



Butler County  
Water System

October 1, 2014

RECEIVED

OCT 02 2014

PUBLIC SERVICE  
COMMISSION

MR JEFF DEROUEN  
EXECUTIVE DIRECTOR  
PUBLIC SERVICE COMMISSION  
211 SOWER BLVD  
PO BOX 615  
FRANKFORT KY 40602-0615

Dear Mr. Derouen:

*Case No. 2014-00353*

Enclosed are an original and ten copies of an Application of Butler County Water System, Inc., for a Certificate of Convenience and Necessity, for authority to issue certain securities and for approval of water rates and charges.

Your assistance will be appreciated.

Sincerely,

A handwritten signature in blue ink that reads 'John M. Dix'.

John M. Dix  
General Manager

JMD:ska

cc: Richard Deye

Enclosures

Providing high-quality  
water services to  
families and businesses  
throughout  
Butler County.

Delivering Quality  
and Commitment  
in Every Drop

523 US 31W Bypass • P.O. Box 10180 • Bowling Green, KY 42102-4780 • 270-842-0052 • butlerwater.com  
104 S. Tyler Street • Suite B • P.O. Box 1488 • Morgantown, KY 42261 • 270-526-4656

EQUAL OPPORTUNITY PROVIDER AND EMPLOYER

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

IN THE MATTER OF

THE APPLICATION OF BUTLER COUNTY WATER SYSTEM, INC. BUTLER COUNTY, KENTUCKY, (A) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY, PURSUANT TO KRS 278.020 AND 278.023, AUTHORIZING SAID SYSTEM TO CONSTRUCT MAJOR IMPROVEMENTS AND ADDITIONS TO ITS EXISTING MUNICIPAL WATER TREATMENT SYSTEM, FINANCED WHICH IMPROVEMENTS AND EXTENSIONS WILL BE FINANCED IN PART UNDER THE TERMS OF AN AGREEMENT BETWEEN THE WATER SYSTEM AND THE UNITED STATES DEPARTMENT OF AGRICULTURE; RURAL DEVELOPMENT, (b) FOR AUTHORITY TO ISSUE CERTAIN SECURITIES AS REQUIRED BY KRS 278.300; AND (C) FOR APPROVAL OF WATER RATES AND CHARGES.

CASE NO. 2014-00353

APPLICATION

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Richard J. Deye  
ATTORNEY AT LAW  
107 E. G.L. Smith Street  
P.O. Box 340  
Morgantown, KY 42261  
Phone (270) 526-3313



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Richard J. Deye  
Attorney for Applicant  
Butler County Water System, Inc.

September 26<sup>th</sup>, 2014

RECEIVED

OCT 02 2014

PUBLIC SERVICE  
COMMISSION

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of

THE APPLICATION OF BUTLER COUNTY WATER SYSTEM, INC., BUTLER COUNTY, KENTUCKY, (1) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AUTHORIZING SAID SYSTEM TO CONSTRUCT MAJOR IMPROVEMENTS AND ADDITIONS TO ITS EXISTING MUNICIPAL WATER TREATMENT SYSTEM FINANCED BY RURAL ECONOMIC AND COMMUNITY DEVELOPMENT SERVICE (FORMALLY FARMERS HOME ADMINISTRATION) PURSUANT TO THE PROVISIONS OF KRS 278.023 OF THE KENTUCKY REVISED STATUTES; AND (2) SEEKING APPROVAL OF THE ISSUANCE OF CERTAIN SECURITIES, AND (3) APPROVAL OF WATER RATES.

CASE NO. 2014-00353

\* \* \*

The Applicant, Butler County Water System, Inc., situated in Butler County, Kentucky (the "System"), acting by and through its Directors, which is a non-profit corporation as set forth in KRS 273, by counsel, respectfully tenders this Application and requests that the Public Service Commission of Kentucky enter its Order issuing authority to the System for (1) CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AUTHORIZING SAID SYSTEM TO CONSTRUCT MAJOR IMPROVEMENTS AND ADDITIONS TO ITS EXISTING MUNICIPAL WATER TREATMENT SYSTEM FINANCED BY RURAL ECONOMIC AND COMMUNITY DEVELOPMENT SERVICE PURSUANT TO THE PROVISIONS OF KRS 278.023 OF THE KENTUCKY REVISED STATUTES; AND (2) SEEKING APPROVAL OF THE ISSUANCE OF CERTAIN SECURITIES; AND (3) APPROVAL OF WATER RATES. By authorizing the request set forth in the application will permit the System to construct major improvements and additions to its municipal water treatment for the purpose of assuring an adequate and potable water supply to the area of and the customers in the System, all in the interests of the public health, safety and general welfare of the

citizens and inhabitants of the System and its customers. In support of this application and in conformity with the rules of the Public Service Commission, the System, by the Directors and counsel, states as follows:

1. Butler County Water System, Inc., situated in Butler County, Kentucky, (The Applicant), is a water association existing by virtue of an Order entered by the Public Service Commission. The System is now, and has been since its inception on February 16, 1971, regulated by the Public Service Commission of Kentucky, and all records and proceedings of the Public Service Commission with reference to the System are incorporated in this Application by reference.

2. The governing body of the System is its Directors, which is a non-profit corporate body, with power to make contracts in furtherance of its lawful and proper purposes as provided in KRS 273. In conformity with KRS 273, the members of the System have held annual membership meetings and, from time to time, elected Directors who were and are water users of the System. The present System Directors and officers are Weymouth Martin, Jr. - President; David Martin - Vice President; Gary Robbins- Secretary/Treasurer; Don Lindsey, Director; and Randall Farris, Director. The mailing address of the System is P. O. Box 10180 (523 U.S. 31W Bypass); Bowling Green, Kentucky 42102; Attention: John M. Dix, General Manager.

3. The System's staff engineer, Ryan Leisey, P.E., Bowling Green, Kentucky (the "Engineer"), has prepared engineering reports as well as detailed plans and specifications for the construction and installation of proposed major additional water facilities and improvements (the "Project") to serve the System.

The Preliminary and Final Engineering Report contains, among other things, a description of the Project, cost figures and other pertinent financial data and projections, and plans for the financing of the Project.

4. According to the final engineering report of the Engineer, the estimated cost of constructing and installing the Project is SIX HUNDRED FORTY SEVEN THOUSAND SIXTY DOLLARS (\$647,060.00), which cost shall be financed by the

Applicant through (A) the issuance of the Applicant's Water Revenue Bonds, in the amount of FOUR HUNDRED THIRTY SEVEN THOUSAND DOLLARS (\$437,000.00), maturing over a period not to exceed 40 years and bearing interest at a single rate not to exceed 2.750% per annum, and which Bonds will be purchased by USDA in accordance with USDA's letter of conditions dated November 5, 2012, said letter of conditions being attached as **EXHIBIT B**, and incorporated herein as if set forth in full; (B) ONE HUNDRED FORTY SIX THOUSAND DOLLARS (\$146,000.00) provided by USDA Grant in accordance with **EXHIBIT B**; and (C) SIXTY FOUR THOUSAND SIXTY DOLLARS (\$64,060.00) will be provided from the Applicants Reserve Fund in accordance with the Applicants Resolution being attached as **EXHIBIT F**.

The Preliminary and Final Engineering Report contains, among other things, a description of the Project, cost figures and other pertinent financial data and projections, and plans for the financing of the Project.

It is the opinion of the Directors of the System that the public health, safety and general welfare of the citizens and inhabitants of the System will be promoted and served by the construction of the Project and the financing thereof as herein described.

5. The System represents that, based upon the projections of the Engineer the proposed rate change is necessary and will be adequate to meet the annual operating cost of the additions to the System. The following rate structure is set out in the RURAL ECONOMIC AND COMMUNITY DEVELOPMENT SERVICE Letter of Conditions:

**EXISTING MONTHLY RATES**

**5/8" X 3/4" Meters**

First	2,000 Gallons	\$16.96	Minimum Bill
Next	4,000 Gallons	4.91	Per 1,000 Gallons
Next	44,000 Gallons	4.36	Per 1,000 Gallons
Next	50,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**1" Meters**

First	5,000 Gallons	\$32.19	Minimum Bill
Next	1,000 Gallons	4.91	Per 1,000 Gallons
Next	44,000 Gallons	4.36	Per 1,000 Gallons
Next	50,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**1-1/2" Meters**

First	10,000 Gallons	\$57.51	Minimum Bill
Next	40,000 Gallons	4.36	Per 1,000 Gallons
Next	50,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**2" Meters**

First	16,000 Gallons	\$84.41	Minimum Bill
Next	34,000 Gallons	4.36	Per 1,000 Gallons
Next	50,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**3" Meters**

First	25,000 Gallons	\$137.03	Minimum Bill
Next	25,000 Gallons	4.36	per 1,000 Gallons
Next	50,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**4" Meters**

First	30,000 Gallons	\$189.56	Minimum Bill
Next	20,000 Gallons	4.36	Per 1,000 Gallons
Next	50,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**6" Meters**

First	60,000 Gallons	\$331.11	Minimum Bill
Next	40,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

**8" Meters**

First	80,000 Gallons	\$419.98	Minimum Bill
Next	20,000 Gallons	3.75	Per 1,000 Gallons
Over	100,000 Gallons	3.13	Per 1,000 Gallons

\*All rates are subject to a 10 percent penalty if paid after the due date.

## PROPOSED MONTHLY RATES

### 5/8 X 3/4-Inch Meter

First 2,000 Gallons	\$18.54	Minimum Bill
Next 4,000 Gallons	5.37	per 1,000 Gallons
Next 44,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

### 1-Inch Meter

First 5,000 Gallons	\$35.18	Minimum Bill
Next 1,000 Gallons	5.37	per 1,000 Gallons
Next 44,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

### 1-1/2-Inch Meter

First 10,000 Gallons	\$62.86	Minimum Bill
Next 40,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

### 2-Inch Meter

First 16,000 Gallons	\$92.26	Minimum Bill
Next 34,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

### 3-Inch Meter

First 25,000 Gallons	\$149.77	Minimum Bill
Next 25,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

### 4-Inch Meter

First 30,000 Gallons	\$207.19	Minimum Bill
Next 20,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

### 6-Inch Meter

First 60,000 Gallons	\$361.90	Minimum Bill
Next 40,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

**8-Inch Meter**

First 80,000 Gallons	\$459.04	Minimum Bill
Next 20,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons

6. A certified copy of the corporation's Articles of Incorporation and all amendments thereto were filed with the PSC in prior proceedings Case No. 93-408 and is incorporated herein by reference.

7. The following detailed information included with the Application and all exhibits referred to herein are incorporated by reference as a part of this Application:

- EXHIBIT A-1** Preliminary Engineering Report.
- EXHIBIT A-2** Final Engineering Report.
- EXHIBIT B** USDA letter of conditions dated November 5, 2012.
- EXHIBIT C** Copy of USDA letter of concurrence in bid award.
- EXHIBIT D** Certified statement from an authorized utility official confirming (1) that the proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066, Section 4(3-4), Section 5(1), Section 6 and 7, Section 8(1-3), Section 9(1) and Section 10. The plans and specifications for the Project have also been designed to meet the minimum construction and operating requirements of the Kentucky Natural Resources and Environmental Protection Cabinet, Department for Environmental Protection, Division of Water: (2) that all other state approvals or permits have already been obtained; (3) that the proposed rates and charges shall produce total revenue requirements set out in the engineering report; and (4) dates when construction will begin and end.
- EXHIBIT E** Notice to customers of rate change with evidence of publication.
- EXHIBIT F** Resolution authorizing use of Reserve Funds.
- EXHIBIT G** Engineering Plans and Specifications signed and sealed by an engineer registered in Kentucky.



8. The Directors of the System respectfully represent to the Public Service Commission that there is a genuine need and demand for the Project and that the Commission should enter herein its Order issuing its Certificate of Public Convenience and Necessity pursuant to KRS 278.023 authorizing construction and installation of the Project.

**WHEREFORE**, the Applicant, Butler County Water System, Inc., respectfully requests that such Order be issued.

Respectfully submitted,

BUTLER COUNTY WATER SYSTEM, INC.

By: Weymouth Martin  
Weymouth Martin, Jr., President of the Board

Richard J. Deye  
Richard J. Deye  
Attorney at Law  
PO Box 340  
Morgantown, Kentucky 42261  
Telephone: (502) 526-3313

COMMONWEALTH OF KENTUCKY )  
COUNTY OF BUTLER )

I, Weymouth Martin, Jr., being first duly sworn according to law, state that I am President of the Board of Directors of Butler County Water System, Inc., Butler County, Kentucky, that I have read the foregoing Application, and that the statements of fact set forth therein are true and accurate to the best of my knowledge and belief.

WITNESS my signature this 30<sup>th</sup> day of September, 2014.

Weymouth Martin  
Weymouth Martin, Jr.

Subscribed and sworn to before me this 30<sup>th</sup> day of September, 2014. My commission expires: 3-1-16.



Shelly Kay Anderson  
Notary Public  
ID: 458223  
Butler County, Kentucky  
(State at Large - Kentucky)





Butler County  
Water System

# Preliminary Engineering Report

## Water Treatment Plant Enhancement Project

June, 2012





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## General

Butler County Water System, Inc. (Butler Water) provides water service to Butler County, KY outside the service area of the Morgantown Utilities Commission. In addition, Butler Water serves a portion of eastern Muhlenberg County. As of July 2012, Butler Water serves 4,800 active customers.

To continue to meet new Environmental Protection Agency requirements and to meet growth in peak system demand, Butler Water is applying to Rural Development (RD) for funds to upgrade and enhance the Water Treatment Plant from 1.5 million gallons per day (MGD) to 2.0 MGD. The information provided in this report more fully describes the proposed project, called the Water Treatment Plant Enhancement Project, describes the need for the construction, and supplies appropriate financial summaries.

## Summary and Conclusions

The proposed water treatment plant improvements as illustrated on the enclosed illustration (Exhibit A) are greatly needed to meet current EPA water quality regulations and to provide adequate capacity during peak demand. The proposed Water Treatment Plant Enhancement Project includes additions of new tube settlers to existing clarifiers, new high service pumps, 16-inch transmission line, 10-inch raw water line, variable frequency drives for the raw water pumps, and structural enhancements inside the treatment facility.

The proposed project to upgrade capacity to 2.0 MGD is economically feasible with a 9.3 percent general rate increase with a \$175,000 grant and a \$408,000 loan from Rural Development (RD). The project qualifies for the RD intermediate level interest rate (3.0 percent) on loan funds and is eligible for up to 30 percent grant funding.



## **Project Need**

The Butler County WTP is located in the northern section of the City of Morgantown, approximately 0.4 miles south of the Green River. The WTP has a current capacity of 1.5 MGD.

Butler Water has determined, to ensure the best service to all customers, that planning for capacity upgrades should be initiated when the peak demand at a WTP exceeds or is projected to exceed 90 percent of its rated capacity. Therefore, when the peak flow is approximately 1.35 MGD (90% of the current 1.5 MGD rated capacity), the required upgrade to increase the rated capacity of the WTP and water transmission lines to 2.0 MGD needs to be undertaken. Over the past three years, Butler Water has experienced several occasions where peak daily demand has exceeded this threshold with recorded peak days between 1.35 MGD and 1.5 MGD in 2011 and 2012.

## **Project Description**

At present, the rated capacity of the WTP is 1.5 MGD. With peak daily demand reaching near this capacity, it is imperative that Butler Water proceed with the Water Treatment Plant Enhancement project to increase the rated capacity of the system to 2.0 MGD. This project includes the following upgrades and enhancements: high service pump upgrades; finished water pipeline upgrades; raw water pipeline upgrades; replacement of the tube settlers in Clarifier Nos. 1 and 2; and structural modifications and painting of the filter building piping and floor.

The high service pump upgrade consists of the two (2) new high service pumps and motors each with a minimum capacity of 2.0 MGD. The starters for the high service pumps have already been upgraded to accommodate the

larger motors. The existing finished water pipeline which transmits water from the WTP to other water lines in the transmission system is a 10-inch water line. This line is not adequate to support a WTP capacity of 2.0 MGD. Therefore, a new 16-inch water line, approximately 700 feet in length, is proposed to replace the existing line.

The raw water pipeline conveys water from the Green River via the Raw Water Pump Station (RWPS) to the WTP. The existing pipeline is a 10-inch line and is approximately 2,100 feet in length. To increase the capacity of the raw water transmission line a parallel 10-inch line is proposed to be constructed from the RWPS to a point approximately 700 feet from the WTP. The proposed raw water line will be connected to the existing 10-inch finished water line which will be disconnected from the water transmission system when the new proposed 16-inch finished water line is placed in service. This existing 10-inch line will then become a continuation of the new raw water line resulting in two parallel 10-inch lines from the RWPS to the WTP.

Replacement of the tube settler systems in Clarifier Nos. 1 and 2 is also required. Tube settlers use multiple tubular channels which combine to form an increased effective settling area and therefore increased capacity. This provides for a particle settling depth that is significantly less than the settling depth of a conventional clarifier, therefore reducing settling times. The existing plastic tube settler systems in Clarifier Nos. 1 and 2 have degraded since their initial installation and had to be removed due to their degradation. This portion of the project consists of the replacement of the tube settler systems in Clarifier Nos. 1 and 2. A structural grid will be installed on top of the tube settlers to protect the tube settlers and allow operating personnel to walk on the tube settlers to perform inspection and maintenance when the clarifier is out of service.



Structural enhancements and painting are needed inside the treatment building due to chlorine off-gassing that occurs during the treatment process. These improvements include installation of a new support system for chemical feed, automation equipment, and controls inside the plant along with painting of all piping in the original portion of the WTP filter building, painting of the filter building floor, and structural steel as needed.

The Project Budget, which includes estimates of various costs and funding sources for the project, is presented on the next page.





## Project Budget

### Water Treatment Plant Enhancement Project

#### Project Cost

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
10" Raw Water Line Upgrade	1,550	LF	\$ 40.00	\$ 62,000.00
16" Finished Water Line Upgrade	700	LF	100.00	70,000.00
Tube Settler Replacement	2	EA	60,000.00	120,000.00
High Service Pump Upgrade	2	EA	80,000.00	160,000.00
Raw Water Pump VFD	2	EA	19,000.00	38,000.00
Plant Structural & Piping Painting	1	LS	90,000.00	<u>90,000.00</u>
 Total Construction				\$ 540,000.00
 Administrative Costs				5,000.00
Legal				5,000.00
Interest During				6,000.00
Contingency				<u>27,000.00</u>
 <b>Total Project Cost</b>				<b>\$ 583,000.00</b>

#### Project Funding

Rural Development Loan	\$ 408,000.00
Rural Development Grant	<u>175,000.00</u>
 <b>Total Project Funding</b>	<b>\$ 583,000.00</b>

## Household Income Information

Qualifications for funding from RD are based in part on the median income level of the households affected by the project. In order to qualify for the intermediate interest rate available, the median income level for households in the project area must be below \$33,723. An examination of U.S. Census data indicates that the median household income in Butler County is \$29,405. Since this income level is well below the required amount, the project qualifies for the intermediate level interest rate of 3.0 percent on RD loan funds. Butler County is also eligible for grant funds up to 30% of the project cost based on the median household income.

## Financial Considerations and Proposed Water Rates

The methodology used in developing the Butler Water's existing rate schedule was taken from the American Water Works Association, Manual M-1, Water Rates, Section 5, "Rate Design for Small Utilities", published by the AWWA in 2000. Basic philosophy and methodology presented in other sections of that manual were also incorporated into the rate design.

It was determined that with the additional debt service and operating expenses resulting from the proposed project, a rate increase averaging 9.3 percent is required. This increase will also allow an adequate margin for



depreciation funds to be accumulated for system maintenance, minor improvements, and special programs.

As Butler Water's facilities continue to age and more facilities are added, the need for expenditures on maintenance and upkeep is expected to increase. Examples of major upcoming expenditures from depreciation funds include tank maintenance, meter and line replacement programs. These are only a few examples of the many uses of depreciation funds that are required for system upkeep. Therefore, it is very important for Butler Water to implement water rates that result in sufficient revenue so that these funds will be available.

The schedule of water rates recommended in conjunction with this project is shown on the following page. Following the rate schedule is the Proforma Adjustment which shows the estimated revenues (which include the rate increase) and expenses for the first full year of operation after the completion of Water Treatment Plant Enhancement Project. Appendix A contains the Analysis of Actual Water Usage and Forecast of Water Usage income along with the Proposed Operating Budget for the first year of operation.



**Schedule of Proposed Water Rates (Includes 9.3% Rate Adjustment)**

**5/8 X 3/4-Inch Meter**

First	2,000 Gallons	\$ 18.54 Minimum Bill
Next	4,000 Gallons	5.37 per 1,000 Gallons
Next	44,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**1-Inch Meter**

First	5,000 Gallons	\$35.18 Minimum Bill
Next	1,000 Gallons	5.37 per 1,000 Gallons
Next	44,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**1-1/2-Inch Meter**

First	10,000 Gallons	\$62.86 Minimum Bill
Next	40,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**2-Inch Meter**

First	16,000 Gallons	\$92.26 Minimum Bill
Next	34,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**3-Inch Meter**

First	25,000 Gallons	\$149.77 Minimum Bill
Next	25,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**4-Inch Meter**

First	30,000 Gallons	\$207.19 Minimum Bill
Next	20,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**6-Inch Meter**

First	60,000 Gallons	\$361.90 Minimum Bill
Next	40,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**8-Inch Meter**

First	80,000 Gallons	\$459.04 Minimum Bill
Next	20,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons



Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

PROFORMA ADJUSTMENT  
WATER TREATMENT PLANT ENHANCEMENT PROJECT  
BUTLER COUNTY WATER SYSTEMS, INC.

	Existing System (1)	Changes on Existing System	Changes Due to New Project	Total Future System After Project (2014)
<b>OPERATING REVENUE:</b>				
METERED & OTHER				
Meter Sales Revenue	\$1,708,691	\$0	\$159,518 (8)	\$1,868,209
Forfeited Discounts	30,943	0	0	30,943
Other Meter Sales Rev.	0	0	0	0
Misc. Service Revenue	26,930	0	0	26,930
Other Water Revenue	0	0	0	0
Misc. Income-Interest	15,003	0	0	15,003
<b>TOTAL OPERATING REVENUE</b>	<b>\$1,781,567</b>	<b>\$0</b>	<b>\$159,518</b>	<b>\$1,941,085</b>
<b>OPERATING EXPENSE:</b>				
SOURCE OF SUPPLY & PUMP. EXP.				
Salary & Wages	\$364,887	\$34,267 (2,3)	\$0	\$399,154
Fringe	201,410	19,841 (2,3)	0	221,251
Purchase Water	0	0	0	0
Purchase Power	124,168	8,443 (2)	6,584 (9)	139,195
Chemicals	56,398	(6,165) (2,4)	0	50,233
Material & Supplies	60,977	4,146 (2)	0	65,123
Contractual Servs - Engr	0	0	0	0
Contractual Servs - Acct	5,897	401 (2)	0	6,298
Contractual Servs - Legal	0	0 (2)	0	0
Contractual Servs - Other	127,195	13,569 (2,5)	0	140,764
Rental of Building & Utilities	14,938	1,016 (2)	0	15,954
Equipment Expense	75,390	5,127 (2)	0	80,517
Insurance - Gen. Liab.	22,631	1,539 (2)	0	24,170
Insurance - Other	948	64 (2)	0	1,012
Regulatory Expense	2,709	184 (2)	0	2,893
Bad Debt Expense	4,466	304 (2)	0	4,770
Misc. Expense	3,018	205 (2)	0	3,223
<b>SUBTOTAL OPERATING EXPENSE</b>	<b>\$1,065,032</b>	<b>\$82,941</b>	<b>\$6,584</b>	<b>\$1,154,557</b>



Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

PROFORMA ADJUSTMENT (CONTINUED)  
WATER TREATMENT PLANT ENHANCEMENT PROJECT  
BUTLER COUNTY WATER SYSTEMS, INC.

	Existing System (1)	Changes on Existing System	Changes Due to New Project	Total Future System After Project (2014)
<b>OTHER EXPENSES:</b>				
Depreciation	\$536,037	\$10,906 (6)	\$11,660 (10)	\$558,603
Misc. Non-Operating Inc.	(7)	0	0	(7)
Misc. Non-Operating Expense	0	0	0	0
<b>SUBTOTAL OTHER EXPENSE</b>	<b>\$536,030</b>	<b>\$10,906</b>	<b>\$11,660</b>	<b>\$558,596</b>
<b>PRINCIPAL &amp; INTEREST EXPENSE:</b>				
PRINCIPAL PAYMENT - EX. RDA	\$161,935	\$7,140 (7)	\$0	\$169,075
INTEREST PAYMENT - EX. RDA	216,941	(11,851) (7)	0	205,090
PRINCIPAL PAYMENT - NEW RDA	0	0	5,900 (11)	5,900
INTEREST PAYMENT - NEW RDA	0	0	12,200 (11)	12,200
CONSUMER DEPOSITS - Interest	830	0	0	830
<b>TOTAL OPERATING &amp; MAINTENANCE EXPENSE AND OTHER</b>	<b>\$1,980,768</b>	<b>\$89,136</b>	<b>\$36,344</b>	<b>\$2,106,248</b>
<b>NET UTILITY OPERATING INCOME</b>	<b><u>(\$199,201)</u></b>	<b><u>(\$89,136)</u></b>	<b><u>\$123,174</u></b>	<b><u>(\$165,163)</u></b>

Notes

- (1) Test period is July 1, 2011 to June 30, 2012.
- (2) Adjustment for 2.5% inflation annually for 2 yrs, 8 months from test period through 2014 =6.8%.
- (3) Increased Salary & Wages by \$9,455 and Fringe Benefits by \$6,145 for CSR wages that were capitalized for CIS project implementation during test period
- (4) Decreased chemical costs by \$10,000 for new peroxide feed system.
- (5) Increase of \$4,920 for CIS maintenance agreement.
- (6) Adjust for full year of depreciation for misc. pump station modifications, treatment plant improvements, and CIS project implementation.
- (7) Adjusted principal and interest to first full year of operation.
- (8) Metered revenue adjusted based on the Usage Analysis to reflect proposed rate increase.
- (9) Additional electrical pumping cost due to new High Service Pumps pumping higher flow rate and pressure.
- (10) Calculated depreciation for proposed project.
- (11) Proposed principal and interest payments assuming 70% loan value using 3% interest rate.

## APPENDIX A

- Analysis of Actual Water Usage and Forecast of Water Usage Income
- Proposed Operating Budget



Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

ANALYSIS OF ACTUAL WATER USAGE AND  
FORECAST OF WATER USAGE INCOME

INCLUDES 9.3% RATE INCREASE AS PROPOSED)

5/8" METERS:

			<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>			
			AVG							
<u>USAGE/MON</u>	<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>		
0 TO 2,000	946	18.54	16,072	15,204,112	\$297,975	1,974	1,867,404	\$36,598		
2 TO 3,000	2,512	21.29	9,514	23,899,168	202,553	214	537,568	4,556		
3 TO 4,000	3,486	26.52	8,776	30,593,136	232,740	184	641,424	4,880		
4 TO 5,000	4,473	31.82	6,338	28,349,874	201,675	117	523,341	3,723		
5 TO 6,000	5,467	37.16	4,230	23,125,410	157,187	71	388,157	2,638		
6 TO 7,000	6,459	42.21	2,909	18,789,231	122,789	67	432,753	2,828		
7 TO 8,000	7,456	46.97	1,695	12,637,920	79,614	49	365,344	2,302		
8 TO 9,000	8,463	51.77	1,098	9,292,374	56,843	48	406,224	2,485		
9 TO 10,000	9,468	56.56	755	7,148,340	42,703	28	265,104	1,584		
10 TO 11,000	10,473	61.36	532	5,571,636	32,644	29	303,717	1,779		
11 TO 12,000	11,474	66.13	344	3,947,056	22,749	24	275,376	1,587		
12 TO 14,000	12,947	73.16	462	5,981,514	33,800	21	271,887	1,536		
14 TO 16,000	14,865	82.31	305	4,533,825	25,105	6	89,190	494		
16 TO 18,000	16,875	91.89	184	3,105,000	16,908	19	320,625	1,746		
18 TO 20,000	18,888	101.50	124	2,342,112	12,586	7	132,216	711		
20 TO 25,000	22,166	117.13	175	3,879,050	20,498	18	398,988	2,108		
25 TO 30,000	26,826	139.36	83	2,226,558	11,567	17	456,042	2,369		
30 TO 40,000	34,233	174.69	70	2,396,310	12,228	15	513,495	2,620		
40 TO 50,000	43,736	220.02	30	1,312,080	6,601	6	262,416	1,320		
50 TO 75,000	57,994	282.68	27	1,565,838	7,632	21	1,217,874	5,936		
75 TO 100,000	87,964	405.55	10	879,640	4,056	15	1,319,460	6,083		
100 TO 150,000	117,090	513.35	7	819,630	3,593	12	1,405,080	6,160		
150 TO 200,000	157,490	651.52	5	787,450	3,258	2	314,980	1,303		
200 TO 300,000	237,180	924.06	1	237,180	924	1	237,180	924		
300 TO 400,000	0	0.00	0	0	0	0	0	0		
400 TO 500,000	0	0.00	0	0	0	0	0	0		
500 TO ABOVE	0	0.00	0	0	0	0	0	0		
SUBTOTALS			53,746	208,624,444	\$1,608,228	2,965	12,945,845	\$98,270		
AVG. RATE				\$7.70						
AVG. USAGE				3,882			4,366			





Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

1" METERS

			<u>RESIDENTIAL</u>					<u>COMMERCIAL</u>		
			AVG							
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	
0	TO	5,000	1,844	35.18	164	302,416	5,770	123	226,812	4,327
5	TO	6,000	5,501	37.87	19	104,519	720	14	77,014	530
6	TO	7,000	6,527	43.06	15	97,905	646	16	104,432	689
7	TO	8,000	7,471	47.57	2	14,942	95	14	104,594	666
8	TO	9,000	8,538	52.66	12	102,456	632	9	76,842	474
9	TO	10,000	9,591	57.68	3	28,773	173	7	67,137	404
10	TO	11,000	10,479	61.91	8	83,832	495	8	83,832	495
11	TO	12,000	11,419	66.40	6	68,514	398	12	137,028	797
12	TO	14,000	12,901	73.47	11	141,911	808	15	193,515	1,102
14	TO	16,000	15,056	83.75	12	180,672	1,005	4	60,224	335
16	TO	18,000	17,112	93.55	7	119,784	655	10	171,120	936
18	TO	20,000	18,883	102.00	5	94,415	510	11	207,713	1,122
20	TO	25,000	22,300	118.30	13	289,900	1,538	12	267,600	1,420
25	TO	30,000	27,215	141.75	9	244,935	1,276	5	136,075	709
30	TO	40,000	34,381	175.93	15	515,715	2,639	10	343,810	1,759
40	TO	50,000	44,266	223.08	6	265,596	1,338	13	575,458	2,900
50	TO	75,000	61,559	297.82	5	307,795	1,489	17	1,046,503	5,063
75	TO	100,000	87,026	402.24	9	783,234	3,620	12	1,044,312	4,827
100	TO	150,000	126,684	530.05	4	506,736	2,120	13	1,646,892	6,891
150	TO	200,000	176,593	700.74	2	353,186	1,401	6	1,059,558	4,204
200	TO	300,000	237,822	910.14	1	237,822	910	5	1,189,110	4,551
300	TO	400,000	333,150	1236.16	0	0	0	3	999,450	3,708
400	TO	500,000	462,733	1679.34	0	0	0	3	1,388,199	5,038
500	TO	ABOVE	725,884	2579.31	0	0	0	5	3,629,420	12,897
SUBTOTALS					328	4,845,058	\$28,238	347	14,836,650	\$65,844



Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

1 1/2" METERS:

			<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>			
		AVG								
<u>USAGE/MON</u>	<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>		
0 TO 10,000	3,181	62.86	0	0	0	12	38,172	754		
10 TO 11,000	0	0.00	0	0	0	0	0	0		
11 TO 12,000	0	0.00	0	0	0	0	0	0		
12 TO 14,000	13,450	79.32	0	0	0	2	26,900	159		
14 TO 16,000	0	0.00	0	0	0	0	0	0		
16 TO 18,000	0	0.00	0	0	0	0	0	0		
18 TO 20,000	19,050	106.03	0	0	0	2	38,100	212		
20 TO 25,000	0	0.00	0	0	0	0	0	0		
25 TO 30,000	27,050	144.19	0	0	0	2	54,100	288		
30 TO 40,000	33,517	175.04	0	0	0	6	201,102	1,050		
40 TO 50,000	0	0.00	0	0	0	0	0	0		
50 TO 75,000	63,600	309.42	0	0	0	5	318,000	1,547		
75 TO 100,000	85,433	398.94	0	0	0	3	256,299	1,197		
100 TO 150,000	109,575	491.41	0	0	0	4	438,300	1,966		
150 TO 200,000	0	0.00	0	0	0	0	0	0		
200 TO 300,000	0	0.00	0	0	0	0	0	0		
300 TO 400,000	0	0.00	0	0	0	0	0	0		
400 TO 500,000	0	0.00	0	0	0	0	0	0		
500 TO ABOVE	0	0.00	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>		
SUBTOTALS			0	0	\$0	36	1,370,973	\$7,173		



Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

2" METERS:

					<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>		
<u>USAGE/MON</u>		<u>AVG</u>	<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>
0	TO 16,000	4,309	92.26	0	0	0	0	29	124,961	2,676
16	TO 18,000	0	0.00	0	0	0	0	0	0	0
18	TO 20,000	18,300	103.23	0	0	0	0	1	18,300	103
20	TO 25,000	21,900	120.40	0	0	0	0	2	43,800	241
25	TO 30,000	0	0.00	0	0	0	0	0	0	0
30	TO 40,000	35,436	184.97	0	0	0	0	11	389,796	2,035
40	TO 50,000	45,356	232.29	0	0	0	0	9	408,204	2,091
50	TO 75,000	57,385	284.72	0	0	0	0	13	746,005	3,701
75	TO 100,000	87,200	406.96	0	0	0	0	6	523,200	2,442
100	TO 150,000	126,400	549.73	0	0	0	0	4	505,600	2,199
150	TO 200,000	181,350	737.66	0	0	0	0	4	725,400	2,951
200	TO 300,000	250,700	974.83	0	0	0	0	5	1,253,500	4,874
300	TO 400,000	335,133	1263.59	0	0	0	0	3	1,005,399	3,791
400	TO 500,000	455,200	1674.22	0	0	0	0	1	455,200	1,674
500	TO 750,000	510,000	1861.64	0	0	0	0	1	510,000	1,862
750	TO 1.0 M	0	0.00	0	0	0	0	0	0	0
1.0	TO 1.5 M	0	0.00	0	0	0	0	0	0	0
1.5	TO ABOVE	0	0.00	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
SUBTOTALS					0	0	\$0	89	6,709,365	\$30,640



Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

3" METERS:

			<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>			
			AVG							
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	
0 TO 25,000		67	149.77	0	0	0	12	804	1,797	
25 TO 40,000		0	0.00	0	0	0	0	0	0	
40 TO 50,000		0	0.00	0	0	0	0	0	0	
50 TO 75,000		0	0.00	0	0	0	0	0	0	
75 TO 100,000		0	0.00	0	0	0	0	0	0	
100 TO 150,000		0	0.00	0	0	0	0	0	0	
150 TO 200,000		0	0.00	0	0	0	0	0	0	
200 TO 300,000		0	0.00	0	0	0	0	0	0	
300 TO 400,000		0	0.00	0	0	0	0	0	0	
400 TO 500,000		0	0.00	0	0	0	0	0	0	
500 TO 750,000		0	0.00	0	0	0	0	0	0	
750 TO 1.0 M		0	0.00	0	0	0	0	0	0	
1.0 TO 1.5 M		0	0.00	0	0	0	0	0	0	
1.5 TO ABOVE		0	0.00	0	0	0	0	0	0	
SUBTOTALS				0	0	\$0	12	804	\$1,797	

4" METERS:

			<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>			
			AVG							
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	
0 TO 30,000		10,415	207.19	0	0	0	8	83,320	1,658	
30 TO 50,000		38,243	246.51	0	0	0	7	267,701	1,726	
50 TO 75,000		0	0.00	0	0	0	0	0	0	
75 TO 100,000		0	0.00	0	0	0	0	0	0	
100 TO 150,000		0	0.00	0	0	0	0	0	0	
150 TO 200,000		0	0.00	0	0	0	0	0	0	
200 TO 300,000		0	0.00	0	0	0	0	0	0	
300 TO 400,000		0	0.00	0	0	0	0	0	0	
400 TO 500,000		0	0.00	0	0	0	0	0	0	
500 TO 750,000		0	0.00	0	0	0	0	0	0	
750 TO 1.0 M		0	0.00	0	0	0	0	0	0	
1.0 TO 1.5 M		0	0.00	0	0	0	0	0	0	
1.5 TO ABOVE		0	0.00	0	0	0	0	0	0	
SUBTOTALS				0	0	\$0	15	351,021	\$3,384	



