No. CR 7-017

Date of Determination: August 1, 2012

PROJECT NO. 023-H-00044-12-7

____ BLDG ____ x ____ HH

This schedule of the prevailing rate of wages for Locality No. 017, which includes Adair, Casey, Pulaski and Russell Counties, has been determined in accordance with the provisions of KRS 337.505 to 337.550. This determination shall be referred to as Prevailing Wage Determination No. CR 7-017.

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

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

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

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

BUILDING CONSTRUCTION

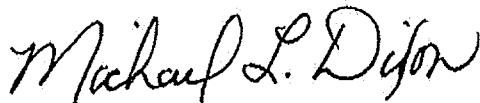
Building construction is the construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment, or supplies. It includes all construction of such structures, the installation of utilities and the installation of equipment, both above and below grade level,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

HIGHWAY CONSTRUCTION

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

HEAVY CONSTRUCTION

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



Michael L. Dixon, Commissioner
Department of Workplace Standards
Kentucky Labor Cabinet

ASBESTOS/INSULATION WORKERS:		BASE RATE	\$23.39
		FRINGE BENEFITS	11.01

BOILERMAKERS:		BASE RATE	\$34.04
		FRINGE BENEFITS	22.76

BRICKLAYERS:		BASE RATE	\$22.33
Bricklayers:		FRINGE BENEFITS	10.03

Refractory & Firebrick:		BASE RATE	\$23.54
		FRINGE BENEFITS	10.07

****Sawmen & Layoutmen add \$.25 per hour to base rate of pay for both classifications.**

CARPENTERS:		BASE RATE	\$20.63
Carpenters:	BUILDING	FRINGE BENEFITS	11.70

Piledrivers:	BUILDING	BASE RATE	\$21.13
		FRINGE BENEFITS	11.70

Carpenters:	HEAVY & HIGHWAY	BASE RATE	\$25.45
		FRINGE BENEFITS	12.35

Divers:	HEAVY & HIGHWAY	BASE RATE	\$38.55
		FRINGE BENEFITS	12.35

Piledrivermen:	HEAVY & HIGHWAY	BASE RATE	\$25.70
		FRINGE BENEFITS	12.35

CEMENT MASONS:		BASE RATE	\$14.10
		FRINGE BENEFITS	4.65

Suspended scaffold over 25 feet, add \$.25 to base rate

ELECTRICIANS:		BASE RATE	\$29.32
		FRINGE BENEFITS	13.88

When working from Bosum chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and TV towers, structural steel-open, unprotected, unfloored raw steel, bridges, or similar hazardous locations where workmen are subject to a direct fall (except for work performed using JLG's and bucket trucks up to 75 ft.): 50' to 75' - add 25% to base rate; over 75' - add 50% to base rate.

LINEMAN:		BASE RATE	\$30.78
		FRINGE BENEFITS	11.33

OPERATOR:		BASE RATE	\$27.52
		FRINGE BENEFITS	10.69

GROUNDSMEN:		BASE RATE	\$18.23
		FRINGE BENEFITS	8.86

ELEVATOR CONSTRUCTORS:	BASE RATE	\$23.93
	FRINGE BENEFITS	10.10

GLAZIERS:	BASE RATE	\$7.25
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IRONWORKERS:	BASE RATE	\$26.34
	FRINGE BENEFITS	18.84

LABORERS / BUILDING:

BUILDING GROUP 1: Laborers, general carpenter tenders, cement finisher tenders, placing of concrete, wrecking on buildings by laborers, hand digging and hand back filling of ditches, clearing of rights of way and building site, curing of concrete and application of hardener, handling of chemically treated lumber, installing of wood sheeting and shoring, signal laborers for concrete bucket, cleaning and moving of general purpose materials, general clean-up of all scrap and debris:

BUILDING	*BASE RATE	\$18.42
	FRINGE BENEFITS	9.18

BUILDING GROUP 2: Mason tender, side rail setter (metal), stackman, fork lift operators, masonry and plastering contractors only, power driven georgia buggy, chain saw, vibrator operator, mesh handler, power tools (air, diesel, electric, gasoline), wagon drill, pipe layer, wall man treatment of exposed concrete (chip, bush hammer, and rub), concrete saw, gasoline tamper machine, walk behind trenching machine, burner man, joint maker, asphalt raker, mobile sweeper:

BUILDING	*BASE RATE	\$18.62
	FRINGE BENEFITS	9.18

BUILDING GROUP 3: Airtrack driller, Introflax burning rod, gunnite nozzle man operator, sewer tunnel laborers (free air), sand hog or mucker (free air), welder:

BUILDING	*BASE RATE	\$18.82
	FRINGE BENEFITS	9.18

BUILDING GROUP 4: Holeman drilled piers, augurad, caissons, sand miner (tunnel free air), caisson workers, powderman, and construction specialist:

BUILDING	*BASE RATE	\$19.42
	FRINGE BENEFITS	9.18

BUILDING GROUP 5: Tunnel man and tunnel miners (pressure and free air), hole man, environmental worker, toxic and hazardous waste, asbestos removal, and lead abatement:

BUILDING	*BASE RATE	\$19.92
	FRINGE BENEFITS	9.18

***All of the Building above: Any free hanging scaffold above 30 feet, add \$.25 to base rate.**

LABORERS / HEAVY HIGHWAY:

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

HEAVY HIGHWAY	BASE RATE	\$21.61
	FRINGE BENEFITS	10.95

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

HEAVY HIGHWAY	BASE RATE	\$21.86
	FRINGE BENEFITS	10.95

HEAVY HIGHWAY GROUP 3: Asphalt luteman and rakers, gunnite nozzelman, gunnite operators and mixers, grout pump operaor, side rail setters, rail paved ditches, screw operators tunnel laborers (free air), and water blasters:

HEAVY HIGHWAY	BASE RATE	\$21.91
	FRINGE BENEFITS	10.95

HEAVY HIGHWAY GROUP 4: Caisson workers (free air), cement finishers, environmental laborers-nuclear, radiation, toxic and hazardous waste Levels A & B, miners and drillers (free air), tunnel blasters and tunnel muckers (free air), directional and horizontal boring, air track drillers (all types), powder man and blasters, troxler and concrete tester if laborer is utilized:

HEAVY HIGHWAY	BASE RATE	\$22.51
	FRINGE BENEFITS	10.95

MARBLE, TILE & TERRAZZO SETTERS:

BASE RATE	\$22.64
FRINGE BENEFITS	6.10

MARBLE, TILE & TERRAZZO FINISHERS:

BASE RATE	\$15.42
FRINGE BENEFITS	5.42

MILLWRIGHTS:

BASE RATE	\$23.73
FRINGE BENEFITS	15.12

OPERATING ENGINEERS / BUILDING:

BUILDING CLASS A-1: Crane, dragline, hoist (1 drum when used for stack or chimney construction or repair), hoisting engineer (2 or more drums), orangepeel bucket, overhead crane, piledriver, truck crane, tower crane, hydraulic crane:

BUILDING	BASE RATE	\$27.30
	FRINGE BENEFITS	13.40

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

BUILDING	BASE RATE	\$26.27
	FRINGE BENEFITS	13.40

OPERATING ENGINEERS / BUILDING: CONTINUED

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

BUILDING	BASE RATE	\$23.45
	FRINGE BENEFITS	13.40

BUILDING CLASS C: Bituminous distributor, cement gun, conveyor, mud jack, paving joint machine, roller (earth), tamping machine, tractors (under 50 HP), vibrator, oiler, concrete saw, burlap and curing machine, hydro-seeder, power form handling equipment, deckhand steersman, hydraulic post driver, and drill helper:

BUILDING	BASE RATE	\$22.66
	FRINGE BENEFITS	13.40

OPERATING ENGINEERS / HEAVY & HIGHWAY:

HEAVY HIGHWAY CLASS A-1: Cableway, carry deck crane, cherry picker, clamshell, crane, derrick, derrick boat, dragline, hoist engine (2 or more drums), hydraulic boom truck, hydrocrane, orangepeel bucket, overhead crane, piledriver, rough terrain crane, tower cranes (French, German & other types), truck crane:

HEAVY HIGHWAY	BASE RATE	\$28.40
	FRINGE BENEFITS	13.40

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

HEAVY & HIGHWAY	BASE RATE	\$27.35
	FRINGE BENEFITS	13.40

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

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

HEAVY & HIGHWAY	BASE RATE	\$24.87
	FRINGE BENEFITS	13.40

OPERATING ENGINEERS / HEAVY & HIGHWAY: CONTINUED

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

BASE RATE	\$25.26
FRINGE BENEFITS	13.40

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

BASE RATE	\$24.60
FRINGE BENEFITS	13.40

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

PAINTERS:	BASE RATE	\$15.50
	FRINGE BENEFITS	2.98

PLASTERERS:	BASE RATE	\$7.25
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PLUMBERS & PIPEFITTERS:	BASE RATE	\$31.00
	FRINGE BENEFITS	15.31

ROOFERS:	BASE RATE	\$13.50
	FRINGE BENEFITS	2.25

SHEETMETAL WORKERS: (includes sheet metal roofs)	BASE RATE	\$25.91
	FRINGE BENEFITS	8.06

SPRINKLER FITTERS:	BASE RATE	\$29.00
	FRINGE BENEFITS	16.75

TRUCK DRIVERS:	BASE RATE	\$7.89
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receive one dollar (\$1.00) above the rate.

IRON0070-014 06/01/2012

ADAIR, BARREN, BUTLER, CASEY, CUMBERLAND, ESTILL, GARRARD,
HART, JACKSON, LINCOLN, MADISON, METCALFE, PULASKI, ROCKCASTLE
& RUSSELL COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 26.34	18.58

IRON0384-001 05/01/2012

CLINTON COUNTY

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 22.61	10.57

IRON0384-010 05/01/2011

BELL, CLAY, KNOX, LAUREL, MCCREARY, WAYNE & WHITLEY COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 24.03	10.19

IRON0492-014 05/01/2012

ALLEN, LOGAN, MONROE & SIMPSON COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 23.00	10.70

IRON0769-016 06/01/2012

POWELL COUNTY

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 30.52	20.08

LABO0189-030 07/01/2012

CLAY, ESTILL, GARRARD, JACKSON, MADISON & POWELL COUNTIES

	Rates	Fringes
LABORER		
Flagger & Grade Checker.....	\$ 21.15	11.41
Pipelayer.....	\$ 21.40	11.41

LABO0576-015 07/01/2012

ADAIR, BELL, CASEY, CLINTON, CUMBERLAND, HART, KNOX, LAUREL,
 LINCOLN, METCALFE, MCCREARY, MONROE, PULASKI, ROCKCASTLE,
 RUSSELL, WAYNE & WHITLEY COUNTIES

	Rates	Fringes
LABORER		
Flagger & Grade Checker.....	\$ 21.61	10.95
Pipelayer.....	\$ 21.86	10.95

 LABO1392-015 07/01/2012

ALLEN, BARREN, BUTLER, LOGAN & SIMPSON COUNTIES

	Rates	Fringes
LABORER		
Flagger & Grade Checker.....	\$ 21.96	10.60
Pipelayer.....	\$ 22.21	10.60

 SUKY2010-139 09/14/2010

	Rates	Fringes
LABORER: Common or General.....	\$ 14.92	5.37
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 19.75	4.57
OPERATOR: Trencher.....	\$ 19.03	5.78

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.

=====
 Unlisted classifications needed for work not included within
 the scope of the classifications listed may be added after
 award only as provided in the labor standards contract clauses
 (29CFR 5.5 (a) (1) (ii)).

 The body of each wage determination lists the classification
 and wage rates that have been found to be prevailing for the
 cited type(s) of construction in the area covered by the wage
 determination. The classifications are listed in alphabetical
 order of "identifiers" that indicate whether the particular
 rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted

because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

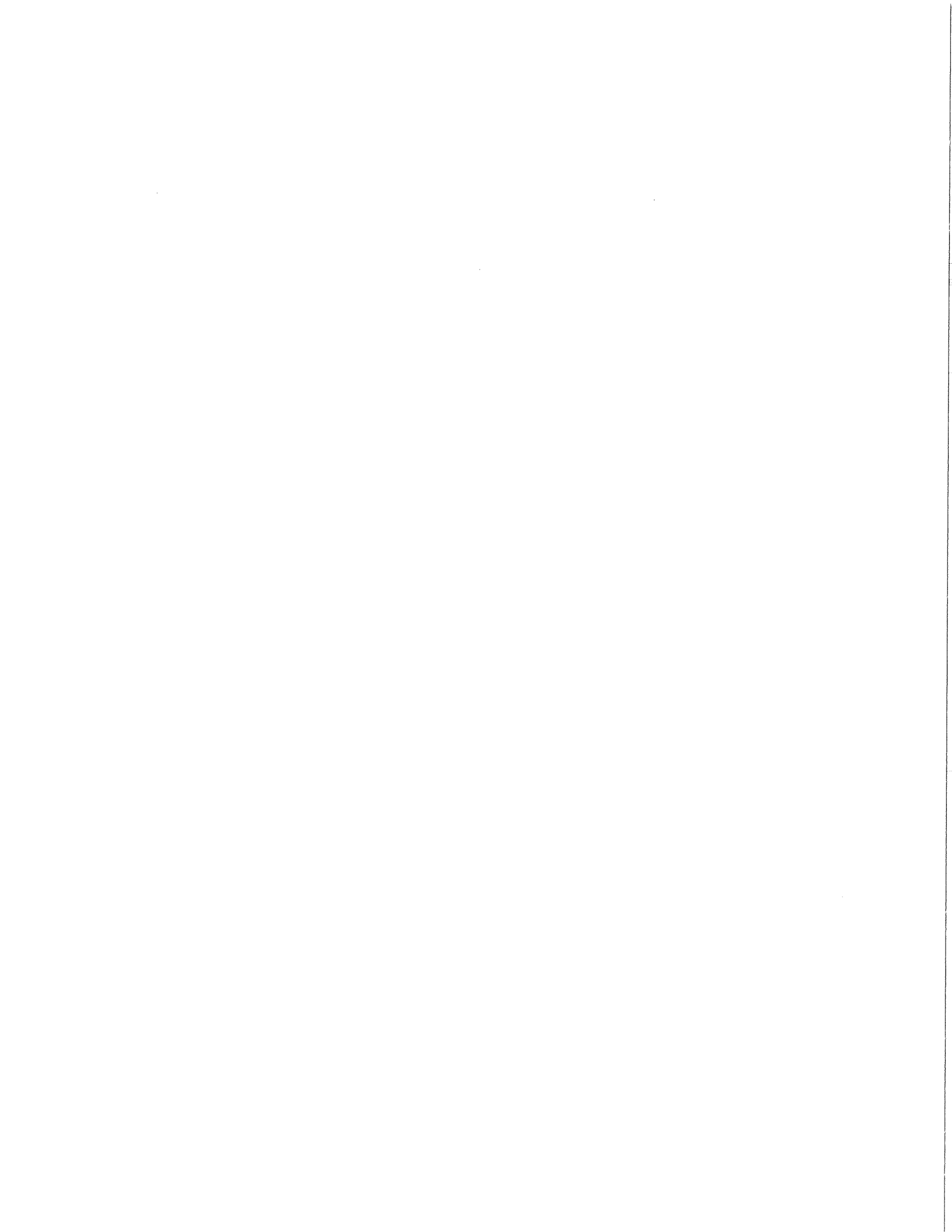
The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION



SECTION 01001

GENERAL SPECIFICATIONS

1.0 DESCRIPTION OF THE WORK AND DESIGNATION OF OWNER

These Specifications and accompanying Drawings describe the work to be done and the materials to be furnished for the construction of the project entitled Water System Upgrade and Pump Station. This project consists of two contracts:

Contract 17A: Water System Upgrade and Pump Station

Contract 17B: 200,000 Gallon Elevated Water Storage Tank

All references to the Owner in these Specifications, Contract Documents and plans shall mean the East Casey County Water District.

2.0 AVAILABLE FUNDS

The attention of all Bidders is directed to the fact that funds will be made available through State Revolving Fund for the award of the contract through an appropriation of the Kentucky General Assembly, administered by the Kentucky Infrastructure Authority.

3.0 TIME OF COMPLETION

The time allowed for the completion of Contract 17A is 180 calendar days and of Contract 17B is 210 calendar days. The time allowed for completion shall begin at midnight, local time, on the date which the Owner, or his authorized representative, the Engineer, shall instruct the Contractor in writing to start work, but no later than 10 days after Notice to Proceed.

Additional time will be allowed the Contractor to cover approved over-runs or additions to the contract in the same proportion that the said over-run or addition in net monetary value bears to the original amount; the total of said additional time to be computed to the nearest whole calendar day.

4.0 LIQUIDATED DAMAGES

It is understood that time is the essence of this contract and that the Owner will sustain damages, monetary and otherwise, in the event of delay in completion of the work hereby contracted.

Therefore, if the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part of the consideration for

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

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

Liquidated damages are fixed at \$500 per calendar day of over-run beyond the date set for completion or authorized extension thereof.

5.0 INSURANCE

Insurance is to be furnished by the Contractor for the benefit of the Owner, Contractor, and Subcontractors as their interests may appear. The minimum amounts of insurance coverage to be furnished under these contracts, in accordance with the applicable provisions of the General Conditions are indicated in Section 00800, SC-5.04.

All policies written for and applicable to the contract of which this Specification is a part shall provide for a minimum of fifteen (15) days written cancellation notice with notice to be given both to the Owner and the Engineer. The Owner and Engineer shall be included as additional insured parties.

6.0 PERFORMANCE AND PAYMENT BOND

The Contractor shall furnish separate performance and payment bonds issued by an approved bonding company in an amount at least equal to one hundred percent (100%) of the contract price, as security for the faithful performance of this contract and for the payment of persons performing labor and furnishing materials in connection with this contract. These bonds shall be executed by a company authorized to do business in the State of Kentucky and shall be signed or countersigned by a Kentucky resident agent. Bonds shall remain in effect for one year after date of final acceptance of the work.

7.0 SITE DIMENSIONS

All Contractors furnishing materials and equipment for this contract shall obtain exact dimensions at the site. Scale or figure dimensions on the drawings and details show the correct size under ideal conditions and shall not, under any circumstances, be so construed as to relieve the Contractor from responsibility

for taking measurements at the site and furnishing materials or equipment of the correct size.

8.0 DAMAGE TO EQUIPMENT STORED AND/OR IN PLACE PRIOR TO INITIAL OPERATION

Any equipment damaged or which has been subjected to possible damage by reason of inundation, improper storage and/or protection during the construction period of project, shall be handled only as follows:

- a) Be replaced with new equipment.
- b) With approval of the Engineer, be returned to the manufacturer of the equipment, or his authorized repair agency, for inspection and repair provided, however, that such repair after inspection will place the equipment in new condition, and restore the manufacturer's guarantee the same as for new equipment.

9.0 SALVAGED MATERIALS AND EQUIPMENT

All materials and/or equipment to be removed from existing structures and not specifically specified to be re-used shall remain the property of the Owner. Such materials and/or equipment shall be stored on sites by the Contractor as directed by the Owner.

The use of second hand and/or salvaged materials will not be permitted, unless specifically provided for in the detailed specifications. Materials and equipment shall be new when turned over to the Owner.

10.0 TEMPORARY FACILITIES

- a) Construction yard shall be located on job site. Provide security and safety protection.
- b) The obtaining of all utilities for construction, including power and water, shall be the responsibility of the Contractor, and he shall bear the cost of all utilities used for construction. Cost of all connections and facilities for use of utilities shall be borne by the Contractor.
- c) Each Contractor shall construct and maintain, in a sanitary condition, sanitary facilities for his employees and also employees of his subcontractors. At completion of the contract work these sanitary facilities shall be properly disposed of as directed by the Engineer.
- d) Temporary construction for safety measures, hoists and scaffolds shall be erected in accordance with the General Conditions.

- e) The obtaining of all utilities for construction, including power and water, shall be the responsibility of the Contractor, and he shall bear the cost of all utilities used for construction. Cost of all connections and facilities for use of utilities shall be borne by the Contractor.

11.0 PROPERTY PROTECTION

Care is to be exercised by the Contractor in all phases of construction to prevent damage and injury to the Owner's or other property.

In connection with work performed on "private property" (property other than that belonging to the Owner), the Contractor shall confine his equipment, the storage of materials, and the operation of his workmen to the limits indicated on the plans, or to lands and right-of-way provided for the project by the Owner, and shall take every precaution to avoid damage to the private property Owner's buildings, grounds and facilities.

Fences, hedges, shrubs, etc. within the construction limits shall be carefully removed, preserved, and replaced when the construction is completed. Where ditches or excavations cross lawns, the sod shall be removed carefully and replaced when the backfilling has been completed. If sod is damaged or not handled properly, it shall be replaced with new sod equal to existing sod at the Contractor's expense. Grassed areas, other than lawns, shall be graded, fertilized and seeded when construction is completed. When construction is completed the private property Owner's facilities and grounds shall be restored to as good or better condition than found as quickly as possible at the Contractor's expense.

Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

12.0 CONFLICT WITH OR DAMAGE TO EXISTING UTILITIES AND FACILITIES

Insofar as location data is available to the Engineers, existing underground utilities (such as waterlines, sewer lines, gas lines, telephone conduits, etc.) are accurately located on the drawings. Due, however, to the approximate nature of much of this data, the location of any particular facility cannot be certified to be correct. In general, locations and elevations shown are approximate only.

Before proceeding with the work, the Contractor shall confer with all public or private companies, agencies, or departments that own and operate utilities in the vicinity of the construction work. The purpose of the conference is to verify the location of, and possible interference with, the existing utilities that are shown on the Plans, arrange for necessary suspension of service, and make arrangements to locate and avoid interference with all utilities that are not shown on the Plans.

13.0 CONTROL OF EROSION

The Contractor shall be responsible for control of siltation and erosion from the project work. Control shall include all necessary ditching, check dams, mulching, etc. to prevent deposition of materials in roadside ditches. The Owner shall incur no extra costs from such work.

14.0 MEASUREMENT AND PAYMENT

14.1. MEASUREMENT OF QUANTITIES

All Work completed under the Agreement will be measured by the Engineer according to United States standard measure.

14.1.1. Unless otherwise specified, measurement of concrete quantities will include only that volume within the neat lines as shown on the Plans or as altered by the Engineer to fit field conditions. The prismatic formula will be used in computing the volumes of structures, or portions of structures, having end sections of unequal areas.

14.1.2. All items which are measured by the linear foot, such as pipe, will be measured along the centerline distance of the installed item with no allowance for connections, fittings or laps at connections.

14.1.3. In computing volumes of excavation, borrow and embankments, the average end-area method will be used. For the purpose of ascertaining quantities, it is agreed that the planimeter shall be considered an instrument of precision adapted to the measurement of areas.

14.2 LUMP SUM

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

14.3 PLAN QUANTITIES

When the plan quantities for a specific portion of the Work are designated as the pay quantities in the Contract Documents, they shall be the final quantities for

which payment for such specific portion of the Work will be made, unless the dimensions of said portions of the Work shown on the plans are revised by the Engineer. When revised dimensions result in an increase or decrease in the quantities of such Work, the final quantities for payment will be revised in the amount represented by the authorized changes in dimensions.

14.4 ACTUAL QUANTITIES

When actual quantities for a specific portion of the Work are designated as the pay quantities in the Contract Documents, they shall be the final quantities for which payment for such specific portion of the Work will be made. The actual quantities will be determined by the difference in field measurements and cross sections before and after construction.

14.5 SCOPE OF PAYMENT

The contract unit prices whether based on lump sum, plan quantities or actual quantities for the various bid items of the Contract Documents shall be considered full compensation for all labor, materials, supplies, equipment, tools, and all things of whatever nature required for the complete incorporation of the item into the Work the same as though the items were to read "in Plan" unless the Contract Documents provide otherwise.

14.6 PAYMENTS

Estimates for payment, partial payments and final payments shall be in accordance with and follow procedures set forth in the General Conditions and Supplementary Conditions.

15.0 ACCESS ROADS

The Contractor, Contractor's employees and all trucks delivering equipment, supplies or materials to the project shall use the access roads shown in the Plans for entering and leaving the project sites.

16.0 TESTING LABORATORY SERVICES

16.1 GENERAL

16.1.1 Work Included. From time to time during progress of the Work, the Owner may require that testing be performed to determine that materials provided for the Work meet the specified requirements; such testing includes, but is not necessarily limited to:

- 1) Material Compaction
- 2) Cast-In-Place Concrete

16.1.2 Related Work Described Elsewhere. Requirements for testing may be described in various Sections of these Specifications; where no testing requirements are described, but the Owner decides that testing is required, the Owner may require testing to be performed under current pertinent standards for testing.

16.1.3 Selection of Testing Laboratory. The Owner will select a testing laboratory.

16.1.4 Codes and Standards. Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

16.1.5 Product Handling. The Contractor shall promptly process and distribute all required copies of test reports for which he is responsible and related instructions to ensure all necessary retesting and/or replacement of materials with the least possible delay in progress of the Work.

16.2 PAYMENT FOR TESTING SERVICES

16.2.1 Initial Services. The Contractor will pay for all initial testing services required by the Owner.

16.2.2 Retesting. When initial tests indicate non-compliance with the Contract Documents, all subsequent retesting made necessary by the non-compliance shall be performed by a testing laboratory selected by the Contractor and approved by the Engineer and the costs thereof will be paid directly by the Contractor.

16.2.3 Contractor's Convenience Testing. Inspection or testing performed exclusively for the CONTRACTOR'S convenience shall be the sole responsibility of the Contractor.

16.3 EXECUTION

16.3.1 Cooperation with Testing Laboratory. Representatives of the testing laboratory shall have access to the Work at all times. The Contractor shall provide facilities for such access in order that the laboratory may properly perform its functions.

16.3.2 Schedules for Testing.

16.3.2.1 Establishing Schedule. By advance discussion with the testing laboratory selected by the Owner, the Contractor shall allow for the time required

for the laboratory to perform its tests and to issue each of its findings. The Contractor shall allow for this time within the construction schedule.

16.3.2.2 Revising Schedule. When changes of construction schedule are necessary during construction, the Contractor shall coordinate all such changes of schedule with the testing laboratory as required.

16.3.2.3 Adherence to Schedule. When the testing laboratory is ready to test according to the determined schedule but is prevented from testing or taking specimens due to incompleteness of the Work, all extra costs for testing attributed to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

16.3.3 Taking Specimens. All specimens and samples for testing, unless otherwise provided in these Contract Documents, will be taken by the testing laboratory; all sampling equipment and personnel will be provided by the testing laboratory; and all deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

17.0 SUBMITTALS AND SUBSTITUTIONS

17.1 GENERAL

17.1.1 Work Included. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards. To insure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data and for its review and approval or rejection by the Engineer.

17.1.2 Related Work Described Elsewhere.

17.1.2.1 Contractual requirements for submittals are described in the General Conditions and Supplementary Conditions.

17.1.2.2 Individual submittals required are described in the pertinent sections of these Specifications.

17.2 SUBSTITUTIONS

17.2.1 Engineer's Approval Required. The Agreement is based on the materials, equipment, and methods described in the Contract Documents. The Engineer will consider proposals for substitution of materials, equipment, and methods only when such proposals are accompanied by full and complete technical data and all other information required by the Engineer to evaluate the proposed

substitution. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this Work by the Engineer.

17.2.2 "Or Equal". Where the phrase "or equal" occurs in the Contract Documents, do not assume that material, equipment, or methods will be approved as equal by the Engineer unless the item has been specifically approved for this Work. The decision of the Engineer shall be final.

17.2.3 Availability of Specified Items. The Contractor shall verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the Work. In the event the specified item or items will not be so available, the Contractor shall notify the Engineer prior to receipt of Bids.

17.3 IDENTIFICATION OF SUBMITTALS

The Contractor shall completely identify each submittal and resubmittal by showing at least the following information:

- 1) Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
- 2) Name of project as it appears in these Specifications.
- 3) Drawing number and Specifications Section number to which the submittal applies.
- 4) Whether this is an original submittal or resubmittal.

17.4 COORDINATION OF SUBMITTALS

17.4.1 General. Prior to submittal for Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:

- 1) Determine and verify all field dimensions and conditions, materials, catalog numbers, and similar data.
- 2) Coordinate as required with all trades and with all public agencies involved.
- 3) Secure all necessary approvals from public agencies and others and signify by stamp, or other means, that they have been secured.

- 4) Clearly indicate all deviations from the Contract Documents.

17.4.2 Grouping of Submittals. Unless otherwise specifically permitted by the Engineer, the Contractor shall make all submittals in groups containing all associated items; the Engineer may reject partial submittals as not complying with the provisions of the Contract Documents.

17.5 TIMING OF SUBMITTALS

The Contractor shall make all submittals far enough in advance of schedule dates of installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery. In scheduling, allow at least five full working days for the Engineer's review following his receipt of the submittal.

18.0 **INSTALLATION REQUIREMENTS**

Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the respective manufacturers, unless otherwise specified.

19.0 **ENDANGERED SPECIES ACT PROVISIONS**

The federally endangered Indiana bat (*Myotis sodalis*) is known to occur in the vicinity of this project. This species normally uses trees with exfoliating (i.e., loose) bark that are greater than six inches in diameter at breast height as maternity and roost sites. As a result, if any tree with a diameter greater than six inches at breast height needs to be removed, it shall be removed between October 15 and March 31.

20.0 **PROOF OF COMPLIANCE**

Whenever the Contract Documents require that a product be in accordance with Federal specification, ASTM designation, ANSI specification, or other association standard, the Contractor shall present an affidavit from the manufacturer certifying that the product complies therewith. Where requested or specified, the Contractor shall submit supporting test data to substantiate compliance.

21.0 **PROJECT RECORD DOCUMENTS**

21.1 As the Work progress, the Contractor shall keep a complete and accurate record of changes or deviations from the Contract Documents and the Shop Drawings, indicating the Work as actually installed. Changes shall be neatly and correctly shown on the respective portion of the affected document, using blackline prints of the Drawings affected, or the Specifications, with appropriate

supplementary notes. This record set of Drawings, Shop Drawings, and Specifications shall be kept at the job site for inspection by the Engineer.

21.2 The records above shall be arranged in order, in accordance with the various sections of the Specifications, and properly indexed. Prior to application for final payment, and as a condition to its approval by the Engineer, deliver the record Drawings and Specifications, arranged in proper order, indexed, and endorsed as hereinbefore specified.

21.3 No review or receipt of such records by the Engineer or Owner shall be a waiver of any deviation from the Contract Documents or the Shop Drawings or in any way relieve the Contractor from his responsibility to perform the Work in accordance with the Contract Documents and the Shop Drawings to the extent they are in accordance with the Contract Documents.

22.0 PROJECT MEETINGS

The Contractor's Superintendent for the Work shall attend project meetings as required by either the Owner or Engineer.

23.0 VIDEO TAPE

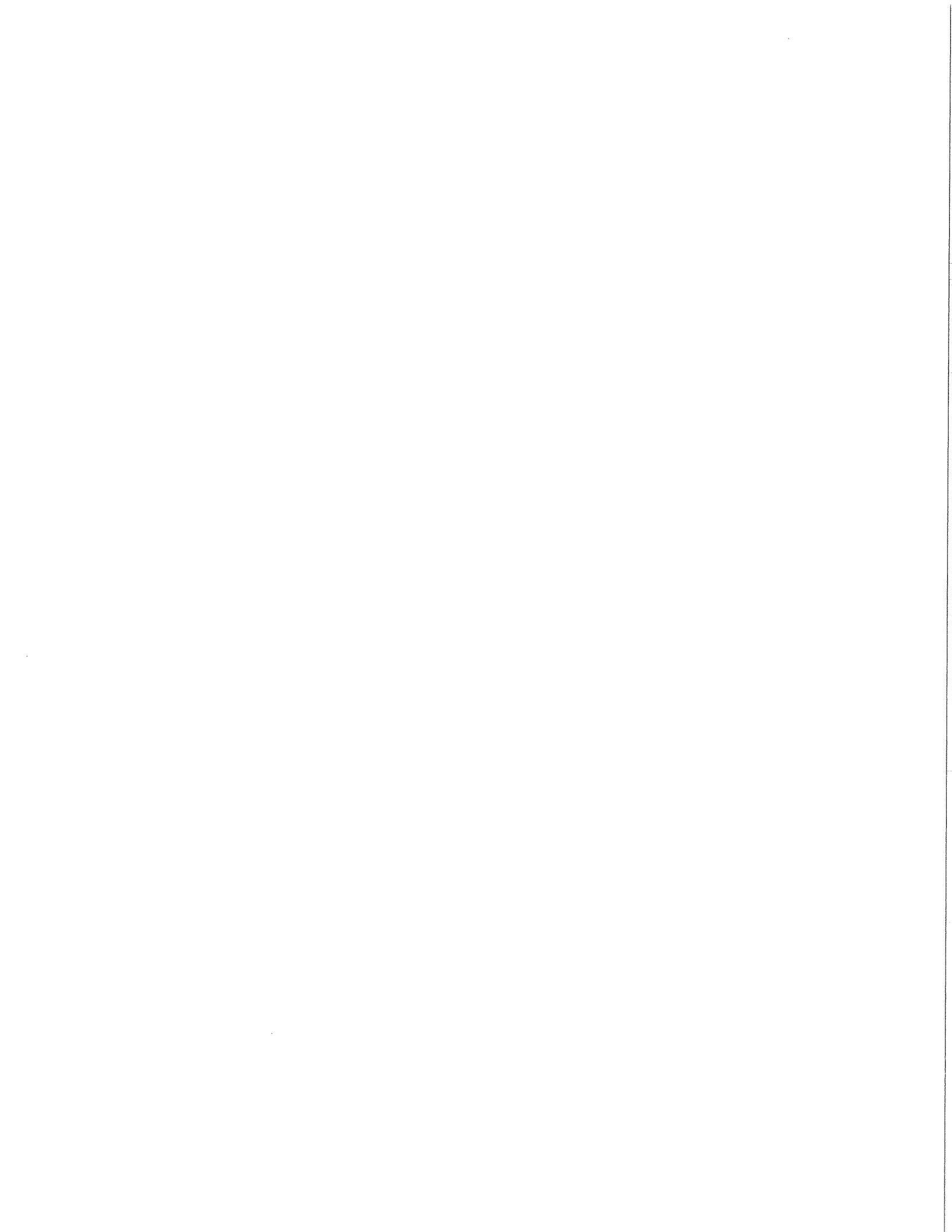
The line Contractor, before proceeding with any work, shall make or have made a video of all areas where work is to be performed and a copy of this video cassette shall be furnished to the Engineer to review for completeness. This video shall be utilized as backup and reference for claims and cleanup.

24.0 DAILY REPORTS

The project inspector, as designated by the Owner and/or Engineer, will keep a daily record of materials installed. This daily report will be used by the Owner and the Engineer to determine the payments due to the Contractor. The Contractor shall sign the inspector's daily report each day. Should the contractor disagree with the inspector's report, the differences shall be resolved before the end of the next day, with the Contractor signing the daily report.

25.0 FINAL ADJUSTMENT OF QUANTITIES

Upon completion of the project, a final adjusting change order will be written to reconcile the differences between the bid quantities and the actual quantities installed. This final adjusting change order will be determined based on the inspector's daily reports.



SECTION 02001

EARTHWORK

1.0 SCOPE

This section covers the required topsoil removal, excavation, the removal and proper utilization or disposal of all excavated materials, necessary borrow, fill requirements, and the shaping and finishing of all excavation work to the required lines and grades.

2.0 TOPSOIL REMOVAL

All topsoil on areas to receive fill shall be stripped and stockpiled at an approved location.

3.0 CLEARING AND GRUBBING

Work shall consist of cutting and removing designated trees, stumps, brush, logs, removal of fences, or other loose and projecting material. 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 prosecute properly the construction work and operate properly the facility upon the completion of construction.

No cleared or grubbed materials shall be used in backfills or embankment fills.

All stumps, roots and other objectionable material shall be grubbed up so that no roots larger than 3 inches in diameter remain less than 18 inches below the ground surface.

All holes and depressions left by grubbing operations shall be filled with suitable material and compacted to grade.

Disposal shall be by burning or other methods satisfactory to the Engineer; however, burning will be permitted only when the Contractor has obtained written permission from the local regulatory agency.

The Contractor shall also remove from the site and satisfactorily dispose of all miscellaneous rubbish including, but not limited to, masonry, scrap metal, rock, pavement, etc., that is under the fill or to be removed as shown on the Drawings, specified herein, or directed by the Engineer.

