

PROJECT MANUAL
WATER SYSTEM REPLACEMENT
CONTRACT I
WATER LINE AND METER
REPLACEMENT AND EXTENSION

TOWN OF TILLAR, AR
PROJECT NO. DW-141

FEBRUARY 2023



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12/20/23
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**ADDENDUM NO. 1
TOWN OF TILLAR
WATER SYSTEM REPLACEMENT
CONTRACT I – WATER LINE AND METER
REPLACEMENT AND EXTENSION
23 January 2024**

INSTRUCTIONS

PROJECT MANUAL:

Section C – Davis-Bacon Wage Determination

Replace the existing Section C with the attached Section C (Updated Davis-Bacon Wage Determination).

Section D – Bid

Replace the existing pages D-2, D-3, D-4, and D-8 with the attached pages (Corrected quantities of items 7, 9, 10, and 16; added bid items 54, 55, and 56.)

Section 09900 – Painting

Insert the attached Section 09900.

PLANS

Replace the existing sheet 20 with the attached sheet 20 (Added repainting of the well house building.)

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Document A
ADVERTISEMENT FOR BIDS

Town of Tillar
P.O. Box 86
Tillar, AR 71670

Separate sealed Bids for the construction of **approximately 50,000 feet of water lines, appurtenances, and meters (Contract I), repainting and rehabilitation of a 50,000-gallon elevated storage tank (Contract II), and a mobile generator set (Contract III)** will be received by **the Town of Tillar at 106 B Street (physical), P.O. Box 86 (mailing), Tillar, AR 71670** until **1:15 p.m. on Monday, January 29, 2024** and then at said office publicly opened and read aloud.

The Contract Documents may be examined at the following locations:

Tillar Town Hall, 106 B Street, Tillar, AR
Gaunt Engineers, Inc., 3256 W. Hillsboro, El Dorado, AR 71730
www.gauntengineers.net

Copies of the Contract Documents may be obtained at the office of **Gaunt Engineers, Inc.** located at **3256 W. Hillsboro, El Dorado, AR 71730** upon **non-refundable** payment of **\$150.00** for each set.

Any contract or contracts awarded under this invitation for bids will be subject to the requirements of the Arkansas Revolving Loan Fund (RLF) Programs as described in the contract documents.

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin. Bidders on this work will be required to comply with the President's Executive Order 11246, as amended. The requirements for Bidders and Contractors under this order are explained in the specifications.

Each Bidder must comply with the requirements, terms, and conditions of the Arkansas Natural Resources Commission, the Disadvantaged, Minority and Women Business Enterprise (DBE/MBE/WBE) requirements, the Consolidated Appropriations Act of 2014 (Public Law 113-76) including the "American Iron and Steel (AIS)" requirement, Labor Standards, Equal Employment Opportunity, and the "Prohibition on certain telecommunication and video surveillance services or equipment provisions" during the performance of this contract. The Bidder commits itself to the requirements for the participation contained herein and all other requirements, terms, and conditions of these bid conditions by submitting a properly signed Bid. Each requirement listed above for the RLF programs are in the Supplemental Conditions in the Contract Documents.

**Document B
INFORMATION FOR BIDDERS**

Bids will be received by **the Town of Tillar** (herein called the "Owner") at **106 B Street (physical), P.O. Box 86 (mailing), Tillar, AR 71670** until **1:15 p.m., Monday, January 29, 2024** and then at said office publicly opened and read aloud.

Each Bid must be submitted in a sealed envelope, addressed to **the Town of Tillar** at **106 B Street (physical), P.O. Box 86 (mailing), Tillar, AR 71670**.

Each sealed envelope containing a Bid must be plainly marked on the outside as Bid for **Water System Replacement: Contract I – Water Line and Meter Replacement and Extension** and the envelope should bear on the outside the Bidder's name, address, and license number if applicable, and the name of the project for which the Bid is submitted. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the Owner at **P.O. Box 86, Tillar, AR 71670**.

The Bidders attention is called to the requirements of the Supplemental General Conditions for the Revolving Loan Fund (RLF) contained in the contract documents including but not limited to Disadvantaged, Minority and Women's Business (DBE/MBE/WBE) participation and reporting requirements as well as the "American Iron and Steel" requirement, Labor Standards, Equal Employment Opportunity, and the "Prohibition on certain telecommunication and video surveillance services or equipment". Further, Bidders will be required to submit with their Bids, a Contractor's Act of Assurance Form certifying their understanding of and compliance with the Supplemental General Conditions. In addition, post Bid completion of DBE/MBE/WBE Compliance Evaluation Forms will be required and approved before the Contract can be Awarded.

All Bids must be made on the required Bid form. All blank spaces for Bid prices must be filled in, in ink or typewritten, and the Bid form must be fully completed and executed when submitted. Only one copy of the Bid form is required.

The Owner may waive any informalities or minor defects or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within sixty days after the actual date of the opening thereof. Should there be reasons why the contract cannot be Awarded within the specified period, the time may be extended by mutual agreement between the Owner and the Bidder.

Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid schedule by examination of the site and a review of the drawings and specifications including Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or of the nature of the Work to be done.

The Owner shall provide to Bidders prior to Bidding, all information that is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The Contract Documents contain the provisions required for the construction of the Project. Information obtained from an Officer, Agent, or Employee of the Owner or any other person shall not affect the risks or obligations assumed by the Contractor or relieve the contractor from fulfilling any of the conditions of the Contract.

Each Bid must be accompanied by a Bid Bond payable to the Owner for five percent of the total amount of the Bid. As soon as the Bid prices have been compared, the Owner will return the Bonds of all except the three lowest responsible Bidders. After Bids have been opened and prior to Award, the apparent low Bidder will have fifteen business days to submit their DBE solicitation process and forms. All Bidders, as a condition of bidding, are required to document to the Owner and to the Commission that the “good faith efforts” were taken in the preparation of bids to obtain DBE/MBE/WBE participation. The Commission will give notice when the Contractor and Entity can sign the Agreement. When the Agreement is executed the Bonds of the two remaining

unsuccessful Bidders will be returned. The Bid Bond of the successful Bidder will be retained until the Payment Bond and Performance Bond have been executed and approved, after which it will be returned. A certified check may be used in lieu of a Bid Bond.

A Performance Bond and a Payment Bond each in the amount of 100 percent of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the contract.

Attorneys-in-Fact who sign Bid Bonds or Payment Bonds and Performance Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney. Attorneys-in-Fact that sign the Bonds must be licensed to conduct business in the State of Arkansas.

The party to whom the contract is Awarded will be required to execute the Agreement, and obtain the performance Bond and payment Bond within ten calendar days from the date when Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and Bond forms. In case of failure of the Bidder to execute the Agreement, the Owner may consider the Bidder in default; in which case the Bid Bond accompanying the proposal shall become the property of the Owner.

Successful Bidder must comply with the requirements of Arkansas Code Ann. §17-25-401-409 (1995) in accordance with the procedures established by the Contractors Licensing Board (Reference Supplemental General Conditions).

Successful Bidder must comply with the requirements of Act 291 of 1993 concerning trenches or other excavations five feet deep or more in accordance with OSHA standards.

The Owner within ten days of receipt of acceptable Performance Bond, Payment Bond and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute

the Agreement within such period, the Bidder may by Written Notice withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Notice to Proceed shall be issued within ten days of the execution of the Agreement by the Owner. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the ten day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

The Bidder must present satisfactory evidence that he has been regularly engaged in the type of work Bid upon, giving the length of time so engaged, and that he is fully prepared with the necessary capital, material, machinery, and expert workmen to perform the contract.

The attention of prospective Bidders is directed to Act 150 of the 1965 Acts of Arkansas, being an "Act Regulating the Practice of Contracting in the State of Arkansas". When the project presented for Bid is financed in whole or in part with State funds and is estimated to cost \$20,000.00 or more, the prospective Bidder must show evidence of license with the "Contractor's Licensing Board" for the State of Arkansas before a proposal form will be furnished.

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

A conditional or qualified Bid will not be accepted.

Award will be made to the lowest responsible Bidder.

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

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

Further, the Bidder agrees to abide by the requirements set forth in the Supplemental Conditions.

The low Bidder shall supply the names and addresses of major material Suppliers and Subcontractors when required to do so by the Owner.

Inspection trips for prospective Bidders will leave from the office of the **Town of Tillar at 106 B Street, Tillar, Arkansas.**

The ENGINEER is **Gaunt Engineers, Inc.**

The ENGINEER'S address is **3256 W. Hillsboro, El Dorado, AR 71730.**

Document C
REVOLVING LOAN FUND (RLF)
Davis Bacon Wage Determination

"General Decision Number: AR20240045 01/05/2024

Superseded General Decision Number: AR20230045

State: Arkansas

Construction Type: Heavy
HEAVY CONSTRUCTION PROJECTS (Including Water and Sewer Lines)

Counties: Arkansas, Ashley, Bradley, Chicot, Desha, Drew and Phillips Counties in Arkansas.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered	. Executive Order 14026	
into on or after January 30,	generally applies to the	
2022, or the contract is	contract.	
renewed or extended (e.g., an	. The contractor must pay	
option is exercised) on or	all covered workers at	
after January 30, 2022:	least \$17.20 per hour (or	
	the applicable wage rate	
	listed on this wage	
	determination, if it is	
	higher) for all hours	
	spent performing on the	
	contract in 2024.	

If the contract was awarded on	Executive Order 13658
or between January 1, 2015 and	generally applies to the
January 29, 2022, and the	contract.
contract is not renewed or	. The contractor must pay all
extended on or after January	covered workers at least
30, 2022:	\$12.90 per hour (or the
	applicable wage rate listed
	on this wage determination,
	if it is higher) for all
	hours spent performing on
	that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024

SUAR2015-042 01/09/2017

	Rates	Fringes
CARPENTER, Includes Form Work.....	\$ 16.41 **	3.15
LABORER: Common or General.....	\$ 10.24 **	0.00
LABORER: Pipelayer.....	\$ 11.97 **	0.00
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 16.13 **	0.00

OPERATOR: Bulldozer.....	\$ 20.10	0.00
TRUCK DRIVER: Dump Truck.....	\$ 12.85 **	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

(29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

Document D
BID

Proposal of _____ (hereinafter called "Bidder"), organized and existing under the laws of the State of _____ doing business as _____*. To the **Town of Tillar** (hereinafter called "Owner").

In compliance with your Advertisement for Bids, Bidder hereby proposes to perform all Work for the construction of **Contract I – Water Line and Meter Replacement and Extension** in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

The Contractor's Act of Assurance Form must be included in the bid proposal. The DBE/MBE/WBE Compliance Evaluation Forms must be supplied after the Low Bidder is confirmed.

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

Bidder hereby agrees to commence Work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within **240** consecutive calendar days thereafter. Bidder further agrees to pay as liquidated damages, the sum of **\$550.00** for each consecutive calendar day thereafter as provided in the Supplemental Conditions.

Bidder acknowledges receipt of the following Addendum:

* Insert "a corporation", "a partnership", or "an individual" as applicable.

BID SCHEDULE

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sums:

NOTE: Bids shall include sales tax and all other applicable taxes & fees.

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
1	3" Water Main - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	5,700	LF		
				Dollars (\$_____)	\$_____
2	4" Water Main - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	23,045	LF		
				Dollars (\$_____)	\$_____
3	6" Water Main - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	21,498	LF		
				Dollars (\$_____)	\$_____
4	8" Water Main - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	130	LF		
				Dollars (\$_____)	\$_____
5	3" Gate Valve w/Box & Conc collar, complete in place	1	EA		
				Dollars (\$_____)	\$_____
6	4" Gate Valve w/Box & Conc collar, complete in place	12	EA		
				Dollars (\$_____)	\$_____
7	6" Gate Valve w/Box & Conc collar, complete in place	55	EA		
				Dollars (\$_____)	\$_____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
8	8" Gate Valve w/Box & Conc collar, complete in place	2	EA		
				Dollars (\$_____)	\$_____
9	4" Upstream Gate Valve w/Manhole and 2 - 3/4" Corp Stops, Complete in Place	2	EA		
				Dollars (\$_____)	\$_____
10	6" Upstream Gate Valve w/Manhole and 2 - 3/4" Corp Stops, Complete in Place	1	EA		
				Dollars (\$_____)	\$_____
11	3/4" Service Line - CTS, Class 250 - Including clearing, trench, backfill, compaction and cleanup	880	LF		
				Dollars (\$_____)	\$_____
12	1" Service Line - CTS, Class 250 - Including clearing, trench, backfill, compaction and cleanup	4,400	LF		
				Dollars (\$_____)	\$_____
13	2" Service Line - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	1,220	LF		
				Dollars (\$_____)	\$_____
14	1" Corp Stop & Saddle, complete in place	87	EA		
				Dollars (\$_____)	\$_____
15	3/4" Corp Stop & Saddle, complete in place	88	EA		
				Dollars (\$_____)	\$_____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
16	Water Valve Signs, complete in place	73	EA		
				Dollars (\$_____)	\$_____
17	1" Uncased Bore - pay quantity for bore equal to pavement width plus 10', excluding carrier pipe	2,610	LF		
				Dollars (\$_____)	\$_____
18	3" Uncased Bore - pay quantity for bore equal to pavement width plus 10', excluding carrier pipe	888	LF		
				Dollars (\$_____)	\$_____
19	4" Uncased Bore - pay quantity for bore equal to pavement width plus 10', excluding carrier pipe	183	LF		
				Dollars (\$_____)	\$_____
20	6" Uncased Bore - pay quantity for bore equal to pavement width plus 10', excluding carrier pipe	1,524	LF		
				Dollars (\$_____)	\$_____
21	4" Uncased Bore for Creek Crossing - use field lock gasket, fused PVC pipe, or SDR-11 polyethylene (PE) pipe with PE-MJ transition	650	LF		
				Dollars (\$_____)	\$_____
22	6" Uncased Bore for Creek Crossing - use field lock gasket, fused PVC pipe, or SDR-11 polyethylene (PE) pipe with PE-MJ transition	25	LF		
				Dollars (\$_____)	\$_____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
23	10" Bore w/10" PVC casing for 6" water line, excluding carrier pipe	734	LF		
				Dollars (\$_____)	\$_____
24	8" Bore w/8" PVC casing for 4" water line, excluding carrier pipe	155	LF		
				Dollars (\$_____)	\$_____
25	2" Bore w/2" PVC casing for 1" service line, excluding carrier pipe	240	LF		
				Dollars (\$_____)	\$_____
26	4 1/2" Fire Hydrant Assy including 4" Gate Valve w/Box & Conc collar as shown on plans, complete in place	4	EA		
				Dollars (\$_____)	\$_____
27	5 1/4" Fire Hydrant Assy including 6" Gate Valve w/Box & Conc collar as shown on plans, complete in place	13	EA		
				Dollars (\$_____)	\$_____
28	2" Blow-Off Assembly, including post hydrant, shut-off valve, connection to main line, and appurtenances, as shown on plans, complete in place	7	EA		
				Dollars (\$_____)	\$_____
29	Water Sampling Station including 3/4" corp stop and saddle, complete in place	12	EA		
				Dollars (\$_____)	\$_____
30	8x8 Tapping Sleeve (valve paid for separately), complete in place	2	EA		
				Dollars (\$_____)	\$_____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
31	6x6 Tapping Sleeve (valve paid for separately), complete in place	1	EA		
				Dollars (\$_____)	\$_____
32	4x4 Tapping Sleeve (valve paid for separately), complete in place	1	EA		
				Dollars (\$_____)	\$_____
33	Wet Connection, complete in place	2	EA		
				Dollars (\$_____)	\$_____
34	8" Check Valve in Vault, Complete in Place	1	EA		
				Dollars (\$_____)	\$_____
35	Cut, Plug, & Abandon existing water lines	8	EA		
				Dollars (\$_____)	\$_____
36	Remove & Replace Concrete /Asphalt	898	SY		
				Dollars (\$_____)	\$_____
37	Gravel Surfacing	599	CY		
				Dollars (\$_____)	\$_____
38	Install Meter for new customer with new box, yoke, and 5/8" meter, complete in place (includes new 5/8" radio read meter and connection to system)	18	EA		
				Dollars (\$_____)	\$_____
39	Replace Meter Box, yoke, and 5/8" meter (includes new 5/8" radio read meter and reconnection to system)	30	EA		
				Dollars (\$_____)	\$_____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
40	Replace existing meter in existing box with new 5/8" radio read meter (includes reconnection to system)	125	EA		
				Dollars (\$_____)	\$_____
41	Replace existing meter with new 1" radio read meter (includes reconnection to system)	2	EA		
				Dollars (\$_____)	\$_____
42	New Meter Radio Read Software w/ Field & Office Equipment, including engagement fee (note the "Prohibition on certain telecommunications and video surveillance services or equipment" provisions)	1	LS		
				Dollars (\$_____)	\$_____
43	Billing Software	1	LS		
				Dollars (\$_____)	\$_____
44	Pipe Locator Equipment	1	LS		
				Dollars (\$_____)	\$_____
45	6" Insertion Valves	4	EA		
				Dollars (\$_____)	\$_____
46	Repair of mislocated main water line (Repair of service lines not paid for separately - to be included in other unit price items)	24	EA		
				Dollars (\$_____)	\$_____
47	Move light switch to exterior of building (building no. 1)	1	LS		
				Dollars (\$_____)	\$_____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
48	Install #24 mesh screen on vent (Well No. 1)	1	LS		
				Dollars (\$_____)	\$_____
49	Clean and Repaint Pipe Inside Well House (Well No. 1)	1	LS		
				Dollars (\$_____)	\$_____
50	Instrumentation and Remote Sensing	1	LS		
				Dollars (\$_____)	\$_____
51	Storm Water Pollution Prevention, install & maintain during construction	1	LS		
				Dollars (\$_____)	\$_____
52	Trench safety as required by OSHA (29 CFR, Part 1926, Subpart P). Contractor's Certification of Compliance will be required for each payment under this item.	1	LS		
				Dollars (\$_____)	\$_____
53	Mobilization, Project Sign, & Misc	1	LS		
				Dollars (\$_____)	\$_____
54	Repaint Interior of Well House (Well No. 1)	1	LS		
				Dollars (\$_____)	\$_____
55	Repaint Exterior of Well House (Well No. 1)	1	LS		
				Dollars (\$_____)	\$_____
56	Repair of Mislocated Water Service Line	50	EA		
				Dollars (\$_____)	\$_____
Total Bid Amount					\$_____

DEDUCTIVE ALTERNATIVE 1:

NOTE: Unit prices in deductive alternatives must be the same unit prices used in base bid.

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
1	Delete - 4" Water Main - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	717	LF		
			Dollars	(\$ _____)	\$ _____
2	Delete - 6" Water Main - Class 200, 200 psi PVC, SDR-21 - including clearing, trench, backfill & 10 gauge tracing wire & risers	2,077	LF		
			Dollars	(\$ _____)	\$ _____
3	Delete - 4" Gate Valve w/Box & Conc collar, complete in place	1	EA		
			Dollars	(\$ _____)	\$ _____
4	Delete - 6" Gate Valve w/Box & Conc collar, complete in place	6	EA		
			Dollars	(\$ _____)	\$ _____
5	Delete - Water Valve Signs, complete in place	7	EA		
			Dollars	(\$ _____)	\$ _____
6	Delete - 4" Uncased Bore - pay quantity for bore equal to pavement width plus 10', excluding carrier pipe	25	LF		
			Dollars	(\$ _____)	\$ _____
7	Delete - 6" Uncased Bore - pay quantity for bore equal to pavement width plus 10', excluding carrier pipe	28	LF		
			Dollars	(\$ _____)	\$ _____

Item No.	Item Description	Est Qty	Unit	Unit Price	Total Amount
8	Delete - 10" Bore w/10" PVC casing for 6" water line, excluding carrier pipe	120	LF		
			Dollars	(\$ _____)	\$ _____
9	Delete - Water Sampling Station including 3/4" corp stop and saddle, complete in place	2	EA		
			Dollars	(\$ _____)	\$ _____
10	Delete - Wet Connection, complete in place	2	EA		
			Dollars	(\$ _____)	\$ _____
11	Add - 2" Blow-Off Assembly, including post hydrant, shut-off valve, connection to main line, and appurtenances, as shown on plans, complete in place	1	EA		
			Dollars	(\$ _____)	\$ _____

Amount Deducted \$ _____

Reduced Bid (Base bid less Deductive Alternative 1) \$ _____

Respectfully submitted:

 Signature

 Address

 Title

 Date

License Number (if applicable) _____

SEAL - (if BID is by a Corporation)

Document E
BID BOND

Know all men by these presents, that we, the undersigned,
_____, as Principal, and
_____ as Surety, are hereby held and firmly
bound unto **the Town of Tillar**, as Owner in the penal sum of
_____ for the payment of which,
well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20 _____. The
Condition of the above obligation is such that whereas the Principal has submitted to **the Town of Tillar** a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the construction of **Water Line and Meter Replacement and Extension (Contract I)**.

Now, therefore,

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

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

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

Principal

Surety

By:_____

Important - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized in accordance with Section 16 of the Supplemental General Conditions to transact business in the State of Arkansas.

Document F
CONTRACTOR'S ACT OF ASSURANCE FORM

As the authorized agent of the individual, incorporation, or corporation (hereinafter referred to as the Contractor) bidding on or participating in a Revolving Loan Fund (RLF) financed project, I certify that I have read and understand the requirements of the RLF Supplemental General Conditions, and that the principles, agents and employees of the Contractor will comply with these requirements, including all relevant statutes and regulations issued pursuant thereto. As the authorized agent of the Contractor, I further certify that:

DBE/MBE/WBE During the bid process, and throughout the performance of the Contract, whenever subcontracts are to be awarded, I will take the six affirmative steps described in the RLF Supplemental General Conditions to use Disadvantaged, Minority and Women's Business (DBE/MBE/WBE) firms wherever possible. I will document to the borrower and the Arkansas Natural Resources Commission all efforts to secure DBE/MBE/WBE participation, including follow-up efforts, and will report to the Owner the dollar value of all DBE/MBE/WBE contracts and subcontracts awarded.

AMERICAN IRON AND STEEL I will comply with the statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States pursuant to this contract and the RLF Supplemental General Conditions. I understand that all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and I will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement as detailed in the RLF Supplemental General Conditions.

EQUAL OPPORTUNITY I will comply with all requirements of 41 CFR Chapter 60 and Executive Orders 11246 and 11375, including inclusion of all required equal opportunity clauses in each subcontract awarded in excess of \$10,000, and will furnish a similar statement from each proposed subcontractor, when appropriate. I will also comply with all Equal Employment Opportunity requirements as defined by Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975; and Section 13 of the Federal Water Pollution Control Act Amendments of 1972 regarding sex discrimination.

NONSEGREGATED FACILITIES The Contractor that I represent does not and will not maintain any facilities provided for its employees in a segregated manner, or permit its employees to perform their services at any location under the Contractor's control where segregated facilities are maintained. I will also obtain a similar certification from each subcontractor prior to the award of any subcontract exceeding \$10,000 to said subcontractor, which is not exempt from the equal opportunity clause.

LABOR STANDARDS I will comply with the Labor Standards Provisions contained in Davis-Bacon wage rates specific to this contract and the RLF Supplemental General Conditions. I understand that the aggregate wage rates paid to any employees must equal or exceed the sum total of the base rate plus any listed fringe rate. I will furnish weekly payrolls and certifications as may be required by the Owner to affirm compliance. I will also require that weekly payrolls be submitted to the Owner for all Subcontracts.

OSHA REQUIREMENTS I will comply with the Department of Labor Occupational Safety and Health Administration (OSHA) Regulations promulgated under Section 107 of the Contract Work Hours and Safety Standard Act (40 U.S.C. 327-333) in performance of the contract.

PROCUREMENT PROHIBITIONS In compliance with Executive Order 11738, Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, I certify that I will not procure goods and services from persons who have been convicted of violations of either law, if the facility that gave rise to said violations produces said goods or services.

PRESERVATION OF OPEN COMPETITION In accordance with Executive Order 13202 and its amendments, I certify that I have not discriminated against my employees or any subcontractor based upon labor affiliation or lack thereof.

RESPONSIBILITIES OF PARTICIPANTS REGARDING TRANSACTIONS (A.K.A. DEBARMENT AND SUSPENSION) I certify that I shall fully comply with Subpart C of 40 CFR Part 32, entitled "Responsibilities of Participants Regarding Transactions." I am responsible for ensuring that any lower tier covered transaction, as described in Subpart B of 40 CFR Part 32, entitled "Covered Transactions," includes a term or condition requiring compliance with Subpart C. I am responsible for further requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions. I acknowledge that failing to disclose the information required under 40 CFR 32.335 may result in the delay or negation of this assistance agreement, or pursuance of legal remedies, including suspension and debarment. I further acknowledge that I may access the Excluded Parties List System at <http://www.epls.gov>. This term and condition supersede EPA Form 5700-49, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters."

PROHIBITION ON CERTAIN TELECOMMUNICATION AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT I will comply with regulations at 2 CFR 200.216, designated as the “Prohibition on certain telecommunication and video surveillance services or equipment”, implementing section 889 of Public Law 115-232 and repeated in the RLF Supplemental General Conditions. The regulation prohibits the use of federal funds to procure, enter into, extend, or renew contracts, or obtain equipment, systems, or services that use “covered telecommunications equipment or services” identified in the regulation as a substantial or essential component of any system, or as critical technology as part of any system. I understand that all products used in this contract will meet this requirement and that I will provide further verified information, certification or assurance of compliance with this paragraph, or information necessary to this prohibition as detailed in the RLF Supplemental General Conditions.

I understand that a false statement on this certification regarding any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution. I further certify that I will obtain a similar certification for each subcontract awarded.

AUTHORIZED AGENT

CONTRACTOR NAME: _____

ARKANSAS LICENSE NO. _____

SIGNATURE: _____

DATE: _____

PRINTED NAME: _____

TITLE: _____

Document G
DBE/MBE/WBE COMPLIANCE EVALUATION FORM
SUPPLEMENTAL CONDITIONS OF THE REVOLVING LOAN FUND
(Bid Package Documentation)

Bidders are to complete this form and submit within fifteen days after the bid opening. A condition for remaining in competition for award is the satisfactory completion of this form. The undersigned submits the following data with respect to the firm's efforts to meet the Arkansas Natural Resources Commission's goal for DBE/MBE/WBE participation. If you have any questions please contact Mr. Keith Sanders, Environmental Program Manager at (501) 682-0554 or email keith.sanders@arkansas.gov.

Prime Contractors that are DBE firms are not exempt from conducting the "good faith efforts" as described in 40 CFR Part 33, Subpart C- Good Faith Efforts.

Subcontracting is to be defined as subcontracts for construction, supplies, equipment and services. It is very infrequent that a Prime Contractor can do the job without hiring for construction, equipment, supplies, and services. If Prime Contractor does not sub-contract/procure for any of the categories mentioned above, the Prime Contractor must indicate that on this form.

1. Name of Project: **Water System Replacement** Project No: **DW-141**
Contract I – Water Line and Meter Replacement and Extension

2. Name of General Contractor: _____

3. DBE/MBE/WBE Firm: _____
(Name) (Complete a separate form for each DBE/MBE/WBE to be used as a subcontractor)

(Address) (City, State, Zip Code)

(Phone Number) (Fax Number)

4. Describe Work to be performed by the DBE/MBE/WBE, provide dollar amount of the subcontract.

DOCUMENTATION OF AFFIRMATIVE STEPS TAKEN TO OBTAIN DBE/MBE/WBE PARTICIPATION

5. Documentation that DBE/MBE/WBE quotes were solicited through direct communication and documentation of responses received (Direct communication includes: faxes, phone calls, letters, e-mails). Newspaper ads/public notice ads alone will not be considered sufficient to meet the good faith effort requirements. The omission of a newspaper advertisement/public notice is not grounds for the bid to be rejected as well.

6. What sources were used to identify potential DBE/MBE/WBE firms. (Arkansas Highway and Transportation Department; Arkansas Economic Development Commission's Minority Business Development Division; U.S. Small Business Administration; other sources, please specify and provide documentation). ANRC recommends using the sources above.

7. Describe steps taken to divide work items into small tasks in an effort to maximize DBE/MBE/WBE participation.

8. List reasons for rejecting a DBE/MBE/WBE that indicated a desire to participate and/or submitted bids.

The undersigned hereby certified, having provided responses or documentation to the questions in the foregoing affirmative steps taken to obtain DBE/MBE/WBE participation, that they are true and correct to the best of her/her knowledge, information and belief.

Name of General Contractor: _____

Signature: _____

Title/Date: _____

**Document H
AGREEMENT**

This Agreement, made this _____ day of _____, 20_____, by and between **the Town of Tillar**, hereinafter called "Owner" and _____ doing business as (an individual,) or (a partnership,) or (a corporation) hereinafter called "Contractor".

Witnesseth: That for and in consideration of the payments and agreements herein after mentioned:

1. The Contractor will commence and complete the construction of **Water Line and Meter Replacement and Extension (Contract I)**.
2. The Contractor will furnish all of the materials, supplies, tools, equipment, labor and other services necessary for the construction and completion of the Project described herein.
3. The Contractor will commence the work required by the Contract Documents within _____ calendar days after the date of the Notice to Proceed and will complete the same within _____ calendar days unless the period for completion is extended otherwise by the Contract Documents.
4. The Contractor agrees to perform all of the Work described in the Contract Documents and comply with the terms therein for the sum of \$_____ or as shown in the Bid schedule.
5. The term "Contract Documents" means and includes the following:
 - (A) Advertisement for Bids
 - (B) Information for Bidders
 - (C) Davis-Bacon Wage Determination(s)
 - (D) Bid
 - (E) Bid Bond
 - (F) Agreement
 - (G) General Conditions (if applicable)

- (H) Revolving Loan Fund (RLF) Supplemental General Conditions
- (I) Supplemental Conditions
- (J) Payment Bond
- (K) Performance Bond
- (L) Notice of Award
- (M) Notice to Proceed
- (N) Contractor’s Act of Assurance
- (O) DBE/MBE/WBE Certification
- (P) Insurance
- (Q) Certificate of Owner’s Attorney
- (R) Change Order
- (S) Drawings prepared by **Gaunt Engineers, Inc.** numbered _____ through _____, and dated _____.
- (T) Specifications prepared or issued by **Gaunt Engineers, Inc.**, dated _____, 20_____
- (U) Addenda:
 - No. _____ dated _____, 20 _____
 - No. _____ dated _____, 20 _____
 - No. _____ dated _____, 20 _____
 - No. _____ dated _____, 20 _____
 - No. _____ dated _____, 20 _____
 - No. _____ dated _____, 20 _____

- 6. The Owner will pay to the Contractor in the manner and at such times as set forth in the Supplemental Conditions such amounts as required by the Contract Documents.
- 7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.
- 8. This contract shall not be effective unless and until approved by the Natural Resources Division, a Division of the Arkansas Department of Agriculture.

In witness whereof, the parties hereto have executed or caused to be executed by their duly authorized official, this Agreement in **five (5)** copies each of which shall be deemed an original on the date first above written.

(Seal) **Owner** Town of Tillar
Entity

Attest: _____
Witness

By: _____

(Name typed)

Robert Allen Evans

(Name typed)

Title

Mayor

Title

(Seal) **Contractor** _____

Attest: _____
Witness

By: _____

(Name typed)

(Name typed)

Title

Address

Employee Identification Number

**Document I
PAYMENT BOND**

Know All Persons By These Presents: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called
(Corporation, Partnership, or Individual)

Principal and _____
(Name of Surety)

hereinafter called Surety, are held and firmly bound unto **the Town of Tillar, P.O. Box 86, 106 B Street, Tillar, AR 71670**

hereinafter called Owner and unto all persons, firms and corporations who or which may furnish labor, or who furnish materials to perform as described under the contract and to their successors and assigns in the total aggregate penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

The Condition of This Obligation is such that whereas, the Principal entered into a certain contract with the Owner dated the _____ day _____ of 20 _____, a copy of which is hereto attached and made a part hereof for the construction of: **Water System Replacement: Contract I – Water Line and Meter Replacement and Extension.**

Now, therefore, if the Principal shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in such contract, and any authorized extensions or modification thereof, including

all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such Work, and for all labor cost incurred in such Work including that by a Subcontractor, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

Provided, that beneficiaries or claimants hereunder shall be limited to the Subcontractors, and persons, firms and corporations having a direct contract with the Principal or its Subcontractors.

Provided, further, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this contract or to the Work or to the Specifications.

Provided, further, that no suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the Owner or the Surety above named within ninety days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration of one (1) year following the date of which Principal ceased work on said Contract, is

being understood, however, that if any limitation embodied in the Bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

Provided, further, that it is expressly agreed that this Bond shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than twenty percent, so as to bind the Principal and the Surety to the full and faithful performance of the Contract as so amended. The term "Amendment", whenever used in this Bond and whether referring to this Bond, the contract or the loan Documents shall include any alteration, addition, extension or modification of any character whatsoever.

Provided, further, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Witness whereof, this instrument is executed in **five (5)** counterparts, each of which shall be deemed an original, this the _____ day of _____ 20 _____.

(Corp. Seal) **Contractor** _____ **Principal**

Attest: _____
Witness as to Principal
(If Corp. then Corp. Sec.)

By: _____
(If Corp then CEO)

Address

Address

Surety _____

Attest: _____
Witness as to Surety

By: _____
Attorney-in-Fact

Address

Address

Note: Date of Bond must not be prior to date of Contract.

If Contractor is partnership, all partners should execute Bond.

Important: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be in accordance with Section 16 of the RLF Supplemental General Conditions and be authorized to transact business in the State of Arkansas.