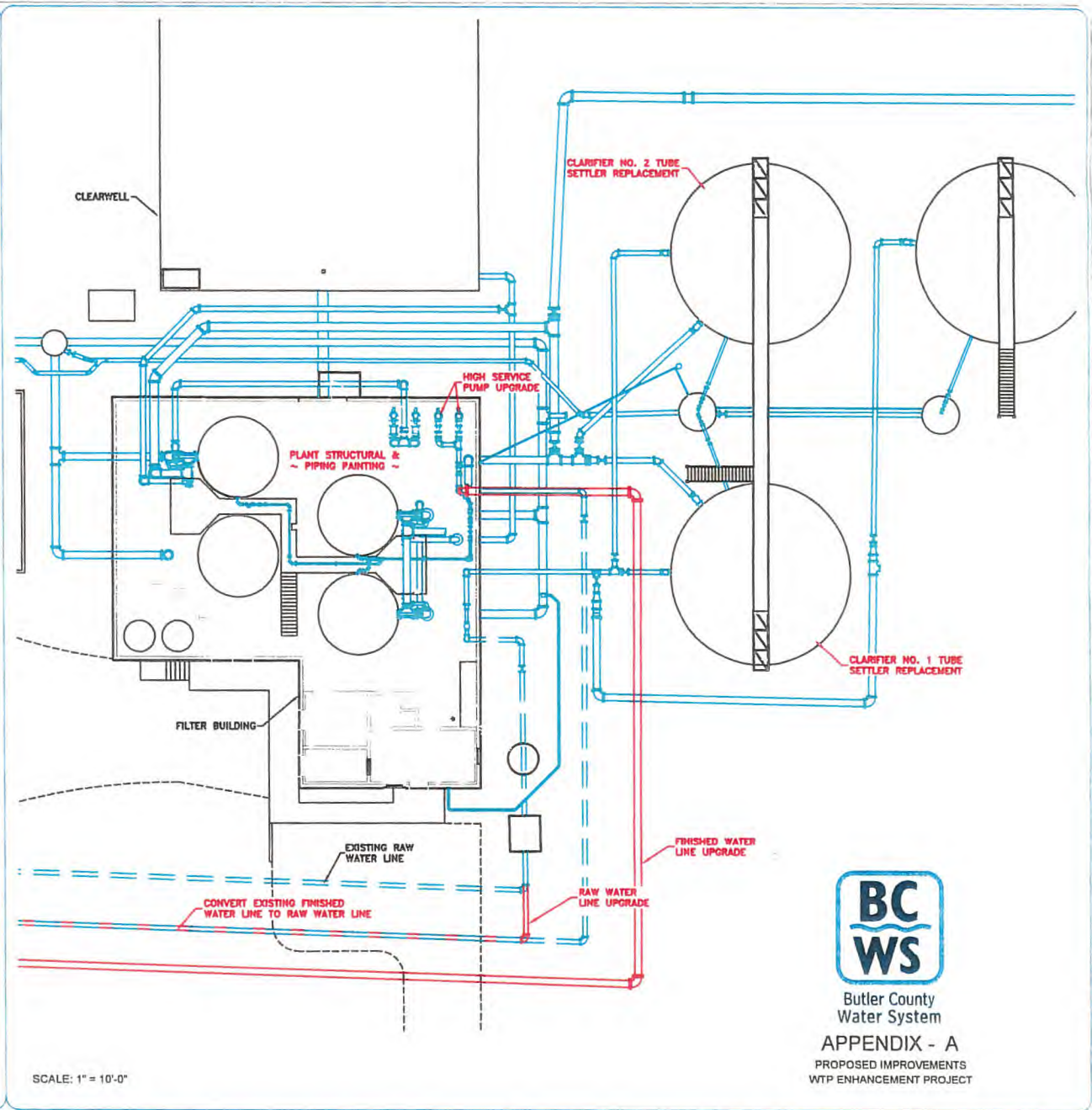
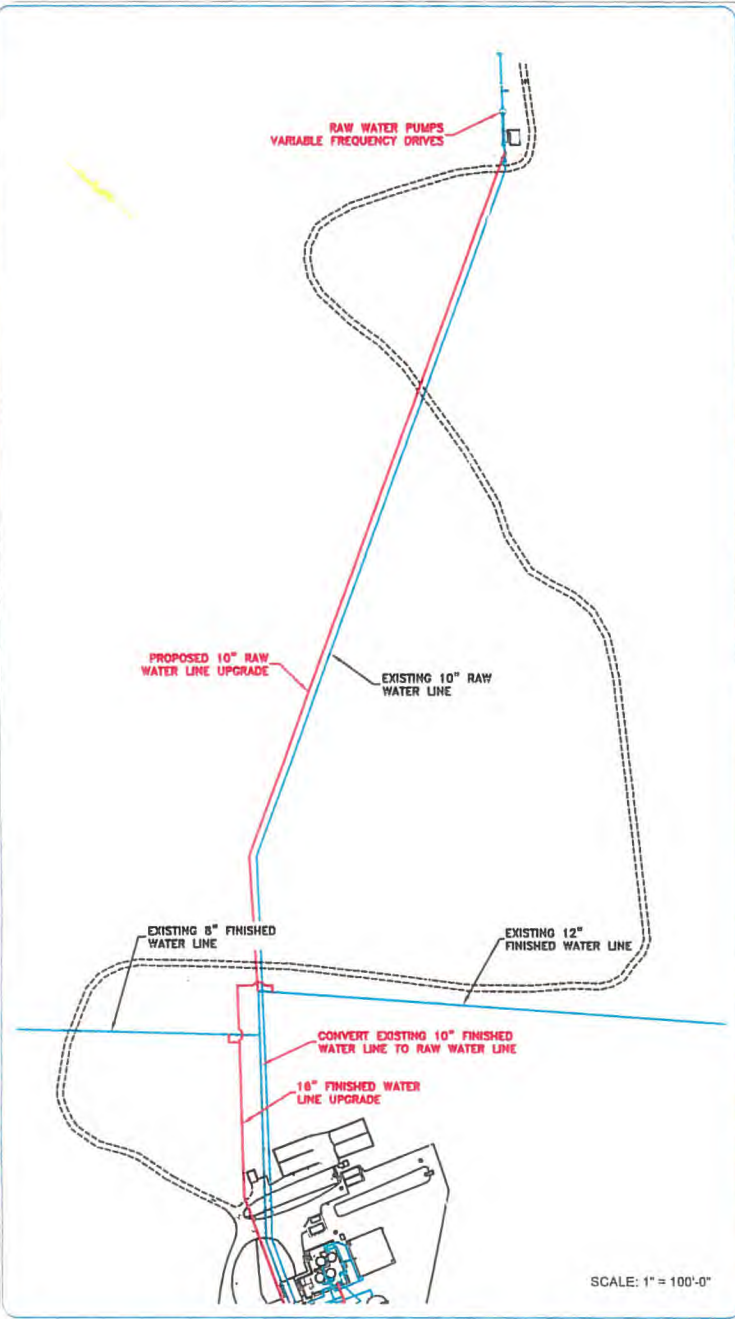
Preliminary Engineering Report  
Water Treatment Plant Enhancement Project

6" METERS:

			<u>RESIDENTIAL</u>					<u>COMMERCIAL</u>		
			AVG							
<u>USAGE/MON</u>	<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>		
0 TO 60,000	17,171	361.90	0	0	0	35	600,985	12,667		
60 TO 75,000	64,933	382.13	0	0	0	3	194,799	1,146		
75 TO 100,000	85,500	466.45	0	0	0	1	85,500	466		
100 TO 150,000	121,929	600.90	0	0	0	7	853,503	4,206		
150 TO 200,000	151,100	700.66	0	0	0	1	151,100	701		
200 TO 300,000	205,500	886.71	0	0	0	1	205,500	887		
300 TO 400,000	0	0.00	0	0	0	0	0	0		
400 TO 500,000	0	0.00	0	0	0	0	0	0		
500 TO 750,000	0	0.00	0	0	0	0	0	0		
750 TO 1.0 M	0	0.00	0	0	0	0	0	0		
1.0 TO 1.5 M	0	0.00	0	0	0	0	0	0		
1.5 TO 2.0 M	0	0.00	0	0	0	0	0	0		
2.0 TO 2.5 M	0	0.00	0	0	0	0	0	0		
2.5 TO 3.0 M	0	0.00	0	0	0	0	0	0		
3.0 TO 4.0 M	0	0.00	0	0	0	0	0	0		
4.0 TO 5.0 M	0	0.00	0	0	0	0	0	0		
5.0 TO ABOVE	0	0.00	0	0	0	0	0	0		
SUBTOTALS			0	0	\$0	48	2,091,387	\$20,073		
TOTALS			54,074	213,469,502	\$1,636,466	3,512	38,306,045	\$227,181		
TOTAL CUSTOMERS			4,506			293				
AVG. CONSUMPTION PER MONTH				3,948			10,907			
ANNUAL WATER SOLD				213,469,502			38,306,045			
ANNUAL WATER PURCH. OR PROD.				266,206,900			47,769,500			
ANNUAL REVENUE					\$1,636,466			\$227,181		
TOTAL ANNUAL WATER SOLD				251,775,547						
TOTAL ANNUAL WATER PURCH. OR PROD.				313,976,400						
TOTAL ANNUAL REVENUE					\$1,863,647					

**EXHIBIT A**

**Proposed Improvements**



Butler County  
Water System  
APPENDIX - A  
PROPOSED IMPROVEMENTS  
WTP ENHANCEMENT PROJECT

SUMMARY ADDENDUM  
TO  
PRELIMINARY ENGINEERING REPORT  
DATED DECEMBER 18, 2012  
FOR  
WATER TREATMENT PLANT ENHANCEMENT PROJECT  
BUTLER COUNTY WATER SYSTEM, INC.  
APPLICANT CONTACT PERSON: JOHN M. DIX, P.E.  
APPLICANT PHONE NUMBER: 270-842-0052  
APPLICANT TAX IDENTIFICATION NUMBER (TIN): XXXXXXXXXX

In order to avoid unnecessary delays in application processing, the applicant and its consulting engineer should prepare a summary of the preliminary report in accordance with this guide.

Please complete the applicable sections of the Summary Addendum. *Please note, if water and sewer revenue will both be taken as security for the loan, all user information and characteristics of both utility systems will be needed even though the project will benefit only one utility.*

Feasibility reviews and grant determinations may be processed more accurately and more rapidly if the Summary/Addendum is submitted simultaneously with the preliminary engineering report, or as soon thereafter as possible.



I. GENERAL

A. Proposed Project: Provide a brief description of the proposed project. In addition to this summary, the applicant/engineer should submit a project map of the service area.

**See the Preliminary Engineering Report titled Preliminary Engineering Report, Water Treatment Plant Enhancement Project, Dated August 2012**

II. FACILITY CHARACTERISTICS OF EXISTING SEWER SYSTEM

**Not Applicable**

III. FACILITY CHARACTERISTICS OF EXISTING WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also, describe the adequacy of Water Purchase Contract if applicable.

**Butler County WTP's source of water is the Green River. This source has adequate quantity and quality for existing and anticipated future water demands. However, to continue to meet new Environmental Protection Agency requirements and to meet growth in peak system demand, Butler Water proposes to upgrade and enhance the WTP from 1.5 million gallons per day (MGD) to 2.0 MGD. The current peak level of production has been between 1.35 MGD and 1.5 MGD in 2011 and 2012. Butler Water does not regularly purchase water.**

If the applicant purchases water, list the Seller(s):

**Not Applicable**

Seller(s):

Price/1,000 gallons:

Present Estimated Market Value of Existing System:

B. Water Storage:

Type:      Ground Storage Tank: **Yes**                      Elevated Tank: **Yes**  
                 Standpipe: **Yes**                                      Other: **Clearwell**

Number of Storage Structures: **15**

Total Storage Volume Capacity: **2,260,000 Gallons**

Date(s) Storage Tank(s) Constructed: **1975 – 2010**

C. Water Distribution System

Pipe Material: **Polyvinyl Chloride, Cast Iron, Ductile Iron, Asbestos Cement**

Lineal Feet of Pipe:	3" Diameter:	<b>180,100</b>	4":	<b>1,396,200</b>
	6":	<b>903,900</b>	8":	<b>173,200</b>
	10":	<b>2,600</b>	12":	<b>20,200</b>

Date(s) Water Lines Constructed: **1972 – 2012**

Number and Capacity of Pump Station(s): **15, Capacity: 60 – 1,050 GPM**

D. Condition of Existing Water System:

Briefly describe the condition and suitability for continued use of the facility now owned by the applicant. Include any major renovation that will be needed within five to ten years.

**The existing water treatment plant and distribution system are in good condition. No major renovations are anticipated within five to ten years.**

E. Percentage of Water Loss for the Existing System: **10.3%**

IV. EXISTING LONG-TERM INDEBTEDNESS

A. List of Bonds and Notes

<u>Date of Issue</u>	<u>Bond/Note Holder</u>	<u>Principal Balance</u>	<u>Payment Date</u>	<u>Bond Type Water/Sewer*</u>	<u>Amount on Deposit in Reserve Account</u>
1974 (91-01)	USDA	\$11,778.45	Jan 1	100%/0%	\$0.00
1977 (91-02)	USDA	57,203.28	Aug 16	100%/0%	\$0.00
1979 (91-03)	USDA	46,949.08	Monthly 15	100%/0%	\$0.00
1977 (91-06)	USDA	90,923.23	Jun 27	100%/0%	\$0.00
1987 (91-07)	USDA	235,592.03	Aug 18	100%/0%	\$0.00
1989 (91-09)	USDA	619,201.55	Apr 21	100%/0%	\$0.00
1992 (91-10)	USDA	548,956.97	Feb 19	100%/0%	\$0.00
1994 (91-11)	USDA	1,543,994.12	Feb 10	100%/0%	\$0.00
1996 (91-12)	USDA	772,547.07	Aug 8	100%/0%	\$0.00
1997 (91-14)	USDA	14,292.92	Dec 18	100%/0%	\$0.00
1997 (91-16)	USDA	156,121.36	Dec 18	100%/0%	\$0.00
1997 (91-17)	USDA	421,641.45	July 7	100%/0%	\$0.00

\*If a combined issue, show attributable portion to each system.

B. Principal and Interest Payments: (begin with the next fiscal year payment)

<u>Date of Issue</u>	<u>Bond/Note Holder</u>	<u>Payment Year 2013</u>		<u>Payment Year 2014</u>		<u>Payment Year 2015</u>	
		<u>Principal Payment</u>	<u>Interest Payment</u>	<u>Principal Payment</u>	<u>Interest Payment</u>	<u>Principal Payment</u>	<u>Interest Payment</u>
1974 (91-01)	USDA	\$5,403	\$270	NA	NA	NA	NA
1977 (91-02)	USDA	8,916	2,433	\$9,362	\$1,987	\$9,830	\$1,520
1979 (91-03)	USDA	6,984	1,980	7,342	1,622	7,717	1,247
1977 (91-06)	USDA	16,513	4,654	17,338	3,829	18,205	2,962
1987 (91-07)	USDA	10,578	11,301	11,107	10,772	11,663	10,216
1989 (91-09)	USDA	24,277	30,967	25,491	29,753	26,766	28,478
1992 (91-10)	USDA	16,815	27,381	17,656	26,540	18,539	25,657
1994 (91-11)	USDA	40,357	77,066	42,374	75,049	44,493	72,930
1996 (91-12)	USDA	18,172	33,945	18,989	33,128	19,844	32,273
1997 (91-14)	USDA	2,728	584	2,864	448	3,007	305
1997 (91-16)	USDA	4,199	6,843	4,388	6,654	4,585	6,457
1997 (91-17)	USDA	11,179	19,505	11,710	18,974	12,266	18,418

V. EXISTING SHORT-TERM INDEBTEDNESS

A. List of all Short-Term Debts (Do Not Show Any Debt Listed in Paragraph IV Above)

**None**

VI. LAND AND RIGHTS – EXISTING SYSTEM(S)

Number of Treatment Plant Sites:	Water 1	Sewer NA
Number of Storage Tank Sites:	Water 13	Sewer NA
Number of Pump Stations:	Water 13	Sewer NA
Total Acreage:	Water 9.6±	Sewer NA Acres
Purchase Price:	Water \$96,000±	Sewer NA

VII. NUMBER OF EXISTING USERS

	Water	Sewer
Residential (In Town) *	0	NA
Residential (Out of Town) *	4,491	NA
Non-Residential (In Town)	0	NA
Non-Residential (Out of Town)	292	NA
Total	4,783	NA
Number to Total Potential Users Living in the Service Area	3	NA

\*Note: Residential Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residence.

VIII.

IX. CURRENT WATER AND SEWER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION

<u>Meter Size</u>	<u>Water Connection Fee</u>	<u>Sewer Connection Fee</u>
5/8" x 3/4"	<b>\$450.00</b>	NA
1 - Inch	<b>\$550.00</b>	NA

X. SEWER RATES – EXISTING SYSTEM

**Not Applicable**

XI. WATER RATES - EXISTING SYSTEM

**5/8 X 3/4-Inch Meter**

First	2,000 Gallons	\$16.96 Minimum Bill
Next	4,000 Gallons	4.91 per 1,000 Gallons
Next	44,000 Gallons	4.36 per 1,000 Gallons
Next	50,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**1-Inch Meter**

First	5,000 Gallons	\$32.19 Minimum Bill
Next	1,000 Gallons	4.91 per 1,000 Gallons
Next	44,000 Gallons	4.36 per 1,000 Gallons
Next	50,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**1-1/2-Inch Meter**

First	10,000 Gallons	\$57.51 Minimum Bill
Next	40,000 Gallons	4.36 per 1,000 Gallons
Next	50,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**2-Inch Meter**

First	16,000 Gallons	\$84.41 Minimum Bill
Next	34,000 Gallons	4.36 per 1,000 Gallons
Next	50,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**3-Inch Meter**

First	25,000 Gallons	\$137.03 Minimum Bill
Next	25,000 Gallons	4.36 per 1,000 Gallons
Next	50,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**4-Inch Meter**

First	30,000 Gallons	\$189.56 Minimum Bill
Next	20,000 Gallons	4.36 per 1,000 Gallons
Next	50,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**6-Inch Meter**

First	60,000 Gallons	\$331.11 Minimum Bill
Next	40,000 Gallons	3.75 per 1,000 Gallons
Over	100,000 Gallons	3.13 per 1,000 Gallons

**8-Inch Meter**

First	80,000 Gallons	\$419.98 Minimum Bill
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Next 20,000 Gallons 3.75 per 1,000 Gallons  
Over 100,000 Gallons 3.13 per 1,000 Gallons

XII. ANALYSIS OF ACTUAL SEWER USAGE - EXISTING SYSTEM

**Not Applicable**

XIII. ANALYSIS OF ACTUAL, WATER USAGE - EXISTING SYSTEM – 12 MONTH PERIOD

**For Period July 2011 to June 2012.**

**See following pages for analysis.**



XIV. FACILITY CHARACTERISTICS OF PROPOSED SEWER SYSTEM

**Not Applicable**

XV. LAND AND RIGHTS - PROPOSED SEWER SYSTEM

**Not Applicable**

XVI. FACILITY CHARACTERISTICS OF PROPOSED WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also, describe the adequacy of Water Purchase Contract if applicable.

**Butler County WTP's source of water is the Green River. This source has adequate quantity and quality for existing water demands. As a result of this project, the capacity of the WTP and Raw Water Intake pumps will be increased to 2.0 MGD, a level which will provide adequate capacity during peak demand. Also as a result of this project, adequate treatment processes will be in place to meet new Environmental Protection Agency requirements.**

B. Water Storage:

Type: Ground Storage Tank: **Yes** Elevated Tank: **Yes**

Standpipe: **Yes** Other: **Clearwell**

Number of Storage Structures: **15**

Total Storage Volume Capacity: **2,260,000 Gallons**

Date(s) Storage Tank(s) Constructed: **1975 – 2010**

C. Water Distribution System

Pipe Material: **Polyvinyl Chloride, Cast Iron, Ductile Iron, Asbestos Cement**

Lineal Feet of Pipe: 3" Diameter: **180,100** 4": **1,396,200**

6": **903,900** 8": **173,200**

10": **4,150** 12": **20,200**

Date(s) Water Lines Constructed: **1972 – 2012**

Number and Capacity of Pump Station(s): **15, Capacity: 60 – 1,400 GPM**

XVII. LAND AND RIGHTS – PROPOSED WATER SYSTEM

Number of Treatment Plant Sites: Water **1** Sewer **NA**

Number of Storage Tank Sites: Water **13** Sewer **NA**

Number of Pump Stations: Water **13** Sewer **NA**

Total Acreage: Water **9.6±** Sewer **NA Acres**

Purchase Price: Water **\$96,000±** Sewer **NA**

XVIII. NUMBER OF NEW SEWER USERS

**Not Applicable**

XIX. PROPOSED SEWER CONNECTION FEES FOR EACH SIZE WATER METER

**Not Applicable**

XX. NUMBER OF NEW WATER USERS

Residential (In Town) *	<b>ZERO</b>
Residential (out of Town) *	<b>ZERO</b>
Non-Residential (Out of Town)	<b>ZERO</b>
Total	<b>ZERO</b>
Number to Total Potential Users Living in the Service Area	<b>3</b>

\*Note: Residential Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residence.

XXI. PROPOSED WATER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION:

<u>Meter Size</u>	<u>Connection Fee</u>
5/8" x 3/4"	<b>\$450.00</b>
1 – Inch	<b>\$550.00</b>
1-1/2 – Inch	<b>\$1,150.00</b>
2 – Inch	<b>\$1,300.00</b>
3 – Inch	<b>\$4,000.00</b>
4 – Inch	<b>\$4,600.00</b>
5 – Inch	<b>NA</b>
6 – Inch	<b>Actual Cost of Installation</b>

XXII. SEWER RATES – PROPOSED

**Not Applicable**

XXIII. WATER RATES – PROPOSED

**5/8 X 3/4-Inch Meter**

First	2,000 Gallons	\$ 18.54 Minimum Bill
Next	4,000 Gallons	5.37 per 1,000 Gallons
Next	44,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**1-Inch Meter**

First	5,000 Gallons	\$35.18 Minimum Bill
Next	1,000 Gallons	5.37 per 1,000 Gallons
Next	44,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**1-1/2-Inch Meter**

First	10,000 Gallons	\$62.86 Minimum Bill
Next	40,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**2-Inch Meter**

First	16,000 Gallons	\$92.26 Minimum Bill
Next	34,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**3-Inch Meter**

First	25,000 Gallons	\$149.77 Minimum Bill
Next	25,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**4-Inch Meter**

First	30,000 Gallons	\$207.19 Minimum Bill
Next	20,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**6-Inch Meter**

First	60,000 Gallons	\$361.90 Minimum Bill
Next	40,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**8-Inch Meter**

First	80,000 Gallons	\$459.04 Minimum Bill
Next	20,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

XXIV. FORECAST OF SEWER USAGE – INCOME – EXISTING SYSTEM – EXISTING  
USERS

**Not Applicable**

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XXV. FORECAST OF SEWER USAGE – INCOME – NEW USERS – EXTENSION ONLY

**Not Applicable**

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XXVI. FORECAST OF WATER USAGE - INCOME - EXISTING SYSTEM - EXISTING  
USERS

**See following pages for forecast.**

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XXVII. FORECAST OF WATER USAGE – INCOME – NEW USERS – EXTENSION  
ONLY

**No new users are associated with this project.**



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XXVIII. CURRENT OPERATION BUDGET – (SEWER SYSTEM)  
(As of the last full operating year.)

**Not Applicable**

XXIX. PROPOSED OPERATING BUDGET – (SEWER SYSTEM) – EXISTING SYSTEM  
AND NEW USERS (1st Full Year of Operation) Year Ending 2014

**Not Applicable**

XXX. PROPOSED OPERATING BUDGET – (SEWER SYSTEM) – NEW USERS –  
EXTENSION ONLY (1st Full Year of Operation) Year Ending 2014

**Not Applicable**

XXXI. CURRENT OPERATING BUDGET – (WATER SYSTEM)

(As of the last full operating year.)

A. Operating Income	
Meter Sales Revenue	\$1,708,691
Forfeited Discounts	30,943
Misc. Service Revenue	26,930
Other Water Revenue	
Total Operating Income	\$1,776,564
B. Operation and Maintenance Expenses	
Source of Supply	\$11,576
Pumping	37,953
Water Treatment	300,059
Transmission & Dist.	350,425
Customer Accounts	263,563
Admin. & General	101,456
Total Operating Expenses	\$1,065,032
Net Operating Income	\$701,532
C. Non-Operating Income	
Misc. Income-Interest	\$14,173
D. Net Income	\$686,081
E. Debt Repayment	
Interest – RD Existing Loans	\$216,941
Principal – RD Existing Loans	161,935
Total Debt Repayment	\$378,876
F. Balance Available for Coverage	\$322,656

XXXII. PROPOSED OPERATING BUDGET – (WATER SYSTEM) – EXISTING SYSTEM  
AND NEW USERS (1st Full Year of Operation) Year Ending 12/31/2014

A. Operating Income	
Meter Sales Revenue	\$1,868,209
Forfeited Discounts	30,943
Misc. Service Revenue	26,930
Other Water Revenue	0
Total Operating Income	\$1,926,082
B. Operation and Maintenance Expenses	
Source of Supply	\$12,676
Pumping	41,559
Water Treatment	335,150
Transmission & Dist.	383,716
Customer Accounts	288,601
Admin. & General	111,094
Total Operating Expenses	\$1,172,796
Net Operating Income	\$753,286
C. Non-Operating Income	
Misc. Income-Interest	\$14,173
D. Net Income	\$767,459
E. Debt Repayment	
RD Interest (Proposed Loan @ 75%)	\$12,000
RD Principal (Proposed Loan @ 75%)	6,700
Interest – RD Existing Loans	216,941
Principal – RD Existing Loans	161,635
Total Debt Repayment	\$397,576
F. Balance Available for Coverage	\$371,083

XXXIII. PROPOSED OPERATING BUDGET – (WATER SYSTEM) – NEW USERS –  
EXTENSION ONLY (1st Full Year of Operation) Year Ending 2014

**No new users are associated with this project.**

XXXIV. ESTIMATED PROJECT COST – SEWER

**Not Applicable**



XXXV. PROPOSED PROJECT FUNDING – SEWER

**Not Applicable**

XXXVI. ESTIMATED PROJECT COST – WATER

Development	\$ 540,000.00
Land and Rights	0.00
Legal	5,000.00
Engineering	0.00
Interest	6,000.00
Contingencies	27,000.00
Initial Operating and Maintenance	0.00
Other	<u>0.00</u>
TOTAL	\$ 583,000.00

XXXVII. ESTIMATED PROJECT FUNDING

Rural Development Loan	\$ 437,000.00
Rural Development Grant	<u>146,000.00</u>
TOTAL	\$ 583,000.00



Butler County  
Water System

# Final Engineering Report

## Water Treatment Plant Enhancement Project

August, 2014





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## Introduction

Butler County Water System, Inc. (Butler Water) provides water service to Butler County, KY outside the service area of the Morgantown Utilities Commission. In addition, Butler Water serves a portion of eastern Muhlenberg County. As of August 2014, Butler Water serves 4,800 active customers.

To continue to meet new Environmental Protection Agency requirements and to meet growth in peak system demand, Butler Water has applied to and been approved by Rural Development (RD) for funds to upgrade and enhance the Water Treatment Plant from 1.5 million gallons per day (MGD) to 2.0 MGD. The information provided in this report more fully describes the proposed project, called the Water Treatment Plant Enhancement Project, describes the need for the construction, and supplies appropriate financial summaries.

## Summary and Conclusions

The proposed water treatment plant improvements as illustrated on the enclosed drawing (Appendix A) are greatly needed to meet current EPA water quality regulations and to provide adequate capacity during peak demand. The proposed Water Treatment Plant Enhancement Project includes additions of new tube settlers to existing clarifiers, new high service pumps, 16-inch transmission line, 10-inch raw water line, variable frequency drives for the raw water pumps, and structural enhancements inside the treatment facility.

The proposed project to upgrade capacity to 2.0 MGD is economically feasible with a 9.3 percent general rate increase, with a \$146,000 grant, a \$437,000 loan from Rural Development (RD), and additional funding from the

Utility's Depreciation Reserve Fund. The project qualifies for the RD intermediate level interest rate (2.75 percent) on loan funds.

### **Project Need**

The Butler County WTP is located in the northern section of the City of Morgantown, approximately 0.4 miles south of the Green River. The WTP has a current capacity of 1.5 MGD.

Butler Water has determined, to ensure the best service to all customers, that planning for capacity upgrades should be initiated when the peak demand at a WTP exceeds or is projected to exceed 90 percent of its rated capacity. Therefore, when the peak flow is approximately 1.35 MGD (90% of the current 1.5 MGD rated capacity), the required upgrade to increase the rated capacity of the WTP and water transmission lines to 2.0 MGD needs to be undertaken. Over the past three years, Butler Water has experienced several occasions where peak daily demand has exceeded this threshold with recorded peak days between 1.35 MGD and 1.5 MGD in 2011 and 2012.

### **Project Description**

At present, the rated capacity of the WTP is 1.5 MGD. With peak daily demand reaching near this capacity, it is imperative that Butler Water proceed with the Water Treatment Plant Enhancement project to increase the rated capacity of the system to 2.0 MGD. This project includes the following upgrades and enhancements: high service pump upgrades; finished water pipeline upgrades; raw water pipeline upgrades; replacement of the tube settlers in Clarifier Nos. 1 and 2; and painting of the filter building structural steel and floor.



The high service pump upgrade consists of the two (2) new high service pumps and motors each with a minimum capacity of 2.0 MGD. The starters for the high service pumps have already been upgraded to accommodate the larger motors. The existing finished water pipeline which transmits water from the WTP to other water lines in the transmission system is a 10-inch water line. This line is not adequate to support a WTP capacity of 2.0 MGD. Therefore, a new 16-inch water line, approximately 700 feet in length, is proposed to replace the existing line.

The raw water pipeline conveys water from the Green River via the Raw Water Pump Station (RWPS) to the WTP. The existing pipeline is a 10-inch line and is approximately 2,100 feet in length. To increase the capacity of the raw water transmission line a parallel 10-inch line is proposed to be constructed from the RWPS to a point approximately 700 feet from the WTP. The proposed raw water line will be connected to the existing 10-inch finished water line which will be disconnected from the water transmission system when the new proposed 16-inch finished water line is placed in service. This existing 10-inch line will then become a continuation of the new raw water line resulting in two parallel 10-inch lines from the RWPS to the WTP.

Replacement of the tube settler systems in Clarifier Nos. 1 and 2 is also required. Tube settlers use multiple tubular channels which combine to form an increased effective settling area and therefore increased capacity. This provides for a particle settling depth that is significantly less than the settling depth of a conventional clarifier, therefore reducing settling times. The existing plastic tube settler systems in Clarifier Nos.1 and 2 have degraded since their initial installation and had to be removed due to their degradation. This portion of the project consists of the replacement of the tube settler systems in Clarifier Nos. 1 and 2. A structural grid will be installed on top of



the tube settlers to protect the tube settlers and allow operating personnel to walk on the tube settlers to perform inspection and maintenance when the clarifier is out of service.

Structural enhancements and painting are needed inside the treatment building due to chlorine off-gassing that occurs during the treatment process. These improvements include painting of the filter building floor and structural steel.

### **Results of Construction Bids**

On August 7, 2014, Butler County Water System, Inc. opened bids for the construction of the Water Treatment Plant Enhancement Project. The low bid exceeded the original budget for the project. Four (4) items are being deleted from the project and additional funding from BCWS's depreciation reserve fund is being utilized to balance the project budget. The revised project budget is presented on the next page. A summary of the bid tabulation for the four (4) bids received is attached as Appendix B. The proposal of the low bidder is attached as Appendix C.





Final Engineering Report  
Water Treatment Plant Enhancement Project

**Project Budget (As-Bid)**

Water Treatment Plant Enhancement Project

**Project Cost**

<u>Item</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Cost</u>	<u>Total</u>
1	10" PVC Raw Water Line	1,550	LF	\$40.00	\$62,000.00
2	16" DIP Finished Water Line	700	LF	120.00	84,000.00
3	12" PVC Finished Water Line	60	LF	300.00	18,000.00
4	Ductile Iron MJ Fittings	10,000	LB	3.00	30,000.00
5	Miscellaneous Items (Vault, Check Valves, Air Release, Etc.)	1	LS	25,000.00	25,000.00
6	Crushed Stone	150	TN	20.00	3,000.00
7	Concrete	10	CY	820.00	8,200.00
8	High Service Vertical Turbine Pumps	2	EA	71,000.00	142,000.00
9	High Service Pump Header Flanged Piping	1	LS	48,000.00	48,000.00
10	Filter Building Structural Steel and Pipe Painting	1	LS	14,800.00	14,800.00
11	Filter Building Type "A" Wall Section	40	LF	430.00	17,200.00
12	Filter Building Type "B" Wall Section	50	LF	440.00	22,000.00
13	Filter Building Type "C" Wall Section	75	LF	390.00	29,250.00
14	Filter Building Floor Painting	1	LS	16,000.00	16,000.00
15	Tube Settlers	2	EA	57,200.00	114,400.00
16	Raw Water Pump VFD Addition	2	EA	16,380.00	32,760.00
17	Silt Fence	500	LF	2.50	1,250.00
18	Rip-Rap Check Dam	20	TN	50.00	1,000.00
19	Final Cleanup	1	LS	12,500.00	12,500.00
<b>TOTAL BASE BID</b>					<b>\$681,360.00</b>
A1	High Service VFD Addition	2	EA	19,565.00	39,130.00
<b>TOTAL BASE BID with Alternates</b>					<b>\$720,490.00</b>

**Total Construction Less Deleted Items\*** **\$612,910.00**

Administrative Costs \$1,000.00  
 Legal \$2,500.00  
 Contingency \$30,650.00

**Total Project Cost \$647,060.00**

**Project Funding**

Rural Development Loan \$437,000.00  
 Rural Development Grant \$146,000.00  
 BCWS Depreciation Reserve Fund \$ 64,060.00

**Total Project Funding \$647,060.00**

## Financial Considerations and Proposed Water Rates

The methodology used in developing Butler Water's existing rate schedule was taken from the American Water Works Association, Manual M-1, Water Rates, Section 5, "Rate Design for Small Utilities", published by the AWWA in 2000. Basic philosophy and methodology presented in other sections of that manual were also incorporated into the rate design.

It was determined that with the additional debt service and operating expenses resulting from the proposed project, a rate increase averaging 9.3 percent is required. This increase will also allow an adequate margin for depreciation funds to be accumulated for system maintenance, minor improvements, and special programs.

As Butler Water's facilities continue to age and more facilities are added, the need for expenditures on maintenance and upkeep is expected to increase. Examples of major upcoming expenditures from depreciation funds include tank maintenance, meter and line replacement programs. These are only a few examples of the many uses of depreciation funds that are required for system upkeep. Therefore, it is very important for Butler Water to implement water rates that result in sufficient revenue so that these funds will be available.



The schedule of water rates recommended in conjunction with this project is shown on the following page. Following the Rate Schedule is the Proforma Adjustment which shows the estimated revenues (which include the rate increase) and expenses for the first full year of operation after the completion of the Water Treatment Plant Enhancement Project. Following the Proforma Adjustment is the Analysis of Actual Water Usage and Forecast of Water Usage Income.



Final Engineering Report  
Water Treatment Plant Enhancement Project

**Schedule of Proposed Water Rates (Includes 9.3% Rate Adjustment)**

**5/8 X 3/4-Inch Meter**

First	2,000 Gallons	\$ 18.54 Minimum Bill
Next	4,000 Gallons	5.37 per 1,000 Gallons
Next	44,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**1-Inch Meter**

First	5,000 Gallons	\$35.18 Minimum Bill
Next	1,000 Gallons	5.37 per 1,000 Gallons
Next	44,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**1-1/2-Inch Meter**

First	10,000 Gallons	\$62.86 Minimum Bill
Next	40,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**2-Inch Meter**

First	16,000 Gallons	\$92.26 Minimum Bill
Next	34,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**3-Inch Meter**

First	25,000 Gallons	\$149.77 Minimum Bill
Next	25,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**4-Inch Meter**

First	30,000 Gallons	\$207.19 Minimum Bill
Next	20,000 Gallons	4.77 per 1,000 Gallons
Next	50,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**6-Inch Meter**

First	60,000 Gallons	\$361.90 Minimum Bill
Next	40,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons

**8-Inch Meter**

First	80,000 Gallons	\$459.04 Minimum Bill
Next	20,000 Gallons	4.10 per 1,000 Gallons
Over	100,000 Gallons	3.42 per 1,000 Gallons



Final Engineering Report  
Water Treatment Plant Enhancement Project

PROFORMA ADJUSTMENT  
WATER TREATMENT PLANT ENHANCEMENT PROJECT  
BUTLER COUNTY WATER SYSTEMS, INC.

	Existing System (1)	Changes on Existing System	Changes Due to New Project	Total Future System After Project (2016)
<b>OPERATING REVENUE:</b>				
METERED & OTHER				
Meter Sales Revenue	1,704,412	\$0	\$159,235 (4)	\$1,863,647
Forfeited Discounts	29,714	0	0	29,714
Other Meter Sales Rev.	0	0	0	0
Misc. Service Revenue	28,290	0	0	28,290
Other Water Revenue	6,230	0	0	6,230
Misc. Income-Interest	9,672	0	0	9,672
<b>TOTAL OPERATING REVENUE</b>	<b>\$1,778,318</b>	<b>\$0</b>	<b>\$159,235</b>	<b>\$1,937,553</b>
<b>OPERATING EXPENSE:</b>				
SOURCE OF SUPPLY & PUMP. EXP.				
Salary & Wages	\$354,184	\$22,668 (2)	\$0	\$376,852
Fringe	224,739	14,383 (2)	0	239,122
Purchase Water	0	0	0	0
Purchase Power	133,543	8,547 (2)	6,584 (5)	148,674
Chemicals	43,429	2,779 (2)	0	46,208
Material & Supplies	37,414	2,395 (2)	0	39,809
Contractual Servs - Engr	0	0	0	0
Contractual Servs - Acct	8,872	568 (2)	0	9,440
Contractual Servs - Legal	1,797	115 (2)	0	1,912
Contractual Servs - Other	126,878	8,120 (2)	0	134,998
Rental of Building & Utilities	15,182	972 (2)	0	16,154
Equipment Expense	62,038	3,970 (2)	0	66,008
Insurance - Gen. Liab.	22,865	1,463 (2)	0	24,328
Insurance - Other	1,065	68 (2)	0	1,133
Regulatory Expense	3,255	208 (2)	0	3,463
Bad Debt Expense	3,996	256 (2)	0	4,252
Misc. Expense	6,156	394 (2)	0	6,550
<b>SUBTOTAL OPERATING EXP.</b>	<b>\$1,045,412</b>	<b>\$66,906</b>	<b>\$6,584</b>	<b>\$1,118,902</b>



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PROFORMA ADJUSTMENT (CONTINUED)  
WATER TREATMENT PLANT ENHANCEMENT PROJECT  
BUTLER COUNTY WATER SYSTEMS, INC.