Existing improvements, adjacent property, utility and other facilities, and trees, plants and brush that are not to be removed shall be protected from injury or damage resulting from the Contractor's operations.

Trees and shrubs, designated to remain or that are beyond the clearing and grubbing limits, which are injured or damaged during construction operations shall be treated at the Contractor's expense by experienced tree surgery personnel.

3.1 EROSION CONTROL

Temporary measures shall be applied throughout the construction process to control and to minimize siltation to adjacent properties and waterways. Such measures shall include, but not be limited to, the use of temporary vegetative cover, berms, baled straw silt barriers, gravel or crushed stone, mulch, slope drains and other methods. These temporary measures shall be applied to erodible material exposed by any activity associated with the construction of this project. Stabilization measures shall be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased on all disturbed portions of the site where construction activity will not occur for a period of 21 or more calendar days.

4.0 STRUCTURAL EXCAVATION

Structural excavation shall consist of and include the removal of all materials encountered or involved in the excavation and subgrade preparation for the placing of structures. The final depths and extent of structural excavation will be determined by the nature of the material encountered; however, after excavation to the limits as shown on the drawings, the Engineer shall inspect the work and determine if additional excavation is required.

5.0 EXCAVATION CONSTRUCTION METHODS

5.1 OPEN-CUT EXCAVATION - GENERAL

All open cut excavation shall be performed in accordance with this section to the lines, grades, and dimensions shown on the drawings or established by the Engineer.

All necessary precautions shall be taken to preserve the material below and beyond the lines of all excavation in the soundest possible condition. Any damage to the work due to the Contractor's operations, including shattering of the material beyond the required excavation lines, shall be repaired at the expense of and by the Contractor. Any and all excess excavation for the

convenience of the Contractor for any purpose or reason, except as may be ordered in writing by the Engineer and whether or not due to the fault of the Contractor, shall be at the expense of the Contractor. Where required to complete the work, all such excess excavation and overexcavation shall be refilled with materials furnished and placed at the expense of and by the Contractor. Slopes shattered or loosened by blasting shall be taken down at the expense of and by the Contractor.

All excavation for embankment and structure foundations shall be performed in the dry. No excavation shall be made in frozen materials without written approval.

The bottom and side slope of rock or shale upon or against which concrete or pervious blanket material is to be placed shall be excavated to the required dimensions as shown on the drawings or established by the Engineer. No material will be permitted to extend within the neat lines of the structure. If, at any point in rock or shale upon written orders from the Engineer, material is excavated beyond the limits required to receive the structure, the additional excavation shall be filled solidly with concrete. If material is excavated beyond the limits required to receive the structure without written orders from the Engineer, the additional excavation shall be brought back to grade with "Class A" concrete at the Contractor's expense.

5.2 UTILIZATION OF EXCAVATED MATERIAL

All suitable material removed from the excavations shall be used insofar as practicable, in constructing the permanent works and at such other places as directed. The Contractor shall not waste materials removed from excavations and suitable for use in the construction of the permanent works, without a written application to do so and a written approval from the Engineer.

5.3 DISPOSAL OF SURPLUS AND/OR WASTE MATERIAL

All surplus excavated material and/or all waste materials shall be disposed of outside of the floodplain in an area provided by the Contractor and approved by the Engineer.

The surfaces thereof shall be left in a neat and sightly condition and sloped to provide positive drainage. Compaction of the waste materials and erosion control measures shall be required.

5.4 BLASTING FOR EXCAVATION

A. GENERAL

Blasting may be done only to the depth, amount, and extent, and in such locations approved by the Engineer. Approval of the methods of blasting by the Engineer will not relieve the Contractor of his responsibility in blasting operation, and no payment will be made for any necessary extra excavation below or outside of the limit lines indicated on the drawings, or modifications thereof, due solely to injury caused by over-shooting, improper blasting, or carelessness on the part of the Contractor. All material thus removed shall be replaced by concrete when a concrete structure is to be placed upon or against such surface, or by compacted fill material when fill is to be placed thereon, at the expense of the Contractor and in a manner satisfactory to the Engineer. Extra fill is to be of the same type as that to be placed directly above it.

B. BLASTING TRENCH AND/OR STRUCTURE EXCAVATION

The use of explosives or blasting material of any kind in trench excavation and/or the structure excavation shall be carried out by using not over one-half (1/2) pound of explosives (equivalent in strength to 40 percent dynamite) per cubic yard of material to be blasted and by shooting only a few holes simultaneously.

C. USE OF EXPLOSIVES

The transportation, handling, storage, and use of dynamite and other explosives shall be directed and supervised by a person of proven experience and ability in blasting operation. All blasting operations shall be in accordance with applicable local, state, and federal laws. Before any explosives are brought on the job, permission to do so shall be obtained from the Engineer. All blasts shall be fired electrically with an electric blasting machine. Where detonating cord is used as a detonating agent, the detonation cord shall be fired with an electric blasting cap. Delay electric detonators shall be used for all delayed blasts. Blasting machines used for firing shall be known to be in good condition and of sufficient capacity to fire all charges. Rubber-covered or other adequately insulated copper wires in good condition shall be used for firing lines and shall have solid cores of appropriate gage. Sufficient firing lines shall be provided to permit the blaster to be located at a safe distance from the blast. Single conductor lead lines shall be used. All operations involving the handling or use of explosives shall be discontinued during approach of a thunderstorm or while it is in progress. Blasting operations in the proximity of overhead power lines, communication lines, or other structures shall not be carried on until the operator and/or Owner of such lines has been notified and precautionary measures deemed necessary have been taken. All holes loaded on a shift shall be fired on the same shift. The use of black powder is prohibited. Before any drilling operations in preparation for blasting are started, the Contractor shall furnish the Engineer a

detailed plan of operations showing the method proposed for the prevention of damage. In order to assure adequate protection, such plan may be modified to meet the conditions that may develop.

5.5 SHEETING AND BRACING

Sheeting and bracing as may be required to safely support the sides of excavations while maintaining the required side slopes shall comply with the safety precautions as outlined in current and accepted safety manuals, such as "Associated General Contractors Manual of Accident Prevention in Construction". Where sheeting and bracing are necessary to prevent caving of the walls of excavations and to safeguard the workmen, the excavations shall be dug to such widths that proper allowance is made for the space occupied by the sheeting and bracing. The Contractor shall perform the additional excavation required and furnish and put in place the necessary sheeting and bracing and shall remove the same as the excavation is filled, at his own expense.

5.6 REMOVAL OF WATER

The Contractor shall construct and maintain all necessary channels, flumes, and/or other temporary diversion and protective works; shall furnish all materials required therefore; and shall furnish, install, maintain and operate all well points, casings, pumps and other equipment for dewatering the various parts of the work and for maintaining the foundations, trenches and other parts of the work free from water as required for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed, or leveled, to give a slightly appearance and so as not to interfere in any way with the operation, usefulness or stability of the permanent structures.

5.7 PROTECTION OF FINISHED STRUCTURE EXCAVATIONS

It shall be the Contractor's responsibility to maintain finished excavated foundation surfaces for the works in good condition until such time as the structures are placed on or against the surfaces.

5.8 BORROW

Borrow excavation shall consist of and include the required excavation and proper utilization of approved materials obtained from designated areas when sufficient quantities of suitable materials are not available from other required excavation.

The control of excavation in any borrow area and the selection of materials therefrom shall at all times be as directed by the Engineer. On completion of excavation, all borrow pits shall be left in a neat and slightly condition. Unless otherwise approved by the Engineer, all borrow pits shall be so graded and

dressed that water will readily drain therefrom, and away from all embankments, berms and structures. When shown on the drawings, terraces, or diversions shall be constructed to protect the slopes of the borrow areas from erosion and shall be considered a subsidiary of this specification.

6.0 STRUCTURE FOUNDATION FILL

After clearing and stripping operations have been completed, all structure locations shall be proof rolled with a loaded pan or heavy pneumatic tired vehicle to densify upper soils and to locate possible areas which will require undercutting, removal and/or recompaction. This operation shall be conducted under the surveillance of the Engineer.

6.1 FILL MATERIAL APPROVAL

Before initiating filling operations, the Contractor shall receive approval of fill material by the Engineer. Several laboratory Proctor density tests shall be run on representative samples obtained from the proposed borrow material.

6.2 PLACEMENT OF FILLS

Where structures or other appurtenances are constructed on fill, the fill shall be placed in layers not over six inches (6") deep, as measured before compaction and be thoroughly compacted.

6.3 COMPACTION

Compaction may be obtained by use of a sheeps foot roller or pneumatic-tired roller. Water shall be applied as directed to obtain close adhesion between layers and all parts of the material. Fill shall be compacted to a minimum of 95% of the Standard Proctor maximum dry density (ASTM Specifications D- 698). A minimum of two (2) compaction tests per each two (2') feet of fill on a structure location shall be run by an experienced soils engineering technician.

In order to prevent damage to existing structures, heavy construction equipment shall not be allowed to operate within approximately 8 feet horizontally of the existing structure exterior wall.

7.0 BACKFILLING AROUND STRUCTURES

Only suitable material approved by the Engineer shall be used for backfilling around structures.

Backfilling around structures shall have material placed in layers of six inch (6") depth and compacted by pneumatic tools or other small equipment operated by hand. In no case shall the backfilling be allowed to obtain an elevation of one

foot (1') above any other area. It shall be uniformly compacted throughout the structure depth. Any deviation shall be cause for the Engineer to require the material deposited to be removed and recompactd at the Contractor's expense.

All backfilling shall be done in such a manner that the pipe or structure over or against which it is being placed will not be disturbed or injured. Any pipe or structure injured, damaged or moved from its proper line or grade during backfilling operations shall be removed or repaired to the satisfaction of the Engineer and then re-backfilled.

8.0 DAM EMBANKMENT (*Not Applicable to this Project*)

One foot of material shall be stripped from the top of the existing embankment. This material shall be stockpiled for use as final cover. The surface of the embankment shall then be moistened and/or worked with a harrow, scarifier, or other suitable equipment to provide a satisfactory bonding surface for the additional fill. The surface condition must be approved by the Engineer prior to any fill being placed.

No fill material used in raising the embankment shall be dumped in place, but shall be distributed by blading or dozing in a manner that will insure placement so that voids, pockets, and bridging are held to a minimum. The hauling and placement equipment shall be routed over the area such that all areas receive approximately the same compactive effort. The fill shall be compacted such that in-place density checks indicate a soil dry density of at least 90 percent of the maximum value as determined by the standard Proctor density test. The embankment shall be raised in approximately horizontal lifts extending the entire length and width of the embankment. The thickness of the lifts before compaction shall not be more than eight inches (8").

The stockpiled topsoil shall be uniformly spread over the raised embankment to insure that the final surface is capable of being vegetated.

It is anticipated that sufficient material to reach the designated elevations and grades will be generated from the excavation necessary to construct the principal spillway and the cleaning of the emergency spillway. Should an insufficient supply of material be available from these two sources, the needed additional material will be obtained from the borrow area below the toe of the embankment designated on the Drawings. Borrow operations shall be conducted in accordance with 5.8 Borrow.

9.0 PRELOADING OF STRUCTURES

All tanks shall be preloaded with water prior to making final pipe connections. Elevations of structures shall be monitored until settlement has virtually ceased.

10.0 BACKFILLING TRENCHES

The backfill shall be in accordance with other applicable sections of these specifications.

11.0 FINISH GRADING

Finish grading shall be to the finished elevations and grades shown, and shall be made to blend into conformation with remaining natural ground surfaces. All finish graded surfaces shall be left smooth and free to drain. Areas to be sown in grasses shall be prepared according to Section 02003. Excess materials shall be spread and compacted as directed. Grading within the construction area and around the outside of building and structure lines shall be performed in a manner which will prevent accumulation of water within the area. Where necessary, or where shown, finish grading shall be extended to insure that water will be directed to drainage ditches, and the site area left smooth and free from depressions holding water.

12.0 MAINTENANCE

All excavated and filled areas for structures, trenches, fills, topsoil areas, embankments and channels shall be maintained by the Contractor in good condition at all times until final acceptance by the Owner. The Contractor shall maintain trench backfill at the original ground surface by periodically adding specified backfill material as necessary or when directed by the Engineer. Such maintenance shall be continued until final acceptance of the project.

13.0 PAYMENT

Payment for all excavation and fill work shown on the Drawings and herein specified, that is required to complete the clearing, grubbing, site grading, roads, structural excavation, trench excavation, borrow excavation, backfill, sheeting, shoring, topsoil, crushed stone or gravel, drainage, pumping, embankment fills and any other excavation and fills required to complete the work as shown on the Drawings shall be included in the work to which it is subsidiary in the Bid Schedule and no measurement of the quantities will be made. The contours and elevations of the present ground are believed to be reasonably correct but are not guaranteed. The Contractor shall satisfy himself by actual examination of the site of work as to the existing elevations and contours and the amount of work required under this Section.

The cost of all initial soils inspections and testing shall be paid by the Owner. If compaction tests do not meet required values, the cost of additional testing as required by the Engineer shall be paid by the Contractor.

SECTION 02002

ACCESS ROAD

1.0 GENERAL

This specification covers the earthwork and surfacing necessary to construct the access road in accordance with the Drawings and the direction of the ENGINEER. The access road will serve as the construction access road and as the water utility's service access road once the project is completed.

2.0 LOCATION

The layout of the access road will generally be as shown on the Drawings. The exact location and cross-section of the road will be as directed by the ENGINEER at the time of construction and will be such as to insure its stability and to keep the grade of the road to a minimum.

3.0 FILL

All roadway fill will be compacted as directed by the ENGINEER with the hauling/placement equipment to insure its stability.

4.0 DRAINAGE

Pipe shall be 15" high density corrugated polyethylene pipe unless otherwise specified. ADS N-12 ST IB pipe or approved equal will be accepted.

5.0 SURFACING

The access roads to the tanks will be surfaced with four inches of #2 coarse aggregate overlain with 2" of #57 coarse aggregate. It will not be necessary to surface uniform, competent rock surfaces. The coarse aggregate shall be in compliance with Section 805 of the Kentucky Department of Highways, "Standard Specification for Road and Bridge Construction."

6.0 PAYMENT

Payment for all work on the access roads shown on the Drawings and herein specified shall be included in the payment for Bid Item "Access Road" as contained in the Bid Schedule and no measurement of the quantities will be made. The information given on the Drawings is believed to be reasonably correct but is not guaranteed. The CONTRACTOR shall satisfy himself by actual

examination of the site of work as to the existing conditions and the amount of work required under this section.

SECTION 02003

SEEDING, MULCHING AND CLEANING-UP

1.0 GENERAL

The Work covered by this Specification consists of furnishing all materials, equipment, and labor for preparing the seedbed, fertilizing, seeding and mulching the disturbed areas as directed by the Engineer. This Specification also covers cleaning up and repairing damage.

The Engineer shall direct all areas to receive seeding and mulching. All areas receiving seeding and mulching shall have lime and fertilizer applied.

2.0 MATERIALS

2.1 LIME

Two tons of agricultural limestone per acre shall be required.

2.2 FERTILIZER

A. Amounts. The following amounts of fertilizer are required per acre:

(1) Nitrogen (N)	60 lbs.
(2) Phosphorous (P205)	120 lbs.
(3) Potash	120 lbs.

B. Analysis. This requirement can be met by applying fertilizer having an analysis of 10-20-20 at the rate of 600 pounds per acre.

2.3 SEED

The following amounts of pure live seed are required per acre:

Permanent Mix

(1) KY-31 Fescue	60 lbs.
(2) Perennial Ryegrass	25 lbs.
(3) Red Clover	10 lbs.

Temporary Mix

- | | |
|---------------------|------------------------|
| (1) Annual Ryegrass | 40 lbs. (2/15 - 7/15) |
| or Rye (Grain) | 80 lbs. (7/15 - 11/15) |
| (2) KY 31 Fescue | 40 lbs. |

2.4 MULCH

Mulch shall consist of wood fiber applied at a rate of 1600 pounds per acre, bituminous treated straw applied at a rate of 2000 pounds per acre or other mulch subject to the advance approval of the Engineer. Netting will be applied to secure the mulch on all areas steeper than 2.5H:1V. The netting will be an extruded high tensile plastic secured with staples per the manufacturer's recommendation.

3.0 EXECUTION

3.1 TIME

The seeding shall be completed within two weeks after completion of the work or as soon thereafter as conditions are favorable.

3.2 PREPARATION OF SEEDBED

- A. Application of Lime and Fertilizer. Immediately prior to seedbed preparation, the Contractor shall apply the agricultural lime and fertilizer uniformly over the area to be seeded.
- B. Mechanical Tillage. The seedbed shall be prepared by pulverizing and breaking up the soil to a minimum depth of two inches with a disk harrow, drag harrow, spike tooth harrow or similar tool. All rocks, clods, and undesirable material that would interfere with seeding operations shall be removed.

3.3 SEEDING

- A. Time. The seeding operations shall be performed immediately after, or as soon as practicable, after the seedbed has been prepared.
- B. Equipment. The seed shall be drilled or broadcast uniformly over the seedbed with regular approved type of equipment or method acceptable to the Engineer.
- C. Tillage. The seeded area shall be passed over with a harrow or cultipacker to help cover more seed and improve seedling establishment. Excessive tillage shall be avoided.

3.4 MULCHING

The approved mulch shall be applied uniformly over the seeded area at the rate required.

4.0 **CLEANING-UP**

4.1 After all construction work is complete, prior to final payment, all exposed areas shall be cleaned and left in a sightly manner.

4.2 All unused material shall be removed from the site. No burning will be allowed on the site.

5.0 **HYDROSEEDING AND HYDROMULCHING**

The CONTRACTOR may hydroseed and hydromulch if the following requirements are met.

1. The individual seed quantities shall be increased by 20%.
2. The mulch shall be a processed hay or straw applied at a rate of 3/4 ton per acre with 80 lbs. per acre of an organic tackifier.
3. The hydroseeder slurry shall not be allowed to drop below a pH of 5.0.

6.0 **MAINTENANCE AND WARRANTIES**

6.1 MAINTENANCE

The Contractor shall be responsible for the maintenance of all work under this Section until final acceptance. Adequate protection of exposed slopes shall be provided at all times to prevent excessive erosion. No work will be accepted unless there is evidence of healthy growth and sufficient cover to prevent erosion.

6.2 WARRANTIES

Work executed under this Section shall be guaranteed for one year with the guarantee beginning on the date of final acceptance of all work under this Contract. Any seeded areas of the site which are found to not have an adequate growth of cover during the guarantee period, shall be re-seeded as soon as weather conditions permit, at no cost to the Owner.

7.0 PAYMENT

Payment for all revegetation work and cleanup shall be included in the work to which it is subsidiary in the Bid Schedule and no measurement of the quantities will be made.

SECTION 03001

CONCRETE

1.0 CAST IN PLACE CONCRETE

1.1 SCOPE

This specification covers the furnishing of all materials, except as may be otherwise provided in the contract, equipment, labor and plant, and performing all operations specified herein, including the manufacturing, transporting, placing, finishing and curing of the concrete. The furnishing and placing of reinforcing steel when specified is covered in a separate technical specification.

1.2 COMPOSITION

Concrete shall be composed of Portland cement, water, fine aggregate, coarse aggregate, and when specified or approved in writing by the Engineer, admixtures for entraining air or retarding agents. The design of the concrete mixture will be based on the water-cement ratio necessary to secure (a) a plastic workable mixture suitable for the specific conditions of placement, and (b) when properly cured, a product having durability, impermeability and strength, in accordance with all the requirements of the structures covered by these specifications. The concrete mixture shall be designed so that the concrete placed according to plans shall produce a minimum laboratory cylinder compressive strength equal to the strength designated in paragraph 3 for the class of concrete specified.

1.3 CLASSIFICATION

Concrete shall be classified as Class A. The basis of classification of concrete shall be the minimum compressive strength at twenty-eight (28) days as listed below. Other minimum design requirements are also shown.

Minimum Strength			Cement Factor	
Class	(7-day)	(28-day)	(Bags/C.Y.)	Air Entrainment
A	2850	4000 psi	6.0	4-½ ± 1-½ %

1.4 CEMENT

1.4.1 Portland Cement. Portland cement shall meet the requirements of ASTM Designation: C-150 for the type of cement specified.

1.4.2 Air-Entraining Portland Cement. Air entraining Portland cement shall meet the requirements of ASTM Designation: C-175 for the type of cement specified.

1.4.3 Storage of Cement on the Site. Cement shall be properly stored and protected from weather, dampness or other destructive agents and any cement which is damaged will be rejected and not permitted to be used in the work.

1.4.4 Sampling and Testing. Portland cement shall be subject to sampling and testing in accordance with ASTM Designation: C-150.

Air-entraining Portland cement shall be subject to sampling and testing in accordance with ASTM Designation: C-175.

1.5 AGGREGATES

1.5.1 Fine and Coarse Aggregates. Shall conform to the provisions of ASTM Designation: C-136 and ASTM Designation: C-33. Sand shall consist of clean, well graded particles of hard, durable stone and shall contain limited amount of deleterious substances. It shall be equivalent to washed Ohio, Scioto, or Cumberland River sand.

Coarse aggregate shall be washed river gravel or crushed limestone of hard durable particles and shall contain limited amounts of deleterious substances. The maximum size of coarse aggregate will be limited to one and one-half (1 1/2) inches.

1.5.2 Handling and Measurement of Materials. Aggregates shall be stored or stockpiled in such a manner that separation of coarse and fine particles of each size will be avoided and that various sizes will not become intermixed before proportioning. Methods of handling and transporting aggregates shall be such as to avoid contamination, excessive breakage, segregation or degradation, or intermingling or various sizes.

Scales for weighing aggregates and cement shall be beam type or springless dial type. They shall be accurate within 1 percent under operating conditions. All exposed fulcrums, clevises and similar working parts of scales shall be kept clean.

The quantities of cement and aggregates in each batch of concrete as indicated by the scales, shall be within the following percentages of the required batch weights:

Cement - plus or minus 1.0 percent
Aggregates - plus or minus 2.0 percent

Measuring tanks for mixing water shall be of adequate capacity to furnish the maximum amount of mixing water required per batch and shall be equipped with outside taps and valves to provide for checking their calibration unless other means are provided for readily and accurately determining the amount of water in the tank.

Cement shall be measured by weight or in bags of 94 lbs. each. When cement is measured by weight, it shall be weighted on scale separate from that used for other materials, and in a hopper entirely free and independent of the hopper used for weighing the aggregates. When cement is measured in bags, no fraction of a bag shall be used unless weighed.

Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weights. The batch weight of each aggregate shall be the required saturated, surface-dry weight plus the weight of surface moisture it contains.

Mixing water shall consist of water added to the batch, ice added to the batch, water occurring as surface moisture on the aggregates and water introduced in the form of admixtures. The added water shall be measured by weight or volume to an accuracy of 1 percent of the required total mixing water. Added ice shall be measured by weight. Wash water shall not be used as a portion of the mixing water for succeeding batches.

Dry admixtures shall be measured by weight, and paste or liquid admixtures by weight or volume, within a limit of accuracy of 3 percent.

1.5.3 Sampling and Testing. When testing is required, the sampling shall be done in accordance with, and the testing results shall conform to, the ASTM Standards referenced herein. The source from which the aggregates are to be obtained shall be selected well in advance of the time when the material will be required in the work. Samples of the aggregates, when requested, shall be furnished at least fifteen (15) days in advance of the time when the placing of concrete is expected to begin.

Usually 150 pounds of sand for initial tests and 150 pounds for periodic tests will be sufficient. Usually 200 pounds of coarse aggregate for initial tests and 200 pounds for periodic tests will be sufficient.

Unless otherwise specified, all test samples shall be taken under the supervision of the Engineer and delivered to the designated point by the Contractor at his expense. Tests will be made by and under the supervision of the Engineer. Routine control tests and analysis of the aggregates at various stages in the

processing operations will be made by the Engineer. The Contractor shall provide such facilities as the Engineer may consider necessary for the ready procurement of representative test samples.

It shall be the responsibility of the Owner to pay for the necessary tests. Once a material has been tested and approved for use, it shall be the Contractor's responsibility to use material throughout the job which is equal in all respects and from the same source as that approved material he delivered to the testing laboratory.

The Engineer shall order additional material tests, if in his opinion the material stored or being used is not equal to the approved tested material. The Contractor shall pay for additional tests if the material is not suitable in accordance with these specifications or if the characteristics of the material are such that a redesign of concrete mix is necessary.

If the Contractor desires to change supplier and/or source of materials after materials have been tested and approved, the Engineer may order additional material tests, the cost of which shall be charged to the Contractor.

In rare instances, a material may meet the requirements of these specifications, but have unusual characteristics which render it unsuitable for the use intended. Therefore, the Owner reserves the right to reject materials if adequate reason is furnished. The Owner also reserves the right to reject material suppliers and sources if quality, uniformity, and other important considerations are not and/or cannot be acceptably maintained. If suppliers or sources of material are rejected after work begins, it may be necessary to test materials from different suppliers and/or sources. If the Engineer deems that tests are necessary, the Contractor shall pay the cost of the necessary tests and all concreting shall be stopped until material is approved for use by the Engineer.

Each material must come from a single source, unless otherwise approved in writing by the Engineer.

All materials must be tested in accordance with these specifications and approved by the Engineer in writing before used in the work, unless the Engineer establishes that some or all of the tests will not be required because of the size of the project or for other reasons. Reports of test results shall be submitted to the Engineer in four (4) copies. It is the intent that the Owner shall pay for material tests necessary to insure suitability for the work, but the Owner shall not pay for material tests caused by negligence, indecision, or carelessness on the part of the Contractor, his subcontractors, or his suppliers.

In the case of ready-mixed concrete the requirements for design mix and testing shall be the same unless waived by the Engineer.

After award of the contract, the Contractor shall submit in writing to the Engineer the name, address and qualifications of the ready mix supplier who will furnish concrete for the project. The Contractor shall also submit the supplier and source of the sand, coarse aggregate, cement and admixture. The Engineer shall then select a testing laboratory and request proposed mixes from the Contractor or ready-mix plant. The Engineer will then indicate tests and design mixes required, to the testing laboratory. The testing laboratory shall also receive a copy of the materials specifications. After receiving the requisition for tests, the Contractor shall send materials per these specifications to the testing laboratory.

1.6 WATER

Water used in mixing concrete shall be fresh, clean and free from injurious amounts of sewage, oil, acid, alkali, salts, or organic matter, and its source shall be subject to the approval of the Engineer. The water used in mixing must be a minimum required for a plastic mix. No water will be permitted for purposes of hastening mixing and reducing tamping or vibration.

1.7 ADMIXTURES

1.7.1 Air-Entrainment. The air-entraining admixtures shall fully meet the requirements of ASTM Designation: C-260 and shall be subject to tests in accordance with ASTM Designation: C-233.

1.7.2 Retarding Agents. Approved types of retarding agents shall be included in the concrete mix when specified on drawings or authorized in writing by the Engineer.

1.7.3 Other Compounds. The use of calcium chloride or other accelerators or anti-freeze compounds will not be allowed.

1.8. CONSISTENCY

The consistency of any concrete shall be such that it can be worked readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The following ranges represent the extreme limits of allowable slump when tested, in accordance with ASTM Designation: C-143. Where vibrators are used, the Engineer may allow a slightly less slump than the specified minimum.

Class of Concrete	Slump Range (Inches)
Class A	1½ to 3

03001-5

The quantity of mixing water shall not be changed without the consent of the Engineer.

1.9 AIR-ENTRAINED CONCRETE

1.9.1 General. When air-entrained concrete is specified, air-entrainment shall be accomplished by using an air-entrained Portland cement or by using an air-entraining admixture with normal Portland cement. If the entrained air content falls below the specified limit when using air-entrained cement, an air-entraining admixture shall be added in sufficient quantity to bring the entrained air content within the specified limits. If the entrained air content is found to be greater than the maximum specified, when using an air-entrained cement, the use of an air-entraining cement shall be prohibited and air-entrainment shall be accomplished by using an air-entraining admixture with normal Portland cement. Air-entraining admixtures shall be added in solutions to a portion of the mixing water by means of a mechanical batcher in a manner that will insure uniform distribution of the agent throughout the batch. The air content of freshly mixed air-entrained concrete shall be determined as a percentage of the volume of the concrete by following the methods specified in ASTM Designation: C-138, C-173, or C-231. Air content determination shall be made on samples of concrete during placement of the concrete in the forms.

Unless otherwise specified the air content (by volume) of the concrete at the time of placement shall be:

Maximum Size Aggregate	Air Content (%)
3/8 inch to 1/2 inch	6 to 9
over 1/2 inch to 1 inch	5 to 8
over 1 inch to 2 1/2 inches	3 to 6

1.9.2 Adjustment of Mix Proportions. When air-entrained concrete is specified, the amount of water and fine aggregate prescribed for normal concrete shall be reduced to compensate for the increased volume of air contained in the air-entrained concrete. This is to maintain the concrete's strength.

1.10 QUALITY OF CONCRETE

1.10.1 Control. The Contractor shall be responsible for the design of the concrete mixtures and the quality of the concrete including ready-mix. Prior to any concrete construction or any change in the mix during construction, the Contractor shall furnish a statement to the Engineer giving the proportions by dry weight of cement and of fine and coarse aggregate that will be used in the manufacture of each class of concrete contained in the contract. The Contractor will also furnish material samples to the laboratory for testing a design mix.

Based on laboratory evidence, the Engineer will either approve the proposed mix or indicate the necessary proportions to meet the specified requirements.

1.10.2 Measurements. All materials entering into the concrete shall be mechanically measured by weight except the air-entraining admixture and water which may be measured by volume.

1.10.3 Delivery Ticket. Where truck mixers or ready-mix are used, the Contractor shall submit, for each load, a certified delivery ticket given the quantities of cement, fine and coarse aggregate, water, admixture, and the time that water was added to the batch.

1.11 DESIGN MIX AND CYLINDER TESTS

Standard tests of the strength of the concrete may be made by the Engineer at any time he elects to do so. The following tests will be performed by the methods indicated:

Test	Method (ASTM Designation)
Sampling	C-172
Slump Test	C-143
Air Content	C-231 or C-173
Compression Test Specimens	C-31 or C-42
Compressive Strength	C-39 or C-42
Unit Weight	C-138

Test of a portion of a batch may be made on samples representative of that portion for any of the following purposes:

- (1) Determining uniformity of the batch.
- (2) Checking compliance with requirements for slump and air content when the batch is discharged over an extended period of time.
- (3) Checking compliance of the concrete with the specifications when the whole amount being placed in a small structure, or a distinct portion of a larger structure, is less than a full batch.

1.11.1 Slump Test. At least one slump test shall be made before first concrete pour, at the start of pouring any concrete and at each seven cubic yards deposited during one operation. These shall be made from same samples as those taken for cylinder tests, and records of same kept therewith. Tests shall be made according to ASTM Designation C-143 and as required under ASTM Designation C-94 for ready-mixed concrete. The Contractor shall furnish the

necessary equipment and labor for making slump tests. Water in excess of the maximum required for a practical concrete mix will have adverse effects on shrinkage, durability, and strength of concrete. Concrete which has a greater slump than specified or directed by the Engineer can be rejected by the Engineer without cost to the Owner.

1.11.2 Entrained Air Tests. The Contractor shall furnish and have on the job at all times, one (2) LA-345 Chase Air Indicator Kit, one (1) LA-340 Spare Chase Air Indicator, and two (2) quarts of isopropyl alcohol (rubbing alcohol) for the Engineer's use in making entrained air measurements. The alcohol can be obtained locally at any drug store and the one (1) LA-345 and one (1) LA-340 can be procured from Forney's Inc., Route 18, R.D. No. 2, Wampum, Pennsylvania 16157.

The amount of measured entrained air shall be recorded by the Engineer. Mortar shall be sampled only from concrete taken directly from the mixer. At least one (1) air measurement shall be made for each test cylinder taken. Concrete which has more or less entrained air than specified or directed by the Engineer can be rejected by the Engineer without cost to the Owner.

1.11.3 Initial Design Mix Cylinder Tests. Where more than 50 cubic yards of concrete are placed: The testing laboratory selected by the Owner shall make a set of six (6) test cylinders from the design mix. Three (3) shall be tested at 7 days and three (3) shall be tested at 28 days per ASTM Designation C-39. Test cylinders shall have a compressive strength per Article 3 of this section. The CONTRACTOR shall pay the cost of the design mix and design mix cylinder tests, and the Owner shall not pay for additional design mixes and design cylinder tests, caused by negligence, indecision, or carelessness on the part of the Contractor or his suppliers.

It is important for the Contractor to pursue all concrete testing requirements with dispatch so that approval of concrete can be granted by the Engineer in writing after all tests are completed.

1.11.4 Periodic Cylinder Tests. All cylinders shall be made per ASTM C-31 and tested per ASTM C-39. The Contractor shall furnish all labor and equipment for sampling and curing cylinders on the job site and transportation to the laboratory for testing. The Owner shall select the laboratory and the Contractor shall bear the cost for testing the concrete cylinders.

At the start of concreting, three cylinders shall be made. One shall be tested at 7 days and two shall be tested at 28 days.

Throughout the remainder of the job, the Engineer shall direct when cylinders shall be taken and in what number they shall be taken. At each time when twenty (20) or more cubic yards of concrete are placed during one operation, and

when the sum of smaller deposits of concrete equal thirty (30) cubic yards since previous test, and at any change in mix, three (3) cylinders shall be made. One (1) shall be tested at 7 days and two (2) shall be tested at 28 days.

For a strength test, three (3) test specimens will be made from a composite sample. The test result will be the average of the strength of the three specimens, except that, if one specimen in a test shows manifest evidence of improper sampling, molding, or testing, it shall be discarded and the remaining two strengths averaged. Should more than one specimen, representing a given test, show definite defects due to improper sampling, molding or testing, the entire test shall be discarded.

The Engineer will ascertain and record the batch number for the concrete and the exact location in the work at which each batch represented by a strength test is deposited.

The Engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Engineer to inspect materials, equipment and process and to obtain samples of the concrete. All tests and inspections will be conducted so as not to interfere unnecessarily with the manufacture and delivery of the concrete.

1.12 FAILURE TO MEET STRENGTH REQUIREMENTS

If cylinders do not meet strength requirements, the Engineer can order shutdown on all concreting and redesign of concrete mix by the laboratory selected by the Owner. The cost of mix redesign shall be paid for by the Contractor. The Engineer can also order additional tests, such as load tests, Swiss Hammer tests, and/or core tests in the areas of the work represented by unacceptable cylinders. If areas of work are found to be under strength requirements, the Engineer can order the Contractor to strengthen or replace those areas at the expense of the Contractor.

When it is determined that such concrete shall be removed and replaced the Contractor shall be notified in writing, stating the extent of the replacement to be made.

1.13 BATCHING AND MIXING

1.13.1 Equipment. The Contractor shall provide at the site of the work a modern and dependable batch-type mixing plant with a capacity consistent with the size of the job. The equipment shall be capable of combining the aggregate, cement and water into a uniform mixture and of discharging this mixture without segregation. Adequate facilities shall be provided for the accurate measurement and control of each of the materials entering the concrete. The complete plant assembly shall include provisions to facilitate the inspection of all operations at

all times. Ready-mix concrete may be used, if approved by the Engineer, in which case the mixing plant at the site will not be required. All mixing requirements specified herein for concrete mixed at the site shall be applicable to ready-mixed concrete. Measurements of materials for ready-mixed concrete shall conform to ASTM Designation: C-94. The Engineer shall have free access to the mixing plant at all times. Truck mixers will be allowed, provided the use of this method will cause no violation of any applicable provisions of specifications for concrete contained herein. Truck mixers, unless otherwise authorized by the Engineer, shall be of the revolving drum-type, watertight, and so constructed that the concrete can be mixed to insure the uniform distribution of materials throughout the mass. Each truck mixer shall be equipped with a tank of known capacity which shall be equipped with an accurate device for measuring the amount of water added. Truck mixers and agitator shall be operated within the limits of capacity and speed of rotation designated by the manufacturer of the equipment.

1.13.2 Mixing Time. Neither the speed nor the volume capacity of the mixer shall exceed those recommended by the manufacturer. Excessive over mixing, requiring additions of water to preserve the required consistency, will not be permitted. The mixing time for each batch after all solid materials are in the mixer drum, provided that all the mixing water shall be introduced before one-fourth (1/4) of the mixing time has elapsed, shall be not less than two (2) minutes for mixers having capacities up to two (2) cubic yards. For mixers of larger capacities, this minimum shall be increased fifteen (15) seconds for each cubic yard or fraction thereof of additional capacity.