Document J
PERFORMANCE BOND

Know All Persons By These Presents: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called
(Corporation, partnership, or Individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto **the Town of Tillar, P.O. Box 86,
106 B Street, Tillar, AR 71670**

hereinafter called Owner in the total aggregate penal sum of _____
Dollars (\$ _____) in lawful money of the United States, for the payment of
which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that whereas, the Principal entered into a certain contract
with the Owner dated the _____ day of _____ 20____, a copy of which is hereto
attached and made a part hereof for the construction of:

**Water System Replacement: Contract I – Water Line and Meter Replacement and
Extension**

Now, therefore, if the Principal shall well, truly and faithfully perform its duties, all the
undertakings, covenants, terms, conditions, and agreements of said contract during the original
term thereof, and any extensions thereof which may be granted by the Owner with or without
notice to the Surety and during the one year guaranty period and if the Principal shall satisfy all

claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

Provided, further, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to Work to be performed thereunder or the Specifications accompanying same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications.

Provided, further, that it is expressly agreed that the Bond shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than twenty percent, so as to bind the Principal and the Surety to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this Bond, and whether referring to this Bond, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

Provided, further, that no final settlement between the Owner and the Principal shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The Owner is the only beneficiary hereunder.

In Witness Whereof, this instrument is executed in **five (5)** counterparts, each one of which shall be deemed an original, this the _____ day of _____ 20 _____.

(Corp. Seal)

Contractor _____
Principal

Attest: _____
Witness as to Principal
(If Corp. then Corp. Sec.)

By: _____
(If Corp then CEO)

Address

Address

Surety _____

Attest: _____
Witness as to Surety

By: _____
Attorney-in-Fact

Address

Address

Note: Date of Bond must not be prior to date of Contract.

If Contractor is partnership, all partners should execute Bond.

Important: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be in accordance with Section 16 of the RLF Supplemental General Conditions and be authorized to transact business in the State of Arkansas.

Document K
Insurance

(Insert Insurance package here)

**Document L
NOTICE OF AWARD**

To: _____

Project Description: Town of Tillar Water System Replacement: Contract I – Water Line and Meter Replacement and Extension

The Owner 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 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 _____.

Town of Tillar
Owner

By _____

Title **Mayor**

Acceptance of Notice

Receipt of the above Notice of Award is hereby acknowledged by

this the _____ day of _____ 20 _____

By _____

Title _____

Document M
NOTICE TO PROCEED

To: _____ Date: _____

Project: **Water System Replacement**

Contract I – Water Line and Meter

Replacement and Extension

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_____.

Town of Tillar
Owner

By _____
Title **Mayor**

Acceptance of Notice

Receipt of the above Notice to Proceed
is hereby acknowledged by

this the _____, 20_____

By _____
Title _____

Employer Identification
Number _____

Document N
CERTIFICATE OF OWNER'S ATTORNEY

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

I have examined the attached contract(s), insurance, and performance and payment bond(s), and I am of the opinion that each of the aforesaid agreements, once validly executed, constitutes a valid and legally binding obligation upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

Name: _____

Date: _____

REVOLVING LOAN FUND (RLF) SUPPLEMENTAL GENERAL CONDITIONS

1. Project Funding
2. Supersession
3. Definitions
4. Additional Instructions & Detail Drawings
5. Drawings & Specifications
6. Land & Rights-of-Way
7. Bidding and Contract Award
8. American Iron and Steel (AIS)
9. Disadvantaged, Minority, Women’s Business Enterprises
10. Equal Employment Opportunity Clause
11. Labor Standards
12. Responsibilities of Participants Regarding Transactions (A.K.A. Debarment and Suspension)
13. Procurement Prohibitions
14. Substitutions
15. Insurance
16. Contract Security
17. Assignments
18. Indemnification
19. Separate Contracts
20. Subcontracting
21. Pre-Construction Conference
22. Schedules, Reports & Records
23. Job Bulletin Board
24. Shop Drawings
25. Materials, Services & Facilities
26. Safety Standards
27. Protection of Lives and Property
28. Protection of Work, Property, and Persons
29. Protection of the Environment
30. Archeological, Historical, and Cultural Remains
31. Storm Water Permit Requirements
32. Engineer’s Authority
33. Owner’s Protection from Contractor’s Actions
34. Inspection & Testing
35. Supervision by Contractor
36. Payment to Contractor
37. Acceptance of Final Payment as Release
38. Cleanup and Corrections
39. Taxes
40. State Tax Exemption
41. Operation and Maintenance Manual
42. Changes in the Work
43. Subsurface Conditions
44. Correction of Work
45. Surveys, Permits, Regulations
46. Time for Completion & Liquidated Damages
47. Suspension of Work, Termination, & Delay
48. As-Built Drawings
49. Guarantee
50. Patents
51. Conflicts of Interest
52. Arbitration by Mutual Agreement
53. Gratuities
54. Prohibition on Telecommunication and Video Surveillance Services or Equipment
- Appendix A Labor Standards Provisions, Attachments 1 & 2
- Appendix B Equal Employment Opportunity Provisions, Title 41, Chapter 60
- Appendix C 40 CFR Part 33 Subpart C: Good Faith Efforts
- Appendix D. Memo: Implementation of American Iron and Steel (AIS)
- Appendix E. Memo: Prohibition on Certain Telecommunication and Video Surveillance Services or Equipment in the SRF Programs

1. PROJECT FUNDING

These Supplemental General Conditions are based on detailed, specific guidance provided by the United States Environmental Protection Agency (US EPA).

In accordance with Title XV and XVI, the Arkansas Natural Resources Commission (Commission) and the Arkansas Development Finance Authority (ADFA) is not a partner, joint venture or in any way party to the construction contract. The Recipient and its Contractors shall release and hold harmless the officers and employees of the Commission and ADFA from claims arising in connection with the design, construction and operation of the project including any matter due solely to the Contractor or Borrowers negligence.

2. SUPERSESSSION

These Supplemental General Conditions supersede any conflicting provisions of the Contract Documents.

3. DEFINITIONS

Wherever used in the Contract Documents, the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:

- A. **Addenda** - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by additions, deletions, clarifications, or corrections.
- B. **Bid** - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- C. **Bidder** - Any person, firm or corporation submitting a Bid for the Work.
- D. **Bonds** - Bid, Performance, and Payment Bonds and other instruments of surety, furnished by the Contractor and the Contractor's surety in accordance with the Contract Documents.
- E. **Change Order** - A written order to the Contractor authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time.
- F. **Commission** – The Arkansas Natural Resources Commission.
- G. **Contract Documents** - The contract, including Advertisement for Bids, Information for Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Change Order, Drawings, Specifications, General Conditions, Supplemental General Conditions, and Addenda.
- H. **Contract Price** - The total monies payable to the Contractor under the terms and conditions of the Contract Documents.
- I. **Contract Time** - The number of calendar days stated in the Contract Documents for the completion of the Work.
- J. **Contractor** - The person, firm or corporation with whom the Owner has executed the Agreement.
- K. **Drawings** - The parts of the Contract Documents, which show the characteristics, and scope of the Work to be performed and which have been prepared or approved by the Engineer.

- L. **Engineer** - The person, firm, or corporation named as such in the Contract Documents.
- M. **Field Order** - A written order effecting a change in the Work not involving an adjustment in the Contract Price, an extension of the Contract Time, or a change affecting the overall integrity of the design of the project issued by the Engineer, not the Engineer's Resident Inspector, to the Contractor during construction.
- N. **Notice of Award** - The written notice of the acceptance of the Bid from the Owner to the successful Bidder.
- O. **Notice to Proceed** - Written communication issued by the Owner to the Contractor authorizing him/her to proceed with the Work and establishing the date for commencement of the Work.
- P. **Owner** - A public or quasi-public body or authority, corporation, association, partnership, or an individual for whom the Work is to be performed.
- Q. **Project** - The undertaking to be performed as provided in the Contract Documents.
- R. **Resident Project Representative** - The authorized representative of the Owner who is assigned to the Project site or any part thereof.
- S. **Shop Drawings** - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, Supplier or distributor, which illustrates how specific portions of the Work shall be fabricated or installed.
- T. **Specifications** - A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- U. **Subcontractor** - An individual, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.
- V. **Substantial Completion** - That date certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it is intended.
- W. **Additional Supplemental General Conditions** - Modifications to Supplemental General Conditions required by a State agency for participation in the Project and approved by the agency in writing prior to inclusion in the Contract Documents, or such requirements that may be imposed by applicable state laws.
- X. **Supplier** - Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.
- Y. **Work** - All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in the Project.
- Z. **Written Notice** - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the Work.

4. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

- A. The Contractor may be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the Work required by the Contract Documents.
- B. The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detailed drawings and instructions.

5. DRAWINGS AND SPECIFICATIONS

- A. The intent of the Drawings and Specifications is that the Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental work necessary to complete the Project in an acceptable manner, ready for use, occupancy or operation by the Owner.
- B. In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over general Drawings.
- C. Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.
- D. In the case of defective Specifications for which the Owner is responsible, the equitable adjustment shall include any increased cost the Contractor reasonably incurred in attempting to comply with those defective Specifications.

6. LAND AND RIGHTS-OF-WAY

- A. Prior to issuance of Notice to Proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the Work to be performed pursuant to the Contract Documents, unless otherwise mutually agreed.
- B. The Owner shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.
- C. The Contractor shall provide at its own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

7. BIDDING AND CONTRACT AWARD

- A. Prospective Bidders are advised that other sections of these Supplemental General Conditions describe requirements pertaining to bidding and the performance of the RLF funded contract. The Supplemental General Conditions should be thoroughly reviewed by prospective Bidders prior to the preparation and submission of bids.

- B. Awards shall be made only to the lowest responsive, responsible Contractors possessing the ability to perform successfully under the terms and conditions of the proposed procurement. Bidders are required to comply with the requirements of these Supplemental General Conditions in the preparation and submission of bids. Failure by the bidder to comply with the requirements outlined herein may result in the rejection of the bid as non-responsive.
- C. Bidders shall submit with the bid proposal an executed Contractor’s Act of Assurance form as provided in these contract documents. Through execution of this form, the Bidder warrants its understanding of and compliance with these Supplemental General Conditions and all relevant requirements pertaining to the RLF funded work. In addition, each prime Contractor is required to submit an executed Contractor’s Act of Assurance form to the Owner for each subcontract awarded above \$2,000.00.
- D. The information described below shall be submitted to the Commission by the Owner for review and approval within thirty days of bid opening. Construction contracts will not be Awarded without Commission concurrence.
- i. Proposal of the lowest responsive responsible Bidder.
 - ii. Bid tabulation showing all bids and bid opening date.
 - iii. Recommendation of Award of contract by Engineer.
 - iv. Clear Site Certificate without exceptions.
 - v. Certified copies of the advertisements for bids.
 - vi. Bid bond for and name of Surety Company that will underwrite the Payment and Performance Bonds for the lowest responsive responsible Bidder.
 - vii. Itemized bid breakdown of lump sum bid from lowest responsive responsible Bidder (if applicable).
 - viii. Resume(s) of the proposed resident inspector(s).
 - ix. Contractors Act of Assurance Form
 - x. DBE/MBE/WBE documentation from lowest responsive responsible Bidder within fifteen days of bid opening.

Items (vi.), (vii.), (viii), (ix.), and (x.) shall be submitted by the lowest responsive responsible Bidder to the Owner within fifteen days of bid opening for transmittal to the Commission.

- E. If the Owner has not already enacted a written protest procedure to handle and resolve disputes relating to the award of contracts, the Owner will follow the process below upon receipt of a bid protest:
- i. Bid protests may be filed by an “interested party.” Prior to a bid submittal deadline, these persons include any party who declares an interest in the solicitation. Following the bid submittal deadline, interested parties include only bidders who submitted a bid or response to the solicitation.
 - ii. The written protest shall specify the reasons and facts upon which the protest is based; specific portions of the documents or statutes that form the basis of the protest; and the name, address, and telephone number of the party representing the Bidder.

- iii. The protest must be filed in writing with the Owner at the address below:

Attn: _____

_____,AR_____

- iv. The protest must be filed with the Owner before 5 p.m. and no later than five business days after the date of the Bid opening.
- v. Owner must disclose all bid protests to the Commission immediately.
- vi. Owner will investigate the basis for the bid protest and analyze the facts. Owner will notify Bidder whose bid is the subject of the bid protest of evidence presented in the bid protest and evidence found as a result of the investigation, and, if deemed appropriate, afford Bidder an opportunity to rebut such evidence, and permit Bidder to present evidence that it should be allowed to perform the work. If deemed appropriate by Owner, an informal hearing will be held.
- vii. Owner will issue a written decision within 15 days following receipt of the bid protest, unless factors beyond Owner's reasonable control prevent such a resolution, in which event such decision will be issued as expeditiously as circumstances reasonably permit. The decision will state the reasons for the action taken by Owner. A copy of the decision will be furnished to the protestor, the Commission, the Bidder whose bid is the subject of the bid protest, and all Bidders affected by the decision. A Bidder is affected by the decision on a bid protest if a decision on the protest could have resulted in the Bidder not being the lowest responsible and responsive Bidder for the contract.

8. AMERICAN IRON AND STEEL (AIS)

The Contractor acknowledges to and for the benefit of the Owner and the Commission that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and the Commission that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the Commission. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Commission to recover as damages against the Contractor any loss, expense, or cost (including without

limitation attorney’s fees) incurred by the Owner or Commission resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Commission or any damages owed to the Commission by the Owner). While the Contractor has no direct contractual privity with the Commission, as a lender to the Owner for the funding of its project, the Owner and the Contractor agree that the Commission is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Commission. A copy of the EPA Memorandum implementing the American Iron and Steel requirement and its procedures is attached as Appendix D to these Supplemental General Conditions.

9. DISADVANTAGED, MINORITY, AND WOMEN’S BUSINESS ENTERPRISES

Whenever subcontracts are solicited, the Contractor is required to take affirmative steps (known as “good faith efforts”) to assure that disadvantaged business enterprises (DBE), which includes small and minority and women’s business enterprises (MBE/WBE) as well, are used when possible as sources of materials, supplies, equipment, construction activities and professional services. DBE utilization is authorized by 40 CFR Parts 30, 31, 33, 35, and 40, OMB Circular A-102, and Executive Orders 11625, 12432 and 12138.

The Contractor and Loan Recipient shall at a minimum, take the following affirmative actions, known as “good faith efforts” in the procurement of subcontracts for construction, equipment, services, and supplies:

- i. Ensure DBE firms are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities and include small, minority and women's businesses on solicitation lists;
- ii. Assure that small, minority and women's businesses are solicited whenever they are potential sources;
- iii. Divide total requirements, when economically feasible, into small tasks or quantities to permit maximum participation by small, minority and women's businesses;
- iv. Establish delivery schedules, when the requirements of the work permit, which will encourage participation by small, minority and women's businesses;
- v. Use the services of the Small Business Administration and the Office of Minority Business Enterprise of the U.S. Department of Commerce, AHTD and AEDC as appropriate.
- vi. Continue the above steps, including follow-up contact as necessary, throughout the performance of the contract.

Prime Contractors must also follow the steps indicated below in the paragraph entitled “DBE/MBE/WBE Requirements Prior to Award” and all other instructions of this document.

DBE/MBE/WBE Requirements Prior to Award: All Bidders, as a condition of bidding, are required to document to the Owner and to the Commission that the “good faith efforts” were taken in the preparation of bids to obtain DBE/MBE/WBE participation. Contractors,

including DBE Prime Contractors, must conduct the “six good faith efforts” as well. Steps for Compliance are as follows:

- i. Solicit DBE/MBE/WBE quotes through direct solicitation communication, document that this was done, and submit within fifteen days of the bid opening. Examples of direct solicitation communication that must be conducted by the low bidder are: faxes, letters, phone calls, and emails. Indicate the source of the DBE/MBE/WBE list(s) used. Sources of DBE Certified Lists are listed below. Newspaper Advertisements/Public Notices alone will not meet the required DBE solicitation efforts.
- ii. Document efforts and responses received.
- iii. Document contracts awarded, or intent to award, and indicate whether the contract is with a DBE/MBE or WBE certified firm.
- iv. Document the basis on which the subcontractor/supplier was selected and/or rejected for all contracts awarded.

Note: Subcontracts include: supplies, services, equipment, and construction activity.

If the Primary Contractor states that they can complete the entire project using only in-house services and supplies, then the Contractor must indicate they will not use a subcontractor or procure supplies, services, and equipment on the DBE Compliance Evaluation Form and shall write a letter to that effect to Keith Sanders, DBE Coordinator. Note, this occurs very infrequently.

If more information is needed please feel free to contact the Division’s DBE Coordinator Keith Sanders at (501) 682-0554.

Required Form: These forms are to be submitted within fifteen days of the bid opening.

- DBE Compliance Evaluation Form Supplemental Conditions of the Revolving Loan Fund. (This form is numbered RLF-96 for CWRLF projects.) This form is to be completed and submitted within fifteen days of the bid opening.
- EPA Forms: 6100-2; 6100-3; and 6100-4

Lists of DBE/MBE/WBE firms are available from:

- Arkansas Highway and Transportation Department, Programs and Contracts Division; 10324 I-30; Post Office Box 2261; Little Rock, Arkansas 72203, Phone: (501) 569-2259 www.ahtd.state.ar.us/contract/program/letting
- Arkansas Economic Development Commission, Small and Minority Business Team; One Capitol Mall; Little Rock, Arkansas 72201; Phone: (501) 682-6105 <http://www.arkansasedc.com>.
- Arkansas Small Business Administration, Business Opportunity Section; 2120 Riverfront Drive, Suite 100; Little Rock, Arkansas 72202-1747; Phone: (501) 324-7379; <http://pro-net.sba.gov/> or <http://www.ccr.gov>.

A copy of 40 CFR Part 33, Subpart C- Good Faith Efforts is attached to these Supplemental General Conditions.

DBE/MBE/WBE Reporting Requirements: In addition to the reporting and documentation requirements during bidding, the Contractor is required to report to the Owner within fifteen days of the end of each calendar quarter, or to the Division as requested, all contracts awarded to DBE/MBE/WBE firms throughout the life of the contract, including the one year Project Performance Period. The Owner is required to report to the Division within thirty days of the end of each calendar quarter, all contracts awarded by the Owner and subcontracts awarded by the Owner's Contractors to DBE/MBE/WBE firms. In accordance with 40 CFR 35, Subpart K, the Division must report to the Environmental Protection Agency all DBE/MBE/WBE participation in the RLF program.

10. EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, creed, sex, age, marital status, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, creed, sex, age, marital status, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to furnish and post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this equal employment opportunity clause.
- B. The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, creed, sex, age, marital status, or national origin.
- C. In the event of the Contractor's noncompliance with the equal employment opportunity clause of this contract or with any rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part.
- D. The Contractor shall include the provisions of subparagraph's (A) through (C) in every subcontract or purchase order involved with this contract.
- E. The Contractor or any Subcontractor shall have an affirmative action plan which declares that it does not discriminate on the basis of race, color, creed, national origin, sex, marital status, or age and which specifies goals and target dates to assure the implementation of that plan. The Owner shall establish procedures to assure compliance with this requirement by the Contractor and to assure that suspected or reported violations are promptly investigated.
- F. The Contractor and Subcontractors supplying materials, equipment and/or labor must comply with the Civil Rights Act of 1964 as amended (42 U.S.C. 2000d et seq.), Section 504 of the Rehabilitation Act of 1973 as amended (29 U.S.C. 794), Section 13 of the

Federal Water Pollution Control Act Amendments of 1972 regarding sex discrimination (Public Law 92-500), and the Age Discrimination Act of 1973.

The Contractor and all Subcontractors shall provide equal employment opportunity for all qualified applicants and all contractor solicitations for employees must contain the Equal Employment Opportunity statement. The Prime Contractor must assure Subcontractor compliance with the Civil Rights Act for each subcontract by including the Act of Assurance form and these Supplemental General Conditions in each Subcontract in excess of \$10,000. Applicable Equal Employment Opportunity regulations and Nondiscrimination provisions are described in the Appendix to these Supplemental General Conditions.

11. LABOR STANDARDS

The Contractor and all Subcontractors awarded subcontracts shall pay all laborers and mechanics employed on the project not less than the prevailing wage rates, as determined by the United States Secretary of Labor, in accordance with the Davis-Bacon Act as provided for in the Supplemental General Condition's Appendix A.

The wage decision identifies job classifications and minimum wages to be paid to all workers. Payrolls must be submitted weekly by the Contractor and all non-exempt Subcontractors to the Owner showing each worker's name, address, job classification, hourly rate of pay, daily regular and overtime hours, gross and net pay, and any fringe benefits where applicable. All workers are required to receive overtime pay in any week in which the hours worked exceed 40 hours per work week. Overtime is paid at a rate not less than 1 and 1/2 times the worker's base rate of pay.

The Owner is responsible for monitoring contractor compliance with Davis-Bacon Act requirements of Appendix A. The Owner's responsibilities will include, but not be limited to, payroll review for compliance, maintain payroll files, and conduct on-site interviews with the Contractor's employees to verify payroll accuracy. The Owner will provide the Commission a letter with each pay request certifying wages, through payroll review and employee interviews, met the Davis-Bacon Requirements of this contract. Copies of completed interviews will be forwarded to the Commission.

**12. RESPONSIBILITIES OF PARTICIPANTS REGARDING TRANSACTIONS
(A.K.A. DEBARMENT AND SUSPENSION)**

Individuals or organizations that have been debarred or excluded from participating in Federal Assistance programs under 40 CFR Part 32 are prohibited from participating in the RLF program. This prohibition applies for every contract and subcontract for materials, supplies, equipment, and services. Contractors and Subcontractors shall execute the Contractors Act of Assurance Form as provided in the Contract Documents certifying compliance with 40 CFR Part 32.

13. PROCUREMENT PROHIBITIONS

As required by Executive Order 11738, Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, RLF loan recipients, Prime Contractors and Subcontractors are

prohibited from procuring goods and services from persons who have been convicted of violations of either law if the goods or services are to be produced by the facility that gave rise to the violation.

14. SUBSTITUTIONS (of “or Equal”)

All RLF procurement transactions shall be conducted in a manner that promotes maximum free and open competition. Whenever a material, article, or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered for substitution. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article or piece of equipment is of equal substance and function to that specified, the Engineer may approve its substitution and use by the Contractor. Any cost differential shall be deductible from the Contract Price and the Contract Documents shall be appropriately modified by Change Order. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the Project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time.

15. INSURANCE

- A. The Contractor shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of, or result from, the Contractor’s execution of the Work, whether such execution be by the Contractor, any Subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:
- i. Claims under worker's compensation, disability benefit and other similar employee benefit acts;
 - ii. Claims for damages because of bodily injury, occupational sickness or disease, or death of employees;
 - iii. Claims for damages because of bodily injury, sickness or disease, or death of any person other than employees;
 - iv. Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by any other person; and
 - v. Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.
- B. Certificates of Insurance acceptable to the Owner and the Commission shall be filed with the Owner and the Commission prior to commencement of the Work. Each insurance policy shall contain a clause providing that it shall not be canceled by the insurance company without written notice to the Owner and the Commission of intention to cancel that is in accordance with Arkansas Code Annotated §23-66-206. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless

at least fifteen days prior written notice has been given to the Owner and the Commission. The Insurance shall be made by an agent licensed by the Insurance Commissioner of the State of Arkansas to represent the surety company executing the bonds. Furthermore, the Commission will be a "Certificate Holder" and the words "will endeavor" must be removed from the insurance form.

- C. The Contractor shall procure and maintain, at the Contractor's own expense, during the Contract Time, liability insurance as hereinafter specified:

Contractor's General Public Liability and Property Damage Insurance including vehicle coverage issued to the Contractor and protecting the Contractor from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the Contract Documents, whether such operations be by the Contractor or by any Subcontractor employed by the Contractor or anyone directly or indirectly employed by the Contractor or by a Subcontractor employed by the Contractor. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom sustained by any one person in any one accident; and a limit of liability of not less than \$2,000,000 aggregate for any such damage sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damage sustained by two or more persons in any one accident.

- D. The Contractor shall furnish umbrella liability coverage, and keep it in effect during the term of the contract which provides excess limits over the primary coverages. The minimal amount of coverage will be determined by the Risk Management Division of the Arkansas Insurance Department.

- E. The Contractor shall procure and maintain, at the Contractor's own expense, during the Contract Time, in accordance with the provisions of the laws of the State in which the Work is performed, Worker's Compensation Insurance, including occupational disease provisions, for all of the Contractor's employees at the site of the Project and in case any Work is sublet, the Contractor shall require such Subcontractor similarly to provide Worker's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this contract at the site of the Project is not protected under Worker's Compensation statute, the Contractor shall provide, and shall cause each Subcontractor to provide, adequate and suitable insurance for the protection of its employees not otherwise protected.

- F. The Contractor shall secure, if applicable, "All Risk" type Builder's Risk Insurance for Work to be performed. Unless specifically authorized by the Owner, the amount of such insurance shall not be less than the Contract Price totaled in the Bid. The policy shall cover not less than the losses due to fire, explosion, hail, lightening, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the Contract Time, and until the

Work is accepted by the Owner. The policy shall name as the insured the Contractor, and the Owner.

16. CONTRACT SECURITY

- A. The Contractor shall within ten days after the receipt of the Notice of Award furnish the Owner and the Commission with a Performance Bond and a Payment Bond in penal sums equal to the amount of the Contract Price, conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of the Contract Documents, and upon the prompt payment by the Contractor to all persons supplying labor and materials in the prosecution of the Work provided by the Contract Documents. Such Bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the State in which the Work is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570, provided that the contract amount shall not exceed the underwriting limitation listed for the surety in Circular 570. For contracts in excess of \$100,000.00, the Bonds shall be issued by a Bonding Company by the A.M. BEST Rating Book as follows:
- i. contracts in excess of \$100,000.00, but less than \$1,000,000.00 - "B+" rating or higher and contract amount may not exceed 2.0% of the policyholder's surplus.
 - ii. contracts in excess of \$1,000,000.00 - "A" rating or higher and contracts may not exceed 2.0% of the policyholder's surplus.
- B. In addition, the Bonds shall be executed by an Agent licensed by the Insurance Commissioner of the State of Arkansas to represent the surety company executing the bonds. The mere countersigning of a bond will not be sufficient. The Agent shall file with the bonds its Power of Attorney. The expense of these Bonds shall be borne by the Contractor. If at any time a surety on any such Bond is declared bankrupt or loses its right to do business in the State of Arkansas or is removed from the above list of Surety Companies, the Contractor shall notify the Owner, Engineer, and the Commission and substitute an acceptable Bond (or Bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner and Commission. The Contractor shall pay the premiums on such Bond. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable Bond to the Owner and the Commission

17. ASSIGNMENTS

The Contractor shall not sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of any right, title or interest therein, or any obligations thereunder, without written consent of the Owner.

18. INDEMNIFICATION

- A. The Contractor will indemnify and hold harmless the Owner and the Engineer and their agents and employees from and against all claims; damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the Work, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction or tangible property including the loss of use resulting

therefrom; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, and Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

- B. In any and all claims against the Owner or the Engineer, or any of their agents or employees, by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under worker's compensation acts, disability benefits acts or other employee benefits acts.
- C. The obligation of the Contractor under this paragraph shall not extend to the liability of the Engineer, its agents or employees arising out of the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs or Specifications.

19. SEPARATE CONTRACTS

- A. The Owner reserves the right to let other contracts in connection with this Project. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their Work, and shall properly connect and coordinate the Work with theirs. If the proper execution or results of any part of the Contractor's Work depends upon the Work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such Work that render it unsuitable for such proper execution and results.
- B. The Owner may perform additional Work related to the Project or the Owner may let other contracts containing provisions similar to these. The Contractor will afford the other Contractors who are parties to such contracts (or the Owner, if the Owner is performing the additional Work) reasonable opportunity for the introduction and storage of materials and equipment and the execution of Work, and shall properly connect and coordinate the Work with theirs.
- C. If the performance of additional Work by other Contractors or the Owner is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to the Contractor prior to starting any such additional Work. If the Contractor believes that the performance of such additional Work by the Owner or others involves it in additional expense or entitles it to an extension of the Contract Time, the Contractor may make a claim thereof as provided in Sections 15 and 16.

20. SUBCONTRACTING

- A. The Contractor may utilize the services of specialty Subcontracts on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors.
- B. The Contractor shall not award Work to Subcontractor(s), in excess of fifty percent of the Contract Price, without prior written approval of the Owner.

- C. The Contractor shall be fully responsible to the Owner for the acts and omissions of its Subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by the Contractor.
- D. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the Work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.
- E. Nothing contained in this Contract shall create any contractual relationship between any Subcontractor and the Owner.

21. PRE-CONSTRUCTION CONFERENCE

A Pre-Construction Conference (PCC) will be held following the RLF loan closing, the review of bid documents by the Commission, and the Award of the construction contract(s). Work orders will not be issued until after the PCC is held and the Contractor has furnished an acceptable completion schedule as described by these Supplemental General Conditions. The PCC shall be attended by the Owner, Engineer, Contractor(s), and representatives of the Commission. The purpose of the conference will be to define the roles and responsibilities of the Owner, the Commission, the Engineer and all Contractors during the performance of the Contract.

22. SCHEDULES, REPORTS AND RECORDS

- A. The Contractor shall submit to the Owner and the Engineer such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the Contract Documents for the Work to be performed. One copy of the up-to-date schedule shall be maintained at the job site.
- B. Prior to the first partial payment estimate, the Contractor shall submit construction progress schedules showing the order in which the Contractor proposes to carry on the Work, including dates at which the various parts of the Work will be started, estimated date of completion of each part and, as applicable:
 - i. The dates at which special detailed drawings will be required; and
 - ii. Respective dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.
- C. The Contractor shall also submit a schedule of payments that the Contractor anticipates will be earned during the course of the Work that must be updated each month.

23. JOB BULLETIN BOARD

The Contractor shall maintain a weather-tight job bulletin board in an area frequented by the Contractor's employees for the duration of construction. The job bulletin board shall display at a minimum a copy of the Davis-Bacon Wage Decision, a Davis-Bacon poster, a notice to employees concerning minimum wage requirements, Equal Employment

Opportunity (Labor Standards) information, and a notice to labor unions as applicable. A copy of the construction schedule (i.e. critical path chart) is to be placed on the job bulletin board and updated monthly, showing project progress.

24. SHOP DRAWINGS

- A. The Contractor shall provide Shop Drawings as may be necessary for the prosecution of the Work as required by the Contract Documents. The Engineer shall promptly review all Shop Drawings. The Engineer's approval of any Shop Drawings shall not release the Contractor from responsibility for deviations from the Contract Documents. The approval of any Shop Drawings, which substantially deviates from the requirement of the Contract Documents, shall be evidenced by a Change Order.
- B. When submitted for the Engineer's review, Shop Drawings shall bear the Contractor's certification that he has reviewed, checked and approved the Shop Drawings and that they are in conformance with the requirements of the Contract Documents.
- C. Portions of the Work requiring Shop Drawings or submission of samples shall not begin until the Shop Drawings or submissions have been approved by the Engineer. A copy of each approved Shop Drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

25. MATERIALS, SERVICES AND FACILITIES

- A. It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, lights, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete and deliver the Work within the specified time.
- B. Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection. Materials not located in or near the project site will not be eligible for re-imburement.
- C. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the Manufacturer.
- D. Materials, supplies, and equipment shall be in accordance with samples submitted by the Contractor and approved by the Engineer.
- E. Materials, supplies or equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the Seller.

26. SAFETY STANDARDS

- A. The Contractor is responsible for complying with the Department of Labor Safety and Health Regulations promulgated under Section 107 of the Contract Work Hours and Safety

Standard Act (40 U.S.C. 327-333). The Contractor shall not require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety, as determined under construction safety and health standards promulgated by regulations of the Secretary of Labor.

Job site situations which pose an immediate and serious threat to life or safety will be referred to the Occupational Safety and Health Administration (OSHA).

- B. Act 291 of the 1993 Arkansas General Assembly applies to all public improvement construction projects that involve any trench or excavation which equals or exceeds five feet in depth. Beginning March 1, 1993, Act 291 requires that:
 - i. The current edition of Occupational Safety and Health Administration Standard for Excavation and Trenches Safety System, 29 CFR 1926, Subpart P, be specifically incorporated into the specifications for the project; and
 - ii. The contract bid form include a separate pay item for trench and excavation safety systems and be included in the base bid.

In the event that a Contractor fails to complete a separate pay item in accordance with the Act, the Owner shall declare that the bid fails to comply fully with the specifications and the bid will be considered invalid as a non-responsive bid.

The Owner shall notify the Safety Commission of the State Department of Labor of the award of a contract covered by this Act.

27. PROTECTION OF LIVES AND PROPERTY

- A. In order to protect the lives and health of its employees under the contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment or work under the contract.
- B. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of its plant, appliances and methods and for any damage which may result from his failure or his improper construction, maintenance or operation.

28. PROTECTION OF WORK, PROPERTY, AND PERSONS

- A. The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor will take all necessary precautions for the safety of, will provide the necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks,

pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

- B. The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. The Contractor will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. The Contractor will notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or part, by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of the Owner, of the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.
- C. In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instructions or authorization from the Engineer or Owner, shall act to prevent threatened damage, injury or loss. The Contractor will give the Engineer prompt Written Notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved.

29. PROTECTION OF THE ENVIRONMENT

The Contractor will provide for protection of the environment as required by the Contract Documents, Local Ordinance, State and Federal Law and these Supplemental General Conditions. The Contractor shall:

- i. Limit the area of construction disturbance to areas within temporary and permanent easements and the land areas designated for the Contractors use in performing the work.
- ii. Provide for the protection of trees, shrubs and grass wherever possible.
- iii. Provide for the prevention of air pollution through burning permits as required. The Contractor shall provide dust control on haul roads as site conditions dictate.
- iv. Control noise pollution by providing efficient mufflers on all machinery and limiting work hours if required by the Contract Documents.
- v. Control excessive erosion and sedimentation at the job site through prompt seeding of disturbed areas and the construction of temporary control measures as required in the contract documents and by Storm Water Permits.
- vi. Perform the work in coordination with the Owner and in a manner that will provide for the continuous transport and treatment of wastewater during construction.
- vii. Cease all work in areas where species classified as threatened or endangered under the Endangered Species Act (Public Law 93-205 as amended) are discovered and promptly notify the Engineer.