	Existing System (1)	Changes on Existing System	Changes Due to New Project	Total Future System After Project (2014)
<b>OTHER EXPENSES:</b>				
Depreciation	\$558,832	\$0	\$12,941 (6)	\$571,773
Misc. Non-Operating Inc.	0	0	0	0
Misc. Non-Operating Expense	0	0	0	0
<b>SUBTOTAL OTHER EXPENSE</b>	<b>\$558,832</b>	<b>\$0</b>	<b>\$12,941</b>	<b>\$571,773</b>
<b>PRINCIPAL &amp; INTEREST EXPENSE:</b>				
PRINCIPAL PAYMENT	\$182,247	\$27,653 (3)	\$0	\$209,900
INTEREST PAYMENT	186,308	(32,288) (3)	0	154,020
PRINCIPAL PAYMENT - NEW RDA	0	0	6,600 (7)	6,600
INTEREST PAYMENT - NEW RDA	0	0	12,100 (7)	12,100
CONSUMER DEPOSITS - Interest	162	0	0	162
<b>TOTAL OPERATING &amp; MAINTENANCE EXPENSE AND OTHER</b>	<b>\$1,972,961</b>	<b>\$62,271</b>	<b>\$38,225</b>	<b>\$2,073,457</b>
<b>NET UTILITY OPERATING INCOME</b>	<b>(\$194,642)</b>	<b>(\$62,271)</b>	<b>\$121,010</b>	<b>(\$135,903)</b>

Notes

- (1) Test period is July 1, 2013 to June 30, 2014.
- (2) Adjustment for 2.5% inflation annually for 2 yrs, 6 months from test period through 2016 =6.4%.
- (3) Adjusted principal and interest to first full year of operation.
- (4) Metered revenue adjusted based on the Usage Analysis to reflect proposed rate increase.
- (5) Additional electrical pumping cost due to new High Service Pumps pumping higher flow rate.
- (6) Calculated depreciation for proposed project.
- (7) Proposed principal and interest payments assuming 75% loan value using 2.75% interest rate.



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ANALYSIS OF ACTUAL WATER USAGE AND  
FORECAST OF WATER USAGE INCOME

INCLUDES 9.3% RATE INCREASE AS PROPOSED)

5/8" METERS:

			<u>RESIDENTIAL</u>				<u>COMMERCIAL</u>			
			AVG							
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	
0 TO 2,000		946	18.54	16,072	15,204,112	\$297,975	1,974	1,867,404	\$36,598	
2 TO 3,000		2,512	21.29	9,514	23,899,168	202,553	214	537,568	4,556	
3 TO 4,000		3,486	26.52	8,776	30,593,136	232,740	184	641,424	4,880	
4 TO 5,000		4,473	31.82	6,338	28,349,874	201,675	117	523,341	3,723	
5 TO 6,000		5,467	37.16	4,230	23,125,410	157,187	71	388,157	2,638	
6 TO 7,000		6,459	42.21	2,909	18,789,231	122,789	67	432,753	2,828	
7 TO 8,000		7,456	46.97	1,695	12,637,920	79,614	49	365,344	2,302	
8 TO 9,000		8,463	51.77	1,098	9,292,374	56,843	48	406,224	2,485	
9 TO 10,000		9,468	56.56	755	7,148,340	42,703	28	265,104	1,584	
10 TO 11,000		10,473	61.36	532	5,571,636	32,644	29	303,717	1,779	
11 TO 12,000		11,474	66.13	344	3,947,056	22,749	24	275,376	1,587	
12 TO 14,000		12,947	73.16	462	5,981,514	33,800	21	271,887	1,536	
14 TO 16,000		14,865	82.31	305	4,533,825	25,105	6	89,190	494	
16 TO 18,000		16,875	91.89	184	3,105,000	16,908	19	320,625	1,746	
18 TO 20,000		18,888	101.50	124	2,342,112	12,586	7	132,216	711	
20 TO 25,000		22,166	117.13	175	3,879,050	20,498	18	398,988	2,108	
25 TO 30,000		26,826	139.36	83	2,226,558	11,567	17	456,042	2,369	
30 TO 40,000		34,233	174.69	70	2,396,310	12,228	15	513,495	2,620	
40 TO 50,000		43,736	220.02	30	1,312,080	6,601	6	262,416	1,320	
50 TO 75,000		57,994	282.68	27	1,565,838	7,632	21	1,217,874	5,936	
75 TO 100,000		87,964	405.55	10	879,640	4,056	15	1,319,460	6,083	
100 TO 150,000		117,090	513.35	7	819,630	3,593	12	1,405,080	6,160	
150 TO 200,000		157,490	651.52	5	787,450	3,258	2	314,980	1,303	
200 TO 300,000		237,180	924.06	1	237,180	924	1	237,180	924	
300 TO 400,000		0	0.00	0	0	0	0	0	0	
400 TO 500,000		0	0.00	0	0	0	0	0	0	
500 TO ABOVE		0	0.00	0	0	0	0	0	0	
SUBTOTALS				53,746	208,624,444	\$1,608,228	2,965	12,945,845	\$98,270	
AVG. RATE						\$7.70				
AVG. USAGE						3,882		4,366		



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1" METERS

				<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>			
		AVG		<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>							
0 TO	5,000	1,844	35.18	164	302,416	5,770	123	226,812	4,327	
5 TO	6,000	5,501	37.87	19	104,519	720	14	77,014	530	
6 TO	7,000	6,527	43.06	15	97,905	646	16	104,432	689	
7 TO	8,000	7,471	47.57	2	14,942	95	14	104,594	666	
8 TO	9,000	8,538	52.66	12	102,456	632	9	76,842	474	
9 TO	10,000	9,591	57.68	3	28,773	173	7	67,137	404	
10 TO	11,000	10,479	61.91	8	83,832	495	8	83,832	495	
11 TO	12,000	11,419	66.40	6	68,514	398	12	137,028	797	
12 TO	14,000	12,901	73.47	11	141,911	808	15	193,515	1,102	
14 TO	16,000	15,056	83.75	12	180,672	1,005	4	60,224	335	
16 TO	18,000	17,112	93.55	7	119,784	655	10	171,120	936	
18 TO	20,000	18,883	102.00	5	94,415	510	11	207,713	1,122	
20 TO	25,000	22,300	118.30	13	289,900	1,538	12	267,600	1,420	
25 TO	30,000	27,215	141.75	9	244,935	1,276	5	136,075	709	
30 TO	40,000	34,381	175.93	15	515,715	2,639	10	343,810	1,759	
40 TO	50,000	44,266	223.08	6	265,596	1,338	13	575,458	2,900	
50 TO	75,000	61,559	297.82	5	307,795	1,489	17	1,046,503	5,063	
75 TO	100,000	87,026	402.24	9	783,234	3,620	12	1,044,312	4,827	
100 TO	150,000	126,684	530.05	4	506,736	2,120	13	1,646,892	6,891	
150 TO	200,000	176,593	700.74	2	353,186	1,401	6	1,059,558	4,204	
200 TO	300,000	237,822	910.14	1	237,822	910	5	1,189,110	4,551	
300 TO	400,000	333,150	1236.16	0	0	0	3	999,450	3,708	
400 TO	500,000	462,733	1679.34	0	0	0	3	1,388,199	5,038	
500 TO	ABOVE	725,884	2579.31	0	0	0	5	3,629,420	12,897	
SUBTOTALS					328	4,845,058	\$28,238	347	14,836,650	\$65,844





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1 1/2" METERS:

				<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>		
<u>USAGE/MON</u>		<u>AVG</u>	<u>AVG</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>
			<u>BILL</u>						
0	TO 10,000	3,181	62.86	0	0	0	12	38,172	754
10	TO 11,000	0	0.00	0	0	0	0	0	0
11	TO 12,000	0	0.00	0	0	0	0	0	0
12	TO 14,000	13,450	79.32	0	0	0	2	26,900	159
14	TO 16,000	0	0.00	0	0	0	0	0	0
16	TO 18,000	0	0.00	0	0	0	0	0	0
18	TO 20,000	19,050	106.03	0	0	0	2	38,100	212
20	TO 25,000	0	0.00	0	0	0	0	0	0
25	TO 30,000	27,050	144.19	0	0	0	2	54,100	288
30	TO 40,000	33,517	175.04	0	0	0	6	201,102	1,050
40	TO 50,000	0	0.00	0	0	0	0	0	0
50	TO 75,000	63,600	309.42	0	0	0	5	318,000	1,547
75	TO 100,000	85,433	398.94	0	0	0	3	256,299	1,197
100	TO 150,000	109,575	491.41	0	0	0	4	438,300	1,966
150	TO 200,000	0	0.00	0	0	0	0	0	0
200	TO 300,000	0	0.00	0	0	0	0	0	0
300	TO 400,000	0	0.00	0	0	0	0	0	0
400	TO 500,000	0	0.00	0	0	0	0	0	0
500	TO ABOVE	0	0.00	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
SUBTOTALS				0	0	\$0	36	1,370,973	\$7,173



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2" METERS:

				<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>		
		AVG							
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>
0 TO 16,000		4,309	92.26	0	0	0	29	124,961	2,676
16 TO 18,000		0	0.00	0	0	0	0	0	0
18 TO 20,000		18,300	103.23	0	0	0	1	18,300	103
20 TO 25,000		21,900	120.40	0	0	0	2	43,800	241
25 TO 30,000		0	0.00	0	0	0	0	0	0
30 TO 40,000		35,436	184.97	0	0	0	11	389,796	2,035
40 TO 50,000		45,356	232.29	0	0	0	9	408,204	2,091
50 TO 75,000		57,385	284.72	0	0	0	13	746,005	3,701
75 TO 100,000		87,200	406.96	0	0	0	6	523,200	2,442
100 TO 150,000		126,400	549.73	0	0	0	4	505,600	2,199
150 TO 200,000		181,350	737.66	0	0	0	4	725,400	2,951
200 TO 300,000		250,700	974.83	0	0	0	5	1,253,500	4,874
300 TO 400,000		335,133	1263.59	0	0	0	3	1,005,399	3,791
400 TO 500,000		455,200	1674.22	0	0	0	1	455,200	1,674
500 TO 750,000		510,000	1861.64	0	0	0	1	510,000	1,862
750 TO 1.0 M		0	0.00	0	0	0	0	0	0
1.0 TO 1.5 M		0	0.00	0	0	0	0	0	0
1.5 TO ABOVE		0	0.00	0	0	0	0	0	0
SUBTOTALS				0	0	\$0	89	6,709,365	\$30,640



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3" METERS:

				<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>		
		AVG		<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>
<u>USAGE/MON</u>	<u>AVG</u>	<u>BILL</u>							
0 TO 25,000	67	149.77	0	0	0	12	804	1,797	
25 TO 40,000	0	0.00	0	0	0	0	0	0	
40 TO 50,000	0	0.00	0	0	0	0	0	0	
50 TO 75,000	0	0.00	0	0	0	0	0	0	
75 TO 100,000	0	0.00	0	0	0	0	0	0	
100 TO 150,000	0	0.00	0	0	0	0	0	0	
150 TO 200,000	0	0.00	0	0	0	0	0	0	
200 TO 300,000	0	0.00	0	0	0	0	0	0	
300 TO 400,000	0	0.00	0	0	0	0	0	0	
400 TO 500,000	0	0.00	0	0	0	0	0	0	
500 TO 750,000	0	0.00	0	0	0	0	0	0	
750 TO 1.0 M	0	0.00	0	0	0	0	0	0	
1.0 TO 1.5 M	0	0.00	0	0	0	0	0	0	
1.5 TO ABOVE	0	0.00	0	0	0	0	0	0	
SUBTOTALS			0	0	\$0	12	804	\$1,797	

4" METERS:

				<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>		
		AVG		<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>
<u>USAGE/MON</u>	<u>AVG</u>	<u>BILL</u>							
0 TO 30,000	10,415	207.19	0	0	0	8	83,320	1,658	
30 TO 50,000	38,243	246.51	0	0	0	7	267,701	1,726	
50 TO 75,000	0	0.00	0	0	0	0	0	0	
75 TO 100,000	0	0.00	0	0	0	0	0	0	
100 TO 150,000	0	0.00	0	0	0	0	0	0	
150 TO 200,000	0	0.00	0	0	0	0	0	0	
200 TO 300,000	0	0.00	0	0	0	0	0	0	
300 TO 400,000	0	0.00	0	0	0	0	0	0	
400 TO 500,000	0	0.00	0	0	0	0	0	0	
500 TO 750,000	0	0.00	0	0	0	0	0	0	
750 TO 1.0 M	0	0.00	0	0	0	0	0	0	
1.0 TO 1.5 M	0	0.00	0	0	0	0	0	0	
1.5 TO ABOVE	0	0.00	0	0	0	0	0	0	
SUBTOTALS			0	0	\$0	15	351,021	\$3,384	



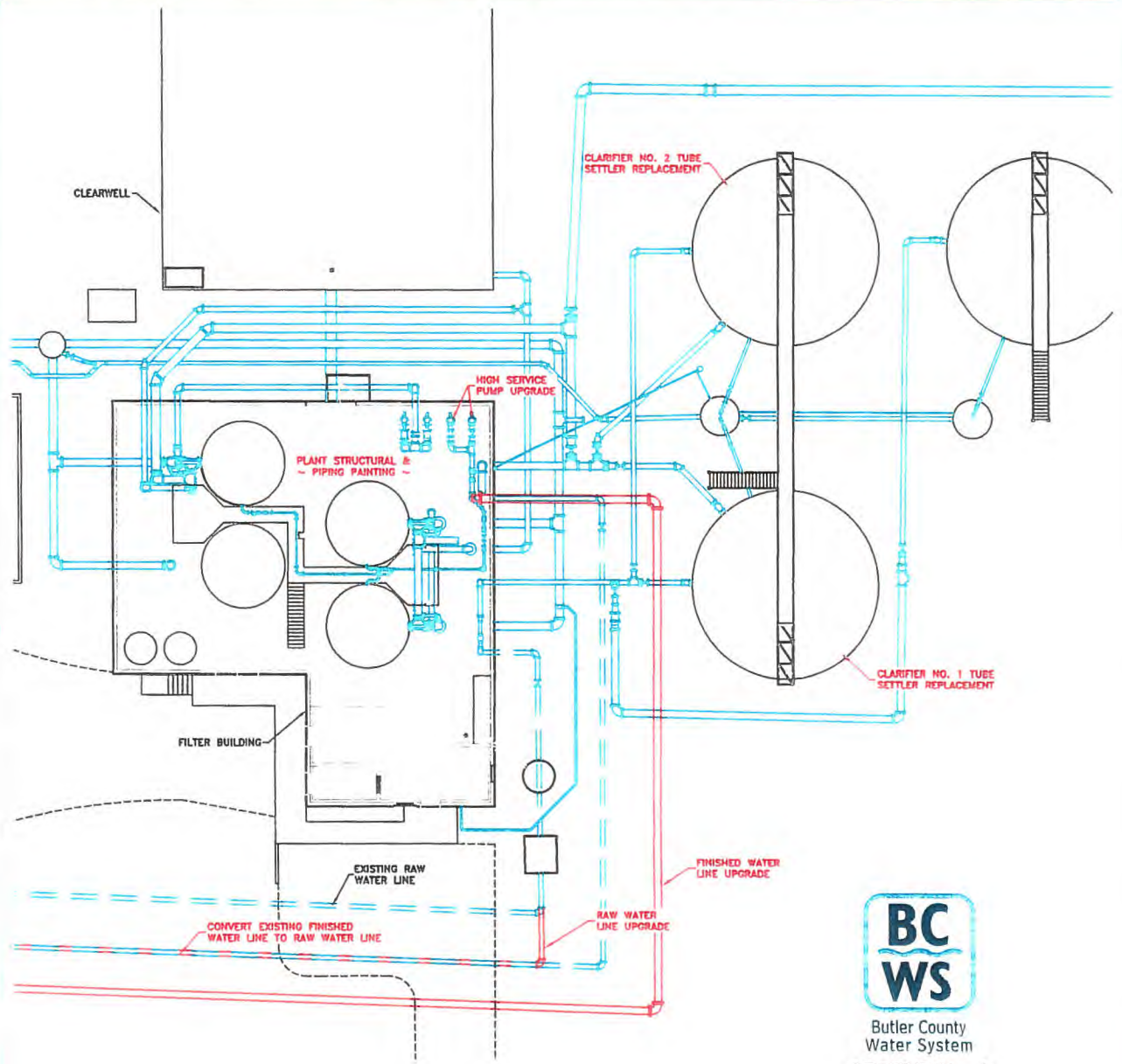
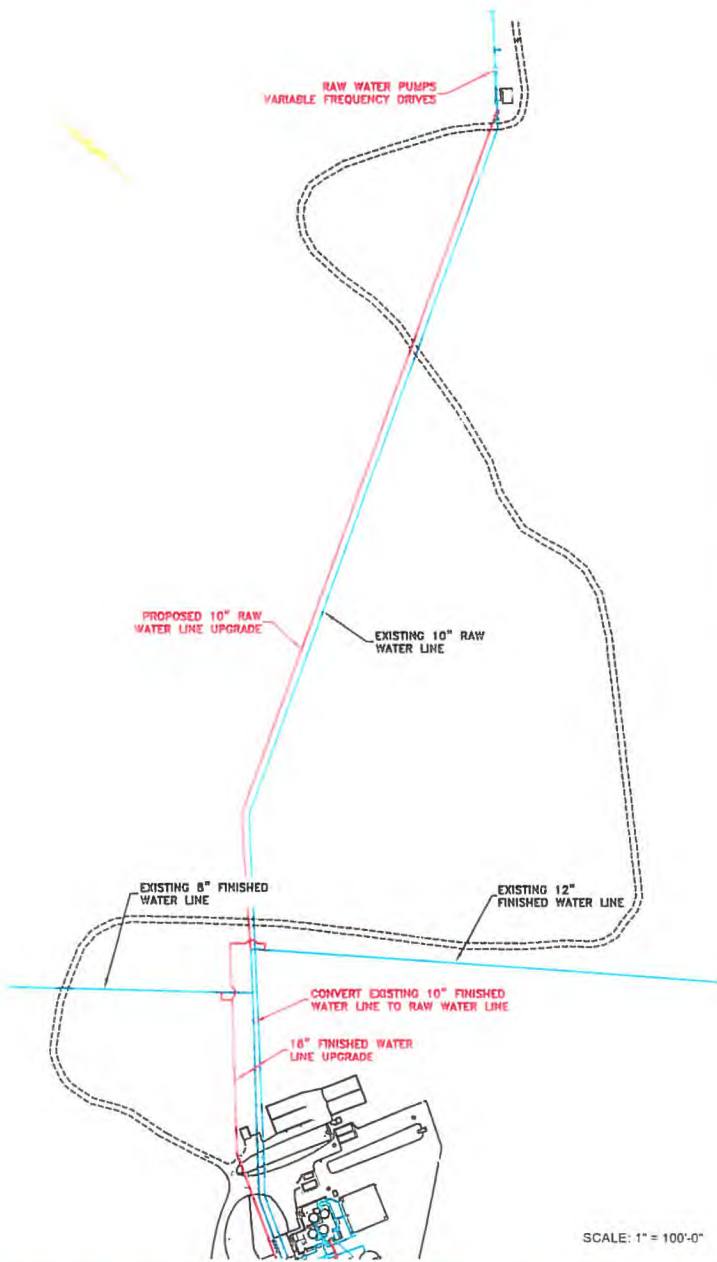
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6" METERS:

				<u>RESIDENTIAL</u>			<u>COMMERCIAL</u>		
		AVG							
<u>USAGE/MON</u>		<u>AVG</u>	<u>BILL</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>	<u>NO. BILLS</u>	<u>USAGE</u>	<u>INCOME</u>
0 TO 60,000		17,171	361.90	0	0	0	35	600,985	12,667
60 TO 75,000		64,933	382.13	0	0	0	3	194,799	1,146
75 TO 100,000		85,500	466.45	0	0	0	1	85,500	466
100 TO 150,000		121,929	600.90	0	0	0	7	853,503	4,206
150 TO 200,000		151,100	700.66	0	0	0	1	151,100	701
200 TO 300,000		205,500	886.71	0	0	0	1	205,500	887
300 TO 400,000		0	0.00	0	0	0	0	0	0
400 TO 500,000		0	0.00	0	0	0	0	0	0
500 TO 750,000		0	0.00	0	0	0	0	0	0
750 TO 1.0 M		0	0.00	0	0	0	0	0	0
1.0 TO 1.5 M		0	0.00	0	0	0	0	0	0
1.5 TO 2.0 M		0	0.00	0	0	0	0	0	0
2.0 TO 2.5 M		0	0.00	0	0	0	0	0	0
2.5 TO 3.0 M		0	0.00	0	0	0	0	0	0
3.0 TO 4.0 M		0	0.00	0	0	0	0	0	0
4.0 TO 5.0 M		0	0.00	0	0	0	0	0	0
5.0 TO ABOVE		0	0.00	0	0	0	0	0	0
SUBTOTALS				0	0	\$0	48	2,091,387	\$20,073
TOTALS				54,074	213,469,502	\$1,636,466	3,512	38,306,045	\$227,181
TOTAL CUSTOMERS				4,506			293		
AVG. CONSUMPTION PER MONTH					3,948			10,907	
ANNUAL WATER SOLD					213,469,502			38,306,045	
ANNUAL WATER PURCH. OR PROD.					266,206,900			47,769,500	
ANNUAL REVENUE						\$1,636,466			\$227,181
TOTAL ANNUAL WATER SOLD					251,775,547				
TOTAL ANNUAL WATER PURCH. OR PROD.					313,976,400				
TOTAL ANNUAL REVENUE					\$1,863,647				



**APPENDIX A**  
**PROPOSED IMPROVEMENTS ILLUSTRATION**



Butler County  
Water System  
APPENDIX - A  
PROPOSED IMPROVEMENTS  
WTP ENHANCEMENT PROJECT

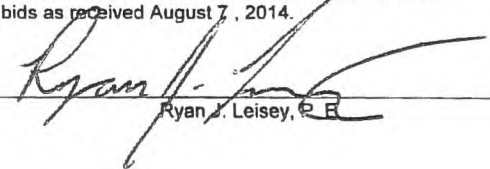


**APPENDIX B**  
**TABULATION OF BIDS**

**TABULATION OF BIDS  
WATER TREATMENT PLANT  
ENHANCEMENT PROJECT  
BUTLER COUNTY WATER SYSTEM  
August 17, 2014**

ITEM NO.	BASE BID SCHEDULE DESCRIPTION	QTY.	UNITS	Scott & Ritter, Inc. Bowling Green, Ky		Infrastructure Systems, Inc. Orleans, In		Cleary Construction, Inc. Tompkinsville, Ky		Layne Water Resources Louisville, Ky	
				UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
1.	10" PVC Raw Water Line	1,550	LF	\$40.00	\$62,000.00	\$65.00	\$100,750.00	\$50.00	\$77,500.00	\$48.00	\$74,400.00
2.	16" DIP Finished Water Line	700	LF	120.00	84,000.00	100.00	70,000.00	85.00	59,500.00	159.00	111,300.00
3.	12" PVC Finished Water Line	60	LF	300.00	18,000.00	95.00	5,700.00	65.00	3,900.00	359.00	21,540.00
4.	Ductile Iron MJ Fittings	10,000	LB	3.00	30,000.00	1.00	10,000.00	0.10	1,000.00	4.00	40,000.00
5.	Miscellaneous Items (Vault, Check Valves, Air Release, Etc.)	1	LS	25,000.00	25,000.00	55,000.00	55,000.00	45,000.00	45,000.00	17,261.00	17,261.00
6.	Crushed Stone	150	TN	20.00	3,000.00	35.00	5,250.00	30.00	4,500.00	34.00	5,100.00
7.	Concrete	10	CY	820.00	8,200.00	250.00	2,500.00	300.00	3,000.00	437.00	4,370.00
8.	High Service Vertical Turbine Pumps	2	EA	71,000.00	142,000.00	65,000.00	130,000.00	83,000.00	166,000.00	67,096.00	134,192.00
9.	High Service Pump Header Flanged Piping	1	LS	48,000.00	48,000.00	67,500.00	67,500.00	38,000.00	38,000.00	61,877.00	61,877.00
10.	Filter Building Structural Steel and Pipe Painting	1	LS	14,800.00	14,800.00	15,000.00	15,000.00	35,000.00	35,000.00	14,835.00	14,835.00
11.	Filter Building Type "A" Wall Section	40	LF	430.00	17,200.00	490.00	19,600.00	300.00	12,000.00	728.00	29,120.00
12.	Filter Building Type "B" Wall Section	50	LF	440.00	22,000.00	325.00	16,250.00	310.00	15,500.00	458.00	22,900.00
13.	Filter Building Type "C" Wall Section	75	LF	390.00	29,250.00	235.00	17,625.00	320.00	24,000.00	323.00	24,225.00
14.	Filter Building Floor Painting	1	LS	16,000.00	16,000.00	17,000.00	17,000.00	20,000.00	20,000.00	15,354.00	15,354.00
15.	Tube Settlers	2	EA	57,200.00	114,400.00	55,000.00	110,000.00	78,000.00	156,000.00	59,961.00	119,922.00
16.	Raw Water Pump VFD Addition	2	EA	16,380.00	32,760.00	17,500.00	35,000.00	30,000.00	60,000.00	18,455.00	36,910.00
17.	Silt Fence	500	LF	2.50	1,250.00	5.00	2,500.00	4.00	2,000.00	13.00	6,500.00
18.	Rip-Rap Check Dam	20	TN	50.00	1,000.00	125.00	2,500.00	40.00	800.00	98.00	1,960.00
19.	Final Cleanup	1	LS	12,500.00	12,500.00	5,000.00	5,000.00	10,000.00	10,000.00	22,701.00	22,701.00
<b>TOTAL BASE BID</b>					\$681,360.00		\$687,175.00		\$733,700.00		\$764,467.00
A1.	High Service VFD Addition	2	EA	19,565.00	39,130.00	24,000.00	48,000.00	40,000.00	80,000.00	27,715.00	55,430.00
<b>TOTAL BASE BID with Alternates</b>					\$720,490.00		\$735,175.00		\$813,700.00		\$819,897.00

I hereby certify that this a true and accurate tabulation of bids as received August 7, 2014.

  
Ryan J. Leisey, P.E.





Butler County  
Water System

Final Engineering Report  
Water Treatment Plant Enhancement Project

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**APPENDIX C**  
**PROPOSAL OF LOW BIDDER**

## Bid Form

Project Identification: Water Treatment Plant Enhancement Project

Contract Identification and Number:

### ARTICLE 1- BID RECIPIENT

1.01 This Bid Is Submitted To: Butler County Water System, Inc., 104 S. Tyler Street, Suite B, Morgantown, KY 42261

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
<u>NO. 1</u>	<u>AUGUST 1, 2014</u>
<u>NO. 2</u>	<u>AUGUST 5, 2014</u>
_____	_____
_____	_____

B. Bidder 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. 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, at the Site that have been identified in SC-4.06.

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from the visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by bidder, including applying the specific means, methods, techniques,

sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.

- F. Based on the information and observations referred to in Paragraph 3.10.E above, 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 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.
- I. 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.
- J. 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— BIDDER'S CERTIFICATION

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 engaged in corrupt, fraudulent, collusive, or coercive practices in competing for Contract. For purposes of the Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. "collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
  - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### 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 and fees.

**BASE BID SCHEDULE**

NO.	ITEM	UNIT	UNIT PRICE	QTY.	TOTAL PRICE
1	10" PVC Raw Water Line	LF	40 <sup>00</sup>	1,550	62,000 <sup>00</sup>
2	16" DIP Finished Water Line	LF	120 <sup>00</sup>	700	84,000 <sup>00</sup>
3	12" PVC Finished Water Line	LF	300 <sup>00</sup>	60	18,000 <sup>00</sup>
4	Ductile Iron MJ Fittings	LB	3 <sup>00</sup>	10,000	30,000 <sup>00</sup>
5	Miscellaneous Items (Vault, Check Valves, Air Release, Etc.)	LS	25,000 <sup>00</sup>	1	25,000 <sup>00</sup>
6	Crushed Stone	TN	20 <sup>00</sup>	150	3,000 <sup>00</sup>
7	Concrete	CY	820 <sup>00</sup>	10	8,200 <sup>00</sup>
8	High Service Vertical Turbine Pumps	EA	71,000 <sup>00</sup>	2	142,000 <sup>00</sup>
9	High Service Pump Header Flanged Piping	LS	48,000 <sup>00</sup>	1	48,000 <sup>00</sup>
10	Filter Building Structural Steel and Pipe Painting	LS	14,800 <sup>00</sup>	1	14,800 <sup>00</sup>
11	Filter Building Type "A" Wall Section	LF	430 <sup>00</sup>	40	17,200 <sup>00</sup>
12	Filter Building Type "B" Wall Section	LF	440 <sup>00</sup>	50	22,000 <sup>00</sup>
13	Filter Building Type "C" Wall Section	LF	390 <sup>00</sup>	75	29,250 <sup>00</sup>
14	Filter Building Floor Painting	LS	16,000 <sup>00</sup>	1	16,000 <sup>00</sup>
15	Tube Settlers	EA	57,200 <sup>00</sup>	2	114,400 <sup>00</sup>
16	Raw Water Pump VFD Addition	EA	16,380 <sup>00</sup>	2	32,760 <sup>00</sup>
17	Silt Fence	LF	2 <sup>50</sup>	500	1,250 <sup>00</sup>
18	Rip-Rap Check Dam	TN	50 <sup>00</sup>	20	1,000 <sup>00</sup>
19	Final Cleanup	LS	12,500 <sup>00</sup>	1	12,500 <sup>00</sup>
	<b>TOTAL BASE BID</b>				<b>681,360<sup>00</sup></b>
A1	High Service VFD Addition	EA	19,565 <sup>00</sup>	2	39,130 <sup>00</sup>
	<b>TOTAL BASE BID with Alternates</b>				<b>720,490<sup>00</sup></b>

A. Unit Prices have been computed in accordance with paragraph 11.03.B 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 and complete and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before the date, or within the number of calendar days, indicated in the Agreement. Upon substantial completion, if necessary, an alternate date for final completion and payment may be determined between the Owner, Contractor, and Engineer based on remaining work, market, and weather conditions.

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 Times.

#### ARTICLE 7- ATTACHEMENTS 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. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. List of Proposed References;
- E. Evidence of authority to do business in the state or jurisdiction of the Project; or a written covenant to obtain such a license within the time frame for acceptance of Bids;
- F. [If applicable] Contractor's License No.: 00889 or Evidence of Bidder's ability to obtain a State Contractor's License and covenant by Bidder to obtain such license within the time for acceptance of Bids;
- G. Required Bidder Qualification Statement and Supporting Date; and
- H. 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;
- I. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- J. 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;

ARTICLE 8- DEFINED TERMS

801 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.

ARTICLE 9- BID SUBMITTAL

9.01 This Bid submitted by:

Name (typed or printed): LARKIN RITTER, CHIEF EXECUTIVE OFFICER

By: [Signature]  
(Individual's signature)

Doing business as:

SCOTT & RITTER, INC.

Bidder's Business address: 2385 BARREN RIVER ROAD  
BOWLING GREEN, KY 42101

Business Phone No. (270) 781-9988

Business FAX No. (270) 782-3267

Business E-Mail Address MAILBOX@SCOTTANDRITTER.COM

State Contractor License No. 00889 (If applicable)

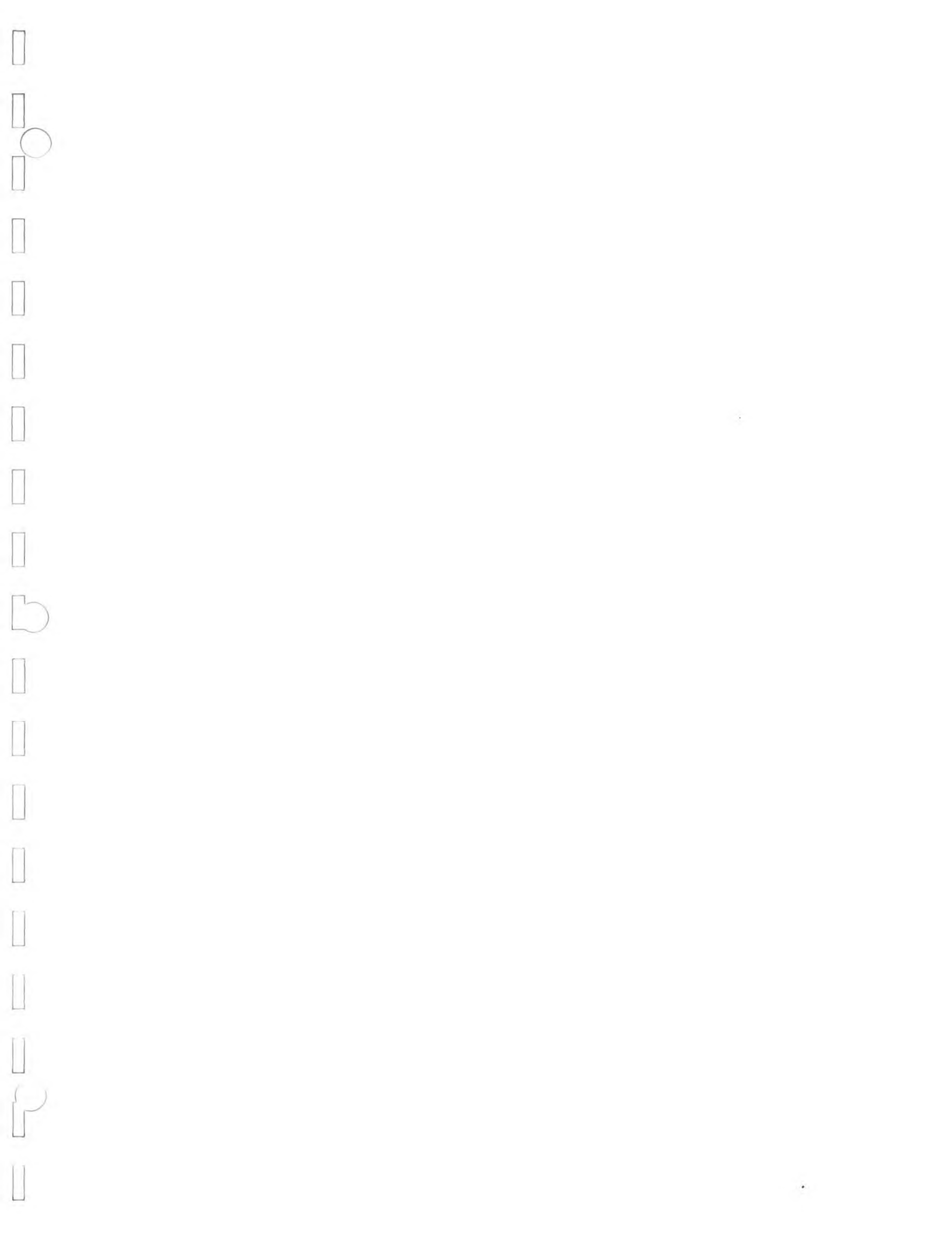
Employer's Tax ID No. [REDACTED]

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

SAME AS ABOVE

9.02 Bid submitted on AUGUST 7, 2014.

SEAL, if required







United States Department of Agriculture  
Rural Development  
Kentucky State Office

November 5, 2012

Roland Stephens, President  
Butler County Water Systems, Inc.  
523 US 31-W By-Pass  
Bowling Green, Kentucky 42101

Dear Mr. Stephens:

This letter establishes conditions which must be understood and agreed to by you before further consideration may be given to the application. The loan and grant will be administered on behalf of the Rural Utilities Service (RUS) by the State and Area office staff of USDA Rural Development. Any changes in project cost, source of funds, scope of services or any other significant changes in the project or applicant must be reported to and approved by USDA Rural Development, by written amendment to this letter. Any changes not approved by Rural Development shall be cause for discontinuing processing of the application. It should also be understood that Rural Development is under no obligation to provide additional funds to meet an overrun in construction costs.

This letter is not to be considered as loan and grant approval or as a representation as to the availability of funds. The docket may be completed on the basis of a RUS loan not to exceed \$437,000 and a RUS grant not to exceed \$146,000. No applicant cash contribution will be required.

If Rural Development makes the loan, the interest rate will be the lower of the rate in effect at the time of loan approval or the rate in effect at the time of loan closing, unless the applicant otherwise chooses. The loan will be considered approved on the date a signed copy of Form RD 1940-1, "Request for Obligation of Funds," is mailed to you.

Please complete and return the attached Form RD 1942-46, "Letter of Intent to Meet Conditions," if you desire that further consideration be given to your application.

The "Letter of Intent to Meet Conditions" must be executed within three weeks from the date of this letter or it becomes invalid unless a time extension is granted by Rural Development.

If the conditions set forth in this letter are not met within 210 days from the date hereof, Rural Development reserves the right to discontinue the processing of the application.

In signing Form RD 1942-46, "Letter of Intent to Meet Conditions," you are agreeing to complete the following as expeditiously as possible:

771 Corporate Drive • Suite 200 • Lexington, KY 40503  
Phone: (859) 224-7336 • Fax: (859) 224-7344 • TDD: (859) 224-7422 • Web: <http://www.rurdev.usda.gov/ky>

Committed to the future of rural communities.

"USDA is an equal opportunity provider, employer and lender."  
To file a complaint of discrimination write USDA, Director, Office of Civil Rights,  
1400 Independence Avenue, SW, Washington, DC 20250-9410  
or call (800) 795-3272 (voice) or (202) 720-6382 (TDD).

1. Number of Users and Their Contribution:

There shall be 4,783 water users, of which all are existing users. The Area Director will review and authenticate the number of users prior to advertising for construction bids.