When a truck mixer is used, each batch of concrete shall be mixed not less than fifty (50) nor more than three hundred (300) revolutions, at a mixing speed of not less than four (4) r.p.m. after all materials are in the mixer drum. In all such cases, however, the concrete shall be delivered to the job site and discharged within 1 1/4 hours or before the drum has revolved 300 times, whichever comes first, after the mixing water has been added.

1.14 CONVEYING

Concrete shall be conveyed from mixer to forms as rapidly as practicable, by methods which will prevent segregation or loss of ingredients. There shall be no vertical drop greater than five feet (5'), except where suitable equipment is provided, to prevent segregation and where specifically authorized by the Engineer. Chuting from towers or elevated positions of the mixer will be permitted, but the water content will be subject to the Engineer's control and excess water will not be allowed, in order to force the concrete to flow clean from the chutes, unless all flushing of chutes is discharged outside the forms.

Belt conveyors, chutes or other similar equipment in which the concrete is delivered to the structure in a thin, continuously exposed flow, will not be

permitted, except for very limited or isolated sections of the work and only then if approved in writing by the Engineer. Such equipment shall be arranged to prevent objectionable segregation.

Where wall forms exceed five feet (5') in height, suitable measures, such as the use of tremie tubes, where practicable, or portholes, shall be provided in the forms to limit the vertical drop of the concrete to a maximum of five feet (5'). Openings shall be spaced around the perimeter of the formed area so that lateral flow of fresh concrete will be limited to three feet (3'). Drop chutes which may be provided to convey the concrete through wall ports shall have an outside pocket under each form opening to stop the concrete and allow it to flow easily over into the form without separation.

No concrete shall be placed until the Engineer has given his approval of the subgrade, forms and reinforcing steel in place. If the reinforcing steel is not placed in accord with the drawings, the Engineer shall stop the Contractor from placing any concrete until the error is corrected. Under no circumstances will an attempt be made to correct errors by inserting additional unscheduled bars. No concrete shall be placed except in the presence of the Engineer or his representative, and the Contractor shall give reasonable notice of his intention to pour.

Before any concrete is placed, the forms and subgrade shall be free of chips, dirt, sawdust, or other extraneous materials.

1.15 PLACING

1.15.1 General. Concrete shall be placed within one and one-quarter (1-1/4) hours after the introduction of the water to the cement and aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, or where the temperature of the concrete is 85°F or above, the time shall be reduced to 45 minutes. The Engineer may allow a longer time, providing the setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding mixture. Concrete shall be deposited as closely as possible to its final position in the forms so that the flow within the mass and consequent segregation are reduced to a minimum.

Vibrators may be used to aid in the placement of the concrete provided they are used under experienced supervision, and the forms designed to withstand their action. The duration of vibration shall be limited to that necessary to produce satisfactory consolidation without causing objectionable segregation. Vibration shall not be applied directly to the reinforcement steel or the forms nor to concrete which has hardened to the degree that it does not become plastic when vibrated.

The Contractor shall keep at least one spare vibrator on the job during all concrete placing operations.

When a vibrator is used the Contractor shall also spade the concrete along form surfaces a sufficient amount to prevent excessive size or numbers of air-void pockets in the concrete surface, except where an approved absorptive form lining is used; in which case the spading specified above will not be permitted.

1.15.2 Lifts in Concrete. The permissible depth of concrete placed in each lift shall be as shown on the drawings or specified herein. All concrete shall be deposited in horizontal layers not exceeding twenty inches (20") in thickness, unless otherwise authorized or directed. The placement shall be carried on at such a rate that the formation of cold joints will be prevented. If a delay occurs in excess of a thirty (30) minute interval between any two (2) consecutive batches or loads, or in case of any delay between placing batches that allows previously placed concrete to take initial set, the Contractor shall discontinue the placing of concrete and make, at his own expense, a construction joint satisfactory to the Engineer before proceeding with the placing operations. He shall remove any portion of the previously placed concrete that is deemed necessary for the proper formation of the construction joint and no payment shall be made to the Contractor for the concrete removed. The thirty (30) minute limitation, cited immediately above, may be extended in those cases where an approved type retarder is added to the concrete mixture to delay the set of the concrete. Use of a retarder in the mix shall be subject to approval of the Engineer.

Hoppers, chutes, and pipes shall be used as necessary to prevent splashing of mortar on forms and reinforcing above the layer being placed.

1.15.3 Placing Temperature. Concrete shall be mixed and placed only when the temperature is at least forty (40) degrees F. and rising, unless permission to pour is obtained from the Engineer, in which event all material shall be heated and otherwise properly prepared so that batching and mixing can proceed in full accord with the provisions of this specification. The methods proposed for heating the materials and protecting the concrete shall be approved by the Engineer. Salt, chemicals, or other materials shall not be mixed with the concrete for the purpose of preventing freezing. Accelerating agents shall not be used.

Concrete placement will not be permitted when, in the opinion of the Engineer, the sun, heat, wind, or humidity prevents proper placement and consolidation.

When the atmospheric temperature may be expected to drop below 40°F at the time concrete is delivered to the work site, during placement or any time during the curing period, the following provisions also shall apply:

- (1) The temperature of the concrete at the time of placing shall not be less than 50°F nor more than 90°F. The temperature of neither aggregates nor mixing water shall be more than 100°F just prior to mixing with the cement.
- (2) When the daily minimum temperature is less than 40°F, concrete structures shall be insulated or housed and heated after placement. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than 50°F nor more than 90°F for the duration of the curing period.
- (3) Methods of insulating, housing and heating the structure shall conform, to "Recommended Practice for Cold Weather Concreting," ACI Standard 306.
- (4) When dry heat is used to protect concrete, means of maintaining an ambient humidity of at least 40 percent shall be provided unless the concrete has been coated with curing compound or is covered tightly with an approved impervious material.

For obtaining the proper curing conditions for the concrete poured, steam heating equipment, oil-fired blowers (airplane heaters) located outside the enclosure and blowing hot air into the enclosure, or other similar equipment of a capacity sufficient to maintain the required minimum temperature all over, will be required. In conjunction with forced air heaters, means of supplying moisture to the area being cured will also be required. Oil or coke burning salamanders and other fuel-burning heaters produce carbon dioxide which combines with calcium hydroxide in fresh concrete to form a weak layer of calcium carbonate. When this occurs, the surface of the concrete floor will dust under traffic. For this reason, carbon dioxide producing heaters shall not be used while placing concrete and for the first 24 to 36 hours of the curing period unless they are properly vented.

The Contractor must have a sufficient steam retaining canvas or other protective covering at the site to cover all sides and tops of forms to be poured and concrete to be cured, before pouring of concrete will be allowed. This covering must be placed over and around forms and concrete being cured in such a manner that circulation of curing air will prove effective to the tops of floors and to the outside, top and corners of concrete structures, as well as to their interiors. Concrete shall be moist cured in accordance with paragraph 18 of this section. The Contractor may strip forms during curing period with covering removed, provided atmospheric temperatures are above specified curing temperatures, concrete surfaces are kept moist, and time and labor is available for recovering for lower night temperatures.

When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 85°F at the time of delivery at the work

site, during placement, or during the first 24 hours after placement, the following provisions also shall apply:

- (1) The Contractor shall maintain the temperature of the concrete below 85°F during mixing, conveying, and placing. Methods used shall conform to "Recommended Practice for Hot Weather Concreting," ACI Standard 605.
- (2) The concrete shall be placed in the work immediately after mixing. Truck mixing shall be delayed until only time enough remains to accomplish it before the concrete is placed.
- (3) Exposed concrete surfaces which tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying during the time between placement and finishing, and after finishing.
- (4) Finishing of slabs and other exposed surfaces shall be started as soon as the condition of the concrete allows and shall be completed without delay.
- (5) Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 24 hours of the curing period, and for the entire curing period unless curing compound is applied as specified in subsection 7, below.
- (6) Formed surfaces shall be kept completely and continuously wet for the duration of curing period (prior to, during and after form removal) or until curing compound is applied as specified in subsection 7, below.
- (7) If moist curing is discontinued before the end of the curing period, white pigmented curing compound shall be applied immediately.

1.15.4 Concrete on Rock Foundations. Rock surfaces upon which concrete is to be placed shall be clean, free from oil, standing or running water, mud, objectionable coatings, debris, loose semidetached, or unsound fragments. Faults or seams shall be cleaned to a depth satisfactory to the Engineer, and to firm rock on the sides. Immediately before concrete is placed, all such rock surfaces shall be cleaned thoroughly by use of high velocity air-water jets, wet sandblasting, or other means satisfactory to the Engineer. All rock surfaces shall be kept continuously wet for forty-eight (48) hours and all approximately horizontal surfaces shall be covered, immediately before the concrete is placed, with a layer of mortar of the same sand-cement ratio as used in the concrete.

1.15.5 Concrete on Earth Foundations. Unless otherwise authorized all concrete shall be placed upon clean, damp surfaces free from frost, ice, or deleterious materials, and standing or running water. Concrete shall not be placed in mud, dried porous earth or upon fill that has not been subject to approved rolling or

tamping until optimum compaction has been obtained. The Contractor shall take all measures to accomplish the results specified in this paragraph.

1.15.6 Vertical Point Spacing. The layout of all monoliths shall be as shown on the drawings or as directed and approved by the Engineer before construction is started.

1.15.7 Placing Concrete Through Reinforcement. In dropping concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs.

1.16 CONSTRUCTION JOINTS

Contractor shall furnish and install vinyl or plastic water stops as manufactured by W.R. Meadows, Inc., Water stops Inc., or B.F. Goodrich Inc., or approved equal quality. Water stops shall be center bulb type 6 inches wide unless shown otherwise in the plans. Care and diligence shall be exercised in securing proper embedment in the concrete mix.

The water stop shall be extruded from elastomeric polyviny- chloride material and joints shall be cemented as recommended by the manufacturer. The Contractor may use other water stop materials subject to the Engineer's approval.

Construction joints shall be located as indicated on the contract drawings, or as approved by the Engineer. The surfaces of construction joints shall be clean when covered with fresh concrete. Cleaning shall consist of the removal of all laitance, loose or defective concrete and foreign material. Cleaning of the surface of construction joints shall be accomplished by the use of high velocity air-water jets, wet sandblasting, or other effective means satisfactory to the Engineer. Surfaces of construction joints that have been permitted to dry by reason of the succeeding lift or adjoining concrete not being placed within the specified post-curing period shall be moistened and kept continuously moist for at least forty-eight (48) hours immediately prior to the placing of the succeeding lift or adjoining concrete. All pools of water shall be removed from the surfaces of construction joints before the new concrete is placed.

1.17 FINISHING

1.17.1 Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms unless otherwise authorized or directed. Voids left by removal of tie rods shall be reamed and completely filled with dry-patching mortar.

Defective concrete shall be repaired by cutting out the unsatisfactory material and placing new concrete which shall be secured with keys, dovetails, or

anchors. Defective areas shall be chipped away to a depth of not less than 1 inch with the edges perpendicular to the surface. The area to be patched and a space at least 6 inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar. A grout of equal parts Portland Cement and sand, with sufficient water to produce a brushing consistency, shall then be well brushed into the surface, followed immediately by the patching mortar. The patch shall be made of the same material and of approximately the same proportions as used for the concrete except that the coarse aggregate shall be omitted. The mortar shall not be richer than 1 part cement to 3 parts sand. On exposed surfaces, white Portland Cement shall be substituted for a part of the grey Portland Cement to match the color of the surrounding concrete. The proportion of white and grey cements shall be determined by making a trial patch. The amount of mixing water shall be as little as consistent with the requirements of handling and placing. The mortar shall be retempered without the addition of water by allowing it to stand for a period of 1 hour during which time it shall be mixed occasionally with a trowel to prevent setting.

The mortar shall be thoroughly compacted into place and screeded off so as to leave the patch slightly higher than the surrounding surface. It shall then be left undisturbed for a period of 1 to 2 hours to permit initial shrinkage before being finally finished. The patch shall be finished in such a manner as to match the adjoining surface.

Excessive rubbing of formed surfaces will not be permitted. All unformed surfaces of concrete, exposed in the completed work, shall have a wood float finish without additional mortar.

1.17.2 When concrete is honeycombed, damaged or otherwise defective, the Contractor shall remove and replace the structure or structural member containing the defective concrete, or correct or repair the defective parts. The Engineer will determine the required extent of removal, replacement or repair.

Prior to starting repair work the Contractor shall obtain the Engineer's approval of his plan for making the repair. Such approval shall not be considered a waiver of the Contracting Officer's right to require complete removal of defective work if the completed repair does not produce concrete of the required quality and appearance. Repair work shall be performed only when the Engineer is present. Repair of formed surfaces shall be started within 24 hours after removal of the forms.

Joints and edges of unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.

1.17.3 In order that the rubbing required by these specifications shall be effective, non-supporting forms may be stripped with 24 hours after concrete pouring is completed, and initial rubbing required completed with 48 hours. If possible,

patching and rubbing shall be done at the same time. This requirement regarding form removal is secondary to heating requirements, and the specifications heretofore included regarding heating of concrete shall take precedence.

After the required curing time has elapsed, support forms may be removed to allow finishing. Finish shall be Type I, II, or III as required by the "Concrete Finishes" section. In general, surfaces that will show in the finished work will be rubbed down with a coarse carborundum stone. Floors and slabs shall be float finished as soon as possible after pouring unless otherwise specified. Cement or mortar coating will not be permitted. The Contractor should refer to the section on "Concrete Finishes" for complete finish requirements for all concrete units.

Rubbing is not required lower than 6 inches below water levels in basins, but all fins must be removed and holes patched. Exposed inside surfaces to be painted must be rubbed smooth.

The surfaces of exposed concrete roofs, walks, and copings shall be finished with a wooden float and left with a gritty surface similar to that in general use for sidewalks. This finish and floating must be done at the proper period in the setting of the concrete. These outside exposed surfaces of floors and roofs must be finished as one piece of work without a separate top coat.

Basin and channel floors shall be struck off smooth and finished with a steel float to produce a surface easily cleaned. The inside exposed floors must be finished with a steel float to even surfaces and present a neat, smooth, and satisfactory appearance. Finish with bevel around all curbs, and other openings. Floors must be finished to drain to floor traps and sump with slopes as shown on the plans. Floors at the walls must be level except where shown otherwise on the plans.

Surfaces of precast concrete members that are to be painted shall have all air holes and other imperfections filled and dressed to present surfaces comparable in smoothness and appearance to rubbed concrete as set forth above.

1.17.4 Watertightness. All concrete when finished must be watertight. Exposed concrete surfaces shall show no dampness when the interior of basins or exterior of pits have been filled with water for seven days. To obtain this result, the foregoing specifications must be rigidly followed. In case any leakage or dampness shows on the surface of any such walls after testing the time stated, then such defects must be remedied by the Contractor and work will not be accepted until this is done.

1.17.5 Openings for Pipes and Joints to Pipes. Where pipes pass through concrete walls or floor pours they shall do so by the use of a mechanical joint

wall sleeve. The sleeve shall be cast into the pour and it shall be of sufficient length to allow easy installation or removal of the main line pipe.

Where malleable pipe (steel, wrought iron, or copper), brittle pipe (hard rubber), rubber hose, or any pipe cut to fit on the job, passes through any concrete slab, floor or wall, a wrought or cast iron pipe nipple with about 1/2 inch greater diameter than the outside of the pipe shall be used as a sleeve and cast into the slab. In case of floors above ceilings, these sleeves shall extend 1/2 inch to 1 inch above floor surface, to prevent scouring water from running into them. If joint about pipe is required for watertightness or pipe support, the annular ring shall be caulked with dry, unbraided oakum to within 2 inches of surface. The ring at surface shall be filled with nonshrink grout, raked back 1/2 inch, and filled with 1/2 inch cap of Portland Cement grout as previously mentioned.

Where holes greater than 10 inch diameter have to be cut for pipe in existing concrete slabs or walls, the space about the pipe shall be formed to original surfaces and the pipe wrapped with 1/2 inch braided hemp. In grouting this space, use a nonshrink grout, such as Sonneborn "Ferrolith G" or Masters Builders "Embeco". Where walls and spaces give sufficient room for safely using large aggregate, this may be added in a quantity equal to the sand specified. After removal of forms, the yarn shall be removed for a depth of 2 inches from water side and/or exposed surfaces, and the space refilled to surface with a nonshrink grout. Then the joint shall be raked back 1/2 inch from the surface and filled with a one to two mix grout of Portland Cement and sand.

1.18 CURING AND PROTECTION

1.18.1 General. All concrete shall be cured for a period of not less than seven (7) consecutive days by an approved method, or combination of methods. The curing process shall be done so as to prevent loss of moisture from the concrete for the duration of the entire curing period. Unhardened concrete shall be protected from heavy rains and flowing water. All concrete shall be adequately protected from damage.

1.18.2 Moist Curing. Concrete shall be moist cured by maintaining all surfaces continuously (not periodically) wet for the duration of the entire curing period. Water for curing shall be clean and free from any elements which will cause staining or discoloration of the concrete. Where forms of wood are used and left in place during curing, the wood shall be kept wet at all times.

1.18.3 Membrane Curing. At the option of the Contractor and when approved by the Engineer, the concrete may be cured with an approved curing compound of the surface membrane type in lieu of moist curing with water provided a permanent stain is not produced and provided the concrete surface is not to receive rubbed finish, terrazzo, tile, paint, chemical hardening, grout, cement patch, or concrete topping. The curing compound shall be applied to formed

surfaces immediately after the forms have been removed and the surfaces cleaned of any loose sand, mortar and debris. The surface to receive the compound shall be moistened thoroughly with water and the compound applied as soon as the moisture film has disappeared but when the surface is still damp. On unformed surfaces the compound shall be applied immediately after the surface loses its free water and has a dull appearance.

The curing compound shall be applied in a two coat continuous operation by approved spraying equipment and at a coverage of not more than two hundred (200) square feet per gallon for both coats. The second coat shall be applied to overlap the first coat in a direction at approximately right angles to the direction of the first application. Concrete surfaces which are subjected to heavy rainfall within three (3) hours after the curing compound has been applied shall be resprayed by the method and at the coverage herein specified. All concrete surfaces on which curing compound has been applied shall be adequately protected for the duration of the entire curing period from any damage that would disrupt the continuity of the curing membrane.

The curing compound shall conform to Type 2 or Type 3 of ASTM Designation: C-309.

All curing compound shall be delivered to the site of the work in the original sealed container bearing the name of the manufacturer, the brand name and the manufacturer's batch number. The compound shall be approved prior to use. The compound shall be stored so as to prevent damage to the containers, and water-emulsion types shall be protected from freezing.

1.18.4 Cold Weather. The air and forms in contact with the concrete shall be maintained at temperatures above forty (40) degrees for at least seven (7) days and at a temperature above freezing for at least 21 days. Concrete, permitted to be cured with curing compounds, shall be provided the same protection against freezing and low temperatures as provided herein. No fire or excessive heat shall be permitted near or in direct contact with concrete at any time.

1.19 FORMS

1.19.1 Material. Forms shall be wood, steel, or other approved material. Wood forms shall be tongue-and-groove lumber of uniform width and thickness, or plywood having a minimum of five (5) plies, a minimum thickness of 9/16 inch, and a type made especially for concrete forms. Steel forms shall be of a type acceptable to, and commonly used in the construction field. The type, shape, size, quality and strength of all material of which the forms are made shall be subject to the approval of the Engineer.

1.19.2 Construction. Forms shall be true to line and grade, mortartight, and sufficiently rigid to prevent objectionable deformation under load. Where forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the complete surface so as to obtain accurate alignment of the surface and to prevent leakage of mortar. Forms shall be constructed such that keyways, waterstops, and dowels can be placed as shown in the plans.

Responsibility for their adequacy shall rest with the Contractor. The form surfaces shall be smooth, free from irregularities, depressions, sags, or holes when used for permanently exposed faces. Bolts and rods used for internal ties shall be so arranged that, when all forms are removed, all metal will not be less than one inch (1") from any concrete surface. Wire ties will not be permitted. All forms shall be so constructed so that they can be removed without hammering or prying against the concrete. All exposed joints shall be chamfered and suitable molding shall be placed to bevel or round exposed edges or corners, unless otherwise directed by the Engineer.

Temporary openings shall be provided in the inside form of all wall forms and column forms to facilitate cleaning and inspection immediately before depositing concrete. When wood sheathing is used for the inside form, the bottom board shall be fitted and removed to provide a continuous cleanout space and if plywood is used, the forms shall be started with a 6- inch wide piece for the same purpose. Washing out of all forms and other concrete before pouring new materials must be done with water or air from a hose under pressure. The hose must be provided with a suitable nozzle for this work. The intent of these specifications is to produce a perfectly watertight structure in all cases, without any subsequent repair work. Forms shall be so assembled that their removal will not damage the concrete.

Contact surfaces of forms shall be divided into two categories; forms for exposed concrete, and forms for unexposed concrete. Exposed concrete shall mean concrete normally exposed to view and shall be considered extending 6 inches below planned regrade or water level. Exposed concrete shall exclude interior surfaces of covered water holding basins and unpainted, unfinished, interior surfaces of manholes and vaults. Unexposed concrete shall be concrete not normally exposed to view and shall include all concrete not included by exposed concrete, unless otherwise noted on the plans or in the specifications. Either unlined forms or lined forms (as hereinafter specified) shall be used for exposed concrete. A combination of lined forms for exposed concrete and unlined forms for unexposed concrete may be used in a structure where only a part of the structure is exposed. When this combination occurs, the Engineer will determine, upon request of the Contractor, if that portion of the structure which requires lined forms can be reduced in section to accommodate the liner without offsetting the liner backing from the sheathing used for the unexposed portion of the structure.

(1) Forms for Exposed Concrete

- (a) Unlined. The contact surface of forms shall be constructed from 5/8 inch or 3/4 inch 5 ply structural plywood of concrete form grade. All concrete form plywood shall be designated by grade marking each panel. Full sized sheets of plywood must be used except where smaller pieces will cover an entire area. The edges of all plywood sheets shall be straightened on the bench to insure close fitting, tight joints. All vertical joints shall be backed solidly and the edge of abutting sheet shall be nailed to the same stud.

When the one form is erected and reinforcement is in place, and before the other form is erected, the Engineer shall be notified and the other form shall not be placed until work already done is approved. Open joints which would permit leakage of grout shall be sufficient cause for rejection of forms. If, in the opinion of the Engineer, pointing of slightly open joints will prevent leakage, then such pointing shall be done with an approved mixture. Pointing shall be carefully done and there shall be no trace of the pointing mixture on the surface of the sheathing.

Contact surfaces of forms shall be in good condition. The Engineer has the right to reject forms which will not produce a smooth, uniform, concrete surface.

- (b) Lined. The backing for form lining shall be constructed of a good grade of form lumber that is solid, straight, and free from defects that might impair its strength but need not be of the quality used for contact forms. Square-edged, sized lumber may be used for form boarding in place of shiplap or tongue-and-groove.

The boarding for lined forms may be horizontal or vertical, depending upon convenience. Form sheathing shall be securely nailed to the studs and the edges of the boards shall be in contact to prevent any bulging of the lining.

Plywood faced panel or patented forms in good condition, with tight fitting joints, such as steel-ply forms, can be substituted for lined forms if a smooth wall surface, as required by these specifications, can be obtained. Minor variations in concrete texture at form joints will be permitted.

Lining material shall be 1/4 inch structural plywood securely nailed to the form sheathing. All lining material shall be used in as wide pieces as possible. Areas less than 4 feet in width shall be lined with a single width of plywood.

Joints in lining and backing shall not occur at the same place and butting edges of adjacent sheets shall be nailed to the same board. The lining material shall be nailed to the backing beginning at the center of the board and working toward the edges to prevent buckling. Lining material may be re-used, if it is in satisfactory condition and is approved by the Engineer. Open joints which would permit leakage of grout shall be sufficient cause for rejection of forms. If, in the opinion of the Engineer, pointing of slightly open joints will prevent leakage, then such pointing shall be allowed.

In the case of lined circular forms where the backing for form lining is constructed in chords of a circle, the form lining shall be adequately supported by variable thickness shim strips on at least 6 inch centers so that the liner forms a circular surface within tolerances specified herein.

(2) Forms for Unexposed Concrete

Forms shall be constructed of a good grade of form lumber that is solid, straight and free from defects which might impair its strength, but need not be of the quality required for contact surfaces of forms for exposed concrete. Forms shall be of shiplap of T & G No. 2 wood sheathing, 3/4 inch plywood, 5/8 inch plywood or approved equal. Panel or patented forms may be used upon approval of the Engineer.

(3) Form Ties

Forms ties shall be as follows:

- (a) "Water-Seal" type of ties shall be used for water holding structures or structures subject to flooding.
- (b) Nonwater holding structures, which are not subject to flooding, shall have ties approved by the Engineer.

Form ties shall have a minimum working strength when fully assembled of at least 3,000 pounds. Ties shall be so adjustable in length as to permit tightening of forms and of such type as to leave no metal closer than 1 inch from the surface and they shall not be fitted with any lugs, cones, washers or other device to act as a spreader within the form or for any other purpose which will leave a hole larger than 7/8 inch in diameter or a depression back of the exposed surface of the concrete. Wire ties shall not be permitted.

1.19.3 Construction Tolerance. The forms shall be constructed and rigidly braced in place within the following tolerances:

- (1) Variation from true alignment as shown on the drawings in the lines and surfaces of walls:

In 10 feet	1/4 inch
In 20 feet maximum	3/8 inch
In 40 feet or more	3/4 inch

- (2) Variation from the level or from the grades indicated on the drawings in floors or slabs:

In 10 feet	1/4 inch
In 20 feet maximum	3/8 inch
In 40 feet or more	3/4 inch

- (3) Variation in sizes and/or locations of floor and/or wall openings:

1/4 inch

- (4) Variation in thickness of slabs and walls and in cross-sectional dimensions of columns and beams:

Minus	1/4 inch
Plus	1/2 inch

- (5) Variation in plan dimension of footings:

Minus	1/2 inch
Plus	2 inches

1.19.4 Wetting and Oiling Forms. The inside surface of wood board forms shall be soaked with clean water and kept continuously wet for 12 hours before any concrete is placed. In case forms have been erected for some time and have become dry so that joints have opened, then the forms shall be thoroughly soaked at least twice each day for at least 3 days prior to placing concrete. If the forms cannot be tightened to the satisfaction of the Engineer, they shall be torn down and rebuilt. Plywood forms may be treated with a nonstaining form oil, mineral oil or lacquer. If oil is used, all excess oil shall be wiped off with rags to leave the surface of the forms just oily to the touch. In freezing weather oil shall be used.

Coatings of dust shall be removed from contact surfaces of forms before placing concrete. Concrete shall not be placed in any form until inspected by the Engineer and permission is given to start placing.

1.19.5 Removal. Forms shall not be removed without approval of the Engineer. All form removal shall be accomplished in such a manner as to prevent injury to the concrete.

Forms shall not be removed sooner than the following minimum times after the concrete is placed. These periods represent cumulative number of days and fractions of days, not necessarily consecutive, during which the temperature of the air adjacent to the concrete is above 50°F.:

Element	Time
Beams, arches - supporting forms and shoring	14 days
Conduits, deck slabs - supporting (inside) forms and shoring	7 days
Conduits (outside forms), sides of beams, small structures	24 hours
Columns, walls, spillway risers - with side or vertical load	7 days
Columns, walls, spillway risers - with no side or vertical load	4 days
Concrete supporting more than 30 feet of wall in place above it.	7 days
Concrete supporting 20 to 30 feet of wall in place above it.*	4 days
Concrete supporting not more than 20 feet in place above it.*	24 hours

* Age of stripped concrete shall be at least 7 days before any load other than the weight of the column or wall itself is applied.

When conditions on the job are such as to justify the requirements, forms will be required to remain in place for longer periods. Forms for beams, girders, and flood slabs shall remain in place for at least seven (7) days and shall only be removed when test cylinders used under the same conditions as the members break with a compressive strength as required in these specifications.

1.19.6 Design, Inspection and Approval of Form Work. The design and engineering of the form work, as well as the construction, shall be the responsibility of the Contractor. The Engineer's approval of form work design and/or drawings, as submitted or as corrected in no way shall relieve the Contractor of his responsibility for adequately constructing and maintaining the forms so that they will function properly.

Forms, form joints, and reinforcing steel placement shall be checked by the Resident Engineer before closing up the forms. Concrete shall not be placed in any form until the placing of steel and erection of form work have been completed and approved in the completed state by the Resident Engineer. Immediately after completion of pouring, tops of all forms shall be adjusted to line and approved by the Resident Engineer as to conformity with the tolerances specified herein.

1.20 EXPANSION OR CONTRACTION JOINTS

1.20.1 General. Where required, joints shall be provided at the location indicated on the drawings and according to the details shown, or as otherwise approved. The methods and materials used shall be subject to approval and the materials shall conform to the specification applicable. In no case shall any fixed metal, embedded in concrete be continuous through an expansion or contraction joint, except as specifically detailed in the drawings.

1.20.2 Expansion Joint Filler. At all expansion joints shown on the drawings, a premolded joint filler of the thickness specified, shall be provided to prevent bond between and allow for the expansion and contraction of adjacent parts. The filler material shall be of sufficient length and width, and shall be accurately cut, matched and placed to prevent contact of the concrete in the parts of the structure to be separated.

Preformed expansion joint filler shall conform to the requirements of ASTM Specification D 1752, Type I, Type II or Type III, unless bituminous type is specified.

Bituminous type preformed expansion joint filler shall conform to the requirements of ASTM Specification D 994.

1.20.3 Asphalt-Treated Roofing Felt. Two layers of heavy, smooth surface asphalt-treated roofing felt, approximate weight 55 pounds per 100 square feet, shall be placed at expansion joints, as shown on the drawings.

1.20.4 Waterstops. Where required, waterstops shall be installed in joints as shown on the drawings or as otherwise directed to provide a continuous water-tight diaphragm in the joint. All joints in metal waterstops shall be brazed or welded. Joints in rubber and plastic waterstops shall be cemented, fused, or vulcanized as recommended by the manufacturer. Adequate provisions shall be made to support and completely protect the waterstops during progress of the work. The Contractor shall replace or repair, at his own expense, any waterstops punctured, ruptured, or otherwise damaged before final acceptance of the work.

Copper used for waterstops shall conform to ASTM Designation: B-248.

Steel used for waterstops shall conform to ASTM Designation: A-366 or ASTM Designation: A-93.

Wrought iron used for waterstops shall conform to ASTM Designation: A-162 or ASTM Designation: A-163.

Plastic material used for waterstops shall conform to ASTM Designation: D-742.

The rubber water stop material shall meet the following physical requirements when and if tested, in accordance with the appropriate sections of Federal Test Method Standard No. 601, ASTM Designation: D-395, and ASTM Designation: D-1432.

Hardness. The Shore A durometer hardness shall be 60 to 70.

Elongation. The elongation shall be a minimum of 400 percent.

Tensile Strength. The tensile strength shall be a minimum of 2,500 pounds per square inch.

Water Absorption. The water absorption shall be a maximum of 5 percent by weight after immersion in water for two (2) days at 158°F.

Tensile Strength After Aging. The tensile strength after accelerated aging for five (5) days at 158°F., shall not be less than 80 percent of the original tensile strength.

Compression Set. The compression set after 22 hours at 158°F., shall not be more than 30 percent.

Specific Gravity. The specific gravity shall be 1.20 plus or minus .05.

1.20.5 Dowel Bar Assembly. Where required, dowel bar assembly shall be installed at the expansion joints as shown on the drawings. The dowel bars shall be plain, smooth steel bars of the size specified on the drawings and shall conform to ASTM Designation: A-15. An expansion sleeve shall be provided on one end of each dowel bar. The sleeve shall be metal of an approved type, crimped or capped on one end, and provided a minimum of three inch (3") length of covering of the dowel bar with a minimum of three-quarters (3/4) of an inch expansion chamber beyond the end of the dowel bar. The portion of the dowel bar on the expansion sleeve side of the joint shall be coated with a heavy grease to prevent bond between the bar and the concrete. The dowel bar assembly shall be securely held in place by use of metal dowel chairs at each intersection of a dowel bar and spacer bar. The dowel bars shall be installed on proper horizontal and longitudinal alignment to assure a workable expansion device. The premolded joint filler at these expansion joints shall be held in a true vertical plane by means of a header board. The header board shall remain in place for a minimum of thirty (30) minutes after the concrete has been placed on one side or until the concrete has set sufficiently to prevent sloughing, before the header is removed and the work of placing concrete continued.

1.21 FURNISHING AND PLACING STEEL REINFORCEMENT

The furnishing and placing of reinforcing steel, when specified, is covered in a separate technical specifications.

1.22 EMBEDDED ITEMS

1.22.1 General. Before placing concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings or required by the Engineer. All embedded items shall be thoroughly clean and free of oil and other foreign matter such as loose coatings, of rust, paint, and scale. The embedding of wood or other perishable materials in concrete shall be prohibited unless specifically directed or authorized by the Engineer. Any air lines, water lines, wall sleeves, or other materials embedded in structures, as construction expedients authorized by the Engineer, shall conform to the above requirements and, upon completion of their use, shall be backfilled with concrete or grout as directed by the Engineer.

1.22.2 Pipe Embedded in Concrete. Where pipe is partially or wholly encased in concrete, care shall be taken that the pipe is firmly and securely held in place so that the alignment and grade of the pipe is not disturbed while the concrete is placed around the pipe.

1.23 CONSTRUCTION

Concrete work shall be performed in accordance with these specifications on concrete. The vertical surfaces of the cradle, expansion and contraction joints shall be formed. The cradle shall be poured with the pipe in place and to line and grade. Construction joints that are used shall conform with the requirements of paragraph 16. Expansion and contraction joints shall conform with requirements of paragraph 20.

1.24 SEALING JOINTS IN CONCRETE AND CONCRETE PIPE

1.24.1 General. This specification covers the requirements for sealing or filling joints in concrete pipe and concrete structures where expansion joint material is not used.

1.24.2 Type. The sealing compound shall be a cold- application mastic, single component or multiple component type.

The single component type shall be a ready-mixed nondrying compound furnished in troweling consistency or in preformed rope or strip form.

The multiple component type shall be composed of two or more substances that are to be mixed prior to application.

1.24.3 Quality. Sealing compound shall conform to the requirements of one of the following specifications:

ASTM Specification D 1850; Concrete Joint Sealer, Cold- Application Type. Penetration, determined as specified in ASTM D 1850, shall be not greater than 120.

Federal Specification SS-S-00210; Sealing Compound, Preformed Plastic, for Expansion Joints and Pipe Joints.

Federal Specification TT-S-227; Sealing Compound; Rubber base, Two Component (For Caulking, Sealing and Glazing in Building Construction), Type II.

1.24.4 Application. The compound will be applied using manufacturer's instructions to joints identified in the plans or as otherwise required in accordance with good construction practices.

1.25 MEASUREMENT AND PAYMENT

Payment will be based on one of the following criteria as specified and described in the Contract Bid Item Descriptions and on the Drawings:

- A. Cost shall be included in the work to which it is subsidiary and no separate measurement and payment will be made.
- B. Payment will be based on Plan Quantities or a percentage of concrete installed to complete the structure as computed by the Engineer or as shown on the Drawings.

Payment as specified above shall be considered as full compensation for all labor, materials, equipment and incidentals necessary to perform the work as required.

Payment for concrete placed outside the lines shown on the drawings due to over excavation or Contractor error will not be made. Where extra concrete is authorized by the Engineer in writing, payment will be made at a price agreed upon by the Contractor and the Engineer.

SECTION 03002

CONCRETE REINFORCEMENT

1.0 GENERAL

1.1. DESCRIPTION OF WORK

This specification covers furnishing, cutting, bending, handling, and placing of steel reinforcement for all reinforced cast-in-place concrete included in this Contract.

1.2. CODES AND STANDARDS

The provisions of the following codes, specifications, and standards latest editions shall apply:

- (1) American Concrete Institute, ACI-315, "Manual of Standard Practice for Detailing Reinforced Concrete Structures."
- (2) American Concrete Institute, ACI-318, "Building Code Requirements for Reinforced Concrete."
- (3) Concrete Reinforcing Steel Institute, "Placing Reinforcing Bars."