30. ARCHAEOLOGICAL, HISTORICAL, AND CULTURAL REMAINS

The Contractor shall immediately stop all work in any area where artifacts of archaeological, historical or cultural significance are found and notify the Engineer. The Owner shall notify the Commission, the State Advisory Council on Historic Preservation and the Arkansas Natural Heritage Commission of the discovery.

31. STORM WATER PERMIT REQUIREMENTS

- A. The Contractor is advised that if this construction activity involves clearing, grading or excavation activities that result in the disturbance of one or more acres of total land area including areas which are part of the total RLF project, this activity is subject to Storm Water Permit Requirements of the Arkansas Department of Environmental Quality. The Owner will obtain an NPDES General Stormwater Permit for construction activities (ARR150000). The Contractor is responsible for compliance with all terms and conditions of the General Permit. Most RLF projects are eligible for inclusion under the General Permit.
- B. The General Permit requires the control of the entrance of pollutants into the surface and ground waters of the State. Temporary and permanent sediment and erosion control measures must be included in the Work during the course of construction. These measures may include temporary and permanent seeding, construction of catch basins, the use of mulch, straw bales and silt fences to control sediments, the use of riprap at erosion-prone areas, and other measures.
- C. The General Permit also requires maintenance and “good housekeeping practices” that include items such as proper waste disposal, proper storage for hazardous materials and designating safe places for equipment maintenance and wash-down.
- D. The Contractor is required to maintain on-site a Stormwater Pollution Prevention Plan describing the storm water pollution prevention measures that will be taken at the construction site. The Plan must include a site description, a description of the nature of the activity, the intended sequence of the work, estimates of the total area involved in the activity, an estimate of the possible volume of runoff from the area, site maps showing drainage patterns, pollution prevention measures that will be taken, and other items.
- E. The Contractor is responsible for implementation of Best Management Practices described within the Stormwater Pollution Prevention Plan.
- F. The Contractor shall be responsible for implementing all applicable requirements of the Owner’s ADEQ General Stormwater Permit for Construction Activity, 401 Water Quality Certification, the COE Section 404 Permit, the ADEQ Short-Term Activity Authorization, the SPCCP, the USFWS recommendations for cave protection, local Municipal Separate Storm Sewer requirements, and all other environmental regulatory requirements that are associated with the construction activities that the Contractor is to perform.
- G. Additional information and application materials may be obtained by writing to the Arkansas Department of Environmental Quality’s Storm Water Permits Section.

32. ENGINEER’S AUTHORITY

- A. The Engineer shall act as the Owner’s representative during the construction period, shall decide questions which may arise as to quality and acceptability of materials furnished and Work performed, and shall interpret the intent of the Contract Documents in a fair and unbiased manner. The Engineer will make visits to the site and determine if the Work is proceeding in accordance with the Contract Documents.
- B. The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship, and execution of the Work. Inspections may be made at the factory or fabrication plant of the source of material supply.
- C. The Engineer will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.
- D. The Engineer shall promptly make decisions relative to interpretation of the Contract Documents.

33. OWNER’S PROTECTION FROM CONTRACTOR’S ACTIONS

The Engineer may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any approved partial payment estimate to such extent as may be necessary to protect the owner from loss on account of:

- i. Defective work not remedied.
- ii. Claims filed or reasonable evidence indicating probable filing of claims.
- iii. Failure of Contractor to make payments properly to Subcontractors or for material or labor.
- iv. A reasonable doubt that the work can be completed for the balance then unpaid.
- v. Damage to another Contractor.
- vi. Performance of work in violation of the terms of the contract documents.

34. INSPECTION AND TESTING

- A. All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.
- B. The Owner shall provide for full time inspection of the work by the Engineer to assure the work is being performed in accordance with the approved plans, specifications and change orders; and in accordance with sound engineering principles and building practices.

The Resident Inspector(s) of the Owner will perform required inspections and tests and maintain on-site records as assurance that the work conforms to the contract requirements. The Resident Inspector shall make available to the Owner and Commission representatives adequate records of such inspections and tests. Failed tests with passing retests will be clearly marked in the project records.

- C. The Contractor will maintain an adequate inspection and supervision system and perform required inspections and tests to assure that the work conforms to the contract requirements. The Contractor will make available to the Owner and the Commission adequate records of such inspections and tests. Failed tests with passing re-tests will be clearly marked in the project records.
- D. If laws, ordinances, or regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested, or approved by an employee or other representative of such public body, the Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish the Engineer the required certificates of inspection or approval.
- E. Inspections, tests, or approvals by the Engineer or others shall not relieve the Contractor from the obligations to perform the Work in accordance with the requirements of the Contract Documents and Specifications.
- F. The Engineer and the Engineer's representatives will at all times have access to the Work. In addition, authorized representatives and agents of any participating State agency shall be permitted to inspect all work, materials, payrolls, records or personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.
- G. The Commission will make periodic engineering and administrative inspections of the project to examine project records, monitor progress and inspect the work for conformance with contract requirements. The Commission shall notify the Owner and the Engineer of any observed deficiencies in the completed construction, procedures or materials used in construction, resident inspection, engineering supervision, financial management or any violation of loan program requirements. The Commission will require the Owner to take such action as may be necessary to correct any such observed deficiency.
- H. If any Work is covered contrary to the written instructions of the Engineer it must, if requested by the Engineer, be uncovered for the Engineer's observation and replaced at the Contractor's expense.
- I. If the Engineer considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the Engineer's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, if however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

- J. The Contractor shall maintain books, records, documents and other evidence directly pertinent to performance on RLF funded work under this agreement in accordance with the provisions of these Contract Documents. The Contractor shall also maintain the financial information and data used in the preparation or support of the cost submission required for a change order and a copy of the cost summary submitted to the Owner. The Owner and the Commission or any of their authorized representatives shall have access to all such books, records, documents and other evidence for the purpose of inspection, audit and copying during normal business hours. The Contractor will provide proper facilities for such access and inspection.
- K. Upon completion of all project construction, the Commission will schedule a final inspection within thirty days of receipt of a written certification by the Owner that construction is ready for a final inspection. Prior to approval of the final construction payment, the Commission will verify that all construction is complete in accordance with plans, specifications and approved change orders, all equipment has been purchased and installed, the final contract amounts have been agreed to by Change Order, as-built drawings are complete, and the Owner has prepared an operation and maintenance manual that includes contractor supplied data as required by these Supplemental General Conditions.

Following an acceptable Final Inspection by the Commission, the Commission will provide written acceptance to the Owner of the project and the final construction payment can be requested. The Commission will not approve the final construction payment until the Owner and the Contractor has complied with the requirement for the release of final payment as outlined in these Supplemental General Conditions.

35. SUPERVISION BY CONTRACTOR

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

36. PAYMENT TO CONTRACTOR

- A. Disbursements from the State Revolving Loan Fund (RLF) Programs shall be made monthly based upon actual work performed and materials stored on site less retainage. Funds will not be disbursed from the RLF without approval by the Commission. The Commission will approve disbursements provided the Owner (loan recipient) and the Contractor are in compliance with the provisions of these contract documents and RLF regulations. Contract cost overruns approved by the Commission but in excess of the loan amount must be funded by the Owner or through an additional loan. Contract cost overruns not approved by the Commission must be funded by the Owner.

- B. Each month, at least ten days before each progress payment falls due (but not more often than once a month), the Contractor shall prepare and submit to the Engineer a progress estimate acceptable in form and content to the Engineer and the Commission supported by such data as the Engineer may reasonably require. The estimate shall show a detailed breakdown of the amount of work completed previously, amount of work completed this period, amount of work completed to date, the amount of retainage, and the quantity and value of materials and equipment currently stored on site that have not been incorporated into the work. Partial payment requests will be placed on the form provided by the Commission and must include a reduced scale copy of the updated construction schedule. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the Owner as will establish Owner's title to the material and equipment and protect the Owner's interest therein, including applicable insurance.

The progress payment request shall also include a certification by the Contractor that it has complied with all labor standards. The Certification may be placed in the content of the progress payment request or Commission form "Certification by Contractor of Labor Standards Compliance" may be attached to the payment request. No disbursement request will be approved by the Commission without this certification. Furthermore, the Owner will provide the Commission a letter with each pay request certifying wages, through payroll review and employee interviews, met the Davis-Bacon Requirements of this contract. Copies of completed interviews will be forwarded to the Commission.

The Engineer will, within ten days after receipt of each partial payment estimate, either indicate in writing approval of payment, and present the partial payment estimate to the Owner or return the partial payment estimate to the Contractor indicating in writing the reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate. The Owner will, within ten days of presentation of an approved partial payment estimate, pay the Contractor a progress payment on the basis of the approved partial payment estimate less the retainage.

Retainage will be in accordance with state law (Arkansas Code of 1987 as amended, Annotated 22-9-604) and as described herein. The retainage shall be an amount equal to five percent of said estimate (excluding Section C. below). Upon final completion of the work, any amount retained may be paid to the Contractor. When the Work has been completed except for Work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgement of the Owner are valid reasons for non-completion, the Owner may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the Work still to be completed.

- C. In compliance with Arkansas Code Ann. §17-25-404 (1995), ten percent may be withheld from the Engineer's estimate until a proper statement or certificate is received from the Contractors Licensing Board stating that the required bond has been filed and that the Contractor is otherwise in compliance with Arkansas Code Ann. §17-25-404 (1995).
- i. That no compensating tax is due the State under the contract.

- ii. That the tax due under the contract has been paid.
 - iii. That a suitable surety bond has been provided by the Contractor and approved by the Contractors Licensing Board as prescribed in the Act.
- D. The Owner shall request payment on Disbursement Request Form supplied during the Pre-Construction Conference. The requested amount shall not exceed the current amounts approved for construction, engineering and other project costs on individual line items. Only those individuals authorized to represent the Owner and the Engineer shall sign the Disbursement Request Form. Documentation for costs incurred since the last disbursement request must accompany each pay request including the Contractor's monthly pay estimate with attachments as described in these Supplemental General Conditions and invoices for engineering, administrative, and legal services as well as approved equipment costs.
- E. The Owner is required to submit one copy of the completed Disbursement Request Form and all supporting documentation to the Commission for processing; the deadlines for all disbursements from the City to the Commission will be discussed at the Preconstruction Conference. Disbursement requests not received at the Commission prior to the deadlines established in the Preconstruction Conference will not be processed and paid until the following month.

For the Owner to realize this deadline, Contractor estimates should be received by the Engineer on or before the 10th day of each month. The actual due date for Contractor estimates shall be as established by the Contract Documents or by the Engineer.

- F. Disbursements from the RLF are generally received by the Owner (loan recipient) from the Arkansas Development Finance Authority (ADFA) within the first ten working days of the month. The Owner shall promptly pay all bills due as disbursements are made from the RLF.
- G. Prior to Substantial Completion, the Owner with the approval of the Engineer and with the concurrence of the Contractor, may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.
- H. The Owner shall have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work, or the restoration of any damaged Work except such as may be caused by agents or employees of the Owner.
- I. Upon completion and acceptance of the Work, the Engineer shall issue a certificate attached to the final payment request that the Work has been accepted under the conditions of the Contract Documents. The entire balance found to be due the Contractor, including the retained percentages, but except such sums as may be lawfully retained by the Owner shall be paid to the Contractor within thirty days of completion and acceptance of the Work.

- J. The Contractor will indemnify and save the Owner or the Owner's agents harmless from all claims growing out of the lawful demand of Subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools and all supplies, incurred in the furtherance of the performance of the Work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so the Owner may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor, the Contractor's Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Owner shall be considered as a payment made under the Contract Documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.
- K. If the Owner fails to make payment thirty days after approval by the Engineer, in addition to other remedies available to the Contractor, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the Contractor.
- L. In addition to the Contract Time specified in these Contract Documents, the Bond Purchase Agreement between the Owner and the Commission contains an estimated completion date beyond which no further loan disbursements will be made without specific written waiver by ADFA and the Commission. ADFA and the Commission will grant waivers only where there is sufficient documented evidence that project completion was delayed through no fault of the Contractor and the Owner.

Regardless of the existence of circumstances where a delay in completion is beyond the control of the Contractor and the Owner, a waiver to the estimated completion date will not be granted should the granting of such waiver harm any commitments made to the purchasers of Revolving Loan Fund Bonds issued by ADFA. Should a waiver be denied, the Owner must complete the project with its own funds or apply for an additional loan from the RLF program.

37. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

The acceptance of the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the Owner and others relating to or arising out of this Work. Any payment, however, final or otherwise, shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds.

38. CLEANUP AND CORRECTIONS

Where work on unit price items are substantially complete but lack clean-up and/or corrections ordered by the Engineer, amounts shall be deducted from unit prices in partial payment estimates to amply cover such clean-up and corrections.

39. TAXES

The Contractor will pay all sales, consumer, use and other similar taxes required by the laws of the place where the Work is performed.

40. STATE TAX EXEMPTION

This section only applies with projects receiving Clean Water Revolving Loan Funds; Drinking Water Revolving Loan Funds can not receive this benefit. Except where applicable below, the Contractor will pay all sales, consumer, use and other similar taxes required by the laws of the place where the Work is performed. Machinery and equipment purchased by the Contractor for installation under this contract may be exempt from Arkansas Sales Tax. Arkansas Department of Finance and Administration Regulation GR-66 states that the gross proceeds derived from the sale of pollution control machinery and equipment are exempt from the tax if:

- i. The machinery and equipment is utilized, either directly or indirectly, by manufacturing or processing plants or facilities, or cities or towns in Arkansas to prevent or reduce air or water pollution or contamination which might otherwise result from the operation of the plant or facility; and,
- ii. The machinery and equipment is required by Arkansas or federal law or regulations to be installed and utilized to control pollution or contamination as evidenced by written documentation from the Arkansas Natural Resources Commission or the Environmental Protection Agency.
- iii. Supplies and chemicals used by pollution control machinery and equipment are taxable.

Should the contract involve the installation of pollution control machinery and equipment at a treatment facility, the Arkansas Department of Environmental Quality will furnish a written general certification to document that the machinery and equipment is required by Arkansas or federal law. A request for written documentation should be sent to the Arkansas Department of Environmental Quality's NPDES Permit Branch, Water Division.

To claim the exemption, the Contractor must provide the vendor with a copy of the documentation. The invoice must show that the purchase is for pollution control machinery and equipment under Arkansas Code Annotated 26-53-114. Most ancillary items necessary to install the equipment do not qualify for tax exemption. Any questions involving the definition of machinery and equipment should be directed to the Arkansas Department of Finance and Administration's Sales and Use Tax Section.

41. OPERATION AND MAINTENANCE MANUAL

- A. The Contractor shall furnish four copies of all operation, maintenance, repair and replacement manuals, and product data for all equipment supplied by the Contractor to the Engineer. The Engineer shall not certify payments requesting more than eighty percent of the Contract amount until such time as all operation, maintenance, repair and replacement manuals, and product data has been furnished by the Contractor to the Engineer.
- B. The Engineer is required to obtain approval from the Commission of the project operation and maintenance manual prior to the release of the final construction payment.

42. CHANGES IN THE WORK

- A. The Owner may at any time, as the need arises, order changes within the scope of the Work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the Work, an equitable adjustment shall be authorized by Change Order.
- B. All changes should be recorded and approved on a contract Change Order so that they may be included in partial payment estimates. The Commission must approve all contract Change Orders prior to commencing with the associated Work. When drafting Change Orders, the Engineer will use the RLF form provided by the Commission.
- C. All changes, which affect the cost of the construction of the Project, must be authorized by means of a contract Change Order. The contract Change Order will include extra work, work for which quantities have been altered from those shown in the bidding schedule, as well as decreases or increases in the quantities of installed units which are different than those shown in the bidding schedule because of final measurements.

In the case of defective specifications for which the Owner is responsible, the equitable adjustment shall include any increased cost the Contractor reasonably incurred in attempting to comply with those defective specifications.

Where justified, adjustments to the Contract Time specified in the Contract Documents shall be made in conjunction with changes in the work and with equitable adjustments in the contract price as described in these Supplemental General Conditions. Where delays in project completion are not due to changes in the work or acts of the Owner, extensions to the contract time will be made only where there is sufficient documented evidence that delays in project completion were caused by events beyond the contractor's control.

The Owner shall promptly investigate the conditions and if found that conditions materially differ, the Owner will cause an increase or decrease in the Contractor's cost or the time required to perform any part of the work under this agreement as applicable.

The Contractor shall promptly, and before such conditions are disturbed, notify the Owner in when differing site conditions occur. Notification will come in the writing with:

- i. Subsurface or latent physical conditions at the site differing materially from those indicated in this agreement, or

- ii. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this agreement.

No claim of the Contractor for increased cost or time due to differing site conditions shall be allowed unless the Contractor has given a written notice of the differing site conditions within thirty days of the discovery of such conditions.

- D. The Contractor shall document the necessity of all claims for additional cost and time in writing and shall provide detailed cost and time estimates to the Engineer for all proposed contract changes. The Engineer shall review the supporting documents and estimates provided by the Contractor for reasonableness and shall as necessary develop independent cost estimates of the proposed contract changes to assure that the cost of the proposed change is fair and reasonable.
 - E. The Owner shall provide sufficient information such as a description and justification for the change, drawings, the Contractor's proposal and other supporting documentation to the Commission for review. The Owner shall promptly notify the Commission in writing of events or proposed changes which may substantially alter the design and scope of the Project, alter the type of treatment provided or the location, size, capacity, or quality of any major item of equipment or treatment unit, or exceed the amount of funds available to complete the project.
 - F. The Contract Price may be changed only by a Change Order. The value of any Work covered by a Change Order or of any claim for increase or decrease in the Contract Price shall be determined by one or more of the following methods in the order of precedence listed below:
 - i. Unit prices previously approved.
 - ii. An agreed lump sum.
 - G. Should project changes increase the amount of funds necessary to complete the Project beyond the initial loan amount, the Owner must fund the project changes or apply to the Commission for monies to cover the cost overruns.
 - H. The Engineer, also, may at any time, by issuing a Field Order, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the Work so ordered by the Engineer unless the Contractor believes that such Field Order entitles the Contractor to change in Contract Price or Time, or both, in which event the Contractor shall give the Engineer written notice thereof within seven days after the receipt of the ordered change. Thereafter the Contractor shall document the basis for the change in Contract Price or Time within thirty days. The Contractor shall not execute such changes pending the receipt of an executed Change Order or further instruction from the Owner.
- 43. SUBSURFACE CONDITIONS**
- A. The Contractor shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the Owner by Written Notice of:

- i. Subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents; or
 - ii. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents.
- B. The Owner shall promptly investigate the conditions, and if it is found that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the Work, an equitable adjustment shall be made and the Contract Documents shall be modified by a Change Order. Any claim of the Contractor for adjustment hereunder shall not be allowed unless the required Written Notice has been given; provided that the Owner may, if the Owner determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

44. CORRECTION OF WORK

- A. The Contractor shall promptly remove from the premises all Work rejected by the Engineer for failure to comply with the Contract Documents, whether incorporated in the construction or not, and the Contractor shall promptly replace and re-execute the Work in accordance with the Contract Documents and without expense to the Owner and shall bear the expense of making good all Work of other Contractors destroyed or damaged by such removal or replacement.
- B. All removal and replacement Work shall be done at the Contractor's expense. If the Contractor does not take action to remove such rejected Work within ten days after receipt of Written Notice, the Owner may remove such Work and store the materials at the expense of the Contractor.

45. SURVEYS, PERMITS, REGULATIONS

- A. The Owner, through the Engineer, shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of bench marks adjacent to the Work as shown in the Contract Documents. From the information provided by the Engineer unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.
- B. The Contractor shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, shall be charged with the resulting expense and shall be responsible for any mistake that may be caused by their unnecessary loss or disturbance.
- C. Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor unless otherwise stated in the Supplemental General Conditions. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and

specified. If the Contractor observes that the Contract Documents are at variance therewith, the Contractor shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Section 42, CHANGES IN THE WORK.

46. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- A. The date of beginning and the time for completion of the Work are essential conditions of the Contract Documents and the Work embraced shall be commenced on a date specified in the Notice to Proceed.
- B. The Contractor will proceed with the Work at such rate of progress to insure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner that the Contract Time for the completion of the Work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work.
- C. If the Contractor shall fail to complete the Work within the Contract Time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages as specified in the Bid for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents.
- D. The Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work is due to the following and the Contractor has promptly given Written Notice of such delay to the Owner or Engineer.
 - i. To any preference, priority or allocation order duly issued by the Owner.
 - ii. To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and
 - iii. To any delays of Subcontractors occasioned by any of the causes specified in paragraphs (i.) and (ii) of this article.
- E. Where justified, adjustments to the Contract Time specified in the Contract Documents shall be made in conjunction with changes in the work and with equitable adjustments in the contract price as described in these Supplemental General Conditions. Where delays in project completion are not due to changes in the work or acts of the Owner, extensions to the contract time will be made only where there is sufficient documented evidence that delays in project completion were caused by events beyond the Contractor's control. Requests for time extensions by the Contractor must be submitted with the pay estimate for the month that the lost days are being sought.
- F. Notification procedures.
 - i. At eighty percent completion of project construction time the Engineer will contact in writing the Surety Company, the Contractor, the Owner, and the Funding Agencies. The letter will contain contract specific language concerning time left in the contract and work needed to be completed. If the Engineer deems the project to be on time for

completion then they may contact the Owner and the Funding Agency via email requesting a relief from this clause.

- ii. When contract time has been completed and the project is not substantially complete, the Engineer will notify in writing the Surety Company, the Contractor, the Owner, and the Funding Agencies. The letter will notify all parties that Liquidated Damages will be assessed from this point forward until the project has been completed.
- iii. If paragraph ii. above is enacted, the Engineer will contact all parties in writing when the project is complete.

47. SUSPENSION OF WORK, TERMINATION, AND DELAY

- A. The Owner may suspend the Work or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the Contractor, by Written Notice to the Contractor and the Engineer, which shall fix the date on which Work shall be resumed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.
- B. If the Contractor is adjudged to be bankrupt or insolvent, or makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the Contractor or for any of its property, or if the Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or repeatedly fails to make prompt payments to Subcontractors or for labor, materials, or equipment or disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the Work or disregards the authority of the Engineer, or otherwise violates any provision of the Contract Documents, then the Owner may, without prejudice to any other right or remedy and after giving the Contractor and its surety a minimum of ten days from delivery of a Written Notice, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and finish the Work by whatever method the Owner may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor will pay the difference to the Owner. Such costs incurred by the Owner will be determined by the Engineer and incorporated in a Change Order.
- C. Where the Contractor's services have been so terminated by the Owner, said termination shall not affect any right of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor will not release the Contractor from compliance with the Contract Documents. Upon receipt of a termination action the Contractor shall promptly discontinue all affected work (unless the notice directs otherwise), and deliver or otherwise make available to the Owner all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the Contractor in performing this agreement, whether completed or in process.

- D. After ten days from delivery of a Written Notice to the Contractor and the Engineer, the Owner may, without cause and with prejudice to any other right or remedy, elect to abandon the Project and terminate the Contract. In such case the Contractor shall be paid for all Work executed and any expense sustained plus reasonable profit.
- E. If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety days by the Owner or under an order of the court or other public authority, or the Engineer fails to act on any request for payment within thirty days after it is submitted, or the Owner fails to pay the Contractor substantially the sum approved by the Engineer or awarded by arbitrators within thirty days of its approval and presentation, then the Contractor may, after ten days from delivery of a Written Notice to the Owner and the Engineer terminate the Contract and recover from the Owner payment for all Work executed and all expenses sustained. In addition and in lieu of terminating the Contract, if the Engineer has failed to act on a request for payment or if the Owner has failed to make any payment as aforesaid, the Contractor may upon ten days written notice to the Owner and the Engineer stop the Work until paid all amounts then due, in which event and upon resumption of the Work Change Orders shall be issued for adjusting the Contract Price or extending the Contract Time or both to compensate for the costs and delays attributable to the stoppage of the Work.
- F. If the performance of all or any portion of the Work is suspended, delayed, or interrupted as a result of a failure of the Owner or Engineer to act within the time specified in the Contract Documents, or if no time is specified, within a reasonable time, an adjustment in the Contract Price or an extension of the Contract Time, or both, shall be made by Change Order to compensate the Contractor for the costs and delays necessarily caused by the failure of the Owner or Engineer.

48. AS-BUILT DRAWINGS

To assure quality control, the Contractor and the Owner's Inspector shall each maintain a complete set of Plans and Specifications and approved shop drawings at the construction site. In addition, one set of Plans shall be maintained at the site solely for the purpose of marking authorized changes in the plans as the work progresses. These marked up drawings shall be used in the preparation of as-built drawings following project completion and shall be maintained in current condition at all times.

49. GUARANTEE

The Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one year from the date of Substantial Completion. The Contractor warrants and guarantees for a period of one year from the date of Substantial Completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other Work that may be made necessary by such defects, the Owner

may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

50. PATENTS

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

51. CONFLICTS OF INTEREST

No official of the Owner who is authorized in such capacity and on behalf of the "Owner" to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof. No officer, employee, architect, attorney, engineer or inspector of or for the "Owner" who is authorized in such capacity and on behalf of the "Owner" who is in any legislative, executive, supervisory, or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

52. ARBITRATION BY MUTUAL AGREEMENT

- A. All claims, disputes, and other matters in question arising out of, or relating to, the Contract Documents or the breach thereof, except for claims which have been waived by making an acceptance of final payment as provided by Section 36 and 37, may be decided by arbitration if the parties mutually agree. Any agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.
- B. Notice of the request for arbitration shall be filed in writing with the other party to the Contract Documents and a copy shall be filed with the Engineer. Request for arbitration shall in no event be made on any claim, dispute, or other matter in question which would be barred by the applicable statute of limitations.
- C. The Contractor shall diligently pursue the completion of the work during any arbitration or court proceeding unless the work is suspended by the Owner or the contract terminated under the provisions of the Contract Documents.

53. GRATUITIES

If the Owner finds after a notice and hearing that the Contractor or any of the Contractor's agents or representatives offered or gave gratuities (in the form of entertainment, gifts or otherwise) to any official, employee or agent of the Owner, or the State, in an attempt to

secure an agreement or favorable treatment in awarding, amending or making any determinations related to the performance of this agreement, the Owner may, by written notice to the Contractor, terminate this agreement. The Owner may also pursue other rights and remedies that the law or this agreement provides. However, the existence of the facts on which the Owner bases such findings shall be at issue and may be reviewed in proceedings under the Disputes and Remedies section of these Supplemental General Conditions.

54. PROHIBITION ON CERTAIN TELECOMMUNICATION AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

The Contractor and all subcontractors awarded subcontracts must comply with regulations at 2 CFR 200.216, *Prohibition on certain telecommunication and video surveillance services or equipment*, implementing section 889 of Public Law 115-232. The regulation prohibits the use of federal funds to procure, enter into, extend, or renew contracts, or obtain equipment, systems, or services that use “covered telecommunications equipment or services” identified in the regulation as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor hereby represents and warrants to and for the benefit of the Owner and the Commission that: (a) the Contractor has reviewed and understands the prohibition on certain telecommunication and video surveillance services, or equipment (the “Prohibition Requirement”) and (b) the Contractor will provide verified information, certification or assurance of compliance with this paragraph, or information necessary to support the Prohibition Requirement. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Commission to recover as damages against the Contractor for any loss, expense, or cost including, without limitation, attorney’s fees, incurred by the Owner or Commission resulting from any such failure including, without limitation, any impairment or loss of funding, whether in whole or in part, from the Commission or any damages owed to the Commission by the Owner. While the Contractor has no direct contractual privity with the Commission, the Owner and the Contractor agree that the Commission is a third-party beneficiary and neither this paragraph nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the Commission. A copy of the EPA Memorandum implementing the Prohibition Requirement is attached as Appendix E to these Supplemental General Conditions.

Appendix A.

United States Environmental Protection Agency
Washington, DC 20460

Labor Standards Provisions for
Federally Assisted Contracts

Davis-Bacon and Related Acts

ATTACHMENT 1

CWSRF: The recipient agrees to include in all agreements to provide assistance for the construction of treatment works carried out in whole or in part with such assistance made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.), or with such assistance made available under section 205(m) of that Act (33 U.S.C. 1285(m)), or both, a term and condition requiring compliance with the requirements of section 513 of that Act (33 U.S.C. 1372) in all procurement contracts and sub-grants, and require that loan recipients, procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions. All contracts and subcontracts for the construction of treatment works carried out in whole or in part with assistance made available as stated herein shall insert in full in any contract in excess of \$2,000 the contract clauses as attached hereto entitled “Wage Rate Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6).” This term and condition applies to all agreements to provide assistance under the authorities referenced herein, whether in the form of a loan, bond purchase, grant, or any other vehicle to provide financing for a project, where such agreements are executed on or after October 30, 2009.

DWSRF: The recipient agrees to include in all agreements to provide assistance for any construction project carried out in whole or in part with such assistance made available by a drinking water revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12), a term and condition requiring compliance with the requirements of section 1450(e) of the Safe Drinking Water Act (42 U.S.C.300j-9(e)) in all procurement contracts and sub-grants, and require that loan recipients, procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions All contracts and subcontracts for any construction project carried out in whole or in part with assistance made available as stated herein shall insert in full in any contract in excess of \$2,000 the contract clauses as attached hereto entitled “Wage Rate Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6).” This term and condition applies to all agreements to provide assistance under the authorities referenced herein, whether in the form of a loan, bond purchase, grant, or any other vehicle to provide financing for a project, where such agreements are executed on or after October 30, 2009.

ATTACHMENT 2

Wage Rate Requirements

Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6)

With respect to the Clean Water and Safe Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Typically, the subrecipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman Numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the subrecipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

I. Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) for Subrecipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the FY 2013 Continuing Resolution with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact Lorraine Fleury at fleury.lorraine@epa.gov or at 215-814-2341 of EPA, Region III Grants and Audit Management Branch for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

1. Applicability of the Davis-Bacon (DB) prevailing wage requirements.
Under the FY 2013 Continuing Resolution, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.
2. Obtaining Wage Determinations.
 - (a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes

or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the subrecipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.
 - (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.
- (b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.
 - (c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.
 - (d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.
3. Contract and Subcontract provisions.
 - (a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any

contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(1) Minimum wages.

- (i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

- (ii) (A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits

under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding.

The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such

documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- (1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for

submission of the “Statement of Compliance” required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

- (iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees,

- (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the

apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (iv) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.
- (5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
- (6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
- (7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.
- (10) Certification of eligibility.
 - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.
 - (a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.
 - (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.
 - (3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
 - (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

- (b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

- (a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.
- (b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB.

Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

- (c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

- (d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.
- (e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/contacts/whd/america2.htm>.

II. Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) for Subrecipients That Are Not Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2013 Continuing Resolution with respect to subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. If a State recipient needs guidance, the recipient may contact Julie Milazzo at Milazzo.julie@epa.gov or at 415-972-3687, EPA Grants Management Office for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

Under these terms and conditions, the subrecipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.
Under the FY 2013 Continuing Resolution, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.
2. Obtaining Wage Determinations.
 - (a) Subrecipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Subrecipient obtains its proposed wage determination, it must submit the wage determination to the Arkansas Natural Resources Commission's Water Resource Development Division for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to

existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official.

- (b) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.
- (i) While the solicitation remains open, the subrecipient shall monitor www.wdol.gov on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.
- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.
- (c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.
- (d) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.
- (e) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(1) Minimum Wages.

(i) All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii) (A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate,

the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- (2) Withholding. The subrecipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
- (3) Payrolls and basic records.
 - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of

apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- (ii) (A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- (1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work

performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and Trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates

(expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iv) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment

opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

- (5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
 - (6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
 - (7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
 - (8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
 - (9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.
 - (10) Certification of eligibility.
 - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.
4. Contract Provision for Contracts in Excess of \$100,000.
- (a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract

Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
 - (3) Withholding for unpaid wages and liquidated damages. The subrecipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.
 - (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.
- (b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract.

Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

- (a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.
- (b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."
- (c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.
- (d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

- (e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

Appendix B.

Rules and Regulations

Title 41- Public Contract and Property Management

Chapter 60 - Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor

Compliance Responsibility for Equal Employment Opportunity

Final Rule

Part 60-1 Obligations of Contractors and Sub-Contractors

§60-1.4 Equal Opportunity Clause

(a) **FEDERALLY ASSISTED CONSTRUCTION CONTRACTS** (1) Except as otherwise provided, each administering agency shall require the inclusion of the following language as a condition of any grant, contract, loan, insurance, or guarantee involving federally assisted construction which is not exempt from the requirements of the equal opportunity clause:

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the contractor agrees as follows:

- (2) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin, such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other form of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (3) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's non-compliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: PROVIDED, HOWEVER, That in the event a contractor becomes involved in or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interest of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: PROVIDED, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliances.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

(b) **SUBCONTRACTS.** Each nonexempt prime contractor or subcontractor shall include the equal opportunity clause in each of its nonexempt subcontracts.

(c) **INCORPORATION BY REFERENCE.** The equal opportunity clause may be incorporated by reference in all Government contracts and subcontracts, including Government bills of lading, transportation requests, contracts for deposit of Government funds, and contracts for issuing and paying U.S. savings bonds and notes, and such other contracts and subcontracts as the director may designate.

(d) **INCORPORATION BY OPERATION OF THE ORDER.** By operation of the Order, the equal opportunity clause shall be considered to be a part of every contract and subcontract required by the Order and the regulations in this part to include such a clause whether or not it is physically incorporated in such contracts and whether or not the contract between the agency and the contractor is written.

