

## ADDENDUM #1

**DATE:** April 11, 2023  
**OWNER:** City Of Las Vegas NM  
**PROJECT:** Las Vegas Water Treatment Plant SCADA Integration  
**BID NO.:**  
**ENGINEER:** Bohannon Huston

This addendum forms a part of the Contract Documents and modifies the original specifications and drawings dated March 3, 2023 Acknowledge receipt of this addendum in the space provided in the Bid Form. Failure to do so may subject the bidder to disqualification.

### I. GENERAL CLARIFICATIONS

1. N/A

### II. PRE-BID MEETING QUESTIONS

1. None.

### III. BHITRACKER BIDDER'S QUESTIONS

1. **Question:** *Verify if the EE requirements are hard requirements:*
  - EE-98 – Residential/Commercial Electrical License with exam AND Business Law Exam
  - GF-9 - Utility Lines Contractors License
  - GF-98 - Fixed Works License
  - ES-7 - Telephone Communications Systems Exam

**Answer:** *Yes, this will be a public bid process due to the state funding acquired for this project. This will be awarded on the lowest apparent bidder, and a contract will be entered with the prime contractor, who must have a license to perform low voltage electrical work in the State of New Mexico (or subcontract one). An EE-98 could be the prime contractor, or a GF-9 or GF-98 teamed with a EE-98 subcontractor would suffice.*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** No changes

2. **Question:** *Do you have funding?*

**Answer:** *Additional state support funding was acquired to go back out to rebid due to higher than anticipated electronics costs, we anticipate it will be sufficient to move forward on the base bid at a minimum.*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** No changes

3. **Question:** *Why is this a re-bid?*

**Answer:** *This was rebid due to higher costs than previously budgeted.*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** No changes

4. **Question:** *How many strands for the fiber?*

**Answer:** *Six Strand Fiber.*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** Added Fiber Optic Cable specifications to 26 05 19 2.08 and 2.09.

5. **Question:** *What type of fiber cable is required, jacketed?*

**Answer:** *Gel filled loose tube with polyethylene jacket.*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** Added Fiber Optic Cable specifications to 26 05 19 2.08 and 2.09.

6. **Question:** *Pull boxes/Yard Boxes, do they need to be drive over rated?*

**Answer:** *Pull boxes are specified in 26 27 21 - Boxes, 2.03 as Tier 22 rated, 36-3/4" x 24" x 24".*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** No changes

7. **Question:** *Verify that all fiber is Multi-Mode? 406610 2.01 D.*

**Answer:** *Multimode fiber has been specified in 26 05 19 - Low Voltage Wire and Cable, see revised Section 26 05 19 2.08 and 2.09 attached.*

**Contract Documents:** No changes

**Drawings:** No changes

**Specifications:** Added Fiber Optic Cable specifications to 26 05 19 2.08 and 2.09.

#### IV. CONTRACT DOCUMENT CORRECTIONS/MODIFICATIONS

- a. C-111 – Advertisement for Bids; Amend Bid Opening date from April 12, 2023 at 2:00 pm to April 19, 2023 at 11:00 am, place remains unchanged.
- b. Add Supplemental Conditions for Federally Assisted Drinking Water Infrastructure under the Drinking Water State Revolving Loan Fund Revised July 2021; see attached and to be inserted after C-455 Campaign Contribution Disclosure Form.
- c. Add State Wage Decision SM-23-1043-B; see attached.
- d. Add Davis Bacon Federal Wage Rates NM20230026; see attached.

#### V. TECHNICAL SPECIFICATIONS CORRECTIONS/MODIFICATIONS

- a. Section 01 12 16 - Work Sequence, Add requirements to 1.01.B, and re-issue entire section.
- b. Section 01 58 13 - Project Sign, Add section to project.
- c. Remove VFD from backwash process narrative in 4.2.1 and 5.4 and re-issue entire Process Control Narrative.
- d. Add fiber optic cable specifications 2.08 and 2.09 to Section 26 50 19: Low Voltage Wire and Cable.
- e. Add State Wage Decision SM-23-1043-B; see attached
- f. Add Federal Davis-Bacon Wage Rate NM20230028; see attached

#### VI. CONSTRUCTION DRAWINGS CORRECTIONS/MODIFICATIONS

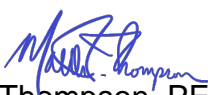
- a. Drawing I-100, add key notes to clarify the base bid items.
- b. Drawing I-230, revise location of level switches and change them from new to existing.
- c. Drawing I322, revise backwash pump controls.
- d. Drawing I-323, revise level switches from new to existing.