1.3. SUBMITTALS

1.3.1. Shop Drawings. Within 15 days after award of the Contract, the Contractor shall prepare and submit to the Engineer for review complete shop drawings in accordance with Section 1A of these Specifications. The Contractor shall not allow delivery of the reinforcing steel to the job site until a review of the shop drawings has been completed by the Engineer. Shop drawings shall include the following:

- (1) Reinforcement bar schedules complete with the quantity, shape and size, dimensions, weight per foot and total weights, and bending details.
- (2) Details of bar supports including types, sizes, and support spacing and sequence.
- (3) Plan and elevation views detailing reinforcing placement.
- (4) Location and arrangement of accessories.
- (5) All details and notes appearing on the Drawings.

1.3.2. Mill Tests. Mill tests of reinforcement shall be submitted prior to use for each 15 tons or less shipped to the job site. Tests shall be conducted in conformance with ASTM A-615, and the methods described therein. Cost of the test shall be borne by the Contractor. Three (3) copies of each test report shall be submitted to the Engineer. The bars shall be properly tagged so as to permit identification of the heat number shown on the mill test report for any and all steel delivered to the Work.

2.0 MATERIALS

2.1. REINFORCING STEEL BARS

All bar reinforcement shall be new billet steel deformed bars of American manufacture conforming to ASTM Designation: A-615, Grade 60. Bars shall be plainly marked showing size, type and grade in accordance with these Specifications.

2.2. BAR SUPPORTS

Bar supports shall conform to ACI-3125.

2.3. WIRE TIES

Ties shall be 16-gage or heavier black annealed wire.

2.4. OTHER MATERIALS

All other materials, not specifically described but required for proper completion of concrete reinforcement, shall be as selected by the Contractor subject to the approval of the Engineer.

2.5. REJECTION OF MATERIALS

Reinforcement with any of the following defects will not be permitted in the Work:

- (1) Bar lengths, depth and bends exceeding the specified fabrication tolerances.
- (2) Bends or kinks not indicated on the Drawings or Shop Drawings.
- (3) Bars with reduced cross-section due to excessive rusting or other cause.

3.0 EXECUTION

3.1. BENDING

Reinforcing bars may be mill or field bent. No bars partially embedded in the concrete shall be field bent. All bends shall be made in compliance with requirements of the American Concrete Institute Standard 315 and by approved machine methods except as noted otherwise on the drawings. All bends shall be made without heating.

3.2. HANDLING AND PROTECTION

3.2.1. Protection. The Contractor shall use all means necessary to protect concrete reinforcement before, during, and after installation and to protect the installed work.

3.2.2. Storage. Steel reinforcement shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected, as far as practicable, from mechanical injury, surface deterioration caused by conditions producing rust, and fouling with dirt, grease and other bond breaking coatings.

3.2.3. Identification. All necessary precautions to maintain identification of bars after bundles are broken shall be exercised.

3.3. PLACING

3.3.1. Surface Coatings. All reinforcement shall be free from dirt, oil, grease, paint, mill scale, loose or thick rust, or other coating which might destroy or reduce its bond with the concrete when the surrounding concrete is placed.

3.3.2. Bracing Reinforcement. All reinforcement shall be placed in accordance with the Drawings and shall be held so securely in position by wiring and blocking from the forms and by wiring together at intersections that it will not be displaced during the depositing and compacting of the concrete. Tack welding of bars will not be permitted.

3.4. SPLICES

3.4.1. General. All splices in reinforcement shall be as shown on the Drawings or as directed by the Engineer. Unless otherwise specified on the Drawings, by statement or scaled distance, splices shall overlap at least 40 times the diameter of the smaller bar but not less than 12 inches.

3.4.2. Method of Splicing. Splice by lapping ends, placing bars in contact, and tightly wire tying.

3.4.3. Splices in Adjacent Bars. Alternate sides for splices of horizontal reinforcing bars in the riser.

3.5. OPENINGS

3.5.1. Amount of Reinforcement Removed. Where reinforcing bars must be field cut to allow for thimbles, manholes and other required openings, the amount of steel removed shall be the absolute minimum necessary to provide the opening and maintain the minimum concrete cover as required.

3.5.2. Additional Reinforcement for Cracking. All openings shall be reinforced against potential cracking by placing No. 5 bars or other size bars designated in the Drawings in both faces normal to the plane of cracking. The bars shall not be less than 3'-0" in length, except where otherwise shown on the Drawings, and shall be placed inside the main reinforcement and tied to the main reinforcement.

3.5.3. Supplemental Reinforcement. Where reinforcing bars are removed to provide an opening, supplemental reinforcement shall be provided in the direction of the bars removed. This reinforcement shall have a minimum area of the total bars removed, and shall extend at least 18 inches past the edges of the opening, unless shown otherwise in the Drawings.

3.6. TOLERANCES

3.6.1. Minimum Cover. The minimum cover for all main reinforcement shall conform to the dimensions shown on the Drawings which will indicate the clear distance from the edge of the reinforcement to the concrete surface.

3.6.2. Allowable Tolerances. The following tolerances will be allowed in the placement of reinforcing bars as shown on the Drawings:

(1) Variation in protective cover

1/4 inch for 2.5-inch cover

1/2 inch for 4-inch cover

(2) Variation of spacing

1/12 of indicated spacing

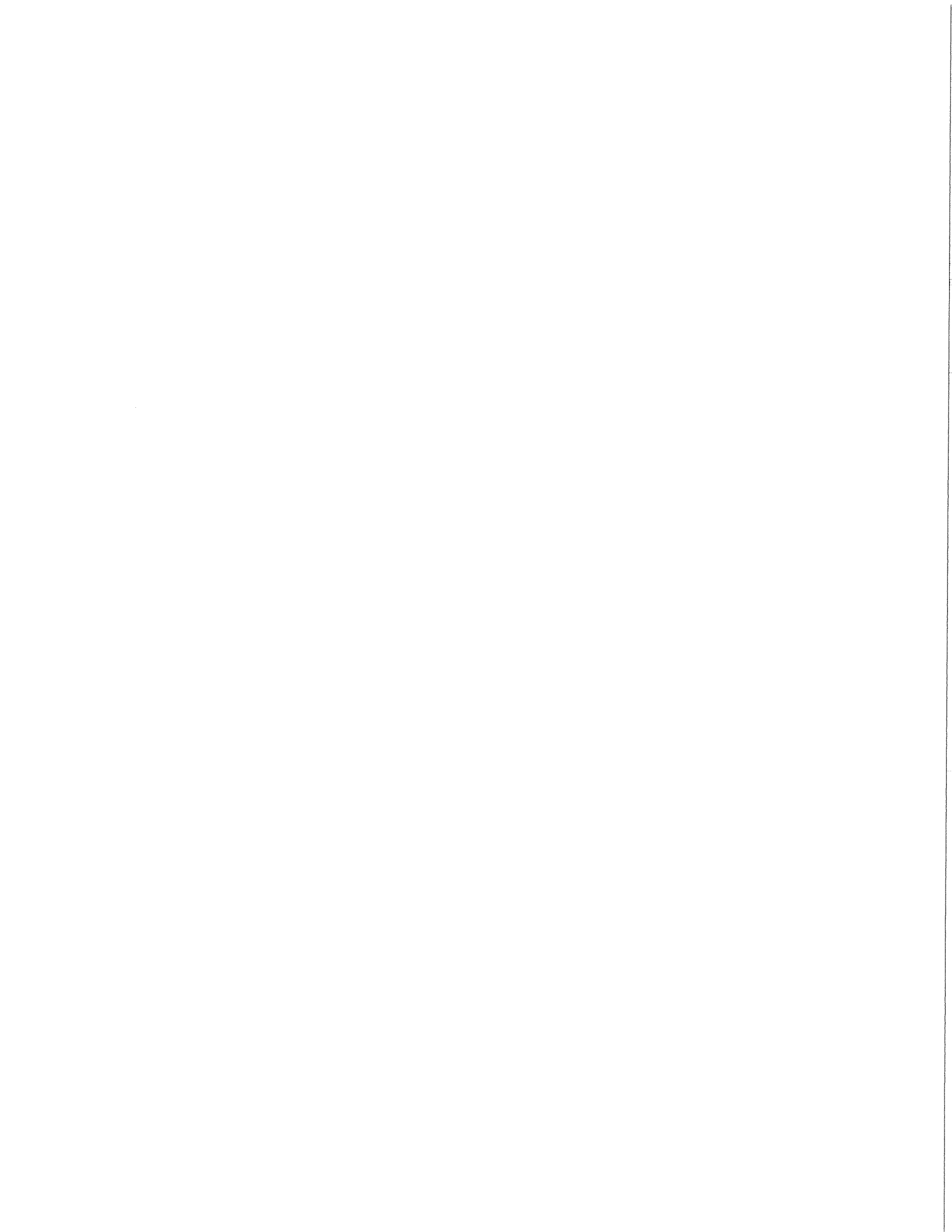
3.7. INSPECTIONS

3.7.1. Notice. The Engineer or his representative shall have 24 hours notice and the opportunity to inspect and approve the placement of reinforcing steel before concrete is placed.

3.7.2. Purpose. Such inspections are in the nature of assisting the Contractor to minimize errors, and in no case will they relieve the Contractor of his responsibility to provide the materials and workmanship required by the Contract Documents.

4.0 MEASUREMENT AND PAYMENT

No direct measurement or payment will be made for any concrete reinforcing. Payment shall be included in the payment for the work to which it is subsidiary in the Bid Schedule.



SECTION 03003

CONCRETE FINISHES

1.0 GENERAL

These specifications are supplemental to the "Concrete" section and provide additional instructions to the requirements therein.

2.0 CONCRETE FINISHES (except floors)

Hardened concrete surfaces shall be finished in accordance with this section of the specifications and the instructions in the "Concrete" section. The various types of finishes described shall be applied as per the schedule shown in the "Special Provisions" section of the specifications.

2.1 TYPES

Type I - All holes left by removal of ends of ties, and all other holes, depressions or voids shall be filled solid with mortar after first being thoroughly wetted. Holes shall be filled with a small tool that will permit packing the hole solidly with mortar. Mortar shall consist of one part cement to three parts sand, and the amount of mixing water shall be as little as consistent with the requirements of handling and placing. Color of mortar shall match the adjacent wall surface.

Type II - After completing the Type I finish specified above, the Contractor shall also remove all fins, burrs and other projections left by the removed forms.

Type III - This finish shall be applied after the completion of the Type II finish. A smooth, uniform surface shall be obtained using the "carborundum-rub" finish which shall consist of the following procedure: Surfaces shall be rubbed with a carborundum stone to eliminate irregularities. Unless the nature of the irregularities require it, the general surface of the concrete shall not be cut into. Bulging or protruding areas, which result from slipping or deflecting forms shall be ground flush or chipped out and re-dressed as directed by the Engineer. Brush finishing or painting with grout or neat cement will not be permitted. Corners and edges shall be slightly rounded by the use of the carborundum stone. No rubbing shall be done before the concrete is seven (7) days old or until the concrete is thoroughly hardened and the mortar used for patching is firmly set.

3.0 CONCRETE FLOOR FINISHES

The finish of all floors and slabs shall be as described below, by types, and further outlined on the final pages in this section of the Specifications. Listed below are descriptions of the various type finishes.

3.1 TYPE "A" SCREEDED - This finish shall be obtained by placing screeds at frequent intervals and striking off to the surface elevation required. Unless otherwise stipulated, this type of finish shall be used on slabs over which quarry tile, ceramic tile, terrazzo, bituminous mixtures, grout swept in by mechanism, or similar type wearing surface is subsequently to be applied.

TYPE "B" WOOD FLOATED - This type of integral finish shall be obtained by working a previously screeded surface with a wood float until the desired texture is reached. Unless otherwise stipulated, this type finish shall be used for exterior paved areas, sidewalks, ramps and steps. Care shall be taken to prevent the formation of laitance and excess water on the finished surface.

TYPE "C" STEEL TROWELED - This type of integral floor finish shall be obtained by first screeding and then giving a preliminary wood float finish which shall be true, even and free from depressions.

After this operation, and when the concrete has hardened sufficiently to prevent excess fine material from working to the surface, the surface shall be compacted and smoothed with not less than two thorough and complete steel troweling operations. The finish shall be brought to a smooth, dense surface, free from defects and blemishes. In areas that are to be covered with resilient flooring, one complete steel trowling operation will be sufficient.

TYPE "D" SWEPT-IN GROUT TOPPING - This finish shall be applied to certain tank floors as specified. Grout topping shall be placed and spread on a previously screeded and hardened concrete slab. Before placing the grout, the surface shall be properly cleaned, washed, and coated with a mixture of water and Portland Cement. The grout shall then be plowed and swept into neat conformance with the blades or arms of the apparatus by turning or rotating the previously positioned mechanical equipment. Special attention is to be paid to true grades, shapes and tolerances as specified by the manufacturer of the equipment. Before beginning this finish, the Contractor shall notify the Engineer and the equipment manufacturer of the details of the operation, and obtain approval and recommendations, respectively, before commencing work.

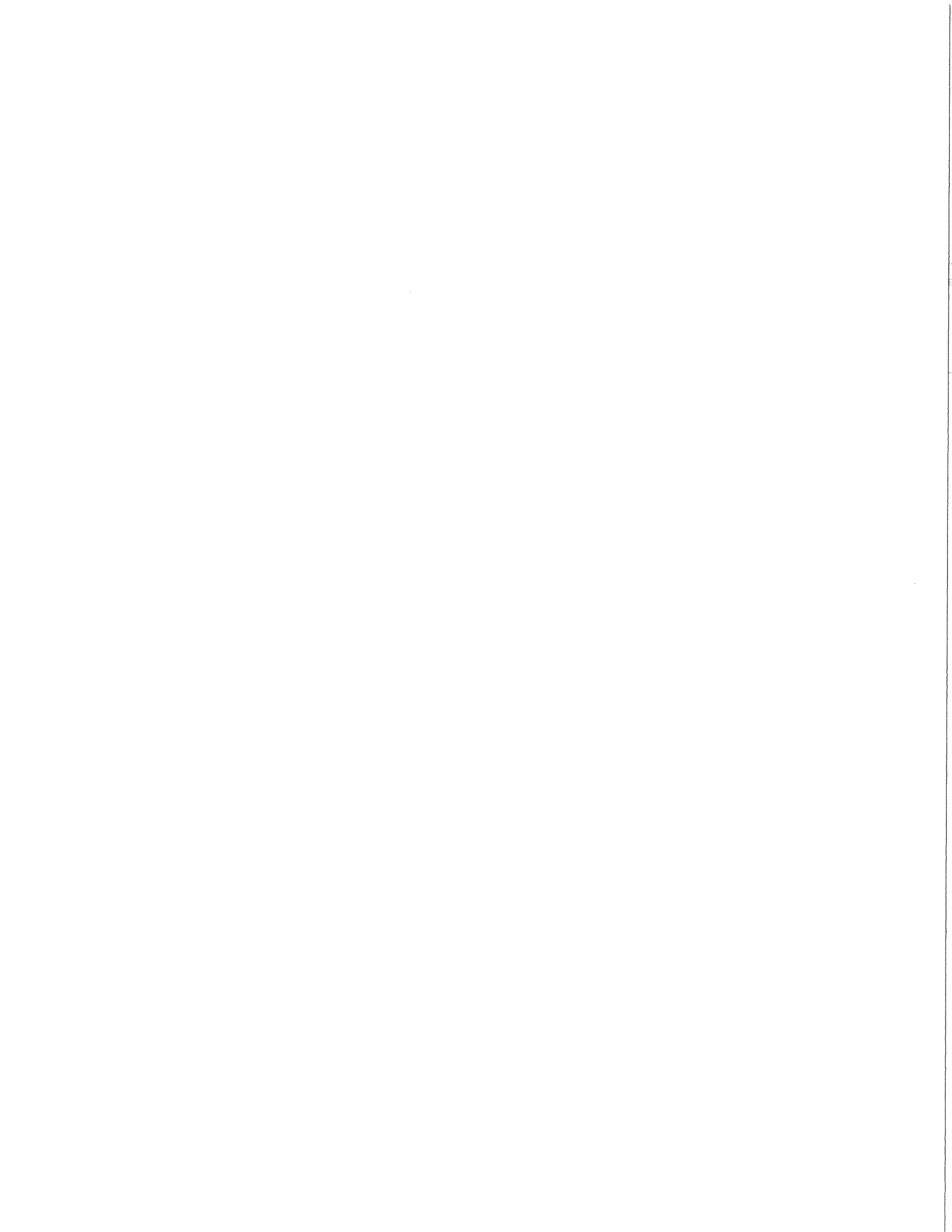
TYPE "E" HARDENED FINISH - Floor surfaces requiring a hardened finish shall receive a concrete hardener of a type scheduled on the final pages of this section. Concrete hardeners shall be either a liquid applied to the floor surface or a metallic compound which is troweled into the floor surface and made integral

with the floor. All concrete hardeners shall be applied in strict conformance with the manufacturer's directions and instructions.

TYPE "F" COLOR FINISH - Coloring agents shall be a product of an experienced manufacturer and shall be applied in complete accordance with the manufacturer's instructions. Colors and make will be specified on the final pages of this section, if their use is required.

4.0 PAYMENT

No separate payment will be made for this item. Cost for this work shall be included in the bid for work to which it is subsidiary.



SECTION 05002

ANCHOR BOLTS AND EXPANSION ANCHORS

1.0 SCOPE

This section covers cast-in-place anchor bolts and expansion anchors to be installed in hardened concrete.

The General Equipment Stipulations set forth additional requirements for anchor bolts for equipment.

2.0 GENERAL

Unless otherwise specified or indicated on the drawings, all anchor bolts shall be cast-in-place bolts and shall have a minimum 3/4 inch diameter. Anchor bolts and expansion anchors for buried and immersion service and in splash zones shall be galvanized or zinc plated. All other anchor bolts and expansion anchors shall be carbon steel unless otherwise specified or indicated on the drawings.

3.0 MATERIALS

Bolts and Nuts

Carbon Steel ASTM A307.

Stainless Steel IFI-104, Grade 303 or 305.

Galvanized Steel Carbon steel bolts and nuts; hot-dip galvanized ASTM A153 and A385, or zinc plated ASTM A164 Type GS.

Flat Washers ANSI B18.22.1; of the same material as bolts and nuts.

Expansion Anchors

For Concrete Fed Spec FF-S-325; wedge type, Group II, Type 4, Class 1 or 2; self-drilling type, Group III, Type 1; or nondrilling type, Group VIII, Type 1 or 2; Phillips, Hilti, Rawlplug, USM< or Wej-It.

4.0 ANCHOR BOLTS

Anchor bolts shall be delivered in time to permit setting when structural concrete is placed. Anchor bolts which are cast-in-place in concrete shall be provided with sufficient threads to permit a nut to be installed on the concrete side of the concrete form or supporting template.

Two nuts, a jam nut, and washer shall be furnished for anchor bolts indicated on the drawings to have lock nuts; two nuts and a washer shall be furnished for all other anchor bolts.

5.0 EXPANSION ANCHORS

Expansion anchors shall be installed in conformity with the manufacturer's recommendations for maximum holding power, but in no case shall the depth of hole be less than four bolt hole diameters. Minimum distance between the center of any expansion anchor and an edge or exterior corner of concrete shall be at least 4-1/2 times the diameter of the hole in which the anchor is installed. Unless otherwise indicated on the drawings, the minimum distance between the centers of expansion anchors shall be at least 8 times the diameter of the hole in which the anchors are installed.

Nuts and washers for expansion anchors shall be as specified for anchor bolts.

6.0 PAYMENT

No separate payment will be made for any anchors. Cost for these items shall be included in the items to which they are subsidiary in the Bid Schedule and no measurement of the quantities will be made.

SECTION 05003

MISCELLANEOUS METALS

1.0 GENERAL

The Contractor shall furnish all labor, materials, equipment and services necessary for fabrication and erection of all miscellaneous steel angles, beams, plates and channels as shown on the Drawings and specified herein and not specifically included under other sections of these Specifications.

2.0 APPLICABLE STANDARDS

In the absence of other instructions, all work under this section shall be governed by the latest edition of:

SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION
OF STRUCTURAL STEEL FOR BUILDINGS - American Institute of
Steel Construction.

All welding shall conform to the latest code of the American Welding Society.

3.0 SUBMITTALS

Shop drawings, giving complete information necessary for fabrication, layout and installation of all metal work, shall be submitted to the Engineer for approval prior to fabrication.

The preparation of shop drawings for fabricated metal items shall be coordinated by the Contractor with the manufacturers of various equipment in order to comply with details, locations, openings, etc. required by the manufacturers.

Field measurements shall be made to verify all dimensions in the field which may affect installation of work before shop drawings are made and/or fabrication is performed.

4.0 STRUCTURAL STEEL

Steel shall conform to the requirements of ASTM A 36.

5.0 ANCHORAGE ITEMS

The Contractor shall furnish all bolts, nuts, shims, pins, screws, straps, nails and other anchors, which may be required by the Drawings or job conditions, to

secure all items permanently in place, whether or not specifically called for or shown on the Drawings.

6.0 FABRICATION AND INSTALLATION OF METAL WORK

All metal items shall be accurately fabricated and erected with exposed joints close fitting. All joints shall be of such character and so assembled that they will be as strong and rigid as adjoining sections. Joints shall be located where least conspicuous. Items shall have smooth finished surfaces except where otherwise shown or specified.

Where welding is required or permitted, it shall conform to the requirements for shielding metal arc welding of the Standard Code for Arc and Gas Welding in Building Construction of the American Welding Society. Shop drawings shall show welding and shall indicate the size, length, spacing and type of welds. Joints required to be welded shall be continuously welded or spot welded as specified and face of welds dressed flush and smooth where exposed to view.

Members or parts to be built in with masonry or concrete shall be in a form affording a suitable anchorage or shall be provided with approved anchors, expansion shields or other approved means of securing members.

Ferrous and non-ferrous metals shall be insulated at all contacts with felt washers, strips or sheets, bitumastic paints, or other approved means.

6.1 All required anchors, couplings, bolts, and nuts required to support miscellaneous metal work shall be furnished and installed as required.

6.2 Weights of connections and accessories shall be adequate to safely sustain and withstand stresses and strains to which they will be normally subjected.

6.3 Connections shall be bolted except where welding is called for in the Drawings. Bolts shall be 3/4 inch diameter unless noted or required otherwise.

6.4 Accurately place all miscellaneous metal items in the locations and to the required elevations.

6.5 Adequately brace any items which are cast in concrete masonry work.

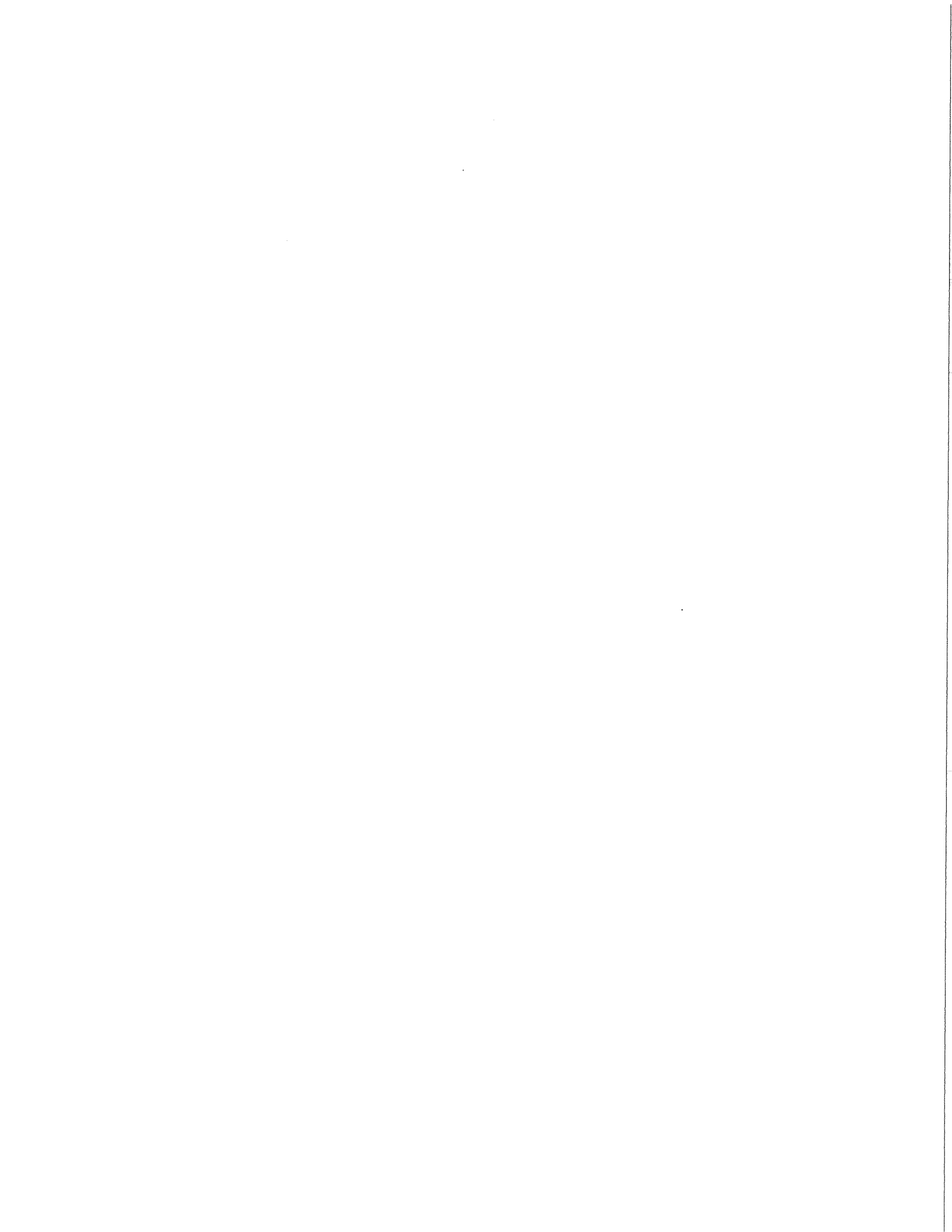
6.6 Use concealed anchors wherever possible.

7.0 CLEANING

Remove and properly dispose of all debris and litter; leave the work area in a clean condition.

8.0 PAYMENT

No separate payment will be made for any of the miscellaneous metal items covered by this specification. Cost for these items shall be included in the items to which they are subsidiary in the Bid Schedule and no measurement of the quantities will be made.



SECTION 05004

LADDERS

1.0 GENERAL

1.1 DESCRIPTION OF WORK

A. This section of the specifications shall include the furnishing of all materials, equipment and other labor necessary for the complete installation of Ladders as shown on the Contract Drawings.

1.2 PAYMENT

A. No separate payment will be made for ladders. Cost for this work shall be included in the work to which it is subsidiary.

1.3 QUALITY ASSURANCE

A. All ladders furnished and installed shall comply with all OSHA requirements.

B. Acceptable Manufacturers

1. Permac-Paragon, Inc.
2. Cotterman Co.
3. Approved Equal

1.4 SUBMITTALS

A. Refer to the General Specifications of the Contract Documents.

B. Shop Drawings

1. Shop Drawings shall include fabrication, assembly, foundation and installation drawings along with detailed specifications and data covering materials, parts and accessories used.
2. Shop Drawings shall include recommendations for maintenance and cleaning methods and precautions for use of materials which may be detrimental to finishes when improperly applied.

C. Certificates

1. The ladder manufacturer shall submit signed certificates of compliance that all fabrication and materials used meet, or exceed, all requirements of Paragraph 1.03 of this section.

D. Samples

1. Submit duplicate samples of side frames and rungs showing finish.

2.0 PRODUCTS

2.1 GENERAL

- A. All ladders shall be fixed, permanently, unless noted otherwise on the Contract Drawings.
- B. Materials of construction shall be as shown on the Contract Drawings.
- C. Ladder style, standard or walk-thru, shall be as shown on the Contract Drawings.
- D. Spacing between rungs shall not exceed 12 inches. Rungs shall be a minimum of 16 inches long. Spacing between ladder and wall shall not be less than 7 inches.
- E. Walk-thru ladders shall extend a minimum of 42" above the last rung. Safety chains shall be provided.
- F. Standard ladders shall extend to within 6" of the access openings.

2.2 MATERIALS

A. Carbon Steel

- 1. Side frame members shall be 1" minimum diameter, schedule 40 pipe and receive one coat of red oxide primer.
- 2. Side frames shall be 1/4" x 2" x 2" minimum angle iron and receive one coat of red oxide primer.
- 3. Rungs shall be 3/4" minimum diameter, schedule 40 pipe and shall be welded to side frames.

4. All metal surfaces shall receive one shop applied rust inhibitive prime coat.

B. Stainless Steel

1. Side frame members and rungs shall be 1" minimum diameter, schedule 40, type 304, grade ASTM A544 stainless steel with a 320 grit finish, and rungs shall be welded to the side frame members.

C. Aluminum

1. Aluminum shall be 6061-T6.

2. Side frame members shall be 3" x 2 1/2" minimum I-beams with a clear anodized finish.

3. Rungs shall be 1" minimum diameter bar aluminum, and shall be securely anchored to the side frames.

D. Plastic

1. Rungs shall be injection molded plastic, minimum 5" width and have an integral non-skid finish. Rungs shall be installed with the top surface level, with stainless steel hardware.

E. Mounting Hardware

1. Stainless steel ladders shall have type 304 stainless steel welded flanges with electropolished finish. Bolted flanges shall be cast bronze with chrome plated finish.

2. Carbon steel ladders shall have steel flanges and supports, either welded or bolted securely to the side frames.

3. Aluminum ladders shall have aluminum hardware.

3.0 EXECUTION

3.1 DELIVERY AND STORAGE

A. All deliveries and shipments shall be accompanied by a shipping list, bill of lading and invoice which describes all items in the lot. All items shall be inspected and marked as listed on the invoice.

- B. Store all materials on clean surfaces and protect from weather. Leave protective coatings intact until materials have been accepted and installed.
- C. The Contractor shall be responsible for carefully handling all materials during fabrication, storing, loading, transit, unloading, storage at the site and during installation.

3.2 INSTALLATION

- A. All ladders shall be installed in accordance with the manufacturer's written instructions, maintaining side frames in plumb position and the rungs level and parallel.
- B. Side frames used for hand railings shall be free of sharp edges, splinters or burs and afford an adequate gripping surface.
- C. Anchor and secure all ladders to insure a safe system.

3.3 ADJUSTMENT AND CLEANING

A. Final Adjustment

- 1. Remove and replace any defective materials or workmanship including dented or bent materials.

B. Cleaning and Touch-up

- 1. Wash thoroughly with clean water and soap, and rinse with clean water.
- 2. Any damaged areas of finish shall be touched up in accordance with the manufacturer's written instructions for eliminating all evidence of repair.

SECTION 13001

GLASS COATED, BOLTED STEEL WATER STORAGE TANK

1.0 GENERAL

1.1 SCOPE OF WORK

1.1.1 Furnish and erect a glass-coated, bolted-steel water storage tank, including foundation, tank structure and tank appurtenances as shown on the contract drawings and described herein.

1.1.2 All required labor, materials and equipment shall be included.

1.2 QUALIFICATIONS OF TANK SUPPLIER

1.2.1 The Engineer's selection of factory applied glass-fused-to-steel bolt together tank construction for this facility has been predicated upon the design criteria, construction methods specified, and optimum coating for resistance to internal and external tank surface corrosion. Deviations from the specified design, construction or coating details, will not be permitted.

1.2.2 The bidder shall offer a new tank structure as supplied from a manufacturer specializing in the design, fabrication and erection of factory applied glass-fused-to-steel, bolt together tank systems.

1.2.3 The tank shall be equal to 34' dia. x 30' ht. Aquastore Tank System as manufactured by A.O. Smith Harvestore Products, Inc. of Barrington, Illinois.

1.2.4 Alternate glass-fused-to-steel tank products, as provided by other manufacturers, will be considered for approval by the Engineer. Manufacturers lacking the experience requirement will be considered, if the manufacturer provides a satisfactory 5-year 100% Performance Bond in lieu of evidence of experience and long term operation.

1.2.5 Strict adherence to the standards of design; fabrication; erection; product quality; and long term (30 year minimum) performance, established in this Specification will be required by the Owner and Engineer.

1.2.6 Tank suppliers shall submit the following to the Engineer/Owner with their bid:

- a. typical structure and foundation drawing(s);

- b. list of tank materials, appurtenances and tank coating specs;
- c. list of five (5) tanks presently in potable water service, of size and character specified herein, operating satisfactorily for a minimum of five (5) years.

1.2.7 The Engineer reserves the right to evaluate all bids based on long term (30 year minimum) operation, coating and maintenance costs. Values to be used in this evaluation will be at the discretion of the Engineer, as detailed in this specification and bid tabulation form.

1.3 SUBMITTAL DRAWINGS AND SPECIFICATIONS

1.3.1 Construction shall be governed by the Owner's drawings and specifications showing general dimensions and construction details after written approval by the Engineer of detailed erection drawings prepared by the tank bidder. There shall be no deviation from the drawings and specifications, except upon written order from the Engineer.

1.3.2 The bidder is required to furnish, for the approval of the Engineer and at no increase in contract price, 5 sets of complete specifications and construction drawings for all work not shown in complete detail on the bidding drawings. A complete set of structural calculations shall be provided for the tank structure and foundation. All such submissions shall be stamped by a Registered Professional Engineer licensed in the state of project location, as well as, by a Registered Professional Engineer employed on the tank manufacturer's engineering staff.

1.3.3 When approved, one set of such prints and submittal information will be returned to the bidder marked "APPROVED FOR CONSTRUCTION" and these drawings will then govern for the work detailed thereon. The approval by the Engineer of the tank supplier's drawings shall be an approval relating only to their general conformity with the bidding drawings and specifications and shall not guarantee detail dimensions and quantities.

1.3.4 The tank manufacturer's erection manual shall be included with submittal information.

1.3.5 The tank manufacturer's standard published warranty shall be included with submittal information.

2.0 DESIGN CRITERIA

2.1 TANK SIZE

2.1.1 The factory coated glass-fused-to-steel, bolt together tank shall have a nominal diameter of 34 feet, with a sidewall height (to roof eave) of 30 feet.

2.2 TANK CAPACITY

2.2.1 Tank capacity shall be 200,000 gallons (nominal, U.S. gallons).

2.3 FLOOR ELEVATION

2.3.1 Finished floor elevation shall be set at Elevation 1122.0.

2.4 TANK DESIGN STANDARDS

2.4.1 The materials, design, fabrication and erection of the bolt together tank shall conform to the AWWA Standard for "Factory-Coated Bolted Steel Tanks For Water Storage" - ANSI/AWWA D103, latest revision.

2.4.2 The tank coating system shall conform solely to Section 10.4 of ANSI/AWWA D103.

2.4.3 The tank shall be certified and listed by the National Sanitation Foundation (NSF) to meet ANSI/NSF Additives Standard No. 61.

2.5 DESIGN LOADS

Specific Gravity	1.0
Wind Force	100 mph
Shape Factor	0.6
Allowable Soil	
Bearing Capacity	See Geotechnical Investigation
Roof Live Load	25 psf
Earthquake Seismic	
Zone	2 AWWA D103
a.	AWWA Pseudo
Dynamic	_____ (Check a or b)
b.	AWWA D103 Fixed
Percentage	<u>X</u>

3.0 **MATERIALS SPECIFICATIONS**

3.1 PLATES AND SHEETS

3.1.1 Plates and sheets used in the construction of the tank shell, tank floor (optional) or tank roof, shall comply with the minimum standards of AWWA D103, Section 2.4.

3.1.2 Design requirements for mild strength steel shall be ASTM A570 Grade 30 with a maximum allowable tensile stress of 15,000 psi.

3.1.3 Design requirements for high strength steel shall be ASTM A607 Grade 50 with a maximum allowable tensile stress of 26,000 psi.

3.1.4 The annealing effect created from the glass coated firing process shall be considered in determining ultimate steel strength. In no event shall a yield strength greater than 50,000 psi be utilized for calculations detailed in AWWA D103, Sections 3.4 and 3.5.

3.1.5 Multiple vertical bolt line sheets of ASTM A607 Grade 50 only shall be manufactured such that holes are staggered in the vertical bolt lines, and that no adjoining holes are in line horizontally, except at the center of the sheet or plate.