2. Grant Agreement:

Attached is a copy of RUS Bulletin 1780-12, "Water and Waste System Grant Agreement," for your review. You will be required to execute a completed form at the time of grant closing.

3. Drug-Free Work Place:

Prior to grant closing, the Association will be required to execute Form AD-1049, "Certification Regarding Drug-Free Workplace Requirements (Grants) Alternative I - For Grantees Other Than Individuals." ✓

4. Repayment Period:

The loan will be scheduled for repayment over a period not to exceed 40 years from the date of the Promissory Note. Principal payment will not be deferred for a period in excess of two years from the date of the Promissory Note. The Association may be required to adopt a supplemental payment agreement providing for monthly payments of principal and interest so long as the Promissory Note is held or insured by RUS. Monthly payments will be approximate amortized installments.

5. Recommended Repayment Method:

Payments on this loan shall be made using the Preauthorized Debit (PAD) payment method. This procedure eliminates the need for paper checks and ensures timely receipt of RD loan payments. To initiate PAD payments, Form RD 3550-28, "Authorization Agreement for Preauthorized Payments," should be signed by the Association to authorize the electronic withdrawal of funds from your designated bank account on the exact installment payment due date. The Area Director will furnish the necessary forms and further guidance on the PAD procedure.

6. Reserve Accounts:

Reserves must be properly budgeted to maintain the financial viability of any operation. Reserves are important to fund unanticipated emergency maintenance, pay for repairs, and assist with debt service should the need arise.

The Association will be required to deposit \$160 per month into a "Funded Debt Reserve Account" until the account reaches \$19,200. The deposits are to be resumed any time the account falls below the \$19,200.

The required monthly deposits to the Reserve Account and required Reserve Account levels are in addition to the requirements of the Association's prior loan resolutions.

The monthly deposits to the Reserve Account are required to commence with the first month of the first full fiscal year after the facility becomes operational.

The Association also needs to fund an account for short-lived assets by depositing a sum of \$1,000 monthly to the account. The funds in the short-lived asset account may be used by the Association as needed to replace or add short-lived assets in the Association's water system.

7. Security Requirements:

The loan will be secured by a real estate mortgage, a financing statement, and a pledge of gross water revenue, in the Loan Resolution and Financing Statement. Promissory Note

8. Land Rights and Real Property:

The Association will be required to furnish satisfactory title, easements, etc., necessary to install, maintain and operate the facility to serve the intended users. The pipelines will be on private rights-of-way where feasible. Easements and options are to be secured prior to advertising for construction bids.

9. Organization:

The Association will be legally organized under applicable KRS, which will permit them to perform this service, borrow and repay money.

10. Business Operations:

The Association will be required to operate the system under a well-established set of resolutions, rules and regulations. A budget must be established annually and adopted by the Association after review by Rural Development. At no later than loan pre-closing, the Association will be required to furnish a prior approved management plan to include, as a minimum, provisions for management, maintenance, meter reading, miscellaneous services, billing, collecting, delayed payment penalties, disconnect/reconnect fees, bookkeeping, making and delivering required reports and audits.

11. Accounts, Records and Audits:

The Association will be required to maintain adequate records and accounts and submit annual budgets and year-end reports (annual audits)/statistical and financial reports, quarterly and annually, in accordance with subsection 1780.47 of RUS Instruction 1780.

Annual audits, budgets, and reports will be submitted to Rural Development showing separate accounts.

12. Accomplish Audits for Years in Which Federal Financial Assistance is Received:

The Association will accomplish audits in accordance with OMB Circular A-133, during the years in which federal funds are received. The Association will provide copies of the audits to the Area Office and the appropriate Federal cognizant agency as designated by OMB Circular A-133.

13. Insurance and Bonding:

The following insurance and bonding will be required:

- A. Adequate Liability and Property Damage Insurance including vehicular coverage, if applicable, must be obtained and maintained by the Association. The Association should obtain amounts of coverage as recommended by its attorney, consulting engineer and/or insurance provider.
- B. Worker's Compensation - The Association will carry worker's compensation insurance for employees in accordance with applicable state laws.
- C. Fidelity Bond - The Association will provide Fidelity Bond Coverage for all persons who have access to funds. Coverage may be provided either for all individual positions or persons, or through "blanket" coverage providing protection for all appropriate employees and/or officials. The amount of coverage required for all RUS loans is \$400,000.
- D. Real Property Insurance - The Association will obtain and maintain adequate fire and extended coverage on all structures including major items of equipment or machinery located in the structures. The amounts of coverage should be based on recommendations obtained by the Association from its attorney, consulting engineer and/or insurance provider. Subsurface lift stations do not have to be covered except for the value of electrical and pumping equipment therein.
- E. Flood Insurance - The Association will obtain and maintain adequate coverage on any facilities located in special flood and mudslide prone areas.

14. Planning and Performing Development:

- A. The engineer should not be authorized to commence work on final plans and specifications until a determination has been made that the project can be planned and constructed within the estimated cost shown in paragraph "24" of this letter. The engineer may then proceed to develop final plans and specifications to be completed no later than 180 days from this date, and prepare bid documents. The Area Director is prepared to furnish the necessary guide to follow so as to keep the project plans and documents within our guidelines and requirements. The project should not be advertised for construction bids until all easements and enforceable options have been obtained, and total funds are committed or available for the project.
- B. The following documents will be submitted to Rural Development for review and must be concurred in by Rural Development prior to advertisement for construction bids:
  - 1. Final plans, specifications and bid documents.
  - 2. Applicant's letter on efforts to encourage small business and minority - owned business participation.

3. Legal Service Agreements.
4. Engineering Agreements.

Revision in these documents will be subject to Rural Development concurrence. Any agreements, contracts, etc. not reviewed and approved by Rural Development will not be eligible for payment from project funds or revenues from facilities financed by this Agency.

15. Civil Rights & Equal Opportunity:

You should be aware of and will be required to comply with other federal statute requirements including but not limited to:

A. Section 504 of the Rehabilitation Act of 1973:

Under Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), no handicapped individual in the United States shall, solely by reason of their handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Rural Development financial assistance.

B. Civil Rights Act of 1964:

All borrowers are subject to, and facilities must be operated in accordance with, Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and Subpart E of Part 1901 of this Title, particularly as it relates to conducting and reporting of compliance reviews. Instruments of conveyance for loans and/or grants subject to the Act must contain the covenant required by paragraph 1901.202(e) of this Title.

C. The Americans with Disabilities Act (ADA) of 1990:

This Act (42 U.S.C. 12101 et seq.) prohibits discrimination on the basis of disability in employment, state and local government services, public transportation, public accommodations, facilities, and telecommunications. Title II of the Act applies to facilities operated by state and local public entities that provide services, programs, and activities. Title III of the Act applies to facilities owned, leased, or operated by private entities that accommodate the public.

D. Age Discrimination Act of 1975:

This Act (42 U.S.C. 6101 et seq.) provides that no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Rural Development financial programs must be extended without regard to race, color, religion, sex, national origin, marital status, age, or physical or mental handicap.

16. Closing Instructions:

The Office of General Counsel, our Regional Attorney, will be required to write closing instructions in connection with this loan. Conditions listed therein must be met by the Association.

17. Compliance with Special Laws and Regulations:

The Association will be required to conform to any and all state and local laws and regulations affecting this type project.

18. Treatment Plant and System Operator:

The Association is reminded that the treatment plant and system operator must have an Operator's Certificate issued by the State.

19. Prior to Pre-Closing the Loan, the Association Will Be Required to Adopt:

- A. Form RD 1942-8, "Resolution of Members or Stockholders."
- B. Form RUS Bulletin 1780-28, "Loan Resolution Security Agreement."
- C. Form RD 400-1, "Equal Opportunity Agreement."
- D. Form RD 400-4, "Assurance Agreement."
- E. Form AD-1047, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transaction."
- F. Form RD 1910-11, "Applicant Certification Federal Collection Policies for Consumer or Commercial Debts."
- G. RD Instruction 1940-Q, Exhibit A-1, "Certification for Contracts, Grants and Loans."
- H. RUS Bulletin 1780-22, "Eligibility Certification."

20. Refinancing and Graduation Requirements:

The Association is reminded that if at any time it shall appear to the Government that the Association is able to refinance the amount of the RUS indebtedness then outstanding, in whole or in part, by obtaining a loan from commercial sources at reasonable rates and terms, upon the request of the Government, the Association will apply for and accept such loan in sufficient amount to repay the Government.

21. Commercial Interim Financing:

The Association will be required to use commercial interim financing for the project during construction for the RUS loan portion of the financing, if available at reasonable rates and terms.

Before the loan is closed, the Association will be required to provide Rural Development with statements from the contractor, engineer and attorneys that they have been paid to date in accordance with their contract or other agreements and, in the case of the contractor, that he has paid his suppliers and sub-contractors.

22. Disbursement of Project Funds:

A construction account for the purpose of disbursement of project funds (RUS) will be established by the Association prior to start of construction. The position of officials entrusted with the receipt and disbursement of RUS project funds will be covered by a "Fidelity Bond," with USDA Rural Development as Co-Obligee, in the amount of construction funds on hand at any one time during the construction phase.

For each "construction account" as established, if the amount of RUS loan and grant funds plus any applicant contributions or funds from other sources to be deposited into the account are expected to exceed \$250,000 at any time, the financial institution will secure the amount in excess of \$250,000 by pledging collateral with the Federal Reserve Bank in an amount not less than the excess in accordance with 7 CFR, 1902.7(a).

During construction, the Association shall disburse project funds in a manner consistent with subsection 1780.76 (e) of RUS Instruction 1780. Form RD 1924-18, "Partial Payment Estimate," or similar form approved by Rural Development, shall be used for the purpose of documenting periodic construction estimates, and shall be submitted to Rural Development for review and acceptance. Prior to disbursement of funds by the Association, the Board of Directors shall review and approve each payment estimate. All bills and vouchers must be approved by Rural Development prior to payment by the Association.

Form RD 440-11, "Estimate of Funds Needed for 30-Day Period Commencing \_\_\_\_\_," will be prepared by the Association and submitted to Rural Development in order that a periodic advance of federal cash may be requested.

Borrowers receiving federal loan and/or grant funds by EFT will have funds directly deposited to a specified account at a financial institution with funds being available to the recipient on the date of payment. The borrower should complete Form SF-3881, "Electronic Funds Transfer Payment Enrollment Form," for each account where funds will be electronically received. The completed form(s) must be received by Rural Development at least thirty (30) days prior to the first advance of funds.

Monthly audits of the Association's construction account records shall be made by Rural Development.

23. Disbursement of Grant Funds:

The RUS funds will be advanced as they are needed in the amount(s) necessary to cover the RUS proportionate share of obligations due and payable by the Association. Grant funds, upon receipt, must be deposited in an interest bearing account in accordance with 7 CFR part 3019 (as applicable). Interest earned on grant funds in excess of \$250 (as applicable) per year will be submitted to RUS at least quarterly.

24. Cost of Facility:

## Breakdown of Costs:

Development	\$ 540,000
Legal and Administrative	10,000
Interest	6,000
Contingencies	<u>27,000</u>
TOTAL	\$ 583,000

## Financing:

RUS Loan	\$ 437,000
RUS Grant	<u>146,000</u>
TOTAL	\$ 583,000

25. Use of Remaining Project Funds:

After providing for all authorized costs, any remaining project funds will be considered to be RUS grant funds and refunded in proportion to participation in the project. If the amount of unused project funds exceeds the grants, that part would be RUS loan funds.

26. Proposed Operating Budget:

You will be required to submit to Rural Development a copy of your proposed annual operating budget that supports the proposed loan repayment prior to this agency giving you written authorization to proceed with the bidding phase. The operating budget should be based on a typical year cash flow, subject to completion of this project in the first full year of operation. Form RD 442-7, Operating Budget, or similar form may be utilized for this purpose.

27. Rates and Charges:

Rates and charges for facilities and services rendered by the Association must be at least adequate to meet cost of maintaining, repairing and operating the water system and meeting required principal and interest payments and the required deposits to debt service and/or depreciation reserve.



Water rates will be at least:

5/8 X 3/4 Inch Meter:

First	2,000	gallons @ \$	18.54. - Minimum Bill.
Next	4,000	gallons @ \$	5.37. - per 1,000 gallons.
Next	44,000	gallons @ \$	4.77. - per 1,000 gallons.
Next	50,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

1 Inch Meter:

First	5,000	gallons @ \$	35.18. - Minimum Bill.
Next	1,000	gallons @ \$	5.37. - per 1,000 gallons.
Next	44,000	gallons @ \$	4.77. - per 1,000 gallons.
Next	50,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

1 1/2 Inch Meter:

First	10,000	gallons @ \$	62.86. - Minimum Bill.
Next	40,000	gallons @ \$	4.77. - per 1,000 gallons.
Next	50,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

2 Inch Meter:

First	16,000	gallons @ \$	92.26. - Minimum Bill.
Next	34,000	gallons @ \$	4.77. - per 1,000 gallons.
Next	50,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

3 Inch Meter:

First	25,000	gallons @ \$	149.77. - Minimum Bill.
Next	25,000	gallons @ \$	4.77. - per 1,000 gallons.
Next	50,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

4 Inch Meter:

First	30,000	gallons @ \$	207.19. - Minimum Bill.
Next	20,000	gallons @ \$	4.77. - per 1,000 gallons.
Next	50,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

6 Inch Meter:

First	60,000	gallons @ \$	361.90. - Minimum Bill.
Next	40,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

8 Inch Meter:

First	80,000	gallons @ \$	459.04. - Minimum Bill.
Next	20,000	gallons @ \$	4.10. - per 1,000 gallons.
All Over	100,000	gallons @ \$	3.42. - per 1,000 gallons.

28. Compliance with the Bioterrorism Act:

Prior to pre-closing the loan, the Association will provide a certification they have completed a Vulnerability Assessment (VA) and prepared an emergency response plan (ERP) as required by the Safe Drinking Water Act (SDWA).

29. Floodplain Construction:

The Association will be required to pass and adopt a Resolution or amend its By-Laws whereby the Association will deny any water service to any future customer wishing to build on or develop property located within a designated floodplain. If a customer or developer requests service for construction in a designated floodplain, the customer or developer must provide evidence and a justification for approval by the Association and Rural Development officials that there are no other alternatives to construction or development within the designated floodplain. The community must be a participant in the National Flood Insurance Program (NFIP) and the customer or developer must obtain the required permits prior to the tap on restrictions being waived.

30. Water Withdrawal Permit:

The Association will be required to obtain satisfactory evidence that a revised water withdrawal permit has been secured from the Division of Water. The permit must be obtained prior to the commencement of construction on the water project.

31. Mitigation Measures:

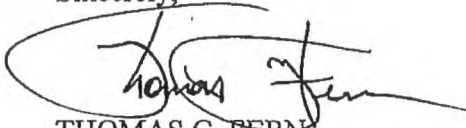
- A. The project shall be in compliance with all requirements noted in the Governor's Office for Local Development letter dated August 6, 2012, from Ms. Lee Nalley.
- B. Any excavation by Contractor that uncovers a historical or archaeological artifact shall be immediately reported to Owner and a representative 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).
- C. The design and construction shall be in compliance with all local, state and federal environmental statutes, regulations and executive orders applicable to the project.
- D. Best Management Practices shall be incorporated into the project design, construction, and maintenance.

32. Final Approval Conditions:

Final approval of this assistance will depend on your willingness, with the assistance of all your co-workers, to meet the conditions of this letter in an orderly and systematic manner. Then too, final approval will depend on funds being available.

If you desire to proceed with your application, the Area Director will allot a reasonable portion of time to provide guidance in application processing.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas G. Fern", written over a large, loopy flourish.

THOMAS G. FERN  
State Director

Enclosures

cc: Area Director - Columbia, Kentucky  
Area Manager - Elizabethtown, Kentucky  
Barren River ADD - Bowling Green, Kentucky  
Richard J. Deye - Morgantown, Kentucky  
PSC - ATTN: Dennis Jones - Frankfort, Kentucky





United States Department of Agriculture

Rural Development

September 11, 2014

Kentucky State Office

771 Corporate Drive,  
Suite 200  
Lexington, KY  
40503

Voice 859.224.7300  
Fax 859.224.7425  
TTY 859.224.7422

SUBJECT: Butler County Water System  
WTP Enhancement  
Contract Award Concurrence

9/15/2014

TO: Area Office  
Columbia, Kentucky

Based on the bids received and the recommendation of the consulting engineer, Rural Development concurs in the award of subject contract to the low bidder, Scott and Ritter Construction, Inc., in the amount of \$720,490.00.

If you have any questions, please contact Julie Anderson, State Engineer, at (859) 224-7348.

  
THOMAS G. FERN  
State Director  
Rural Development

cc: ~~Ryan Leisley~~  
Butler County Water System

USDA is an equal opportunity provider and employer.

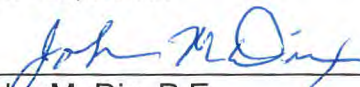
If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html), or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at [program.intake@usda.gov](mailto:program.intake@usda.gov).

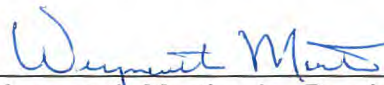


**CERTIFIED STATEMENT  
OF  
BUTLER COUNTY WATER SYSTEM, INC.  
WATER TREATMENT PLANT ENHANCEMENT PROJECT**

**CONCERNING PROPOSED RURAL DEVELOPMENT FINANCED  
WATER PLANT EXPANSION**

We hereby certify that the proposed plans and specifications for the project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066, Section 4 (3-4), Section 5 (1), Sections 6-7, Section 8 (1-3), Section 9 (1) and Section 10; All the other required state approvals and/or permits have been obtained. The proposed rates shall produce total revenue requirements set out in the Engineering Reports. Notice to the customers has been given in conformance with Section 4. The construction is anticipated to begin on December 1, 2014. The project will take 210 days to complete which will make the completion date June 29, 2015.

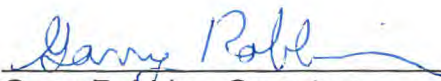
  
\_\_\_\_\_  
John M. Dix, P.E.  
Butler County Water System, Inc.

  
\_\_\_\_\_  
Weymouth Martin, Jr., President  
Butler County Water System, Inc.

**COMMONWEALTH OF KENTUCKY)  
COUNTY OF BUTLER )**

I, Garry Robbins, being first duly sworn according to law, state that I am Secretary of the Board of Directors of Butler County Water System, Inc., Butler County, Kentucky, that the Board of Directors approved the foregoing Statement, and that the statements of fact set forth therein are true and accurate to the best of our knowledge and belief.

Witness my signature this 26 day of September, 2014.

  
\_\_\_\_\_  
Garry Robbins, Secretary





AFFIDAVIT

This is to certify that the 24 day of September  
an ad for Butler County Water System

was published in the regular edition of the Butler County  
Banner, a newspaper published for general  
circulation in the City of Morgantown, Butler  
County and adjoining counties.

Dan Wright

COMMONWEALTH OF KENTUCKY

County of Hart

The foregoing was subscribed and sworn to before me by \_\_\_\_\_  
Dan Wright on this 24 day of September  
in 2014.

Lesee Loggins  
Notary Public, Kentucky, State-At-Large  
My commission expires: 02-09-15



# Shop, Mechanical & Garden Tools



United Country Estate

Heartland Realty & Auction LLC

Brokers/Auctioneers: Ron Kirby, Jr., Chris Gravit & Terry Garmon : 270-783-3000  
Auction Manager: A.J. Woosley : 270-999-8172

**HeartlandAuctions.com**

For good check w/ proper ID, payment in full on sale day, KY sales tax will apply, resale certificates available at the time of sale. Everything is being sold "As Is, Where Is", 10% Buyer's Premium will apply. Announcements day of sale take precedence over printed materials.

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## NOTICE OF PROPOSED RATE ADJUSTMENT

Notice is hereby given that Butler County Water System, Inc., 104 S. Tyler Street, Morgantown, KY, plans to file an application with the Public Service Commission, 211 Sower Boulevard, Frankfort, KY, pursuant to KRS278.023 for the purpose of changing its water rates as follows:

### EXISTING MONTHLY RATES

General Service		
<u>5/8" X 3/4" Meters</u>		
First 2,000 Gallons	\$16.96	Minimum Bill
Next 4,000 Gallons	4.91	per 1,000 Gallons
Next 44,000 Gallons	4.36	per 1,000 Gallons
Next 50,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>1" Meters</u>		
First 5,000 Gallons	\$32.19	Minimum Bill
Next 1,000 Gallons	4.91	per 1,000 Gallons
Next 44,000 Gallons	4.36	per 1,000 Gallons
Next 50,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>1-1/2" Meters</u>		
First 10,000 Gallons	\$57.51	Minimum Bill
Next 40,000 Gallons	4.36	per 1,000 Gallons
Next 50,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>2" Meters</u>		
First 16,000 Gallons	\$84.41	Minimum Bill
Next 34,000 Gallons	4.36	per 1,000 Gallons
Next 50,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>3" Meters</u>		
First 25,000 Gallons	\$137.03	Minimum Bill
Next 25,000 Gallons	4.36	per 1,000 Gallons
Next 50,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>4" Meters</u>		
First 30,000 Gallons	\$189.58	Minimum Bill
Next 20,000 Gallons	4.36	per 1,000 Gallons
Next 50,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>6" Meters</u>		
First 60,000 Gallons	\$331.11	Minimum Bill
Next 40,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons
<u>8" Meters</u>		
First 80,000 Gallons	\$419.98	Minimum Bill
Next 20,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons

All Rates are subject to a 10 percent penalty if paid after the due date.

### PROPOSED MONTHLY RATES

General Service		
<u>5/8 X 3/4-inch Meter</u>		
First 2,000 Gallons	\$18.54	Minimum Bill
Next 4,000 Gallons	5.37	per 1,000 Gallons
Next 44,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons
<u>1-inch Meter</u>		
First 5,000 Gallons	\$35.18	Minimum Bill
Next 1,000 Gallons	5.37	per 1,000 Gallons
Next 44,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons
<u>1-1/2-inch Meter</u>		
First 10,000 Gallons	\$62.86	Minimum Bill
Next 40,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons
<u>2-inch Meter</u>		
First 16,000 Gallons	\$92.26	Minimum Bill
Next 34,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons
<u>3-inch Meter</u>		
First 25,000 Gallons	\$149.77	Minimum Bill
Next 25,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons
<u>4-inch Meter</u>		
First 30,000 Gallons	\$207.19	Minimum Bill
Next 20,000 Gallons	4.77	per 1,000 Gallons
Next 50,000 Gallons	4.10	per 1,000 Gallons
Over 100,000 Gallons	3.42	per 1,000 Gallons
<u>6-inch Meter</u>		
First 60,000 Gallons	\$331.11	Minimum Bill
Next 40,000 Gallons	3.75	per 1,000 Gallons
Over 100,000 Gallons	3.13	per 1,000 Gallons

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5814	5691
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541	521
Mailed In-County Paid Subscriptions Stated on PS Form 3541 (include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	
793	756
Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS®	
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**A RESOLUTION OF THE DIRECTORS OF BUTLER COUNTY WATER SYSTEM, INC. AUTHORIZING THE USE OF RESERVE FUNDS TO BE USED TO FUND THE COST OF THE WATER TREATMENT PLANT ENHANCEMENT PROJECT**

**WHEREAS**, the Directors of the Butler County Water System, Inc. (the System) authorize the use of Reserve Funds to be used towards construction of the planned Water Treatment Plant Enhancement Project, all in accordance with Plans and Specifications; and


**WHEREAS**, bids have been received for the project and bids were deemed to be reasonable and it is recommended by the engineer that the bids be accepted; and where it is to the best interest of the customers of the System to proceed with the project in order to assure that an adequate supply of water is available to the customers of the System now and in the future;

**NOW, THEREFORE, BE IT RESOLVED BY THE DIRECTORS OF BUTLER COUNTY WATER SYSTEM, INC., AS FOLLOWS:**

**Section 1.** Authorize the contribution from the Reserve Funds of the System in the amount of \$64,060.00 to be used toward the construction of the planned Water Treatment Enhancement Project as recommended and set forth in the Final Engineering Report.

Adopted by the Directors of the Butler County Water System, Inc., Butler County, Kentucky, at a meeting held on August 25, 2014, on the same occasion signed in open session by the President, attested under seal by the Secretary, and declared to be in full force and effect.

(SEAL)

  
Weymouth Martin, Jr., President

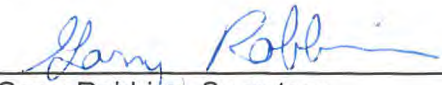
Attested:

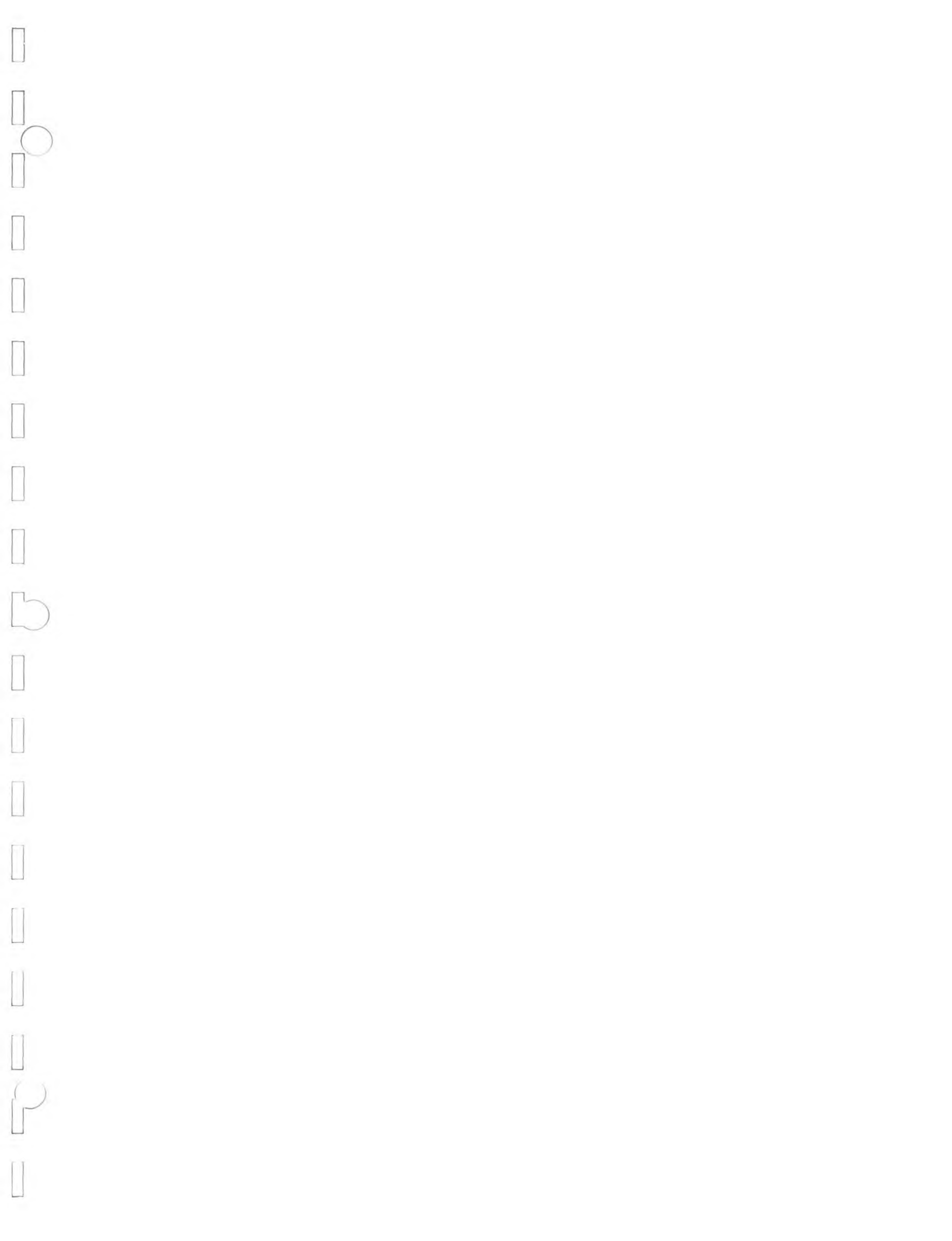
  
Garry Robbins, Secretary

**COMMONWEALTH OF KENTUCKY)  
COUNTY OF BUTLER )**

I, Garry Robbins, being first duly sworn according to law, state that I am Secretary of the Board of Directors of Butler County Water System, Inc., Butler County, Kentucky, that the Board of Directors approved the foregoing Statement, and that the statements of fact set forth therein are true and accurate to the best of our knowledge and belief.

Witness my signature this 25<sup>th</sup> day of August, 2014.

  
Garry Robbins, Secretary



BUTLER COUNTY WATER SYSTEM, INC.  
BUTLER COUNTY, KENTUCKY

SPECIFICATIONS AND  
CONTRACT DOCUMENTS

WATER TREATMENT PLANT  
ENHANCEMENT PROJECT



Butler County  
Water System, Inc.

May 1, 2014



Prepared by  
Engineering Staff  
Butler County Water System, Inc.

**CHECKLIST FOR RURAL DEVELOPMENT WATER AND WASTEWATER PROJECTS  
EJCDC 2002 FORMAT**

No.	Title	Form Number
1	Advertisement for Bids	Kentucky Bulletin 1780-1
2	Information for Bidders	Kentucky Bulletin 1780-1
3	Bid Form- Base bid with alternative deducts will not be accepted.	Kentucky Bulletin 1780-1
4	Bid Bond	EJCDC C-430 (07)
5	Certification for Contracts, Grants and Loans	RD Instruction 1940-Q, Exhibit A-1
6	Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion - Lower Tier Covered Transactions	Form AD-1048, 1992 Edition
7	Compliance Statement and Notice to Prospective Subcontractors of Requirements for Certifications of Non-segregated Facilities	Form RD 400-6, 2000 Edition
8	Notice of Award	Kentucky Bulletin 1780-1
9	Agreement	EJCDC C-520 (07) in conjunction with Kentucky Bulletin 1780-1
10	RUS Concurrence	Kentucky Bulletin 1780-1 Attachment 5
11	Performance Bond	EJCDC C-610 (07)
12	Payment Bond	EJCDC C-615 or 615A (07)
13	Power of Attorney	Contractor provides from Surety
14	Notice to Proceed	Kentucky Bulletin 1780-1
15	Certificate of Insurance	Contractor provides
16	General Conditions	EJCDC C-700 (07)
17	Certificate of Owner's Attorney	Kentucky Bulletin 1780-1 Attachment 5
18	Supplementary Conditions	Kentucky Bulletin 1780-1
19	Kentucky Wage Determinations, if applicable	Current Rates, if applicable
20	Federal Wage Determinations, if applicable	Current Rates, if applicable
21	Contract Change Order	Form RD 1924-7, 1997 Edition
22	Partial Pay Estimate	Form RD 1924-18, 1997 Edition
23	Project Sign Detail	KY Bulletin 1780-1, Attachment 3
24	Technical Specifications	Prepared by Consulting Engineer
25	Special Conditions	Prepared by Consulting Engineer

These documents must be used in their entirety with no revisions or changes except those allowed for in the EJCDC instructions.

Insurance certificate cancellation clause must provide at least a 15 day notice to owner. (Alter clause accordingly.)

**NOTE: Engineering information is available online at <http://www.usda.gov/rus/water/ees/englib/contract.htm>.**

## Advertisement for Bids

Water Treatment Plant Enhancement Project  
Butler County Water System, Inc.

Separate sealed Bids for the construction of: Replacement of tube settlers, installation of 2,100 linear feet of 10" and 16" water line, two 150 hp high service pumps, electrical controls, structural modifications, painting, and associated appurtenances, will be received by Butler County Water System, Inc. at the office of 104 S. Tyler Street, suite B, Morgantown, KY 42261 until 10:00 am(Local Time) , August, 7, 2014, and then at said office publicly opened and read aloud. The Contract Documents may be examined at the following locations: Butler County Water System, Inc., 104 S. Tyler Street, suite B, Morgantown, KY 42261 Copies of the Contract Documents may be obtained at the Issuing Office, Butler County Water System, Inc., located at 523 US 31W Bypass, Bowling Green, KY 42101 upon payment of \$ 100.00 for each set. There will be a pre-bid meeting at the project site on July, 17 at 10:00 am.

July 2, 2014

John M. Dix, General Manager



## Instructions to Bidders

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#### ARTICLE 1. DEFINED TERMS

101 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

201 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.

202 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.

203 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

301 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.

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, 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 **{10:00}** (am.) on **{July 17, 2014}** at **{the project site}** local time. 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, and complete and ready for final payment. Upon substantial completion, if necessary, an alternate 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.

#### **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 *{section, Bid item, alternative, adjustment unit price item, and unit price 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.

**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-responsive. 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... In cases where the low bidder is not awarded the contract, submit an explanation of the selection process used, along with the recommendation for award, in order for all bidding requirements to be met for RD to concur in award of contract.

#### 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 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 Department of Agriculture, Rural Development (RD). Refer to Article 18 of the General Conditions for information on the Federal Requirements.
- 21.03 Concurrence by RD in the award of the Contract is required before the Contract is effective.

#### ARTICLE 22- CONTRACTS TO BE ASSIGNED

- 22.01 Owner as "buyer" has/will execute a contract with           N/A           as "seller" for the procurement of goods and special services for           N / A          . The materials and equipment provided for the procurement contract are to be furnished and delivered to the Site [or other pre-determined location] for installation by Contractor. The said procurement contract will be assigned by Owner to Contractor as set forth in the Agreement. Contractor will accept the assignment and assume responsibility for the "seller", who will become a Subcontractor to Contractor.
- 22.02 Bidders may examine the contract documents for the procurement of goods and specials for the proposed project at           N / A



***ARTICLE 23- WAGE RATE REQUIREMENTS***

23.01 The prevailing wage rates of the State of Kentucky do apply to this contract as do any requirements of the State of Kentucky associated with the use of these State Prevailing wages.

## Bid Form

Project Identification: Water Treatment Plant Enhancement Project

Contract Identification and Number:

### ARTICLE 1- BID RECIPIENT

1.01 This Bid Is Submitted To: Butler County Water System, Inc., 104 S. Tyler Street, Suite B, Morgantown, KY 42261

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 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. 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, at the Site that have been identified in SC-4.06.

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from the visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by bidder, including applying the specific means, methods, techniques,

- sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.10.E above, 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 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.
  - I. 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.
  - J. 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— BIDDER'S CERTIFICATION**

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 engaged in corrupt, fraudulent, collusive, or coercive practices in competing for Contract. For purposes of the Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. "collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
  - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### **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 and fees.

**BASE BID SCHEDULE**

NO.	ITEM	UNIT	UNIT PRICE	QTY.	TOTAL PRICE
1	10" PVC Raw Water Line	LF	_____	1,550	_____
2	16" DIP Finished Water Line	LF	_____	700	_____
3	12" PVC Finished Water Line	LF	_____	60	_____
4	Ductile Iron MJ Fittings	LB	_____	10,000	_____
5	Miscellaneous Items (Vault, Check Valves, Air Release, Etc.)	LS	_____	1	_____
6	Crushed Stone	TN	_____	150	_____
7	Concrete	CY	_____	10	_____
8	High Service Vertical Turbine Pumps	EA	_____	2	_____
9	High Service Pump Header Flanged Piping	LS	_____	1	_____
10	Filter Building Structural Steel and Pipe Painting	LS	_____	1	_____
11	Filter Building Type "A" Wall Section	LF	_____	40	_____
12	Filter Building Type "B" Wall Section	LF	_____	50	_____
13	Filter Building Type "C" Wall Section	LF	_____	75	_____
14	Filter Building Floor Painting	LS	_____	1	_____
15	Tube Settlers	EA	_____	2	_____
16	Raw Water Pump VFD Addition	EA	_____	2	_____
17	Silt Fence	LF	_____	500	_____
18	Rip-Rap Check Dam	TN	_____	20	_____
19	Final Cleanup	LS	_____	1	_____
	<b>TOTAL BASE BID</b>				=====
A1	High Service VFD Addition	EA	_____	2	_____
	<b>TOTAL BASE BID with Alternates</b>				=====

- A. Unit Prices have been computed in accordance with paragraph 11.03.B 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 and complete and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before the date, or within the number of calendar days, indicated in the Agreement.. Upon substantial completion, if necessary, an alternate date for final completion and payment may be determined between the Owner, Contractor, and Engineer based on remaining work, market, and weather conditions.

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 Times.

#### ARTICLE 7- ATTACHEMENTS 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. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. List of Proposed References;
- E. Evidence of authority to do business in the state or jurisdiction of the Project; or a written covenant to obtain such a license within the time frame for acceptance of Bids;
- F. [If applicable] Contractor's License No.: \_\_\_\_\_ or Evidence of Bidder's ability to obtain a State Contractor's License and covenant by Bidder to obtain such license within the time for acceptance of Bids;
- G. Required Bidder Qualification Statement and Supporting Date; and
- H. 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;
- I. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- J. 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;

ARTICLE 8- DEFINED TERMS

801 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.

ARTICLE 9- BID SUBMITTAL

9.01 This Bid submitted by:

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_  
(Individual's signature)

Doing business as: \_\_\_\_\_

Bidder's 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

**SECTION 00430  
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):           Butler County Water System, Inc.  
  523 US 31W Bypass  
  Bowling Green, KY 42101

**BID**

Bid Due Date: \_\_\_\_\_

Project (Brief Description Including Location):

**Replacement of tube settlers, installation of 2,100 linear feet of 10" and 16" water line,  
two 150 hp high service pumps, electrical controls, structural modifications, painting,  
and associated appurtenances.**

**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 prepaid, 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.

END OF SECTION 00430

CERTIFICATION FOR CONTRACTS. GRANTS ADD 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 subaiards 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)

o0o

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 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

Clear Form

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 transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "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 Transaction," without modification, in all lower tier covered transaction 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 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.

COMPLIANCE STATEMENT

This statement relates to a proposed contract with Butler County Water System, Inc.