(e) **ADAPTATION OF LANGUAGE.** Such necessary changes in language may be made in the equal opportunity clause as shall be appropriate to identify properly the parties and their undertakings.

Part 60-4 - Construction Contractors - Affirmative Action Requirements
§60-4.2 Solicitations.

(a) All Federal contracting officers and all applicants shall include the notice set forth in paragraph (d) of this section and the Standard Federal Equal Employment Opportunity Construction Contract Specifications set forth in §60-4.3 of this part in all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts to be performed in geographical areas designated by the Director pursuant to §60-4.6 of the part. Administering agencies shall require the inclusion of the notice set forth in paragraph (d) of this section and the specifications set forth in §60-4.3 of this part as a condition of any grant, contract, subcontract, loan, insurance or guarantee involving federally assisted construction covered by this part 60-4.

(b) All nonconstruction contractors covered by Executive Order 11246 and the implementing regulations shall include the notice in paragraph (d) of this section in all construction agreements which are necessary in whole or in part to the performance of the covered nonconstruction contract.

(c) Contracting officers, applicants and nonconstruction contractors shall give (SIC) written notice to the Director within 10 working days of award of a contract subject to these provisions. The notification shall include the name, address and telephone number of the contractor; employer identification number; dollar amount of the contract, estimated starting and completion dates of the contract; the contract number; and geographical area in which the contract is to be performed.

(d) The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in geographical areas designed by the Director pursuant to §60-4.5 of this part (see 4) CFR 60-4.2 (a)):

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

- (1) The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

- (2) The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor’s aggregate work force in each trade on all construction work in the covered area, are as follows:

Time Tables	Goals for minority participation for each trade Insert goals for each year.	Goals for female participation in each trade Insert goals for each year.
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These goals are applicable to all the Contractor’s construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed, with regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

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

- (3) The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction sub-contract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract ; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
- (4) As used in this Notice, and in the contract resulting from this solicitation, the “covered area” is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

§60-4.3 EQUAL OPPORTUNITY CLAUSES;

(a) The equal opportunity clause published at 41 CFR 60-1.4 (a) of this chapter is required to be included in, and is part of, all nonexempt Federal contracts and subcontracts, including construction contracts and subcontracts. The equal opportunity clause published at 41 CFR 60-1.4 (b) is required to be included in, and is a part of, all nonexempt federally assisted construction contracts and subcontracts. In addition to the clauses described above, all Federal contracting officers, all applicants and all nonconstruction contractors as applicable, shall include the specifications set forth in this section in all Federal and federally assisted construction contracts in excess of \$10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part and in construction subcontracts in excess of \$10,000 necessary in whole or in

part to the performance of non-construction Federal contracts and subcontracts covered under the Executive Order.

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

- (1) As used in these specifications:
 - a. “Covered area” means the geographical area described in the solicitation from which this contract resulted;
 - b. “Director” means Director, Office of Federal Contracts Compliance Programs, United States Department of Labor, or any person to who the Director delegates authority;
 - c. “Employer identification number” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. “Minority” includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands): and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- (2) Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which a set forth in the solicitations from which this contract resulted.
- (3) If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate, their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in a approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor’s or Subcontractor’s failure to take good faith efforts to achieve the Plan goals and timetables.
- (4) The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the

Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal of federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting the goals in each craft during the period specified.

- (5) Neither the provisions of any collective bargaining agreement, or the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications. Executive Order 11246, or the regulations promulgated pursuant thereto.
- (6) In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. The trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- (7) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a.. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with what-ever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the

- Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meets its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female new media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with who the Contractor does or anticipates doing business.
 - i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that

- the EEO policy and the Contractor's obligation under these specifications are being carried out.
- n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
- (8) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participating may be asserted as fulfilling any one or more to its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf to the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
- (9) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
- (10) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- (11) The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- (12) The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

- (13) The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contract fails to comply with the requirements to the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
- (14) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes of status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
- (15) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(b) The notice set forth in 41 CFR 60-4.2 and the specifications set forth in 41 CFR 60-4.3 replace the New Form for Federal Equal Employment Opportunity Bid Conditions for Federal and Federally Assisted Construction published at 41 FR 32482 and commonly known as the Model Federal EEO Bid Conditions, and the New Form shall not used after the regulations in 41 CFR part 60-4 become effective.

Appendix C.

40 CFR PART 33

PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES
IN UNITED STATES ENVIRONMENTAL PROTECTION AGENCY PROGRAMS

Subpart C—Good Faith Efforts

§ 33.301 What does this subpart require?

A recipient, including one exempted from applying the fair share objective requirements by § 33.411, is required to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, even if it has achieved its fair share objectives under subpart D of this part:

- (a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- (b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- (c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- (d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
- (e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- (f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

§ 33.302 Are there any additional contract administration requirements?

- (a) A recipient must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient.
- (b) A recipient must be notified in writing by its prime contractor prior to any termination of a DBE subcontractor for convenience by the prime contractor.
- (c) If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor.
- (d) A recipient must require its prime contractor to employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of this part.

§ 33.303 Are there special rules for loans under EPA financial assistance agreements?

A recipient of an EPA financial assistance agreement to capitalize a revolving loan fund, such as a State under the CWRLF or DWSRF or an eligible entity under the Brownfields Cleanup Revolving Loan Fund program, must require that borrowers receiving identified loans comply with the good faith efforts described in § 33.301 and the contract administration requirements of §3.302. This provision does not require that such private and nonprofit borrowers expend identified loan funds in compliance with any other procurement procedures contained in 40 CFR part 30, part 31, or part 35, subpart O, as applicable.

§ 33.304 Must a Native American (either as an individual, organization, Tribe or Tribal Government) recipient or prime contractor follow the six good faith efforts?

- (a) A Native American (either as an individual, organization, corporation, Tribe or Tribal Government) recipient or prime contractor must follow the six good faith efforts only if doing so would not conflict with existing Tribal or Federal law, including but not limited to the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e), which establishes, among other things, that any federal contract, subcontract, grant, or subgrant awarded to Indian organizations or for the benefit of Indians, shall require preference in the award of subcontracts and subgrants to Indian organizations and to Indian-owned economic enterprises.
- (b) Tribal organizations awarded an EPA financial assistance agreement have the ability to solicit and recruit Indian organizations and Indian-owned economic enterprises and give them preference in the award process prior to undertaking the six good faith efforts. Tribal governments with promulgated tribal laws and regulations concerning the solicitation and recruitment of Native-owned and other minority business enterprises, including women-owned business enterprises, have the discretion to utilize these tribal laws and regulations in lieu of the six good faith efforts. If the effort to recruit Indian organizations and Indian-owned economic enterprises is not successful, then the recipient must follow the six good faith efforts. All tribal recipients still must retain records documenting compliance in accordance with § 33.501 and must report to EPA on their accomplishments in accordance with § 33.502.
- (c) Any recipient, whether or not Native American, of an EPA financial assistance agreement for the benefit of Native Americans, is required to solicit and recruit Indian organizations and Indian-owned economic enterprises and give them preference in the award process prior to undertaking the six good faith efforts. If the efforts to solicit and recruit Indian organizations and Indian-owned economic enterprises is not successful, then the recipient must follow the six good faith efforts.
- (d) Native Americans are defined in § 33.103 to include American Indians, Eskimos, Aleuts and Native Hawaiians.

Appendix D.

MEMORANDUM

SUBJECT: Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act, 2014

FROM: Andrew Sawyers, Director
Office of Wastewater Management (4201M)

Peter Grevatt, Director
Office of Ground Water and Drinking Water (4601M)

TO: Water Management Division Directors
Regions I - X

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an “American Iron and Steel (AIS)” requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Fiscal Year 2014.

Section 436 also sets forth certain circumstances under which EPA may waive the AIS requirement. Furthermore, the Act specifically exempts projects where engineering specifications and plans were approved by a State agency prior to January 17, 2014.

The approach described below explains how EPA will implement the AIS requirement. The first section is in the form of questions and answers that address the types of projects that must comply with the AIS requirement, the types of products covered by the AIS requirement, and compliance. The second section is a step-by-step process for requesting waivers and the circumstances under which waivers may be granted.

Implementation

The Act states:

Sec. 436. (a)

(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the “Administrator”) finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency’s capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

The following questions and answers provide guidance for implementing and complying with the AIS requirements:

Project Coverage

What classes of projects are covered by the AIS requirement?

All treatment works projects funded by a CWSRF assistance agreement, and all public water system projects funded by a DWSRF assistance agreement, from the date of enactment through the end of Fiscal Year 2014. The AIS requirements apply to the entirety of the project, no matter when construction begins or ends. Additionally, the AIS requirements apply to all parts of the project, no matter the source of funding.

Covered Iron and Steel Products

What is an iron or steel product?

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works:

- Lined or unlined pipes or fittings;
- Manhole Covers;
- Municipal Castings (defined in more detail below);
- Hydrants;
- Tanks;
- Flanges;
- Pipe clamps and restraints;
- Valves;
- Structural steel (defined in more detail below);
- Reinforced precast concrete; and
- Construction materials (defined in more detail below).

What does the term ‘primarily iron or steel’ mean?

‘Primarily iron or steel’ places constraints on the list of products above. For one of the listed products to be considered subject to the AIS requirements, it must be made of greater than 50% iron or steel, measured by cost. The cost should be based on the material costs.

Can you provide an example of how to perform a cost determination?

For example, the iron portion of a fire hydrant would likely be the bonnet, body and shoe, and the cost then would include the pouring and casting to create those components. The other material costs would include non-iron and steel internal workings of the fire hydrant (i.e., stem, coupling, valve, seals, etc.). However, the assembly of the internal workings into the hydrant body would not be included in this cost calculation. If one of the listed products is not made primarily of iron or steel, United States (US) provenance is not required. An exception to this definition is reinforced precast concrete, which is addressed in a later question.

If a product is composed of more than 50% iron or steel, but is not listed in the above list of items, must the item be produced in the US? Alternatively, must the iron or steel in such a product be produced in the US?

The answer to both question is no. Only items on the above list must be produced in the US. Additionally, the iron or steel in a non-listed item can be sourced from outside the US.

What is the definition of steel?

Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel and other specialty steels.

What does ‘produced in the United States’ mean?

Production in the United States of the iron or steel products used in the project requires that all manufacturing processes, including application of coatings, must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

Are the raw materials used in the production of iron or steel required to come from US sources?

No, raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-US sources.

If an above listed item is primarily made of iron or steel, but is only at the construction site temporarily, must such an item be produced in the US?

No. Only the above listed products made primarily of iron or steel, permanently incorporated into the project must be produced in the US. For example trench boxes or scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. Iron or Steel.

What is the definition of ‘municipal castings’?

Municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Examples of municipal castings are:

- Access Hatches;
- Ballast Screen;
- Benches (Iron or Steel);
- Bollards;
- Cast Bases;
- Cast Iron Hinged Hatches, Square and Rectangular;
- Cast Iron Riser Rings;
- Catch Basin Inlet;
- Cleanout/Monument Boxes;
- Construction Covers and Frames;
- Curb and Corner Guards;
- Curb Openings;
- Detectable Warning Plates;
- Downspout Shoes (Boot, Inlet);
- Drainage Grates, Frames and Curb Inlets;
- Inlets;
- Junction Boxes;
- Lampposts;
- Manhole Covers, Rings and Frames, Risers;
- Meter Boxes;
- Steel Hinged Hatches, Square and Rectangular;
- Steel Riser Rings;
- Trash receptacles;
- Tree Grates;
- Tree Guards;
- Trench Grates; and
- Valve Boxes, Covers and Risers.

What is ‘structural steel’?

Structural steel is rolled flanged shapes, having at least one dimension of their cross-section 3 inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees and zees. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

What is a ‘construction material’ for purposes of the AIS requirement?

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered “structural steel”. This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, gates, and screens.

What is not considered a ‘construction material’ for purposes of the AIS requirement?

Mechanical and electrical components, equipment and systems are not considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electrical/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, and analytical instrumentation, and dewatering equipment.

If the iron or steel is produced in the US, may other steps in the manufacturing process take place outside of the US, such as assembly?

No. Production in the US of the iron or steel used in a listed product requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

What processes must occur in the US to be compliant with the AIS requirement for reinforced precast concrete?

While reinforced precast concrete may not be at least 50% iron or steel, in this particular case, the reinforcing rebar must be produced in the US and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in the US. The cement and other raw materials used in concrete production are not required to be of domestic origin.

If the reinforced concrete is cast at the construction site, the reinforcing rebar is considered to be a construction material and must be produced in the US.

Compliance

How should an assistance recipient document compliance with the AIS requirement?

In order to ensure compliance with the AIS requirement, specific AIS contract language must be included in each contract, starting with the assistance agreement, all the way down to the purchase agreements.

EPA recommends the use of a step certification process, similar to one used by the Federal Highway Administration. The step certification process is a method to ensure that producers adhere to AIS requirements and assistance recipients can verify that products comply with the AIS requirement. The process also establishes accountability and better enables States to take enforcement actions against violators.

Step certification creates a paper trail which documents the location of the manufacturing process involved with the production of steel and iron materials. A step certification is a process under which each handler (supplier, fabricator, manufacturer, processor, etc.) of the iron and steel products certifies that their step in the process was domestically performed. Each time a step in the manufacturing process takes place, the manufacturer delivers its work along with a certification of its origin. A certification can be quite simple. Typically, it includes the name of the manufacturer, the location of the manufacturing facility where the product or process took place (not its headquarters), a description of the product or item being delivered, and a signature by a manufacturer's responsible party. Attached, as Attachment 3, is a sample certification. These certifications should be collected and maintained by the assistance recipients.

Alternatively, the final manufacturer that delivers the iron or steel product to either the worksite, vendor, or contractor, may provide a certification asserting that all manufacturing processes occurred in the US. While this type of certification may be acceptable, it may not provide the same degree of assurance. Additional documentation may be needed if the certification is lacking important information. Step certification is the best practice.

How should a State ensure assistance recipients are complying with the AIS requirement?

States should, as a best practice, conduct site visits of projects during construction and review documentation demonstrating proof of compliance which the assistance recipient has gathered.

What happens if a State or EPA finds a non-compliant iron and/or steel product permanently incorporated in the project?

If a potentially noncompliant product is identified, the State should notify the assistance recipient of the apparent unauthorized use of a non-domestic component, including a proposed corrective action, and should be given the opportunity to reply. If unauthorized use is confirmed, the State can take one or more of the following actions: request a waiver where appropriate; require the removal of the non-domestic item; or withhold payment for all or part of the project. Only EPA can issue waivers to authorize the use of a non-domestic item. EPA may use remedies available to it under the Clean Water Act, the Safe Drinking Water Act, and 40 CFR part 31 grant regulations in the event of a violation of a grant term and condition.

It is recommended that the State work collaboratively with EPA to determine the appropriate corrective action, especially in cases where the State is the one who identifies the item in noncompliance or there is a disagreement with the assistance recipient.

If fraud, waste, abuse, or any violation of the law is suspected, the Office of Inspector General (OIG) should be contacted immediately. The OIG can be reached at 1 (888) 546-8740 or OIG_Hotline@epa.gov. More information can be found at this website: <http://www.epa.gov/oig/hotline.htm>.

How do international trade agreements affect the implementation of the AIS requirements?

The AIS provision applies in a manner consistent with United States obligations under international agreements. Typically, these obligations only apply to direct procurement by the entities that are signatories to such agreements. In general, SRF assistance recipients are not signatories to such agreements, so these agreements have no impact on this AIS provision. In the few instances where such an agreement applies to a municipality, that municipality is under the obligation to determine its applicability and requirements and document the actions taken to comply for the State.

Waiver Process

The statute permits EPA to issue waivers for a case or category of cases where EPA finds (1) that applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the US in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the US will increase the cost of the overall project by more than 25 percent.

In order to implement the AIS requirements, EPA has developed an approach to allow for effective and efficient implementation of the waiver process to allow projects to proceed in a timely manner. The framework described below will allow States to apply for waivers of the AIS requirement directly to EPA Headquarters. Pursuant to the Act, EPA has the responsibility to make findings as to the issuance of waivers to the AIS requirements.

Definitions

The following terms are critical to the interpretation and implementation of the AIS requirements and apply to the process described in this memorandum:

Reasonably Available Quantity: The quantity of iron or steel products is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design.

Satisfactory Quality: The quality of iron or steel products, as specified in the project plans and designs.

Assistance Recipient: A borrower or grantee that receives funding from a State CWSRF or DWSRF program.

Step-By-Step Waiver Process

Application by Assistance Recipient

Each local entity that receives SRF water infrastructure financial assistance is required by section 436 of the Act to use American made iron and steel products in the construction of its project. However, the recipient may request a waiver. Until a waiver is granted by EPA, the AIS requirement stands, except as noted above with respect to municipalities covered by international agreements.

The waiver process begins with the SRF assistance recipient. In order to fulfill the AIS requirement, the assistance recipient must in good faith design the project (where applicable) and solicit bids for construction with American made iron and steel products. It is essential that the assistance recipient include the AIS terms in any request for proposals or solicitations for bids, and in all contracts. The assistance recipient may seek a waiver at any point before, during, or after the bid process, but before installation of the product, if one or more of the following three conditions is met:

1. Applying the American Iron and Steel requirements of the Act would be inconsistent with the public interest;
2. Iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Proper and sufficient documentation must be provided by the assistance recipient. A checklist detailing the types of information required for a waiver to be processed is attached as Attachment 1.

Additionally, it is strongly encouraged that assistance recipients hold pre-bid conferences with potential bidders. A pre-bid conference can help to identify iron and steel products needed to complete the project as described in the plans and specifications that may not be available from domestic sources. It may also identify the need to seek a waiver prior to bid, and can help inform the recipient on compliance options.

In order to apply for a project waiver, the assistance recipient should email the request in the form of a Word document (.doc) to the State SRF Engineer. The State SRF designee will review the application for the waiver and determine whether the necessary information has been included. Once the waiver application is complete, the State designee will forward the application to either of two email addresses. For CWSRF waiver requests, please send the application to: cwsrfwaiver@epa.gov. For DWSRF waiver requests, please send the application to: dwsrfwaiver@epa.gov.

Evaluation by EPA

After receiving an application for waiver of the AIS requirements, EPA Headquarters will publish the request on its website for 15 days and receive informal comment. EPA Headquarters will then use the checklist in Attachment 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.

In the event that EPA finds that adequate documentation and justification has been submitted, the Administrator may grant a waiver to the assistance recipient. EPA will notify the State designee that a waiver request has been approved or denied as soon as such a decision has been made. Granting such a waiver is a 3-step process:

1. Posting – After receiving a complete application for a waiver, EPA is required to publish the application and all material submitted with the application on EPA’s website for 15 days. During that period, the public will have the opportunity to review the request and provide informal comment to EPA. The website can be found at: http://water.epa.grants_funding/aisrequirement.cfm
2. Evaluation – After receiving an application for waiver of the AIS requirements, EPA Headquarters will use the checklist in Attachment 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.
3. Signature of waiver approval by the Administrator or another agency official with delegated authority – as soon as the waiver is signed and dated, EPA will notify the State SRF program, and post the signed waiver on our website. The assistance recipient should keep a copy of the signed waiver in its project files.

Public Interest Waivers

EPA has the authority to issue public interest waivers. Evaluation of a public interest waiver request may be more complicated than that of other waiver requests so they may take additional time for a decision to be made. An example of a public interest waiver that might be issued could be for a community that has standardized on a particular type or manufacturer of a valve because of its performance to meet their specifications. Switching to an alternative valve may require staff to be trained on the new equipment and additional spare parts would need to be purchased and stocked, existing valves may need to be unnecessarily replaced, and portions of the system may need to be redesigned. Therefore, requiring the community to install an alternative valve would be inconsistent with public interest.

EPA also has the authority to issue a public interest waiver that covers categories of products that might apply to all projects.

EPA reserves the right to issue national waivers that may apply to particular classes of assistance recipients, particular classes of projects, or particular categories of iron or steel products. EPA may develop national or (U.S. geographic) regional categorical waivers through the identification of similar circumstances in the detailed justifications presented to EPA in a waiver request or requests. EPA may issue a national waiver based on policy decisions regarding the public's interest or a determination that a particular item is not produced domestically in reasonably available quantities or of a sufficient quality. In such cases, EPA may determine it is necessary to issue a national waiver.

If you have any questions concerning the contents of this memorandum, you may contact us, or have your staff contact Jordan Dorfman, Attorney-Advisor, State Revolving Fund Branch, Municipal Support Division, at dorfman.jordan@epa.gov or (202) 564-0614 or Kiri Anderer, Environmental Engineer, Infrastructure Branch, Drinking Water Protection Division, at anderer.kirsten@epa.gov or (202) 564-3134.

Attachment 1: Information Checklist for Waiver Request

The purpose of this checklist is to help ensure that all appropriate and necessary information is submitted to EPA. EPA recommends that waiver applicants review this checklist carefully and provide all appropriate information to EPA. This checklist is for informational purposes only and does not need to be included as part of a waiver application.

Items	✓	Notes
<p>General</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> – Description of the foreign and domestic construction materials – Unit of measure – Quantity – Price – Time of delivery or availability – Location of the construction project – Name and address of the proposed supplier – A detailed justification for the use of foreign construction materials • Waiver request was submitted according to the instructions in the memorandum • Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor 		
<p>Cost</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> – Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products – Relevant excerpts from the bid documents used by the contractors to complete the comparison – Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers 		
<p>Availability</p> <ul style="list-style-type: none"> • Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: <ul style="list-style-type: none"> – Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials – Documentation of the assistance recipient’s efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers. – Project schedule – Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials • Waiver request includes a statement from the prime contractor confirming the non-availability of the domestic construction materials for which the waiver is sought • Has the State received other waiver requests for the materials described in this waiver request, for comparable projects? 		

Attachment 2: EPA HQ Review Checklist for Waiver Request

Instructions: To be completed by EPA. Review all waiver requests using the questions in the checklist, and mark the appropriate box as Yes, No or N/A. Marks that fall inside the shaded boxes may be grounds for denying the waiver. If none of your review markings fall into a shaded box, the waiver is eligible for approval if it indicates that one or more of the following conditions applies to the domestic product for which the waiver is sought:

1. The iron and/or steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.
2. The inclusion of iron and/or steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Review Items	Yes	No	N/A	Comments
<p>Cost</p> <ul style="list-style-type: none"> • Does the waiver request include the following information? <ul style="list-style-type: none"> — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products — Relevant excerpts from the bid documents used by the contractors to complete the comparison — A sufficient number of bid documents or pricing information from domestic sources to constitute a reasonable survey of the market • Does the Total Domestic Project exceed the Total Foreign Project Cost by more than 25%? 				
<p>Availability</p> <ul style="list-style-type: none"> • Does the waiver request include supporting documentation sufficient to show the availability, quantity, and/or quality of the iron and/or steel product for which the waiver is requested? <ul style="list-style-type: none"> — Supplier information or other documentation indicating availability/delivery date for materials — Project schedule — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of materials • Does supporting documentation provide sufficient evidence that the contractors made a reasonable effort to locate domestic suppliers of materials, such as a description of the process for identifying suppliers and a list of contacted suppliers? • Based on the materials delivery/availability date indicated in the supporting documentation, will the materials be unavailable when they are needed according to the project schedule? (By item, list schedule date and domestic delivery quote date or other relevant information) • Is EPA aware of any other evidence indicating the non-availability of the materials for which the waiver is requested? Examples include: <ul style="list-style-type: none"> — Multiple waiver requests for the materials described in this waiver request, for comparable projects in the same State — Multiple waiver requests for the materials described in this waiver request, for comparable projects in other States — Correspondence with construction trade associations indicating the non-availability of the materials • Are the available domestic materials indicated in the bid documents of inadequate quality compared those required by the project plans, specifications, and/or permits? 				

Attachment 3: Sample Certification for Step Certification Process

The following information is provided as a sample letter of step certification for Buy America compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address
City, State Zip

Subject: Buy America Step Certification for Project (XXXXXX-XXXXXXA)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

The following information is provided as a sample letter of certification for Buy America compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address
City, State Zip

Subject: Buy America Certification for Project (XXXXXX-XXXXXXA)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

Appendix E.

Prohibition on Certain Telecommunication and Video Surveillance Services
or Equipment in the SRF Programs

OFFICE OF WATER
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MEMORANDUM

SUBJECT: Prohibition on Certain Telecommunication and Video Surveillance Services or
Equipment in the SRF Programs

FROM: Kiri Anderer, P.E., Acting Associate Branch Chief
Infrastructure Branch, OGWDW

Michael Deane, Branch Chief
State Revolving Fund Branch, OWM

TO: SRF Branch Chiefs
Regions 1-10

Effective August 13, 2020, recipients and subrecipients of EPA funded assistance agreements, including borrowers under EPA funded revolving loan funds, must comply with regulations at 2 CFR 200.216, *Prohibition on certain telecommunication and video surveillance services or equipment*, implementing section 889 of Public Law 115-232. The regulation prohibits the use of Federal funds to procure (enter into, extend, or renew contracts) or obtain equipment, systems, or services that use “covered telecommunications equipment or services” identified in the regulation as a substantial or essential component of any system, or as critical technology as part of any system. Prohibitions extend to the use of Federal funds by recipients and subrecipients to enter into a contract with an entity that “uses any equipment, system, or service that uses covered telecommunications equipment or services” as a substantial or essential component of any system, or as critical technology as part of any system. Certain equipment, systems, or services, including equipment, systems, or services produced or provided by entities subject to the prohibition are recorded in the System for Award Management exclusion list.

As described in section 889 of Public Law 115-232, covered telecommunications equipment or services includes:

- Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

- Telecommunications or video surveillance services provided by such entities or using such equipment.
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Applicability in the State Revolving Fund (SRF) Programs

Clean Water and Drinking Water SRF (CWSRF and DWSRF) programs may not expend equivalency funds for these products on or after August 13, 2020. States must ensure that equivalency assistance agreements include the telecommunications prohibition condition provided by EPA’s Office of Grants and Debarment (OGD) in OGD’s most recent EPA General Terms and Conditions. The condition must also be in construction contracts associated with equivalency assistance agreements.

There is no exhaustive list of components and services that fall under the prohibition. State SRF managers and local assistance recipients should exercise due diligence and be particularly mindful of project components with internet or cellular connections. For example, recipients should be mindful of automatic meter reading (AMR) technology and advanced metering infrastructure (AMI), instrumentation control systems (e.g. process control systems, distributed control systems and programmable logic controls), and security cameras and other electronic security measures to ensure that those items are procured from a non-excluded entity. Items included in the prohibition are not eligible SRF costs, and the SRF programs cannot reimburse borrowers for these costs.

The prohibition also applies to the CWSRF administrative funds (if states are billing those costs to the federal CWSRF capitalization grant) and the four DWSRF set-asides. States should be mindful of items such as cell phones, computers, and mobile WiFi routers or hotspots funded by those accounts.

If you have questions on the implementation of this grant condition, please contact Michael Deane at Deane.Michael@epa.gov or Kiri Anderer at Anderer.Kirsten@epa.gov.

Section 01310
SUBMITTALS

PART 1 - GENERAL

1.01 Requirements

- A. Submit Construction Contract Schedule, Shop Drawings, samples, and manufacturers' certificates required by the Contract Documents.

1.02 Related Requirements

- A. Definitions and additional responsibilities of parties: General Conditions and Modifications to General Conditions.
- B. Submittal requirements for specific work: The respective specifications sections.

1.03 Procedures

- A. Deliver submittals to Engineer. All submittals shall include the following:
 - 1. Date and submittal number.
 - 2. Project title and number (if applicable)
 - 3. Names of contractor, subcontractor, supplier and manufacturer
 - 4. Identification of Product being supplied
 - 5. Location of where Product is to be installed
 - 6. Applicable Specification section number and / or drawing number
- B. Sequentially number transmittal letters beginning with number one. Use original number for resubmittals with an alphabetic suffix (i.e., 2A for the first resubmittal of submittal 2, or 15C for the third resubmittal of submittal 15, etc.)
- C. On Shop Drawings, identify Project, Contractor, Subcontractor, major supplier; identify pertinent Drawings sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Engineer review stamps.
- D. Shop drawings submittals shall contain the Contractor's signature or stamp confirming his review of the submittal, verification of products, field measurements and construction criteria, and coordination of the information within the submittal with requirements of the Work and of the Contract Documents.

- E. After Engineer review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.04 Shop Drawings

- A. Present drawings in a clear and thorough manner, showing pertinent dimensions and identifying details by reference to sheet and detail, and schedules shown on the Drawings.
- B. Submit the number of copies which Contractor, subcontractor, and supplier require plus three copies for the Engineer.

1.05 Illustrations and Brochures

- A. Preparation:
 - 1. Clearly mark each copy to identify pertinent products or models.
 - 2. Show performance characteristics and capacities.
 - 3. Show dimensions and clearances required.
 - 4. Show wiring or piping diagrams and controls.
 - 5. Include special installation instructions.

1.06 Samples

- A. Samples for Selection:
 - 1. Submitted to Engineer for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes in custom colors selected, textures, and patterns for Engineer selection.
 - 3. After review, produce duplicates and distribute in accordance with 1.03 - Procedures above.
- B. Include identification on each sample, with full Project information.
- C. Submit a minimum of two samples, one of which will be retained by Engineer.

1.07 Manufacturer's Certification

- A. Submit certificates, in duplicate, in accordance with requirements of each Specification Section.

1.08 Notifications

- A. Notify the Engineer, in writing at the time of submission, of any deviations in the submittals from requirements of the Contract Documents. Identify deviations from contract documents BY clouding submittal drawings and itemize and detail on separate 8-1/2 by 11-inch sheets entitled “DEVIATIONS FOR _____.”
- B. Notify the Engineer, in writing at the time of resubmission, of changes made on resubmittals other than those previously requested by the Engineer.

PART 2 - PRODUCTS -

All iron and steel products shall meet “American Iron and Steel” requirements.

PART 3 - EXECUTION - (NOT USED)

END OF SECTION

Section 01326
CONSTRUCTION SCHEDULE (BAR CHART)

PART 1 - GENERAL

1.01 Section Includes

- A. Provide an initial Construction Schedule as required by this section for the Work. Do not start construction until Project Manager reviews the schedule.

1.02 Form and Content of Initial Construction Schedule

- A. Bar Chart:
 - 1. Show major construction activities such as pipe laying, by traffic control phases or other approved key areas; tunnel construction, pavement removal, pavement replacement, pressure testing, chlorination, clean up and punch list as separate activities on the schedule.
 - 2. Show week duration for each activity.
 - 3. Show separate activities for each Shop Drawing and Product Data submittal critical to timely completion. Show submittal dates and dates Project Manager needs to provide approved submittals.
 - 4. Provide separate horizontal bar for each activity. List start and finish date for each activity at left side of diagram.
 - 5. Horizontal Time Scale: Identify first work day of each week.
 - 6. Scale and Spacing: Notes must be legible. Allow space for notations and future revisions.
 - 7. Order of Listings: Order bar chart listings by phases or other approved groups of activities that are contiguous. List activities in chronological order within each phase or group.
- B. Narrative Description:
 - 1. Submit narrative descriptions of anticipated work sequences as indicated by the sequence of activities presented in the schedule.
 - 2. Discuss any activity that affects the public (such as phases of traffic control), interaction with specific forces of the Owner (such as valve operation, chlorination and testing) or other associated contractors.

1.03 Progress Revisions

- A. Submit progress revisions or necessary information to complete and process Payment Applications. When required, re-submittals for rejected revisions must be submitted and reviewed prior to the following month's processing of a Payment Application. The following month's Payment Application will not be processed until the re-submittal is reviewed and required progress revisions are received.

- B. Provide a narrative report to describe:
 - 1. Major changes in scope.
 - 2. Revised projections in progress, completion, or changes in activity duration.
 - 3. Other identifiable changes.
 - 4. Problem areas, anticipated delays, and the impact on schedule.
 - 5. Corrective action recommended and its effect.
 - 6. Effect of changes on schedules or other contractors.
 - 7. Product delivery lead times.

- C. Include additional data with Bar Chart described in Paragraph 1.03A of this Section:
 - 1. Show original dates for each activity in the approved initial progress schedule by narrow bar next to a wider bar for the current schedule.
 - 2. Show date each activity actually started or finished when an event has occurred. Clearly identify actual dates in two right-most columns in left portion of an 11 by 17 inch chart.
 - 3. Indicate the percentage progress to the date of submittal for each activity.

1.04 Submittals

- A. Submit the initial progress schedule within 15 days after award of contract. Project Manager will review the schedule and return a reviewed copy within 21 days after receipt.

- B. Cut-off dates for progress revisions may be as early as the 20th of the month to avoid delaying processing of Payment Applications. Use the cut-off date for the first approved revision for further revisions.

- C. When required, re-submit within seven days after return of review copy.

- D. Include connecting lines between bars in the schedule to indicate the sequence that activities will be accomplished. Connecting lines when the activity's start or finish is modified will identify impact of preceding or succeeding activities.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION

Section 01785
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 Section Includes

- A. Maintenance and submittal of record documents and Samples.

1.02 Maintenance of Documents and Samples

- A. Maintain one record copy of documents at the job site.
- B. Store record documents and Samples in field office, if a field office is required by the Contract, or in a secure location. Provide files, racks, and secure storage for record documents and Samples.
- C. Label each document “PROJECT RECORD” in neat, large, printed letters.
- D. Maintain record documents in a clean, dry, and legible condition. Do not use record documents for construction purposes. Do not use permit drawings to record Modifications to the Work.
- E. Keep record documents and Samples available for inspection by owner, Project Manager and/or Project Inspector.
- F. Bring record document to progress review meetings for viewing by Project Manager and, if applicable, Design Consultant.