#### VII. ATTACHMENTS

- a. DWRSF Supplemental Conditions
- b. State Wage Decision SM-23-1043-B
- c. Davis-Bacon Federal Wage Decision NM20230028
- d. Section 01 12 16 - Work Sequence - Addendum #1
- e. Section 01 58 13 - Project Sign.- Addendum #1
- f. Section 26 05 19 - Low Voltage Wire and Cable - Addendum #1
- g. Process Control Narrative 40 68 10 Supplement - Addednum #1
- h. Drawing I-100-R1
- i. Drawing I-230-R1
- j. Drawing I-322-R1
- k. Drawing I-323-R1

All bidders shall acknowledge receipt of this addendum in the appropriate location on the BID FORM.

Sincerely,

  
Matthew R. Thompson, PE  
Senior Vice President  
Bohannon Huston, Inc.

(1-19)

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6**

**Supplemental Conditions for Federally Assisted Drinking Water Infrastructure  
under the Drinking Water State Revolving Loan Fund**

**Revised July 2021**

REPRODUCTION OF THIS GUIDANCE  
SHOULD BE ON COLORED PAPER,  
PREFERABLY PINK



## **REQUIRED FEDERAL FORMS**

Forms that must be submitted within bidder's proposal:

1. XP-211 Certifications Regarding Contract under Equal Opportunity Clause & Non-Segregated Facilities
2. XP-215 MBW/WBE/SBRA Utilization Form along with proof of solicitation (i.e. newspaper advertisement, letters of solicitation)
3. XP-315 Davis Bacon Certification
4. 5700-49 Certification Regarding Debarment, Suspension & Other Responsibility Matters
5. NM SRF DBE Form DBE-3
6. NM SRF DBE Form DBE-4
7. SRF Telecom Prohibition Certification
8. American Iron and Steel Certification AIS DWSRF 314

Forms to be provided with every construction pay application:

1. XP-214 Labor Standards Certification
2. AIS Pay Application Certification

## REFERENCES

- Copeland Anti-Kickback, 29 CFR Part 3  
<http://www.dol.gov/compliance/laws/comp-copeland.htm>
- Suspension and Debarment, Subpart C of 2 CFR 180 and 1532  
[http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr180\\_main\\_02.tpl](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr180_main_02.tpl)  
[http://edocket.access.gpo.gov/cfr\\_2009/janqtr/pdf/2cfr1532.332.pdf](http://edocket.access.gpo.gov/cfr_2009/janqtr/pdf/2cfr1532.332.pdf)
- Disadvantaged Business Enterprise, 40 CFR Part 33  
<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=40:1.0.1.2.30&idno=40>
- Equal Employment Opportunity, 41 CFR Part 60  
<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=41:1.2.3.1.1&idno=41>
- Labor Standards, 29 CFR Parts 4 & 6  
[http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title29/29cfr4\\_main\\_02.tpl](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title29/29cfr4_main_02.tpl)  
<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=99c9a20e960f56be66f17ac91b52c888&rgn=div5&view=text&node=29:1.1.1.1.7&idno=29>
- Nondiscrimination, 40 CFR Part 7  
<http://www.epa.gov/ocr/docs/40p0007.pdf>
- OMB Circular A-133  
[http://www.whitehouse.gov/omb/assets/a133\\_compliance/app\\_7.pdf](http://www.whitehouse.gov/omb/assets/a133_compliance/app_7.pdf)
- Reissuance of NPDES General Permits for Storm Water Discharges from Construction Sites in Region 6- Federal Register  
<http://www.epa.gov/region6/6en/w/sw/swcon98.pdf>

Model Contract Clauses—Attached

NPDES Bypass Policy—Attached

Federal Cross-Cutters—Attached

XP-211

**BIDDER'S CERTIFICATION\***  
**In Compliance with Equal Employment Opportunity and Nonsegregated Facilities**

Project Name \_\_\_\_\_ Project Number \_\_\_\_\_  
Contract For \_\_\_\_\_

**The following certifications must be completed by the bidder for each contract.**

**A. EQUAL EMPLOYMENT OPPORTUNITY:**

- I have developed and have on file at my each establishment affirmative action programs pursuant to 41 CFR Part 60-2.
- I have participated in previous contract(s) or subcontract(s) subject to the equal opportunity clause under **Executive Orders 11246 and 11375**. I have filed all reports due under the requirements contained in 41 CFR 60-1.7.
- I have not participated in previous contract(s) subject to the equal opportunity clause under **Executive Orders 11246 and 11375**.
- I will obtain a similar certification from any proposed subcontractor(s), when appropriate.