*(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 Order 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: or  If the proposed nonconstruction 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):

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)*

NOTICE OF AWARD

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT Description: Replacement of tube settlers, installation of 2,100 linear feet of 10" and 16" water line, two 150 hp high service pumps, electrical controls, structural modifications, painting, and associated appurtenances.

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated \_\_\_\_\_, 20\_\_\_\_, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$ \_\_\_\_\_

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

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

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

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Butler County Water System, Inc.  
Owner

By \_\_\_\_\_

Title \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by . this the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_. By \_\_\_\_\_  
Title \_\_\_\_\_

**AGREEMENT**

**THIS AGREEMENT** is by and between Butler County Water System, Inc., (hereinafter called OWNER) and \_\_\_\_\_  
(hereinafter called 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:

Replacement of tube settlers, installation of 2,100 linear feet of 10" and 16" water line, two 150 hp high service pumps, electrical controls, structural modifications, painting, and associated appurtenances.

**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:

Water Treatment Plant Enhancement

**ARTICLE 3 - ENGINEER**

3.01 The Project has been designed by Butler County Water System, Inc., who is hereinafter called ENGINEER and 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 Dates for Substantial Completion and Final Payment*

A. The Work will be substantially completed within 180 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 within 210 days after the date when the Contract times commence to run. Upon substantial completion, if necessary, an alternate date for final completion and payment should be determined between the OWNER, CONTRACTOR, and ENGINEER based on remaining work, market, and weather conditions.

*4.03 Liquidated Damages*

A. CONTRACTOR and OWNER recognize that time is of the essence on this Project and that the OWNER will suffer financial loss if the Work is not substantially completed within the time specified in Paragraph 4.02 above, plus any extensions allowed in accordance with Article 12 of the General Conditions. Accordingly, CONTRACTOR shall pay OWNER \$400 for each day that expires after the time specified in Paragraph 4.02 until the work is substantially



complete. After substantial completion, retainage may be reduced to an amount agreed upon by OWNER, CONTRACTOR, and ENGINEER. It should be no less than 150% of the amount required for completion and ready for final payment. Liquidated damages may not be assessed after substantial completion has been achieved, and hourly reimbursement rates will be used to calculate damages based on actual costs incurred by OWNER as a result of the delay.

## 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 paragraph 5.01.A below:

A. TOTAL OF ALL UNIT PRICES \_\_\_\_\_ \$ \_\_\_\_\_ (dollars)  
(use words)

at the prices stated in CONTRACTOR's Bid, attached at Section 00400.

As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

## 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 10th 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 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, in accordance with paragraph 14.02 of the General Conditions:

a. 90% of Work completed (with the balance being retainage). If the Work has been 90% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100% of the Work completed less the aggregate of payments previously made; and

b. 90% 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 final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

## 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 rate of 18% per annum.

## 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 having done 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 applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, 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 \_\_\_\_\_, inclusive);
2. Performance Bond (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
3. Payment Bond (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
4. Other Bonds (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - a. \_\_\_\_\_ (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - b. \_\_\_\_\_ (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - c. \_\_\_\_\_ (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
5. General Conditions (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
6. Supplementary Conditions (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
7. Specifications as listed in the table of contents of the Project Manual;
8. Drawings consisting of a cover sheet and sheets numbered \_\_\_\_\_ through \_\_\_\_\_, inclusive, with each sheet bearing the following general title: \_\_\_\_\_;
9. Addenda (numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive);
10. Exhibits to this Agreement (enumerated as follows):
  - a. Notice to Proceed (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - b. CONTRACTOR's Bid , marked as Section 00400;
  - c. Documentation submitted by CONTRACTOR prior to Notice of Award (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - d. \_\_\_\_\_;
11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
  - a. Written Amendments;
  - 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 3.05 of the General Conditions.

## **ARTICLE 10 - MISCELLANEOUS**

### **10.01 *Terms***

A. Terms used in this Agreement will have the meanings indicated in the General 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.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on \_\_\_\_\_, \_\_\_\_\_ (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

Butler County Water System, Inc.

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

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

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest \_\_\_\_\_

Attest \_\_\_\_\_

Address for giving notices:

Address for giving notices:

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

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

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement.)

License No. \_\_\_\_\_  
(Where applicable)

Agent for service of process: \_\_\_\_\_

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

Designated Representative:

Designated Representative:

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

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

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

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

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

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

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

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

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

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

Facsimile: \_\_\_\_\_

Facsimile: \_\_\_\_\_

END OF SECTION

**Certificate of Owner's Attorney**

I, the undersigned, \_\_\_\_\_, the duly authorized and acting legal Representative for Butler County Water System, Inc. do hereby certify as follows:

I have carefully examined the attached Contract(s) and performance and payment bond(s) and the manner or 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.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

---

**Agency Concurrence**

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Typed Name

# 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):  
Butler County Water System, Inc  
523 US 31-W Bypass  
Bowling Green, KY 42101

## CONTRACT

Date:

Amount:

Description (Name and Location): Water Treatment Plant Enhancement Project , Morgantown, KY

## 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

Company:

Signature: \_\_\_\_\_ (Seal)

Name and Title:

### SURETY

\_\_\_\_\_  
(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

Company:

Signature: \_\_\_\_\_ (Seal)

Name and Title:

### SURETY

\_\_\_\_\_  
(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.

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):  
Butler County Water System, Inc  
523 US 31-W Bypass  
Bowling Green, KY 42101

## CONTRACT

Date:  
Amount:  
Description (Name and Location): Water Treatment Plant Enhancement Project , Morgantown, KY

## 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

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

### SURETY

\_\_\_\_\_  
Surety's Name and Corporate Seal (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

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

### SURETY

\_\_\_\_\_  
Surety's Name and Corporate Seal (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.

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):**

NOTICE TO PROCEED

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

Project: Water Treatment Plant Enhancement

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

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

\_\_\_\_\_  
Owner

By \_\_\_\_\_

Title \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by \_\_\_\_\_

\_\_\_\_\_  
this the \_\_\_\_\_ 19\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

Employer Identification  
Number \_\_\_\_\_

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



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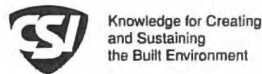
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Construction Specifications Institute

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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). 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. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *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.

4. *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.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *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.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner 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.

10. *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.

11. *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.

12. *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.

13. *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).

14. *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.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *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.

18. *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.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *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.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *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.

23. *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.

24. *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.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *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.

27. *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.

28. *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.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *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.

32. *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.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *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.

35. *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.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *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.

39. *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.

40. *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.

41. *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.

42. *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.

43. *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.

44. *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.

45. *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.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *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.

49. *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.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *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.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by 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

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### 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. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

### 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; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

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, 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

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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 or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, 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 insured (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, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). 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 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;

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, false work, 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. Owner 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.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 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 Owner 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 Owner and made payable to Owner 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. Owner 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, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner 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 Owner's exercise of this power. If such objection be made, Owner 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, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner 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

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#### 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 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) 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 Draw-

ings 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:* Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

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 Drawing's 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

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### 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

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### 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

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#### 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, 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

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### 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, expresses, 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 quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect 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.C.

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

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### 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. there are other items entitling Owner to a set-off against the amount recommended; or
- d. 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, Contractor, and Engineer shall make an 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 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.

#### 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

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#### 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. Either Owner or Contractor may 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 and the other party to the Contract. 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

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### 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.

## Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract Funding Agency Edition (No. C-710, 2002 Edition) and other provisions of the Contract Documents as indicated below. All provisions not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

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**SC-1.01.A.2. Add the following language to the end of Paragraph 1.01.A.2:**

The Project is financed in whole or in part by USDA Rural Development pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). *[add other funding sources and modify when necessary.]*

**SC-1.01.A.3. Add the following language to the end of Paragraph 1.01.A.3:**

The Application for Payment form to be used on this Project is Form RD 1924-18. The Agency must approve all Applications for Payment before payment is made.

**SC-1.01.A.9. Add the following language to the end of Paragraph 1.01.A.9:**

The Change Order form to be used on this Project is Form RD1927-7. Agency approval is required before Change Orders are effective.

**SC-1.01.A.15. Delete in it's entirety and replace with the following:**

Contract Times: The number of days or date stated in the Agreement to achieve substantial completion and be complete and ready for final payment. An alternate final completion date may be determined at that point, if necessary, by Contractor, Owner, and Engineer, after substantial completion, based on remaining work, weather and market conditions.

**SC-1.01.A.19. Add the following language to the end of Paragraph 1.01.A.9:**

The Engineer's Consultants on this project are: None

**SC-4.02. Delete Paragraphs 4.02.A and 4.02.B in their entirety and insert the following:**

A. No reports or explorations or tests of subsurface conditions at or contiguous to the Site are known to the Owner or Engineer.

**SC-4.06. Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:**

A. No reports or explorations or tests of subsurface conditions at or contiguous to the Site are known to the Owner or Engineer.

B. {Not used.} **SC-5.04. Add the following new paragraph immediately after**

**Paragraph 5.04.B:**

C. The limits of liability for insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:

- |  |           |
|--|-----------|
| a. State:                                    | Statutory |
| b. Applicable Federal (e.g., Longshoremen's) | Statutory |
| c. Employer's Liability                      | \$500,000 |

2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody, and control of the Contractor:

- |   |   |
|---|---|
| a. General Aggregate  | { \$ 2,000,000 }  |
| b. Products - Completed<br>Operations Aggregate   | { .5 1,000,000 }  |
| c. Personal and Advertising<br>Injury   | { \$ 1,000,000 }  |
| d. Each Occurrence<br>(Bodily Injury and<br>Property Damage)  | { \$ 1,000,000 }  |
| e. Property Damage liability insurance<br>will provide Explosion, Collapse, and<br>Underground coverages where<br>applicable. |   |
| f. Excess or Umbrella Liability   | Amount required for<br>sum of general liability,<br>and umbrella to equal<br>minimum of \$2,000,000 |
| 1) General Aggregate  |   |
| 2) Each Occurrence  |   |

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

- a. Bodily Injury:
  - Each Person \$500,000
  - Each Accident \$200,000
- b. Property Damage:
  - Each Accident \$500,000
- c. Combined Single Limit of \$500,000

4. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

- a. Bodily Injury:
  - Each Person \$500,000
  - Each Accident \$500,000
- b. Property Damage:
  - Each Accident \$500,000
  - Annual Aggregate \$2,000,000

SEE ATTACHED EXAMPLE INSURANCE CERTIFICATE  
FOR ALL REQUIRED COVERAGES

**SC-6.05.C. Amend the paragraph by making two subparagraphs under the title C. Engineer's Evaluation. The paragraph text is retitled, 6.05.C.2 After Effective Date of Agreement. A new paragraph is added before this paragraph to read as follows:**

1. During Bidding. The contract, if awarded, will be on the bases 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. Request for Engineer's clarification of materials and equipment considered substitute or "or equal" will not be considered until after the effective date of the Agreement between Owner and Contractor.

And

2. The burden of proof of the merit of the proposed item is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item or "or-equal" prior to the effective date of the agreement, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

**SC-6.06 Add a new paragraph immediately after Paragraph 6.06.G:**

- H. The Contractor shall not award work valued at more than fifty (50%) percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.



**SC-9.03.A. Add the following language at the end of paragraph 9.03.A:**

The Owner will provide Resident Project Representative services for this project.

**SC-14.02.A.3 Add the following language at the end of paragraph 14.02.A.3:**

No payments will be made that would deplete the retainage prior to substantial completion, nor place in escrow any funds that are required for retainage, or invest the retainage for benefit.

**SC-14.02.C.1. Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:**

1. The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 14.02.D will become due ten days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

**Sc- 18 Add a new Article 18, "Federal Requirements", after Article 17.**

**SC- 18.01 Add the following language at the beginning of Article 18 with the title "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 the Contract.

**Sc- 18.02 Add the following language at the beginning of Article 18.01.A with the title "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.

**SC 18.03 Add the following language after Article 18.02B with the title "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. Owner's officers, employees, or agents shall not engage in award or administration of the Contract if in 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 subcontractor.

SC 18.04 Add the following language after Article 18.03 with the title "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 performance of the 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 the Contract.
- B. In the event this contract is terminated as provided in paragraph 18.04A. 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 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.

**SC 18.05 Add the following language after Article 18.04B with the title "Audit and Access to Records"**

- A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Engineer which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.

**SC 18.06 Add the following language after Article 18.05.A with the title "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 that requirement, 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 subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus firms.

**SC 18.07 Add the following language after Article 18.06.A with the title "AntiKickback"**

- 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 Part by Loans or Grants of the United States"). The Act provides that contractor or subcontractor shall be prohibited from inducing, by any means, and 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.

**SC-18.08 Delete paragraph 18.08.A in its entirety and insert the following in its place:**

- A. If this Contract exceeds \$100,000, the Contractor shall comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 USC §1857(h) and 42 USC § 7401 et.seq.), Section 508 of the Clean Water Act (33 USC §1368), and Federal Water Pollution Control Act (33 USC § 1251

et seq.), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR§15) is required. Contractor will report violations to the Agency and Regional Office of the EPA.

**SC-18.09 Add the following after 18.08 with the title "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.

**SC-18.10 Add the following after 18.09 with the title "Equal Opportunity Requirement":**

- 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 action 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 on 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 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.
- C. Contractor shall provide written notification to the Director of the Office for 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 for the subcontract; and the geographical area in which the Contract is to be performed.

**SC.18.11 Add the following after 18.10 with the title "Restrictions of Lobbying":**

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-102, 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.

**SC.18.12 Add the following after 18.11.A with the title "Environmental Requirement":**

When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:

- A. Wetlands- When disposing of excess, spoil. Or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

- B. 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 Floodplain Maps or other appropriate maps, I.E., alluvial soils on NRCS Soil Survey Maps.
- C. Historical 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 and after consultation with the State Historic Preservation Officer (SHPO).
- D. 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 the Owner and a representative of Agency. Construction shall be temporarily halted pending notification process and further directions issue by Agency after consultation with the U.S. Fish and Wildlife Service.
- E. Mitigation Measures- If the project had an Environmental Report, Environmental Assessment, or Environmental Impact Statement to meet the requirements of the National Environmental Policy Act, compliance with the mitigation measures, if any, in that document are hereby included as a condition of this contract. {These mitigation measures are as follows: Insert mitigation measures if any.}

KENTUCKY LABOR CABINET  
PREVAILING WAGE DETERMINATION  
CURRENT REVISION  
LOCALITY NO. 033

Determination No. CR 8-033

Project number: 016-H-00045-13-8

Date of Determination: March 18, 2013

Type: \_\_\_ Bldg \_\_\_x\_\_\_ HH

This schedule of the prevailing rate of wages for Locality No. 033, which includes Butler and Warren 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 8-033.

Apprentices shall be permitted to work as such subject to Administrative Regulations adopted by the Executive Director of the Office 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 Donta, Deputy Commissioner  
KENTUCKY LABOR CABINET

**CLASSIFICATIONS** **RATE AND FRINGE BENEFITS**

ASBESTOS/INSULATION WORKERS: BASE RATE \$23.55  
FRINGE BENEFITS 8.66

ASBESTOS & LEAD ABATEMENT WORKERS: BASE RATE \$15.55  
FRINGE BENEFITS 4.55

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 BOILERMAKERS: BASE RATE \$23.95  
FRINGE BENEFITS 12.04

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 BRICKLAYERS: BASE RATE \$23.03  
FRINGE BENEFITS 2.07

**CARPENTERS/BUILDING:**

Carpenters: BUILDING BASE RATE \$22.70  
FRINGE BENEFITS 14.14

Piledriver BUILDING BASE RATE \$22.95  
FRINGE BENEFITS 14.14

**CARPENTERS/HEAVY HIGHWAY:**

Carpenters: HEAVY & HIGHWAY BASE RATE \$26.40  
FRINGE BENEFITS 13.95

Piledrivermen: HEAVY & HIGHWAY BASE RATE \$26.65  
FRINGE BENEFITS 13.95

Divers: HEAVY & HIGHWAY BASE RATE \$39.98  
FRINGE BENEFITS 13.95

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 CEMENT MASONS: BASE RATE \$ 20.40  
FRINGE BENEFITS 8.25

**ELECTRICIANS:**

Electricians: \*BASE RATE \$29.32  
FRINGE BENEFITS 13.88

\*When workmen are required to work from bosun chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and TV towers, structural steel and bridges or similar hazardous locations where workmen are subject to a direct fall, add 25% above workman's hourly rate for work that is 50' to 75' above the surface and add 50% above workman's hourly rate for work that is over 75' above the surface. No premium shall be paid on work performed using JLGs, bucket trucks, or other similar elevated mechanized work platforms up to 75' above the surface upon which the platform sits. Structural steel is defined as open, unprotected, unfloored raw steel.

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March 18, 2013

CLASSIFICATIONS RATE AND FRINGE BENEFITS  
**ELECTRICIANS: HEAVY/HIGHWAY**

LINEMAN:	HEAVY HIGHWAY	BASE RATE	\$30.78
		FRINGE BENEFITS	11.08
EQUIPMENT OPERATOR:	HEAVY HIGHWAY	BASE RATE	\$27.52
		FRINGE BENEFITS	10.44
GROUNDSMEN:	HEAVY HIGHWAY	BASE RATE	\$18.23
		FRINGE BENEFITS	8.61

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ELEVATOR CONSTRUCTORS:		BASE RATE	\$28.62
		FRINGE BENEFITS	7.47

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FIREPROOFING:	BUILDING	BASE RATE	\$19.25
		FRINGE BENEFITS	4.28

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**BUTLER COUNTY:**

GLAZIERS:		*BASE RATE	\$18.01
		FRINGE BENEFITS	3.88

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

**WARREN COUNTY:**

GLAZIERS:		BASE RATE	\$8.50
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IRONWORKERS: (Including reinforcing and structural)		BASE RATE	\$26.34
		FRINGE BENEFITS	18.84

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**LABORERS/BUILDING:**

GROUP 1

General laborers, watchman, water boy, wrecking labor on building and structures, clearing right-of-way and building site, carpenter tender, deck hand, flagging traffic, truck spotters and dumper, axe and cross cut saw filer, concrete puddlers and form strippers, asbestos abatement laborers, toxic waste removal laborer, lead abatement laborers, and industrial deep cleaning:

BUILDING	BASE RATE	\$19.85
	FRINGE BENEFITS	10.23

GROUP 2

All power driven tools, hod carriers, mason tenders, finishing tenders, mortar mixers, jack hammer, vibrators, soil compactors, wagon drill, core drill, test drill, well drill, concrete pump machine, tunnel boring machine, men in tunnel and crib ditch work, signal man, riprap rock setters and handlers, asphalt rakers, tampers and smoothers, pipe layers, grout pump man, chain saw, pipe clearing, doping and wrapping, swampers and straight cable hooking, cement guns, grade checkers machine excavating, tool room checkers, batch plant scale man, sand hog free air, sand hog compressed air, cutting torch man on salvage work, road form setters, brick slingers, hand spikers, power buggy,<sub>3</sub>

**CLASSIFICATIONS** **RATE AND FRINGE BENEFITS**  
**LABORERS/BUILDING (CONTINUED):**

GROUP 2 CONTINUED:

handling of creosote material, sandblasters, curing of concrete and apply hardner, air and gas tampers, concrete saw, power post hole diggers and green cut men on concrete work, request that two men be used on pavement breakers, multi-craft tender:

BUILDING	BASE RATE	\$20.05
	FRINGE BENEFITS	10.23

Group 3

Powderman or Blasters:

BUILDING	BASE RATE	\$21.05
	FRINGE BENEFITS	10.23

**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, grade checkers, all hand digging and hand back filling, highway marker placers, landscaping laborers, mesh handlers and placers, puddler, railroad laborers, rip-rap and grouters, right of way laborers, sign, guard rail and fence installers (all types), signal men, sound barrier installer, storm and sanitary sewer laborers, swampers, truck spotters and dumpers, and wrecking of concrete forms:

HEAVY & HIGHWAY	BASE RATE	\$21.51
	FRINGE BENEFITS	10.15

HEAVY HIGHWAY GROUP 2:

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

HEAVY & HIGHWAY	BASE RATE	\$21.76
	FRINGE BENEFITS	10.15

HEAVY HIGHWAY GROUP 3:

Asphalt luteman and rakers, gunnite nozzleman, gunnite operators and mixers, grout pump operator, side rail setters, rail paved ditches, screw operators, tunnel laborers (free air), and water blasters:

HEAVY & HIGHWAY	BASE RATE	\$21.81
	FRINGE BENEFITS	10.15

HEAVY HIGHWAY GROUP 4:

Caisson workers (free air), cement finishers, environmental laborer - nuclear, radiation, toxic and hazardous waste - Levels A and B, miners and drillers (free air), tunnel blasters, tunnel muckers (free air), directional & horizontal boring, air track driller (all types), and powderman and blaster:

HEAVY & HIGHWAY	BASE RATE	\$22.41
	FRINGE BENEFITS	10.15



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 March 18, 2013

CLASSIFICATIONS

RATE AND FRINGE BENEFITS

MARBLE, TILE & TERRAZZO SETTERS:	BASE RATE	\$23.72
	FRINGE BENEFITS	8.72

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 MARBLE, TILE & TERRAZZO FINISHERS:

Finishers: (Excluding Marble)	BASE RATE	\$17.84
	FRINGE BENEFITS	8.62

Marble Finishers:	BASE RATE	\$18.04
	FRINGE BENEFITS	8.62

Terrazzo Grinders:	BASE RATE	\$18.24
	FRINGE BENEFITS	8.62

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MILLWRIGHTS:	BASE RATE	\$22.90
	FRINGE BENEFITS	10.69

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**OPERATING ENGINEERS/BUILDING:**

CLASS A-1:

Operating Engineers possessing 3<sup>rd</sup> party certification NCCCO (National Commission for the Certification of Crane Operators) (or Operating Engineers Certification Program) shall be paid the minimum rate per hour on the following equipment: 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	\$27.28
	FRINGE BENEFITS	13.40

CLASS A:

Articulating Dump, Auto Patrol, Batch Plant, Bituminous Paver, Cableway, Central Compressor Plant, Clamshell, Concrete Mixer (21 cu. ft. or over), Concrete Pump, Crane, Crusher Plant, Derrick, Derrick Boat, directional boring machine, Ditching and Trenching Machine, Dragline, Dredge Operator, Dredge Engineer, Elevating Grader and all types of Loaders, Forklift (regardless of lift height), GPS systems (on equipment within the classification), Hoe-Type Machine, Hoist (1 drum when used for stack or chimney construction or repair), Hoisting Engineer (2 or more drums), laser or remote controlled equipment (within the classification), Locomotive, Motor Scraper, Carry-all Scoop, Bulldozer, Heavy Duty Welder, Mechanic, Orangepeel Bucket, Piledriver, Power Blade, Motor Grader, Roller (bituminous), Scarifier, Shovel, Tractor Shovel, Truck Crane, Winch Truck, Push Dozer, Highlift, 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	\$26.25
	FRINGE BENEFITS	13.40

CLASSIFICATIONS RATE AND FRINGE BENEFITS  
**OPERATING ENGINEERS/BUILDING (CONTINUED):**

**\*Operators on cranes with boom one-hundred fifty feet (150') and over including jib, shall receive seventy-five cents (\$.75) above base rate. All cranes with piling leads will receive \$.50 above base rate regardless of boom length**

**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, 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 materials), Hoisting Engineer (1 drum or buck hoist), Firebrick (Masonry Excluded), Well Points, Grout Pump, Throttle-Valve Man, Tugger, Electric Vibrator Compactor and Caisson Drill Helper:

BUILDING	BASE RATE	\$22.67
	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, Truck Crane Oiler, Hydro-Seeder, Power Form handling Equipment, Deckhand Steersman, Hydraulic Post Driver and Drill Helper:

BUILDING	BASE RATE	\$21.11
	FRINGE BENEFITS	13.40

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**OPERATING ENGINEERS/HEAVY HIGHWAY:**

**HEAVY HIGHWAY CLASS A-1:**

Operating Engineers possessing 3<sup>rd</sup> party certification NCCCO (National Commission for the Certification of Crane Operators) (or Operating Engineers Certification Program) shall be paid the minimum rate per hour on the following equipment: Cableway, carry deck crane, cherry picker, clamshell, 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 and other types) truck crane:

HEAVY HIGHWAY	BASE RATE	\$28.40
	FRINGE BENEFIT	13.40

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CLASSIFICATIONS RATE AND FRINGE BENEFITS  
**OPERATING ENGINEERS/HEAVY HIGHWAY (CONTINUED):**

**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 \$1.00 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, Skid Steer Machine with all Attachments, 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

**HEAVY HIGHWAY CLASS B2:**

Greaser on Grease Facilities servicing Heavy Equipment, All Off Road Material Handling Equipment, Including Articulating Dump Truck:

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

CLASSIFICATIONS

RATE AND FRINGE BENEFITS

**OPERATING ENGINEERS: (CONTINUED):**

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

**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.**

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**PAINTER/BUILDING:**

Brush and roller:	BUILDING	BASE RATE	\$16.53
		FRINGE BENEFITS	5.65

Structural steel, swing state and chair and motor stage, spray work, climbing shoes, drywall finishing, pressure cleaning steam and water, tuck point (in connection with painting), epoxies, vinyl and plastic type paint, power driven buffers and sanders, and lead base paint abatement

BUILDING	BASE RATE	\$16.88
	FRINGE BENEFITS	5.65

Sandblasting, bitumastic coatings, hot:

BUILDING	BASE RATE	\$17.23
	FRINGE BENEFITS	5.65

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**PAINTER/HEAVY HIGHWAY:**

Brush, Roller & Paperhangers:	HEAVY & HIGHWAY	BASE RATE	\$18.25
		FRINGE BENEFITS	4.28

Drywall Finishers & Plasterers:	HEAVY & HIGHWAY	BASE RATE	\$17.35
		FRINGE BENEFITS	3.13

Spray, Sandblast, Power Tools, Waterblast, Steam Cleaning; Brush & Roller of Mastics, Creosotes, Kwinch Koate and Coal Tar Epoxy:

HEAVY & HIGHWAY	BASE RATE	\$19.25
	FRINGE BENEFITS	4.28

Spray of Mastics, Creosotes, Kwinch Koate and Coal Tar Epoxy:

HEAVY & HIGHWAY	BASE RATE	\$20.25
	FRINGE BENEFITS	4.28

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**PLUMBERS & PIPEFITTERS:**

BASE RATE	\$32.00
FRINGE BENEFITS	16.29

CLASSIFICATIONS

RATE AND FRINGE BENEFITS

PLASTERERS:		BASE RATE	\$11.81
		FRINGE BENEFITS	1.59

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ROOFERS:(Excluding metal roofs)		BASE RATE	\$10.31
		FRINGE BENEFITS	3.37

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SHEETMETAL WORKERS :(Including metal roofs)		BASE RATE	\$27.70
		FRINGE BENEFITS	13.35

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SPRINKLERFITTERS:		BASE RATE	\$29.55
		FRINGE BENEFITS	17.22

**TRUCK DRIVERS/BUILDING:**

Truck Drivers:	BUILDING	BASE RATE	\$10.77
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**TRUCK DRIVERS/HEAVY HIGHWAY:**

Greaser, tire changer:	HEAVY & HIGHWAY	BASE RATE	\$16.34
		FRINGE BENEFITS	7.04

Truck mechanic:	HEAVY & HIGHWAY	BASE RATE	\$16.57
		FRINGE BENEFITS	7.04

Driver-single axle dump and flatbed truck, terrain vehicle when used to haul materials, semi-trailer or pole trailer when used to pull building materials and equipment, tandem axle dump truck, driver of distributors, driver on mixer trucks (all types):

	HEAVY & HIGHWAY	BASE RATE	\$16.64
		FRINGE BENEFITS	7.04

Driver-Euclid and other heavy earthmoving equipment and low-boy, articulator, cat truck, 5-axle wheel, winch truck and A-Frame truck when used in transporting materials, Ross Carrier, forklift truck when used to transport building materials, driver on pavement breakers:

	HEAVY & HIGHWAY	BASE RATE	\$16.65
		FRINGE BENEFITS	7.04

Form RD 1924-7  
(Rev. 2-97)

UNITED STATES DEPARTMENT OF AGRICULTURE  
RURAL DEVELOPMENT AND  
FARM SERVICE AGENCY

**CONTRACT CHANGE ORDER**

ORDER NO.
DATE
STATE
COUNTY

CONTRACT FOR \_\_\_\_\_  
OWNER \_\_\_\_\_

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 in Contract Price	INCREASE in Contract Price
TOTALS	0.00	0.00
NET CHANGE IN CONTRACT PRICE	0.00	0.00

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) : \_\_\_\_\_ Days.

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 by Agency \_\_\_\_\_  
(Name and Title) (Date)

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 a valid OMB control number. The valid OMB control number for this information collection is 0575-01042. The time required to complete this information collection is estimated to average 15 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.

- ORIGINAL-BORROWER'S CASE FOLDER
- COPY-CONTRACTOR
- COPY-BORROWER

Form RD 1924-18 (Rev. 6-97)	UNITED STATES DEPARTMENT OF AGRICULTURE RURAL DEVELOPMENT FARM SERVICE AGENCY <b>PARTIAL PAYMENT ESTIMATE</b>	CONTRACT NO.  PARTIAL PAYMENT ESTIMATE NO.  PAGE
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OWNER:	CONTRACTOR:	PERIOD OF ESTIMATE FROM _____ TO _____
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CONTRACT CHANGE ORDER SUMMARY				ESTIMATE	
No.	Agency Approval Date	Amount			
		Additions	Deductions		
				1. Original Contract	\$ 0.00
				2. Change Orders	\$ 0 . 0 0
				3. Revised Contract (1 + 2)	\$0.00
				4. Work Completed*	
				5. Stored Materials*	
				6. Subtotal (4 + 5)	\$ 0 . 0
TOTALS		\$0.00	\$0.00	7.	
NET CHANGE		\$0.00	\$0.00		

CONTRACT TIME					
Original (days)	On Schedule	LJ Yes	Starting	Date	
Revised				Projected	
Remaining				Completion	

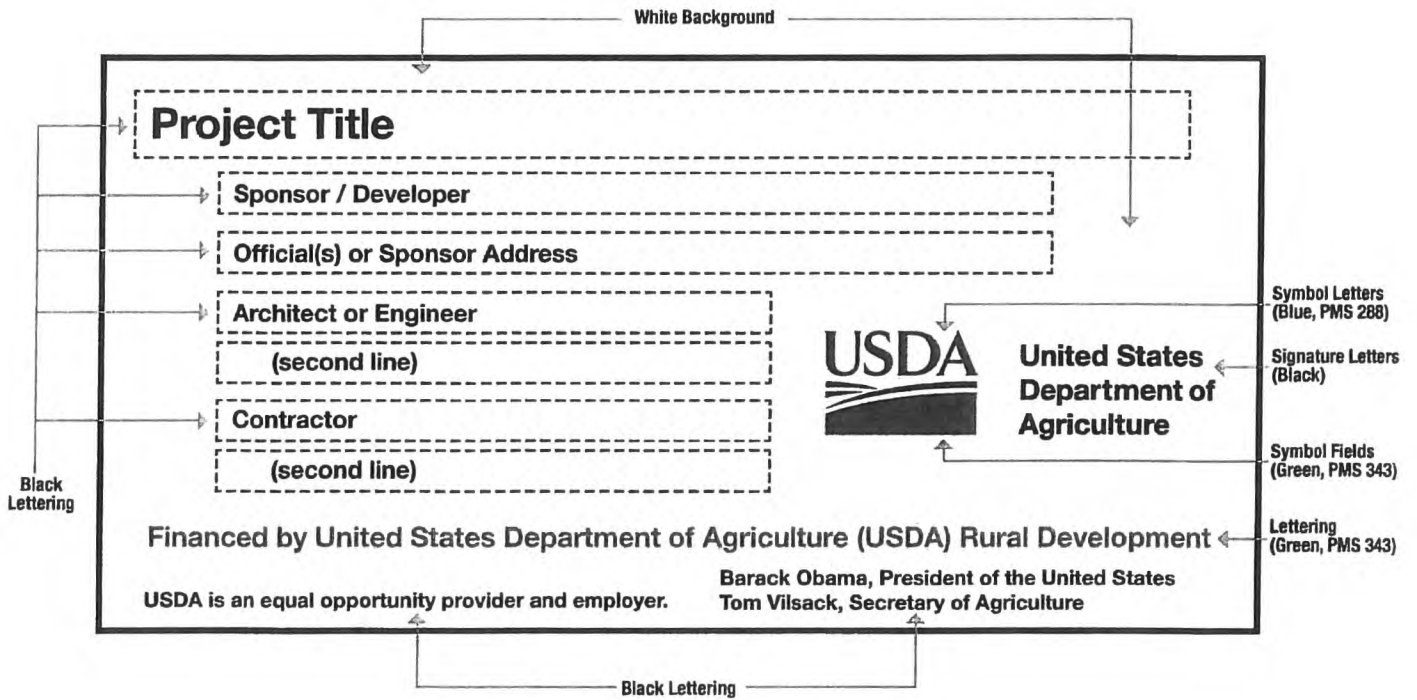
<p><b>CONTRACTOR'S CERTIFICATION:</b></p> <p>The undersigned Contractor certifies that to the best of their knowledge, information and belief the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts have been paid by the contractor for work for which previous payment estimates was issued and payments received from the owner, and that current payment shown herein is now due.</p>	<p><b>ARCHITECT OR ENGINEER CERTIFICATION:</b></p> <p>The undersigned certifies that the work has been carefully inspected and to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work performed has in accordance with the contract documents.</p>
Contractor _____  By _____  Date _____	Architect or Engineer _____  By _____  Date _____
<p><b>APPROVED BY OWNER:</b></p> Owner _____  By _____  Date _____	<p><b>ACCEPTED BY AGENCY:</b></p> <p>The review and acceptance of this estimate does not attest to the correctness of the quantities shown or that the work has been performed in accordance with the contract documents.</p> By _____  Title _____  Date _____

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0575-0042. The time required to complete this information collection is estimated to average 30 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.





# TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS



**SIGN DIMENSIONS: 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x ¾")**  
**PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)**

**SECTION 1**  
**GENERAL SCOPE AND SPECIAL PROVISIONS**

1. Scope

The instructions and information set out in the paragraphs of the Detailed Specifications shall supersede the instructions and information set out in the Information for Bidders, General Conditions, and Supplemental General Conditions if and when differences occur.

2. Shop Drawings, Product Data, and Samples

Shop drawings, product data, and samples as discussed in Paragraph 5 of the General Conditions shall be furnished by the CONTRACTOR to the ENGINEER. Unless otherwise set out, all shop drawings shall be furnished in five copies. It shall be clearly understood by the CONTRACTOR that the ENGINEER will examine the shop drawings for general design only, and that his approval stamped on such drawings shall be approval only for general design, and the CONTRACTOR shall in all cases be held responsible for detailed dimensions. In case of discrepancy between the shop drawings and the requirements of the Drawings, Specifications, and Contract Documents, the provisions of the Drawings, Specifications, and Contract Documents shall prevail even though the shop drawings have been approved by the ENGINEER, unless the conflict therein has been specifically waived in writing by a Change Order.

3. Owner's Right to Carry Out the Work

If the CONTRACTOR defaults or neglects to carry out the work in accordance with the Contract Documents and fails within ten days after receipt of written notice from the OWNER to commence and continue correction of such default or neglect with diligence and promptness, the OWNER may, (without prejudice to any other remedy he may have) make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the CONTRACTOR the cost of correcting such deficiencies. If the payments then or thereafter due the CONTRACTOR are not sufficient to cover such amount, the CONTRACTOR shall pay the difference to the OWNER.

4. Execution and Coordination of the Work

4.1 It is intended that the work covered by this Contract be done so as to cause the minimum amount of interference with traffic and/or existing utilities. The CONTRACTOR will be required to organize and schedule his work so as to keep the existing facilities in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed. The manner in which shutdowns will be made and the work schedule of the CONTRACTOR during shutdowns will be subject to the approval of the OWNER. The CONTRACTOR shall

## General Scope and Special Provisions

schedule a proposed shutdown with the OWNER at least three days prior to the outage. All shutdowns shall be made by employees of the OWNER. Although every effort will be made to cause the minimum amount of interference with the CONTRACTOR's work, the interest of the OWNER in regard to the existing facilities must always take precedence over the construction work. Therefore, the right is reserved by the OWNER to put any lines or other facilities (that may be shut down for the construction work) back into service when an emergency arises.

4.2 The work on the project shall be scheduled so as to expedite service to new customers. The CONTRACTOR shall install meters and perform testing as each section of new water main is constructed. Water lines or sections of lines thus completed shall be placed in service while work proceeds on other lines or sections.

4.3 Following installation of the pipeline, "rough cleanup" work shall be performed. This shall consist of grading the trench to create a neat, low mound of backfill material and disposing of any excavated material, rubbish, etc. (See Section 1, Paragraph 16 and Section 3, Paragraph 22) Crushed stone shall be added to driveways where necessary and fences repaired to the satisfaction of the property owners. After trenches have had adequate time to settle, final grade work and seeding shall be performed as described in Section 3, Paragraph 23.

### 5. Progress Schedule, Construction Records, and Reports

5.1 The CONTRACTOR shall furnish the OWNER with proof that all payrolls for services rendered and invoices for materials supplied have been duly paid as herein required, and such other data as the OWNER may require.

5.2 The CONTRACTOR shall furnish (and keep current) a suitable progress chart or schedule showing the estimated (and actual) progress on the work. The progress chart or schedule shall be subject to the approval of the ENGINEER.

5.3 The CONTRACTOR shall furnish all the necessary information for and prepare the partial payment estimates on forms approved by the ENGINEER.

5.4 The OWNER, or his authorized representatives and agents, shall be permitted to inspect all payrolls, records of personnel, invoices of materials, and other relevant data and records.

### 6. Lines and Grades

6.1 The CONTRACTOR shall be held totally responsible for construction of the work according to the lines and grades shown on the Drawings. The CONTRACTOR shall also insure that the work is constructed in proper relation to proposed highway construction where applicable.