3.2 ROLLED STRUCTURAL SHAPES

3.2.1 Material shall conform to minimum standards of ASTM A36 or AISI 1010.

3.3 HORIZONTAL WIND STIFFENERS

3.3.1 Design requirements for intermediate horizontal wind stiffeners shall be of the "web truss" design.

3.3.2 Web truss stiffeners shall be of steel with hot dipped galvanized coating.

3.3.3 Rolled steel angle stiffeners are not permitted for intermediate stiffeners.

3.4 BOLT FASTENERS

3.4.1 Bolts used in tank lap joints shall be 1/2 - 13 UNC-2A rolled thread, and shall meet the minimum requirements of AWWA D103, Section 2.2.

3.4.2 Bolt Material:

A. SAE Grade 2

1. Tensile Strength - 74,000 psi Min.
2. Proof Load - 55,000 psi Min.
3. Allowable shear stress - 18,164 psi (AWWA D103)

B. SAE Grade 8/ASTM A325 heat-treated to:

1. Tensile Strength - 150,000 psi Min.
2. Proof Load - 120,000 psi Min.
3. Allowable shear stress - 36,818 psi (AWWA D103)

3.4.3 Bolt Finish - Zinc Plate

- a. .0003" Min - under bolt head
- b. .0003" Min - on shank
- c. .0005" to .0007" - on last five threads
- d. Iridite #3 bronze color coat

3.4.4 Bolt Head Encapsulation

- a. High impact co-polymer encapsulation of entire bolt head up to the splines on the shank;
- b. Natural resin only, no color ingredients to be added such that color should appear translucent white.

3.4.5 All bolts shall be installed such that the head portion is located inside the tank, and the washer and nut are on the exterior.

3.4.6 All lap joint bolts shall be properly selected such that threaded portions will not be exposed in the "shear plane" between tank sheets. Also, bolt lengths shall be sized as to achieve a neat and uniform appearance. Excessive threads extending beyond the nut after torquing will not be permitted.

3.4.7 All lap joint bolts shall include a minimum of four (4) splines on the underside of the bolt head at the shank in order to resist rotation during torquing.

3.5 SEALANTS

3.5.1 The lap joint sealant shall be a one component, moisture cured, polyurethane compound. The sealant shall be suitable for contact with potable water and meet applicable FDA Title 21 regulations, as well as, ANSI/NSF Additives Standard 61.

3.5.2 The sealant shall be used to seal lap joints, bolt connections and sheet edges. The sealant shall cure to a rubber-like consistency, have excellent adhesion to the glass coating, have low shrinkage, and be suitable for interior and exterior exposure.

3.5.3 The sealant shall be manually applied from cartridges at ambient temperatures between 20 and 110°F.

3.5.4 Sealant curing rate at 73°F/50%RH

- a. Tack-free time: 6 to 8 hours;
- b. Final cure time: 5 to 8 days.

3.5.5 The sealant shall be Harvestore Products, Inc. System Sealer No. 79.

3.5.6 Neoprene gaskets and tape type sealer shall not be used.

4.0 GLASS COATING SPECIFICATIONS

4.1 SURFACE PREPARATION

4.1.1 Following the decoiling and shearing process, sheets shall be steel grit-blasted on both sides to the equivalent of SSPC-10. Sand blasting and chemical pickling of steel sheets is not acceptable.

4.1.2 The surface anchor pattern shall be not less than 1.0 mills.

4.1.3 These sheets shall be evenly oiled on both sides to protect them from corrosion during fabrication.

4.2 CLEANING

4.2.1 After fabrication and prior to application of the coating system, all sheets shall be thoroughly cleaned by a caustic wash and hot rinse process followed immediately by hot air drying.

4.2.2 Inspection of the sheets shall be made for traces of foreign matter or rust. Any such sheets shall be re-cleaned or grit-blasted to an acceptable level of quality.

4.3 COATING

4.3.1 All sheets shall receive one coat of a glass precoat to both sides and then air dried.

4.3.2 A final coat to both sides of the sheets, of cobalt glass frit, shall be made.

4.3.3 The sheets shall then be fired at a minimum temperature of 1500°F in strict accordance with the manufacturer's quality process control procedures, including firing time, furnace humidity, temperature control, etc.

4.3.4 Minimum dry coating thickness shall be 6.0 mils. The finished inside color shall be cobalt blue. The finished outside color may be other than cobalt blue as specified, but the color shall be fired over a cobalt blue base.

4.4 INSPECTION

4.4.1 All coated sheets shall be inspected for mil thickness (Mikrotest or equal).

4.4.2 All coated sheets shall be checked for color uniformity by an electronic colorimeter.

4.4.3 An electrical leak detection test shall be performed on the inside surface after fabrication of the sheet. Sheets with excessive electrical leakers shall be rejected so as to minimize field touch up (See Sec. 5.3.4).

4.4.4 An owner representative may be present during these inspection procedures.

4.5 PACKAGING

4.5.1 All approved sheets shall be protected from damage prior to packing for shipment.

4.5.2 Heavy paper or plastic foam sheets shall be placed between each panel to eliminate sheet-to-sheet abrasion during shipment.

4.5.3 Individual stacks of panels will be wrapped in heavy mil black plastic and steel banded to special wood pallets built to the roll-radius of the tank panels. This procedure eliminates contact or movement of finished panels during shipment.

4.5.4 Shipment from the factory to the jobsite will be by truck, hauling the tank components exclusively.

5.0 **ERECTION**

5.1 FOUNDATION

5.1.1 The tank foundation is a part of this contract and shall be installed by the tank Contractor.

The Contractor shall submit to the Engineer for approval the dimensions, layout, details, and recommended design of the foundation and footings for the proposed storage tank. A subsurface investigation has been performed by American Engineers, Inc., Glasgow, Kentucky, and the indicated results of these investigations are included at the end of the Detailed Specifications and Drawings. The Owner does not guarantee that materials other than those disclosed by the borings will not be encountered nor that the proportions of the various materials encountered will not vary from those indicated by the borings. The Contractor may, at his option and expense, undertake such additional subsurface explorations as he may deem necessary to insure a proper foundation design.

Concrete foundations from the top of the foundation to a depth of six inches below grade shall be formed with removable forms. From six inches below grade and downward, the foundations may be formed using the sides of the excavation. Concrete shall be Class "A" in accord with Section 03001. Reinforcing steel shall conform to Section 03002.

The tops of all foundations shall be level and plane within one-quarter inch.

The prepared foundation shall be protected and kept dry until the floor of the tank is in place.

All areas that have been disturbed by construction or noted to be cleared on the Drawings shall be cleared of underbrush and graded in a uniform and neat manner leaving the lot in a shape as near possible to the contours as shown on the construction drawings. All graded areas shall be left smooth and shall be sown with grasses as specified in other portions of these Specifications.

Upon the completion of all construction of tank and tank foundations, the Contractor shall remove all debris and surplus construction material resulting from the work.

5.1.2 The tank foundation shall be designed by the manufacturer to safely sustain the structure and its live loads.

5.1.3 Tank footing design shall be based on the soil bearing capacity as determined by geotechnical analysis performed by a licensed soils engineer. The cost of this investigation and analysis are not to be included in the bid price. A geotechnical investigation has been done and the results of that investigation are included in the Plans and Specifications.

5.2 CONCRETE TANK FLOOR

5.2.1 Concrete Tank Floor

5.2.1.1 The floor design is of reinforced concrete with an embedded glass coated steel starter sheet per the manufacturer's design.

5.2.1.2 Leveling of the starter ring shall be required and the maximum differential elevation within the ring shall not exceed one-eighth (1/8) inch, nor exceed one-sixteenth (1/16) inch within any ten (10) feet of length.

5.2.1.3 A leveling plate assembly (per Harvestore Products, Inc. - U.S. Patent No. 4,483,607), consisting of two 18" anchor rods (3/4" dia.) and a slotted plate (3 1/2" x 11" x 3/8" thk) shall be used to secure the starter ring, prior to encasement in concrete. Installation of the starter ring on concrete blocks or bricks, using shims for adjustment, is not permitted.

5.2.1.4 Two watershed seals made of a butyl rubber elastomer special for this application shall be placed on the inside surface of the starter ring below the concrete floor line. These materials shall be installed as specified by the tank manufacturer.

5.3 SIDEWALL STRUCTURE

5.3.1 Field erection of the glass-coated, bolted-steel tank shall be in strict accordance with the procedures outlined in the manufacturer's erection manual, and performed by an authorized dealer of the tank manufacturer, regularly engaged in erection of these tanks.

5.3.2 Specialized erection jacks and building equipment developed and supplied by the manufacturer shall be used to erect the tanks.

5.3.3 Particular care shall be taken, in handling and bolting of the tank panels and members to avoid abrasion of the coating system. Prior to liquid test, all surface areas shall be visually inspected by the Engineer.

5.3.4 An electrical leak test shall be performed during erection using a nine (9) volt leak detection device. All electrical leak points found on the inside surface shall be repaired in accordance with manufacturer's published touch up procedure.

5.3.5 The placement of sealant on each panel may be inspected prior to placement of adjacent panels. However, the Engineer's inspection shall not relieve the bidder from his responsibility for liquid tightness.

5.3.6 No backfill shall be placed against the tank sidewall without prior written approval and design review of the tank manufacturer. Any backfill shall be placed according to the strict instructions of the tank manufacturer.

5.4 ROOF

5.4.1 14 to 31 ft. diameter tanks shall include a radially sectioned roof fabricated from glass-coated, bolted steel panels, as produced by the tank manufacturer, and shall be assembled in a similar manner as the sidewall panels utilizing the same sealant and bolting techniques, so as to assure a water/air tight assembly. The roof shall be clear-span and self-supporting. Both live and dead loads shall be carried by the tank walls. The exterior coating finish shall include a white glass fired over the cobalt blue glass. The manufacturer shall furnish a roof opening which shall be placed near the outside tank ladder and which shall be provided with a hinged cover and a hasp for locking. The opening shall have a clear dimension of at least twenty-four (24") inches in one direction and fifteen (15") inches in the other direction. The opening shall have a curb at least four (4") inches in height, and the cover shall have a downward overlap of at least

two (2") inches, or a gasketed weather-tight cover in lieu of the four (4") inch curb and two (2") inch overlap.

5.4.2 Roofs for tanks greater than 31 ft. diameter shall be constructed of non-corrugated triangular aluminum panels which are sealed and firmly clamped in an interlocking manner to a fully triangulated aluminum space truss system of wide flange extrusions, thus forming a spherical dome structure.

5.4.2.1 The dome shall be clear-span and designed to be self-supporting from the periphery structure with primary horizontal thrust contained by an integral tension ring. The dome dead weight shall not exceed 3 pounds per square foot of surface area.

5.4.2.2 The dome and tank shall be designed to act as an integral unit. The tank shall be designed to support an aluminum dome roof including all specified live loads.

5.4.2.3 Materials:

1. triangulated space truss: 6061-T6 aluminum struts and gussets;
2. triangular closure panels: .050"t 3003-H16 aluminum sheet;
3. tension ring: 6061-T6 aluminum
4. fasteners: 7075-T73 anodized aluminum or series 300 stainless steel;
5. sealant and gaskets: silicone rubber;
6. dormers, doors, vents and hatches: 6061-T6, 5086-H34 or 3003-H16 aluminum.

5.4.2.4 Supplier shall be TEMCOR of Torrance, California.

5.4.3 Roof Vent

5.4.3.1 A properly sized vent assembly in accordance with AWWA D103 shall be furnished and installed above the maximum water level of sufficient capacity so that at maximum possible rate of water fill or withdrawal, the resulting interior pressure or vacuum will not exceed 0.5" water column; the maximum inlet rate is 1000 gpm; the maximum withdrawal rate is 5000 gpm.

5.4.3.2 The overflow pipe shall not be considered to be a tank vent;

5.4.3.3 The vent shall be constructed of aluminum;

5.4.3.4 The vent shall be so designed in construction as to prevent the entrance of insects, birds and/or animals by including a 24 mesh polyester monofilament screens.

5.5 APPURTENANCES (PER AWWA D103, SECTION 5)

5.5.1 Pipe connections

5.5.1.1 Where pipe connections are shown to pass through tank panels, they shall be field located, saw cut, (acetylene torch cutting or welding is not permitted), and utilize an interior and exterior flange assembly. Harvestore Systems Sealer No. 79 shall be applied on any cut panel edges or bolt connections.

5.5.1.2 Overflow piping shall be twelve (12") inches diameter stainless steel. The overflow pipe shall extend down the outside of the tank and terminate at least ten feet (10') from the edge of the foundation. A 24 mesh non-corrodible screen and flap valve shall be installed on the end of the overflow pipe.

5.5.2 Outside tank ladder

5.5.2.1 An outside tank ladder shall be furnished and installed as shown on the contract drawings.

5.5.2.2 Rest platforms shall be provided at intervals of 30 feet on tanks and standpipes with heights greater than 30 feet.

5.5.2.3 Ladders shall be fabricated of aluminum and utilize grooved, skid-resistant rungs.

5.5.2.4 Safety cage and step-off platforms shall be fabricated of galvanized steel.

5.5.3 Access doors

5.5.3.1 One (1) bottom access door shall be provided as shown on the contract drawings in accordance with AWWA D-103.

5.5.3.2 Such door shall be a minimum of 24 inches in diameter, shall include a properly designed reinforcing frame and cover plate, and provide a hinged opening mechanism for cover opening.

5.5.4 Identification Plate

A manufacturer's nameplate shall list the tank serial number, tank diameter and height, maximum design capacity, intended storage use, and date of installation. The nameplate shall be affixed to the tank exterior sidewall at a location approximately five feet (5') from grade elevation in a position of unobstructed view.

5.5.5 Cathodic Protection is required.

5.5.5.1 The responsibility for determining the need for, the design of and specifications for cathodic protection of the tank shall be the responsibility of the Engineer or Owner.

5.5.5.2 Attachment of rectifier boxes, anodes, or wiring to tank structure shall be approved by tank manufacturer.

5.5.5.3 When cathodic protection is specified, electrical continuity between all tank sidewall or floor panels shall be the responsibility of the tank manufacturer.

6.0 FIELD TESTING

6.1 HYDROSTATIC

6.1.1 Following completion of erection and cleaning of the tank, the structure shall be tested for liquid tightness by filling tank to its overflow elevation.

6.1.2 Any leaks disclosed by this test shall be corrected by the erector in accordance with the manufacturer's recommendations.

6.1.3 Water required for testing shall be furnished by the Contractor. The rates for water used shall be the regular monthly rates charged by the Utility. Disposal of test water shall be the responsibility of the Contractor.

6.1.4 Labor and equipment necessary for tank testing is to be included in the price of the tank.

7.0 DISINFECTION

7.1 STANDARDS

7.1.1 The tank structure shall be disinfected at the time of testing by chlorination in accordance with AWWA Specifications C652 "Disinfection of Water Storage Facilities".

7.1.2 Disinfection shall not take place until tank sealant is fully cured (5 to 8 days at 73 F/50%RH).

7.1.3 Acceptable forms of chlorine for disinfection shall be:

- a. Liquid chlorine as specified in AWWA C652.
- b. Sodium hypochlorite as specified in AWWA C652.
- c. Calcium hypochlorite (HTH) is not acceptable.

7.1.4 Acceptable methods of chlorination per AWWA C652:

- a. Section 4.1.1
- b. Section 4.1.2 - chemical feed pump only (4.1.2.1)
- c. Section 4.3

7.1.5 Section 4.2 is not acceptable.

7.1.6 Water required for disinfection shall be supplied by the Contractor per Section 6.1.3 of this Specification.

8.0 WARRANTY

8.1 STRUCTURE

The warranty shall conform to Section 29 of the General Conditions.

8.2 GLASS COATING SYSTEM

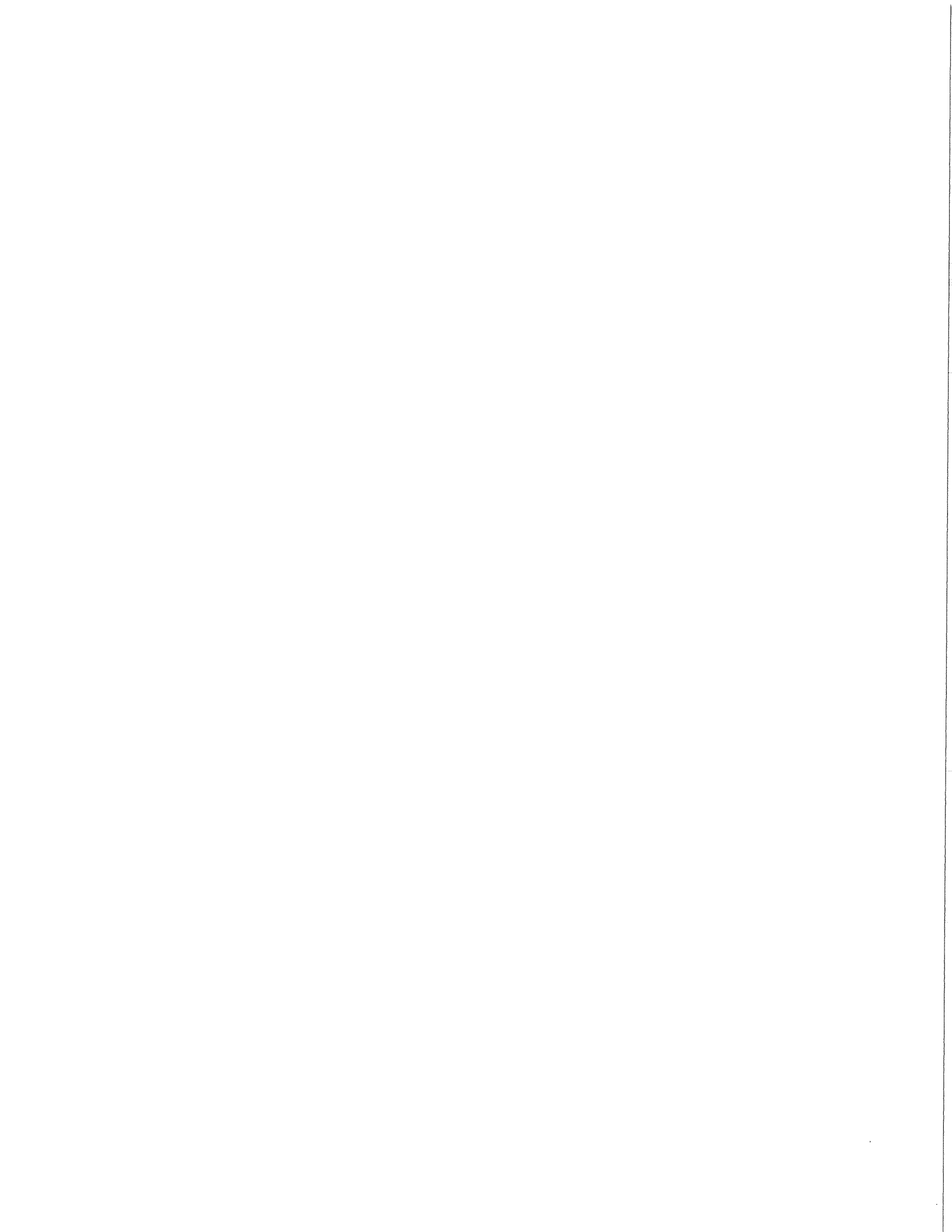
If within a period of five (5) years from date of completion of the tank, the coating on the tank chips, cracks, spalls, or under-cuts during normal water service, the Contractor shall replace the defective part or repair the defect. This warranty is in addition to the normal one year period warranty.

9.0 INSPECTION

On or near the one year anniversary date of initial tank use the manufacturer's authorized dealer shall make a visual inspection of the tank interior coating and appurtenances; tank exterior coating and appurtenances; and the immediate area surrounding the tank. A written summary of this inspection will be filed with the tank owner and the tank manufacturer.

10.0 PAYMENT

Payment for this item shall be as shown in the Bid Proposal.



SECTION 13010

WELDED STEEL STORAGE TANKS

1.0 SCOPE OF WORK, MATERIALS, AND INSTALLATION

1.1 WORK INCLUDED

Under this item, the Contractor shall furnish all labor, tools, materials and equipment to erect a storage tank for water as specified on the Plans and Bid Documents complete with foundation and appurtenances.

1.2 STANDARD WATER STORAGE TANK SPECIFICATIONS

The materials, design, fabrication and erection of the storage tank shall conform to current AWWA Standard for Welded Steel Tanks for Water Storage, "AWWA D100" of the American Water Works Association.

1.3 TANK

The tank shall be cylindrical above-ground metal type and of all-welded construction.

1.4 GENERAL INFORMATION

Information to be furnished by Purchaser for a storage tank, as outlined in Part IV of the Foreword, AWWA D100, is made a part of this specification, and is as follows:

- a. The tank shall be nominal 200,000 gallon capacity with dimensions of 34 feet in diameter and height of 30 feet.
- b. The roof shall be of low cone design, with a minimum slope of 3/4 inches in 12 inches. The transition knuckle between the shell and roof shall be butt-welded plates, 1/4 inch thick minimum, curved to a radius of 3'-0" inches radial direction. The knuckle plates shall be formed to the tank radius in the circumferential direction.
- c. Earthquake Design. The tank shall be designed to withstand earthquake loading as specified in Section 3.1.5 of AWWA D100. The design percentages shall be based upon the tanks location as being in zone 2.
- d. Location. The tank shall be located as shown on the plans.

- e. The snow load design shall be a minimum of 25 lb./sq.ft.
- f. The tank shall be designed to withstand wind loads produced by a 100 mile per hour wind.
- g. Foundation Bearing. Subsurface investigation has been done at the tank site and that report is contained in the Appendix to these Specifications. Boring layout and logs are contained in the Drawings.
- h. Welds shall be inspected using radio-graphic methods as outlined in Section 11.4 of AWWA D100 specifications. The Contractor shall furnish a person experienced in radio-graphic inspection of welds to review and approve welds based upon the radio-graphs and who shall also submit a copy of the radio-graphs to the Engineer. The Contractor shall submit a Certification of Compliance statement to the Engineer as outlined in AWWA D100 specifications. Trepanned sections will not be allowed.
- i. Pipe connections shall be as shown on the Drawings.
- j. One 6-inch diameter steel overflow pipe, equipped with an anti-vortex entrance detail shall be provided. Overflow shall extend down the outside of the tank and terminate at least ten feet (10') from the edge of the foundation. A 24 mesh non-corrodible screen and flap valve shall be installed on the end of the overflow pipe.
- k. A removable silt stop extending 6 inches above the tank bottom shall be provided.
- l. The inlet/outlet pipe shall have a minimum of 3 feet of cover.
- m. All steel surfaces shall be cleaned by blasting (see painting of tank).
- n. The tank contractor shall provide the structural design of the tank and foundation and detailed drawings of the tank foundation and associated appurtenances. The design and drawings shall be stamped by a Professional Engineer registered in Kentucky.
- o. All seams shall be continuous weld.
- p. All primer coats and painting shall be done in the field after the required abrasive blasting. No factory shop primer will be accepted.

1.5 DRAWINGS

All tank construction shall be sufficient to meet the OSHA Standards. After the award of the contract, the Contractor shall furnish detailed plans of the structures, including detailed drawings for the foundations and valve vaults connected to the tank foundation. The shop drawings shall show the thickness of plate and other data in connection with the work, and shall be submitted to the Engineer for review, and said review must be completed before any work is commenced. Six (6) sets of the shop drawings and one (1) set of the design calculations shall be furnished. These Drawings and calculations shall be sealed by a Professional Engineer with registration in the State of Kentucky.

1.6 TANK FOUNDATION

The entire work area shall be stripped of all vegetation, roots, and boulders, and the area within which foundations are to be constructed shall be stripped of all top soil to a minimum of six inches deep and excavated until level within three inches. The entire leveled area shall be either in cut (that is original, undisturbed soil) or filled in layers not exceeding six inches in depth loose and compacted to 90% Modified Proctor. No filling to obtain grade shall be done without the Engineer's supervision.

The CONTRACTOR shall submit to the Engineer for approval the dimensions, layout, details, and recommended design of the foundation and footings for the proposed storage tank. A subsurface investigation has been done by American Engineers, Inc., Glasgow, Kentucky, and the indicated results of these investigations are included at the end of the Plans and Specifications. The Owner does not guarantee that materials other than those disclosed by the borings will not be encountered nor that the proportions of the various materials encountered will not vary from those indicated by the borings. The Contractor may, at his option and expense, undertake such additional subsurface explorations as he may deem necessary to insure a proper foundation design.

Concrete foundations from the top of the foundation to a depth of six inches below grade shall be formed with removable forms. From six inches below grade and downward, the foundations may be formed using the sides of the excavation. Concrete shall be Class "A" in accord with KTC Specification 601. Reinforcing steel shall conform to KTC Specification 811.

The tops of all foundations shall be level and plane within one-quarter inch.

On ground storage tanks, after all forms and loose materials have been removed from the interior of the retainer ring, a nine-inch layer of No. 57 crushed limestone or approved equal shall be placed and compacted. The remainder of the interior shall be filled and compacted flush with the retainer ring bearing surface with an oil-bearing sand as recommended and approved by the tank

manufacturer. This layer of oil-bearing sand shall be a minimum of six inches deep and mounted to the center. See the tank drawing for the delineation of the sand and crushed stone fill. If the ringwall is founded on rock, the interior of the retainer ring shall be filled with crushed stone from solid rock to the sand cushion.

On standpipes requiring solid concrete slab foundations for stability, the steel floor panels shall be placed on a two inch (2") compacted oil-bearing sand base or a one-half inch (1/2") fiberglass impregnated asphaltic plank liner.

The prepared foundation shall be protected and kept dry until the floor of the tank is in place.

All areas that have been disturbed by construction or noted to be cleared on the Drawings shall be cleared of underbrush and graded in a uniform and neat manner leaving the lot in a shape as near possible to the contours as shown on the construction drawings. All graded areas shall be left smooth and shall be sown with grasses as specified in other portions of these Specifications.

Upon the completion of all construction of tank and tank foundations, the Contractor shall remove all debris and surplus construction material resulting from the work.

1.7 STEEL STORAGE TANK

Each tank shall be furnished and erected in strict conformity with the current requirements of AWWA "Standard Specifications for Steel Tanks, Stand Pipes, Reservoirs and Elevated Tanks for Water Storage" latest revision. The tank shall be welded construction.

Each storage tank shall be fabricated, transported and erected on the prepared foundation, as shown on the plans and as specified herein. The steel tanks shall be of the volume and dimensions shown on the plans and shall have a conical roof with a three-quarter inch in twelve inch pitch. Bottom plates, shell plates and top plates shall be of the thickness required, but in no case shall be less than one fourth inch (1/4") in thickness.

A fixed ladder equipped with a safety cage shall be provided on the exterior of the tank, as shown on the plans. Rest platforms shall be provided at maximum intervals of 30 feet on tanks and standpipes with heights greater than 30 feet. Another ladder shall be provided on the inside of the tank extending from the manhole in the roof to the bottom of the tank. Inside ladders will not be required on most standpipes. See Drawings for specific requirements.

The tank shall be furnished with manholes, a vent and finial. A 24-inch diameter manhole shall be provided in the shell near the ground level. A second manhole

meeting the requirements of AWWA D100 (latest revision) shall also be installed. A roof hatch 24-inches square and covered, shall be located over the inside ladder in the roof and the second shall be located near the center of the roof in accordance with AWWA D100.

The roof vent shall be capable of reducing dangerous air pressures that could develop by the maximum flow of water either leaving or entering the tank. The maximum inlet rate is 1000 gpm. The maximum withdrawal rate is 5000 gpm. The vent and finial may be combined. The overflow pipe shall not be considered as a tank vent. The vent and finial shall be so designed as to prevent the ingress of birds, insects, and animals. All screening shall be corrosion resistant.

The storage tank shall be provided with an overflow as shown on the plans. The overflow shall be provided with a weir or funnel at the elevation of high water line. The overflow shall extend down the outside of the tank and discharge at least ten feet from the side of the tank. The outlet end of the overflow pipe shall be supplied with a noncorrodible screen and flap valve.

All hinges, hasps, float cable, float, pulleys for float cable, and similar items shall be stainless steel.

All tank construction shall be sufficient to meet the OSHA Standards. After the award of the contract, the Contractor shall furnish detailed plans of the structures, including detailed drawings for the foundations and valve vaults if different from that shown on the plans. The shop drawings shall show the thickness of plate and other data in connection with the work, and shall be submitted to the Engineer for review, and said review must be completed before any work is commenced. Six (6) sets of the shop drawings shall be furnished.

Before painting, the tank shall be filled with water furnished by the Contractor and tested according to the provisions contained in AWWA Standard D100 - latest revision. The Contractor shall furnish all materials, equipment and labor for conducting the tests.

After painting has been completed and allowed to dry in strict accordance with the paint manufacturer's recommendations, the tank shall be sterilized in accordance with the provisions specified herein.

1.8 WELDING

All welding shall be done by the electric shielded arc process, adaptable to welding in any direction on both sides of horizontal, vertical and inclined surfaces. The Contractor, before commencing work, shall submit proper witnessed certification that welding procedures for use in the structures and welding operators have been qualified in accordance with American Welding Society Standard Qualification Procedures. Surfaces to be welded shall be free

from rust, grease, paint and other foreign material. No welding shall be done when the temperature of the base metal is lower than 32°F.

2.0 CLEANING AND PAINTING

2.1 WORK INCLUDED

Provide all labor, materials, equipment and services required to do all painting including preparation, priming and protection of finished surfaces.

All paint, materials, and methods of cleaning to be used shall conform to the latest edition of AWWA D-102 and as specified herein.

2.2 QUALITY ASSURANCE

- A. All materials specified herein are manufactured by the Tnemec Co., Inc., North Kansas City, Missouri, or equal. These products are specified to establish standards of quality and are approved for use on this project.
- B. Equivalent materials of other manufacturers may be substituted on approval of the Engineer. Requests for substitution shall include manufacturer's literature for each product, given the name, generic type, descriptive information, and evidence of satisfactory past performance. **SUBMITTALS SHALL INCLUDE THE PERFORMANCE DATA AS CERTIFIED BY A QUALIFIED TESTING LABORATORY.**
- C. Bidders desiring to use coatings other than those specified shall submit their proposal in writing to the Engineer prior to surface preparation or application. Substitutions which decrease the film thickness, the number of coats applied, change the generic type of coating, or fail to meet the performance criteria of the specified materials will not be approved. Prime and finish coats of all surfaces shall be furnished by the same manufacturer.

2.3 EXPERIENCE

- A. The Contractor shall submit a list of not less than five (5) utility or industrial installations which he has painted during the last five (5) years. This list shall include the names of the Owners, the installations painted, responsible officials, architects or engineers of record for the project.
- B. Applicators and/or manufacturers whose submissions indicate, in the judgment of the Engineer, that they have not had the experiences required to perform the work will not be acceptable.

- C. Shortly after the award of the Contract, the Contractor shall submit experience records of the paint applicator and that of the paint manufacturer.
- D. All painting shall be done by qualified, skilled, experienced craftsmen. In the acceptance or rejection of completed painting, no allowance will be made for lack of skills on the part of the craftsmen.

2.4 PAINT LABELS

Labels on paint containers shall include the following:

1. Manufacturer's name.
2. Generic type of paint.
3. Manufacturer's stock number.
4. Color.
5. Instructions for thinning where applicable.

2.5 FIELD QUALITY CONTROL

Paint film thickness shall be subject to measurement by the Engineer with elecometer, wet film gauge, low or high voltage meter, and/or applicable measuring instruments acceptable to the Engineer. If dry film thickness is found to be less than specified, or coverage is not uniform, the Contractor shall apply additional paint to correct thickness or appearance at no additional cost to the Owner.

2.6 COMPATIBILITY

Where thinning is necessary, only the products of the manufacturer furnishing the paint, and products for thinning purposes only, will be allowed.

2.7 THICKNESS AND SPREADING RATES

- A. Minimum dry mil thickness per coat (MDMTPC) and/or spreading rates in square feet per gallon shall be governed by the manufacturer's current data sheets or literature containing recommendations or instructions regarding these values. These recommended dry mil thickness and/or spreading rate values will be considered requirements to be met same as if set out herein these Specifications and Contract Documents and must be included with material list submittals before Engineer grants approval to use any paint materials. Do not exceed manufacturer's recommended coverage rates.

- B. The number of coats to be applied are specified herein and shall govern. Where the total dry film thickness is specified, this thickness shall govern over the MDMTPC.

2.8 TECHNICAL SERVICES

The Contractor shall provide assurance that a qualified representative of the paint manufacturer makes periodic visits to the project site during painting to verify proper application procedures, quality and progress of work.

2.9 SUBMITTALS

- A. Submittals shall be as specified in the General Conditions.
- B. Before any materials are delivered to the job site, submit to the Engineer a complete list of all materials proposed to be furnished including quantities, types and descriptions of paint for each part of the project. Submit the following:
 - 1. Coating manufacturer's certificate for each coating proposed for use attesting that the coatings meet the specifications in this Section and are proper for the proposed application.
 - 2. Coating manufacturer's specifications and data sheets and application instructions for each coating proposed for use on the interior and exterior of the tank including the coating for the logo.
 - 3. Color chart for Engineer's selection of colors.
 - 4. Certificate of compliance to each product performance requirement.

2.10 PRODUCT DELIVER, STORAGE AND HANDLING

- A. The Contractor shall be responsible for the delivery, storage and handling of coating products.
- B. Deliver all materials to the job site in original, new and unopened packages and containers bearing manufacturer's name and label.
- C. Provide labels on each container with the following information:
 - 1. Name or title of material
 - 2. Manufacturer's stock number
 - 3. Manufacturer's name

4. Contents by volume, for major pigment and vehicle constituents.
 5. Expiration date after which the material should not be used.
 6. Thinning instructions
 7. Application instructions
 8. Batch numbers
- D. Store coating products in sealed and labeled containers. Properly store coatings to prevent degradation of the coating products. Do not use coating products which have been damaged during storage, which have not been applied prior to the applicable expiration date, or which do not otherwise comply with the specifications. Promptly remove damaged coating products from the job site.
- E. Restrict storage to coating materials and related equipment. Store materials in an area protected in accordance with NFPA Bulletin No. 101.
- F. Storage of material shall comply with manufacturer's recommendations; however, storage shall be at a minimum temperature of 50° degrees F.
- G. Product delivery, storage and handling shall meet the requirements of safety, health and fire regulations. Remove used rags from the job site and take all necessary steps to prevent spontaneous combustion.

2.11 JOB CONDITIONS

- A. The Contractor shall ascertain that job conditions are suitable for the application of coatings.
- B. The Contractor shall not operate valves or controls in the existing waterworks. The Owner will operate all existing valves, hydrants, blow-offs and controls.

2.12 PROTECTION

- A. Take all precautions necessary to prevent damage of adjoining properties due to coating work.
- B. Protect all surfaces which could be damaged in function or appearance by paint, including surfaces not being painted concurrently and surfaces not to be painted.
- C. Spray painting will not be permitted when it will cause damage to adjacent or otherwise located surfaces.

- D. Contractor shall be solely liable for damages to adjacent and/or surrounding items.

2.13 ACCEPTABLE MANUFACTURERS

- A. The paints listed are products of the Tnemec Co., Inc. (North Kansas City, MO) and are specified as a "standard of quality" only. Similar products and painting systems may be substituted subject to approval by the Engineer and subject to the provisions contained herein in Section 2.2 of this Specification.

2.14 PAINT SYSTEMS

A. GENERAL

1. All paints of a system shall be by one (1) manufacturer.
2. "Lift" tests may be requested by the Engineer on various surfaces to be painted to assure bonding compatibility.
3. Paints containing lead, or other "dangerous" materials, that surpass federal maximum levels shall not be allowed. Oil shall be pure boiled linseed oil.
4. All paints must be approved by AWWA for potable water service.

B. EXTERIOR COATINGS

1. Rustoleum Corporation or equal

Prime Coat: 1 coat-prime of Rustoleum 9360 primer to a D.F.T. of 3.0 to 5.0 mils. Color - Red.

Intermediate Coat: 1 coat of Rustoleum 9370 epoxy to a D.F.T. of 3.0 to 5.0 mils. Color - Beige.

Finish Coat: 1 coat of Rustoleum 9400 Polyurethane to a D.F.T. of 3.0 to 5.0 mils. Color - White.

2. TNEMEC Co. or equal

Prime Coat: 1 coat of TNEMEC Series 69 to D.F.T. of 3.0 to 5.0 mils. Color - Red.

Intermediate Coat: 1 coat of TNEMEC Series 69 to a D.F.T. of 3.0 to 5.0 mils. Color - Beige.

Finish Coat: 1 coat of TNEMEC Series 74 Polyurethane to a D.F.T. of 3.0 to 5.0 mils. Color – White.