1.03 Recording

- A. Record information legibly with red ink pen on a set of drawings, concurrently with construction progress. Maintain an instrument on site at all times for measuring elevations accurately. Do not conceal work until required information is recorded.
- B. Contract Drawings and Shop Drawings: Mark each item to record completed Modifications, or when minor deviations exist, the actual construction including:
 - 1. Measured depths of elements of foundation in relation to finish first floor datum.
 - 2. Measured horizontal locations and elevations of Underground Facilities and appurtenances, referenced to permanent surface improvements.
 - 3. Elevations of Underground facilities referenced to a benchmark utilized for the work.
 - 4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 5. Dimensions and details of field changes.

6. Changes made by Modifications.
 7. Details not on original Drawings.
 8. References to related Shop Drawings and Modifications.
- C. Survey all joints of water mains at the time of construction. Record on Drawings, water main invert elevation, elevation top of manway, and centerline horizontal location relative to baseline.
- D. For large diameter water mains, mark specifications and addenda to record:
1. Manufacturer, trade name, catalog number and Supplier of each Product actually installed.
 2. Changes made by Modification or field order.
 3. Other matters not originally specified.
- E. Annotate Shop Drawings to record changes made after review.

1.04 Submittals

- A. At closeout of the contract, deliver Project record documents to Project Manager.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION

Section 02545
GRAVEL SURFACING (PIT GRAVEL)

PART 1 - GENERAL

1.01 Work Included

- A. Prepare sub-grade to receive gravel surfacing course for driveway and parking area.
- B. Place, distribute and level gravel surfacing course.
- C. Provide compaction as required.

1.02 Related Work

- A. Section 02112 - Demolition
- B. Section 02200 - Earthwork.

1.03 Unit Price

Payment for the various unit price items shall include the cost of all materials, labor, equipment, tools and incidental items necessary to complete the work.

- A. The cost for Gravel Surfacing shall be paid for on a cubic yard basis if listed as a separate item in the Bid Schedule.
- B. The cost for Gravel Surfacing shall be included in the unit price for the related item if not listed as a separate item in the Bid Schedule.

1.04 Reference Standards - (All reference to standard specifications shall be the latest revision to said specification).

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³)
 - 2. ASTM D1557- Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (56,000 ft-lbf/ft³)
 - 3. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- B. Arkansas State Highway and Transportation Department - Standard Specification for Highway Construction

1. Section 303 – Aggregate Base Course

PART 2 - PRODUCTS

2.01 Material

- A. Pit gravel shall be used and shall be defined by the following gradation requirements:

Grade Requirements	
<u>Size of Sieve</u>	<u>Pit Gravel</u>
<u>Total Retained</u>	
2" Sieve	0 - 05
1-1/2" Sieve	0 - 15
3/4" Sieve	0 - 40
3/8" Sieve	20 - 60
#4 Sieve	40 - 70
#10 Sieve	55 - 80
<u>Total Passing</u>	
#40 Sieve	10 - 35
#200 Sieve	03 - 15

The fraction passing the #200 sieve shall not be greater than two-thirds (2/3) the fraction passing the #40 sieve. The fraction passing the #40 sieve shall have a plasticity index not greater than ten (10).

The contractor shall have the necessary tests performed at his own expense to insure that the stone course meets specifications. The blending of materials on the above requirements will not be permitted.

PART 3 - EXECUTION

3.01 Sub-Grade Preparation

- A. Ensure grading of the sub-grade to the required elevation.
- B. Scarify to a depth of six inches the sub-grade where the surface course is to be placed.
- C. Water and thoroughly mix sub-grade until optimum moisture content is obtained when deficiency of moisture content exists. When excess moisture exists, rework and aerate sub-grade until optimum moisture content is obtained.

- D. Recompact the sub-grade to a minimum of 95% of the maximum dry density at or near the optimum moisture content as determined by the Standard Proctor Test per ASTM D698.

- E. Before final rolling, shape the entire area to the required cross section, adding additional sub-soil as required and compact the sub-grade surface to the required density.

3.02 Placement of Surface Course

- A. Place the surface course material over the prepared sub-grade in accordance with the construction methods described in Section 303 of the AHTD Standard Specifications for Highway Construction.

- B. Material is to be spread and compacted the same day that the material is delivered to the site.

- C. Add water during compaction to bring the base course materials to optimum moisture content. When excess moisture exists, rework the surface course material until optimum moisture content is obtained.

- D. Place surface course, uniformly spread, to depths indicated on the drawings.

- E. For compacted depths exceeding five (5) inches, place material in two (2) courses of equal depth.

- F. Maintain the surface course in a satisfactory condition until accepted.

3.03 Field Quality Control

- A. Testing laboratory will make in-place tests of density and moisture content of the sub-grade in accordance with ASTM D6938.

END OF SECTION

Section 02555
ASPHALT CONCRETE HOT MIX

PART I GENERAL

1.01 Work Included

- A. Furnish and place asphalt pavement.

1.02 Related Work

- A. Section 02245 – Lime Stabilization
- B. Section 02510 – Gravel Surfacing & Subgrade Preparation
- C. Section 02550 - Prime and Tack Coat

1.03 Unit Price

Payment for the various unit price items shall include the cost of all materials, labor, equipment, tools and incidental items necessary to complete the work.

- A. Asphalt concrete surface course: Surface course shall be paid for at the contract unit price per square yard of asphalt placed.
- B. Asphalt concrete binder course: Binder course shall be paid for at the contract unit price per square yard of asphalt placed.

1.04 Referenced

- A. Standard specification for Highway Construction, Arkansas State Highway and Transportation Department, latest edition.

1.05 System Performance

- A. Paving: Designed for movement of trucks up to 78,000 lbs.

1.06 Submittals

- A. Contractor to develop mix design in accordance with AHTD requirements of Section 404.0.
- B. Submit proposed mix design for review prior to commencement of work.

1.07 Quality Assurance

- A. Work shall be performed in accordance with Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1988 edition.
- B. Mixing Plant shall be conforming to and approved by Arkansas State Highway and Transportation Department.

PART 2 PRODUCTS

2.01 Materials

- A. Mineral aggregate of Type 1 shall contain a mineral filler composed of limestone dust, Portland cement or hydrated lime complying with the requirements of AASHTO M 17.
- B. Mineral aggregate in Type 2, 3, and 4 shall contain minor filler complying with the requirements of AASHTO M 17.
- C. Mixes shall contain a heat stable anti-strip additive.
- D. Materials shall comply with AHTD requirements of Section 409.
- E. Unless otherwise specified, the mixture used shall be Type 2.

2.02 Asphalt Mix

- A. The asphalt mixture shall conform to the following requirements:

BINDER COURSE DESIGN REQUIREMENTS

SIEVE	MAX MIX PERCENT PASSING			Tolerance (%)
	TYPE 1	TYPE 2	TYPE 3	
1 1/2"			100	
1 1/4"	100	100		
1"	92-100	92-100		
3/4"	75-97	75-97	70-90	±7
1/2"	55-85	55-85		
No. 4	35-60	35-60	35-60	±7
No. 10	20-45	20-45	20-38	±4
No. 20	14-35	14-35		±4
No. 40	10-30	10-30	10-25	±4
No. 80	6-20	6-20		±4

No. 200	4-10	4-10	0-7	±2
Asphalt Content	3.7-7.0	3.7-7.0	3.7-7.0	0.4
No. of Blows	75	50	50	
Min. Marshall Stability, lbs.	1500	1000		
Marshall Flow, 1/100"	7-16	7-16	7-16	
% Voids	3.0-6.0	3.0-6.0	3.0-6.0	
Min. % VMA	13	13	12	
Min. Water				
Sensitivity Ratio, %	75	70	70	
% Anti-strip	As required	As required	As required	
% Mineral Filler	2-4			

SURFACE COURSE DESIGN REQUIREMENTS

SIEVE	MAX MIX PERCENT PASSING				Tolerance (%)
	TYPE 1	TYPE 2	TYPE 3	TYPE 4	
3/4"	100	100			
1/2"	85-100	85-100	100	100	
No. 4	55-80	55-80	60-80	95-100	±7
No. 10	35-60	35-60	40-60	75-95	±4
No. 20	22-45	22-45	22-47	45-62	±4
No. 40	15-35	15-35	15-40	30-55	±4
No. 80	8-22	8-22	8-24	15-30	±4
No. 200	4-10	4-10	4-10	5-12	±2
Asphalt Content	4.5-7.5	4.5-7.5	4.5-7.5	6.0-10.0	0.4
No. of Blows	75	50	50	50	
Minimum Marshall					
Stability, lbs.	1750	1000	1000	750	
Marshall Flow, 1/100"	7-16	7-16	7-16		
% Voids	3.0-5.0	2.5-5.0	2.0-5.0		
Minimum % VMA	14	4	15		
Minimum Water					
Sensitivity Ratio, %	75	70	70		
% Anti-strip	As required	As required	As Required	As Required	
% Mineral Roller	2-4			4-6	

2.03 Asphalt Mixing Plant

- A. The equipment used shall comply with AHTD requirements as defined in section 409.
- B. The Engineer may inspect the plant operations at any time.

2.04 Minimum Quality Control

- A. Aggregate samples will be tested for gradation in accordance with AASHTO T 11, T 27, and T 30 as applicable.
- B. Asphalt mixtures will be tested using extraction tests to be performed in accordance with AASHTO T 164.

PART 3 EXECUTION

3.01 Inspection

- A. The Engineer will inspect all equipment to make sure that the equipment will satisfactorily perform the work and that the equipment is in good working order.
- B. Contractor shall inspect the base to make sure that the prime coat or tack coat has sufficiently cured.
- C. Contractor shall inspect the base to make sure that the equipment can negotiate all rough areas and still lay a surface that will conform with the grades and other requirements.
- D. Contractor shall inspect the base for excessive moisture or soft areas.

3.02 Preparation

- A. Complete all required corrections to the existing pavement or base including:
 - 1. Filling all pot holes, sags and depressions
 - 2. Alterations to the existing crown.
- B. Accomplish corrections by placing asphalt binder or surface course mixtures at the locations and in the manner directed by the Engineer.
- C. Prime or tack all existing surfaces prior to placing asphalt.
- D. Reprime or retack, prior to laying asphalt, all areas that have had excessive traffic or when the surface has been damaged.
- E. Use clean sand to blot excess primer.
- F. Remove excessive joint or crack filler on existing pavement surfaces.

- G. Contact surfaces of curbing, gutters, manholes and other structures shall be painted with a thin coating of rapid curing cut-back asphalt or emulsified asphalt.
- H. When asphalt course is to be laid over previously laid course, apply a tack coat when the surface was placed more than 72 hours earlier or when the surface has excessive dirt or foreign material.
- I. Apply tack coat when directed by Engineer even if the lapse time is less than 72 hours.
- J. Establish edge of asphalt course by string or chalk line for a distance of not less than 500 feet ahead of the spreading equipment.

3.03 Transportation

- A. Transport in vehicles with clean, tight beds.
- B. Insulate vehicle beds and cover material with canvas when mixture is hauled more than 15 miles or when placed between November 1 and April 1.
 - 1. Insulating material shall be at least 3/4" thick and shall cover ends, sides and bottom of truck bed.
- C. Sufficient haul vehicles and plant production rate shall be maintained to provide a continuous operation at the site.

3.04 Spreading and Finishing

- A. Mixture shall be delivered to the paver within the recommended temperature range as determined by the approved mix design.
- B. Material shall not be placed at a temperature of lower than 250 F.
- C. Longitudinal joints of one layer shall offset joints immediately below by approximately 6 inches.
- D. Top longitudinal joint shall be at the center line of roadway.
- E. All material shall be placed with a paver unless the area is inaccessible to the paver.
- F. Hand spread in inaccessible areas.
- G. Uniformly distribute and compact mixture in front of the screed for the full width being paved.

- H. Finished surface shall be smooth and of uniform texture.
- I. Screed or strike-off assembly shall effectively produce a finished surface of the required evenness and texture without tearing, shoving or gouging the mixture.
- J. Speed of the paver shall match the plant production rate so as to provide a smooth operation.

3.05 Rolling and Density Requirements

- A. Compact mixture as soon as it will bear the weight of the roller without undue displacement.
- B. Contractor to develop a rolling pattern acceptable to the Engineer.
- C. Vibratory roller shall not be used on courses less than 1 1/2" thick.
- D. Roll longitudinal joint first.
- E. Rolling shall start longitudinally at the lower edge and proceed towards the higher portion.
- F. Alternate passes of the roller shall terminate at least 3 feet from any proceeding stop.
- G. Speed of the roller shall be slow enough to avoid displacement of the hot mixture and in no case, more than 3 mph.
- H. Rolling shall continue until all roller marks are eliminated.
- I. Roll in a manner and frequency to obtain required density.
- J. Keep roller moist to prevent adhesion of the asphalt mixture.

3.06 Joints

- A. Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course.
- B. Brush coat of asphalt material shall be used on the contact surface just prior to placing additional material.
- C. Roller shall not pass over the unprotected end of freshly laid asphalt.

3.07 Tolerances

- A. Finished surface shall show no variation more than 1/8" when checked with a 10' straight edge.

3.08 Field Quality Control

	SURFACE COURSE			
	TYPE 1	TYPE 2	TYPE 3	TYPE 4
Mini Marshall Stability, lbs.	1500			
Min Density, % Theoretical	92.0	92.0	92.0	92.0
Max Moisture% (Roadway)	0.75	0.75	0.75	0.75

In accordance with AHTD Test Method No. 454.

	BINDER COURSE		
	TYPE 1	TYPE 2	TYPE 3
Min Marshall Stability, lbs.	1500		
Min Density, % Theoretical	92.0	92.0	92.0
Max Moisture, % (Roadway)	0.75	0.75	0.75

In accordance with AHTD Test Method No. 454.

3.09 Protection

- A. Immediately after placement of asphalt, barricade area to keep traffic off of freshly laid asphalt until the asphalt has sufficiently cooled.
- B. Barricade areas to receive a second layer so as to eliminate the need for a tack coat between layers.

3.10 Clean-Up – Restoration of Area

- A. Remove all excess asphalt from shoulders and R-O-W.
- B. Remove all trash and other debris from R-O-W.

END OF SECTION

Section 02610A
PIPE & FITTINGS (WATER LINES)

PART 1 - GENERAL

1.01 Work Included

- A. This section covers the material specifications for the various types of pipe and fittings called for in other sections of these specifications.

1.02 Related Sections - Not Used

1.03 References - (All reference to standard specifications shall be the latest revision to said specification)

- A. AWWA C104 – Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water
- B. AWWA C110 – Ductile-Iron and Gray-Iron Fittings
- C. AWWA C111 - Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
- D. AWWA C115 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
- E. AWWA C150 - Thickness Design of Ductile-Iron Pipe
- F. AWWA C151 – Ductile Iron Pipe, Centrifugally Cast, for Water
- G. AWWA C200 – Steel Water Pipe 6 Inch (150 Mm) and Larger
- H. ASTM A123 – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- I. ASTM A139 – Standard Specification for Electric Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over)
- J. ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- K. ASTM D2239 – Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR PR) Based on Controlled Inside Diameter

- L. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR Series)
- M. ASTM D2513 – Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing and Fittings
- N. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
- O. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

1.04 Unit Prices

- A. The cost of all the pipe and fittings are to be included in the various lump sum or unit price items listed in the other sections unless specified in the Bid Schedule.

PART 2 - PRODUCTS

2.01 General Requirements

- A. Material To Be Furnished - The inclusion of certain materials does not imply that all materials specified herein are acceptable on a particular project. The plans and actual bid items may specify particular products for a particular area of a project.

2.02 Water Pipe Material

- A. Ductile Iron Pipe AWWA C150 & 151
 - 1. Class 51 for 3" & 4" and class 50 for all other push-on and mechanical joint pipe unless designated otherwise on the plans.
 - 2. Class 53 for flanged fittings.
 - 3. Inside coating of cement-mortar lining – AWWA C104.
 - 4. Outside coating of varnish.
 - 5. Joints - Buried.
 - a. Push-on joint with rubber gaskets-AWWA C111, unless otherwise noted on plans.
 - 6. Joints - Exposed
 - a. Mechanical joints with rubber gaskets AWWA C111
 - 7. Joints - Above Ground
 - a. Flanged Joints - AWWA C115
 - 8. Class of pipe to be stenciled on all pipes & fittings
 - 9. Fittings: AWWA C110

- a. 2" - 14": Classified at 250 PSI unless specified otherwise on the plans or in the specifications.
 - b. Over 14": Classified at 250 PSI unless specified otherwise on the plans or in the specifications.
- B. PVC (Polyvinyl Chloride)
1. Sizes 2" through 4" - have a pressure rating of 200 PSI at 23° C (73° F) and have a Standard Dimension Ratio (SDR) number of 21.
 2. Sizes 6" and larger - have a pressure rating of 200 PSI at 23° C (73° F) and have a Standard Dimension Ratio (SDR) number of 21.
 3. All PVC pipe shall be PVC 1120 pressure pipe made from class 12454-A or 12454-B material as defined by ASTM D1784 with outside diameter dimensions of steel or cast-iron pipe.
 4. Joints
 - a. Gasket: Single rubber, continuous molded, ring gasket of vulcanized natural or vulcanized synthetic rubber conforming to ASTM F477 & ASTM D3139.
 - b. Push-on, bell and spigot joint (couplings will not be accepted)
 - c. The gasket and the angular recess shall be so designed and shaped that the gasket is locked in place against displacement as the joint is assembled. Gasket dimensions shall be in accordance with manufacturer's standard design dimensions and tolerances and shall be of such size and shape as to provide an adequate compressive force against the plain end and socket after assembly to effect a positive seal under all combinations of joint and gasket tolerances. The joint shall be designed to withstand the same pressure as required for the pipe. All plain ends should be extended into the socket. The joint shall be designed so as to provide for the thermal expansion or contraction experienced with a temperature change of at least 75°F.
 5. Fittings
 - a. 2" - 4" - push on made of the same type of material as the pipe and having the same pressure rating.
 - b. 6" and larger - short or long bodied cast iron fittings using a mechanical joint system with hardened or duck tipped type of rubber gaskets in accordance with AWWA C110 and C111.
 6. Markings: Stencil the following information on all pipe and fittings:
 - a. Normal size
 - b. Type of material
 - c. SDR or class
 - d. Manufacturers Name
 - e. NSF (National Sanitation Foundation) Seal of Approval for water products (NSF Standard No. 14).

- C. PE (Polyethylene)
 - 1. Sizes ½” through 2” – The pipe shall have a Standard Dimension Ratio (SDR) number of 9.
 - 2. Sizes 3” through 8” – The pipe shall have a Standard Dimension Ratio (SDR) number of 11.
 - 3. All PE pipe shall be PE 2306, 2466 or 3408 pipe as defined by ASTM D2239.
 - 4. Joints – All joints to be fused welded in accordance with ASTM specification.
 - 5. Lengths – Manufacturer’s standard lengths of 18 to 20 feet.
 - 6. Fittings – Use PE fittings with the same SDR ratio as the pipe on which it is installed.

- D. Galvanized Pipe:
 - 1. Schedule 40, manufactured in accordance with ASTM A123 and ASTM A53.
 - 2. Working pressure of fittings equal to or exceeding that of the pipe.
 - 3. Threads: IPS.

- E. Encasement Pipe:
 - 1. Steel: Smooth wall, manufactured in accordance with ASTM A139 (Grade B) or AWWA C200 (Grade B), with ends prepared for welded joints.
 - a. Up to 14" - Minimum thickness of 3/16".
 - b. Over 14" - Minimum thickness of 1/4".
 - 2. PVC: Minimum SDR 26 Class 160.

END OF SECTION

Section 02640
VALVES & HYDRANTS

PART 1 - GENERAL

1.01 Work Included

- A. Providing valves and fire hydrants for water distribution line construction.

1.02 Related Work

- A. Section 02660 - Water Distribution Lines

1.03 Unit Prices

- A. The cost of valves shall be included in the lump sum or unit price for the related item if not listed as a separate item in the Bid Schedule.
- B. Gate Valves: Complete work of providing gate valve and valve box will be measured on a per each basis and will be paid for at the unit price bid per each for "Gate Valve w/Box" of the sizes listed in the Bid Schedule, which price shall be full compensation for excavation and backfill, concrete for thrust blocking, if necessary, and all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- C. Combination Tapping Sleeve & Gate Valve: Complete work of providing combination tapping sleeve gate valve and valve box will be measured on a per each basis and will be paid for at the unit price bid per each for "Tapping Sleeve & Gate Valve w/ Box" of the sizes listed in the Bid Schedule, which price shall be full compensation for excavation and backfill, concrete for thrust blocking if necessary, and all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- D. Insertion Valve: Complete work of providing insertion valve and valve box will be measured on a per each basis and will be paid for at the unit price bid per each for "Insertion Valve w/ Box" of the sizes listed in the Bid Schedule, which price shall be full compensation for excavation and backfill, concrete for thrust blocking if necessary, and all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- E. Altitude Valves: Complete work of installing altitude valve will be paid for on a per each basis and will be paid for at the unit price bid per each for "Altitude Valve" of the types and sizes listed in the Bid Schedule, which price shall be full compensation for excavation and backfill, concrete for thrust blocking if necessary, and all materials, labor, tools, equipment, and incidentals necessary to complete the work.

- F. Check Valves: Complete work of providing check valves will be measured on a per each basis and will be paid for at the unit price bid per each for “check valves” of the sizes listed in the Bid Schedule, which price shall be full compensation for excavation and backfill, concrete for thrust blocking, if necessary, and all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- G. Air Release Valves: Complete work of providing air release valve and valve box will be measured on a per each basis and will be paid for at the unit price bid per each for "Air Release Valve w/Box" of the sizes listed in the Bid Schedule, which price shall be full compensation for excavation and backfill, concrete for thrust blocking, if necessary, and all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- H. Fire Hydrant Assembly: Completely installed fire hydrant assembly will be paid for on a per each basis and will be paid for at the unit price bid per each for "Fire Hydrant Assembly w/Gate Valve" of the types and sizes listed in the Bid Schedule, which price shall include fire hydrant, lead pipe and fittings, pipe connection, gate valve, gaskets and lubricants, concrete thrust blocking, drainage fill, excavation and backfill, and all other materials, labor, tools, and equipment necessary for a complete installation.
- I. Post Hydrants: Completely installed post hydrant assembly will be paid for on a per each basis and will be paid for at the unit price bid per each for "Post Hydrant Assembly w/Gate Valve" of the types and sizes listed in the Bid Schedule, which price shall include post hydrant, lead pipe, pipe connection, gate valve, gaskets and lubricants, concrete thrust blocking, drainage fill, excavation and backfill, and all other materials, labor, tools, and equipment necessary for a complete installation.

1.04 Reference Standards - (All reference to standard specifications shall be the latest revision to said specification).

- A. American Water Works Association (AWWA):
1. AWWA C500 – Metal Seated Gate Valves for Water Supply Service
 2. AWWA C502 – Dry-Barrel Fire Hydrants
 3. AWWA C508 – Swing-Check Valves for Waterworks Service, 2 In. through 24 In. (50-mm through 600-mm) NPS
 4. AWWA C509 – Resilient-Seated Gate Valves for Water Supply Service
 5. AWWA C512 – Air-Release, Air/Vacuum, and Combination Air Valves for Waterworks Service
- B. American Society for Testing and Materials (ASTM)
1. ASTM A48 – Standard Specification for Gray Iron Castings.
- C. Federal Law 111-380 – All materials and components to comply with federal definition of “lead free.”

PART 2 - PRODUCTS

2.01 Material

All iron and steel products shall meet “American Iron and Steel” requirements.

A. Gate Valve with Double Disc

1. Conform to AWWA C500
2. Design Working Pressure: 200 psi.
3. Bronze mounted iron bonnet, non-rising stem, double-disc parallel seat type, O-ring stem seals.
4. 2 inch x 2 inch square operating nut for mechanical joint valves and hand wheel for flanged valves.
5. Valves shall open when operating nut is turned counterclockwise.
6. Valves shall be as manufactured by the Mueller Company, or approved equal.
7. Valves are to either mechanical joint for buried service or flanged for above ground service.

B. Gate Valves with Resilient Seat

1. Conform to AWWA C509
2. Design Working Pressure: 200 psi.
3. Have a resilient rubber seat ring mounted on the front of the valve disc and securely attached with stainless steel screws.
4. 2 inch x 2 inch square operating nut for mechanical joint valves and hand wheel for flanged valves.
5. Valves shall open when operating nut is turned counterclockwise.
6. Valves shall be as manufactured by the Mueller Company, or approved equal.
7. Valves are to either mechanical joint for buried service or flanged for above ground service.

C. Combination Tapping Sleeve & Valve

1. Tapping sleeve to conform to ANSI B16.1
2. Design Working Pressure: 200 psi.
3. Sleeve to be ductile iron or stainless steel.
4. Valve to conform to Section A of this specification
5. Sleeve to have duck-tipped end gaskets
6. Sleeve & valves to be mechanical joint
7. Sleeve & valve shall be Mueller Company H-615, H-619, or H-610; Romac SST with ductile flange; or approved equal.

D. Insertion Valve

1. Insertion Valve to conform to American Iron and Steel Requirements
2. Design Working Pressure: 250 psi.
3. Sleeve to be stainless steel

4. Valve to conform to Section A of this specification
 5. Valve to be IV 250 Patriot series as manufactured by Hydra-Stop or approved equal.
- E. Altitude Valves – One Way Flow:
1. Manufacturer:
 - a. Cla-Val Co. - Clayton 210-01 or approved equal
 - b. Manufacturer that can prove that his equipment is equal and who has a minimum of five (5) years of satisfactory manufacturing and operational experience.
 2. Provide hydraulically operated, diaphragm-actuated valve.
 3. Provide main valve body and cover of cast iron (ASTM A48).
 4. Provide main valve trim of brass (QQ-B-626).
 5. Provide diaphragm of Buna N Synthetic Rubber or approved equal.
 6. Maximum working pressure of 175 psi.
 7. Flanged end connections.
- F. Check Valves
1. Conform to AWWA C508.
 2. Design working pressure: 250 psi.
 3. Lever and weight operated.
 4. Mueller A-2600-6-01 or A-2600-20-01 or approved equal
- G. Wafer-Style Check Valves
1. To allow flow in only one direction
 2. To be constructed of elastomeric material
 3. To be inserted between two mating flanges; flange to be 125#ANSI standard flat face.
 4. Maximum backpressure limits by nominal size:
 - a. 0" to 3" - 175 psi.
 - b. 4" to 8" - 150 psi
 - c. 10" to 12" - 100 psi
 - d. 14" to 24" - 75 psi
 - e. 30" and larger – 50 psi
- H. Valve Boxes:
1. Mueller Co., #M-10364, 562-A, or equal.
 2. Two-piece, sliding type, 5-1/4" shaft, 24-36 inch extensions.
 3. Drop cover with work "WATER" cast into top surface.
- I. Air-Release
1. Conform to AWWA C512
 2. Installed prior to check valve
 3. Cast iron body
 4. Stainless steel float

5. APCO 142-55 or approved equal
- J. Fire Hydrants (AWWA C502)
1. Standard fire hydrant, improved type with traffic flange.
 2. Working pressure: 150 psi
 3. Size of valve opening: 5-1/4 inch.
 4. Diameter of inlet connection: 4 inch.
 5. Type of inlet connection: Mechanical Joint.
 6. Hose Connections: 2-1/2 inch size; Two
 7. Nozzle thread: ASA Standard.
 8. Nozzle cap chains: Two.
 9. Nozzle cap washers: Rubber.
 10. Operating threads: Oil or grease lubricated with "O" ring seals.
 11. Seat Rings: Bronze to bronze.
 12. Direction to turn to open: Counterclockwise.
 13. Shape and size of operating and nozzle cap nut: 1/4 inch from flat to point.
 14. Color above ground - Barrel and Dome: Red.
 15. Color - Nozzle Caps and top nut including shield: Red.
 16. Fire Hydrants shall be Mueller Super Centurion model A-423 or AVK Series 2780, or approved equal.
- K. Post Hydrants
1. 2" diameter post flushing hydrant as manufactured by
 - a. Gil Industries of Pensacola, Florida
 - b. Kupferle of St. Louis, Missouri
 - c. or approved equal.
 2. Working pressure: 150 psi
 3. Size - 2 inch inside diameter.
 4. Line Valve - provide gate valve as specified in paragraphs A or B in Supply Line.
 5. Type of inlet connection: Screwed.
 6. Hose Connections - One 2-1/2 size connection.
 7. Nozzle thread: ASA Standard.
 8. Provide nozzle cap chain.
 9. Provide rubber nozzle cap washer.
 10. Provide traffic breakable union at ground level.
 11. 2-1/2" nozzle to extend above the ground approximately 24 inches
- L. Concrete and Steel for Thrust Blocks & Collars: Refer to Section 03001.
- M. Wrenches:
1. Provide one (1) valve wrench for each 20 valves set. (Provide a minimum of one wrench.)
 2. Provide one (1) fire hydrant wrench for each five (5) fire hydrants. (Provide a minimum of one wrench.)

- N. Sampling Station: Sampling Station shall be Kupferle Foundry # 88-SS (Stainless Steel) Eclipse Sampling Station or approved equal.

PART 3 - EXECUTION

3.01 Installing Valves

A. Setting Valves:

1. Place valves in pipe lines at points designated.
2. Cut pipes to proper length and bevel ends as specified in this section.
3. Place valve with stem vertical with clearance for installation of valve box.
4. Place valve on firm soil or on blocking as shown on Detail Drawings.
5. For tapping sleeves, contractor to complete the installation without interfering with existing service.

B. Jointing Valves:

1. Joint valves in accordance with methods of jointing pipes as specified in this section.
2. Joint valves with mechanical joint ends as specified in this section for mechanical joint pipe and fittings.

C. Setting Valve Boxes:

1. Install valve boxes over operating nut of each valve.
2. Ensure that box is of adequate length to reach finish ground or paved surface.
3. Provide valve stem extension on valve when height to finished surface exceeds five (5) feet.

3.02 Setting Fire Hydrants

- A. Thoroughly clean hydrants before setting, removing all dirt and foreign matter from the barrel and the bottom section up to the main valve. Place main valve in the "closed" position and ensure that waste outlet is free of any obstructions.
- B. Locate hydrants a safe distance from driveways, roadways, and narrow-type sidewalks and in a manner to provide complete accessibility, and set plumb with nozzles at proper elevation.
- C. Unless otherwise directed, place the large diameter nozzle at right angles to the street, with no portion of the nozzle cap less than eighteen (18) inches from back of the curb or edge of pavement.
- D. If necessary, rotate the hydrant barrel or nozzle section at the flanged joint to obtain the desired nozzle position as specified by the Engineer.

- E. Support the bowl or bottom of the hydrant firmly on the bottom of excavation and brace against unexcavated earth on the back side. Brace the hydrant against undisturbed soil with poured concrete blocking, or use other restraining devices approved by the Engineer.
- F. Provide a drainage bed under and around the base of the hydrant of at least six (6) cubic feet in volume and extending at least six (6) inches above the drain outlet using gravel drainage fill.
- G. Backfill and tamp around hydrant barrels in continuous operation.

END OF SECTION

Section 02660
WATER DISTRIBUTION LINES

PART 1 - GENERAL

1.01 Work Included

- A. Provide water line pipe, fittings, and appurtenances.
- B. Provide encasement pipe for road crossings.

1.02 Related Work

- A. Section 02610A – Pipe & Fittings (Water Lines)
- B. Section 02640 – Valves and Hydrants
- C. Section 02644 – Master Meter Station
- D. Section 02661 – PVC Line Tracing Facilities
- E. Section 02665 – Water Service Lines, Connections & Meters.

1.02 Unit Prices

- A. Water Lines: Completed and accepted water line will be measured by the linear foot or pipe with the total length of each segment being determined by measuring parallel to the far end of the last pipe section laid. Measurement will be made through valves and fittings. Payment will be made at the unit price bid per linear foot for the various sizes and type of water line which price shall include excavation and backfill for water line, the gaskets and lubricant, fittings, blocking, and all other materials, labor, tools, equipment, and incidentals necessary to complete the work.
- B. Blow-Off Assemblies: Completed and accepted blow-off assemblies will be measured on a per each basis and will be paid for at the unit price bid per each for "Blow-Off Assemblies", which price shall be full compensation for excavating and backfilling; blocking; furnishing all materials; assembling and installing; and for all other labor, tools, equipment, and incidentals necessary to complete the Work.
- C. Roadway and Railroad Bore: Completed and accepted bore and encasement pipe installation will be measured on a linear foot basis and will be paid for at the unit price bid per linear foot for bore and encasement pipe of the size and

type of encasement pipe designated for each crossing, which price shall be full compensation for furnishing and installing encasement pipe; for excavating and backfilling; for final grading and clean-up; and for all labor, materials, tools, equipment, and incidentals necessary to complete the Work.

- D. Pavement Repairs: Completed and accepted Work of cutting and replacing asphalt and concrete pavement will be measured on a per square yard basis and will be paid for at the unit price bid per square yard for "Asphalt and Concrete Drive Repair". Maximum pay width for repair will be 36 inches plus the nominal diameter of the pipe. All repairs beyond the maximum pay width shall be completed at the Contractor's expense. The unit price for each type of paving repair shall include all labor, materials, tools, equipment and incidentals necessary to cut and replace the pavement.
- E. Gravel Surface Repairs: Completed repairs of gravel-surfaced drives and streets will be paid for by the cubic yard of gravel used which price shall be full compensation for all labor, tools, materials, equipment, and incidentals necessary to complete the work. Payment will be based on gravel tickets submitted by the Contractor and verified by the inspector.
- F. Wet Connections: At designated locations as shown on the plans, the Contractor is to tie into existing water lines. When the connection does not include a tapping valve and sleeve and when the proposal lists wet connections as a bid item, the Contractor will be paid the unit price for "Wet Connections" which payment shall be full compensation for furnishing all labor, tools, and equipment necessary to make the connections.
- G. PE Adaptor: Unless "PE Adaptor" is listed as a separate item in the bid schedule, the cost of PE adaptors shall be included in the various lump sum or unit price of related items. The cost shall include the PE fitting, mechanical joint fitting, and the necessary time and materials for a complete transition from fused PE pipe to mechanical joint PVC or ductile iron pipe.