6.2 The CONTRACTOR shall furnish all labor, equipment, stakes, and grade boards. The CONTRACTOR also shall be required to furnish equipment and aides when required by the ENGINEER in checking lines and grades. The labor and

equipment shall be available to the ENGINEER on call, and the labor shall be fully capable of performing the duties of rodman and/or chainman.

7. Access to and Inspection of the Work

Representatives of the OWNER shall at all time have full access for inspection of the work and the CONTRACTOR shall provide proper facilities for such access and inspection.

8. Work on Private Property

8.1 In connection with work performed on private property, the CONTRACTOR shall take every precaution to avoid damage to the property owners' buildings, grounds, and facilities. Fences, hedges, shrubs, etc., within the construction limits shall be removed carefully, preserved, and replaced when the Construction is completed in accordance with the requirements set out hereinafter in these specifications. 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. The OWNER reserves the right to require the CONTRACTOR to obtain a signed Release from each property owner affected by the work. Said Release shall indicate that the property owner is satisfied with the restoration of his land. However, the execution of such a release shall not relieve the CONTRACTOR from any of his contractual obligations or other claims that may arise at a later date. The widths of construction easements obtained by the OWNER from property owners is normally 15 feet each side of the pipeline and the CONTRACTOR shall confine his activities to the area within the limits of the easements unless specific permission is obtained by the CONTRACTOR from property owners.

8.2 Large trees, or other facilities within the actual construction limits that cannot be preserved and replaced shall be removed by the CONTRACTOR but the OWNER will assume the responsibility for settling with the property owner for the loss of said trees or facilities. However, trees and facilities for which the OWNER has made such settlement will be designated on the Drawings and the CONTRACTOR shall be solely and entirely responsible for any damage to trees and facilities not so designated.

8.3 All trees and brush cleared along the route of the pipeline shall be disposed of by the CONTRACTOR in a manner suitable to the ENGINEER and property owner. If such trees and brush are left on the property the CONTRACTOR shall obtain a release for same from the property owner.

9. Traffic Control and Work in Highway Rights of Way

9.1 The CONTRACTOR shall (before beginning work on any public highway right-of-way) make arrangements for maintaining the traffic on said highways and/or roadways, or rerouting traffic as may be required. The applicable regulations of the Kentucky Department of Transportation (Ky D.O.T.) must be followed in this regard.

## General Scope and Special Provisions

9.2 The CONTRACTOR shall furnish proper equipment which shall be available at all times for maintaining streets and roads upon which work is being performed. All such streets and roads shall be maintained suitable for traffic until complete and final acceptance of the work.

9.3 When the CONTRACTOR is cutting across a street or highway, he is to cut half of the street at one time, lay the pipe, and complete the backfilling operation so that traffic may pass over this trench before the opening of the trench for the other half of the street or highway. In lieu of the above, bridging of the trench may be required. The time and method of making these crossings shall be approved by the ENGINEER, and the agency or legal entity having responsibility for the maintenance of the street or highway.

9.4 The CONTRACTOR shall be responsible for erecting signs, providing flagmen, providing any other such items, and performing all work as required by Kentucky D.O.T. regulations, the Kentucky D.O.T. permit granted to the OWNER for construction of this specific project, and/or regulations of other agencies having jurisdiction over the right-of-way.

9.5 The CONTRACTOR shall plan his operations so as to cause a minimum of inconvenience to property owners and to traffic. No road, street or alley may be closed unless absolutely necessary, and then only if the following conditions are met:

9.5.1 Permit is secured from appropriate, State, County or Municipal authorities having jurisdiction.

9.5.2 Fire and Police Departments are notified before road is closed.

9.5.3 Suitable detours are provided and are clearly marked.

9.6 No driveways shall be cut or blocked without first notifying the occupants of the property. Every effort shall be made to schedule the blocking of drives to suit to occupants' convenience, and except in case of emergency, drives shall not be blocked for a period of more than 8 hours.

### 10. Shoring, Sheeting, and Bracing of Excavations

10.1 Where unstable material is encountered or where the depth of excavation warrants it, the sides of the trench or excavation shall be supported by substantial sheeting, bracing, and shoring, or the sides sloped to the angle of repose. The design and installation of all sheeting, sheet piling, bracing, and shoring shall be based on computations of pressure exerted by the materials to be retained under existing conditions. Adequate and proper shoring of all excavations and safety of workmen shall be the entire responsibility of the CONTRACTOR; however, the OWNER may require the submission of shoring drawings (accompanied by supporting computations) for approval prior to the CONTRACTOR undertaking any portion of the work.

10.2 Foundations, adjacent to where the excavation is to be made below the depth of the foundation, shall be supported by shoring, bracing, or underpinning as long as the excavation shall remain open and the CONTRACTOR shall be held strictly responsible for any damage to said foundations.

10.3 Care shall be taken to avoid excessive backfill loads on the completed pipe lines and the requirements regarding the width of the ditch as specified herein be strictly observed.

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

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

## 11. Existing Utilities

11.1 Special precautions shall be taken by the CONTRACTOR to avoid damage to existing overhead and underground utilities owned and operated by the OWNER, or by other public or private utility companies.

11.2 With particular respect to existing underground utilities, all available information concerning their location has been shown on the drawings. While it is believed that the locations shown are reasonably correct, the OWNER cannot guarantee the accuracy or adequacy of this information.

11.3 The location of buried telephone cable often differs from the preliminary information given the OWNER by phone companies and shown on the drawings. Therefore, in order to construct a pipeline that is parallel to the highway right-of-way as specified, the CONTRACTOR may be required to cross buried telephone cable at various locations not indicated on the drawings. The CONTRACTOR shall consider these crossings as incidental to the pipeline construction.

11.4 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 (or conferences) shall be to notify said companies, agencies, or departments of the proposed construction schedule, verify the location of, and possible interference with, the existing utilities that are shown on the drawings, arrange for necessary suspension of service, and make arrangements to locate and avoid interference with all utilities (including house connections). The OWNER has no objection to the CONTRACTOR arranging for the said utilities companies, agencies, or departments to locate and uncover their own utilities; however, the CONTRACTOR shall bear the entire responsibility for locating and avoiding, or repairing damage to said existing utilities.

## General Scope and Special Provisions

11.5 Where existing utilities or other underground structures are encountered, they shall not be displaced or molested unless necessary and then only with the approval of the respective owner. In such cases they shall be replaced in as good (or better) condition than found as quickly as possible. All such utilities that are so displaced or molested shall be replaced at the CONTRACTOR's expense.

11.6 Should it become necessary to provide additional guying or support of power, lighting, or telephone facilities, the CONTRACTOR shall consult with the authorities of these utilities so that suitable arrangements can be made for the protection of same.

11.7 All costs for temporary or permanent work necessary for the protection of utilities, private or public, shall be included in the contract amount to which the items of work pertain, or may be considered to be incidental thereto. In addition, the CONTRACTOR shall be responsible for any damage to the existing utilities resulting from the construction operations and shall bear the cost of all repair or replacement necessary for correction.

11.8 It is expected that the CONTRACTOR will be diligent in his efforts and use every possible means to locate existing utilities. Any claims for unavoidable damage, based on improper or unknown locations, will be examined thoroughly in the light of the CONTRACTOR's efforts to locate the said utilities or obstructions prior to beginning construction.

### 12. Utilities Required by CONTRACTOR

All electrical current and/or any utility service required by the CONTRACTOR shall be furnished at his own expense except as noted hereinafter.

### 13. Supervision of Installation

All special equipment or materials shall be installed under the supervision of a qualified installation engineer and/or representative furnished by the manufacturer of such equipment or materials.

### 14. Execution of the Contract

The construction Contract and the Performance Bonds shall be executed within the time specified in the Information for Bidders and in at least three (3) copies.

### 15. Permits, Codes, Etc.

Unless otherwise set out in the Specifications or required by the agencies involved, the CONTRACTOR shall make application for, obtain, and pay for all licenses and permits, and shall pay all fees and charges in connection therewith. The CONTRACTOR shall be required to comply with all state or municipal ordinances, laws, and/or codes insofar as the same is binding upon the OWNER.

16. Cleaning up and Removal of Rubbish

16.1 The CONTRACTOR shall at all times keep the premises free from accumulations of waste materials or rubbish caused by his employees or work and shall keep the work site in a clean and useable condition satisfactory to the ENGINEER. The CONTRACTOR shall direct his forces to promptly clean up streets, sidewalks, drainage channels, or private property, affected by his construction operations, when in the opinion of the ENGINEER such clean up is needed. At the completion of the work the CONTRACTOR shall remove all his rubbish from and about the site of the work and all of his tools, equipment, and surplus materials.

16.2 The Contract shall not be considered complete until all construction structures, equipment and rubbish from construction are cleaned from the site of the work. All damage to existing paving, grounds, and structures caused by the CONTRACTOR's operations must be repaired or the owners compensated for such damage before the contract will be considered complete. This includes the removal of rock from blasting (1 1/2 inches or over in size), and the broom sweeping, or water removal, of dirt from pavement.

17. Items Deleted and Quantity Changes

The OWNER reserves the right to delete any bid item or in the case of unit price items, the OWNER may delete, reduce, or increase the quantities involved. BIDDERS shall be aware of this possibility and shall base their BIDS accordingly.



## **SECTION 2** **QUALITY ASSURANCE**

### 1. Approval of Testing Agencies and Reports

When in these Contract Documents inspection and testing services are required, bureaus, laboratories, and/or agencies selected for such inspection and testing shall be approved by the ENGINEER. If inspection and testing services are provided by the OWNER or are performed in accordance with Section 7.8 of the General Conditions, the OWNER shall select the laboratories and/or agencies for such inspection and testing.

### 2. Suitability of Materials and Test Reports

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

### 3. Governing Specifications

It is the intention of the ENGINEER in the preparation of these Specifications to define properly the kind and quality of materials to be furnished. The standards of the American Society of Testing Materials (ASTM); standards of the American Water Works Association (AWWA); or other such agencies may be referred to in the Specifications. Where such standards are referred to, said references shall be construed to mean the latest amended and/or revised versions of the said standard specifications. In the selection of samples and the routine testing of materials, the testing laboratory shall follow the standard procedure as outlined by the ASTM, unless otherwise set out.

### 4. Extent of Inspection and Testing Service

It is intended that materials of construction, particularly those upon which the strength and durability of the work may depend, shall be inspected and tested to establish conformance with specifications and suitability for uses intended. The following is a schedule showing the extent of testing, and requirements and methods of reporting. If it is found that this list does not cover all items that will require testing, then such materials shall be tested as directed by the ENGINEER.

### 5. Requirements and Methods of Reporting

In general, four copies of all test reports will be required with two copies to the CONTRACTOR, one to the ENGINEER, and one to the OWNER. All copies shall be forwarded to the ENGINEER.

## Quality Assurance

### 6. Coarse Aggregate (Backfill and Surfacing)

Regarding coarse aggregates for use in backfill and surfacing, certifications, which state that the aggregates comply with the Specifications and give the gradation for each size used, will be required from the material supplier.

### 7. Concrete (Kickers, Anchors, Encasement and Pavement)

The mix design and a certification that the concrete supplied for this project is designed for a 28 day compressive strength of 2,500 psi shall be submitted by the supplier.

### 8. Fine Aggregate (For Use In Cement Concrete)

Standard tests shall be made in advance of concreting by an approved independent laboratory per ASTM C33, Paragraphs 2, 3, 4, and 5, and ASTM C40 on each fine aggregate proposed to be used. Other tests being satisfactory, the aggregate may be used pending results of 28 day concrete strength tests.

### 9. Coarse Aggregate (For Use In Cement Concrete)

Standard tests shall be made in advance of concreting by an approved laboratory on each grading of each coarse aggregate proposed to be used per ASTM C33, Paragraphs 6, 7, 8, 9, 10, and 11.

### 10. Concrete Tests (For Concrete Used In Structures)

#### 10.1. Standard Slump Tests

Slump tests shall be made per ASTM C143. Not less than one such test shall be made for each 50 cubic yards of concrete placed at one operation.

#### 10.2. Concrete Control Tests

10.2.1 During the progress of the work and for each different mix of concrete, standard concrete cylinders shall be made and tested. The testing shall be done per ASTM C39, and ASTM C31 (Paragraphs 7a and 7c). When field curing will be used in lieu of, or supplementing laboratory curing, care shall be exercised to avoid mistreatment of the cylinders in the field and testing shall be the same as specified for laboratory cured samples.

10.2.2 Test cylinders shall be made from each day's pour at the frequency specified by ACI 318 with a maximum of two (2) from each batch or ready-mix truck load. The maximum requirement will be imposed only when the ENGINEER deems necessary due to wide fluctuations in the concrete quality. A minimum of three (3) cylinders will be required for each day's

pour if the concrete is used in structures or otherwise in a load-carrying capacity.

10.2.3 Each cylinder shall be numbered and logged, so as to adequately identify the representative concrete in the structure. Where three (3) cylinders are made from each day's pour, one (1) cylinder shall be tested at 7 days and two (2) at 28 days. Where more than three (3) cylinders per day are required, the "break" schedule shall be as requested by ENGINEER.

11. Reinforcing Steel

Reinforcing steel shall undergo a field inspection for section, rust, shape, and dimensions, plus certified test report for heat number(s).

12. Ductile Iron Pipe

Each piece of pipe shall bear the manufacturer's name or trademark and the date manufactured. Each piece of pipe shall also be certified by the manufacturer to have met the requirements of the governing standard specifications. Manufacturer Certifications and test reports shall be forwarded to the ENGINEER. Also, each piece shall be visually inspected in the field for any defects and specification conformance.

13. PVC and PVC(MO) Pipe for Water Lines and Force Mains (Not Applicable to C905 PVC Pipe)

13.1 PVC or PVC (MO) pipe shall be marked in accordance with ASTM D-2241. PVC or PVC (MO) pipe shall be certified in accordance with NSF/ANSI 14 – 2012. The manufacturer shall supply certifications indicating that all pipe to be supplied for the project meets the applicable Specification and Standard. This information shall be furnished to the ENGINEER with the shop drawings.

13.2 The total quality system of the pipe manufacturer shall meet the requirements set forth in ISO/IEC 17025: 2005 and the pipe manufacturer shall be capable of maintaining the specified requirements of both the pipe and material. Pipe manufacturer compliance shall be required prior to approval of any shop drawings for PVC or PVC (MO) pipe.

13.3 Each truckload of pipe delivered to the project shall be subject to whatever field measurements and tests deemed necessary by the OWNER. These tests may be conducted by the OWNER or his representative. The cost of field testing shall be the responsibility of the OWNER, but the cost of any pipe destroyed during such testing shall be the responsibility of the CONTRACTOR.

13.4 In addition to the requirements and specifications of ASTM D-2241, all PVC pipe supplied under this Contract shall be concentric from spigot to bell. Any PVC pipe delivered to the project that fails this concentricity requirement will be

## Quality Assurance

rejected. The cost of replacement of rejected pipe shall be the responsibility of the CONTRACTOR.

### 14. Testing Water Lines

14.1 Water lines shall be tested at a pressure equal to the rated working pressure of the pipe for a period of four hours. Line segments between gate valves shall be tested separately. During the duration of the test, the line segment shall display leakage not exceeding ten gallons per day per inch of pipe diameter per mile of pipeline. This rate of leakage is given below for 1,000 feet of pipeline and various diameters of pipe:

**TABLE 2.1**  
MAXIMUM RATE OF LEAKAGE FOR GIVEN DIAMETER OF PIPE

Pipe Diameter	Max. Leakage in 4 hrs. for 1,000 feet of pipe
4"	1.26 gallons
6"	1.89 gallons
8"	2.53 gallons
10"	3.16 gallons
12"	3.79 gallons
14"	4.42 gallons
16"	5.05 gallons
20"	6.13 gallons

14.2 Lines which fail to meet these criteria shall be repaired and retested as necessary until requirements are met. If the initial pressure test indicates that repairs must be made to a particular line segment, the ENGINEER may require a 24-hour pressure test to verify soundness of the construction work. This test shall be performed at no additional expense to the OWNER. Pressure tests shall be performed only after service line taps are completed.

14.3 The pressure gauge and/or recorder used for testing pipelines will be supplied by the OWNER. The CONTRACTOR shall supply the necessary pump, taps, connections, water meter, and all piping and fittings required for testing. All methods and equipment for pressure testing shall be as approved by the ENGINEER.

14.4 The CONTRACTOR shall schedule his work so that each section of water line or force main between gate valves shown on the Drawings shall be pressure tested in sequence as the pipeline work progresses. The CONTRACTOR's schedule in this regard shall be as approved by the ENGINEER.

### 15. Testing Tapping Sleeves

All tapping sleeves and valves shall be subjected to a pressure test while in place on the existing water line, prior to the existing line being tapped. The tapping sleeve and valve shall be tested at the rated working pressure of the sleeve over a period of 15 minutes. The connection being tested shall maintain 100 percent

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of the test pressure throughout the test period. The CONTRACTOR shall supply all necessary equipment for testing sleeves. Other details of the test shall be as directed by the ENGINEER.

**SECTION 3**  
**WATER LINES AND WATER SERVICES**

1. Scope of the Work

The work to be accomplished under this section of the Specifications consists of the furnishing of all materials and labor necessary for the construction of water lines, including all services, meters, fittings, blow-offs, valves, accessories, and appurtenances in strict accordance with the Specifications and the applicable Drawings.

2. Location of Water Lines

2.1 The approximate location of water lines in relation to the limits of rights-of-way, pavement, etc. is shown on the Drawings but is not guaranteed. The location shown was chosen to minimize the overall project cost with respect to rock excavation, pavement replacement, crushed stone for traffic bound roadway, customer water services, etc. Water lines shall generally be constructed in easements on private property parallel to and within 10 feet of highway rights-of-way.

2.2 The final location (as constructed) may be varied upon approval by the ENGINEER, provided: (1) the proposed location is approved by the Kentucky Department of Transportation (Bureau of Highways), the County Highway Department, or other agency, legal entity or property owner having jurisdiction, and (2) the effect reduces the project cost. The final location may be varied by necessity due to construction conditions at the direction of the ENGINEER, or due to the requirements of the Kentucky Department of Transportation (Bureau of Highways), the County Highway Department, or other agency, legal entity or property owner having jurisdiction. The construction of pipelines in the highway, road, or street right of way will not be allowed except where shown on the Drawings.

3. Excavation of Pipeline Trenches

3.1 **Unless otherwise directed by the ENGINEER or as shown on the Drawings, trenches in which pipes 12 inches or less in diameter are to be laid shall be excavated in open cut to a depth which will allow a minimum of 2 feet 6 inches of cover above the top of the pipe or 2 feet 6 inches below the elevation of the existing roadway, whichever is lower.** The roadway based elevation provision is excluded in residential lawns. For pipes greater than 12 inches in diameter, the trenches shall be excavated in open cut to a depth which will allow a minimum of 4 feet of cover above the top of the pipe. The diameter of the pipe, proper bedding and construction of bell holes must be considered in determining the depth of excavation. Extra depth excavation may be required by the Kentucky Department of Transportation (Bureau of Highways)

or as shown on the Drawings.

**3.2 Topsoil shall be stripped from the top of the trench and placed to the side for reuse during the final layer of backfill to facilitate productive growth of lawns, crops, and other vegetation.** Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the ENGINEER, trenches shall in no case be excavated or permitted to become wider (as measured at the top of the pipe) than 2 feet plus the nominal diameter of the pipe. The desired width shall be the nominal diameter of the pipe plus 16 inches. The minimum allowable trench width in rock excavation shall be the nominal diameter of the pipe plus 12 inches. The minimum allowable trench width in earth excavation shall be the nominal diameter of the pipe plus 6 inches. Trenching equipment that cannot maintain these minimum widths will not be allowed for use on the project.

3.3 Trench excavation shall proceed far enough ahead of pipe laying to reveal any obstructions that might necessitate changing the line or grade of the pipeline. The trench shall be reasonably straight and uniform in grade. Trenches shall be kept free of water during the construction of the pipeline and removal of water shall be at the CONTRACTOR's expense. Trench excavation shall proceed in a continuous manner from the beginning of the pipeline to the end.

3.4 Unless specifically authorized by the ENGINEER, no skipping by obstacles such as rock, road crossings, existing utilities, etc. shall be permitted. If skips are authorized by the ENGINEER and the CONTRACTOR does not close the resulting gaps in the pipeline in a timely manner, the ENGINEER may require the CONTRACTOR to discontinue all other operations until the gaps are closed.

3.5 Unless specifically directed otherwise by the ENGINEER, not more than 500 feet of trench shall be opened ahead of the pipe laying, and not more than 500 feet of open ditch shall be left behind the pipe laying. All barricades, lanterns, watchmen, and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches, excavations, and other obstructions, shall be provided by and at the expense of the CONTRACTOR.

3.6 At the close of each working day all trenches that have been excavated shall be refilled unless exceptions are granted by the ENGINEER. All public or private drives shall be promptly backfilled or bridged at the direction of the ENGINEER.

3.7 All excavation shall be "unclassified" and therefore there will be no separate payment for rock excavation. The cost of all excavation should be merged into the cost of constructing the water line.

4. Blasting

4.1. General

4.1.1 All blasting operations shall conform to Kentucky Department of Mines and Minerals code for explosive disintegration of rock. CONTRACTOR shall obtain permits from local authorities having jurisdiction before explosives are brought to site or drilling is started.

4.1.2 The CONTRACTOR shall keep explosives on the site only in such quantity as may be needed for the Work under way and only during such time as they are being used. He shall notify the ENGINEER, in advance, of his intention to store and use explosives. Explosives shall be stored in a secure manner and separate from all tools. Caps or detonators shall be safely stored at a point over 100 feet distance from the explosives. When the need for explosives has ended, all such materials remaining on the Work shall be promptly removed from the premises.

4.1.3 The CONTRACTOR shall observe all state, federal and municipal laws, ordinances and regulations relating to the transportation, storage, handling and use of explosives. In the event that any of the above-mentioned laws, ordinances or regulations require a licensed blaster to perform or supervise the Work of blasting, said licensed blaster shall, at all times have his license on the Work and shall permit examination thereof by the ENGINEER or other officials having jurisdiction.

4.1.4 No explosives shall be used within 20 feet of buildings and/or structures existing, constructed or under construction; or underground and/or overhead utilities whether existing or partially constructed.

4.1.5 Permission for any deviation from the restriction set forth above shall be secured from the ENGINEER, in writing; however, permission for any such deviations shall not relieve the CONTRACTOR from any responsibility in the event of damage to buildings, structures or utilities.

4.1.6 All operations involving explosives shall be conducted with all possible care to avoid injury to persons and property. Blasting shall be done only with such quantities and strengths of explosives and in such a manner as will break the rock approximately to the intended lines and grades and yet will leave the rock not to be excavated in an un-shattered condition. Care shall be taken to avoid excessive cracking of the rock upon or against which any structure will be built, and to prevent injury to existing pipes or other structures and property above or below ground. Rock shall be well covered with logs or mats, or both, where required. Sufficient warning shall be given to all persons in the vicinity of the Work before a charge is exploded.

4.1.7 The CONTRACTOR shall be solely responsible for his blasting



## Water Lines and Water Services

operations. The CONTRACTOR shall not hold the OWNER and/or the ENGINEER liable for any damages resulting from his blasting operations on this project.

4.1.8 Blasting will not be permitted under or on CSXT's right-of-way.

### 4.2. Pre-blast Structure Survey

4.2.1 CONTRACTOR shall perform a pre-blast survey to determine and document with pictures the condition of adjacent structures, utilities, wells, buried cables, and other features within a minimum of 400 ft. of the blast area unless otherwise required by applicable regulatory authorities. Determine safe distances to structures or other facilities according to NFPA 495, Appendix B. Where facilities are closer than these distances, and natural barriers are not present, or when the amount of explosive cannot be reduced economically, blasting mats shall be used. Provide mats to protect environmentally sensitive areas, trees within 20 feet from the blasting area, streams, and rock formations from throw rock.

4.2.2 Purpose of survey is to document existing condition of structures prior to blasting, and is intended to be used as evidence in ascertaining whether and to what extent damage may have occurred as result of blasting. Survey shall be conducted prior to start blasting operations.

4.2.3 CONTRACTOR shall record information for each structure surveyed including:

- 4.2.3.1 Age and type of construction.
- 4.2.3.2 Location and character of cracks.
- 4.2.3.3 Evidence of settlement and leakage.
- 4.2.3.4 Other pertinent information.

4.2.4 Record pre-blast survey information on forms prepared specifically for pre-blast surveys. Supplement written records with photographs or videotape recordings. Submit copies of written records and photographs or videotapes to OWNER, and ENGINEER, prior to start of blasting.

### 4.3. Blast Design

4.3.1 Design each blast to avoid damage to existing facilities, adjacent property, and completed Work. Consider effects of blast-induced vibrations, air blast, and fly rock potential in design of each blast.

4.3.2 Establish appropriate maximum limit for vibration for each structure or facility that is adjacent to or near blast sites. Base maximum limits on expected sensitivity of each structure or facility to vibration, and federal, state, or local regulatory requirements, but not to exceed 1.25 in/sec. Whenever peak particle velocity exceeds vibration limits, change design of

subsequent blasts, as necessary to reduce peak particle velocity to within limits established by Blaster-in-charge (BIC).

4.3.3 Establish appropriate maximum limit for air blast for each structure or facility that is adjacent to or near blast sites. Base maximum limits on expected sensitivity of each structure or facility to air blast, and federal, state, or local regulatory requirements, but not to exceed 0.015 psi peak overpressure (133 decibels). Whenever air blast exceeds limits, change design of subsequent blasts or provide controls necessary to reduce air blast to within specified limits.

4.4. Fly Rock Containment

Where fly rock may damage existing facilities, adjacent property, or completed Work, cover area to be blasted with blasting mats or provide other means that will contain and prevent scattering of blast debris.

4.5. Vibration and Air-Blast Monitoring

4.5.1 Monitor and record blast-induced vibrations and air blast using suitable sensors and recording equipment for each blast.

4.5.2 CONTRACTOR shall provide two (2) seismographs during blasting operations capable of the following:

4.5.2.1 Designed for monitoring blast-induced vibrations and air blast. Capable of recording particle velocity in three mutually perpendicular directions in range from 0 to 6 inches per second.

4.5.2.2 Flat vibration frequency response between 4 and 200-Hz.

4.5.2.3 Capable of recording air-blast overpressure up to 140 decibels.

4.5.2.4 Flat air-blast frequency response between 2- and 500-Hz.

4.5.3 Monitor on, or at, structures or other facilities that are closest to point of blasting. Monitoring more distant facilities that are expected to be sensitive to blast-induced vibrations and air blast.

4.5.4 BIC shall supervise establishment of monitoring programs and initial operation of equipment; review interpretation of records and recommend revisions of blast designs.

4.5.5 Include following information in blasting plan:

4.5.5.1 Vibration and air-blast limits as recommended by BIC.

4.5.5.2 Name of qualified BIC who will be responsible for monitoring program and interpretation of records.

4.5.5.3 Types and models of equipment proposed for monitoring.

## Water Lines and Water Services

- 4.5.5.4 Numbers and locations of proposed monitoring stations.
- 4.5.5.5 Procedures to be used for coordinating recording of each blast.
- 4.5.5.6 Steps to be taken if blasting vibrations or air blast exceed limits.

### 4.6. Blasting Records

4.6.1 For each blast, document the following:

- 4.6.1.1 Location of blast in relation to Project stationing or state plane coordinate system and elevation.
- 4.6.1.2 Date and times of loading and detonation of blast.
- 4.6.1.3 Name of person in responsible charge of loading and firing.
- 4.6.1.4 Details of blast design, as previously specified.
- 4.6.1.5 Vibration records including location and distance of seismograph geophones to blast and to nearest structure, and measured peak particle velocity. Report peak particle velocity in units of inches per second.
- 4.6.1.6 Air-blast records. Report peak air blast values in units of pounds per square inch overpressure above atmospheric or in decibels at linear response.
- 4.6.1.7 Comments by BIC regarding damage to existing facilities, adjacent property, or completed Work, misfires, fly rock occurrences, unusual results, or unusual effects as required.

### 4.7. Suspension of Blasting

4.7.1 In event damage to existing facilities, adjacent property, or completed Work occurs due to blasting, immediately suspend blasting and report damage to ENGINEER and OWNER. CONTRACTOR shall be responsible for all costs of repairs or replacement due to damage from blasting.

4.7.2 Before resuming blasting operations, adjust design of subsequent blasts, or take other appropriate measures to control effects of blasting, and submit complete description of proposed changes for reducing potential for future damage.

4.7.3 Do not resume blasting until authorized by OWNER and applicable regulatory authorities.

## 5. Pipe Bedding and Initial Backfill

For all pipe 14 inches in diameter and larger, or where rock excavation is encountered or in rocky soil as directed by the ENGINEER, the pipe shall be bedded with six (6) inches of crushed stone under the pipe. Crushed stone shall

be used in the initial backfill from the bottom of the pipe to the centerline of the pipe. Initial backfill material shall be placed and thoroughly compacted by hand tamping. Initial backfill material shall be deposited in the trench for its full width on each side of pipe, fittings and appurtenances simultaneously. Care must be taken to compact fill along the sides of the pipe and appurtenances adjacent to pipe wall. Crushed stone shall be No. 9-M or #57 as described in the *Standard Specifications for Road and Bridge Construction* as published by the Kentucky Department of Transportation, Bureau of Highways. In certain cases the CONTRACTOR may be required to move earth of good quality from previous trench excavation for use as bedding material.

## 6. Pipe Laying

### 6.1. General

6.1.1 The CONTRACTOR shall notify the ENGINEER as to the date and time of all pipe deliveries and shall not unload any pipe except in the presence of the Inspector. Pipe shall be transported and handled in strict conformance with the manufacturer's recommendations.

6.1.2 The CONTRACTOR will be required to stockpile all pipe in central locations. Pipe strung along the route of the pipeline, shall be limited to the current day's expected production.

6.1.3 Pipe laying shall be in strict accordance with the manufacturer's recommended practice. Special tools, lubricant and equipment for proper laying shall be provided by the manufacturer. If the CONTRACTOR proposes a method of installation not covered by the manufacturer's recommended procedures, the CONTRACTOR shall obtain written certification from the manufacturer that installation by this proposed method will in no way affect the manufacturer's warranty of the pipe.

6.1.4 Pipe shall not be rolled, or dropped, into the trench.

6.1.5 All angles or bends in the pipe lines, either vertical or horizontal shall be satisfactorily braced or anchored against the tendency of movement with concrete anchors to the satisfaction of the ENGINEER.

6.1.6 Open ends of unfinished pipelines 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.

### 6.2. Ductile Iron Pipe

6.2.1 The trench shall be excavated to the required depth and width, bell holes and/or joint holes shall be dug in advance of the pipe laying.

6.2.2 The beds of each piece of pipe shall be prepared carefully so that

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each individual piece of pipe shall have a uniform bearing. Pipe shall be laid in a straight line and grade without kinks or sags, and shall be laid in a workmanlike manner. Bell holes and/or jointing holes shall be large enough so that the bell or hub will clear the ground and leave ample room for making and inspection of joints.

6.2.3 Before each piece of pipe is lowered into the trench, it shall be swabbed out thoroughly to insure its being clean. Each piece of pipe shall be lowered into the trench separately.

6.2.4 Care shall be taken to prevent injury to the pipe coating both inside and outside. No piece of pipe or fitting which is known to be defective shall be laid or placed in the lines. If any defective pipe or fittings shall be discovered after the pipe line is laid, they shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line, it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe.

### 6.3. Plastic Pipe

6.3.1 Plastic pipe shall be installed in accordance with manufacturer's recommendations. A representative who is a direct employee of the pipe manufacturer shall conduct training sessions for CONTRACTOR's personnel regarding proper pipe installation. The manufacturer's representative shall certify to the ENGINEER the names of CONTRACTOR's personnel who have attended such training. Pipe laying and assembly work shall be performed only by personnel who appear on the manufacturer's certified list.

6.3.2 Backfilling shall be done in accordance with Paragraph 7, Backfilling Pipeline Trenches, where not in conflict with manufacturer's recommendations.

## 7. Backfilling Pipeline Trenches

7.1 Backfilling shall be conducted at all times in a manner to prevent damage to the pipe and the exterior protection on the pipe. Placing of backfill shall be done only in the presence of the ENGINEER after his final inspection and acceptance of the pipe in place. If material for backfilling is not available at the construction site, the CONTRACTOR shall "import" earth of good quality from a site approved by the ENGINEER. This will not be a separate pay item.

7.2 In areas of earth excavation of the pipeline trench, earthen material reasonably free from rock and acceptable to the ENGINEER shall be used in the backfilling of the trench. Backfill material free of rock over one inch in diameter shall be placed around the pipe up to the point where the pipe is thoroughly covered with at least one foot of material. Walking or working on the completed pipe (except as may be necessary in backfilling) shall not be permitted until the

trench has been backfilled to a height of at least one foot above the top of the pipe. The filling of the trench shall be carried on simultaneously on both sides of the pipe in such a manner that the completed pipeline will not be disturbed and injurious side pressures do not occur.

7.3 In areas of rock excavation of the pipeline trench, crushed stone as used for bedding shall be used as backfill material to a level 6 inches above the top of the pipe. Placement of this backfill material shall be performed as described above. In certain cases in lieu of or in addition to the crushed stone backfill the CONTRACTOR may be required to use earth of good quality as backfill material to a depth of 12 inches above the pipe as described above.

7.4 In filling the remainder of the trench above the initial backfill described above, whether in earth or rock excavation, earth backfill material reasonably free of rock may be shoved into the trench without compacting and heaped over, then compacted by rolling with the wheel of a grader or front-end loader. Earth backfill material containing rocks greater than 6 inches in diameter shall not be acceptable.

7.5 The final step in the backfill operation shall be to windrow good quality earthen material over the top of the ditch. The windrow shall be no higher than one foot and no wider than the width of the ditch plus 4 feet. All other excavated material except that required for the above described windrow shall be considered excess and shall be disposed of as described hereinafter.

7.6 Where street, driveway and highway crossings are made and where streets or highways are proposed, the CONTRACTOR will be required to tamp all backfill as described hereinafter and backfill the trench with No. 9-M crushed stone.

7.7 Where tamping is required, the backfilling shall all be done in layers not exceeding 6 inches and firmly tamped into place by tampers or rammers. The ENGINEER may permit puddling of ditches to compact the backfill in lieu of tamping with mechanical tampers except where street paving is to be replaced immediately after the backfilling is completed. The ENGINEER may also require puddling where (in his opinion) it is necessary for proper compaction.

8. Disposition of Excess Excavated Material

Excavated materials not used for backfill including "shot rock" and boulders shall be disposed of within one week of the adjacent trench being backfilled. Disposal of excavated material shall be performed so as to cause the least interference with the completed pipeline and operations of the OWNER, property owners, etc. and in a manner satisfactory to the ENGINEER.

9. Replacing Streets and Roadways

9.1 The CONTRACTOR shall replace all streets, alleys, driveways, and

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roadways which may be removed, disturbed, or damaged in connection with his operations under this Contract. CONTRACTOR shall reconstruct same to the satisfaction of the Kentucky Department of Transportation, the County Highway Department, or other legal entity or property owner having jurisdiction. The reuse of materials removed in making excavations will be permitted, provided said materials are in good condition and acceptable to the ENGINEER.

9.2 The CONTRACTOR will be paid for street replacement only where the line is constructed within the paved surfaces. Care shall be exercised to minimize damage to graveled shoulders and paved surfaces.

9.3 Gravel, crushed limestone, bituminous materials, or other materials used in the resurfacing of streets, shall meet the current requirements of the Kentucky Department of Transportation (Bureau of Highways) Specifications.

### 9.4. Traffic-Bound Base Course

9.4.1 On all trenches where replacing streets or drives is required, it shall be handled in the following manner:

9.4.2 After the backfill has been compacted (by mechanical tamping) and brought up to approximately finish grade, the CONTRACTOR then shall place crushed stone when and as directed by the ENGINEER as a traffic-bound base course, at the proper elevation to allow for settlement but not in such a way as to prevent traffic from using it. Crushed stone shall be Kentucky Department of Transportation, dense graded aggregate.

9.4.3 The CONTRACTOR may be required by the ENGINEER to maintain the traffic-bound base course (by adding crushed stone as specified hereinbefore) in a safe and passable condition for a period of 60 days (or until such time as sufficient settlement has taken place in the opinion of the ENGINEER) and the trenches are ready for final resurfacing. Crushed stone will be paid for at the unit bid price specified in the Contract.

### 9.5. Subgrade for Final Resurfacing

9.5.1 The traffic-bound course hereinbefore described shall comprise the base course for all types of resurfacing.

9.5.2 When, in the opinion of the ENGINEER, the trench has reached a condition of settlement satisfactory for final resurfacing, the CONTRACTOR shall first strip the base course or backfill with crushed stone (size as specified hereinbefore) to obtain the proper subgrade elevation. The subgrade then shall be rolled with an approved type roller or tamped until thoroughly compacted. Any depressions shall be filled with crushed stone (as specified hereinbefore) and the process of rolling or tamping continued until the subgrade has a smooth and uniform

surface.

9.6. Portland Cement Concrete Pavement

Where Portland Cement Concrete Pavement is to be replaced, or is required under bituminous pavement replacement, it shall conform to the existing pavement and/or the ENGINEER'S instructions (not less than 6 inches thickness), and the type concrete required by the Kentucky Department of Transportation shall be used.

9.7. Asphaltic Concrete Pavement

9.7.1 Where asphaltic concrete pavement is to be replaced, the subgrade shall be prepared as hereinbefore specified, and this subgrade shall comprise the base course upon which the concrete subslab and/or the bituminous pavement shall be laid. Asphaltic concrete shall be as required by the Kentucky Department of Transportation.