3. Sherwin-Williams or equal

Prime Coat: 1 coat of Sherwin-Williams Macropoxy 646 to D.F.T. of 3.0 to 5.0 mils. Copoxy is an acceptable shop primer. Color – Red.

Intermediate Coat: 1 coat of Sherwin-Williams Macropoxy 646 to a D.F.T. of 3.0 to 5.0 mils. Color – Beige.

Finish Coat: 1 coat of Sherwin-Williams Acrolon 218HS or Hi-Solids Polyurethane to a D.F.T. of 3.0 to 5.0 mils. Color – White.

C. Interior Coatings

1. Rustoleum Corporation or equal

Prime Coat: 1 coat of Rustoleum 9200 Epoxy to a D.F.T. of 5.0 to 8.0 mils. Color – Red.

Intermediate Coat: 1 coat of Rustoleum 9200 Epoxy to a D.F.T. of 5.0 to 8.0 mils. Color - Beige

Finish Coat: 1 coat of Rustoleum 9200 White Epoxy to a D.F.T. of 5.0 to 8.0 mils. Color – White.

2. TNEMEC Co. or equal

Prime Coat: 1 coat of TNEMEC Pota-Pox Polyamide Primer 20-1255 to a D.F.T. of 5.0 to 8.0 mils. Color - Red.

Intermediate Coat: 1 coat of TNEMEC Pota-Pox Polyamide Primer 20-1255 to a D.F.T. of 5.0 to 8.0 mils. Color - Beige.

Finish Coat: 1 coat of TNEMEC Series 20-AA90 Pota-Pox Polyurethane to a D.F.T. of 5.0 to 8.0 mils. Color–White.

3. Sherwin-Williams or equal

Prime Coat: 1 coat of Sherwin-Williams Macropoxy 646 PW to a D.F.T. of 5.0 to 8.0 mils. Copoxy is an acceptable shop primer. Color – Red.

Intermediate Coat: 1 coat of Sherwin-Williams Macropoxy 646 PW to a D.F.T. of 5.0 to 8.0 mils. Color – Beige.

Finish Coat: 1 coat of Sherwin-Williams Macropoxy 646 PW to a D.F.T. of 5.0 to 8.0 mils. Color – White.

2.15 ABRASIVE

Abrasive shall be a non-metallic type of a grit size to produce the surface profile specified by the paint manufacturer for the coating system being applied or a minimum of 1.5-2.0 mils. It shall be a low silica abrasive with a free silica content less than 0.010%. It shall be properly stored and shall be free from contaminants. The Contractor shall provide verification of the quantity of abrasive delivered to the site.

2.16 SEALER

Sealer shall be a polyurathane type equivalent to SIKA-FLEX.

3.0 EXECUTION

The painter shall apply each coating at the rate and in the manner specified by the manufacturer. If material has thickened or must be diluted for application by spray gun, the coating shall be built up to the same film thickness achieved with undiluted material. Deficiencies in film thickness shall be corrected by the application of an additional coat of paint. Where thinning is necessary, only the products of the manufacturer furnishing the paint, and for the particular purpose, shall be allowed. All thinning shall be done strictly in accordance with the manufacturer's instructions, as well as with the full knowledge and approval of the Engineer. No paint shall be applied when the surrounding air temperature, as measured in the shade, is below 40°F. No paint shall be applied when the temperature of the surface to be painted is below 35°F. Paint shall not be applied to wet or damp surfaces, and shall not be applied in rain, snow, fog or mist, or when the relative humidity exceeds 85%. No paint shall be applied when it is expected that the relative humidity will exceed 85% or that the air temperature will drop below 40°F within 18 hours after the application of the paint. Dew or moisture condensation should be anticipated, and if such conditions are prevalent, painting shall be delayed until mid-morning to be certain that the surfaces are dry. Further, the day's painting should be completed well in advance of the probable time of day when condensation will occur, in order to permit the film an appreciable drying time prior to the formation of moisture.

The Contractor shall submit to the Engineer, immediately upon completion of the job, certification from the manufacturer indicating that the quantity of each coating purchased was sufficient to properly coat all surfaces. Such certification

shall make reference to the square footage figures provided to the manufacturer and the Engineer by the Contractor.

3.1 EXTERIOR TANK SURFACES

All Exterior painting shall conform to the latest revision of AWWA D-102. The steel surface shall be abrasive blasted in the field in accordance with the Steel Structures Painting Council Specifications SSPC-SP6 commercial blast cleaning.

The profile of the steel prepared for painting shall not exceed 2 mils.

Within eight (8) hours after the surface preparation, apply one (1) coat of Tnemec Series 65-1211 primer to a minimum dry film thickness of 3.0 to 3.5 mils. This coat shall be spray applied under constant agitation. This primer shall be as otherwise specified herein or an approved equal. Allow 12 hours for curing of the prime coat.

Prior to applying subsequent fieldcoats make sure all surfaces are clean and dry.

Apply one intermediate coat of TNEMEC Series 66 Epoxoline, or equal, to a dry film thickness of 2.0-3.0 mils.

Apply one finish coat of Tnemec Series 74 Endurashield, or equal, to a dry film thickness of 2.0-3.0 mils.

The total dry film thickness of the exterior coating system shall not be less than 7.0-9.5 mils.

3.2 INTERIOR TANK SURFACES

All interior painting shall conform to the latest revision of AWWA D-102. The steel surface shall be abrasive blasted in the field in accordance with the steel structures painting council specifications SSPC-SP10.

The profile of the steel prepared for painting shall not exceed 2 mils.

Within eight (8) hours after the surface preparation, apply one (1) field coat of Tnemec Series 20-1211 Potapox Red primer to a minimum dry film thickness of 3.0-5.0 mils. This primer shall be as otherwise specified herein or an approved equal. If more than one (1) coat is necessary to obtain the specified thickness, a second coat shall be tinted to contrast with the first coat to indicate coverage.

Apply one intermediate coat of Tnemec Series 20-1255 Potapox Beige, or equal, to a dry film thickness of 3.0-5.0 mils.

Prior to applying subsequent finish coat, make sure all surfaces are clean and dry.

Apply one finish coat of Themec Series 20-WHO2 Potapox white, or equal, to dry film thickness of 4.0-6.0 mils.

The total dry film thickness of the interior coating system shall not be less than 10-16 mils.

All weld seams shall receive an additional 5 mil roll coat.

After final coat has been applied on interior, provide continuous exhaust for 48 hours from the lowest portion of the tank, i.e., manway at bottom of tank, to provide a proper curing environment. The volume of air to be provided shall be equal to at least one exchange of air volume every two hours.

4.0 INSPECTION

The Owner reserves the right to engage an independent inspection or testing service to make mill, shop and field inspections as specified in Section 11 of American Water Works Association Standard Specifications for Steel Tanks, Standpipes, Reservoirs, and Elevated Tanks for Water Storage (D-100, latest revision).

On-site inspections will be made by the Engineer at various intervals during construction of the tank. The Contractor shall notify the Engineer a reasonable time in advance of any field sandblasting and painting so that surface preparation for painting may be inspected. After all painting has been completed, the total thickness of the paint film will be checked by the Engineer with an elcometer. If thicknesses of coatings are less than specified, additional coats of paint shall be applied as necessary to provide paint thicknesses within the limits of the specifications. The Contractor should also check paint thickness as the work progresses.

5.0 PAYMENT FOR WATER

All water used from the District's supply shall be metered by meters supplied by the Contractor. The rates for water shall be the regular monthly rates charged by the Utility. Disposal of water shall be the responsibility of the CONTRACTOR.

6.0 DISINFECTION

All water piping and storage tanks shall be thoroughly disinfected before being placed in service, by the use of chlorine or chlorine compounds in such amounts as to produce an initial concentration of at least 50 ppm and a residual of at least 25 ppm at the end of 24 hours followed by thorough flushing. If for some reason, the initial disinfection does not achieve at least 50 ppm, the process shall be repeated until said 25 ppm is obtained after 24 hours. All disinfection shall be

accomplished in accordance with AWWA C651 and C652 and in a manner satisfactory to the Engineer.

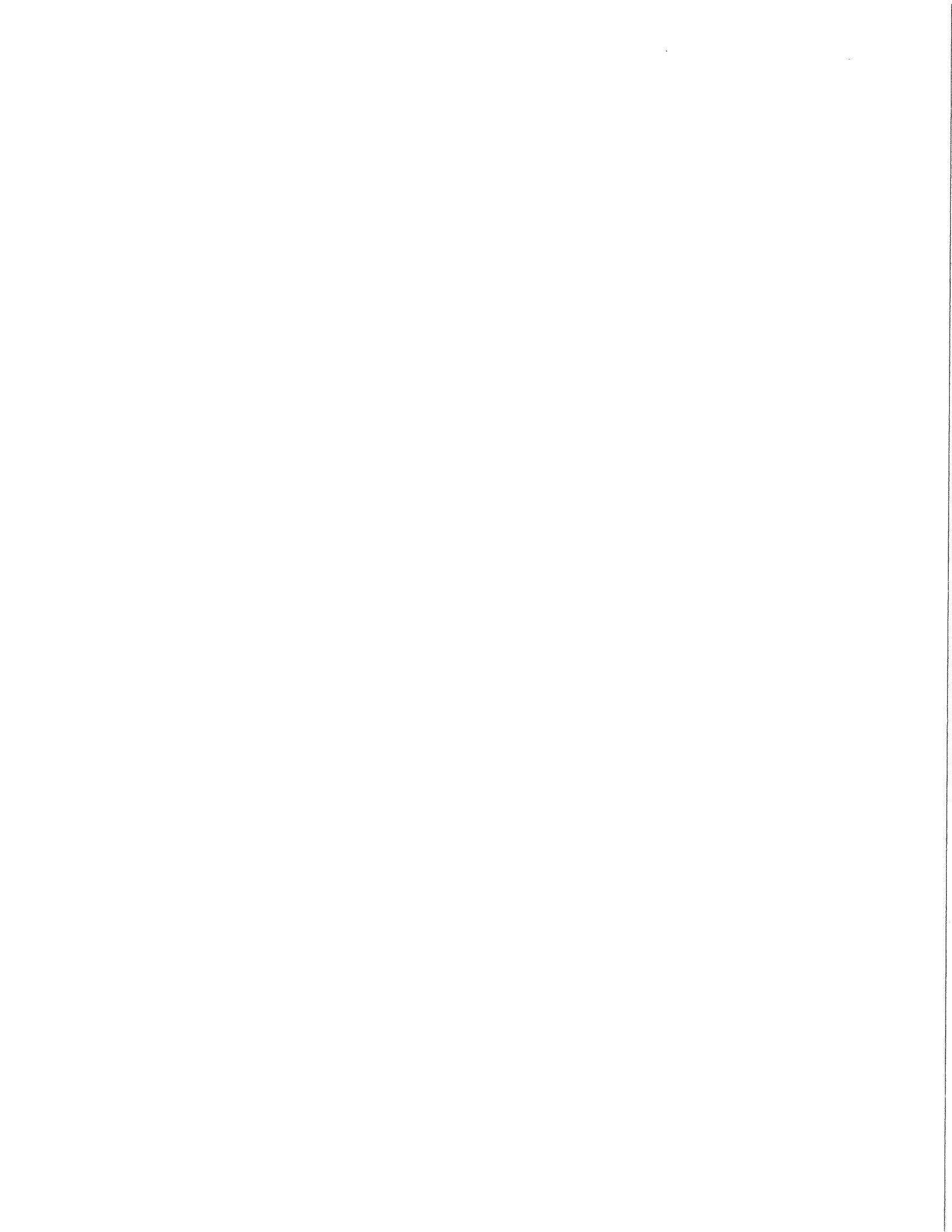
An alternative disinfection method for storage tanks involves the thorough spraying of a water solution containing 100 ppm of residual chlorine so as to cover the entire internal surface of the tank. This shall be accomplished three times over a period of 24 hours, followed by a thorough flushing with potable water.

7.0 DISPOSING OF HEAVILY CHLORINATED WATER

The environment into which the chlorinated water is to be discharged shall be inspected. If there is any possibility that the chlorinated discharge will cause damage to the environment, then a neutralizing chemical shall be applied to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water. (See Appendix B of ANSI/AWWA C651 for neutralizing chemicals.) Federal, state, provincial, and local regulatory agencies should be contacted to determine special provisions for the disposal of heavily chlorinated water.

8.0 PAYMENT

Payment for this item shall be as shown in the Bid Proposal.



SECTION 13104

YARD PIPING AND VALVES

1.0 GENERAL

1.1 SCOPE OF WORK

Provide all labor, materials, equipment and services required for furnishing and installing all yard piping and appurtenances specified herein.

2.0 PRODUCTS

2.1 DUCTILE IRON PIPE

Ductile iron pipe shall conform to AWWA C151, (ANSI A21.51), Class 350, with push-on or mechanical joints.

The interior of the pipe shall be cement-mortar lined with bituminous seal coat in accordance with AWWA C104 (ANSI A21.4). Thickness of the lining shall be set forth in Section 4.10.1 of the aforementioned specification unless otherwise directed by the Engineer. The exterior of all pipe, unless otherwise specified, shall receive either coal tar or asphalt base coating a minimum of 1 mil thick.

Each piece of pipe shall bear the manufacturer's name or trademark, the year in which it was produced and the letters "DI" or the word "DUCTILE". Pipe manufacturer shall furnish notarized certificate of compliance to the above AWWA or ANSI specifications.

Fittings shall be 350 psi rated (through 24" size) ductile iron in accordance with AWWA C110 (ANSI A 21.10) and shall conform to the details and dimensions shown therein. Fittings shall have mechanical joints meeting the requirements of AWWA C111 (ANSI A 21.11). Fittings shall have the same interior cement-mortar lining and exterior coating as specified for the pipe.

Joints shall be of the mechanical joint type conforming to AWWA C111 (ANSI A21-11). Mechanical joints shall be bolted and of the stuffing box type and shall consist of a bell, with exterior flange and interior recess for sealing gasket, a pipe or fitting plain end, a sealing gasket, a follower gland, tee-head bolts and hexagon nuts. Below floor slabs and on all high pressure lines, the mechanical joints shall also be fitted with retainer glands.

The cleaning and assembly of pipe and fitting joints shall be in accordance with the manufacturer's recommendations.

2.2 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

Polyvinyl chloride plastic pipe shall be Class 200 (SDR 21) pressure rated pipe. All PVC pipe shall conform to the latest revisions of the following:

ASTM Specification D2241

Department of Commerce PS22-70 (SDR-PR) (pressure rate pipe)

National Sanitation Foundation (NSF) Testing Laboratories

Standard Dimensional Ratio SDR-21 (200 psi)

Health Properties - The seal of the National Sanitation Foundation Testing Laboratory must appear on each pipe.

Cast or ductile iron mechanical joint or push-on type fittings shall be used with PVC pipe.

Adapters or specials shall be furnished, as required, to connect the plastic pipe to the cast iron mechanical joint valves, fittings and pipe.

Jointing material shall be non-toxic. Joints shall be amde with the use of rubber gasket couplings. Couplings shall be supplied with the pipe (not a pay item).

Pipe and fittings shall be visually inspected on the project site for proper markings which shall include manufacturer's name or trademark, nominal pipe size, class pressure rating for water at 73.4°F, plastic pipe material designation (e.g. PVC 1120), ASTM Designation D2241 and the NSF Logo.

2.3 POST HYDRANTS

Post hydrants shall be Dresser/M & H Style 133 or equal. Hydrants shall be 2-1/4" post type designed for 150 PSI working pressure. Hydrants shall have 3-9 inch mechanical joint bottom connection and 1-1/2" hose nozzle with cap and cap chain.

2.4 FIRE HYDRANTS

The Contractor shall furnish and install fire hydrants where shown on the Drawings or directed by the Engineer.

2.5 BUTTERFLY VALVES

Butterfly valves shall conform to the specifications of Section 13500 except be designed for buried service, have mechanical joint ends, have all exterior surfaces shop painted with two coats of Fed. Spec. TT-V-51F Asphalt Varnish, with 2-inch square AWWA Class 150B nut operator in a vertical position for use in a valve box.

2.6 GATE VALVES

Gate Valves shall conform to the specifications of Section 13500 except be designed for buried service, have mechanical joint ends, have all exterior surfaces shop painted with two coats of Fed. Spec. TT-V-51F Asphalt Varnish, with 2-inch square nut operator in a vertical position for use in a valve box.

2.7 FLAP VALVES

Flap valves shall be flanged (or other suitable connection for headwall mounting), iron body, bronze mounted, Mueller A-2540-6, M & H Style 47-02, Clow F-3012 or equal.

2.8 PLUG VALVES

Plug valves shall conform to the specifications of Section 13500 except be designed for buried service; have mechanical joint ends; have all exterior surfaces shop painted with two coats of Fed. Spec. TTV-51F Asphalt varnish, with 2-inch square nut operator in a vertical position for use in a valve box.

2.9 VALVE BOXES

Valve boxes shall be of 5-1/4 inch standard cast iron, two-piece, screw type valve box with drop cover marked "WATER", "SEWER", "DRAIN", as applicable. Valve boxes shall be accurately centered over valve operating nut, and backfill thoroughly tamped about them. Valve box bases shall not rest on the valves but shall be supported on crushed stone fill. They shall be set vertically and properly cut and/or adjusted so that the tops of boxes will be at grade in any paving, walk or road surface, and 2 to 3 inches above ground in grass plots, fields, woods or other open terrain. In grass areas, provide concrete pad around valve box; slightly crown in all directions to shed water.

3.0 **EXECUTION**

3.1 LINES AND GRADES

The CONTRACTOR will be required to accomplish any detailed layout, including that required for establishing the grade of the pipe line.

3.2 TRENCH EXCAVATION

3.2.1 General. The CONTRACTOR shall include in his bid, all trenching necessary for installation of all pipelines as planned and specified. Trenching shall include all clearing and grubbing, including all weeds, briars, small trees, stumps, etc. encountered in the trenching. The Contractor shall dispose of any such material by burning, burial, or hauling away (or as noted on the drawings),

at no extra cost to the Owner. It shall be the Contractor's responsibility to notify the appropriate State and local Air Pollution Control agencies when he conducts open burning of refuse.

The Contractor shall protect existing facilities against danger or damage while pipeline is being constructed and backfilled, or from damage due to settlement of this backfill. In case of damage to any existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structures will be in as good condition and serve its purpose as completely as before and such restoration and repair shall be done without extra cost to the Owner. The use of trench-digging machinery will be permitted except where its operations will cause damage to trees, buildings or existing structures above or below the ground. At such locations hand methods shall be employed to avoid such damage. All excavated material shall be piled in a manner that will not endanger the work or cause obstruction.

All excavation shall be open trenches, except where the drawings call for tunnelling, boring, or jacking under structures, railroads, sidewalks and roads.

3.2.2 Clearing. The Contractor shall accomplish all clearing and/or grubbing as required for the construction under this contract. Clearing and grubbing shall include the cutting and removal of trees, stumps, brush, roots, logs, fences and other loose or projecting material and natural obstructions which, in the opinion of the Engineer, must be removed to properly prosecute the construction and operate the facilities upon completion of construction. Trees, unless designated otherwise on the plans, shall remain and be properly protected. Ornamental shrubs, plantings, fences, walls, etc. shall be removed and replanted or replaced or protected from the construction activity. Clearing and/or grubbing shall be incidental to the various bid items and no additional compensation will be paid for same.

3.2.3 Trench Depth. Trenches shall be excavated to the line and grade required for the installation of pipe at the elevations indicated on the plans. The minimum depth of cover shall be 30 inches above the top of the pipe, unless shown otherwise on the plans or on the Standard Details. When the pipe is laying in or on solid rock, the minimum depth of cover shall also be 30 inches above the top of the pipe. No additional compensation will be made for extra depth where required by the plans or due to Contractor error. Excavation, except as required for exploration, shall not begin until the proposed work has been staked out. Materials which are not required for backfill and site grading shall be removed and disposed of as directed by the Engineer. Hauling, bedding, and backfilling shall be considered incidental to the various bid items and will not be paid for directly. Excavation shall be of sufficient depth to allow the piping to be laid on the standard pipe bedding in accordance with the Section 6 of this section. The trenches shall be excavated to a minimum of six inches (6") below

the bottom of the pipe barrel in rock. In all cases where lines are under traffic a minimum cover of forty-two inches (42") shall be provided. Should it be necessary to avoid existing utilities, culverts, outlets, or other structures, the water line shall be carried deeper at no additional expense to the Owner.

Where the plans call for extra trench depth, this extra depth shall be provided at no extra cost.

3.2.4 Trench Width. Trench widths shall exceed the minimum width that will provide free working space on each side of the pipe and to permit proper backfilling around the pipe as shown in the accompanying table and unless specifically authorized by the Engineer, shall not be excavated to wider than two feet (2') plus the nominal diameter of the pipe at the top of the trench. Before laying the pipe, the trench shall be opened far enough ahead to reveal any obstruction that may necessitate changing the line and grade of the pipe. Should the Contractor fail to accomplish this, and changes are required, they shall be at his sole expense. In rock, all ledge rocks, boulders and large stones shall be removed to provide six inches (6") of clearance on each side and below all pipe and fittings.

MINIMUM TRENCH WIDTH
IN EARTH AND PAY WIDTH
FOR ROCK EXCAVATION

<u>Size</u>	<u>Width</u>	<u>Size</u>	<u>Width</u>
Up to 4" Pipe	1'-6"	16" Pipe	2'-8"
6" Pipe	2'-0"	18" Pipe	3'-0"
8" Pipe	2'-0"	20" Pipe	3'-2"
10" Pipe	2'-4"	24" Pipe	3'-8"
12" Pipe	2'-6"		
14" Pipe	2'-6"		

3.2.5 Shoring, Sheet piling, and Bracing of Excavation. Where unstable material is encountered, or where the depth of the excavation in earth exceeds five feet (5'), the sides of the trench or excavation shall be supported by substantial sheet piling, bracing, or shoring. The design and installation of all sheet piling, sheet piling, bracing or shoring shall be based on computations of pressure exerted by the materials to be retained under retaining conditions. Adequate and proper shoring of all excavations will be the entire responsibility of the Contractor. The Standards of the Federal Occupational Safety and Health Act and the Kentucky Department of Labor shall be followed.

3.2.6 Removal of Water. The Contractor shall provide for adequate removal of all water and the prevention of surface water from entering the excavation. The Contractor shall maintain dry conditions within the excavations until the backfill is

placed. No additional compensation will be paid for replacement and/or stabilization of prepared excavations due to flooding and/or deterioration from extended exposure. All water pumped or drained from the excavation shall be disposed of in a suitable manner without damage to adjacent property or to other work under construction.

3.2.7 Pavement Removal. Pavement removal shall be as indicated on the plans or directed by the Engineer. When so required, or when directed by the Engineer, only one-half (1/2) of the street crossings or road crossings shall be excavated before placing temporary bridges over the side excavated, for the convenience of the traveling public. All backfilled ditches shall be maintained in such a manner that they will offer no hazard to the passage of traffic. The convenience of the traveling public and the property Owners abutting the improvements shall be taken into consideration. All public or private drives shall be promptly backfilled or bridged at the direction of the Engineer. Pavement replacement shall be in accordance with Standard Drawings of these specifications. Excavated materials shall be disposed of so as to cause the least interference and in every case the disposition of excavated materials shall be satisfactory to the Engineer.

3.2.8 Traffic Maintenance. The Contractor must "red light" and guard all open trenches or obstructions placed on the streets or sidewalks. The lights must be burning from sunset to sunrise in order to effectually warn and safeguard the public against dangers connected with open trenches, excavations and other obstructions. The Contractor shall be held responsible for any damage that may occur to persons or property by reason of the failure of the Contractor to properly "red light" and guard all open trenches or obstructions along the routes of the water lines. This Contractor at his own expense shall also maintain warning signs, barricades and a watchmen or flagmen to control traffic at such times as his work would interfere with the flow of traffic. No excavation shall begin that may present a safety hazard unless the signs, barricades, lights, etc. are available to protect the open excavation at the conclusion of the day. The Contractor will comply with all Federal and State Occupational Safety and Health requirements for this type of construction. The Contractor shall also comply with all local and Kentucky Department of Highways requirements for signing and traffic control.

3.2.9 Line Location. The location of pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before construction on any line is started that would indicate desirable changes in location. In such cases, the Owner reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by extra units of materials and construction actually involved. The Owner is under no obligation to locate pipelines so they can be excavated by machine.

3.2.10 Solid Rock Excavation. No extra payment will be made for rock excavation. Cost shall be included in the work to which it is subsidiary.

3.3 BEDDING OF PIPELINE

In all cases the foundation for pipe 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 of the pipe shall not carry any of the load of the backfill. The Contractor should refer to the Standard Details for pipe bedding shown in the plans. The bedding specifications shall govern the backfill from the bottom of the trench up to the centerline or spring line of the pipe.

3.3.1 STABLE EARTH FOUNDATION. On all galvanized or copper lines, the Contractor may use either the "solid trench bottom method" or the "undercutting method" as shown in the Standard Details. The solid trench bottom method allows support of the pipe barrel by the trench bottom with holes dug out for the bells. The bottom must be leveled with soil and free of irregularities. The undercutting method calls for 4 inches of excavation below the barrel and then refill with evenly spread earth cushion or other standard bedding.

On all PVC pipelines, the trench bottoms shall be smooth and free of frozen material, clodded dirt and stones over 1/2" diameter. Bottom dirt left by trenching equipment will usually provide adequate material to level the trench bottom and provide bedding support for the pipe barrel. If the trench bottom is free of dirt, soft material may be shoveled off the side walls or shoveled under the pipe to insure proper pipe barrel bedding. In areas where the trench bottom is hard, a layer of soft backfill must be provided to insure the pipe barrel is properly cushioned. See the plans for proper bedding material depth.

If the foundation is good firm earth the pipe may be laid directly on the undisturbed earth provided the pipe barrel is supported for its full length.

Bedding of No. 9 stone, fine gravel, sand or compacted finely graded select earth shall be used to correct irregularities in the subgrade. Where bell and spigot is involved, bell holes shall be excavated to prevent the bells from being supported on undisturbed earth.

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 on a bed of granular material or finely graded select earth to provide continuous support for the pipe barrel. Bedding depth shall be as shown on the plans.

All ductile iron pipe will be installed using the undercutting method and a crushed stone or clean earth refill bedding in accordance with the Standard Details. The bedding is not a separate pay item and shall be included as incidental expense in the unit price for the pipe bid per foot of pipe or lump sum cost for the item to which it is subsidiary.

3.3.2 TRENCHES IN ROCK. All installation in rock will utilize the undercutting method. Bedding will be with 6 inches crushed stone as shown in the Standard Details. The only exception to this will be with PVC, copper, or galvanized iron pipe 4 inches in diameter or smaller. These may be bedded on 6 inches of evenly spread earth backfill.

3.3.3. UNSTABLE TRENCHES. If unstable material is encountered which may not provide a suitable foundation for the pipe, the unstable material will be removed and an adequate layer of encasement concrete or other special bedding shall be placed for the pipe foundation in accordance with the Standard Details in the plans. Such "special pipe foundation" shall only be installed if directed by the Engineer in writing or on the plans. This special pipe foundation shall be considered a pay item and shall be paid for at the unit contract price for the type of bedding required.

3.4 PIPE LAYING

3.4.1 GENERAL. Proper instruments, tools and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. Each pipe manufacturer shall have an experienced representative on the job for at least one day at the commencement of jointing and laying operations.

Before any length of pipe is placed in the trench, a careful inspection shall be made of the interior of the pipe to see that no foreign material is in the pipe. In order to properly remove any foreign materials, a swab of necessary length is to be available at all times.

All pipe shall be lowered carefully into the trench, properly aligned and properly jointed by use of suitable tools and equipment, in such a manner as to prevent damage to water line materials and protective coatings and linings. Excessive scratching of the exterior surface of the pipe will be cause for rejection of the pipe.

Under no circumstances shall pipeline materials be dropped or dumped into the trench. The pipe and fittings shall also be inspected for the purpose of determining if they are sound and free from cracks. Laying of pipe shall be commenced immediately after excavation is started. Pipe shall be laid with bell ends facing in the direction of laying.

When pipe laying is not in progress, the open ends of pipe shall be closed by approved means to prevent entrance of trench water into the line. Whenever water is excluded from the interior of the pipe, adequate backfill shall be deposited on the pipe to prevent floating. Any pipe which has floated shall be removed from the trench and relaid as directed by the Engineer. No pipe shall be laid in water or on frozen trench bottom, or whenever the trench conditions or the weather are unsuitable for such work.

If any defective pipe and fittings shall be discovered after the pipeline is laid, they shall be removed and replaced with a satisfactory pipe or fitting without additional charge to the Owner. Open ends of unfinished pipe lines shall be securely plugged or closed at the end of each day's work or when the line is left temporarily at any other time.

3.4.2 LAYING DUCTILE IRON PIPE. Ductile iron bolted joint, rubber ring slip joint, and ball and socket river crossing pipe shall first be thoroughly cleaned at joints, then joined according to instructions and with tools recommended by the manufacturer. Three (3) copies of instructions shall be furnished the Engineer and one (1) copy shall be available at all times at the site of the work. The lining inside ductile iron pipe must not be damaged by handling.

All pipes must be forced and held together, or "homed" at the joints, before sealing or bolting. Pipe must be aligned as each joint is placed, so as to present as nearly true, straight lines and grades as is practical, and all curves and changes in grades must be laid in such a manner that the manufacturer's recommended maximum deflection is not exceeded at any joint.

Cutting of pipe may be done by wheeled pipe cutters or saws, or by hammer and chisel, as the Contractor may elect, but the Contractor will be held responsible for breakage or damage caused by careless cutting or handling.

Ductile iron pipe shall be laid in accordance with Standard ANSI/AWWA C150/A21.50 Laying Conditions, Type 3 as shown in the Standard Drawings in these Specifications. Six inches (6") crushed stone bedding shall be used in rock. Sufficient space (limited to 2 feet longitudinally) shall be left out of 4 or 6 inch cushion for tightening of bolts where bolted joints are used. No pipe shall be laid resting on rock, blocking, or other unyielding objects. Jointing before placing in trench, and subsequent lowering of more than one section jointed together may be allowed, subject to the Engineer's approval and direction.

When using pipe with push-on joints care must be exercised to make certain that the correct gasket is being used for the type of joint installed and that the gasket faces the proper direction. Before inserting the gasket, the groove and bell socket should be carefully cleaned of all dirt. If sand or dirt is permitted to remain in the groove, leaks may occur. Lubricant must be applied to bell socket, gasket and plain- end of pipe as required by manufacturer. Plain-end must be beveled before joint is made. Deflection required at the joint shall be obtained after the joint is made.

Cut pieces of ductile iron pipe 18 inches or more in length, shall be used in fitting to special conditions, and valves and fitting changes in grade and alignment, provided cutting is even enough to make first class joints and no cracks are evident.

Bell and spigot pipe with caulked joints may be used for special cases only. Where this type of pipe is required the joints shall be made as described in this paragraph. After placing a length of pipe on the prepared grade in the trench, the yarning material shall be held around the bottom of the spigot end of the next length so that it will enter the bell of the previously laid pipe as the pipe is shoved into position. The spigot shall be centered there with earth carefully tamped under and on each side of it, excepting at the bell holes. Care shall be taken to prevent dirt from entering the joint space. Two or more joints of pipe shall be in place ahead of each joint before it is poured. Yarning material for bell and spigot joints shall be rubber rings, asbestos rope, or treated paper rope. Joint material for bell and spigot pipe, unless otherwise shown on the drawings, shall be of the sulphur compound type "Leadite," "Mineralead", or approved equal. Jute shall not be used for joint material. Yarning material shall be thoroughly caulked into the joint to insure centering of the spigot and within the ball and prevent loss of molten joint material into the interior of the pipe, but in no event shall a depth of less than 2-1/2 inches be left for the joint compound. Each length of material shall be such as to pass completely around the pipe and provide a lap of two inches. Joint compound shall be heated in accordance with the directions of the manufacturer, care being taken to prevent under and over heating and burning. Joints shall be run with the aid of a runner and metal pouring gate thoroughly clayed to the pipe to prevent the molten compound from breaking out of the joint. Each joint shall be run full to the top of the pouring gate in one continuous pour. Material contained in the pouring gate when it is cut free from the joint may be reused. No joint shall be run in a wet trench and no water shall be allowed to come in contact with the joint until it is thoroughly hardened. If, upon inspection by the Engineers, imperfect joints are disclosed, the compound shall be cut out or otherwise removed and the joint re-run.

3.4.3 LAYING PLASTIC PIPE. The trench bottom must be smooth and uniform and the alignment must conform with the plans. Bedding and cover as specified herein and shown in the Standard Details is required.

To make a clean and unobstructed joint, it is necessary to wipe the ring, groove and pipe spigot free from all foreign materials at the time of assembly (welded joints will be allowed only in special cases and will be required as shown on the plans). The ring must be positioned properly in the fitting to receive the pipe by a worker who is not in contact with the lubricant. In general, the lubricant is applied to the spigot (not the ring or groove). However, the manufacturer's instructions are to be followed in all cases. Only an approved lubricant may be used in accordance with the manufacturer's recommendations. All plastic pipe shall be joined by hand.

Where good bedding conditions are attained PVC pipe smaller than 4 inches may be assembled outside the trench in longer sections (as conditions allow) and then lowered into the trench. At any time when improper bedding is discovered or the pipe is severely deflected the pipe will be removed from the trench and the

condition corrected. Pipe in sizes 4 inch and above may be assembled outside the trench but must be lowered into the trench as each joint is assembled. Regardless of installation methods all couplings must be inspected after laying in trench for proper insertion and alignment. Field cuts and bevels will be allowed in accordance with the manufacturer's recommendations for these operations. A new reference mark shall be installed before joining any field cut pipe. The same requirements for clearance from rock or other objects, thrust blocking and deflections shall apply to PVC pipe as for other pipe materials.

Municipal PVC pipe of all sizes must be assembled in the trench in strict accordance with the manufacturer's requirements.

3.5 BACKFILLING

Backfilling must be started as soon as practicable after pipe has been laid and joints hardened sufficiently, and jointing and alignment approved. Spading of crushed rock, sand, or mechanical tamping of earth, around pipe (as specifically required) between joints shall be the usual procedure as the laying progresses. This is in order to avoid danger or misalignment from slides, flooding or other causes. The Engineer shall be given a minimum of 24 hours for inspection before backfilling. The backfill shall be crushed rock, sand, or finely divided earth free from debris, organic material and stones, places simultaneously on both sides of pipe to the same level by hand.

In backfilling of the lower part of the trench beginning at the top of the bedding, the backfill material shall be carefully and solidly tamped by hand or approved mechanical methods in 6" layers around the pipe and up to a point 8 inches higher than the top of the pipe. For PVC only the backfill shall be select material and may be walked-in. Walking or working on the completed pipe line, except as necessary in tamping or backfilling, shall not be permitted until the trench has been backfilled to a point one diameter higher than 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 pipe line will not be disturbed and injurious side pressures do not occur.

After the above specified backfill is hand placed, rock may be used in the backfill in pieces no larger than 18 inches in any dimension and to an extent not greater than one-half (1/2) the backfill materials used. If additional earth is required, it must be obtained and placed by the Contractor. Filling with rock and earth shall proceed simultaneously, in order that all voids between rocks may be filled with earth. Above the hand placed backfill, machine backfilling may be employed without tamping, (if not contrary to specified conditions for the location) provided caution is used in quantity per dump and uniformity of level of backfilling. Backfill material must be uniformly ridged over trench and excess hauled away, with no excavated rock over 1-1/2 inch in diameter or pockets of crushed rock or gravel in top 6 inches of backfill. Ridged backfill shall be confined to the width of the

trench and not allowed to overlap onto firm original earth and its height shall not be in excess of needs for replacement of settlement of backfill. All rock, including crushed rock or gravel from construction, must be removed from yards and fields. Streets, roadways and walks shall be swept to remove all earth and loose rock immediately following backfilling.

In the case of street, highway, railroad, sidewalk and driveway crossings or within any roadway paving or about manholes, valve and meter boxes, the backfill must be machine tamped in not over 4-inch layers, measured loose in accordance with the standard details. Where backfill is under paved driveways, streets, highways, railroads, sidewalks, paved parking areas and other areas where settlement is not allowed, crushed stone or coarse sand backfill only shall be used up to the paving surface. Crushed stone shall be Kentucky Department of Highways Standard Specification No. 78 or finer. Coarse sand backfill shall be spread in layers not over 4 inches thick and thoroughly compacted. Sand may be moistened to aide compaction. Tunnels shall be backfilled in not over 3-inch layers, measured loose, with selected material suitable for mechanically tamping. If material suitable for tamping cannot be obtained, sand, gravel or crushed rock (No. 78) shall be blown, packed or sluiced to complete fill all void spaces.