1.04 Reference Standards - (All reference to standard specifications shall be the latest revision to said specification).

- A. Arkansas State Highway and Transportation Department
 - 1. Standard Specification for Highway Construction:
 - a. Section 407 – Asphalt Concrete Hot Mix Surface Course
 - b. Section 303 – Aggregate Base Course
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft³)

- C. American Water Works Association (AWWA):
 - 1. AWWA C600 – Installation of Ductile Iron Water Mains and Their Appurtenances
 - 2. AWWA C604 – Installation of Steel Water Pipe – 4 Inch (100mm) and Larger
 - 3. AWWA C605 – Underground Installation of PVC Pressure Pipe and Fittings for Water
 - 4. AWWA C651 – Disinfecting Water Mains

- D. Other:
 - 1. Recommended Standards for Water Works (Ten State Standards)
 - 2. Arkansas Board of Health Rules and Regulations Pertaining to Public Water Systems

PART 2 - PRODUCTS

2.01 Materials, Pipe – Refer to Section 02610A – Pipe & Fittings (Water Lines)

- A. Ductile Iron
- B. PVC (Polyvinyl Chloride)
- C. PE (Polyethylene)
- D. Galvanized Pipe
- E. Encasement Pipe

2.02 Materials, Miscellaneous

- A. Select Backfill Material: Soil excavated from trench or sub-soil from site that is free of rocks larger than 3/4" in greatest dimension that could cause significant scratching or abrasion of the pipe, and free of frozen soil, large clumps of soil, muddy soil, organic matter and foreign materials.
- B. Drainage Fill Material: Refer to Section 03001.
- C. Concrete: Refer to Section 03001.
- D. Asphalt Mix: Comply with provisions of Standard Specifications for Highway Construction of Arkansas State Highway & Transportation Department Section 407 for Asphalt Concrete Hot Mix Surface Course.

- E. Gravel Surfacing: Comply with provisions of Standard Specifications for Highway Construction of Arkansas State Highway & Transportation Department Section 303 for class 2 aggregate base course.
- 2.03 Valves and Hydrants – Refer to Section 02640 – Valves & Hydrants
- A. Gate Valves
 - B. Combination Tapping Sleeve & Valve
 - C. Altitude Valves
 - D. Check Valves
 - E. Air Release Valve
 - F. Fire Hydrants
 - G. Post Hydrants
- 2.04 Equipment
- A. Master Meter: Refer to Section 02644 and Drawings.
- 2.05 Water
- A. The Contractor is to furnish the water needed for filling, flushing and testing the lines.

PART 3 - EXECUTION

- 3.01 Coordination & Protection
- A. Notify water operator of intended sequence of construction and modify to meet operator's requirements.
 - B. Notify water operator 24 hours prior to disrupting any existing water service.
 - C. Expose other utilities in congested areas by hand.
 - D. Protection of Vegetation: The contractor shall not remove or disturb any vegetation except that required for the excavation of the Work. In developed areas the contractor shall protect all shrubs, bushes, trees and flowers.

Landscape plants damaged by the Contractor shall be replaced at the Contactor's expense.

- E. Clearing Right-of-Way: In undeveloped areas, the Contractor shall clear enough brush and small trees to allow the Contractor to install the pipe. If the Contractor cannot install the pipe without removing merchantable timber, the Contractor shall notify the Engineer prior to clearing the right-of-way.
- F. Disposal of Brush: All brush, damaged trees, stumps and other debris is to be removed from the pipe line right-of-way prior to final inspection and disposed of to the Engineer's satisfaction.
- G. Removal and Replacement of Fence: It is the Contractor's responsibility to remove and replace any fences which interfere with the Work. Temporary fencing shall be maintained if necessary for the control of livestock until permanent fences can be reconstructed.
- H. Location and Protection of Utilities and Structures: The approximate location of surface and subsurface structures known to the Owner are shown on the plans. This information is shown for the guidance of the Contractor and the Owner does not guarantee the accuracy or correctness of the locations of such structures as shown. Furthermore, there may be structures that are not shown. It shall be the responsibility of the Contractor to satisfy himself as to the actual location and nature of subsurface structures.
- I. The Contractor shall make necessary exploratory excavations to determine the location of underground structures such as pipes, drains, conduits, and other structures. He shall be responsible for contacting the Owners of such structures before excavating in the vicinity of these facilities and shall be guided by their instructions.

3.02 Excavation - Trench

- A. Excavate to lines and grades shown on Drawings or as established at the site.
- B. When excavation is carried below that required, fill space with concrete, approved gravel, or compacted select material.
- C. Provide sheeting and shoring where necessary to protect workmen, the Work, or adjacent property.
 - 1. Leave shoring in place until backfill has proceeded to point where it can be safely removed.
- D. Minimum trench width measured at the pipe spring line shall be four (4) inches greater than the outside diameter of the pipe. Maximum trench width

at the top of the pipe shall not exceed the outside diameter of the pipe plus two feet.

- E. If the above defined trench widths must be exceeded or if the pipe is installed in a compacted embankment, pipe embedment shall be compacted with mechanical tampers to a point at least 2.5 pipe diameters from the pipe on both sides of the pipe or to the trench walls, whichever is less.
- F. If necessary, to reduce earth load on trench banks to prevent sliding and caving, trench banks may be sloped except for the last 2 feet of trench which cannot be wider than the width specified in paragraph 3.02(A).
- G. Excavate to depth that will provide minimum 30 inch cover over top of pipe where required by the landowner. The minimum cover shall be 36 inches. The extra work shall be performed at no additional expenses to any party.
- H. If soil at trench bottom is mucky, or too soft to properly support pipe or in such a condition that it cannot be properly shaped and graded, excavate to a minimum depth of 6 inches below normal pipe subgrade elevation and refill with drainage fill material or tamped select material.
- I. Where water occurs in trenches, excavate to depth of 6 inches below grade and backfill with drainage fill material to point approximately 1/6 of internal pipe diameter or 2 inches, whichever is greater, above grade. Pump water out of trench from sump below gravel so as to hold water level below bottom of pipe until joints have been placed and pipe firmly bedded in position.
- J. Do not excavate more than 300 feet ahead of pipe installation and backfill.
- K. Direct surface run-off water away from trenches into existing drainage structures and ditches in such a manner as to prevent flooding of streets or private property.
- L. Pile excavated material in a manner that will not endanger the Work and that will avoid obstructing sidewalks and driveways. Keep street drainage swales clear or make other satisfactory provisions for street drainage.
- M. Dispose of excess material and material unsuitable for backfilling in a manner approved by the Owner.
- N. Rock Excavation: Where rock is encountered, excavate trench 6" below grade and fill with gravel or crushed stone. Rock excavation is defined as rocks or pieces of rock one (1) cubic yard in volume and a formation which cannot be excavated without power excavations or power shovels without continuous and systematic blasting.

3.03 Bedding and Backfilling of Water Lines

- A. Bedding of Pipe:
1. Grade trench bottom or bedding material to provide support of the full length of the pipe at the designated slope of line.
 2. Trench bottom is to be smooth and free of stones greater than 1/2" in diameter.
 3. Lay pipe as specified in this section.
 4. Bring material up evenly on each side of pipe to centerline of pipe along full width of trench.
- B. Backfilling Trench:
1. Begin backfilling immediately after pipe laying and embedment.
 2. Place select material to a point 12 inches above top of pipe in such a manner as to minimize voids.
 3. Backfill trenches not under structures or paving area with material from trench excavation or other approved material:
 - a. Do not use material of a perishable, spongy, or otherwise unsuitable nature and do not place rocks larger than six (6) inches in greatest dimension within 36 inches of top of pipe.
 - b. Do not place rocks larger than 3/4" in greatest dimension that could cause significant scratching or abrasion to the pipe within 12 inches of top of pipe.
 - c. Leave trench slightly mounded above top of pipe to allow for settlement.
 4. Under structures or paving areas, backfill trench from the top of the initial bedding to the top of subgrade with select material or other approved cohesive material:
 - a. Place material in uniform layers of not more than 6-inch loose thickness and compact each layer up to a point twelve (12) inches below subgrade to a density of 92% of optimum standard proctor density as determined by ASTM D 698.
 - b. Compact remaining 12 inches to 95% of the maximum density.
- C. Maintaining Trenches:
1. Maintain top of trenches during guarantee period of contract, adding material as backfill material settles.
 2. Maintain road and sidewalk crossings until pavement has been placed.

3.04 Separation of Water and Sewer Lines

- A. Do not lay water lines closer horizontally than 10 feet from any sanitary sewer line.

- B. Where water lines cross gravity sewer lines, lay with a minimum of 18 inches vertical separation between pipe barrels. If this distance must unavoidable be reduced, the water line or sewer line must be encased in watertight pipe with sealed watertight ends extending at least ten feet either side of the crossing. Any joint in the encasement pipe is to be mechanically restrained. Where a water line must unavoidable pass beneath the sewer line, at least 18 inches of separation must be maintained between the outside of the two pipes in addition to the preceding encasement requirements.

3.05 Laying Pipe

- A. General:
1. Carefully inspect each joint of pipe before it is placed in trench, making sure no foreign material is inside pipe.
 2. Lower pipe carefully into trench one length at a time in such a manner that spigot and bell will not become contaminated.
 3. If cutting of pipe is necessary, make cut straightly and smoothly without damage to pipe, removing all burrs.
 4. Lay pipe with bell facing direction of laying.
 5. Do not lay pipe in water or when trench conditions or weather is unsuitable for such Work.
 6. Place pipe on bedding prepared as specified in this Section.
 7. Lay pipe in straight and true alignment without sharp bends or severe breaks in grade.
 8. Do not allow deflection at joints to exceed the maximum deflection recommended by pipe manufacturer.
 9. At end of each day's Work or when laying of pipe must be discontinued for a significant period, close open ends of pipe temporarily to prevent foreign matter and water from entering.
- B. Jointing push-on joint pipe:
1. Check inside of pipe barrel for cleanliness.
 2. Thoroughly clean bell and spigot ends of pipe, especially the gasket seat, using wire brush as necessary.
 3. Clean and insert rubber gasket in seat within bell.
 4. Apply lubricant as recommended by pipe manufacturer.
 5. Insert spigot end into bell of pipe to which connection is being made and force to firm contact with shoulder of bell.
 6. Bed pipe as required in Section 3.03 and begin initial backfilling immediately after each joint has been laid and jointed.
 7. All cut pieces of pipe that enter a push-on bell are to be beveled at 30 degrees for at least 1/8 inch.

- C. Jointing Mechanical Joint Pipe and Fittings:
1. Thoroughly clean, using soapy water and cloth, the plain ends of the pipe and the bell ends of the pipe and fittings, removing all foreign materials from the bells, especially in the gasket seats.
 2. Place cast or malleable iron follower ring on the plain end of the pipe or fittings, followed by the rubber gasket which has been thoroughly cleaned and lubricated with the soapy water.
 3. Place the plain end of the pipe in the bell to which the connection is to be made and push to firm contact with shoulder of bell.
 4. Advance the rubber gasket into the bell and seat in the gasket seat. Bring the follower ring into contact with the rubber ring and enter all bolts and start nuts. Give pipe necessary deflection up to maximum recommended by the manufacturer.
 5. Make joint tight by advancing nuts with a wrench on bolts 180 degrees apart until a tight joint is made. Tighten bolts to the following torque range:

5/8" Bolts	45-60 ft. lbs.
3/4" Bolts	75-90 ft. lbs.
1" Bolts	85-100 ft. lbs.
1-1/4" Bolts	105-120 ft. lbs.
- D. Jointing Flange Joint Pipe and Fittings.
1. Thoroughly clean faces of all flanges and remove all burrs or imperfections with a steel brush.
 2. Place rubber gasket of 1/16 inch minimum thickness between flanges.
 3. Clean and lubricate all bolts and nuts prior to tightening.
 4. Prevent strain on flanges when aligning and tightening bolts.
 5. Tighten bolts alternately on opposite sides to the torque listed above for mechanical joints.

3.06 Roadway and Railroad Bores

- A. Bore and encase all roadway and railroad crossings designated on the plans.
- B. Encasement must be jacked into a bored tunnel. Contractor shall not use an excessive amount of water that will wash out voids or holes under the road. No roadways designated on the plans to be bored will be open cut.
- C. Encasement pipe for all state highway and railroad crossings will be steel pipe. Encasement pipe for all county roads designated on the plans to be bored may be SDR 26 Class 160 PVC pipe.
- D. Cables or jacks shall not be in direct contact with the casing but shall be padded.

3.07 Concrete Thrust Blocks

- A. General: Brace securely against undisturbed earth to hold in correct position all changes in direction of the pipe line, plugs, elbows, tees, valves on the end of lines, fire hydrants and reducers. Brace by pouring blocks of concrete as shown on Detail Drawings. Use concrete having a 28-day compressive strength of at least 3,000 psi.
- B. Place concrete for thrust blocks against undisturbed soil and on dry bottom excavation. Hand shape the excavation and remove loose material. Use forms to confine the concrete to the areas needed.
- C. Do not place concrete around any part of a joint so that it interferes with the removal of any joint accessories such as bolts, followers, threads, collars, and couplings. Do not restrict fire hydrant drains.
- D. Strike off top of concrete thrust block with a wood straight edge or float.
- E. Do not place concrete when temperature is below 40 degrees F and dropping or below 35 degrees F if the temperature is rising.
- F. Do not use admixtures in the concrete mix without the approval of the Engineer.
- G. Place concrete only in the presence of the Engineer.
- H. Do not place backfill over concrete thrust blocks before the concrete has attained initial set.
- I. Do not install thrust blocks with less than 6 inches between the pipe or appurtenance and undisturbed soil in the direction of thrust.
- J. Clean surfaces of pipe or appurtenances where concrete is to be in direct contact.
- K. Ensure that the area of contact of the thrust blocks is sufficient to resist the thrust. Use as a guide, the following suggested safe soil bearing values:

Suggested Safe Bearing Values

Type of Soil	Tons/Sq. Ft.
Solid Rock	25
Hard Slate	6
Medium Shale	4
Soft Shale	2
Dry Clay Gravel	4

Soft Clay	1.5
Dry Sand or Loam	2.5
Wet Clay	0.75

- L. Where the soil in the wall of the excavation is unstable or is in a recent fill area, use the following procedures either singly or in a combination:
 1. Make thrust blocks of adequate size to restrain pipe or appurtenance by mass alone.
 2. Extend excavation deep enough to contact firm soil and bring block up to pipe or appurtenance so that block acts as a beam and will provide restraint required.
 3. Construct anchor blocks in a firm soil and extend tie rods to pipe or appurtenance.

- M. For vertical bends, ensure that thrust blocks are adequate to resist the thrust by mass alone when the thrust is upward.

- N. Ensure that thrust blocks are adequate to restrain the pipe line and appurtenances at the specified test pressure. Refer to the following table which lists the resultant thrust at certain fittings at a test pressure of 100 psi:

Fitting	<u>Thrust Per 100 psi Pressure</u>									
	Thrust (tons)									
	6"	8"	12"	16"	20"	24"	30"	36"	42"	48"
11.25°	0.3	0.5	1.1	2.0	3.1	4.4	6.9	10.0	13.6	17.7
15°	0.4	0.7	1.5	2.6	4.1	5.9	9.2	13.3	18.1	23.6
22.50°	0.6	1.0	2.2	3.9	6.1	8.8	13.8	19.9	27.0	35.3
30°	0.7	1.3	2.9	5.2	8.1	11.7	18.3	26.3	35.9	46.8
45°	1.1	1.9	4.3	7.7	12.0	17.3	27.1	39.0	53.0	69.2
90°	2.0	3.6	8.0	14.2	22.2	32.0	50.0	72.0	98.0	128.0
Plug (Dead End)	1.4	2.5	5.7	10.1	15.7	22.6	35.3	50.3	69.3	90.5

3.08 Installing Valves

- A. Refer to Section 02640

3.09 Setting Fire Hydrants

- A. Refer to Section 02640

3.10 Pavement Repairs

- A. General: Remove the minimum amount of street, driveway, sidewalk, parking lot, or other pavement required to permit installation of the pipe lines or

appurtenances. Score all pavement surfaces in straight lines with suitable equipment before removal. Score concrete surfaces with a suitable concrete saw unless all material is removed between existing concrete joints. The Contractor shall repair street to the specification and satisfaction of the Owner.

- B. Asphaltic or Concrete Pavement: Backfill trench as specified in this Section. Replace the surface to its original condition by repairing and replacing the base and surface. Refer to Detail Drawing for construction details for replacement of both type surfaces.
- C. Gravel Surfaced Drives and Streets: Either strip the existing gravel surface and place in stockpile and replace after backfilling the trench, or provide new gravel. (Stripping and replacing the existing gravel will not be considered a pay item.)

3.11 Filling Pipe Lines

- A. After the pipelines and appurtenances have been installed, all concrete thrust blocking has cured adequately, and upon approval of the Engineer, fill the pipe lines with water.
- B. Open the valve operated to fill the pipe lines slowly and do not fully open.
- C. Expel all air from the pipe line by opening fire hydrants, blow-offs, and/or other openings installed at the pipe line crests.

3.12 Cleaning Pipe Lines

- A. All sections of lines greater than 2,000 feet are to be cleaned by running a "cleaning pig" through each line. The "pig" shall be the Polly-Pig Blue Devil manufactured by Knapp, Inc., Houston, Texas, or approved equal. The "pig" is to be at least two percent (2%) larger in diameter than the inside diameter of the pipe.
- B. Before disinfection and hydrostatic pressure and leakage testing, also clean lines by flushing.
- C. Provide drainage at blow-off points so as not to create a nuisance and to avoid property damage.

3.13 Hydrostatic and Leakage Test

- A. General: After the pipe lines or isolated sections of the lines have been filled with water, perform hydrostatic and leakage tests in the presence of the Engineer and in conformance with the requirements of Section 7.3 of AWWA

C605. Furnish all necessary pressure gauges, meters, and pumps. Make all taps and connections necessary to perform the tests.

- B. Hydrostatic Test: Increase the pressure in the filled lines to test pressure by means of a pump. The pump shall have the following features:
1. Designed so that the required test pressures can be attained.
 2. Equipped with a by-pass pipe between the pump suction and discharge. By-pass shall be equipped with an in-line valve and a valve exhaust outlet.
 3. The pump discharge shall be equipped with the following in the order listed from the pump outward:
 - a. Pump by-pass outlet.
 - b. Check valve arranged so as to prevent flow back toward pump.
 - c. Adjustable pressure regulating device capable of maintaining discharge pressure at a constant level.
 - d. Valved exhaust outlet.
 - e. Section of flexible hose - length sufficient that ends of hose rests on ground.
 - f. Straight meter coupling - 1/2" M.I.P. x 3/4" F.I.P.
 - g. 5/8" Meter.
 - h. Straight meter coupling - 1/2" M.I.P. x 3/4" F.I.P.
 - i. Outlet for pressure gauge. Outlet shall be equipped with valve and surge dampening device. Connection for gauge shall be 1/4" F.I.P.
 4. The pump suction shall be equipped with the following from the pump outward:
 - a. Pump by-pass outlet.
 - b. Suction pipe.
 - c. End strainer to prohibit entry of foreign matter if pump suction is connected to a vessel instead of on a water main.
- C. Provide all other necessary connections for connecting pump to suction source and the main to be tested.
- D. The test shall be at such a pressure that no part of the line shall have a pressure less than 100 pounds per square inch, or less than 50% above normal working pressure, whichever is greater. The duration of the hydrostatic test shall be two (2) hours or as specified by the Engineer.
- E. The source of water for the pump suction shall be a water pipe line in the Owner's distribution system.
- F. All interior valves including valves on fire hydrants and other appurtenances shall be open during all tests.

- G. After the specified test pressure has been applied to test the entire pipe line in the presence of the Engineer, giving particular attention to that part of the pipe line and those appurtenances that are exposed, repair and correct all leaks and defects found during the test.
- H. Leakage Test: After the hydrostatic test has been made, make a leakage test under the same pressure conditions as specified for the hydrostatic test. Each leakage test shall be of two (2) hours duration or longer, if necessary, to satisfy the Engineer that leakage in the line meets the specifications.
- I. The construction of the line shall be such that leakage shall be no greater than the allowable leakage as required in Section 7.3.6 of AWWA Specification C605. The maximum leakage per hour shall be as calculated from the following formula:
1. All Rubber Gasket or O-Ring Joints: $Q = (LD\sqrt{P}) \div 148,000$
Q = Quantity of makeup water in (gallons/hour)
L = Length of pipe sections being tested
D = Nominal diameter of pipe (inches).
P = Average test pressure during hydraulic test (psi/gauge).
- J. If any test of pipe laid discloses leakage greater than the allowable leakage as calculated from the above formulas or table, the Contractor shall, at his expense, locate the leak or leaks and perform whatever work and/or replace whatever material that is required in order to remedy the defect and stop the leak. All corrective work shall be approved by the Engineer.
- K. Stop all known leaks regardless of this test requirement.
- L. Retest after repair and place the system in service.
- 3.14 Disinfecting Pipe Lines & Appurtenances

- A. Conform to the requirements of AWWA Standard C651. Blow-off and sample points will be designated by the Engineer. Utilize fire hydrants as blow-off points whenever possible. However, fire hydrants are not satisfactory for sample points. Openings for sample points shall be 3/4" copper riser pipe which extends well above the surface.
- B. There are three (3) acceptable methods of disinfection: Continuous Feed Method using liquid chlorine or calcium hypochlorite, the Slug Method using liquid chlorine or calcium hypochlorite, and the Tablet Method using calcium hypochlorite. The Slug Method applied to large mains and shall be used only upon the approval of the Engineer. Use liquid chlorine only when the Contractor has suitable equipment available and employees are familiar with

the physiological, chemical, and physical properties and are properly trained and equipped to handle any emergency that may arise.

1. When the Continuous Feed or Slug Method is to be used, thoroughly flush the pipe lines and appurtenances prior to disinfecting. Open and close all valves in sections of mains being sterilized at least twice during the sterilizing period. Handle all chlorine compounds in accordance with manufacturer's recommendations. Breathing of chlorine gas can be fatal. Do not allow hypochlorite solutions to come into contact with the skin or clothing. Containers used for mixing hypochlorite solution shall be clean and dry.
 2. When the Continuous Flow or Tablet Method is used, the final concentration of chlorine inside the main shall be 50 parts per million. The concentration of chlorine entering the pipe line when the Slug Method is used shall be at least 300 to 400 parts per million. Calcium hypochlorite shall contain 70% available chlorine by weight either in tabular or granular form.
- C. When the Continuous Feed or Slug Method is used and the source of chlorine is calcium hypochlorite, prepare a solution of hypochlorite and water by mixing thoroughly in a suitable container. The mix shall contain one pound of calcium hypochlorite per gallon of water. Provide a suitable pump for pumping this solution into the pipe lines to be disinfected. This pump shall be equipped with a flow measuring device.
- D. When liquid chlorine is used, the equipment for injection shall consist of a solution feed chlorinator in combination with a booster pump for injecting the chlorine-gas water solution into the pipe line. Do not introduce chlorine-gas directly from the supply cylinder. The pump shall be equipped with a flow measuring device. During application of any chlorine solution, assure that the solution does not flow back into the distribution system.
- E. Use the following procedures for disinfecting by the Continuous Flow Method:
1. Regulate the flow through the pipe line and the solution flow so that the required concentration of chlorine is attained. Measure the flow through the main by using a pivot gauge or meter.
 2. Make the introduction of the solution continuous until the desired concentration is attained throughout the pipe line system. Check the concentration by the Drop Dilution Method.
 3. After the required concentration has been attained, operate all internal valves in order to assure that the solution comes in contact with all appurtenances.
 4. Allow the solution to remain in the pipe line system for 24 hours, after which thoroughly flush the pipe lines. Check the chlorine concentration before flushing. If the concentration is less than 25 parts

per million, repeat the disinfecting procedure as directed by the Engineer.

- F. Use the same procedure for disinfecting by the Slug Method as for the Continuous Flow Method except regulate the flow rates so that the specified concentration of chlorine is in contact with all parts of pipe line for at least three (3) hours.
- G. Use the following procedure for disinfecting by the Tablet Method:
 - 1. Place five gram calcium hypochlorite tablets in each section of pipe, in hydrants, hydrant branches, and in other appurtenances in sufficient quantities to produce the specified chlorine concentration after the introduction of water. Place the tablets in the top of the pipe with Permatex No. 1 or other approved adhesive. If tablets are placed in the pipe before jointing, mark the location of the tablets on the outside of the pipe to assure that the pipe is not rotated. Place the tablets so that they are not damaged during the laying operation.
 - 2. After the pipe lines and appurtenances have been installed, fill very slowly so that the tablets are not dislodged.
 - 3. Apply the procedures outlined in the paragraphs above.
- H. After final flushing, collect samples of water from the sample points and deliver to the controlling government agency for analysis as to bacterial purity. Take two (2) consecutive samples 24 hours apart. Before a line or section of line can be considered safe, two series of consecutive samples must be tested with negative results.

3.15 Cleaning Up

- A. During construction and after the construction work is completed, clean up all rubbish, debris and unused material and remove to a point designated by the Engineer. Restore all sidewalks, streets, pavement and other property, private or public, disturbed or damaged, to their former condition to the satisfaction of the Owner.

END OF SECTION

Section 02661
PVC LINE TRACING FACILITIES

PART 1 - GENERAL

1.01 Work Included

- A. Furnish and install copper tracing wire on pipe so that the PVC line can be located at a later date.
- B. Furnish and install tracer wire stations / risers.

1.02 Related Work

- A. Section 02660 – Water Line Distribution

1.03 Unit Price

- A. The cost of all the tracer wire and stations / risers are to be included in the various lump sum or unit price items listed in the other sections unless specified separately in the bid schedule.
- B. Tracing Wire: If listed separately, completed and accepted water line tracing wire shall be paid for at the unit price listed in the bid schedule which price shall be full compensation for furnishing the material, installing the material, completing spot checks to make sure the equipment works, and for all labor, tools, equipment and incidentals necessary for a complete installation.
- C. Tracer Wire Stations / Risers: If listed separately, completed and accepted tracer wire stations / risers shall be paid for at the unit price listed in the bid schedule which price shall include installation of and furnishing the station wire, connections, labels, and all applicable appurtenances.
- D. Pipe Locator Equipment: The contractor shall furnish pipe locator equipment for use with the trace wire. Payment shall include the cost of the transmitter, receiver, and miscellaneous equipment necessary to use the equipment with the trace wire specified.

PART 2 - PRODUCTS

2.01 Trace Wire

- A. Furnish 10 gauge solid copper wire with E insulation suitable for direct bury. Nylon insulation is not acceptable.
- B. Provide wire in rolls sufficient in length to eliminate all wire splices in the ground.

2.02 Tracer Wire Station / Riser

- A. Tracer wire stations / risers to be Rhino Triview TracerPed Tracer Wire Station or approved equal.
- B. Tracer wire stations / risers to have external tracer wire access points.
- C. Tracer wire stations / risers shall be blue for potable water with standard decals for water line tracer application.

2.03 Pipe Locator

- A. Equipment shall be H2-4000 D Portable Underground Cable Detector or approved equal.

PART 3 - EXECUTION

3.01 Trace Wire Placement

- A. Install wire as line is being laid.
- B. Lay trace wire on top of pipe, do not wrap. Secure in place with tape as required so that wire stays in place during backfill.
- C. Connect all wires in trace wire risers. No buried splices will be allowed.
- D. Install wire risers a minimum of every 1,000 feet.

3.02 Trace Wire Stations / Risers

- A. Install the station / riser so that it extends from the water line to 18 inches above the ground.
- B. Thread both wires through the station / riser pipe and connect to terminals as recommended by manufacturer.

3.03 Maintenance of Trace Wire Risers

- A. Maintain the trace wire stations / risers until the completed project is accepted.
- B. Replace all trace wire stations / risers that are damaged prior to the final inspection regardless of how or by whom they were damaged.

END OF SECTION

Section 02665
WATER SERVICE LINES, CONNECTIONS & METERS

PART I - GENERAL

1.01 Work Included

- A. Provide water service lines, corporation stops, connections to main lines, meters, trenching and backfill.
- B. Provide new radio read meters.
- C. Provide radio read software.
- D. Provide bores and encasement pipe for road crossing.
- E. Provide paved surface repairs to disturbed areas.

1.02 Related Work

- A. Section 02660 - Water Distribution Lines

1.03 Unit Prices

The unit prices for the various items of work includes all material, labor, tools, equipment, and incidental items necessary to perform the various units of work.

- A. Service Lines: The cost of cleaning the right-of-way, excavating the trench, furnishing the pipe, installing the pipe, backfilling the ditch, compacting the ditch and cleaning up the area will be paid for by the unit price listed in the proposal for the various types and sizes of service lines.
- B. Corporation Stops and Saddles: The cost of furnishing and installing corporation stops and for tapping the main line will be paid for by the unit price listed in the proposal. This price shall include the cost of the saddles if required. If corporation stops are not included in the proposal, the cost of installation shall be included in the various other unit price items.
- C. Meter Replacement: The cost of removing the existing meter and furnishing a new radio read meter and any other items needed to replace the existing meter shall be paid for by the unit price listed in the Bid Schedule for “Install New Radio Read Meter” for the various sizes of meters.

- D. Relocation of Existing Meter: The cost to remove the existing water meter, yoke, box; and to reinstall the meter, yoke, box and to provide new clamps and couplings shall be paid for at the unit price listed in the proposal for “Relocation of Existing Meters”. The cost for a new corporation stop and service tubing will be paid for under the other unit price items.
- E. Meters, Coppersettors & Meter Boxes: The cost of furnishing a meter, coppersetter, meter box, locking shut-off valve, check valve, clamps, coupling, installation of this material, and any other items needed to install a meter complete with coppersetter and meter box shall be paid for by the unit price listed in the proposal for the various sizes of meters.

PART 2 - PRODUCTS

2.01 Meter

- A. Approved Manufacturers
 - 1. Master Meters 3G Dial-Log
 - 2. Other approved equal: Manufacturers must have their submittals in the Engineer's office ten (10) days prior to the bid opening. The manufacturer of approved equal shall have a repair facility within 200 miles of the project. The Engineer will notify all bidders of any additional manufacturer which have been approved at least 3 days prior to the bid opening.
- B. Guarantee and Qualification of Manufacturer
 - 1. 10 year guarantee on register against defects in materials and workmanship.
 - 2. Manufacturer shall have actively engaged in the manufacture of all parts of their meter and shall have a minimum of five (5) years of satisfactory operating experience with their meter.
 - 3. All meters guaranteed against defects in material and workmanship for a period of one (1) year from acceptance of the job.
- C. Construction
 - 1. Contractor to furnish the type and size of meter designated on the plans and bid schedule.
 - 2. Bronze outer casing with a separate measuring chamber which can be easily removed.
 - 3. Meter to have cast in the outer casing the size and direction of flow through the meter.
 - 4. Register to have large sweeping hand enclosed in a hermetically sealed, tamper proof unit.
 - 5. Measuring chamber to be bronze or penton.

6. External stainless steel strainer.
7. All external bolts to be of corrosion resistant material and be easily removed.

2.02 Meter Boxes & Lids - Meter box shall be concrete box with lid as specified in paragraph D.

- A. Manufactured by Brooks Products, Inc., 36H-12 or approved equal.
- B. Size - large enough to hold meter plus sufficient working room. (10'x17' minimum for 5/8' meter 17" X 28" box for 1" meter)
- C. Boxes subject to traffic loads shall have cast iron cover.
- D. Hinged cast iron reading lid located in the center of the box.
- E. 11 inches minimum depth of box.

2.03 Coppersettlers - Yokes

- A. Conform to AWWA C 800
- B. Setter shall be a Ford Meter Box Co. V-172-7W packjoint both sides or approved equal.
 - 1) Angle ball valve on water system side.
 - 2) Padlocking wing on water system side.
 - 3) Single check valve on customer's side.

2.04 Corporation Stops

- A. Corporation stops shall be Ford Meter Box Co. F1000 with pack joint coupling or approved equal.

2.05 Saddles

- A. Saddles to be used on all galvanized, plastic, or asbestos cement pipe.
- B. Saddles shall be manufactured by Mueller (single - strap), Hays Manufacturing Co., Ford Meter Box S-70 or approved equal.
- C. Threads will be corporation stop threads.
- D. Service clamps shall have 250 psi working pressure.

2.06 Service Line

- A. Copper Pipe:
 - 1. Type "K", soft tempered, seamless pipe for underground installation.
 - 2. Manufactured in accordance with ASTM B88 and Federal Specification WW-T-799.

- B. Polyethylene:
 - 1. Ultra high molecular weight, high density polyethylene resin conforming to ASTM D 2239, Type III, Grade III, Class C.
 - 2. Meet the requirements of the National Sanitation Foundation Testing Laboratories.
 - 3. Minimum of 2% carbon black.
 - 4. Class 200 psi with Standard Thermoplastic Pipe Dimension Ratio (SDR) not more than seven (9).
 - 5. Markings: As a minimum, the pipe shall have the following markings applied at intervals specified in ASTM D 2239.
 - a. Nominal pipe size.
 - b. Type of plastic.
 - c. SDR or class.
 - d. Manufacturer.
 - e. NFS (National Sanitation Foundation) seal of approval.

- C. Galvanized Pipe:
 - 1. Schedule 40, manufactured in accordance with ASTM A-120 and ASTM A53.
 - 2. Working pressure equaling or exceeding that of the main pipe.
 - 3. Threads: IPS.

- D. Encasement Pipe:
 - 1. Steel: Smooth wall, manufactured in accordance with ASTM A-139 (Grade B), ASTM A-2111 or AWWA C202 (Grade B), with ends prepared for welded joints.
 - 2. PVC: Minimum SDR 26 Class 160 with gasket joints.