9.7.2 Where no Portland cement concrete subslab is required, the subgrade or base shall be cleaned and broomed thoroughly and a prime coat of medium tar shall be applied uniformly at the rate of 0.20 to 0.25 gallons per square yard. Where Portland cement concrete subslab is required, the prime shall be applied at the rate of approximately 0.05 gallons per square yard. The prime shall be applied by a pressure distributor or other approved pressure spray method.

9.8. Bituminous Surfacing (Surface Treatment)

9.8.1 Where bituminous surfacing is to be replaced as shown on the Drawings, or as directed by the ENGINEER, the traffic-bound base shall comprise the subgrade upon which the bituminous surfacing shall be constructed. After the subgrade or base has been prepared, thoroughly cleaned and broomed, a prime coat of medium tar shall be applied at the rate of 0.30 to 0.35 gallons per square yard.

9.8.2 When the prime coat has become tacky but not hard, the bituminous material (asphalt of the grade directed by the ENGINEER) shall be applied in two applications at the rate of 0.35 to 0.45 gallons per square yard for each application. The CONTRACTOR shall apply approximately 50 pounds of crushed stone chips per square yard between the two applications of bituminous material, and 35 to 40 pounds of chips per square yard after the final application of bituminous materials.

9.9. Untreated Surface

9.9.1 Where the existing surface is untreated gravel or stone, the CONTRACTOR shall reuse all native materials possible using crushed stone as required, replacing the surfacing that is disturbed or removed



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with crushed stone equal to the grade present prior to construction.

9.9.2 Prior to final acceptance, the CONTRACTOR shall fill in all depressions with crushed stone as hereinbefore specified, and shall thoroughly roll and grade to the existing surface.

### 9.10. General

The CONTRACTOR shall be held responsible for any and all damage occurring to street and road paving due to his operations outside the actual limits of his work, and shall replace any such damage to as good, or better, condition than that which existed prior to the CONTRACTOR's operations and at no additional expense to the OWNER.

## 10. Concrete Kickers, Anchors, Cradles, and/or Encasement

10.1 Concrete kickers, anchors, cradles, and/or encasement of water lines shall be placed where and as shown on the Drawings, or as directed by the ENGINEER.

10.2 Concrete for anchors, kickers, cradle, and/or encasement shall be 2,500 psi concrete and shall be mixed sufficiently wet to permit it to flow under the pipe to form a continuous bed. In tamping concrete, care shall be taken not to disturb the grade or line of the pipe, or to injure the joints. Concrete placed outside the specified limits or without authorization from the ENGINEER will not be subject to payment.

10.3 Thrust blocks shall be provided in accordance with details shown on Drawings and must bear against an undisturbed trench face. Thrust blocks must be used even when special locked-joint fittings, anchoring fittings, or pipe clamps with tie rods are employed. Fitting bolts shall be protected from the concrete being poured for thrust blocks by using plastic sheeting to cover the area of the bolts.

## 11. Pipe and Fittings for Water Lines

### 11.1. General

Pipe for water mains shall be nominal diameter and material indicated on the Drawings. The pipe shall be as specified herein and shall be either PVC or ductile iron.

### 11.2. Fittings

11.2.1 Ductile iron mechanical joint fittings shall be required for all sizes of PVC and ductile iron pipe. Ductile iron mechanical joint fittings shall conform to AWWA specification C 153 and shall have a rated working pressure of 350 psi up to 24-inch diameter and 250 psi above 24-inch.

Ductile iron fittings shall be furnished with a bituminous coating outside in accordance with AWWA specification C 153 and shall be cement mortar lined inside in accordance with AWWA specification C 104.

11.2.2 Only high strength low alloy steel T-bolts shall be used with all mechanical joints including fittings, valves, etc. All glands, T-bolts and other accessories shall be manufactured and provided by the same manufacturer as the fittings on which the accessories are used.

11.2.3 Fittings used in pipeline sections noted on the Drawings to be restrained shall be slip joint type fittings that incorporate the specified type of restraining system used with ductile iron pipe or mechanical joint type fittings with approved restraining devices listed below.

11.2.4 Fittings shown on the Drawings are intended to convey the general configuration only. The CONTRACTOR shall be required to furnish fittings at each abrupt change (vertical or horizontal) in the pipeline alignment, as determined by the ENGINEER. The CONTRACTOR shall also be required to furnish any special gaskets, adaptors, etc. necessary for construction.

11.2.5 All vertical bends and all bends greater than 12 inches in diameter shall include approved restraining devices. Approved restraining devices are Megalug by EBBA Iron, Inc., GripRing by Romac Industries, Inc., or approved equal.

11.2.6 Fittings and accessories shall be manufactured in the United States and shall be Union/Tyler, ACIPCO, U.S. Pipe, or approved equal.

### 11.3. Ductile Iron Pipe

11.3.1 Ductile iron pipe shall conform to AWWA specifications C 150 and C 151 with a rated working pressure of 350 psi for 4-inch through 12-inch diameter pipe and 250 psi for pipe 14-inch and larger, under the laying conditions and depth of cover specified herein.

11.3.2 Ductile iron pipe shall be furnished with an outside bituminous coating approximately one mil thick and shall be cement mortar lined inside according to AWWA specification C 104.

11.3.3 The joints for ductile iron pipe shall be in accordance with AWWA specification C 111 and shall be the "push-on" type. The allowable deflection in each joint shall be a minimum of 3 degrees and gasket lubricant shall be used as recommended by the pipe manufacturer.

11.3.4 Ductile iron pipe shall be "Fastite" as manufactured by American, "Super Bell-tite" as manufactured by Clow Corp., "Tyton" as manufactured by U.S. Pipe Corp., or approved equal.

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11.3.5 In certain locations as described herein, ductile iron pipe and fittings shall be provided and installed with restrained joints. The restrained joint system for pipe shall be similar to "Flex-Grip" by American Ductile Iron Pipe, "Field-Lok" by U.S. Pipe or approved equal. If mechanical joint fittings are used in lieu of push-on-joints, joint restraint shall be accomplished as specified in the preceding subsection.

11.3.6 The locations where restrained joints are required are as follows:

11.3.6.1 All ductile iron carrier pipes used in casing pipe for road crossings. Restrained joints shall be used between and include the adjacent fitting on each side of the crossing.

11.3.6.2 At all fittings used in the ductile iron water line, fittings, and joints shall be restrained to result in the following restrained footage each side of the fitting, as specified herein.

**TABLE 3.1**

MINIMUM RESTRAINED LENGTH  
EACH SIDE OF DUCTILE IRON PIPE

Fitting	Restrained Pipe Length
90° Bend	87 LF
45° Bend	36 LF
22 ½° Bend	17 LF
11 ¼° Bend	17 LF
Tee	64 LF
Dead End	65 LF

### 11.4. Plastic (PVC) Pipe

11.4.1 Plastic pipe shall be polyvinyl chloride (PVC) and shall meet the requirements set forth by ASTM D1784 for Type 1, Grade 1. All plastic pipe shall bear the National Sanitation Foundation Testing Laboratory seal for potable water. All plastic pipe shall be certified in accordance with NSF/ANSI 14 – 2012. The pipe shall also meet the requirements of ASTM D-2241, ASTM D-3139, and all other specifications referred to therein.

11.4.2 In general and unless indicated otherwise on the Drawings, PVC pipe shall be Class 200 (SDR-21). However, in certain areas Class 250 (SDR-17) PVC pipe may be required.

11.4.3 Provision shall be made for contraction and expansion at each joint with either twin gasketed couplings or integral bell joints. Gasket systems shall be Reiber or other locked-in type as approved by the ENGINEER. Twin gasketed couplings shall be rated for working pressure equal to that of pipe and shall be as manufactured by the pipe manufacturer.

11.4.4 PVC pipe shall be manufactured by a company that has made pipe in accordance with ASTM D-2241 under the brand name to be supplied on this project continuously over the previous five (5) year period. Pipe shall be manufactured at a plant that has been owned, operated and controlled by the same manufacturing company and has produced PVC pipe in accordance with ASTM D-2241 as a routine standard procedure for the last three (3) years. The plant shall be certified in accordance with NSF/ANSI 14 – 2012 for the PVC pipe specified. PVC pipe shall be Vulcan, National, Royal, Pipelife-Jetstream, or North American.

11.4.5 Pipe manufactured with Molecular Oriented Poly (vinyl Chloride), PVC (MO), may be substituted for the PVC pipe described above. PVC (MO) pipe shall conform to ASTM F1483 and shall be Ultra-Blue as manufactured by JM Eagle, Inc.

11.4.6 Note special PVC and PVC (MO) pipe testing requirements, Section 2 Paragraph 13.

## 12. Gate Valves, Butterfly Valves, and Boxes

12.1 Gate valves shall comply with AWWA specification C 509 and shall be of the resilient wedge type, epoxy coated, iron body, non-rising stem and fully bronze mounted. Valves shall be suitable for water working pressures of 250 psi. Valves shall be of standard manufacture and of the highest quality both as to materials and workmanship. Gate valves shall be either the A-2360 series by Mueller Company or Style A067 by M & H Valve Company.

12.2 All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve. Unless otherwise indicated on the Drawings, all gate valves shall be provided with a 2-inch square operating nut and shall open by turning counterclockwise.

12.3 Butterfly valves shall be Muller Linesal III, M&H #4500, or #1450 Class 150B meeting the requirements of AWWA C504. They shall have mechanical joint connections with a 2-inch square operating nut and shall be suitable in all respects for underground service.

12.4 All gate valves and butterfly valves installed in Ductile Iron water mains shall be restrained against movement by either rodding the valve to adjacent fittings or use of "Megalugs" or equal.

12.5 Valve boxes shall be cast iron, two piece, screw type 24-inch to 36-inch extension with drop covers marked "WATER" and they shall be set vertically, properly adjusted so that the cover will be in the same plane as the finished surface of the street or ground. The box shall have a 5 1/4-inch shaft. Valve boxes shall be as manufactured by Mueller, Clow, M & H, or an approved equal.

12.6 **Any valve that is installed at a depth to the operating nut greater than 3 feet below the final elevation of the valve box top shall be fitted with a valve operator extension.** The length of the extension shall place the operating nut 12 to 24 inches from the valve box top. The extension shall be secured to the valve nut with a set screw. The extension shall include a 1-inch solid steel shaft, 2-inch square top nut, and centering ring near the top. Valve operator extensions shall be manufactured by an entity regularly engaged in the manufacture of such equipment, and be Water Key Model VE-XX, or approved equal.

13. Tapping Sleeves and Valves

13.1 Tapping sleeves for cast iron or ductile iron pipe shall be mechanical joint and shall be Mueller H615 or M & H Style 1174. Tapping sleeves for A.C. pipe shall be mechanical joint and shall be Mueller H-619 or approved equal. Tapping sleeves for 4-inch through 8-inch PVC pipe shall be Mueller H-304 or Smith Blair No. 622. Tapping sleeves for 10-inch and 12-inch PVC pipe shall be Smith-Blair No. 622 fabricated steel sleeves, epoxy coated with stainless steel bolts and nuts.

13.2 Tapping valves shall meet the same general specifications as described herein for gate valves.

14. Blowoffs

Blowoff valves and appurtenances shall be constructed where shown on the Drawings and as detailed on the standard detail sheet. Gate valves as specified hereinbefore and the meter boxes described below shall be used in the blowoff assembly. Bends used in blowoff assemblies may be PVC with gasketed joints, as approved by the ENGINEER.

15. Fire Hydrants

15.1 Fire hydrants shall be "dry barrel," cast iron bodied, fully bronze mounted, suitable for a working pressure of 150 psi, and shall meet all requirements of the latest AWWA C502 specifications. Each hydrant shall be given a 300 psi hydrostatic test in the shop. Hydrants shall be Mueller Model A-423.

15.2 The waterways of hydrants shall be as free as possible of obstructions, sharp turns, corners, or other causes for resistance. The base of the hydrant shall have a bell connection to admit a proper connection with a standard mechanical joint. Bury depth shall be 3 feet 6 inches minimum or as required to bring the hydrant to the proper grade.

15.3 Hydrants shall have a 6-inch connection to 6-inch and larger mains, 2 1/2-inch brass nozzles with threads for steamer couplings, together with caps fastened securely to each hydrant and threaded to fit nozzles. The main valve of the hydrant shall be not less than 5 1/4 inches in diameter with 7-inch inside diameter riser barrel. All connection threads shall comply with standard

specifications of the National Board of Fire Underwriters.

15.4 The hydrant main valve shall be of the compression type, closing with pressure. The valve shall be faced with heavy impregnated waterproof balata or other approved material. The main valve of the hydrant shall be not less than 5 1/4 inches in diameter when installed on 6-inch or larger mains and 4 1/2 inches in diameter on 4-inch mains.

15.5 Hydrants shall have a safety "breakable flange" section located above the ground line. The distance from the ground line of the hydrant to the top of the hydrant head shall be not less than 30 inches. A maximum of one section of vertical riser shall be accepted. Vertical riser, if required, shall be incidental to hydrant installation. In most situations the CONTRACTOR shall be required to turn the hydrant top 180 degrees so that the pumper nozzle will face the street.

**15.6 Hydrants shall be supplied with factory applied paint. The color shall be Safety Yellow.** The factory applied paint shall be protected during transport and installation. Any hydrants which have excessive chips, scratches, or other abrasions, in the opinion of the ENGINEER, shall be subject to rejection. After installation, exposed surfaces of hydrants shall be painted with two (2) coats of the paint indicated below. The bonnets of the hydrants shall be painted with two (2) coats of a contrasting color to indicate potential flow rate as directed by the ENGINEER. The paint shall be Rust-oleum 9800 System DTM Mastic. Barrel color shall be Safety Yellow. Bonnet colors shall be Safety Red, Safety Orange, Safety Green, or Safety Blue.

16. Meters, Meter Boxes and Meter Equipment

16.1. General

16.1.1 Where shown on the Drawings, existing water meters shall be relocated in new meter settings. The CONTRACTOR shall install on the new mains entire new meter settings as shown on the standard detail sheet and as specified herein. When all new meter settings are installed and pressure testing, disinfection and bacteriological testing is completed, the water meters which are in existing settings shall be removed and installed in the new settings. (In special situations where new meters are required in a particular location, it shall be so noted on the Drawings.)

16.1.2 At the time the water meter is relocated the CONTRACTOR shall also connect the new meter setting to the existing customer's service line which is between the meter and the house or business. Pipe used in making this connection shall be of the same size, material, and type as the existing customer service line, unless otherwise indicated on the Drawings, but in general will be either Sch 40 PVC pipe or P.E. tubing to match existing customer service line. The connection at the meter setting to the new customer service line shall be made with a galvanized or brass

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compression coupling on a brass nipple which is to be threaded into the yoke. The method and materials used to connect new customer service pipe to existing customer service pipe shall be Style 65 Dresser couplings, or as approved by the ENGINEER. The work of relocating existing meter installations shall be performed in such a way that interruptions of service to each customer are minimized.

### 16.2. Meter Boxes

16.2.1 Meter boxes shall be cylindrical with a height of 24 inches. The meter box diameter for 3/4 inch services shall be 18 inches. Boxes with a diameter of 20 inches shall be used for all 1-inch and regulated 3/4-inch services.

16.2.2 Boxes shall be a PVC "shell" meter box manufactured from SDR 51 PVC irrigation pipe as manufactured by Mueller Company.

16.2.3 Meter box covers shall be cast iron with locking lid using "large" pentagon bolts. Covers shall have an 18-inch or 20-inch inside diameter as required and an 11 1/2-inch lid opening. The lid shall be marked "Water Meter". Meter box covers shall be Type A32-LB or Type A3-LB as manufactured by the Ford Meter Box Company.

16.2.4 Meter boxes and covers for meters larger than 1-inch shall be as shown on the standard detail sheet.

### 16.3. Meter Fittings

16.3.1 The necessary corporation stops, curb valves, and all other fittings and accessories shall be furnished as indicated on the Drawings. Service saddles shall be Mueller Series H-134 for PVC pipe and Mueller Series BR-1-B for ductile iron pipe. Corporation stops shall be Mueller # H-15008.

16.3.2 Service saddles for 2-inch taps shall be Mueller, Smith Blair, or approved equal, double strap type with 1.P threads for use with a 2-inch by 4-inch brass nipple. A 2-inch Mueller A-2360 gate valve, or approved equal, with threaded connections shall be used in lieu of a cooperation stop.

16.3.3 For 3/4-inch services, yokes shall be Mueller #H-1404-2 except where a regulator is required and then yokes shall be Mueller #H-1404-012. All 1-inch yokes shall be Mueller #H-1404-2 (See the Standard Detail Sheet). All yokes shall include a lock wing stop and check valve. Inlet connections shall be either Mueller #H-14227 or #H-14222 as required by the particular situation and all outlet connections shall be #H-14222. See the standard detail sheet for additional information regarding fittings for services.

16.3.4 Pressure regulators, where required, shall be Wilkins 600DM-HR, or approved equal for 3/4-inch services and Watts 223HP-Z3, or approved equal or 1-inch services. The adjusting screw on pressure regulators shall remain at the factory setting.

16.4. Service Connection Tubing

16.4.1 Service connection tubing shall be 3/4-inch or 1-inch plastic tubing of the length necessary to run a direct and continuous line from the main to the meter at property line. The service tubing shall be manufactured from very high molecular weight polyethylene as PE 4710; the material cell classification shall be 445574E as defined by ASTM D-3350; and it shall bear the name of the National Sanitation Foundation Testing Laboratory Seal for potable water. Tubing dimensions shall be copper tubing size in accordance with the provisions of ASTM D-2737. Tubing shall be SDR 9, rated for 200 psi working pressure and shall be covered by a lifetime warranty. The service tubing shall be Endopure PE-4710 by Endot Industries, Inc. Special care shall be taken to protect the service tubing (with earthen materials) from sharp and/or hard objects. Cover is to be at least 30 inches at all points. Rigid liners (inserts) shall be used with PE tubing where compression connections are made. Liners shall be stainless steel as manufactured by Mueller Co., Part #504281 or #504385.

16.4.2 Where indicated on the Drawings, copper or brass service line shall be utilized. Service line tubing for 1-inch copper connections shall be Type K. Service line for 1 1/2- and 2-inch connections shall be stick brass, field threaded to appropriate lengths.

16.4.3 Where it is necessary to cross a street, highway, or railroad, the CONTRACTOR shall install service tubing under said street, highway, or railroad by the method indicated on the Drawings and the Bid Form. Such service line shall be installed at least 4 feet under the surface. Road crossings for both 5/8-inch x 3/4-inch and 1-inch meters shall be made with 1-inch tubing as shown on the standard detail sheet.

17. Highway and/or Railroad Crossings (Water Mains)

17.1 All water line crossings of County, State and United States Highways, and/or railroads, shall be in smooth wall steel casing pipe (0.25-inch minimum wall thickness). Joints in casing pipe shall be welded continuously all around. The minimum depth of cover shall be 42 inches for highway and road crossings, as measured from the top of the casing pipe to the low point of the crossing cross section. The minimum depth of cover shall be 48 inches, as measured from the top of the casing pipe to the low point of the crossing cross section and 66 inches as measured from the top of the casing pipe to the bottom of the rails for railroad crossings. Carrier pipe used inside steel casing shall generally be the material



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shown on the Drawings and the Bid Schedule. Where PVC carrier pipe is used, and for bores beneath railroads the carrier pipe shall be supported on casing spacers (Advance, Calpico, CCI, or approved equal) inside the casing at intervals that are in accordance with the spacer manufacturer's recommendations. Casing spacers for ductile iron pipe shall be Advance Model SI.

17.2 The spacer manufacturer shall be supplied the following information when ordering the spacers: carrier pipe O.D., carrier pipe bell O.D., casing pipe I.D., type of pipe being used and SDR information. All carrier pipe shall be centered with maximum clearance of 1-inch between spacer runner and casing. For PVC carrier, the spacer shall be a polyethylene spacer and for DIP carrier the spacer shall be a stainless steel spacer. The CONTRACTOR shall also supply end seals for all steel casings. End seals may be pull-on or wrap around types with stainless steel bands.

17.3 Split casing for ductile iron pipe shall be sized to match existing casing. The two sides of the split casing shall be field butt welded one to the other and to existing casing to provide a water-tight seal. Lugs shall be provided as required to provide for proper pipe alignment. All appurtenances shall be provided as indicated above.

### 18. Air Release Stations

18.1 Automatic air release stations shall be located and constructed as shown on the Drawings and the Standard Detail Sheet. The Air Release Stations shall include an Apco Model 200A, or approved equal. The valve shall be supplied with a 2-inch NPT inlet, 5/32-inch orifice, and be complete with a blow-off valve. Inlet valve shall be a 2-inch ball valve as specified below.

18.2 Manual air release stations shall include a 2-inch ball valve and 10-feet of polybutylene tubing. The tubing shall be connected to the ball valve by a Mueller IP x PE Adaptor. Ball valves shall be Apollo, or approved equal, with bronze body and 316 stainless steel ball and stem.

18.3 All piping, nipples and fittings used in air release stations shall be brass. Saddles shall be Power Seal model 3416AS.

### 19. Inspection of the Lines

Before the CONTRACTOR backfills any of the lines, they first shall be inspected by the ENGINEER's Representative and the ENGINEER's Representative shall give the CONTRACTOR permission to proceed with the backfilling. If any joints, pipes, fittings, or materials or workmanship are found to be defective, they shall be removed and replaced by the CONTRACTOR without any additional compensation.

20. Connecting to the Existing Lines

20.1 Work under this item shall include the connecting of new water lines to the existing water lines in the manner shown on the Drawings, and as directed by the ENGINEER. The work of connecting new lines to existing lines is not a separate pay item under this Contract.

20.2 Where such a connection will result in an interruption of service, the CONTRACTOR shall propose the schedule for such a connection to the ENGINEER several days in advance. The ENGINEER will present the proposal to the OWNER for approval. The interest of the OWNER in regards to service to existing customers shall take precedence over the new construction. The CONTRACTOR's schedule shall permit the OWNER to provide notification to customers at least 24 hours before the suspension of service.

21. Disinfection and Flushing of the Lines

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

21.2 After pressure testing procedures have been completed, the CONTRACTOR shall flush the line thoroughly, removing all foreign material, dirt, etc. Then a solution of hypochlorite using HTH or equal, sufficient to insure a chlorine dosage of at least 50 parts per million through the entire length of the line, shall be introduced into the line.

21.3 The chlorine solution shall remain in the line for 24 hours and a residual of at least 25 parts per million should be present in the pipe at the end of the 24-hour period. The line shall be flushed until 2 parts per million chlorine residual remains, then bacteriological samples taken. One sample shall be taken per mile of pipeline with a minimum of 2 samples per line. Each sample shall be collected from a different point along the line. If negative samples are obtained, the lines may be put into service. If a positive sample is obtained however, the disinfection procedure shall be repeated until negative samples are obtained. Bacteriological test costs shall be paid by the CONTRACTOR.

21.4 Disinfection, pressure testing, other required testing and flushing are not pay items. The CONTRACTOR shall pay for all water used for testing, disinfection, and flushing, except the amount required to fill the pipelines twice. This amount will be computed and deducted from the total amount metered.

21.5 The CONTRACTOR shall install a temporary bypass with a meter around a valve at the point of connection to the existing water system. This meter will be for the purpose of measuring water used by the CONTRACTOR for flushing, testing, and disinfecting the new water lines. The meter shall be large enough to pass the required flows. It shall be tested for accuracy before being installed.

22. Rough Grade Work and Cleanup

22.1 Rough Grade Work and Cleanup (Rough Cleanup) shall be defined to include the final backfill and windrowing of the ditch line, disposal of excess excavated material, level grading of the disturbed areas adjacent to the ditch line, filling and leveling street and driveway cuts, cleaning up and removal of rubbish, repair of fences and structures, and any other such work that may be required to result in a neat, orderly project area. Rough Cleanup shall be performed as other construction progresses and must be completed within one week of the adjacent pipeline construction.

22.2 Rough Cleanup is not a separate pay item. The cost for this work shall be included in the unit bid price for water lines. If Rough Cleanup is not performed as specified, the OWNER will require deductions from partial payment estimates in accordance with the Supplemental General Conditions, Sections 3.3 and 18.

23. Final Cleanup (Also See Basis of Payment)

23.1 Final cleanup, grade work and seeding shall be performed on each line when backfilled trenches have had adequate time to settle, but at least within 2 months from the date each line is constructed. Final grade work and seeding on Kentucky Bureau of Highways rights-of-way shall be done in accordance with said Bureau's specifications and the permit granted to the OWNER specifically for this project.

23.2 Where work was performed on private property in lawns, earth of good quality, free from rock shall be spread over the disturbed area and graded and compacted to match adjacent ground contours. The previously removed topsoil shall be used for the final layer of backfill to facilitate productive growth of lawns, crops, and other vegetation. The graded area shall be hand raked until smooth and free from rock, potholes, and humps. The disturbed area shall then be seeded with the seed variety used on the original lawn (e.g., a bluegrass lawn shall be reseeded with bluegrass seed) and the seed raked in lightly. The seeded area shall be fertilized and then uniformly covered with straw to a depth of approximately 1 1/2 inches. **Final Cleanup in lawns must be completed within 2 weeks after Rough Cleanup.**

23.3 Where work was performed on private property and not in lawns the trench line shall be graded and filled if necessary to match adjacent contours. All rock larger than 1 1/2 inches in diameter shall be removed from the disturbed area. The previously removed topsoil shall be used for the final layer of backfill to facilitate productive growth of lawns, crops, and other vegetation. In general, pasture and fallow land shall be fertilized and seeded with Kentucky 31 Fescue and plowed fields shall be left unseeded, however, the desire of each property owner shall govern regarding seeding. Disturbed areas not in lawns are not required to be strawed unless erosion problems are anticipated by the ENGINEER.

23.4 In all cases on private property the rate of seed and fertilizer application shall be that recommended by the University of Kentucky Cooperative Extension Service for new plantings of the variety of grass seed used.

23.5 If the trench line settles following final grade work or if grass seed fails to germinate within a reasonable time, the CONTRACTOR shall regrade or reseed the area in question as specified above and as directed by the ENGINEER.

23.6 Final cleanup is a separate pay item.

## **SECTION 4**

### **VERTICAL TURBINE PUMPS**

#### 1. General

1.1 The work to be accomplished under this section of the Specifications consists of the furnishing, installation, and start-up of two (2) vertical turbine pumps, complete with all accessories and appurtenances in strict accordance with the Specifications and the applicable Drawings, complete and in proper operating condition.

1.2 The pumps are to be furnished under this section shall be product of a single manufacturer. For system responsibility, the pump and motor shall be provided by the pump manufacturer.

1.3 The pumping units shall be provided by a single manufacturer with a minimum of ten (10) years experience in designing and manufacturing pumping equipment of similar type, size and capacity.

1.4 The manufacturer shall have the ability to promptly furnish any and all interchangeable replacement parts as may be needed at any time within the expected life of the pumps. Upon request, the CONTRACTOR shall submit evidence of the proposed manufacturer's ability to promptly fill replacement orders.

#### 2. Alternate Pump

2.1 The Work associated with this project has been designed, in part, based on recommendations of Peerless Pump Co. Alternate pumps will be considered by the ENGINEER. For consideration as an approved alternate pump, BIDDER's shall submit the following information that shall be received by the ENGINEER no later than 7 days prior to the Bid Opening.

2.1.1 Descriptive literature, bulletins, and catalogs indicating the general description, specifications, and limitations of the alternate pump.

2.1.2 Certified dimension drawings showing all necessary pump and base details of construction including anchor bolt size and locations.

2.1.3 Data on characteristics and performance of the pump and motor. Data shall include guaranteed performance curves based on actual laboratory tests of duplicate units which show compliance with the specified requirements for head, capacity, efficiency, NPSHR and brake horsepower at the rated speed. Curves shall be plotted head versus capacity on 8½"x11" sheets.

2.3.4 A specific listing of any feature of the alternate pump which is not in conformance with the specified pump.

## Vertical Turbine Pumps

### 2.3.5 Required modifications to the proposed pump discharge piping.

### 3. Shop Drawings & Submittals

3.1 All shop drawing submittals shall be made at one time. Submittals shall be detailed to meet the project Specifications. Additional information may be requested for points of clarification. The ENGINEER shall approve these drawings prior to fabrication and shipment of the equipment. The CONTRACTOR shall submit five (5) sets of the following pump information:

3.1.1 Descriptive literature, bulletins, and catalogs indicating the general description, specifications, and limitations.

3.1.2 Certified dimension drawings showing all necessary details of construction including anchor bolt size and locations.

3.1.3 Data on characteristics and performance of the pump and motor. Data shall include guaranteed performance curves based on actual laboratory tests of duplicate units which show compliance with the specified requirements for head, capacity, efficiency, NPSHR and brake horsepower at the rated speed. Curves shall be plotted head versus capacity on 8½"x11" sheets.

3.1.4 The weight of each major component along with the total weight of the equipment.

3.1.5 A complete bill of materials for all equipment showing materials of construction and part numbers.

3.1.6 A list of the manufacturer's recommended spare parts including gaskets, packing and seals.

3.1.7 Any and all thrust/critical speed calculations of the pumping unit.

3.1.8 Complete data on motor including performance characteristics.

3.1.9 In the event that it is impossible to conform with certain details of these Specifications due to different manufacturing techniques, furnish complete descriptive data for all non-conforming aspects of the equipment including justification for the deviation.

3.2 Certified pump shop test results shall be submitted as described in Paragraph 18.

3.3 Three (3) copies of an Operation and Maintenance Manual for the motor and pump shall be furnished to the ENGINEER. The manuals shall be prepared specifically for the equipment furnished and shall include all required catalog cuts, drawings, equipment lists, descriptive text, instructions, and other materials

required to instruct operating and maintenance personnel in the proper use, adjustment, operation and repair of the equipment furnished.

4. Design Conditions

4.1 Pumps shall be capable of delivering 1,400 GPM against a total dynamic head of 241 feet. These duty points are exclusive of all pump losses. The pumps shall have a minimum operating efficiency of not less than 79% at the rated conditions. Minimum shut-off head shall be 325 feet. NPSHR at design point shall not be more than 22 feet required.

4.2 The specified pumping head does not include losses in the column or discharge head of the pump. The efficiency of the pumping unit shall be as high as correct design and good Engineering will permit.

4.3 The pumps shall be Model M14MC as manufactured by Peerless Pump Company, or approved equal as described in Paragraph 2.

5. Discharge Head

5.1 The discharge head shall be constructed of cast iron or fabricated steel materials using the latest methods in manufacturing practices. The head shall be fitted with a discharge flange of the size as depicted on the drawings. The discharge head shall be capable of containing maximum pressure developed by pump. The discharge flange shall be fitted with a 150 lb ANSI raised face flange with bolt holes straddling discharge centerline. Flange pressure ratings must be specified for higher operating pressures. A 3/4-inch NPT pressure gauge connection shall be supplied on the discharge pipe. Heads shall be equal to Peerless type G or ENGINEER approved equal.

5.2 The discharge head shall be supplied with adequate integral motor stand height to accept the sealing arrangement required. The top of the head shall be machined to accept a standard NEMA P base, WP-1 type driver.

6. Packing Housing

6.1 The high pressure cast iron stuffing box shall be type IV and rated for a minimum of 400 lbs. The seal housing shall be fitted with a balanced cartridge mechanical seal. Seal faces shall be carbon vs. tungsten carbide rotating element. All associated components shall be 316 stainless steel and fitted with viton O-rings. Acceptable seals are John Crane 5610, AES, or approved equal. The stuffing box shall be fitted with a throttle bearing. The throttle bearing shall be of nickel chrome impregnated carbon construction.

6.2 Packing box shall be fitted with a by-pass port to relieve pressure through the housing to the gutter located to the rear of the pump. This shall be a water tight seal. This port can also be utilized as a potable water flush to quench the seal

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during operation. Sealing between the stuffing box and the discharge head shall be accomplished by means of an O-ring.

### 7. Sole Plate

7.1 A sole plate of adequate thickness shall be supplied with the pump. The sole plate shall be constructed of A36 steel. Plate shall be of proper size to support and anchor the motor and discharge pedestal. It shall be milled and machined to allow for a smooth level mating surface to the head.

7.2 The sole plate shall be positioned and leveled with the pump weight resting on the plate. Plate shall be level to within .001 thousands of an inch in any direction. Upon shimming, plate shall be grouted in place with, with Ferroso "G" Redi-Mix by W. R. Grace; Embeco (Pre-Mixed) by Master Builders, or approved equal non-shrink grout.

### 8. Pump Bowl

8.1 Bowl assembly shall consist of a suction bell, four intermediate bowls and discharge bowl. Pump bowls shall be accurately aligned with machined registers and shall be finished smooth. The bowls and all guide passages shall be designed and finished to reduce friction losses to a minimum. Water passages shall be lined with Scotchkote 135, or approved equal, for best efficiencies. Bowls assembly shall be bolted to the suction bell assembly, and column assembly by machined heavy flanges. All bolting shall be of 304 stainless steel. The bowl and its bearing housing shall be in one piece and integrally bored for positive alignment. The bowl and suction bell bearings shall be bronze, ASTM B144-932 (SAE660). The suction bell bearing shall be permanently grease packed for optimum bearing life and protection.

8.2 Bowls shall be constructed of close grain high tensile cast iron having a minimum tensile strength of 30,000 pounds. The bowl shall be capable of withstanding a hydrostatic pressure equal to one and a half times the rated discharge pressure at rated capacity or 1-1/2 time shutoff head, whichever is greater.

8.3 Bowls shall be fitted with a lateral bowl seal ring to prevent slippage of water between bowl and impeller. Bowls of lesser construction shall not be considered equal.

8.4 All fasteners shall be a minimum of 304-stainless steel, ASTM A193, Class 2, Grade B8M

### 9. Impellers

Semi-open or enclosed impellers shall be acceptable. The impellers shall be constructed of bronze ASTM B505 Alloy 927 to be zinc free. Impellers shall be vacuum cast in one piece and free from blowholes or casting voids. Impellers shall



be statically and dynamically balanced. Balance shall be to ISO G6.3 specifications as a minimum. Impellers shall be keyed to the bowl shaft. Impeller keys shall be constructed of 316 SST. The impellers shall be securely fastened to the bowl shaft with split rings with retainer. The impellers shall be adjustable by means of the coupling between the motor and pump.

## 10. Pump Shaft

### 10.1. Bowl Shaft

The pump impeller shaft shall be turned and polished 416 stainless steel with a minimum of 12% chromium. Bowl shafts of lesser construction or diameter will not be considered equal or acceptable. It shall be supported by bearings above and below each impeller. Bearings are to be lubricated by the water being pumped and shall be of bronze. The size of the shaft shall be no less than that determined by ANSI/AWWA Specifications E101, Section A4.3 paragraph 4.3.3. and shall be ample to transmit the horsepower required by the pump.

### 10.2. Lineshaft

The lineshaft shall be turned, ground and polished 416 stainless steel of a size that conforms to the requirements of ANSI Standard Specifications for Deep Well Vertical Turbine Pumps, Number B58.1-1971. Line shafting shall be a minimum diameter of 1.19-inches and constructed of 416 stainless steel. The shaft shall be furnished in interchangeable sections as required. The butting faces shall be machined square to the axis of the shaft. A non-corrosive chrome oxide flame sprayed stainless steel journal shall be placed on each shaft at the bearing points. The journal O.D. will be substantially flush with the shaft O.D.

### 10.3. Lineshaft Couplings

Shafts shall be connected by the means of threaded stainless steel coupling. Couplings shall utilize continuous thread connecting the two shafts with a coupling body. Complete coupling assembly shall be constructed of 420-stainless steel material.

### 10.4. Lineshaft Bearing Retainers

The line shaft bearing retainers shall be constructed of fabricated steel. The retainers shall be integral to each column section. Retainers shall be machined to housed the line shaft bearing. Retainers shall be fitted with retaining clips to securely hold the bearings in place.

### 10.5. Lineshaft Bearings

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The bearings shall be designed for vertical pump service to be lubricated by the liquid being pumped. The bearings shall be spaced at intervals of not more than 5- feet. Line shaft bearings shall be constructed of marine grade carboxilated rubber as a minimum for proper dry run lubrication.

### 11. Discharge Column Pipe

Column pipe size shall be such that the friction loss will not exceed five (5) feet per 100 feet based on rated pump capacity. The minimum wall thickness of the discharge column pipe shall be 0.375 inches. The pipe shall be furnished in interchangeable sections having a maximum length of 5 feet. Discharge column pipe shall be a minimum of 10-inch in diameter. Column pipe shall be fitted with threaded connections of proper design for structural stability and pressure rating.

### 12. Strainer

An anti-vortex stainless steel strainer shall be provided for the pump. Strainer shall have a net inlet area equal to at least four times the suction pipe area. The maximum opening size shall not be more than 75 percent of the minimum opening of the water passage through the bowl or impeller. The strainer shall be constructed of 304 stainless steel as a minimum and be fitted with all SST hardware. The strainer shall be constructed to eliminate vortexes.

### 13. Coatings

13.1 Pump assembly including and column assembly shall be factory painted with Tnemec Pot-A-Pox Series 140 Polyamidoamine epoxy paint. Coating is to be applied on the exterior as well as the interior of the column and discharge head. Coating shall be on the exterior of the bowl assembly only.

13.2 Prior to coating all surfaces shall be sand blasted to a spec SSPC-SP10/NACE to near white blast.

13.3 All surfaces shall be coated with Tnemec, Purple Prime Series 1 primer coat. Finished mil thickness shall be a minimum of 2.5-3.5. The top or finish coat shall be with a complete dry mil thickness of 6-8.

13.4 Any coatings which are damaged during shipment or installation shall be repaired in accordance with manufactures recommendations.

13.5 Pump exterior shall be painted as described in Section 7, Paragraph 5.

### 14. Identification

Nameplate and other data plates shall be stainless steel and secured to the pump. Parts shall be completely identified with a numerical system (no alphabetical letters) to facilitate parts inventory control. A separate number shall properly identify each

part, and those parts, which are identical, shall have the same number to effect minimum spare parts inventory.