Where local conditions permit, pavement shall not be placed until 30 days have passed since placing backfill. Crushed stone is specified for roads and parking areas and sidewalks or their bases, shall be placed and compacted to the top of trench. Backfills shall be maintained easily passable to traffic at original ground level, until acceptance of project or replacement of paving or sidewalks.

Where the final surfacing is to be crushed stone, compacted earth backfill may be used in the trench to within 6 inches of the top as shown in the Standard Details.

Railroad Company and Highway Department requirements in regard to backfilling will take precedence over the above general specification where they are involved.

Excavated materials from trenches and tunnels in excess of quantity required for trench backfill shall be disposed as shown on the plans or as directed by the Engineer.

The Contractor shall protect all sewer, gas, electric, telephone, water and drain pipes or conduits, power and telephone poles and guy wires from danger of damage while pipelines are being constructed and backfilled, or from danger due to settlement of his backfill.

In case of damage to any such existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structure will be in as good

condition and serve its purpose as completely as before uncovering and such restoration and repair shall be done without extra charge.

No extra charge shall be made for backfilling of any kind, except as provided in the Bid. Backfilling shall be included as a part of the unit price bid for which it is subsidiary. No extra charge shall be made for supplying outside materials for backfill.

Before completion of contract, all backfills shall be reshaped, holes filled and surplus material hauled away, and all permanent walks, street, driveway and highway paving, and sod, replaced (if such surface replacement items are included in the contract) and reseeding performed.

Any deficiency in the quantity of material for backfilling the trenches or for filling depressions caused by settlement, shall be supplied by the Contractor.

3.6 TIE-INS TO EXISTING PIPELINES

This work shall consist of connecting new water pipes to the existing system where shown on the plans and shall include the necessary fittings, tapping sleeves, valves and necessary equipment and material required to complete the connection.

Knowledge of pipe sizes in the existing system may not be accurate, therefore, it is recommended that the Contractor check outside diameters of existing pipe and types of pipe prior to ordering the required accessories. No additional payment will be allowed for matching pipe and/or accessories when the proper size is not ordered.

Neither the Owner nor the Engineer can guarantee the location of the existing lines. The Contractor shall verify the location of all existing water mains and valves pertaining to the proposed improvements before excavation is started.

The necessary regulation or operation of the valves on existing mains, to allow for the connections being made, shall be supervised by the Engineer. Before shutting down an existing water main or branch main for a proposed connection, prior approval for a specific time and time interval shall be obtained from a representative of the Owner. At no time shall an existing main be shut down without the Owner's knowledge and permission.

Excavation to existing water mains shall be carefully made, care being exercised not to damage the pipe. The excavation shall not be of excessive size or depth beneath the pipe. The sides of the excavation shall be as nearly vertical as possible.

The Contractor shall be responsible for any damage to the existing system and any such damage shall be repaired to the satisfaction of the Engineer at the Contractor's expense.

The Contractor shall verify, by field inspection, the necessary sizes, lengths and the types of fittings needed for each inter-connection. Typical connections are shown on the plans and any modifications or changes shall be subject to the approval of the Engineer. The exact length of the proposed water main needed for this work shall also be determined by field measurement as required.

The probing required to locate existing mains is not a separate pay item.

3.7 PIPE ENTERING STRUCTURES

Ductile iron, steel or PVC pressure pipe, 4-inch diameter or larger, entering structure below original earth level, unsupported by original earth for a distance of more than six feet (6'), shall be supported by Class B concrete, where depth of such support does not exceed three feet (3'), and by Class B Concrete piers where depth exceeds three feet (3'). All other pressure pipe entering buildings or basins below original earth level, which have more than 3 feet span between wall and original earth and having a cover of more than 24 inches of earth, or under roadway, shall be supported on compacted granular fill, in order to prevent breakage from settlement of backfill about the structure. Concrete and reinforcing steel for such supports are to be included in the unit price of work to which it is subsidiary, and not as extra concrete, in order to discourage excessive excavation outside the limits of structures. Pipe entering structures shall have flexible joint within 16 inches of exterior of structure.

3.8 OWNERSHIP OF OLD MATERIALS

A. Pipe - Unless otherwise indicated, all existing pipe that is to be abandoned that interferes with construction or is easily removed shall become the property of the Contractor. All pipe that is not easily removed or not required to be removed as a result of the new construction, shall be abandoned in place by this Contractor.

B. Pipe Line Fittings and Appurtenances - All pipe line fittings, valves, hydrants and other like appurtenances that are removed as a result of new construction shall be removed by this Contractor but shall become the property of the Owner. All such fittings and appurtenances shall be delivered to a point by the Contractor. Said point shall be on the Owner's property and shall be designated by the Engineer.

C. Other Materials - All other materials or items that are to be removed, demolished, or abandoned as a part of this contract shall become the property of the Contractor and shall be disposed of by him.

3.9 THRUST BLOCKING AND ANCHORAGE

All angles or bends in the pipe line, either vertical or horizontal, shall be braced or anchored against the tendency of movement with concrete thrust blocking per the Standard Details, or approved equivalent joint harness or anchors to the satisfaction of the Engineer. Where joint harness is used, all component parts shall be stainless steel. Concrete thrust blocking or joint harness materials shall be considered incidental to the expense of installing the line and shall be included in the cost for the pipe line. No separate payment will be made for these items.

Thrust blocks for plastic pipe will not be attached to couplings.

Where thrust blocks are used for extra fittings ordered by the Engineer, payment shall be made using the bid price for Class "B" concrete and the thrust block dimensions shown in the Standard Details. This payment shall cover all work required for extra thrust blocks.

3.10 TESTING PRESSURE LINES

The Contractor will be required to test all pipelines and appurtenances, with water, at pressure class of pipe installed.

The pipe shall be slowly filled with water, care being taken to expel all air from the pipes. If necessary, the pipe shall be tapped at high points to vent the air. Pressure at least equal to 200 PSIG (or the operating pressure if higher) as measured at the point of lowest elevation shall be applied.

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. No pipe shall be accepted unless or until the leakage, determined by this test, is less than 0.08 U.S. gallons per hour, per 1,000 feet, per inch nominal diameter of pipe. The leakage test shall be applied to the pipe for a period of not less than 4 hours.

To determine the rate of leakage, the Contractor shall, as required, furnish a suitable pump, pressure gauge and water meter or other appliance for measuring the amount of water pumped. The instrument used to measure leakage shall be tested for accuracy as frequently as directed by the Engineer. The Contractor shall furnish all necessary labor and materials to make the test and to perform any work incidental thereto. Where it is impractical to test between the valves, the Contractor shall as directed, at his own expense and cost, temporarily place caps and plugs on the lines and test sections of the new line.

Where any section of the main is provided with concrete reaction blocking, the hydrostatic pressure test shall not be made until at least five days have elapsed

after the concrete reaction blocking was installed. If high early strength cement is used in the reaction blocking, the hydrostatic pressure test shall not be made until at least two days have elapsed.

Should there be leakage over the allowable amount, the Contractor will be required to locate and repair the leaks and retest the section. It is suggested, but not required, that the Contractor have a geophone (underground listening device) on the job at the time of testing.

If the leakage of the section of pipeline being tested is below the allowable amount, but leakage is obvious in the opinion of the Engineer, due to water at the surface of the ground, or by listening the leak can be heard underground with a geophone, or any other means of determining a leak, the Contractor will be required to repair these leaks.

The Contractor shall furnish a meter or suction tank, pipe test plugs and by-pass piping and make all connections for conducting the above tests. The pumping equipment used shall be centrifugal pump, or other pumping equipment which will not place shock pressures on the pipeline. Power plunger or positive displacement pumps will not be permitted for use on closed pipe systems for any purpose.

Inspection of pipe laying shall in no way relieve the Contractor of the responsibility for stopping leakage or correcting poor workmanship.

3.11 DISINFECTION OF POTABLE 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.

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.

3.12 MAINTENANCE OF FLOW OF DRAINS AND SEWERS

Adequate provision shall be made for the flow of sewers, drains and water courses encountered during construction. Any structures which are disturbed shall be satisfactorily restored by the Contractor.

3.13 INTERRUPTION OF UTILITY SERVICES

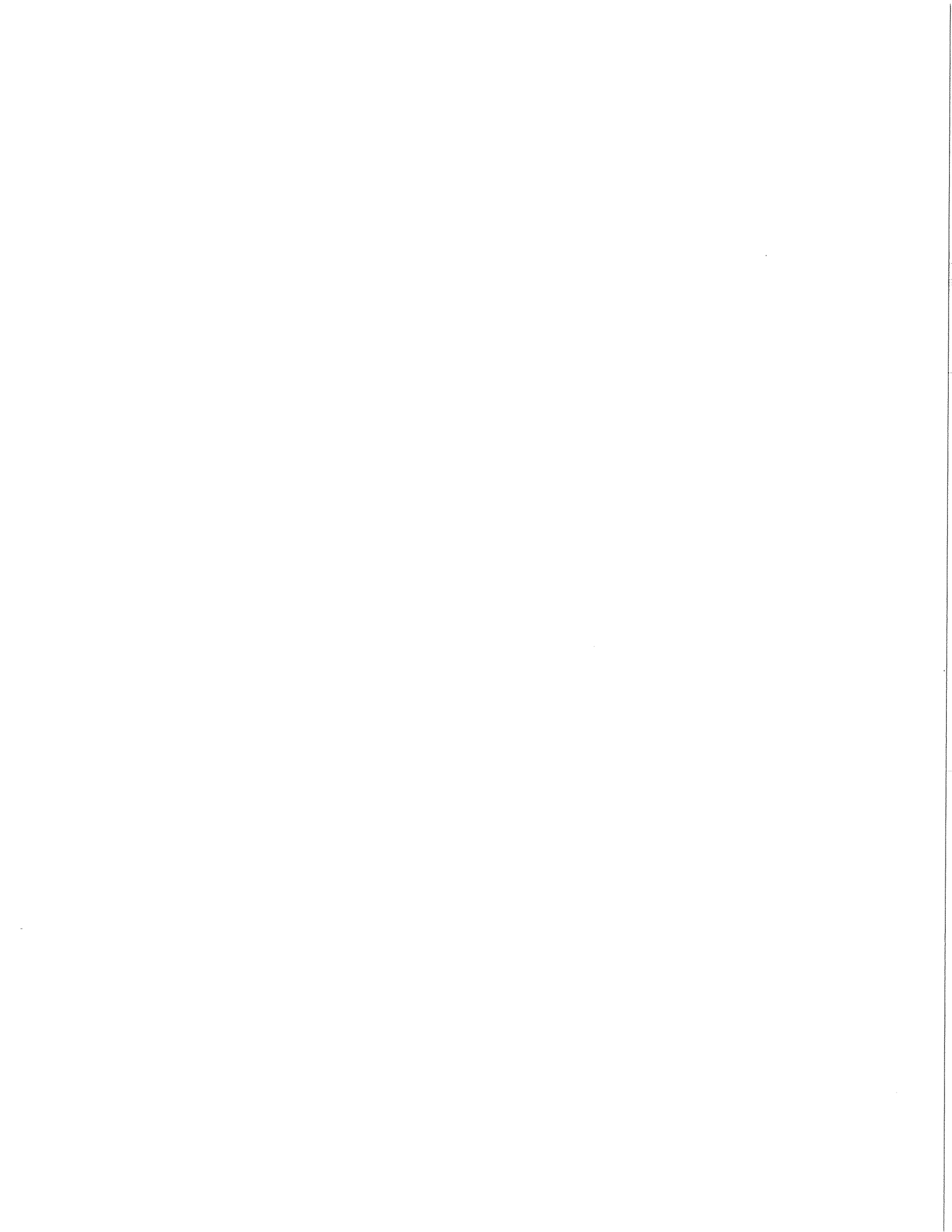
No valve, switch or other control on any existing utility system shall be operated for any purpose by the Contractor without approval of the Engineer and the Utility. All consumers affected by such operations shall be notified by the Contractor as directed by the Engineer and utility before the operation and advised of the probable time when service will be restored.

3.14 CLEAN-UP

Upon completion of the installation of the piping 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 pipe trenches in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

4.0 MEASUREMENT AND PAYMENT

Yard piping and valves are generally not a separate pay item. The cost for this work shall be included in the work to which it is subsidiary unless otherwise shown in the Bid Schedule.



SECTION 13500

HOUSED VALVES

1.0 GENERAL

1.1 SCOPE OF WORK

Provide all materials, labor, equipment and services required to furnish and install all valves shown on the Drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Piping is included in 13104.
- B. Hangers and supports are included in 13100 (not applicable to this contract).
- C. Valves associated with yard piping (buried service) are included in Section 13104.

2.0 PRODUCTS

2.1 SHEAR GATES

Shear gates shall be iron body bronze mounted double wedge type with pull rod and handle. Rod length is as shown on plans. Shear gates shall be M & H Figure No. 44, Clow Model F-3002 or approved equal.

2.2 AIR AND VACUUM VALVE FOR VERTICAL TURBINE PUMPS

Air valves for Vertical Turbine Pumps shall be designed to allow large quantities of air to escape out the orifice when the pump is started and close water tight when the liquid enters the valve. The air valve shall also permit large quantities of air to re-enter thru the orifice when the pump is stopped to prevent a vacuum from forming in the pump column.

The valve shall consist of body, cover, baffle, float and seat. The baffle will be designed to protect the float from direct contact of the rushing air and water to prevent the float from closing prematurely in the valve. The seat shall be fastened into the valve cover, without distortion, and shall be easily removed, if necessary.

The entire float and baffle assembly must be shrouded with a perforated water diffuser to prevent the water column entering the valve, from slamming the float shut and eliminate water hammer in the system.

The discharge orifice shall be fitted with an adjustable throttling device to regulate the flow of air escaping to establish a pressure loading on the rising column of water to minimize shock to the pump and check valve.

The float shall be stainless steel, designed to withstand a minimum of 1000 psi. The float shall be center guided and not free floating for positive seating.

Valve may have either threaded or flanged inlet and outlet. The outlet shall be piped to clearwell or atmosphere as shown on the Drawings.

Valve exterior to be painted with Red Oxide Phenolic Primer Paint as accepted by the FDA for use in contact with Potable Water.

All materials of construction shall be certified in writing to conform to ASTM specifications as follows:

Body, cover & baffle	Cast iron	ASTM A48 Class 30
Float	Stainless Steel	ASTM A240
Seat	Buna-N	
Water diffuser	Brass	Commercial
Throttling device	Malleable iron	Commercial

Valve to be APCO Air & Vacuum Valve for Vertical Turbine Pumps, as manufactured by Valve & Primer Corp., Schaumburg, Illinois.

An automatic air release valve shall be provided on the high service pumps to exhaust small pockets of air which may collect in the Air and Vacuum Valve. The automatic air release valve shall have a 1/2" threaded inlet and be equal to APCO Model No. 55.

2.3 COMBINATION AIR RELEASE VALVES

Combination air release valves (single body, double orifice) shall be designed to allow large volumes of air to escape out the large air vacuum orifice when filling a pipeline and to close water tight when the liquid enters the valve. During large orifice closure, the small air release orifice shall open to allow small pockets of air to escape automatically and independently of the large orifice. The large air vacuum orifice shall also allow large volumes of air to enter through the orifice during pipeline drainage to break the vacuum. The body inlet must be baffled to protect the lower float from direct contact of the rushing air and water to prevent premature valve shut off. The top float must be protected in similar manner for the same purpose. The Buna-N seat must be fastened to the valve cover without distortion for drop tight shut off. All floats shall be heavy stainless steel, hermetically sealed; designed to withstand 1000 psi or more. The upper float shall be center guided for positive shut off. Valve exterior to be painted red lead

TT86B Type IV for high resistance to corrosion. Materials certified to ASTM specifications as follows:

Body & Cover & Baffle - Cast Iron
Stainless Steel Float
Buna-N Seat & Needle
Plug & Bronze Forging
Delrin Level Frame
ASTM A48 Class 30
ASTM A240
Nitrile Rubber ASTM SB 800
ASTM D638

Combination air release valves shall be as shown in the valve schedule manufactured by APCO or equal.

2.4 CHECK VALVES

A. Swing Check Valves. Check valves shall be shall be Mueller Swing type lever and weight check valve with flanged end series A-2600-6-01 as manufactured by Mueller, or equal. Check valve shall be iron body, bronze mounted with bronze disc facing, pressure class 175 psig horizontal, with adjustable weight to control opening and closing of clapper.

B. Double Door Check Valves. Double door check valves shall be APCO Series 9000 as manufactured by Valve and Primer Corporation, Schaumburg, Illinois, or equal. Check valve shall be lug style, pressure class 150 pounds with cast iron body, aluminum bronze doors, T316 stainless steel hinge pin and stop pin, Buna-N set and T316 stainless steel spring.

C. Air Cushion Swing Check. Air Cushion Swing Check Valve body shall be cast iron per AWWA C508 having integral flanges.

The seat shall be centrifugally cast bronze with and o-ring seal and be locked in place with stainless steel lock screws and be field replaceable, without the use of special tools.

The shaft shall be single and continuous stainless steel, extending both sides of the body with a lever and weight, using an air cushion cylinder side mounted.

The air cushion cylinder shall be constructed of corrosion - resistant material and the piston shall be totally enclosed within the cylinder and not open at one end.

The cushion cylinder assembly shall be externally attached to either or both sides of the valve body and will permit adjustability to cushion the closure of the valve. Cushioning shall be by air trapped in the cushion cylinder which shall be fitted

with a one way adjustable control check valve to cushion disc contact to the seat at the shut-off point. The bottom cylinder head shall be swivel mounted and not rigid to follow the change of force angles as the lever raises or lowers to open or close the check valve.

This valve shall prevent backflow of the media on normal pump shut-off or power failure, at zero velocity and be water tight.

The disc shall be cast iron utilizing a double clevice hinge connected to a Ductile iron disc arm. The disc arm assembly shall be suspended from a stainless steel shaft which passes thru a seal retainer on both sides of the valve body.

Valve exterior to be painted with Red Oxide Phenolic Primer Paint as accepted by the FDA for use in contact with Potable Water.

Materials shall be certified to the following A.S.T.M. Specifications:

Valve to be APCO Series 6000 Cushion Swing Check Valve - Air Cushion Side Mounted as manufactured by Valve & Primer Corporation, Schaumburg, Illinois, or equal.

D. Rubber Flapper Check Valve. The check valve shall be an APCO Series 100 rubber flapper serving check valve as manufactured by Valve and Primer Corporation, Schaumburg, Illinois, or approved equal. This check valve shall have a cast iron body and cover and the body shall be long pattern design with integrally cast on end flanges. The flapper shall be Buna-N having an "O"-ring seating edge and shall be internally reinforced with steel.

E. Electric Check Valves. Electric solenoid operated check valves shall be of cast iron body, globe pattern, with all bronze or non-corrosive trim construction. The valves shall be flanged, faced and drilled to conform to 250# Stds. B16.1. The electric check valves shall be rated for a normal working pressure of 200 psi. The valves shall be Figure No. 173-D, Globe Body as manufactured by GA Industries, Inc., Cla-val, Ross or approved equal as specified herein.

The valves shall be constructed with complete bronze or non-corrosive lining which shall extend down to and form the seat of the valve. The liner shall be provided with cast "V" port openings. The piston shall be bronze. The pilot shall be of the 3-way type and of all bronze construction.

The design of the valve shall be such as to provide air and water cushioning to reduce hammer and shock. Speed of valve closing/opening shall be adjustable by a hand operated regulating valve. Wear on valve moving parts shall be absorbed by renewable leather composition or rubber cups and seat. The design

of valve shall be such that the area above the piston shall be approximately twice the area on the small end of the piston.

The valve shall be designed to provide full pipe line flow when open, and it shall shut off tight, when closed.

Valve shall provide for normal automatic opening and closing function, plus emergency closing on electrical outage. It shall also provide for manual-hydraulic control for opening main valve.

The Sequence of operation for the electric check valve shall be as follows:

a. Valve openings:

-Pump motor starter, three-way solenoid pilot, emergency solenoid pilot simultaneously energized by control circuit.

-Valve opens as pump reaches full speed.

-Limit switch contacts close interlocking with motor starter circuit.

b. Valve closing:

-Three-way solenoid pilot de-energized by control circuit.

-Pump motor circuit and emergency solenoid pilot remain energized.

-Valve starts to close, pump running.

-As piston nears its seat, limit switch contacts open, de-energizing pump circuit and emergency solenoid pilot.

In the event of a power failure, the motor starter circuit solenoid operated three-way pilot, and the solenoid operated two-way pilot will become de-energized simultaneously. De-energizing both pilots simultaneously will cause the main valve piston to move rapidly to its seat. The speed of emergency closing is adjustable by regulating valve. The emergency closing speed is always at a faster rate than that of the normal closing speed.

The emergency sequence of operation would also pertain in the event of motor undervoltage, motor overload, or by depressing the emergency stop button if same is used.

2.5 SURGE RELIEF VALVES

The water pressure relief valve shall function to open to atmosphere when the system pressure exceeds the intensity for which the pilot is set. It shall open rapidly, and close slowly at a predetermined rate of speed. Provision shall be made on the valve to regulate the closing speed of the valve.

The valve shall be of the angle body or globe body design with inlet pressure entering the valve under the piston. It shall be possible to install the valve in any position without impairing its function.

The valve shall be hydraulically operated, designed with a differential type piston such that the piston will expose a greater area to the closing force than to the opening force. A vent to atmosphere from the side of the valve body shall produce the differential piston area, and also serve to provide air cushion to prevent hammer and shock.

The body and lid of the valve shall be constructed of high grade cast iron. Interior parts of the valve, including the piston, liner and seat, shall be of bronze. The liner and piston shall be equipped with renewable leather cups and the piston shall additionally have a leather or rubber seat ring. All wear on the valve shall be absorbed by the cups and seat ring and there shall be no metal to metal contacts within the main valve.

The pilot valve shall be of cast bronze conforming to ASTM Specifications B-62. It shall be of the diaphragm operated, spring loaded type, single seated, balanced design. Adjustment of the opening pressure of the main valve shall be accomplished by regulation of the handwheel on the pilot and shall provide for a range of 20 psi.

The valve shall provide full pipe line opening when opened its full stroke, and it shall be drop tight when closed. It shall be possible to open the relief valve at any time by exhausting the pressure from above the piston to atmosphere. The overall body test shall be made hydraulically at a pressure of no less than 50 percent above the maximum working pressure of the valve. The purchaser reserves the right to witness all or any tests, and must be given free access to the place of manufacture at all times. The valve shall be Golden-Anderson Valve Co. Figure No. 66-D for angle body or 67-D for globe body. The valve shall be factory tested to relieve at 200 psi.

2.6 GATE VALVES*

A. Housed. Gate valves for fabricated pipe systems shall be resilient seat type, iron body, flanged, fully bronze mounted with O-ring seals, and suitable for

* - Buried service gate valves specified in Section 13104

working water pressures of not less than 250 PSIG. Housed valves shall be left uncoated to allow painting without the use of tar stop. Valves shall be of standard manufacture and of the highest quality both of materials and workmanship and shall conform to the latest revision of AWWA Specification C-500. Unless otherwise shown on the plans, all housed gate valves shall be non rising stem. Valves shall be rated for a working pressure of not less than 250 psi and shall have flanges drilled 125 lbs. pattern. Unless otherwise shown on the Drawings, housed valves and valves in basins shall be handwheel operated. Handwheels shall be ANSI B16.1 Class 125. Handwheels shall have not less than the following diameters:

<u>Size Valves</u>	<u>Diameter</u>
1"	3 1/8"
1 1/2"	4 1/4"
2"	6"
3"	8"

<u>Size Valves</u>	<u>Diameter</u>
4"	10"
6"	12"
8"	14"
10"	16"
12"	18"

<u>Size Valves</u>	<u>Diameter</u>
14"	20"
16"	22"
18"	24"

Valve stand handwheels and handwheels on extended stems, shall have the same minimum diameters as those shown for handwheels directly on valves. Extension stems for O.S&Y valves shall be non-rising, with clamp to valve handwheel and hollow shaft for rising stem of valve, with adjustable cast iron guides per each eight feet (8') of extension stem length maximum. All extension stems shall be connected with suitable coupling castings for connection to and removal from valves and stands. Nuts and bolts on all extension stem connections shall be stainless steel.

2.7 PLUG VALVES

Plug valves shall be non-lubricated eccentric type with synthetic rubber faced plugs, corrosion resistant nickel seats, replaceable stainless steel sleeve type

bearings in the upper and lower journals. Furnish with flanges faced and drilled ANSI B16.1 125-pound.

Valve shall provide drip-tight shut-off up to the full rated pressure. All plug valves shall be provided with limit stops and rotated 90 degrees from fully opened to fully closed. Plug valves shall be manually operated with worm gear operator handwheel or lever actuated. Plug valves located 6 feet or more above the floor shall be furnished with chainwheel operators.

Eccentric plug valves shall be as manufactured by DeZurik, Clow, or equal.

2.8 BUTTERFLY VALVES*

All butterfly valves shall be of tight closing, rubber or synthetic rubber seat type with seats securely fastened to valve body. No metal-to-metal seating surfaces will be permitted. Valves shall be bubble tight at the rated pressure in either direction and shall be satisfactory for applications involving throttling service and/or frequent operation and for applications involving valve operation after long periods of inactivity.

The valve discs shall rotate 90° from the full open position to the tight shut position.

The valve bodies themselves shall be of the lugged wafer or flanged type design except where specifically noted on the Drawings. Valve bodies shall be constructed of cast iron ASTM A 126, Class B, and shall be suitable for use with 125# ANSI flanges. Valves shall meet the full structural requirements of the applicable classes of AWWA C 504.

The valve discs shall be cast iron, semi-steel or bronze with a welded nickel edge free of ribbing or protrusions which may collect solids. The disc-to-shaft connections shall be via polished 316 SS pins. Sprayed or plated discs are not acceptable. All disc seating edges shall be smooth and polished.

The shafts shall be turned, ground and polished. They shall be 300 Series or 400 Series Stainless Steel with diameters per AWWA Spec. C504, Class 75B. The shafts shall be of one-piece construction.

The shaft seals shall be of Hycar or Hypalon and shall be provided to prevent leakage into the bearing chest areas.

The valve bearings shall be Teflon coated, self-lubricating, stainless steel design and construction.

* - Buried service butterfly valves specified in Section 13104

The valve seats shall be Neoprene or Hypalon and shall be simultaneously molded, vulcanized and bonded to the valve body or a rigid reinforcing ring. All surfaces of the valve shall be clean, dry and free from grease before painting. The valve surfaces except for disc, seating and finished portions shall be evenly coated at the factory with a suitable rust inhibitive primer. Hydrostatic and leakage tests shall be conducted in strict accordance with AWWA C 504, Section 12.

The valves shall be manufactured by M & H, Dresser, Dezurik or approved equal and supplied as listed in the valve schedule specified herein.

A. High Pressure Butterfly Valves. High performance butterfly valves, 2" - 12" in ANSI Class 300 design, shall be of the flanged or lugged wafer body style. Bodies shall be of carbon steel or cast 316 stainless steel construction. ANSI Class 300 valves shall provide drip tight shutoff to 740 psi.

All valves shall be furnished with upper and lower body bearings and with thrust bearings to assure disc centering in the seat. Valves are to be furnished with adjustable v-ring packing of PTFE and an adjustable gland. The one piece shaft shall be high strength Condition "B" type 316 stainless steel, and shall be centerless ground and polished to minimize bearing and packing wear.

Valve seats shall be of PTFE with integral titanium control ring capable of service in temperature ranges of -100°F to 300°F.

Discs shall be cast 316 stainless steel with concave face to reduce dynamic torque and decrease turbulence.

Valve actuators shall provide external disc position indication. Actuators to be weather proof, factory lubed and equipped with fully adjustable mechanical open and closed position stops.

Valves shall be as manufactured by DeZURIK, M & H or approved equal.

B. Manually Operated Butterfly Valves. Manually operated valves shall be operated using a cast iron housed handwheel or chain wheel, as required, available in standard weatherproof construction. All units shall have adjustable open and close position stops and valve position indicator with provision to prevent accidental adjustment changes. The operating shaft shall be supported, axially and radially, at the input end by permanently lubricated bronze thrust and sleeve bearings.

Manually operated butterfly valves shall be furnished and installed as listed in the Butterfly Valve Schedule contained herein.

C. Hydraulically Operated Butterfly Valves. All hydraulically operated butterfly valves shall meet the requirements of Section 2.8 contained herein.

The valves supplied with hydraulic cylinder operators shall be designed and sized according to torque requirements of the valve. The method for calculating torques shall be as outlined in AWWA, Appendix A. Operator shall produce the full AWWA Standard C504 Table 1 output torque throughout entire travel. All hydraulically operated butterfly valves shall be furnished with manual override solenoid valves.

Cylinder actuators shall have working mechanisms fully enclosed and shall be sized for operation using water supply at 40 psi to 100 psi. Contractor shall coordinate cylinder pressure requirements and settings on the plant water pressure reducing valve.

Cylinder pivots shall have bearings. All Cylinder actuators shall be provided with stationary supply connections and flexible cylinder supply lines to allow rigid supply piping to the valve.

Cylinder operator shall be of the base mounted configuration. Cylinder barrel shall be of molybdenum-disulfide lined glass fiber reinforced epoxy tubing, to provide a corrosion-free, self-lubricated high strength barrel. Rod seal shall be of urethane, molybdenum-disulfide filled, to provide a self-lubricated, long life seal.

Piston rod shall be of hard chromium plated 18-8 stainless steel, and shall be top and bottom guided in a heavy cast iron mechanism housing for positive alignment. Guiding shall be accomplished by bronze bearings at end of housing straddling all side loads imposed in operation. Entire operator including piston rod shall be fully enclosed.

The open/close valves shall be supplied with 4-way pre-piped solenoid valves with manual override - NEMA 4 115 V coils, energize to operate.

Open/Closed Valves shall be supplied with speed control for both opening and closing speeds.

Solenoids for open/hold/close (backwash) valves shall be dual coil 4-way with manual override.

Hydraulically operated butterfly valves shall be furnished and installed as listed in the Butterfly Valve Schedule contained herein.

D. Electric Motor Operators. Electric motor operators shall be designed to move the valve from fully open to fully closed with operating speeds such that no undue surge or water hammer occurs when electrical power is applied, and hold the valve disc in any intermediate position between full open and fully closed

without creeping or fluttering. Valve, gear, reducer, electric motor operator and accessories shall be furnished complete, ready for installation. Accessories shall include pre-wired control stations with indicating lights, controls and integral reversing contactor furnished for remote operation, and a valve position transmitter and feedback potentiometer enclosed in a NEMA IV housing furnished for remote indication of valve disc position. The motors shall be heavy duty, operating from 120 VAC single phase input source and shall be fused locally. Control compartment shall have internal heater to prevent condensation, a thermal cut-out switch in case of motor overload and four (4) limit switches, 2 to prevent disc overtravel in each direction and 2 for signal-controlled intermediate position stop. Limit switches shall be field adjustable, independent of each other. Limit switches gearing shall be totally enclosed, permanently lubricated. Operator housing shall be heavy, cast aluminum, fully gasketed, capable of remaining watertight for 48 hours submersion in 20 feet of water with conduit access ports sealed.

One handwheel operator shall be furnished for each valve. Operator shall have manual over-ride in which the motor is disconnected when handwheel is in use and the handwheel is not engaged when the motor is in operation.

Motor operation and controls shall be Henry Pratt, AUMA Actuators, or equal.

All valves to be integrated to a flow tube to provide means of rate of flow control shall be equipped with a proportional positioning system to be internally wired to the electric operator for remote indication and control of position of the disc. This system shall be capable of converting a DC milliampere output signal from rate of flow controller to accuate the valve operator to the position required. All valves equipped with electric operators for open and close service shall have on and off position indicators and transmitters.

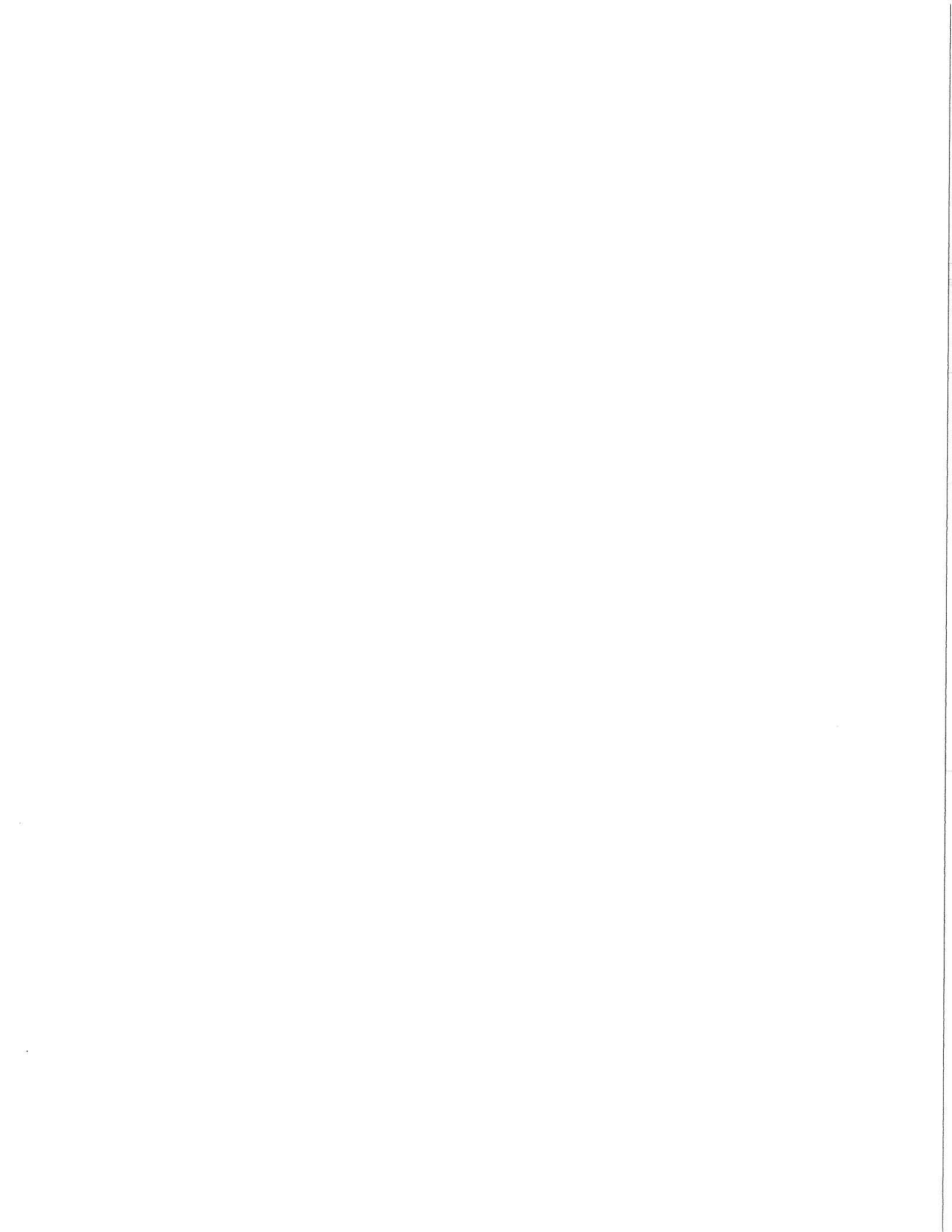
3.0 EXECUTION

3.1 INSTALLATION

Installation shall be in accordance with manufacturer's recommendations.

4.0 MEASUREMENT AND PAYMET

Valves are included in the fabricated piping of a structure or specific bid item and separate payment will not be made unless provided for in the Bid Schedule. Costs are to be included in the work to which they are subsidiary.



**REPORT OF GEOTECHNICAL
EXPLORATION**

**EAST CASEY COUNTY
WATER DISTRICT
YOSEMITE WATER TANK**

CASEY COUNTY, KENTUCKY

PREPARED BY:

**AMERICAN ENGINEERS, INC.
FIELD SERVICES CENTER**

January, 2012



AMERICAN ENGINEERS, INC.