2.07 Water

- A. Contractor is to furnish the water needed for filling, flushing, and testing the lines.

PART 3 - EXECUTION

3.01 Excavation & Backfill

- A. Minimum of 18" deep at all locations outside public right-of-way.

- B. Minimum of 30" deep inside public right-of-way.
- C. Excavation and backfill to be done in the same manner as the excavation and backfill for the main line as specified in Section 02660.

3.02 Installation

- A. Laid straight and connections made in accordance with the details shown on the plans.
- B. Pipe shall be connected by use of flared type fittings or packed joint coupling approved by Engineer.
- C. All crimped pipe shall be removed and replaced at the Contractor's expense.
- D. Install 12" long ¾-inch diameter tail piece on the customer side of the meter.
- E. Remove existing meters.
- F. Install new radio read meters and replace any gaskets, fittings, or packing necessary to eliminate all leaks.

3.03 Roadway and Railroad Bores

- A. Bore in the same manner as specified for the main lines in Section 02660.

3.04 Pavement Repairs

- A. Pavement repairs to be made in the same manner specified in Section 02660.

END OF SECTION

Section 03001
CONCRETE WORK

PART 1 - GENERAL

1.01 Work Included

- A. Formwork, complete with required shoring, bracing and anchorage.
- B. Concrete reinforcing, complete with required supports, spacers, and related accessories.
- C. Cast-in-place concrete.

1.02 Payment

- A. Unless a pay item is included in the bid schedule, the cost of the concrete work shall be included in the other lump sum or unit price items.

1.03 Quality Assurance

- A. Perform cast-in-place concrete work in accordance with ACI 301, unless specified otherwise in this Project Manual.
- B. Keep copy of ACI 301-72 (latest edition) in field office for duration of project.

1.04 Testing Agency

- A. Field testing of the concrete mix will be performed by an independent testing laboratory.
- B. Provide free access to work and cooperate with the appointed laboratory.
- C. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.

1.05 Reference Standards - (All reference to standard specifications shall be the latest revision to said specification)

- A. ACI-301-72 (Latest Revised Edition), Specifications for Structural Concrete for Buildings.
- B. ACI Manual of Concrete Practice, Parts 1, 2 and 3.

- C. ANSI/ASTM A1064– Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
 - D. ANSI/ASTM A615 – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - E. ANSI/ASTM C31 – Making and Curing concrete Test Specimens in the Field
 - F. ANSI/ASTM C33 – Concrete Aggregates
 - G. ANSI/ASTM C39 – Test Method for Compressive Strength of Cylindrical Concrete Specimens
 - H. ANSI/ASTM C42 – Test Method for Obtaining Testing Drilled and Sawed Beams of Concrete
 - I. ANSI/ASTM C94 – Ready-Mixed Concrete
 - J. ANSI/ASTM C150 – Portland Cement
- 1.06 Environmental Requirements
- A. Allowable Concrete Mix Temperatures: ACI 301-72
 - 1. Cold Weather: Minimum 35° F and rising or Minimum 40° F and falling.
 - 2. Hot Weather: Maximum 100° F if falling or Maximum 95° F and rising.
 - B. Do not place concrete during rain, sleet, or snow, unless protection is provided.
 - C. Keep accurate thermometer in area where work is proceeding.

PART 2 - PRODUCTS

2.01 Cement

- A. Portland Cement: ASTM C150, Type 1.
- B. Use one brand and type of cement throughout project unless otherwise specified.

2.02 Admixtures

- A. Add air entraining agent as indicated in ACI 301, Table 3.4.1.
 - B. Use of accelerating admixtures such as salts, chemicals, or other foreign materials in cold weather will not be allowed. Use no other admixtures without prior approval of the Engineer.
 - C. Use of set-retarding admixtures during hot weather will not be allowed.
- 2.03 Strength (ACI 301 3.2)
- A. Provide concrete of following strength: Compressive Strength (28 Day): 3,000 psi, except where noted otherwise in the Contract Documents.
- 2.04 Air Entrainment
- A. Add air entraining agent to concrete mix for concrete work exposed to exterior.
- 2.05 Slump
- A. Contractor shall provide slump cone and test slump for each load of concrete.
 - B. Minimum slump for all concrete work: Three (3) inches.
 - C. Slump for consolidation by vibration: Four (4) inches maximum.
 - D. Slump for slabs and consolidation other than by vibration: Five (5) inches maximum.
- 2.06 Proportions (ACI 301 3.8)
- A. Selection of proportions for normal weight concrete: Method 1, Method 2, or Method 3, Contractor's Option.
 - B. Fine aggregate shall conform to the requirements of ASTM C33, latest edition, and shall consist of clean, fresh water sand graded uniformly to conform to paragraph 4 of ASTM C33.
 - C. Coarse aggregate shall conform to the requirements of ASTM C33, latest edition, using standard grading size 1-1/2" to No. 4 of washed gravel or crushed stone meeting requirements above and soundness requirements of ASTM C33.
 - D. Water: Clean and free of injurious amounts of oils, acids, alkalis, organic materials, or other deleterious substances.

2.07 Reinforcing Steel (ACI 301 5.2)

- A. Reinforcing Steel: 60 ksi yield grade; deformed billet steel bars, ASTM A615; plain finish.
- B. Welded Steel Wire Fabric: Plain type, ASTM A1064; in coiled rolls, plain finish, 6x6 - W1.4 or 6x6 - W2.9 x W2.9 as shown on drawings.

PART 3 - EXECUTION

3.01 General

- A. Notify Engineer at least 24 hours before the planned time to pour concrete.
- B. Inspection:
 - 1. Ensure that excavations and form work are completed and within the allowed tolerances.
 - 2. Ensure that ice and excess water are removed, no frost is present, and ground is not frozen.
 - 3. Check that reinforcement is secured in place.
- C. Install concrete work in accordance with ACI 301 except as amended by this Section.

3.02 Formwork (ACI 301 4.2)

- A. Obtain Engineer's review for use of earth forms. When using earth forms, hand-trim sides and bottoms, and remove loose dirt prior to placing concrete.
- B. Tolerances for Formed Services: Comply with ACI 301, Table 4.3.1

3.03 Form Surfaces Preparation (ACI 301 4.4)

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations. Apply prior to placing reinforcing steel, anchoring devices and embedded parts.

3.04 Finishing Formed Surfaces

- A. Formed Surface Finishes: Provide rough form finish (ACI 301 10.2.1) at all surfaces not exposed to view. Provide smooth rubbed finish (ACI 301 10.3.1) at all surfaces exposed to view.

3.05 Removal of Forms (ACI 301 4.5)

- A. Do not remove forms, shores, and bracing until concrete has gained sufficient strength to carry its own weight, construction loads, and design loads which are liable to be imposed upon it. Verify strength of concrete by compressive test results.

3.06 Placing Reinforcing

- A. Reinforcing shall be unpainted and uncoated, free from rust or scale and shall be cleaned and straightened before being shaped and in position.
- B. Position reinforcing accurately and tie securely.
- C. Support footing reinforcement on concrete brick bats or concrete grout at maximum three (3) feet on center each way to insure proper depth from bottom.
- D. Wire dowels to longitudinal bars and place top bars.
- E. Provide three (3) inches of concrete between reinforcing and the ground, unless detailed otherwise, where concrete is poured against the ground.
- F. If, after removal of forms, concrete surfaces are to be in contact with the ground or exposed to the weather:
 - 1. Bars larger than No. 5: Protect with 2 inches of concrete.
 - 2. No. 5 Bars and Smaller: Protect with 1-1/2 inches of concrete.
- G. Concrete covering for any reinforcing at surfaces not exposed directly to the ground or weather: Protect with 1-1/2 inches of concrete.

3.07 Mixing Concrete

- A. Concrete shall be ready-mix and shall conform to ASTM C94, latest issue.
- B. Concrete shall be mixed until there is a uniform distribution of the materials and the mass is homogeneous in consistency and color.

3.08 Placing Concrete

- A. Convey concrete from mixer to final position by method which will prevent separation or loss of material.
- B. Maximum height of concrete free fall: Sixty (60) inches.

- C. Regulate rate of placement so concrete remains plastic and flows into position.
- D. Deposit concrete in continuous operation until panel or section is completed.
- E. Do not use concrete that has set and do not re-temper or use concrete that has been mixed for more than 1-1/2 hours.

3.09 Consolidating Concrete

- A. Use mechanical vibrating equipment for consolidation.
- B. Vertically insert and remove hand-held vibrators at points 18 inches to 30 inches apart, inserting to within 6 inches of bottom of freshly poured concrete.
- C. Do not use vibrators to transport concrete in forms.
- D. Minimum vibrator frequencies: 6,000 impulses per minute.
- E. Vibrate concrete minimum amount required for consolidation.
- F. Make sure the concrete is thoroughly worked around the reinforcing, the embedded items, and into corners of the forms.

3.10 Curing

- A. Cure tops of foundations: Use moisture-retaining coverings as approved by the Engineer in accordance with ACI 308.

3.11 Welding (ACI 301 5.3)

- A. Welding Reinforcing Steel: Not Allowed.

3.12 Construction Joints

- A. Install construction joints in accordance with ACI 301 6.1.

3.13 Inserts, Embedded Parts and Openings

- A. Provide formed openings where required for pipes, conduits, sleeves and other work to be embedded in and passing through concrete members.
- B. Coordinate work of other sections and cooperate with trade involved in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

3.14 Repair of Surface Defections (ACI 301 9.1)

- A. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Modify or replace concrete not conforming to required lines, detail, and elevations.
- C. Repair or replace concrete not properly placed resulting in excessive honeycombing and other defects. Do not patch, repair, or replace exposed architectural concrete except upon express direction of Engineer.

3.15 Field Quality Control

- A. Three (3) concrete tests cylinders will be taken by the testing laboratory for every 50 cubic yards, or fraction thereof, of concrete placed. Not less than one (1) set of test cylinders shall be taken for each day's pour.
- B. Compression Test Cylinders: Test cylinders shall be cast on the project site by the contractor.
 - 1. Make cylinders according to ASTM C31.
 - 2. Make additional sets of test cylinders for curing under job conditions:
 - (a) When it is needed to determine when to remove forms.
 - (b) When to put a structure into service.
 - (c) When temperature extremes are expected during the curing period.
 - 3. Make test cylinders in the presence of the Engineer.
 - 4. Properly mark prepared test cylinders and fill out the card supplied by the testing laboratory with instructions on when to make test breaks and where to send the test results.
 - 5. Transport in a protected condition, each set of prepared and marked test cylinders to the designated testing laboratory for curing and testing as soon as the cylinders can be transported without damage.
- C. Compression Testing Concrete Cylinders ASTM C39: by commercial testing laboratory.
 - 1. Cure cylinders in laboratory until time for testing.
 - 2. Test each set of cylinders at 7 days, 14 days, and 28 days after pouring.
 - 3. Tabulation of breakage schedule and action: Specified Strength of 3,000 psi at 28 Days

	<u>Test Break</u>	<u>Action</u>
7 Day:	Less than 2400 psi 2400 - 3000 psi	Contractor notify Engineer Break 28 Day Cylinder

	Over 3000 psi	Stop Testing
14 Day:	Less than 3000 psi 3000 to 3500 psi Over 3500 psi	Contractor notify Engineer Break 28 Day Cylinder Stop Testing
28 Day:	Less than 3000 psi	Contractor to notify Engineer; investigate reason for low break and report in writing to Engineer.

4. For testing cylinders for specified compressive strength other than 3,000 psi, see the Engineer.

D. In case of low compression test results:

1. Engineer will have the right to order change in the mix design, costs to be borne by the Contractor.
2. Engineer will have the right to order core tests of the concrete in accordance with ASTM C42, or load tests of the structure, the costs to be borne by the contractor for either test.

3.16 Protection of Completed Work

- A. During curing period, protect the concrete from damaging mechanical disturbances, water flow, loading, shock, and vibration.

END OF SECTION

Section 09900
PAINTING

PART 1 - GENERAL

1.01 Work Included

- A. Prepare surfaces which are to receive finish.
- B. Finish surfaces as indicated in schedule at end of this Section.

1.02 Unit Prices

- A. The cost of painting the shall be included in the various lump sum or unit price items listed in the other sections unless specified in the Bid Schedule.

1.03 Submittals

- A. Submit in accordance with Section 01310 – Submittals, color charts and paint chips of approved paint manufacturer to be used for selection by the Engineer who will prepare a color schedule and transmit it to the Contractor.

1.04 Maintenance Materials

- A. Leave on premises not less than one gallon of each color used.
- B. Containers to be tightly sealed and clearly labeled for identification.

1.05 Delivery, Storage and Handling

- A. Deliver paint materials in sealed original labeled containers, bearing manufacturer's name, type of paint, brand name, color designation and instruction for mixing and/or reducing.
- B. Provide adequate storage facilities. Store paint materials at minimum ambient temperature of 45 degrees F in well ventilated area.

1.06 Environmental Conditions

- A. Ensure surface temperatures or the surrounding air temperature is above 40 degrees F before applying finishes. Minimum application temperature for latex paints is 45 degrees F. Minimum application temperature for varnish finishes is 65 degrees F.

1.08 Protection

- A. Adequately protect other surfaces from paint and damage. The Contractor shall be responsible for the repair of any damage that results from inadequate or unsuitable protection.
- B. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from fouling surfaces not being painted and, in particular, surfaces within storage and preparation area.

PART 2 - PRODUCTS

2.01 Acceptable Manufacturers

- A. Paint, Varnish, Stain, Enamel, Lacquer and Fillers: Type and brand listed in Painting Schedule at the end of this Section or equivalent products manufactured by Pittsburgh, Devoe, Sherwin-Williams, Benjamin Moore, Cook and others approved by Engineer.

PART 3 - EXECUTION

3.01 Preparation of Surfaces

- A. Wood, General: Sandpaper to smooth and even surface and then dust off. After priming or stain coat has been applied, thoroughly fill holes and cracks.
- B. Steel and Iron: Remove grease, rust, scale and dust and touch up any chipped or abraded places on items that have been shop coated. On existing painted surfaces, strip to prime coat.
- C. General: Do not proceed with finishing work until all prepared surfaces have been inspected by Engineer. Remove hardware, accessories, plates, lighting fixtures and similar items or provide ample protection before performing painting work. Clean existing surfaces properly before painting in conjunction with remodeling work.

3.02 Application

- A. Ensure that surface to be painted is dry and smooth. Apply each coat smoothly, working out evenly, and allow to dry before applying the subsequent coat.

- B. Make finished work uniform, with complete coverage, smooth and free from runs, sags, or excessive flooding. Make edges of paint adjoining other materials or colors sharp and clean without overlapping. Where high gloss enamel is used, lightly sand undercoats to obtain a smooth finish coat.
- C. At completion, touch up and restore finish where damaged and leave in good condition.
- D. Apply all painting materials and finishes in strict accordance with the manufacturer's specifications.
- E. Paint grilles and registers same color and texture as walls adjacent thereto. Paint exposed piping color and texture to match walls or ceiling adjacent to it, unless color coding is specified.
- F. Make each coat of paint slightly darker than the preceding unless otherwise directed.
- G. Finish top and bottom of metal doors with two coats of paint as used for finished coat. Apply after fitting and before faces are painted.

3.03 Cleaning

- A. As work proceeds and upon completion, promptly remove paint where spilled, splashed or spattered.
- B. During progress of work, keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.
- C. Upon completion of work, leave premises neat and clean.

3.04 Painting and Finishing Schedule

- A. General: For ease of scheduling, products listed are Sherwin Williams Brand names except where noted otherwise. Other products by manufacturers listed in paragraph 2.01.A of this Section may be equally acceptable.
- B. INTERIOR WOOD Painted wood, smooth finish.
 - First Coat: B28W8111 Premium Wall and Wood Primer
 - Second Coat: B34-8250 Series Pro Mar 200 Waterbased Acrylic Alkyd S/G
 - Finish Coat: Same as Second Coat.

- C. STEEL DOORS AND FRAMES
(Shop Primed): Semi-gloss finish.
First Coat: B53-1150 Series, Pro Industrial Waterbased Alkyd Urethane
Finish Coat: Same as First Coat.
- D. INTERIOR CONCRETE BLOCK Interior gloss wall finish.
System: Epoxy gloss paint.
First Coat: B42W150 Pro Industrial Heavy Duty Block Filler.
Second Coat: B73-300 Pro Industrial Waterbased Catalyzed Epoxy
Finish Coat: Same as Second Coat.
- E. EXTERIOR CONCRETE BLOCK
System: Exterior flat latex wall finish.
First Coat: B42W150 Pro Industrial Heavy Duty Block Filler.
Second Coat: WEATHER PERFECT Acrylic Latex
Finish Coat: Same as Second Coat.
- F. EXTERIOR WOOD Painted wood, smooth finish.
System: Latex Exterior Flat Finish.
First Coat: B42W8141 Exterior Latex Wood Primer.
Second Coat: A80-150 Series Superpaint Exterior Acrylic Latex.
Finish Coat: Same as Second Coat.
- G. DUCTILE IRON PIPE & CAST IRON FITTINGS & VALVES
Interior & Exterior System:
First Coat Sherwin Williams Corothane I Coal Tar @
(on bituminous coated iron): 5.0-7.0 Mils DFT or
TNEMEC Pota-Pox Series N140
Second Coat: Sherwin Williams Corothane I Coal Tar @
5.0-7.0 Mils DFT or
TNEMEC Pota-Pox Series N140
Alternative First Coat (if Top Sherwin Williams Dura-Plate 235 Epoxy @
Coat for Color is required) 4.0-6.0 Mils DFT
Second Coat (for Color) Sherwin Williams Pro Industrial Urethane
Alkyd Enamel @ 2.0-4.0 Mils DFT
Finish Coat: Same as second coat

END OF SECTION

SECTION 11800
SATELLITE TELEMTRY SYSTEM

PART 1 GENERAL

1.01 WORK INCLUDED

- A. The OWNER is accepting separate sealed proposals from manufacturers of Supervisory Control and Data Acquisition (SATELLITE TELEMTRY SYSTEM) System equipment for the installation of new remote telemetry units to monitor elevated and ground storage tank, master meters, chemical parameters, etc.; and control pump station installations to operate said water distribution system. The CONTRACTOR shall provide design, programming, documentation, equipment, installation and start-up services for SATELLITE TELEMTRY SYSTEM system. The CONTRACTOR shall install all SATELLITE TELEMTRY SYSTEM equipment specified herein including all wiring and conduit to connect to equipment at the sites.
- B. The system specified herein shall be manufactured by High Tide Technologies, LLC., or approved equal.

1.02 GENERAL PROJECT INFORMATION

- A. Proposal submitters not meeting all of the qualifications as defined in Paragraph 1.06 need not apply and will not be accepted.
- B. The project shall include all work required to create a working satellite telemetry system suitable for the existing sites and up to 4 additional locations. The project work shall include all software, all screens, and documentation for the complete system.

1.03 DEFINED TELEMTRY SITES

- A. Central Hosted Software

The satellite telemetry system shall provide a web based software host on High Tide Technologies, LLC server. An individual URL will be created for the OWNER and assigned to this project. The software will provide the following status: tank levels, pump status (on/off), valve status (open/closed), alarm status of each site. The software will provide tabular and graphical history on: tank levels, pump starts/stops, pump run time, flow meter totalized flow, hourly meter totalized flow, alarm history, and monthly reports. The software will provide pages to configure and manage text and voice alarms. The software will provide the OWNER with the ability to manually control each pump and demand read each tank unit for current status. The software will provide the following alarms: Power Loss, Power Restored, Low Battery, Pump Fail (if feedback provided such

as Fail to Start, Temperature Fail, Overload), Low Tank Level, High Tank Level, and Entry Alarms as provided.

Each office PC provided by the OWNER shall be equipped with a web browser with Microsoft Internet Explorer 5.0 or Netscape 4.0 or better.

- B. Water Tanks
 - a. A/C Power Provided by OWNER
 - i. 105,000-Gallon Standpipe Tank, Willett Road between Mount Holly Road and Union Road 756
 - b. A/C Power Not Provided by OWNER or not available (Provide solar powered RTU)
 - i. None
- C. Pump Stations
 - a. Well Pump No. 1, Lisbon Road and Richland Creek Road

1.04 SITE MINIMUM INPUT/OUTPUT STRUCTURE

Each existing site is unique and currently does not contain a standard input and output structure.

A. Tanks

Each unique tank site shall contain a minimum of Four analog inputs, Eight digital inputs, and Four digital outputs for monitoring and control of various tank functions. The inputs and outputs shall be determined by OWNER.

B. Booster Pump Station

Each unique pump station site shall contain a minimum of four analog inputs, eight digital inputs, and four digital outputs for monitoring and control of various pump station functions. The inputs and outputs shall be determined by OWNER.

1.05 SITE INSPECTIONS

A. Site Inspections

All defined sites may be inspected prior to proposal submittal. The OWNER shall provide one (1) person to provide access to all sites.

1.06 QUALIFICATIONS

- A. Manufacturers Qualifications: Only manufacturers who have been regularly engaged in the supply of Supervisory Control and Data Acquisition (satellite telemetry system) equipment for at least 3 years and capable of meeting the following criteria need respond.
- B. Installers Qualifications: Only firms who have been regularly engaged in the installation of Supervisory Control and Data Acquisition (satellite telemetry system) equipment for at least 3 years need respond.
- C. Each responsible manufacturer shall meet the following minimum qualifications and shall:
 - 1. Have completed a minimum of three (3) satellite telemetry system applications throughout the regions – no exceptions.
 - 2. Provide the OWNER with references and phone numbers of each of the three satellite telemetry systems. A minimum of two names per each SATELLITE TELEMETRY SYSTEM reference shall be provided. References will be contacted and completed work verified by the ENGINEER and OWNER.
 - 3. Acknowledge that shipment of the SATELLITE TELEMETRY SYSTEM RTU nodes and related equipment shall be authorized only by the ENGINEER and OWNER group – no exceptions.
 - 4. Utilize only UL listed and rated components in enclosure manufacture.
 - 5. Provide 100 percent of all hardware and software technical manuals to the ENGINEER and OWNER in digital format. The manuals shall be in Adobe pdf format.
 - 6. Provide all system concept, layout, design, and telemetry setup notes in Microsoft Word or Excel formats to the ENGINEER and OWNER.
 - 7. Provide a warranty and emergency support for a period of not less than one (1) year after the ENGINEER and OWNER accept each satellite telemetry system node.
 - 8. Provide primary technical support to the OWNER by full-time qualified staff members only. Temporary or part-time staff members do not qualify as full time employees. Technical support provided by manufactures representatives, salespersons or local distributors is not acceptable - no exceptions.

1.07 REFERENCES

A. Publications listed below form part of specification to extent referenced. Publications are referenced in text by basic designation only.

1. NATIONAL FIRE PROTECTION AGENCY (NFPA)
 - a. ANSI/NFPA 70 (1999) National Electric Code

PART 2 PRODUCTS

2.01 DEFINITION

A. Remote Terminal Units

2.02 REMOTE TERMINAL UNIT DESCRIPTION

A. The satellite telemetry system design shall use High Tide Technologies' Model HTT2100 or HTT3100 satellite monitoring/control unit, or equal.

1. RTUs shall be installed at the locations specified.
2. General: The OWNER's existing system shall remain in-place and operational until all components of the system are eventually replaced by the new SATELLITE TELEMETRY SYSTEM system.

B. Manufacturer's products, including design, materials fabrication, assembly, examination, inspection, and testing shall be in accordance with ANSI/NFPA 70, except as modified herein or indicated otherwise.

C. Contractor's Responsibility: Provide a complete satellite telemetry system, including RTUs, and satellite telemetry equipment; indicating devices; controls; power supplies; enclosures; conduit, wire, and installation. Provide interconnecting wiring for the system to be based upon general requirements of specified components with spare capacity. Coordinate the interconnecting wiring requirements with OWNER provided instruments and provide necessary wiring for the system. Coordinate the loop impedance requirements of the equipment provided and provide additional loop isolation, noise suppression, surge protection, drivers, and other devices necessary to provide a complete and operating system properly installed and protected in accordance with the device manufacturer's recommendations.

D. Electrical wiring diagrams including Cable Interface drawings for each RTU shall be included.

2.03 NOT USED

2.04 BASIS OF DESIGN

- A. The satellite telemetry system is based on Stellar satellite modems, ANSI C protocol Software – no exceptions.

2.06 SATELLITE MODEM SYSTEM REQUIREMENTS

A. Modems

1. The modems shall use the mobile frequency designated by the Iridium Satellite System.
2. The modems shall be able to be programmed.
3. The communication protocol shall be Iridium Satellite Communication standard.
4. The modems shall be model DS101 by Stellar Communications, LTD or approved equal.
5. One modem shall be installed at each of the selected sites except for the treatment plant, which will have high speed internet access provided by the owner.

B. Antennas

1. Omni-directional antennas tuned specifically for the Iridium Satellite frequency bands.
2. Proper grounding shall be provided as part of price proposed at each site, including wiring, conduit, clamps, and any other item for state-of-the-art grounding.
3. One antenna shall be installed at each of the specified sites, with the exception of the water treatment plant.

C. Antenna Cable Lengths

The following minimum standard cable lengths shall be used during the bidding process:

1. Water Treatment Plant – Not Applicable
2. Tank sites – at the locations specified
3. Booster Pump – at the locations specified.

4. The actual as-installed cable lengths may be more or less per site.

D. Antenna Mounting

1. All antennas shall be mounted with galvanized clamps or other non-corroding attachment devices.
2. The mounting of the antennas shall be in such a manner to prevent welding, drilling or other corrosion and stress inducing modifications, or damage to paint systems.
3. All antennas shall utilize existing non-load bearing structures such as safety rails for mounting points.
4. Antennas shall be mounted in a manner so that cables and antennas do not interfere with safety equipment or harnesses while climbing up or on the structures.
5. Cutting into a wall or structural member is not acceptable.
6. All antennas shall be mounted to insure the most direct view of the horizon in all directions whenever possible at the remote sites. When some blockage can not be avoided the view of the Northeast horizon is preferred
7. Antenna masts shall be provided where necessary to elevate the antenna high enough to insure direct view of the horizon in all directions, and shall include the mast and all attachment hardware. At tank sites if the antenna is not mounted on top of the tank the antenna mounting must be at least one tank diameter away from the tank. In this case the view of the Northeast sky is preferred.
8. Antenna lightning arrestors should be used at all tank sites.

E. Antenna Connection Sealing

1. All antenna connections shall be wrapped in self-vulcanizing tape to keep all moisture away from the connections..

2.07 NOT USED

2.08 NOT USED

2.09 SITE COMMUNICATIONS

A. Methods

1. Each RTU shall be capable of communicating via the ORBCOMM Satellite System with the High Tide Technologies central server.

2.10 SITE CONTROL

A. Control Methods

1. The control of the typical remote booster pump shall be based upon the comparison of adjustable setpoints and dynamic tank levels. The pump shall be able to be controlled by the tank of interest. Provide override pump control from the web based software.
2. Each booster pump location shall have an operator interface on the web based software for display of local alarm messages, pump status, relevant remote tank levels, and setpoints.
3. Provide the booster pump site with the ability to operate pumps manually by providing Hand-Off-Auto (H-O-A) switches. The OWNER may specify that the software reflect the status of the H-O-A switch.
4. When the switch is in the “Hand” position, the pump shall be manually controlled by the switch and without the aid of a functioning RTU controller.
5. When the switch is in the “Auto” position, the RTU or controller shall automatically control the pump.

2.11 SUBMITTALS

A. General

Within 7 days after receiving the contract, the Manufacturer shall submit all component data sheets in an orderly manner for review and approval.

1. All data sheets shall be printed out from PDF format files. Legible copies from catalogs will also be accepted. All copies shall be clear and legible.
2. The specified product in the data sheet shall be highlighted with a pointed stamp to clearly identify the submitted item.
3. The sheets shall list all pertinent product data such as name, catalog number, model number, nameplate data, dimensions etc.
4. The submitted data shall be organized into separate loose-leaf

three-ring binders according to the type of site such as master, tanks, and booster pump station, etc.

5. A detailed description and/or list of functions, including spares for future items, for each SATELLITE TELEMETRY SYSTEM site shall be submitted to the ENGINEER. The Manufacturer shall meet with OWNER and ENGINEER, as requested, to fully explain functionality submittal.
6. Five (5) duplicate copies of the submittals shall be required.

B. Submittals

1. Manufacturer's Catalog Data
 - a. Software.
 - b. DC power supplies.
 - c. Control relays.
 - d. Hardware.
 - e. Enclosures.
 - f. Modems
 - g. Surge Protection
3. Operation and Maintenance Manuals
 - a. "Quick Start" Software Guide
 - b. Operations and Maintenance Manual

2.13 PROGRAMMABLE RTU PROCESSOR

- A. Provide a High Tide Technologies system, or equal. The control system shall consist of individual RTUs located at each monitoring location. The capability shall exist to allow for expansion of the system by the addition of hardware and/or software. Program development is the responsibility of the Manufacturer of the satellite telemetry system.
1. All hardware of the RTU shall operate at an ambient temperature of minus 20 to 60 degrees C (-4 to 140 degrees F), with an ambient temperature rating for storage of minus 40 to plus 60 degrees C.
 2. All RTU hardware shall function continuously in the relative humidity range of 5 to 95 percent with no condensation.
 3. Each RTU shall have at least one dedicated serial port.

B. Processor Hardware

1. The processor shall be an integral piece of the modem, and will provide control program execution and support remote or local programming.
2. The user program, data, and operating system shall include EEPROM or equivalent for backed memory storage.
3. Each processor shall contain enough base memory for at least 30% growth room after the program has been completed and tested.
4. The front enclosure of the processor shall include an RS232 serial port.
5. All system modules, local and remote chassis shall be designed to provide for free airflow convection cooling. No internal fans or other means of cooling, except heat sinks, shall be permitted.

C. RTU Power Supplies

1. The RTU power supplies shall operate in compliance with an electrical service of 85-265 VAC, single phase, in the frequency range from 47 to 63 Hz, or 17-32 VDC.
2. The manufacturer shall, if electrical power is unavailable, provide a solar powered RTU.
3. The RTU shall have an integral AC to DC power converter.
4. The power supply shall monitor the incoming line voltage for proper levels. When the power supply is wired to utilize AC input, the system shall function properly within the range of 85 to 265 VAC. When the power supply is wired to utilize DC input, the system shall function properly within the range of 17 to 32 VDC. In addition, the power supply shall provide surge protection and isolation.
8. In addition to the electronic protection described above the power supply shall offer a failsafe fuse that is not accessible by the customer.

D. RTU Networking and Communications

1. RTUs in the satellite telemetry system shall have standard communications that support ASCII or Modbus protocols.
2. The RTU shall have a standard programming instruction that allows bi-directional satellite messaging with the central server.

3. The RTUs shall support both scheduled and unscheduled communications between the central server.

E. Digital Inputs

1. Number of Inputs: Minimum of 8
2. Minimum 8 optically isolated digital inputs
3. Ambient Operating Temperature Rating: Minus 20 degrees C to 60 degrees C.

F. Digital Outputs

1. Number of Outputs: 4 Minimum
2. 4 minimum of sync only digital outputs.
3. Ambient Operating Temperature Rating: Zero degrees C to 60 degrees C.
4. External SSR's shall be provided by the Contractor

H. Analog Inputs

1. Input Type: voltage or current
2. Number of Inputs: 4 minimum
3. Input Power: Loop Powered or Sensor Powered.
4. Current/Voltage Ranges: 0-5 dcv or 4-20 mA
6. Resolution: 10 bits.
7. Ambient Operating Temperature Rating: Minus 20 degrees C to 60 degrees C.

I. RTU System Technical Support

1. The manufacturer of the RTU shall provide multiple-channels of technical support to the OWNER. These channels include toll free telephone, fax, and web-based support.

2. The satellite telemetry system manufacturer shall maintain technical assistance toll free telephone “hotline.

2.14 RTU SYSTEM ENCLOSURES

- A. The system enclosure shall contain the RTU, complete with inputs/outputs, power supplies, surge protection, terminals and all associated wiring. The enclosures shall come pre-assembled with all associated components din rail mounted and wired.
- B. Remote Terminal Enclosures: Provide pre-built and wired NEMA 4 or equivalent remote terminal enclosures. Each remote terminal enclosure shall consist of:
 1. One (1) molded NEMA 4 rated enclosure. Enclosures shall be lockable, hinged fiberglass.

2.15 NOT USED

2.16 DC POWER SUPPLIES

- A. Regulated: Solid-State
- B. Input: 85-230 volts ac, single phase, 60 hertz.
- C. 20-24 volts dc.
- D. Output Current: 2.0A.
- E. Ambient Temperature Range: Minus 20 to 50 degrees C.
- I. Mounting: Enclosure-mount acceptable.
- J. Primary Protection: Short circuit protected
- K. Additional Protection: Over-current protection for secondary

2.17 TERMINALS

- A. Provide single-circuit feed-through terminal blocks for all control system enclosures. Provide the following:
 1. Voltage Rating: 30 volts AC/DC maximum.
 2. Screw Type

2.18 CONDUCTORS

- A. Shielded twisted pairs for signal wiring such as instrument signals. General wiring for enclosures. Group and neatly route conductors within enclosures.
- B. Wire Color Codes: General internal wiring color code specifications for all supplied enclosures/enclosures. There shall be no exceptions.
 - 1. All 120V single-phase AC LINE wiring shall be black.
 - 2. All single-phase AC NEUTRAL wiring shall be white.
 - 3. All wiring originating outside the enclosure/enclosure that is not controlled by the local disconnect or main breaker shall be yellow.
 - 4. All 24V DC positive wiring shall be red.
 - 5. All 24V DC common wiring shall be black.
 - 6. All ground wiring shall be green or green with yellow tracer.
- C. Shielded Twisted Pair
 - 1. Tinned, soft copper and insulated with nylon-jacked polyvinyl chloride.
 - 2. Color code each conductor pair.
 - 3. Twist conductors into pairs with a 1-1/2-to 2-1/2-inch lay.
 - 4. Code each pair with a unique pair number.
 - 5. 100 percent shielded coverage, aluminum-polyester.
 - 6. No. 22 AWG.
 - 7. No. 22 AWG stranded copper drain wire.
 - 8. Rated 300 volts, 60 degrees C.
- D. Conductors: General internal wiring of specified electrical enclosures. Group and neatly route conductors within enclosures.
 - 1. All wiring internal to the supplied enclosures/enclosures shall be machine tool wiring rated MTW/AWM/TFF with an insulation rating of at 300-volts and UL approved - no exceptions.
 - 2. All non-input/output module point-to-point wiring shall be 16 AWG.