15. Motor

15.1 Motor shall be capable of withstanding all normal forces, which may be imposed upon them during the course of normal operation, including starting and normal stops. Motors shall be vertical solid shaft design, squirrel cage induction type. Motors shall be suitable for continuous duty operation on a 3-phase, 60 hertz electrical system rated at 460 volts AC. Motor shall be designed for constant, and variable speed service. The motor shall be of the proper size to drive the pump continuously and be non-overloading over the entire proposed operating range of the pump without regard to the motor service factor. Motor shall be a maximum of 150 horsepower.

15.2 The motor shall be designated for 40 C ambient conditions with a minimum of 1.15 service factor. The motor shall be premium efficiency in design. The motor shall be 3-phase, 60 Hz, and of the 460 volts. Motor must operate successfully under running conditions at rated load with variations in the voltage of +/- 10% of rated voltage and rated frequency, +/- 5 % rated frequency with rated voltage. Motor shall be inverter duty rated.

15.3 Motor construction shall comply with applicable ASA specifications; Institute of Electrical and Electronic ENGINEERs (IEEE); National Electrical Manufacturers' Association (NEMA) and Anti-Friction Bearing Manufacturers' Association (AFBMA). Motors and all equipment shall be listed as being approved by Underwriter's Laboratories (UL) whenever applicable.

15.4 Motor shall be furnished with Weather Protected, Type I (WP-I) enclosure. Openings on all Weather Protected designs shall be covered with metal guard screens having a mesh size no larger than 1/2-inch square. Weather Protected Type I motors shall be designed to protect internal components from falling water and debris at angles up to 100 degrees from vertical. Enclosures shall be of fabricated steel or cast iron construction in accordance with the manufacturer's standard design. Canopy caps shall be of aluminum. Motor winding shall include custom Polyseal stator winding insulation. Both internal and external metal parts shall be coated with anti-corrosion treatment.

15.5 Stator laminations shall be of fully processed steel. Each lamination surface shall be given the necessary treatment so as to have core plate type C-5 insulation. Stator windings shall be form wound of rectangular copper magnet wire. Aluminum magnet wire is not acceptable. Individual coils shall be insulated with mica bearing tape prior to insertion. Coil extensions shall be blocked and braced sufficiently to minimize movement during normal starting and running conditions at full rated voltage. The motor shall utilize a stator-coil-lock system for the suppression of normal operating coil vibration and to withstand mechanical forces on the winding during start and bus transfer or reclosing. The minimum basis for design is an

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ability to withstand forces associated with a resultant voltage at bus transfer of reclosing of 1.33 per unit on motor voltage and frequency base.

15.6 Motor insulation system shall be Class F or better. The insulation system shall consist of a minimum of two vacuum pressure impregnation treatments using a 100% solids epoxy resin. Temperature rise shall not exceed the limits defined by NEMA for Class F insulation systems while operating at nameplate horsepower, frequency, and voltage.

15.7 Bearings supplied shall be of type and size sufficient to satisfy thrust loading requirements for each motor in accordance with manufacturer's standard design. The bearing shall be of such size that the average life rating is no less than five (5) year's continuous operation. Thrust bearings shall conform to L10 life requirements of 8800 hours of operation. Motor construction shall be designed and constructed with thrust bearings on top to allow inspection and/or replacement without requiring complete disassembly of motor.

15.8 Lubrication of the thrust bearings shall be oil lubricated and contained in an oil reservoir with oil sight level gauge and oil fill and drain openings with plugs. Deep-groove ball bearings furnished as thrust bearings for normal thrust motors shall be grease lubricated. When furnished as guide bearings for high thrust units, they shall be oil lubricated. Grease lubricated bearings shall be furnished with provisions for in-service positive lubrication. A drain shall be provided to guard against over lubrication.

15.9 Sound pressure levels shall be measured according to IEEE 85 and shall not exceed 88 decibels as measured on the A-Weighted Scale at a distance of three (3) feet from any motor surface under no load, free field conditions.

15.10 The terminal boxes shall be of fabricated steel or cast iron construction to be compatible with the motor enclosure specified and when possible, shall be diagonally split and capable of rotation in 90 degree increments. Boxes not suitable for rotation must be capable of top entry. The area in which the main terminal box is connected with the motor frame shall be fully gasketed in order to prevent entrance of foreign matter into the motor and to provide support for the stator leads where they pass through the motor frame. A properly sized grounding terminal shall be mounted in the main terminal box when specified. The main terminal box shall be sufficiently oversized and fitted with the appropriate terminations points for the incoming power cables

15.11 The motor shall be given a complete standard commercial test in accordance with IEEE 112 method B and shall be submitted with the pump certified test curves.

15.12 The motor shall be fitted with a non-reverse ratchet type coupling.

15.13 The motors shall be manufactured by U.S. Electric Motors, General Electric, or approved equal.

16. Coupling

Connection between the pump and motor shall be by steel flanged spacer style coupling. Coupling shall be adjustable to facilitate adjustment of the entire rotating assembly while assuring proper clearances. Coupling flanged are to be machined with a register fit to ensure proper alignment between the motor and pump shafts. The coupling configuration shall be constructed so that it is not necessary to remove the motor to service the mechanical seal.

17. Delivery, Storage and Handling

17.1 Deliver, store, protect, and handle products in a safe manner and in accordance with manufacturer instructions.

17.2 Pump and components shall be delivered to the site in factory packaging and inspected for damage by the CONTRACTOR. Protect pump and components from physical damage including effects of weather, water, and construction debris. The motor shall be stored in a dry environment as depicted by the motor manufacturer.

18. Shop Test

18.1 The pump shall be fully tested to Hydraulic Institute Standards (Acceptance level "A", non-witnessed) at the manufacturer's works prior to shipment at their rated speed, capacity, and head, and at such other conditions of head and capacity to establish that each has met all guarantees on the characteristic curves submitted. Pump test shall be performed utilizing jobsite motors to guarantee overall pump/motor operation. Five certified copies of the results of these tests are to be sent to the ENGINEER. Also included with the test curves shall be a certified bill of material list depicting quality of construction. Such tests shall be accomplished at the manufacturer's facility prior to shipment.

18.2 The pumping unit will be accepted upon the basis of the certified copies of the shop test, subject to a four-hour field test of each unit. This test will be for the purpose of determining if each pumping unit will operate under installed conditions within a reasonable degree of correlation with the shop tests.

18.3 Five (5) certified copies of test results shall be sent to the ENGINEER.

19. Field Acceptance Tests

19.1 After installation of the pumping equipment, and after inspection, operation, testing and adjustment have been completed by the manufacturer's representative, the pump shall be given a running test in the presence of the ENGINEER during which it shall determine its ability to operate without vibration or overheating, and to deliver its rated capacity under the specified conditions.

19.2 During the flow and field tests, observations shall be made of head, capacity, and motor input. All defects or defective equipment revealed by or noted during the

## Vertical Turbine Pumps

tests shall be corrected or replaced promptly at the expense of the CONTRACTOR, and if necessary, the tests shall be repeated until results acceptable to the ENGINEER are obtained. The CONTRACTOR shall furnish all labor, piping, equipment, and materials necessary for conducting the tests.

19.3 The pump and motor shall operate at the specified capacities in the range of heads specified without undue noise or vibration. The pump and motor assembly shall operate within the tolerances as set forth by Hydraulic Institute Standards. Any undue noise or vibration in the pumps or motors, which is objectionable, will be sufficient cause for rejection of the units.

19.4 Any defects in the equipment or failure to meet the guaranteed requirements of these Specifications will be corrected promptly by the CONTRACTOR, by replacement or otherwise.

### 20. Field Quality Control & Startup

20.1 Provide the services of a qualified factory-trained manufacturer's representative to assist the CONTRACTOR in installation and start up of the equipment for a period of one (1) working day. The manufacturer's representative shall provide technical direction and assistance to the CONTRACTOR in the general assembly of the pump, positioning, and leveling of the pump, connections and adjustments, and testing of the motor and components contained therein.

20.2 The following minimum work shall be performed by the CONTRACTOR under the technical direction of the manufacturer's service representative.

20.2.1 Verification of proper installation, mounting, and alignment.

20.2.2 Final inspection of the lubricating system.

20.2.3 Final inspection of the cooling system.

20.2.4 Supervision of the "meggar" test.

20.2.5 Supervision of the final coupled test.

20.3 The CONTRACTOR shall provide three (3) copies of the manufacturer's field start up report, and certification that the equipment has been installed, adjusted and tested in accordance with the manufacturer's recommendations.

### 21. Training

21.1 The CONTRACTOR shall provide a ½ day training session for the OWNER's representatives at a jobsite location determined by the OWNER. The training session shall be conducted by a manufacturer's qualified representative, and shall consist of the following:

21.1.1 Proper maintenance procedures.

21.1.2 Proper servicing procedures.

21.1.3 Proper operating procedures.

22. Manufacturer's Warranty

22.1 The warranty is the sole responsibility of the manufacturer and that manufacturer's warranty shall be provided in written form for inclusion with both the submittal covering the specified equipment and the O&M manuals provided with that equipment.

22.2 Said manufacturer's warranty shall at a minimum cover a period of two (2) years commencing upon **successful start-up**, after authorized manufacturer's start-up, not to exceed eighteen (18) months from the date of shipment.

22.3 The warranty period shall be inviolate regardless of any component manufacturer's warranty for equipment and components within the pump system.

22.4 The warranty shall provide for the pump manufacturer to bear the full cost of labor and materials for replacement and/or repair of faulty or defective components so there shall be **no cost** incurred by the OWNER for this work during the warranty period.

22.5 The manufacturer's warranty policy is amended only by the items considered consumables, i.e., light bulbs, pump seals, pump packing, lubricants, and other maintenance items consumed by usage.

22.6 No assumption of contingent liabilities for any component failure during manufacturer's warranty is made.

22.7 It is the intent of this manufacturer's warranty to gain for the OWNER a single source responsible party for all components specified herein. "Second party" or "pass through" warranties will not be accepted.

22.8 If the submitted written manufacturer's warranty does not meet the minimum requirements set forth above, that submittal will forthrightly be rejected.

## **SECTION 5**

### **ELECTRICAL AND CONTROLS**

#### 1. Scope of the Work

The work to be accomplished under this section of the Specifications consists of the furnishing of labor, materials, equipment, and services associated with the electrical and control work. This work is described more fully on the Drawings and specified herein.

#### 2. General

2.2 All conduit shall be new. Conduit installed above ground shall be rigid and conduit installed within the concrete floor shall be PVC with rigid rising through the floor. All buried conduit shall be rigid and be coated with an asphalt mastic coating with all joints sealed. Conduit bends shall be free from dents and kinks and shall not disturb the protective coating. Radii of the bends shall not be less than those allowed in the National Electrical Code (NEC). Conduit shall be continuous from box to box or panel to panel. All wireways shall be non-corrosive. THHN-THWN insulation with 600V rating is required on all wire. Sizes #10AWG or larger must have stranded conductors.

2.6 All work shall be done in a neat workmanlike manner. Electrical codes of the utility involved, as well as the NEC shall be observed. All materials and equipment installed shall be guaranteed for a period of one year. Replacement of any such items that fail to operate properly in this period of time shall be replaced at no added cost to the OWNER.

#### 3. Shop Drawing Submittal

3.1 All electrical shop drawing submittals shall be made at one time. Submittals shall include all electrical materials and components to be used for the proposed pump station. Submittals shall be detailed to meet the project Specifications. Additional information may be requested for points of clarification. The CONTRACTOR shall submit five (5) sets of the shop drawing submittals.

#### 4. Control Wiring

4.1 Station control panel wiring shall conform to high quality assembly standards. All components shall be UL listed where available.

4.2 Panel wiring shall conform to standard color-coding practices for easy identification. Color coding scheme shall be clearly stated on system drawings.

4.3 All internal back plate wiring shall be in slotted wire way. Duct shall be neatly installed in vertical and horizontal runs. Duct installed at angles other than vertical or horizontal shall not be accepted. Exposed wiring shall only be



acceptable where wiring transitions to the intended device or termination point. All exposed wiring crossing door panels or similar transitions shall be wrapped in plastic wire wrap or flexible duct.

4.4 Proper grounding practice for personnel and equipment protection shall apply.

4.5 All field wiring shall terminate at DIN rail mounted terminal strips. Direct field termination to RTU devices shall not be allowed. Terminal strips shall be feed through type rated @ 600 V/ 20 Amp.

4.6 All terminals and wiring shall be clearly marked using machine printed permanent making labels. Wires shall be clearly identified on both ends of termination points and clearly identified on system drawings.

## 5. Variable Frequency Drives

5.1 The VFD's shall accept an input voltage of 480 volts, and be sized appropriately for the load. Variable speed AC drives shall be supplied in a NEMA 12V or 3R (or equivalent) enclosure. The cabinet shall be mounted in a 40°C ambient without derating.

5.2 The drives associated with the Raw Water Pumps shall be Benshaw Model RSI-100-SG-4-B, or approved equal. The drives associated with the High Service Pumps shall be Benshaw Model RSI-150-SG-4-B, or approved equal.

5.3 The VFD shall include a full wave diode bridge rectifier. The drive shall maintain a fundamental power factor near unity regardless of speed or load. The drives shall have a full load amp rating which exceeds or meets NEC Table 430-150. The drive shall be able to provide full rated output current continuously, and shall be able to provide 110% of its variable torque rating and 150% of its constant torque rating for one minute.

### 5.4 Input/Output

5.4.1 The VFD shall be able to be controlled via a 4-20mA, 0-10Vdc, +/- 10Vdc, pulse train, or 0 – 5 Vdc input. The VFD shall be able to be programmed to be inverse or direct acting. The VFD shall accept two or three wire control for start/stop. The VFD shall have eight programmable inputs that are programmable.

5.4.2 The VFD shall have (1) 0-10Vdc output, and (1) 4-20mA output that are programmable. The VFD shall have (1) Form A output that is programmable.

5.4.3 The VFD shall have an integral PID loop to hold pressure, flow rate, etc. The feedback signal shall be selectable to a 4-20mA, 0-10Vdc, or 0-

5Vdc signal. The VFD shall have a Low Limit and High Limit Alarm for the PID Loop.

5.4.4 The VFD shall have a loss of a signal function. Upon loss of signal the VFD shall be field selectable to no action, free run, or stop by decel pattern.

## 5.5 Protective Functions

5.5.1 The VFD shall have a built in adjustable overload protection to protect the connected motor. The VFD shall protect itself from input transients by utilizing MOV's(Metal Oxide Varistors).

5.5.2 The VFD Shall protect itself and display in English the following faults:

- 5.3.2.1 Over Voltage
- 5.3.2.2 Under Voltage
- 5.3.2.3 Over Current
- 5.3.2.4 Ground Fault
- 5.3.2.5 Drive Over Temperature
- 5.3.2.6 Overload
- 5.3.2.7 Motor Overload
- 5.3.2.8 External Trip
- 5.3.2.9 Electronic Thermal Trip
- 5.3.2.10 Loss of Reference Fault
- 5.3.2.11 Loss of Keypad Fault
- 5.3.2.12 Over Current 2
- 5.3.2.13 Output Phase Open
- 5.3.2.14 BX Protection
- 5.3.2.15 H / W Diag Fault
- 5.3.2.16 COM Fault
- 5.3.2.17 Inverter Overload
- 5.3.2.18 NTC Open

5.5.3 The VFD shall have an adjustable Drive Stall function which will lower the drive's output frequency to prevent Over Current faults during periods of high load on variable torque applications.

5.5.4 The VFD shall have single phase protection. The VFD shall have a field selectable fault for loss of phase protection. VFD's without this function must be supplied with a separate phase loss relay.

5.5.5 The VFD shall have an Auto Restart function to automatically restart the drive after an Over Voltage, Over Current, Ground Fault, or Overload fault. The number of restarts shall be programmable from 0-10 retry attempts.

5.5.6 The VFD shall allow which faults will have the ability to be auto restarted. These faults will include Overload, Over Voltage, Over Current, and Over Temperature.

5.5.7 The VFD shall have a motor speed search function to match the motor speed upon restart.

5.5.8 The VFD will have a warning on the display for a loss of internal cooling fan.

5.5.9 The VFD will allow reverse operation to be locked out for applications in which reverse operation would damage the equipment.

5.5.10 The VFD shall have an internal light duty DB resistor to eliminate nuisance overvoltage trips.

## 5.6 Interface

5.6.1 The VFD shall have a digital keypad for programming, monitoring, speed control and start/stop control. The VFD display shall be a LCD true English display. LED keypads are not acceptable.

5.6.2 The VFD shall have a Fault Reset button to clear trips.

## 5.7 Programming Features

5.7.1 The VFD shall have (7) adjustable acceleration and (7) adjustable deceleration times. The times shall be adjustable from 0 – 3200 seconds. The VFD shall have a base/nominal frequency adjustable from 25 – 320Hz. The VFD shall provide adjustable maximum and minimum speed settings.

5.7.2 The VFD shall have Volts/Hz patterns selectable for linear, squared, or auto boost to optimize the Volts/Hz curve at low speeds.

5.7.3 The VFD shall have an adjustable carrier frequency for quiet motor operation. The carrier frequency shall be adjustable from 0.7 – 15kHz. The VFD shall have an Auto Carrier Frequency Function to automatically select the highest carrier frequency possible without overheating the VFD.

5.7.4 The VFD shall have password protection.

5.7.5 The VFD shall have a standard Modbus Interface Port.

5.7.6 The VFD shall have three selectable skip frequencies to avoid system resonance.

5.8 The VFD shall be warranted for a period of 24 months after the date of shipment. The warranty shall include parts and labor by the manufacturer.

6. Long-Lead Filters

Long-lead filters shall be rated for 480 volts at 60 Hz, 5 percent impedance. The filters shall be complete with NEMA 1 enclosure. Filters must be copper wound with class H insulation. Box lug type terminals shall be provided on the filters. The filters associated with the Raw Water Pumps shall be MTE RLW-013005, or approved equal. The drives associated with the High Service Pumps shall be MTE RLW-020005, or approved equal.

7. Instrumentation and Control Modifications

7.1 Systems Responsibility

The instrumentation and control systems specified herein shall be supplied by a single System Integrator. This System Integrator shall have total responsibility for coordinating all work involved in these systems, and for furnishing all submittals and manufacturer's services required by these specifications for these systems. The CONTRACTOR shall furnish proof of the System Integrator's responsibilities as a condition of approval of the manufacturer and supplier. The System Integrator of these systems shall be a firm regularly engaged in supplying these types of systems in the water treatment field and be familiar with the existing WTP instrumentation and control system. The System Integrator shall be HTI, Inc. of Horse Branch, KY, or pre-approved equal.

7.2 Scope of Instrumentation and Control Modifications

7.2.1 Generally, the scope of the instrumentation and control modifications is as follows:

7.2.1.1 Modify I & C to accommodate the removal of the existing RVSS's and the integration of VFD's for the existing raw water pumps. Existing H-O-A switches, contactors, and overload relays shall remain. Proposed VFD's shall be operated at constant speed or via PID control based on raw water flow rate. Automatic control of VFD's shall be set via set existing OI's at the WTP site. Selection shall be permitted for either selectable continuous speed or flow rate (in gpm). Outputs shall be provided for common alarm, speed, etc.

7.2.1.2 Modify I & C to accommodate the removal of the existing RVSS's and the integration of VFD's for the existing high service pumps. Existing H-O-A switches and contactors shall remain. Proposed VFD's shall be operated at constant speed or via PID control based on plant discharge flow rate. Automatic control of

VFD's shall be set via set existing OI's at the WTP site. Selection shall be permitted for either selectable continuous speed or flow rate (in gpm). Outputs shall be provided for common alarm, speed, etc.

7.2.1.3 Modify I & C to accommodate the replacement of the existing plant discharge water meter and the plant process water meter (See Section 3 Paragraphs 17.5 & 18). Plant discharge water meter flow rate shall be determined via current output and totalization shall be determined via pulse output. Plant process water meter flow rate shall be estimated via pulse output and totalization shall be determined via pulse output.

### 7.3 Control Submittals

7.3.1 The following information shall be submitted for review by Engineer prior to the procurement or fabrication of any equipment or generation of any application software:

7.3.1.1 Description of Modifications: Provide an overview of the proposed I & C modifications.

7.3.1.2 Block Diagrams: Provide a block diagram of the proposed modifications showing all major components and their interconnections and interrelationships. Label each diagram and indicate all external power and communications interfaces. All diagrams shall be in an 11 by 17 format.

7.3.1.3 Equipment List: Provide a listing of new equipment, if any required, for the modifications with descriptive literature and specifications for the proposed system.

7.3.1.4 Test Outlines and Procedures - Test descriptions shall be in sufficient detail to fully describe the specific tests to be conducted to demonstrate conformance with this specification.

### 7.4 Final Documentation

7.4.1 Prior to final acceptance of the modifications, the following final documentation shall be submitted in accordance with the requirements of this Specification.

7.4.1.1 Application Software Manuals - These manuals shall include all Application Software configuration modifications not included in the computer manufacturer's and System Supplier's standard manuals. This manual shall include the following information as a minimum:

7.4.1.1.1 A simple overview of the entire system indicating function and purpose of the control system.

7.4.1.1.2 Overview of the Application Software program.

7.4.1.1.3 Narrative describing exactly how the program works. All calculations, references to process I/O points, and operator inputs should be mentioned. CRT displays shall be included, where appropriate.

7.4.1.1.4 A list of variables used by the program including the function of each. A cross reference to the Software Functional Design Documentation shall be provided where appropriate.

7.4.1.2 Software Listing - As a minimum two (2) sets of well-annotated program listing of all software provided or modified shall be furnished for all software items. These shall include, but not limited to, the following:

7.4.1.2.1 All listings associated with the system generation and software configuration of the specific system (i.e., system parameterization tables, build maps, disk maps, etc.).

7.4.1.2.2 Listings of all data bases configured for or associated with the system.

7.4.1.2.3 Listings of all custom or modified software developed specifically for the system. These listings shall reflect any change after the factory acceptance test.

## 7.5. Testing and Startup

7.5.1 All modified elements of the control system shall be tested to demonstrate that the total system satisfies all of the requirements of this Specification. All special testing materials and equipment shall be provided by the CONTRACTOR. The CONTRACTOR shall coordinate and schedule all of his testing and startup work with the OWNER. As a minimum, the testing shall include both a factory test and a field test. Testing requirements are as follows:

7.5.1.1 Factory Tests - The PLCs, OIs, peripherals, and all other associated hardware shall be tested at the factory, prior to shipment, so as to demonstrate that each component is operational and meets the requirements of these specifications. Test results shall be certified, with written documentation provided to the Owner

upon test completion. Factory testing may be witnessed by the Owner or Engineer at no expense to the Contractor.

7.5.1.2 Field Tests - All modified components shall be checked to verify that they have been installed properly and that all terminations have been made correctly. Witnessed field tests shall be performed on the complete system. Each function shall be demonstrated to the satisfaction of the OWNER and ENGINEER on a paragraph-by-paragraph basis. Each test shall be witnessed and signed off by the CONTRACTOR and the ENGINEER upon satisfactory completion. The CONTRACTOR shall notify the OWNER at least one (1) week prior to the commencement date of the field tests.

## **SECTION 6**

### **TUBE SETTLER SYSTEM**

1. Scope

The work included under this section shall include furnishing all labor, materials, equipment, tools and other items necessary for the supply and installation of two (2) tube settler assemblies in two (2) existing upflow solids contact clarifier units and disposal of existing tube settler units.

2. Sequence of Work

The installation of equipment shall progress so as to minimize shutdowns of the water treatment process. Installation of one tube settler system shall be completed prior to beginning the second.

3. Installation

The CONTRACTOR's installation work shall be in accordance with instructions and details shown on the equipment shop drawings and erection drawings. When the equipment is capable of being operated, the equipment manufacturer shall furnish personnel to check the equipment for correct installation and operation. The CONTRACTOR shall correct any defects in the installation noted by the Manufacturer's representative.

4. Tube Settler System - General

The CONTRACTOR shall supply and install PVC tube settler systems consisting of approximately 785 square feet of tube settlers on existing steel support systems for same in the entire area of the clarifiers between the concrete outer wall and the flocculation zone skirt. The location and elevation of the tube settlers shall be as shown on the Drawings. The tube settler system shall be manufactured by Brentwood Industries, Inc. of Reading, Pennsylvania, or approved equal. The system shall include tube settler modules and protective surface grating.

5. Definitions

5.1 Tube Settler Module – Tube settlers are comprised of multiple tubular channels sloped at an angle of about 60°, which allow enhanced settling characteristics and accumulation of solids within a settling basin. Modules will be 2 ft. height, 1 ft. or 2 ft. widths, up to 12 ft. lengths as required by the tank geometry and support structure. Tube settler modules shall have a minimum tube length of 28 inches.

5.2 Protective Surface Grating – Interlocking panels, a minimum 1-1/4 in. height, to absorb hydraulic impact (during washdowns), provide operator access,



## Tube Settler System

provide a protective layer from foot traffic, and added UV protection to tube settler area.

### 6. Performance Requirements

6.1 Each tube shall have a cross sectional perimeter of approximately 10.0 inches to give a low Reynolds number and of an approximate triangular shape that allows rapid accumulation, concentration, and drainage of solids.

6.2 Cross corrugation of tubes with mixing points within individual modules is not allowed. This causes mixing currents, which adversely affect the settlement of solids as well as re-suspend the settled solids within the system.

6.3 Reversal of tube direction between adjacent modules is not allowed. Such reversal causes mixing currents at the surface of the module as described above.

6.4 Tube settlers that have alternating tube direction will not be allowed.

6.5 Protective surface grating shall not impact performance of tube settlers or cause physical damage to tube settler material.

### 7. Qualifications of Manufacturer

Tube settler module manufacturer shall have minimum 5 years continuous experience in manufacture and supply of tube settlers.

### 8. Installation Requirements

8.1 Install tube settler system in accordance with manufacturer's written instructions.

8.2 Tube settler system manufacturer provides services of qualified representative onsite to provide instructions on installation, cutting, etc.

8.3 Install tube settler system within as recommended by tube settler manufacturer, or as directed on project Drawings.

8.4 Top of adjacent tube modules shall be installed true level, plus or minus 1/2 inch in full length.

8.5 A maximum 1/4 inch space is allowed between installed modules.

### 9. Submittals

9.1 The CONTRACTOR is required to provide shop drawings and product data for the tube settler modules and protective surface grating.

9.2 Operating and Maintenance (O & M) Instructions shall be provided and shall include storage and installation procedures and cleaning procedures.

10. Delivery, Storage, and Handling

10.1 Tube modules shall be shipped and delivered to job site on pallets.

10.2 All material and equipment shall be shipped, stored, handled, and installed in such a manner as to not degrade quality or serviceability.

10.3 The tube settling modules shall not be stacked more than four high (one over the other).

10.4 All modules shall be stacked such that the PVC sheet planes are in a vertical position (similar to the manner of their placement inside the tank).

10.5 A light colored cover shall cover all modules required to be stored in the open beyond two months. Ideally these covers should be double sided such as a white on black. The white side, facing out, is used to reflect light away. Clear covers are prohibited. Black is not recommended. Black will absorb heat and if the cover comes in direct contact with the media, this heat can be quickly transferred to the media.

10.6 Covers cannot be wrapped tightly around the media. There should be at least a 6" air gap between the cover and top of media. The ends of the cover should be securely anchored on all sides with at least a 12" air gap at the bottom. These covers should provide shading while allowing air to pass through to prevent heat from building up.

10.7 Modules should be checked at least once a week. It is very possible that the covers can become loose over time due to wind or rain. A check of the stored area should be done to make any minor repairs to the cover or to restack any modules that could have fallen.

10.8 Tube modules shall remain on shipping pallets until ready to install.

10.9 Any abusive handling of the modules shall not be permitted. Workmen shall be careful in placing the tube modules and avoid any damage to the corners and tube edges.

10.10 Personnel shall not stand or walk directly on top of the modules except as outlined in Paragraph 11.1.9.

10.11 Media modules may become brittle at low temperatures or soft at high temperatures. Therefore, care should be used in the handling of modules.

11. Material Requirements

11.1. Tube Modules

11.1.1 Tube settler modules shall have a minimum vertical height of 24-

## Tube Settler System

inches.

11.1.2 Tube settler modules with a vertical height of less than 24-inches will not be allowed.

11.1.3 Tube settler modules shall have a minimum tube length of 28-inches.

11.1.4 The material of construction shall be flame resistant, self-extinguishing, rigid PVC, **30 mils thick**.

11.1.5 Material shall be inert and resistant to naturally occurring constituents in water and to the normal dosage of water treatment chemicals required in the treatment process.

11.1.6 Tube settler modules must be Tested and Certified by NSF to ANSI/NSF Standard 61 Drinking Water System Components. Evidence of certification must be included with submittal package and indelibly marked on the sheets of the modules.

11.1.7 The PVC sheet shall be prime, rigid PVC conforming to commercial standard ASTM D1784:12454B with the following properties:

Property	Test Method	Unit	Typical Value
Specific Gravity	D792	gm/cu.cm.	1.45 max.
Tensile Strength	D638/D882	psi	6,000 min.
Flexural Modulus	D790	psi	425,000 min.
Flexural Strength	D790	psi	11,000 min.
Elastic Modulus	D638/D882	psi	360,000 min.
Impact Resistance	D4226	in.lbs./mil	1.2 min.
Heat Deflection	D648	F (264 psi)	162 min.
Flammability	D635		self-extinguishing less than 5 sec.

11.1.8 The modules shall be self-supporting and constructed to support foot traffic. Such foot traffic may occur only after the tube settler surface has been covered with 4' X 4' x 3/8" thick plywood sheets or the Brentwood AccuGrid, or approved equal, surface grating. The sheeting/grating is required to prevent damage to the tube settler edges and to distribute the weight of the worker. A potential safety hazard may occur if the sheeting/grating is not utilized when walking atop the tube settlers.

11.1.9 Structural integrity of the modules shall be maintained under a loading of 25 pounds per sq. ft. (psf) (122 kgs/m<sup>2</sup>) which includes the module dead weight plus a uniformly distributed load of 15 psf while bearing a movable live load of 250 lbs concentrated over a one sq. ft. area.

11.1.10 The maximum unsupported module span shall be 8 feet.

## 11.2. Protective Surface Grating

11.2.1 The protective surface grating when installed as per manufacturer's recommendations shall provide a protective surface (such as operator access or for minimizing the hydraulic impact on the media during washdowns, etc.) on top of the tube settler media. Such grating shall comprise of multiple square mesh of 2 in. x 2 in. openings, molded together to provide a strong and lightweight panel. Each panel of the grating shall measure approximately 24 inches in width, 24 inches in length and approximately 1 ¼ inches in height.

11.2.2 The material of construction shall be NSF certified HDPE, and be blue in color that will be specifically UV stabilized for inhibiting UV degradation of the grating under extended exposure to the sun. The material shall be inert and resistant to naturally occurring constituents in water.

11.2.3 Protective surface grating shall be NSF certified to ANSI/NSF Standard 61 Drinking Water System Components.

11.2.4 Grating shall be installed in panels side-by-side and placed on top of the tube settler media as shown on the Drawings. Each panel shall be snapped together with the adjacent panel with locks provided at the edges of each panel. The grating panels shall be placed on top of the media such that the grating is in contact with the media.

11.2.5 The grating system shall be designed to prevent damage to the tube settler media, and allow for ease of placement and removal.

## 12. Fabrication – Tube Modules

12.1 All PVC sheets shall be thermoformed and have a continuous, dedicated glue guide to allow precise alignment of sheets during assembly and installation. Non-thermoformed sheets, which do not provide dedicated guides for precise tube alignment, are not acceptable.

12.2 Fabricated modules shall be comprised of tube-like channels sloped at an angle of about 60° placed in same direction to prevent mixing points and unstable flow patterns. Modules consisting of tubes in alternating directions are not

12.3 Rectangular or square shape tubes or "cross-flow" tube settlers shall not be acceptable.

12.4 Join PVC sheets and channels by solvent bonding to provide a rigid structure, resistant to separation of sheets

## Tube Settler System

### 13. Field Installation

13.1 Field-verify all dimensions affecting installation. Protect adjacent surfaces, piping and other items.

13.2 The tube settler modules shall be installed in accordance with the manufacturer's recommendations.

13.3 Tube settler modules shall be factory trimmed into the required pie shaped sections and ready for installation by the CONTRACTOR.

13.4 Tube settler system manufacturer shall provide the services of a qualified factory field installation supervisor. Installation supervision shall be provided for 1 working day.

13.5 Contractor is responsible for removal and disposal of existing tube settler units from the clarifier and plant site.

### 14. Warranty

14.1 Tube settler system shall be guaranteed to be free from defects in material for a period of 1 year from date of Substantial Completion, or 14 months from date of shipment, whichever is earlier.

14.2 Prior to the end of the warranty period the OWNER shall conduct an inspection and review of the tube settler system equipment with the CONTRACTOR and manufacturer of the materials. A punch list will be provided by the OWNER indicating any deficiencies which shall be corrected prior to release of the warranty bond.

### 15. Extra Stock/Spare Parts

15.1 Spare tube modules - Furnish two full size (minimum 12 ft. lengths) spare tube modules to OWNER.

15.2 Wastage tube modules - Furnish two full size (minimum 12 ft. lengths) modules to CONTRACTOR as wastage during installation. Any remaining modules (after installation) shall be given to OWNER.

15.3 Wastage/Spare Protective Surface Grating – Furnish ten full size panels to CONTRACTOR as wastage during installation.

**SECTION 7**  
**FILTER BUILDING MODIFICATIONS**

1. Scope

The work included under this section shall include furnishing all labor, materials, equipment, tools and other items necessary for modifications to the existing water treatment plant filter building interior.

2. Sequence of Work

The installation of equipment shall progress so as to minimize shutdowns of the water treatment process.

3. Installation

3.1 The CONTRACTOR's installation work shall be in accordance with instructions and details shown on the equipment shop drawings and erection drawings. When the equipment is capable of being operated, the equipment manufacturer shall furnish personnel to check the equipment for correct installation and operation. The CONTRACTOR shall correct any defects in the installation noted by the Manufacturer's representative.

3.2 Furnish and install the indicated work required for this Project, as shown on the Drawings and as specified herein. All work shall be provided in compliance with the ordinances, codes, and bylaws of the governmental units having jurisdiction.

3.3 Make connections to fixtures of the same class at equal height and plumb. Fixtures shall be set at right angles to the wall, unless otherwise indicated.

4. Verification of Contract Drawings

Make connections to fixtures of the same class at equal height and plumb. Fixtures shall be set at right angles to the wall, unless otherwise indicated. Coordinate the location of inserts, hangers, and similar work with facilities required for other systems.

4. Fiberglass Reinforced Plastic (FRP) Panels

4.1 FRP panels shall be durable and impact resistant, with a class C fire rating. Panels shall be produced in a continuous laminating process. Panels shall consist of random chopped fiberglass roving reinforcement and a polyester copolymer resin mix. The front of the panels shall have a pebble pattern embossed on the surface. Color, to be determined by OWNER, shall be consistent and uniform throughout.

## Filter Building Modifications

4.2 FRP shall be attached using an adhesive recommended by the manufacturer. Strict adherence to installation guidelines is required. **The FRP shall also be attached with corrosion resistant mechanical fasteners on 12" centers.**

4.3 All trim pieces, including H-clips between each panel, shall be PVC and be provided by the same manufacturer as the FRP panels.

## 5. Paint

### 5.1. Materials

5.1.1 All paint used in this work shall be pure and of the best quality, delivered in unbroken original packages bearing the name of the manufacturer, and shall be mixed and applied in conformity with the manufacturer's specifications and directions.

### 5.2. Workmanship

5.2.1 All painting shall be done in a first-class workmanlike manner. No painting shall be performed upon damp or frosty surfaces or in wet, foggy, or freezing weather. Concrete walls must be thoroughly dry before painting.

5.2.2 All surfaces shall be brushed and cleaned off thoroughly before being painted. They shall be perfectly clean and dry where paint is applied. In the case of iron, steel, and metal work generally, all abrasions in the priming coat shall be wire brushed carefully and sand-papered smooth, removing all scales, ridges, or paint skins, and the surfaces then shall be painted the requisite number of coats as herein specified. Thickness of each coat shall be as recommended by paint manufacturer. If additional finish coats are required for proper coverage, the CONTRACTOR shall perform such painting at no additional cost to the OWNER.

5.2.3 Paint shall be spread evenly and well brushed out so that there will be no drops, runs, or sagging of materials. Drop cloths shall be used where necessary to prevent paint or other material from defacing the structures or equipment in place and upon completion of the work all paint spots shall be removed from all surfaces.

### 5.3. Items to be Painted

5.3.1 The following items shall be painted:

5.3.1.1 All interior structural steel members including beams, girders, cable bracing, rod bracing, angle bracing, purlins, base plates, anchor bolts, etc.

5.3.1.2 All proposed interior piping, valves, fittings, and pumps.

5.3.1.3 Concrete Floor, where indicated on Drawings.

5.4. Surface Preparation

5.4.1 All structural steel and piping shall be prepared in accordance with the coating system manufacturer's recommendations. All areas shall be hand cleaned. Areas of corrosion shall be power tool cleaned.

5.4.2 Concrete floor shall be prepared in accordance with the coating system manufacturer's recommendations. A concrete floor grinding machine and vacuum system shall be utilized to prepare the surface.

5.5. Coating Systems

5.5.1 For structural steel and piping, areas where power tool cleaning results in bare metal, one coat of Rust-oleum 9100 System DTM Epoxy Mastic, or approved Sherwin-Williams or Induron equivalent shall be required. All structural steel and piping shall then be painted with one coat of Rust-oleum 9800 System DTM Urethane Mastic, or approved Sherwin-Williams or Induron equivalent.

5.5.2 Concrete floor shall be painted with two coats of Sherwin-Williams Macropoxy 646 - 100 or approved Rust-oleum or Induron equivalent.

5.6. Colors

Colors shall be as selected by the OWNER.



Application  
CONTAINS  
LARGE OR OVERSIZED  
MAP(S)

RECEIVED ON:  
October 2, 2014