PROFESSIONAL ENGINEERING

www.aei.cc



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January 5, 2012

Mr. Eddie Brown, PE
Project Manager
Kenvirons, Inc.
452 Versailles Road
Frankfort, KY 40601

Re: Report of Geotechnical Exploration
East Casey County Water District
Yosemite Water Tank
Casey County, Kentucky
AEI Project No. 211-394

Dear Mr. Brown:

American Engineers, Inc. Field Services Center is pleased to submit this geotechnical report that details the results of our geotechnical exploration performed at the above referenced site.

The attached report describes the site and subsurface conditions and also details our recommendations for the proposed project. The Appendix to the report contains a drawing with a boring layout and typed boring logs.

We appreciate the opportunity to be of service to you on this project and hope to provide further support on this and other projects in the future. Please contact us if you have any questions regarding this report.

Respectfully,
AMERICAN ENGINEERS, INC.

A handwritten signature in cursive script that reads "Dusty Barrett".

Dusty Barrett, PE
Geotechnical Engineer

A handwritten signature in cursive script that reads "Dennis Mitchell".

Dennis Mitchell, PE
Director of Geotechnical
Services

**REPORT OF GEOTECHNICAL EXPLORATION
YOSEMITE WATER TANK
CASEY COUNTY, KENTUCKY**

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Appendices

Appendix A – Boring Layout

Appendix B – Boring Logs

**REPORT OF GEOTECHNICAL EXPLORATION
YOSEMITE WATER TANK
CASEY COUNTY, KENTUCKY**

1 GENERAL SITE DESCRIPTION

The site is located south of Kentucky Highway 70 near Yosemite, Kentucky in Casey County. The ground surface in the immediate vicinity of the proposed tank is gently sloping in all directions. The property appears to be near the peak of a ridge that runs southwest to northeast. The terrain can generally be described as rolling to steep.

A 200,000 gallon ground storage water tank is planned at the site. The tank is anticipated to be 34 feet in diameter.

2 GENERAL SITE GEOLOGY

Available geologic mapping (*Geologic Map of the Yosemite Quadrangle, Casey Counties, Kentucky, USGS, 1971*) shows the site to be underlain by the Borden Formation. Specifically, the site is potentially underlain by the Muldraugh, Halls Gap and New Providence Shale Members of the Borden Formation. The members can be described as containing varying levels of shale and siltstone. The shale can be described as greenish gray, plastic when wet and very fossiliferous locally. It is typically easily eroded and slumps readily when exposed to weather.

There were no geologic hazards noted on the site or on surrounding sites during the field exploration. However, geologic mapping shows the Trace Fork and Middlesburg Graben Faults to the west and southwest of the proposed tank site. It is impossible to investigate a site to such an extent to fully identify the possibility of future geologically related problems.

3 SCOPE OF WORK PERFORMED

The geotechnical exploration consisted of drilling four soil test borings with rock core within the limits of the proposed tank. All borings were drilled to auger refusal. Boring locations were staked and elevated with information provided to AEI by East Casey County Water District. A boring layout is included in Appendix A of this report.

The borings were drilled by an AEI drill crew using a truck-mounted drill rig equipped with continuous flight hollow-stem augers and an NQ2-size diamond coring bit. A Geotechnical Engineer was on site throughout the fieldwork to log the overburden and recovered rock core encountered during the drilling operation. The recovered soil samples and rock core were further classified in the lab by a Geotechnical Engineer.

4 RESULTS OF THE EXPLORATION

4.1 GENERAL

Information provided in the Appendices for this report includes boring locations, logs of the borings, and other relevant geotechnical information. A description of the subsurface soil, bedrock and groundwater conditions follows.

4.2 SUBSURFACE SOIL CONDITIONS

The generalized subsurface conditions encountered at the boring locations, including descriptions of the various strata and their depths and thicknesses are presented on the Boring Logs in Appendix B.

4.3 BEDROCK CONDITIONS

Refusal, as indicated by the driller on the field boring logs, indicates a depth where essentially no downward progress can be made by the auger. It is normally indicative of a very hard or very dense material such as large boulders or the upper bedrock surface. **At this site, auger refusal was encountered at about four to almost six feet in each of the borings. The actual top of relatively unweathered bedrock at the site is judged to lie at about six to seven feet beneath the existing ground surface.** The recovered rock core from the borings was typically described as shale that is argillaceous, gray to dark gray in color, soft to moderately hard, laminated to thin bedded, and weathered in the upper portions. Core recovery percentages of the recovered rock core from the top of bedrock ranged from 72 to 100%. Rock Quality Designation (RQD) values ranged from zero to 62%. Overall RQD percentages indicate that the rock near the bedrock surface can be classified as having very poor rock mass quality.

4.4 GROUNDWATER CONDITIONS

Groundwater was not encountered in any of the borings during drilling. The short-term groundwater levels reported by the drill crew are not generally indicative of the long-term groundwater level. To accurately determine the long-term groundwater level, as well as the seasonal and precipitation induced fluctuations of the groundwater level, it is necessary to install piezometers in the borings, and monitor them for an extended length of time. Due to the steep topography of the site, groundwater is not anticipated in foundation excavations at the site.

4.5 SEISMIC CONDITIONS

According to the Kentucky Building Code, 2007 Edition, and the subsurface conditions encountered in the borings, Site Class B should be utilized for foundations bearing on bedrock.

Soil liquefaction analysis was outside the scope of this investigation. Prior studies in this region on similar soil types indicate that the potential for liquefaction is low and is primarily dependent on the variability of site soils and earthquake severity.

Consideration for seismic loading and liquefaction potential beyond this level of investigation is left to the discretion of the structural framing and foundation design engineer.

5 ANALYSES AND RECOMMENDATIONS

The recommendations that follow are based on our conceptual understanding of the project. As the site design is advanced, please notify us of any significant design changes so that our recommendations can be reviewed and modified as necessary.

5.1 *General Site Work*

5.1.1 Excavations

Foundation excavations should be properly sloped back in accordance with the Kentucky Occupational Safety and Health Standards for the Construction Industry 29 CFR Part 1926, Subpart P – Excavations. The soil overburden at the site should be classified as Type B soil in accordance with the above standard. Below depths of eight feet the shale bedrock can be classified as stable rock. Soil above these depths should be laid back on a slope of 1 Horizontal : 1 Vertical (1H:1V) while rock may be excavated with vertical walls.

5.2 *Structure Foundations*

5.2.1 Recommended Bearing Capacity Values

Since depths to bedrock are relatively shallow, foundations can be designed to bear on weathered bedrock with an allowable bearing capacity of 5,000 pounds per square foot (psf) at depths of six to seven feet. As an alternative, foundations can be designed to bear on soil with an allowable bearing capacity of 2,500 psf.

5.2.2 Acceptance of Foundation Bearing Surfaces

Prior to placement of reinforcing steel in spread footings, an AEI Engineer or Engineering Technician should review the bearing surface to verify that the design bearing capacity provided can be achieved. The footings should also be reviewed to verify that the bottom is level and free of mud, loose soil or other questionable material that might affect foundation support.

5.2.3 Groundwater

Any groundwater encountered in foundation excavations should be removed prior to concrete placement.

5.2.4 Potential Foundation Movement

A detailed settlement analysis was beyond the scope of this investigation. However, based on a crude empirical settlement analysis, it is anticipated that less than ½ inch of total settlement will occur with a soil bearing foundation system designed using the allowable bearing capacity presented in Section 5.2.1. It is anticipated that foundations bearing on rock would settle only a negligible amount.

These estimates assume that the foundations are designed and constructed according to the recommendations in this report and in conjunction with sound foundation construction practice.

5.3 GENERAL CONSIDERATIONS

5.3.1 Construction Monitoring/Testing

All construction operations involving foundation construction should be performed in the presence of an experienced representative of AEI. The representative would operate under the direct supervision of an AEI Geotechnical Engineer. Field observations should be performed prior to and during concrete placement operations.

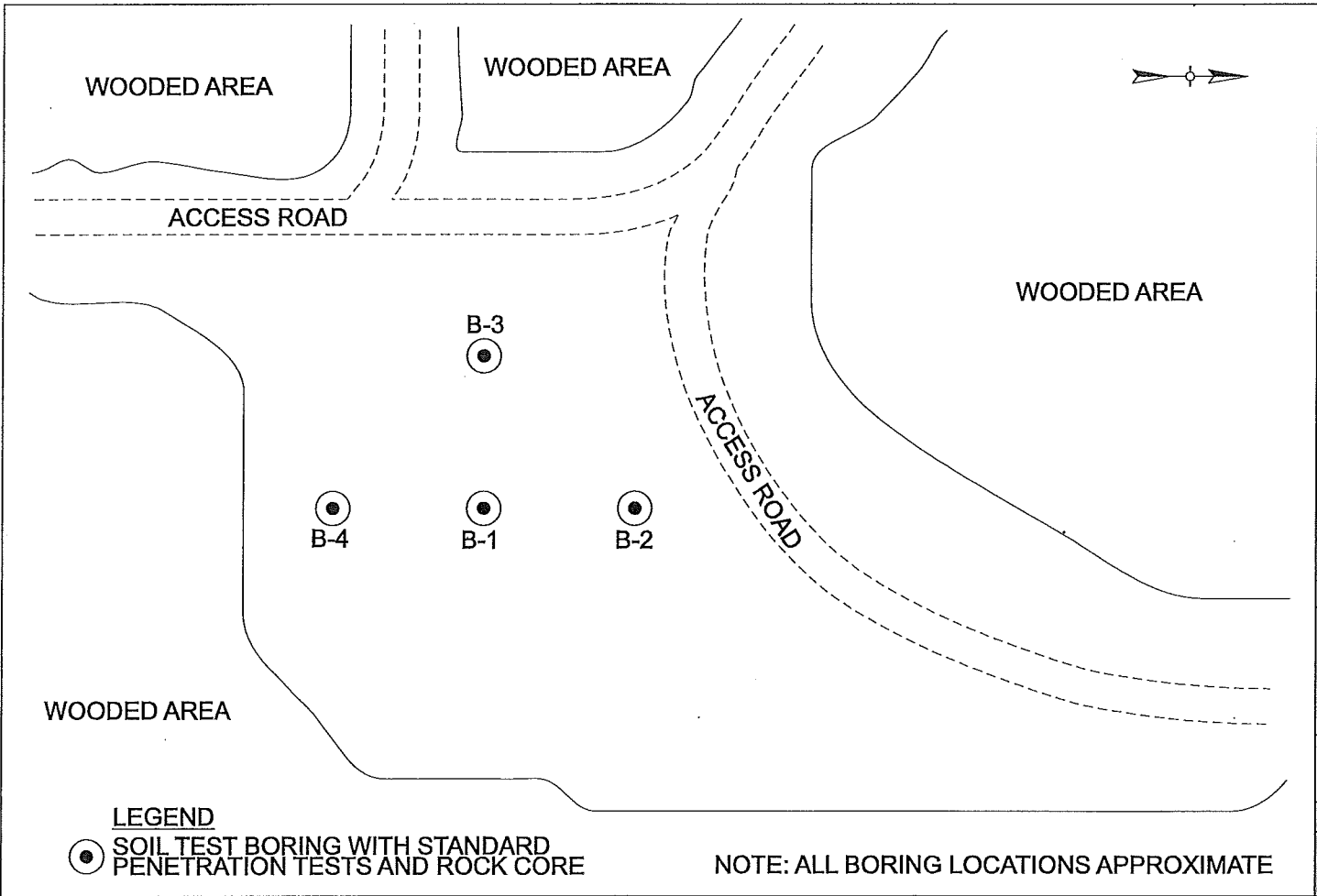
5.3.2 Limitations

The conclusions and recommendations presented herein are based on information gathered from the borings advanced during this exploration using that degree of care and skill ordinarily exercised under similar circumstances by competent members of the engineering profession. No warranties can be made regarding the continuity of conditions between the borings.

We will retain samples acquired for this project for a period of 30 days subsequent to the submittal date printed on the cover of this report. After this period, the samples will be discarded unless otherwise requested.

Appendix A

Boring Layout



LEGEND
 ● SOIL TEST BORING WITH STANDARD PENETRATION TESTS AND ROCK CORE

NOTE: ALL BORING LOCATIONS APPROXIMATE

NO. 1	DATE	BY	REVISION
BORING LAYOUT			
KENVIRONS, INC. FRANKFORT, KY			
PROJECT PROPOSED TANK SITE YOSEMITE, KY			
SCALE: NTS			
DATE: 12-30-11			
DRAWN BY: J. CHRISTENSEN			
CHECKED BY: M. L. L.			
DATE: 12-30-11			
BY: EEC			

Appendix B

Boring Logs

FIELD TESTING PROCEDURES

The general field procedures employed by the Field Services Center are summarized in the following outline. The procedures utilized by the AEI Field Service Center are recognized methods for determining soil and rock distribution and ground water conditions. These methods include geophysical and in situ methods as well as borings.

Soil Borings are drilled to obtain subsurface samples using one of several alternate techniques depending upon the surface conditions. Borings are advanced into the ground using continuous flight augers. At prescribed intervals throughout the boring depths, soil samples are obtained with a split-spoon or thin-walled sampler and sealed in airtight glass jars and labeled. The sampler is first seated 6 inches to penetrate loose cuttings and then driven an additional foot, where possible, with blows from a 140 pound hammer falling 30 inches. The number of blows required to drive the sampler each six-inch increment is recorded. The penetration resistance, or "N-value" is designated as the number of hammer blows required to drive the sampler the final foot and, when properly evaluated, is an index to cohesion for clays and relative density for sands. The split spoon sampling procedures used during the exploration are in general accordance with ASTM D 1586. Split spoon samples are considered to provide *disturbed* samples, yet are appropriate for most engineering applications. Thin-walled (Shelby tube) samples are considered to provide *undisturbed* samples and obtained when warranted in general accordance with ASTM D 1587.

These drilling methods are not capable of penetrating through material designated as "refusal materials." Refusal, thus indicated, may result from hard cemented soil, soft weathered rock, coarse gravel or boulders, thin rock seams, or the upper surface of sound continuous rock. Core drilling procedures are required to determine the character and continuity of refusal materials.

Core Drilling Procedures for use on refusal materials. Prior to coring, casing is set in the boring through the overburden soils. Refusal materials are then cored according to ASTM D-2113 using a diamond bit attached to the end of a hollow double tube core barrel. This device is rotated at high speeds and the cuttings are brought to the surface by circulating water. Samples of the material penetrated are protected and retained in the inner tube, which is retrieved at the end of each drill run. Upon retrieval of the inner tube the core is recovered, measured and placed in boxes for storage.

The subsurface conditions encountered during drilling are reported on a field test boring record by the driller. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as coarse gravel, cobbles, etc., and observations between samples. Therefore, these boring records contain both factual and interpretive information. The field boring records are on file in our office.

The soil and rock samples plus the field boring records are reviewed by a geotechnical engineer. The engineer classifies the soil in general accordance with the procedures outlined in ASTM D 2487 and D 2488 and prepares the final boring records which are the basis for all evaluations and recommendations.

Representative portions of soil samples are placed in sealed containers and transported to the laboratory. In the laboratory, the samples are examined to verify the driller's field classifications. Test Boring Records are attached which show the soil descriptions and penetration resistances.

The final boring records represent our interpretation of the contents of the field records based on the results of the engineering examinations and tests of the field samples. These records depict subsurface conditions at the specific locations and at the particular time when drilled. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change in the subsurface soil and ground water conditions at these boring locations. The lines designate the interface between soil or refusal materials on the records and on profiles represent approximate boundaries. The transition between materials may be gradual. The final boring records are included with this report.

Water table readings are normally taken in conjunction with borings and are recorded on the "Boring Logs". These readings indicate the approximate location of the hydrostatic water table at the time of our field investigation. Where impervious soils are encountered (clayey soils) the amount of water seepage into the boring is small, and it is generally not possible to establish the location of hydrostatic water table through water level readings. The ground water table may also be dependent upon the amount of precipitation at the site during a particular period of time. Fluctuations in the water table should be expected with variations in precipitation, surface run-off, evaporation and other factors.

The time of boring water level reported on the boring records is determined by field crews as the drilling tools are advanced. The boring water level is detected by changes in the drilling rate, soil samples obtained, etc. Additional water table readings are generally obtained at least 24 hours after the borings are completed. The time lag of at least 24 hours is used to permit stabilization of the ground water table which has been disrupted by the drilling operations. The readings are taken by dropping a weighted line down the boring or using an electrical probe to detect the water level surface.

Occasionally the borings will cave-in, preventing water level readings from being obtained or trapping drilling water above the caved-in zone. The cave-in depth is also measured and recorded on the boring records.

Sampling Terminology

Undisturbed Sampling: Thin-walled or Shelby tube samples used for visual examination, classification tests and quantitative laboratory testing. This procedure is described by ASTM D 1587. Each tube, together with the encased soil, is carefully removed from the ground, made airtight and transported to the laboratory. Locations and depths of undisturbed samples are shown on the "Boring Logs."

Bag Sampling: Bulk samples of soil are obtained at selected locations. These samples consist of soil brought to the surface by the drilling augers, or obtained from test pits or the ground surface using hand tools. Samples are placed in bags, with sealed jar samples of the material, and taken to our laboratory for testing where more mass material is required (i.e. Proctors and CBR's). The locations of these samples are indicated on the appropriate logs, or on the Boring Location Plan.

CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

COHESIVE SOILS (Clay, Silt, and Mixtures)

<u>CONSISTENCY</u>	<u>SPT N-VALUE</u>	<u>Qu/Qp (tsf)</u>	<u>PLASTICITY</u>	
Very Soft	2 blows/ft or less	0 – 0.25	<u>Degree of Plasticity</u>	<u>Plasticity Index (PI)</u>
Soft	2 to 4 blows/ft	0.25 – 0.49	Low	0 – 7
Medium Stiff	4 to 8 blows/ft	0.50 – 0.99	Medium	8 – 22
Stiff	8 to 15 blows/ft	1.00 – 2.00	High	over 22
Very Stiff	15 to 30 blows/ft	2.00 – 4.00		
Hard	30 blows/ft or more	> 4.00		

NON-COHESIVE SOILS (Silt, Sand, Gravel, and Mixtures)

<u>DENSITY</u>	<u>SPT N-VALUE</u>	<u>PARTICLE SIZE IDENTIFICATION</u>	
Very Loose	4 blows/ft or less	Boulders	12 inch diameter or more
Loose	4 to 10 blows/ft	Cobbles	3 to 12 inch diameter
Medium Dense	10 to 30 blows/ft	Gravel	Coarse – 1 to 3 inch
Dense	30 to 50 blows/ft		Medium – ½ to 1 inch
Very Dense	50 blows/ft or more		Fine – ¼ to ½ inch
		Sand	Coarse – 0.6mm to ¼ inch
			Medium – 0.2mm to 0.6mm
			Fine – 0.05mm to 0.2mm
		Silt	0.05mm to 0.005mm
		Clay	0.005mm

RELATIVE PROPORTIONS

<u>Descriptive Term</u>	<u>Percent</u>
Trace	1 – 10
Trace to Some	11 – 20
Some	21 – 35
And	36 – 50

NOTES

Classification – The Unified Soil Classification System is used to identify soil unless otherwise noted.

Standard “N” Penetration Test (SPT) (ASTM D1586) – Driving a 2-inch O.D., 1 3/8-inch I.D. sampler a distance of 1 foot into undisturbed soil with a 140-pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6-inches to seat the sampler into undisturbed soil, and then perform the test. The number of hammer blows for seating the spoon and making the tests are recorded for each 6 inches of penetration on the field drill log (e.g., 10/8/7). On the report log, the Standard Penetration Test result (i.e., the N value) is normally presented and consists of the sum of the 2nd and 3rd penetration counts (i.e., N = 8 + 7 = 15 blows/ft.)

Soil Property Symbols

Qu:	Unconfined Compressive Strength	N:	Standard Penetration Value (see above)
Qp:	Unconfined Comp. Strength (pocket pent.)	omc:	Optimum Moisture content
LL:	Liquid Limit, % (Atterberg Limit)	PL:	Plastic Limit, % (Atterberg Limit)
PI:	Plasticity Index	mdd:	Maximum Dry Density



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BORING NUMBER B-1

CLIENT East Casey County Water District PROJECT NAME ECWD Yosemite
 PROJECT NUMBER 211-394 PROJECT LOCATION Yosemite, KY
 DATE STARTED 12/6/11 COMPLETED 12/7/11 GROUND ELEVATION _____
 DRILLER Dusty Barrett GROUND WATER LEVELS:
 DRILLING METHOD HSA/ Diamond impregnated coring bit AT TIME OF DRILLING ---
 LOGGED BY Jon Cox CHECKED BY Dennis Mitchell AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			REMARKS
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0											
0 - 3		TOPSOIL (3 inches) (CL) sandy lean CLAY, trace to some fine to medium gravel, orange to reddish brown, moist to wet, stiff to very stiff	SPT 1	100	3-7-5 (12)	3.25	23				
3 - 4			SPT 2	100	5-7-14 (21)	0.75	34				
4 - 5			SPT 3	100	7-33-50 (83)	4.5+	18				
5 - 14.7		weathered SHALE, argillaceous, gray, soft to moderately hard	RC 4	78 (0)							
			RC 5	100 (0)							
Bottom of borehole at 14.7 feet.											

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 1/5/12 09:57 - T:111 PROJECTS\211-394 ECWD YOSEMITE WATER TANK\211-394 ECWD SOILS.GPJ



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BORING NUMBER B-2

CLIENT East Casey County Water District PROJECT NAME ECWD Yosemite
 PROJECT NUMBER 211-394 PROJECT LOCATION Yosemite, KY
 DATE STARTED 12/7/11 COMPLETED 12/7/11 GROUND ELEVATION _____
 DRILLER Dusty Barrett GROUND WATER LEVELS:
 DRILLING METHOD HSA/ Diamond impregnated coring bit AT TIME OF DRILLING ---
 LOGGED BY Jon Cox CHECKED BY Dennis Mitchell AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 1/5/12 09:57 - T111 PROJECTS\211-394 ECWD YOSEMITE WATER TANK\211-394 ECWD SOILS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			REMARKS
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		TOPSOIL (3 inches) (CL) sandy lean CLAY, trace to some fine to medium gravel, orange to reddish brown, moist to wet, stiff									
5		weathered SHALE, argillaceous, gray, soft to moderately hard	SPT 1	78	8-6-3 (9)	4.5+	23				
			RC 2	72 (0)							
			RC 3	83 (21)							
10			RC 4	100 (62)							

Bottom of borehole at 14.0 feet.



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BORING NUMBER B-3

CLIENT East Casey County Water District PROJECT NAME ECWD Yosemite
 PROJECT NUMBER 211-394 PROJECT LOCATION Yosemite, KY
 DATE STARTED 12/7/11 COMPLETED 12/7/11 GROUND ELEVATION _____
 DRILLER Dusty Barrett GROUND WATER LEVELS:
 DRILLING METHOD HSA/ Diamond impregnated coring bit AT TIME OF DRILLING --
 LOGGED BY Jon Cox CHECKED BY Dennis Mitchell AT END OF DRILLING --
 NOTES _____ AFTER DRILLING ---

GEOTECH.BH COLUMNS - GINT STD US LAB.GDT - 1/5/12 09:57 - T:11 PROJECTS\211-394 ECWD YOSEMITE WATER TANK\211-394 ECWD SOILS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			REMARKS
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		TOPSOIL (3 inches) (CL) sandy lean CLAY, trace fine gravel, orange to reddish brown, moist to wet, stiff									
5		weathered SHALE, argillaceous, gray, soft to moderately hard	SPT 1	67	6-6-7 (13)	2.5	21				
			RC 2	100 (23)							
10			RC 3	100 (0)							

Bottom of borehole at 13.0 feet.



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BORING NUMBER B-4

CLIENT East Casey County Water District PROJECT NAME ECWD Yosemite
 PROJECT NUMBER 211-394 PROJECT LOCATION Yosemite, KY
 DATE STARTED 12/7/11 COMPLETED 12/7/11 GROUND ELEVATION _____
 DRILLER Dusty Barrett GROUND WATER LEVELS:
 DRILLING METHOD HSA/ Diamond impregnated coring bit AT TIME OF DRILLING --
 LOGGED BY Jon Cox CHECKED BY Dennis Mitchell AT END OF DRILLING --
 NOTES _____ AFTER DRILLING --

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 1/5/12 09:57 - T:\11 PROJECTS\211-394 ECWD YOSEMITE WATER TANK\211-394 ECWD SOILS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			REMARKS
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		TOPSOIL (3 inches) (CL) sandy lean CLAY, trace to some fine gravel, orange to reddish brown, moist to wet, very stiff									
5			SPT 1	44	3-7-16 (23)	4.5+	23				
10		weathered SHALE, argillaceous, gray, soft to moderately hard	RC 2	100 (0)							
15			RC 3	100 (33)							

Bottom of borehole at 15.7 feet.



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KEY TO SYMBOLS

CLIENT East Casey County Water District

PROJECT NAME ECWD Yosemite

PROJECT NUMBER 211-394

PROJECT LOCATION Yosemite, KY

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)



CL: USCS Low Plasticity Clay



SHALE: Shale



TOPSOIL: Topsoil

SAMPLER SYMBOLS



Rock Core



Standard Penetration Test

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
 PI - PLASTIC INDEX (%)
 W - MOISTURE CONTENT (%)
 DD - DRY DENSITY (PCF)
 NP - NON PLASTIC
 -200 - PERCENT PASSING NO. 200 SIEVE
 PP - POCKET PENETROMETER (TSF)

TV - TORVANE
 PID - PHOTOIONIZATION DETECTOR
 UC - UNCONFINED COMPRESSION
 ppm - PARTS PER MILLION
 Water Level at Time
 Drilling, or as Shown
 Water Level at End of
 Drilling, or as Shown
 Water Level After 24
 Hours, or as Shown

KEY TO SYMBOLS - GINT STD US LAB.GDT - 1/5/12 09:58 - T:\11 PROJECTS\211-394 ECWD YOSEMITE WATER TANK\211-394 ECWD SOILS.GPJ

Your Geotechnical Engineering Report

To help manage your risks, this information is being provided because subsurface issues are a major cause of construction delays, cost overruns, disputes, and claims.

Geotechnical Services are Performed for Specific Projects, Purposes, and People

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering exploration conducted for an engineer may not fulfill the needs of a contractor or even another engineer. Each geotechnical engineering exploration and report is unique and is prepared solely for the client. No one except the client should rely on the geotechnical engineering report without first consulting with the geotechnical engineer who prepared it. The report should not be applied for any project or purpose except the one originally intended.

Read the Entire Report

To avoid serious problems, the full geotechnical engineering report should be read in its entirety. Do not only read selected sections or the executive summary.

A Unique Set of Project-Specific Factors is the Basis for a Geotechnical Engineering Report

Geotechnical engineers consider a numerous unique, project-specific factors when determining the scope of a study. Typical factors include: the client's goals, objectives, project costs, risk management preferences, proposed structures, structures on site, topography, and other proposed or existing site improvements, such as access roads, parking lots, and utilities. Unless indicated otherwise by the geotechnical engineer who conducted the original exploration, a geotechnical engineering report should not be relied upon if it was:

- not prepared for you or your project,
- not prepared for the specific site explored, or
- completed before important changes to the project were implemented.

Typical changes that can lessen the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a multi-story hotel to a parking lot
- finished floor elevation, location, orientation, or weight of the proposed structure, anticipated loads or
- project ownership

Geotechnical engineers cannot be held liable or

responsible for issues that occur because their report did not take into account development items of which they were not informed. The geotechnical engineer should always be notified of any project changes. Upon notification, it should be requested of the geotechnical engineer to give an assessment of the impact of the project changes.

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that exist at the time of the exploration. A geotechnical engineering report should not be relied upon if its reliability could be in question due to factors such as man-made events as construction on or adjacent to the site, natural events such as floods, earthquakes, or groundwater fluctuation, or time. To determine if a geotechnical report is still reliable, contact the geotechnical engineer. Major problems could be avoided by performing a minimal amount of additional analysis and/or testing.

Most Geotechnical Findings are Professional Opinions

Geotechnical site explorations identify subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field logs and laboratory data and apply their professional judgment to make conclusions about the subsurface conditions throughout the site. Actual subsurface conditions may differ from those indicated in the report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risk associated with unanticipated conditions.

The Recommendations within a Report Are Not Final

Do not put too much faith on the construction recommendations included in the report. The recommendations are not final due to geotechnical engineers developing them principally from judgment and opinion. Only by observing actual subsurface conditions revealed during construction can geotechnical engineers finalize their recommendations. Responsibility and liability cannot be assumed for the recommendations

within the report by the geotechnical engineer who developed the report if that engineer does not perform construction observation.

A Geotechnical Engineering Report Is Subject To Misinterpretation

Misinterpretation of geotechnical engineering reports has resulted in costly problems. The risk of misinterpretation can be lowered after the submittal of the final report by having the geotechnical engineer consult with appropriate members of the design team. The geotechnical engineer could also be retained to review crucial parts of the plans and specifications put together by the design team. The geotechnical engineering report can also be misinterpreted by contractors which can result in many problems. By participating in pre-bid and preconstruction meetings and providing construction observations by the geotechnical engineer, many risks can be reduced.

Final Boring Logs Should not be Re-drawn.

Geotechnical engineers prepare final boring logs and testing results based on field logs and laboratory data. The logs included in a final geotechnical engineering report should never be redrawn to be included in architectural or design drawings due to errors that could be made. Electronic reproduction is acceptable, along with photographic reproduction, but it should be understood that separating logs from the report can elevate risk.

Contractors Need a Complete Report and Guidance

By limiting what is provided for bid preparation, contractors are not liable for unforeseen subsurface conditions although some owners and design professionals believe the opposite to be true. The complete geotechnical engineering report, accompanied with a cover letter or transmittal, should be provided to contractors to help prevent costly problems. The letter states that the report was not prepared for purposes of bid

development and the report's accuracy is limited. Although a fee may be required, encourage the contractors to consult with the geotechnical engineer who prepared the report and/or to conduct additional studies to obtain the specific types of information they need or prefer. A prebid conference involving the owner, geotechnical engineer, and contractors can prove to be very valuable. If needed, allow contractors sufficient time to perform additional studies. Upon doing this you might be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Closely Read Responsibility Provisions

Geotechnical engineering is not as exact as other engineering disciplines. This lack of understanding by clients, design professionals, and contractors has created unrealistic expectations that have led to disappointments, claims, and disputes. To minimize such risks, a variety of explanatory provisions may be included in the report by the geotechnical engineer. To help others recognize their own responsibilities and risks, many of these provisions indicate where the geotechnical engineer's responsibilities begin and end. These provisions should be read carefully, questions asked if needed, and the geotechnical engineer should provide satisfactory responses.

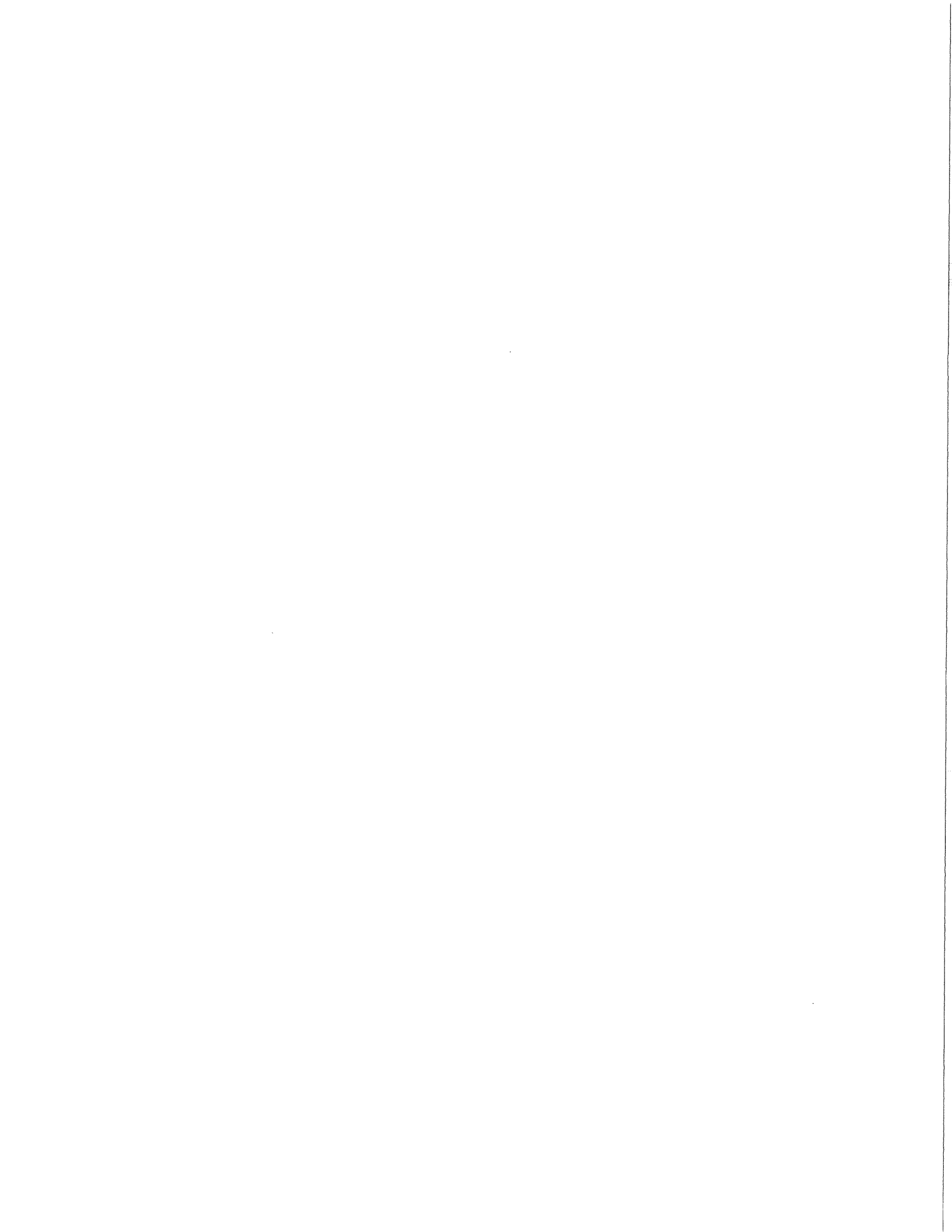
Environmental Issues/Concerns are not Covered

Unforeseen environmental issues can lead to project delays or even failures. Geotechnical engineering reports do not usually include environmental findings, conclusions, or recommendations. As with a geotechnical engineering report, do not rely on an environmental report that was prepared for someone else.



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STEVEN L. BESHEAR
GOVERNOR

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SECRETARY

ENERGY AND ENVIRONMENTAL PROTECTION CABINET

DEPARTMENT FOR ENVIRONMENTAL PROTECTION

DIVISION OF WATER

200 FAIR OAKS LANE

FRANKFORT, KENTUCKY 40601

www.kentucky.gov

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

This General Certification is issued March 19, 2012, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the commonwealth.

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

For all other operations, the Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 12, namely Utility Line Backfill and Bedding, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.
2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.
3. This general water quality certification is limited to the crossing of surface waters by utility lines. This document does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.

General Certification--Nationwide Permit # 12
Utility Line Backfill and Bedding
Page 2

4. For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance.
5. This general certification shall not apply to nationwide permits issued for individual crossings which are part of a larger utility line project where the total cumulative impacts from a single and complete linear project exceed ½ acre of wetlands or 300 linear feet of surface waters. Cumulative impacts include utility line crossings, permanent or temporary access roads, headwalls, associated bank stabilization areas, substations, pole or tower foundations, maintenance corridor, and staging areas.
6. Stream impacts under Conditions 4 and 5 of this certification are defined as the length of bank disturbed. For the utility line crossing and roads, only one bank length is used in calculation of the totals.
7. Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).
8. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
10. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
11. Utility lines placed parallel to the stream shall be located at least 50 feet from an intermittent or perennial stream, measured from the top of the stream bank. The cabinet may allow construction within the 50 foot buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.
12. Utility line stream crossings shall be constructed by methods that maintain flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to re-entering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the excavation shall not be allowed to enter the flowing portion of the stream.

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13. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or wetlands or stream dimension, pattern or profile.
14. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. Mechanized land clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification.
15. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:
 - Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
 - Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.
 - Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
 - Removal of riparian vegetation shall be limited to that necessary for equipment access.
 - To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
 - Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

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- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling (800) 928-2380.

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