3. All discrete input module to terminal wiring shall be 20 AWG or larger.
4. All discrete output module to terminal wiring shall be 20 AWG or larger.
5. Provide nylon wrapping around wire bundles crossing door hinges for protection.

2.19 SOLID STATE RELAYS

- A. Mounting: Din Rail mounted
- B. Relay Rating: 24VAC-240VAC, 8 amperes.
- C. Contacts: SPST.
- D. Coil Voltage: 3.5-30 Volt.

2.20 – 2.30 NOT USED

2.31 FIELD INSTRUMENTS

- A. All of the OWNER's existing field instrumentation shall be integrated into the manufacturer's satellite telemetry system, if possible. CONTRACTOR shall notify the ENGINEER should existing instrumentation not be reusable.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

- A. Install all equipment in accordance with ANSI C2, ANSI/NFPA 70 and the requirements specified herein.

3.02 WIRING

- A. Install conductors and cables in conduit, unless indicated otherwise.
- B. Complete raceway systems and remove obstructions before pulling conductors into place. Avoid damaging insulation during conductor installation. Use an approved lubricating compound as required to facilitate pulling wires.

3.03 SPLICES AND TERMINATIONS

- A. Make up both mechanically and electrically tight.
- B. Provide with a flashover or insulation value at least 100 percent in excess of wire insulation.

- C. Make splices and terminations in junction boxes.
- D. Make connections in No. 10 AWG and smaller conductors with insulated pressure connectors or wire nut connections.
- E. Use terminal blocks of the proper voltage for interconnecting or splicing control cables, communication cables, and other conductors. Mount terminal blocks in a cabinet and label terminals properly.

3.04 NOT USED

3.05 TESTING

- A. Performance Verification Test: Conduct performance verification tests to demonstrate that control system maintains set-points, and that system is programmed for the correct sequence of operation. Conduct performance verification test one day after work is installed of continuous RTU systems operation and before final acceptance of work. Performance verification test shall demonstrate the following:
 - 1. Field Testing: Calibrate field equipment and verify equipment and system operation before placing the system on-line. Field-testing shall include the following tests.
 - 2. Calibration Accuracy and Operation of Inputs Test: Check for proper calibration and operation of each input instrument. Document each reading for the test report.
 - 3. Operation of Outputs Test: Check the operation of each output to verify correct operation. Command digital outputs on and off. Document each command and result for the test report.
 - 5. RTU Startup and Memory Test: Demonstrate that programming is not lost after a power failure, and RTU controllers automatically resume proper control after a power failure.
 - 6. Surge Protection: Show that surge protection, meeting the requirements of this specification, has been installed on incoming power to the digital controllers and on communications lines.

3.06 FIELD TESTS

- A. Demonstrate compliance of the control system with the contract documents. Furnish personnel, equipment, instrumentation, and supplies necessary to perform calibration and site testing. Ensure that tests are performed by competent

employees regularly employed in the testing and calibration of instrumentation systems.

- B. Notify the OWNER of any defective products and workmanship disclosed by the tests.
- C. Testing will include the field and the performance verification tests. Field tests shall demonstrate proper calibration of input and output devices, and the operation of specific equipment. Performance verification test shall ensure proper execution of the sequence of operation and proper tuning of control loops.
- D. Test each device such that each item will function not less than five times.
- E. Tests are subject to oversight and approval by the OWNER.

3.07 TEST REPORTING FOR FIELD TESTING AND PERFORMANCE
VERIFICATION TESTS

- A. Document tests with detailed test results. Explain in detail the nature of each failure and corrective action taken.
- B. During and after completion of field tests, and again after the performance verification tests, identify, determine causes, replace, repair or calibrate equipment that fails to meet the specification, and deliver a written report to the OWNER.
- C. Provide a written report containing test documentation after the field tests and again after the performance verification tests. Convene a test review meeting at the job site to present the results to the OWNER. As part of this test review meeting, demonstrate by performing all portions of the field tests or performance verification test that each failure has been corrected. Based on the report and test review meeting, the OWNER will determine either the restart point or successful completion of testing. Do not commence retesting until after receipt of written notification to retest by the OWNER. At the conclusion of retesting, assessment will be repeated.

END OF SECTION

Section 16910
DATA MANAGEMENT SYSTEM
(WATER METERS)

PART I - GENERAL

1.01 Work Included

- A. Provide automatic read meter software.
- B. Provide field and office equipment for automatic read meters and software
- D. Provide GPS coordinates of electronically read meters.
- C. Provide training for software and equipment.

1.02 Related Work

Section 02665 – Water Service Lines, Connections & Meters

1.03 Unit Prices

The unit prices for the various items of work includes all material, labor, tools, equipment, and incidental items necessary to perform the various units of work.

- A. Meter Reading Software and Equipment: The cost of furnishing, installing and testing the automatic meter reading equipment and data management software and any other items needed for complete installation, data gathering, and invoice generation, as required, shall be paid for at the lump sum price listed in the Bid Schedule.
- B. GPS Coordinates of Meters: The cost of providing GPS coordinates and downloading / uploading the information into the data management and / or billing system, shall be paid for at the unit price listed in the Bid Schedule.
- C. Training: The cost of training field and office personnel in the use and maintenance of the automatic read software and equipment shall be included in the unit or lump sum price for the related item. The price will include the cost of all labor, material, equipment, tools, and incidentals necessary to complete the work.

PART 2 - PRODUCTS

2.01 Software:

2.02 Office Equipment:

2.03 Field Equipment:

PART 3 - EXECUTION

3.01 Software and Radio Read Equipment:

Contractor to provide system and software installation at the City of Hickory Ridge. Installation shall include complete testing of program, data uploading, and all required functions.

3.02 GPS Coordinates

- A. GPS coordinates of all radio read meters shall be provided relative to the _____ and shall be accurate to no less than two decimal places.
- B. Data to be recorded and submitted with each coordinate set shall include:
 - 1. Meter serial number or other easily accessible unique identifying number
 - 2. Northing and Easting Coordinates
 - 3. Physical address associated with each meter

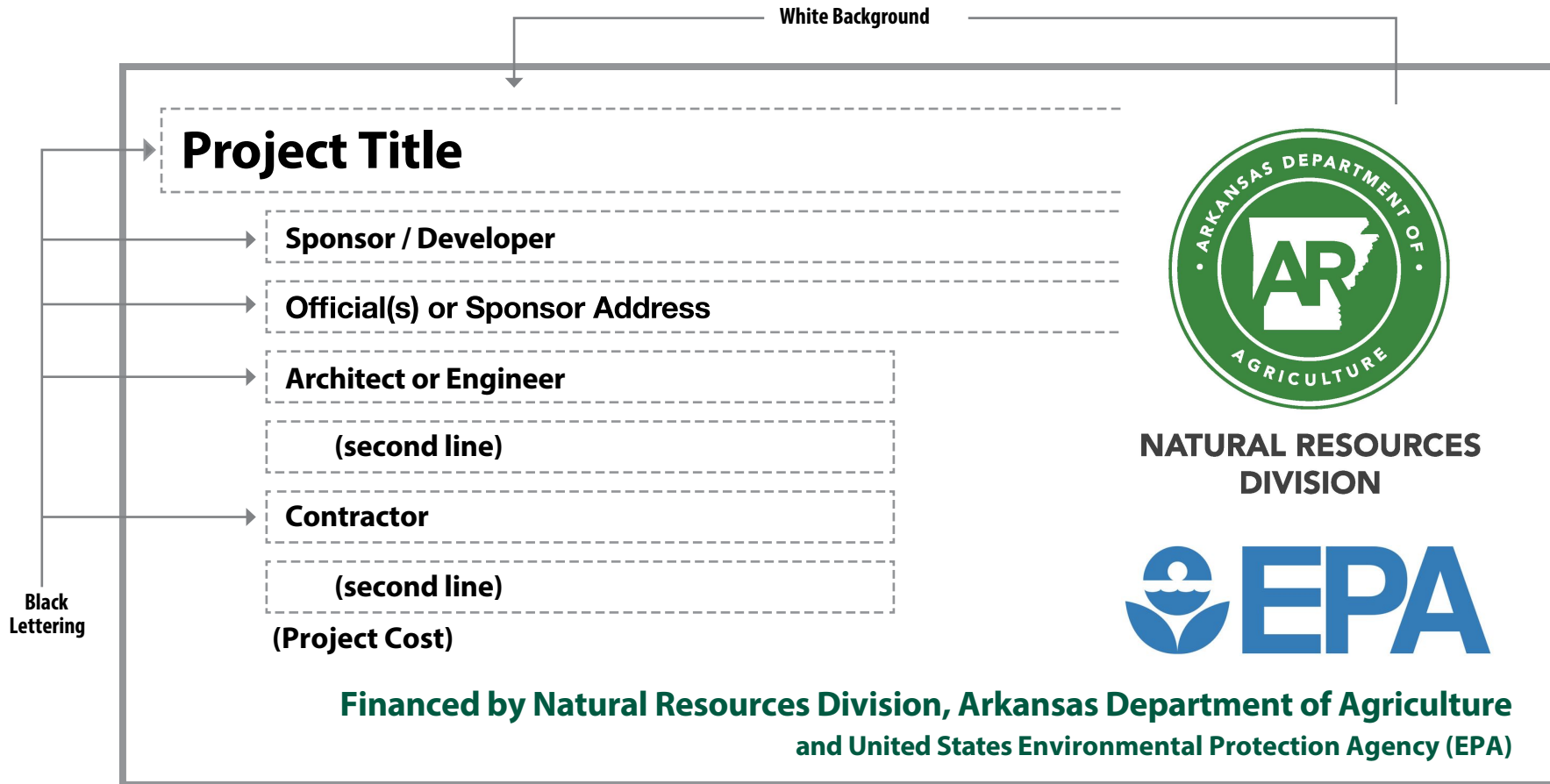
3.03 Training

Contractor to provide a minimum of 40 hours training for public works office and field personnel on the use and operation of the software and radio read equipment.

END OF SECTION

TEMPORARY CONSTRUCTION SIGN FOR EPA/NRD PROJECTS

Recommended Fonts: Helvetica, Arial, or Myriad Pro



SIGN DIMENSIONS : 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")
PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)

Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity
for Large Construction Sites

National Pollutant Discharge Elimination System (NPDES)
General Permit # ARR150000

Prepared for:
Town of Tillar
Water System Replacement

Date:
May 2023

Prepared by:
Gaunt Engineers, Inc.

Project Name and Location: Water System Replacement, Tillar, AR

Property Parcel Number (Optional): _____

Operator Name and Address: Construction Contractor (TBD)

A. Site Description

- a. Project description, intended use after NOI is filed: Water distribution line installation including piping, valves, meters, and applicable appurtenances
- b. Sequence of major activities which disturb soils: Clearing (if required); excavation and/or boring for water line installation, and backfill
- c. Total Area¹: 9.5 Acres Disturbed Area²: 9.5 Acres
- d. Soils Information:
 - i. Runoff Coefficient Pre-Construction (See Appendix A) : 0.50
 - ii. Runoff Coefficient Post-Construction (See Appendix A) : 0.50
 - iii. Describe the soil or the quality of any discharge from the site: The ground consists of silt loams with 0 to 1 percent slopes

B. Responsible Parties

Be sure to assign all SWPPP related activities to an individual or position; even if the specific individual is not yet known (i.e. contractor has not been chosen).

Individual/Company	Phone Number	Service Provided for SWPPP (i.e., Inspector, SWPPP revisions, Stabilization Activities, BMP Maintenance, etc.)
Gaunt Engineers, Inc.	870-862-4231	Original SWPPP
To Be Determined	TBD	Inspector
To Be Determined	TBD	Stabilization Activities
To Be Determined	TBD	BMP Maintenance
To Be Determined	TBD	SWPPP Revisions

C. Receiving Waters

- a. The following waterbody (or waterbodies) receives stormwater from this construction site: Bayou Bartholomew and Boeuf River, thence to Ouachita River
- b. Is the project located within the jurisdiction of an MS4? Yes No
 - i. If yes, Name of MS4: _____
- c. Ultimate Receiving Water:

<input type="checkbox"/> Red River	<input type="checkbox"/> White River
<input checked="" type="checkbox"/> Ouachita River	<input type="checkbox"/> St. Francis River
<input type="checkbox"/> Arkansas River	<input type="checkbox"/> Mississippi River

¹Increases in total acreage require an additional acreage request, an updated SWPPP and a \$200 modification fee to be submitted to ADEQ.

²Increases in only disturbed acreage require an additional acreage request and an updated SWPPP to be submitted to ADEQ.

D. Documentation of Permit Eligibility Related to the 303(d) list and Total Maximum Daily Loads (TMDL) (<https://www.adeg.state.ar.us/water/planning/>)

a. Does the stormwater enter a waterbody on the 303(d) list or with an approved TMDL? Yes No

b. If yes:

- i. Waterbody identified on 303(d) list: Ouachita River, Bayou Bartholomew, Boeuf River
- ii. Pollutant addressed on 303(d) list or TMDL: Mercury, Turbidity, Chloride, Sulfates, Total Dissolved Solids, Sulfates, E. coli
- iii. This specific project ,or generally construction activity i.e. surface erosion, is identified on 303(d) list or associated assumptions and allocations identified in the TMDL for the discharge: Yes No (Surface Erosion)
- iv. Additional controls implemented: Silt fencing will be placed in locations indicated on the map. Streams and creeks will be crossed by directional boring.

E. Attainment of Water Quality Standards After Authorization

a. The permittee must select, install, implement, and maintain BMPs at the construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained below, the SWPPP developed, implemented, and updated to be considered as stringent as necessary to ensure that the discharges do not cause or contribute to an excursion above any applicable water quality standard.

b. At any time after authorization, the Department may determine that the stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, the Department will require the permittee to:

- i. Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns and submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
- ii. Cease discharges of pollutants from construction activity and submit an individual permit application.

I understand and agree to follow the above text regarding the attainment of water quality standards after authorization. Yes No

F. Site Map Requirements (Attach Site Map):

- a. Pre-construction topographic view;
- b. Direction of stormwater flow (i.e., use arrows to show which direction stormwater will flow) and approximate slopes anticipated after grading activities;
- c. Delineate on the site map areas of soil disturbance and areas that will not be disturbed under the coverage of this permit;
- d. Location of major structural and nonstructural controls identified in the plan;
- e. Location of main construction entrance and exit;
- f. Location where stabilization practices are expected to occur;
- g. Locations of off-site materials, waste, borrow area, or equipment storage area;
- h. Location of areas used for concrete wash-out;
- i. Location of all surface water bodies (including wetlands) with associated natural buffer boundary lines. Identify floodplain and floodway boundaries, if available;
- j. Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
- k. Locations where stormwater is discharged off-site (should be continuously updated);
- l. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply;
- m. A legend that identifies any erosion and sediment control measure symbols/labels used in the site map and/or detail sheet; and
- n. Locations of any storm drain inlets on the site and in the immediate vicinity of the site.

G. Stormwater Controls

- a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:

- i. Initial Site Stabilization: Silt fencing will be installed prior to construction in the specific areas mentioned
- ii. Erosion and Sediment Controls: Silt fencing will be installed in accordance with manufacturers' instructions and will intercept runoff from excavation areas. Any stored excavation material shall also be protected with silt fencing.
- iii. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the operator will replace or modify the control for site situations: Yes No

If No, explain: _____

- iv. Off-site accumulations of sediment will be removed at a frequency sufficient to minimize off-site impacts: Yes No
If No, explain: _____

- v. Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%: Yes No
If No, explain: _____

- vi. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: Yes No
If No, explain: _____

- vii. Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: Yes No
If Yes, explain additional BMPs implemented at off-site material storage area: The location of off-site storage areas will be determined by the contractor and will be protected with silt fencing.

b. Stabilization Practices

- i. Description and Schedule: Areas of utility line excavation will be backfilled as soon as the line is laid. All disturbed areas will be stabilized immediately after construction activity in the area has temporarily or permanently ceased.
- ii. Are buffer areas required? Yes No
If Yes, are buffer areas being used? Yes No

If Yes, describe natural buffer areas: Creek crossings will be bored. Bore pits and stored excavation material shall be protected with silt fencing.

If No, explain why not: _____

- iii. A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan.
Yes No
If No, explain: _____

iv. Deadlines for stabilization:

1. Stabilization procedures will be initiated 14 days after construction activity temporarily ceases on a portion of the site.
2. Stabilization procedures will be initiated immediately in portions of the site where construction activities have permanently ceased.

c. Structural Practices

- i. Describe any structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site: Silt fencing will be installed and maintained around areas of excavation until backfilling and stabilization have occurred.
- ii. Describe Velocity Dissipation Devices: No velocity dissipation devices are required as there is no concentrated flow area serving two or more acres. Storm water run-off is controlled by natural sheet flow.

iii. Sediment Basins:

Are 10 or more acres draining to a common point? Yes No

Is a sediment basin included in the project? Yes No

If Yes, what is the designed capacity for the storage?

3600 cubic feet per acre = : _____

or

10 year, 24 hour storm = : _____

Other criteria were used to design basin: _____

If No, explain why no sedimentation basin was included and describe required natural buffer areas and other controls implemented instead: No sedimentation basin is required as is no common drainage point serving ten or more acres.

H. Other Controls

- a. Solid materials, including building materials, shall be prevented from being discharged to Waters of the State: Yes No
- b. Off-site vehicle tracking of sediments and the generation of dust shall be minimized through the use of:
 - A stabilized construction entrance and exit
 - Vehicle tire washing
 - Other controls, describe: _____
- c. Temporary Sanitary Facilities: Portable toilets – all sanitary waste will be collected as required by local regulations.

d. Concrete Waste Area Provided:

Yes

No. Concrete is used on the site, but no concrete washout is provided.

Explain why: _____

N/A, no concrete will be used with this project

e. Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: Fuel storage areas shall be located by the contractor as required, and fuel tanks shall be placed in a bermed area. Hazardous waste shall be stored in a portable hazardous waste container and disposed of in accordance with federal and local regulations. A truck wash area will be identified as required by the contractor, and silt fencing will be installed around this area.

I. Non-Stormwater Discharges

a. The following allowable non-stormwater discharges comingled with stormwater are present or anticipated at the site:

Fire-fighting activities;

Fire hydrant flushings;

Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2;

Potable water sources including uncontaminated waterline flushings;

Landscape Irrigation;

Routine external building wash down which does not use detergents or other chemicals;

Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;

Uncontaminated air conditioning, compressor condensate (See Part I.B.13.C of the permit);

Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.13.C of the permit);

Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.13.C of the permit);

b. Describe any controls associated with non-stormwater discharges present at the site: Discharges from effluent pumps used for dewatering shall pass through a filter bag and shall not traverse disturbed soils or other pollutant sources prior to being discharged from the construction site.

J. Permanent Controls for Post-Construction Stormwater Management:

Describe measures installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed: All construction sites will be restored to existing pre-construction conditions. Post-construction storm water management will be by overland sheet flow, the same as pre-construction.

K. Applicable State or Local Programs: The SWPPP will be updated as necessary to reflect any revisions to applicable federal, state, or local requirements that affect the stormwater controls implemented at the site. Yes No

L. Inspections

a. Inspection frequency:

Every 7 calendar days

or

At least once every 14 calendar days and within 24 hours of the end of a storm even 0.25 inches or greater (a rain gauge must be maintained on-site)

b. Inspections:

Completed inspection forms will be kept with the SWPPP.

ADEQ's inspection form will be used (See Appendix B)

or

A form other than ADEQ's inspection form will be used and is attached (See inspection form requirements Part II.A.4.L.2)

c. Inspection records will be retained as part of the SWPPP for at least 3 years from the date of termination.

d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.

i. Winter Conditions (Part II.A.4.L.4)

ii. Adverse Weather Conditions (Part II.A.4.L.5)

M. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: All control measures will be inspected at least once every 14 calendar days and within 24 hours of the end of a storm event 0.25 inches or greater. All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 4 hours of report. Built-up sediment will be removed from silt fencing when it has reached one-third of the height of the fence. Silt fencing will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground. Temporary and permanent seeding, sodding, and planting will be inspected for bare spots, washouts, and healthy growth. A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached. The site superintendent will select the appropriate individual(s) who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report.

Any necessary repairs will be completed, when practicable, before the next storm event, but not to exceed a period of 3 business days of discovery, or as otherwise directed by state or local officials.

N. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: Four hours of training will be provided to individuals selected for inspection and maintenance responsibilities (contractors and subcontractors) after the pre-construction conference. They will be trained by a knowledgeable and qualified trainer in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used in good working order.

****Note, Formal training classes given by Universities or other third-party organizations are not required, but recommended for qualified trainers; the permittee is responsible for the content of the training being adequate for personnel to implement the requirements of the permit.**

Certification

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

Signature of Responsible or Cognizant Official:

Title: Mayor, Town of Tillar

Date:

05-10-2023

Computation Sheet for Determining Runoff Coefficients

Appendix A

Total Site Area = _____ Acres [A]

Existing Site Conditions

Impervious Site Area ¹ = _____ Acres [B]

Impervious Site Area Runoff Coefficient ^{2,4} = _____ [C]

Pervious Site Area ³ = _____ Acres [D]

Pervious Site Area Runoff Coefficient ⁴ = _____ [E]

Pre-Construction Runoff Coefficient

$$\frac{[B \times C] + [D \times E]}{[A]} = \text{This is your pre-construction runoff coefficient.}$$

Proposed Site Conditions (after construction)

Impervious Site Area ¹ = _____ Acres [F]

Impervious Site Area Runoff Coefficient ^{2,4} = _____ [G]

Pervious Site Area ³ = _____ Acres [H]

Pervious Site Area Runoff Coefficient ⁴ = _____ [I]

Post-Construction Runoff Coefficient

$$\frac{[F \times G] + [H \times I]}{[A]} = \text{This is your post-construction runoff coefficient.}$$

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
2. Use 0.95 unless lower or higher runoff coefficient can be verified.
3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
4. Refer to local Hydrology Manual for typical C values.

Note: The impervious and pervious surfaces should equal the total area.

ARR150000 Inspection Form

Appendix B

Inspector Name: _____

Date of Inspection: _____

Inspector Title: _____

Date of Rainfall: _____

Duration of Rainfall: _____

Days Since Last Rain Event: _____ days

Rainfall Since Last Rain Event: _____ inches

Description of any Discharges During Inspection: _____

Location of Discharges of Sediment/Other Pollutant (specify pollutant & location): _____

Locations in Need of Additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on BMPs in Need of Maintenance

Location	In Working Order?	Maintenance Scheduled Date	Maintenance Completed Date	Maintenance to be Performed By

Changes required to the SWPPP: _____

Reasons for changes: _____

SWPPP changes completed (date): _____

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

Signature of Responsible or Cognizant Official:

Date: 05-10-2023

Title: MAYOR

BMP Consideration Checklist

The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP should be checked as "Not Used" with a brief statement describing why it is not being used.

Note: Appendix C and D do not have to be submitted with the SWPPP. These attachments are for use during the development of the SWPPP.

EROSION CONTROL BMPs				
BMP	BMP Considered for project	BMP Used	BMP Not Used	If not used, state reason
EC-1 Scheduling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-2 Preservation of Existing Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-3 Hydraulic Mulch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-4 Hydroseeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-5 Soil Binders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-6 Straw Mulch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-7 Geotextiles & Mats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-8 Wood Mulching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-9 Earth Dikes & Drainage Swales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-10 Velocity Dissipation Devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-11 Slope Drains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EC-12 Stream bank Stabilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SEDIMENT CONTROL BMPs				
BMP	BMP Considered for project	BMP Used	BMP Not Used	If not used, state reason
SE-1 Silt Fence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-2 Sediment Basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-3 Sediment Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-4 Check Dam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-5 Fiber Rolls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-6 Gravel Bag Berm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-7 Street Sweeping and Vacuuming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-8 Sand Bag Barrier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-9 Straw Bale Barrier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-10 Storm Drain Inlet Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SE-11 Chemical Treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WIND EROSION CONTROL BMPs				
BMP	BMP Considered for project	BMP Used	BMP Not Used	If not used, state reason
WE-1 Wind Erosion Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

BMP Consideration Checklist

TRACKING CONTROL BMPs				
BMP	BMP Considered for project	BMP Used	BMP Not Used	If not used, state reason
TR-1 Stabilized Construction Entrance/Exit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TR-2 Stabilized Construction Roadway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TR-3 Entrance/Outlet Tire Wash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NON-STORM WATER MANAGEMENT BMPs				
BMP	BMP Considered for project	BMP Used	BMP Not Used	If not used, state reason
NS-1 Water Conservation Practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-2 Dewatering Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-3 Paving and Grinding Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-4 Temporary Stream Crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-5 Clear Water Diversion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-6 Illicit Connection/ Discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-7 Potable Water/Irrigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-8 Vehicle and Equipment Cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-9 Vehicle and Equipment Fueling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-10 Vehicle and Equipment Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-11 Pile Driving Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-12 Concrete Curing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-13 Concrete Finishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-14 Material and Equipment Use Over Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-15 Demolition Adjacent to Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NS-16 Temporary Batch Plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs				
BMP	BMP Considered for project	BMP Used	BMP Not Used	If not used, state reason
WM-1 Material Delivery and Storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-2 Material Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-3 Stockpile Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-4 Spill Prevention and Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-5 Solid Waste Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-6 Hazardous Waste Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-7 Contaminated Soil Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-8 Concrete Waste Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-9 Sanitary/Septic Waste Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WM-10 Liquid Waste Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SWPPP Completion Checklist

Yes = Complete

No = Incomplete/Deficient

N/A = Not applicable to project

Yes	No	N/A		Permit Section Citation
			A. A site description, including:	
			1. Project description, intended use after NOT	Part II.A.4.A.1
			2. Sequence of major activities	Part II.A.4.A.2
			3. Total & disturbed acreage	Part II.A.4.A.3
			4. Pre- and post-construction runoff coefficient OR soil/discharge data	Part II.A.4.A.4
			B. Responsible Parties: All parties dealing with the SWPPP and the areas they are responsible for on-site.	Part II.A.4.B
			C. Receiving Water.	Part II.A.4.C
			-MS4 Name	Part II.A.4.C
			-Ultimate Receiving Water	Part II.A.4.C
			D. Documentation of permit eligibility related to Impaired Water Bodies and Total Maximum Daily Loads (TMDL)	
			1. Identify pollutant on 303(d) list or TMDL	Part II.A.4.D.1
			2. Is construction activity or the specific site listed as cause?	Part II.A.4.D.2
			3. Measures taken to reduce pollutants from the site.	Part II.A.4.D.3
			E. Attainment of Water Quality Standards After Authorization.	Part II.A.4.E
			F. Site Map --- See End of Evaluation Form	Part II.A.4.F
			G. Description of Controls:	
			1. Erosion and sediment controls, including:	
			a. Initial site stabilization	Part II.A.4.G.1.a
			b. Erosion and sediment controls	Part II.A.4.G.1.b
			c. Replacement of inadequate controls	Part II.A.4.G.1.c
			d. Removal of off-site accumulations	Part II.A.4.G.1.d
			e. Maintenance of sediment traps/basins @ 50% capacity	Part II.A.4.G.1.e
			f. Litter, construction debris and chemicals properly handled	Part II.A.4.G.1.f
			g. Off-site storage areas and controls	Part II.A.4.G.1.g
			2. Stabilization practices:	
			a. Description and schedule for stabilization	Part II.A.4.G.2.a
			b. Description of buffer areas	Part II.A.4.G.2.b
			c. Records of stabilization	Part II.A.4.G.2.c
			d. Deadlines for stabilization	Part II.A.4.G.2.d
			3. Structural Practices:	
			-Describe structural practices to divert flows, store flows, or otherwise limit runoff	Part II.A.4.G.3
			a. Sediment basins	Part II.A.4.G.3.a.1
			-Are more than 10 acres draining to a common point? If so, are sediment basins included?	Part II.A.4.G.3.a.1
			-Sediment basin dimensions and capacity description and calculations	Part II.A.4.G.3.a.1
			-If a basin wasn't practicable, are other controls sufficient?	Part II.A.4.G.3.a.1
			b. Velocity dissipation devices concentrated flow from 2 or more acres	Part II.A.4.G.3.b
			H. Other controls including:	
			1. Solid waste control measures	Part II.A.4.H.1
			2. Vehicle off-site tracking controls	Part II.A.4.H.2
			3. Compliance with sanitary waste disposal	Part II.A.4.H.4
			4. Does the site have a concrete washout area controls?	Part II.A.4.H.5
			5. Does the site have fuel storage areas, hazardous waste storage and/or truck wash areas controls?	Part II.A.4.H.6

SWPPP Completion Checklist

Yes No N/A

Yes	No	N/A		Permit Section Citation
			I. Identification of allowable non-storm water discharges	Part II.A.4.I
			-Appropriate controls for dewatering, if present	Part I.B.12.C

			J. Post construction stormwater management.	Part II.A.4.J
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			K. State or local requirements incorporated into the plan.	Part II.A.4.K
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L. Inspections

			1. Inspection frequency listed?	Part II.A.4.L.1
			2. Inspection form	Part II.A.4.L.2
			Ours.	
			If not ours, does it contain the following items:	
			a. Inspector name and title	Part II.A.4.L.2.a
			b. Date of inspection.	Part II.A.4.L.2.b
			c. Amount of rainfall and days since last rain event (14 day only)	Part II.A.4.L.2.c
			d. Approx beginning and duration of storm event	Part II.A.4.L.2.d
			e. Description of any discharges during inspection	Part II.A.4.L.2.e
			f. Locations of discharges of sediment/other pollutants	Part II.A.4.L.2.f
			g. BMPs in need of maintenance	Part II.A.4.L.2.g
			h. BMPs in working order, if maintenance needed (scheduled and completed)	Part II.A.4.L.2.h
			i. Locations that are in need of additional controls	Part II.A.4.L.2.i
			j. Location and dates when major construction activities begin, occur or cease	Part II.A.4.L.2.j
			k. Signature of responsible/cognizant official	Part II.A.4.L.2.k
			3. Inspection Records	Part II.A.4.L.3
			4. Winter Conditions	Part II.A.4.L.4
			5. Adverse Weather Conditions	Part II.A.4.L.5

			M. Maintenance Procedures	Part II.A.4.M
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			N. Employee Training	Part II.A.4.N
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			Signed Plan Certification	Part II.A.5. and Part II.B.10
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F. Site Map showing:

			1. Pre-construction topographic view	Part II.A.4.F.1
			2. Drainage flow	Part II.A.4.F.2
			3. Approximate slopes after grading activities	Part II.A.4.F.2
			4. Areas of soil disturbance and areas not disturbed	Part II.A.4.F.3
			5. Location of major structural and non-structural controls.	Part II.A.4.F.4
			6. Location of main construction entrance and exit.	Part II.A.4.F.5
			7. Areas where stabilization practices are expected to occur.	Part II.A.4.F.6
			8. Locations of off-site materials, waste, borrow area or storage area.	Part II.A.4.F.7
			9. Locations of areas used for concrete wash-out.	Part II.A.4.F.8
			10. Locations of surface waters on site.	Part II.A.4.F.9
			11. Locations where water is discharged to a surface water or MS4.	Part II.A.4.F.10
			12. Storm water discharge locations.	Part II.A.4.F.11
			13. Areas where final stabilization has been accomplished.	Part II.A.4.F.12
			14. Legend for symbols/labels used	Part II.A.4.F.13
			15. Location of storm drain inlets on site or in immediate vicinity	Part II.A.4.F.14



ARKANSAS

ENERGY & ENVIRONMENT

NOTICE OF COVERAGE (NOC) FOR NPDES CONSTRUCTION STORMWATER GENERAL PERMIT (CGP) NUMBER ARR150000

Permittee Information (provided by Notice of Intent)

Town Of Tillar
Attn: Robert Allen Evans
Po Box 86
Tillar, Ar 71670

Permit Tracking No.: ARR158017
AFIN: 21-00299

This NOC is issued for the construction of the **Water Line** only. The permittee is responsible for compliance with all applicable terms and conditions of this NOC and the CGP. Any permit-related correspondence must include this Permit Tracking Number and AFIN. A copy of the CGP can be found at:

<https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/Permits/ARR150000.pdf>

Project Name:	Water System Replacement
Project Contact:	Robert Allen Evans
Contact Number:	8702228830
SWPPP Location:	Job Trailer at the Construction Site
Site Address:	106 E B St, Tillar, Ar, 71670 in Drew, Desha County
Administrative Complete:	October 24, 2023
Total Acreage:	9.5
Disturbed Acreage:	9.5

Receipt of this NOC does not relieve any permittee of the responsibility to comply with any other applicable federal, state, and local statute, ordinance, policy, or regulation which includes but is not limited to Short Term Activity Authorizations (STAA) or 404 permits.

This authorization must be **posted** at the construction site in a prominent place per the general permit.

Expiration Date: 10/31/2026

A handwritten signature in black ink that reads "Bryan Leamons".

Bryan Leamons, P.E.
Senior Operations Manager
Office of Water Quality, Division of Environmental Quality
5301 Northshore Drive, North Little Rock, AR, 72118

December 22, 2023
Coverage Date