**B. NONSEGREGATED FACILITIES**

- I certify that I do not and will not maintain any facilities provided for my employees in a segregated manner, or permit my employees to perform their services at any location under my control where segregated facilities are maintained; and that I will obtain a similar certification prior to the award of any federally assisted subcontract exceeding \$10,000 which is not exempt from the equal opportunity clause as required by 41 CFR 60-1.8.

**I understand that a false statement on this certification may be grounds for rejection of this bid proposal or termination of the contract award.**

Typed Name & Title of Bidder's Authorized Representative \_\_\_\_\_

Signature of Bidder's Authorized Representative \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_  
Name & Address of Bidder



**NOTE:** The bidder shall complete the following Minority/Women’s/Small Business in Rural Area (MBE/WBE/SBRA) utilization information whenever they solicit sub contract construction work and/or services and purchase of equipment and supplies for the project.

1. Do you maintain and update qualified MBE, WBE, and SBRA on your solicitation lists for supplies, equipment, construction and/or service? Yes \_\_\_ No \_\_\_

If yes, when did you update your MBE/WBE/SBRA solicitation lists? \_\_\_\_\_

2. Do you maintain a list of minority, women and rural small business-focused publications that may be utilized to solicit MBEs or WBEs or SBRA’s? Yes \_\_\_ No \_\_\_

If yes, name the publications: \_\_\_\_\_

3. Do you use the services of outreach programs sponsored by the Minority Business Development Agency and/or the Small Business Administration to recruit bona fide MBE/WBE/SBRA firms for placement on your solicitation lists? Yes \_\_\_ No \_\_\_

4. Do you seek out Minority Business Development Centers to assist you in identifying MBEs/WBEs/SBRAs for potential work opportunities on your proposed bid for this project? Yes \_\_\_ No \_\_\_

5. Do you analyze the bid package or contract documents to identify portions of work that can be divided and performed by qualified MBEs, WBEs, and SBRA’s including the bonding range? Yes \_\_\_ No \_\_\_

If yes, please attach a brief description of portions of work you have identified for subcontracting.

6. Do you develop realistic delivery schedules which may provide for greater MBE/WBE/SBRA participation? Yes \_\_\_ No \_\_\_

7. Do you send a letter of solicitation to MBE/WBE/SBRA for this project? Yes \_\_\_ No \_\_\_

If yes, please attach a sample copy of each different solicitation letter and the name and address of each MBE/WBE/SBRA.

8. Do you advertise in general circulation, trade journals, State agency publications of identified MBEs/WBEs/SBRAs, minority or women or rural small business focused media, etc., concerning the subcontracting opportunities on your proposed bid for this project? Yes \_\_\_ No \_\_\_

If yes, please list the name of publication and dates of advertisement and attach a copy of each advertisement from each publication.

9. Do you conduct pre-bid, pre-solicitation, and post award conferences, meetings and follow-ups with interested MBE, WBE, and SBRA? Yes \_\_\_ No \_\_\_

If yes, please list person who attended conference as representative of MBE/WBE/SBRA

Name & Title of Person: \_\_\_\_\_

Name of MBE/WBE/SBRA: \_\_\_\_\_

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

Date and Place of Conference: \_\_\_\_\_

Name & Title of Person: \_\_\_\_\_

Name of MBE/WBE/SBRA: \_\_\_\_\_

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

Date and Place of Conference: \_\_\_\_\_

Name & Title of Person: \_\_\_\_\_

Name of MBE/WBE/SBRA: \_\_\_\_\_

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

Date and Place of Conference: \_\_\_\_\_

10. Total dollar amount of the contract:

\$

11. Total dollar amount and percentage of MBE/WBE/SBRA participation:

MBE:	Construction	____%	Equipment	____%	Supplies	____%	Services	____%
	(\$)		(\$)		(\$)		(\$)	
WBE:	Construction	____%	Equipment	____%	Supplies	____%	Services	____%
	(\$)		(\$)		(\$)		(\$)	
SBRA:	Construction	____%	Equipment	____%	Supplies	____%	Services	____%
	(\$)		(\$)		(\$)		(\$)	

12. Name, address, phone number, contact person, type of construction subcontract, and dollar amount of subcontract.

**MBE Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**WBE Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**SBRA Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**MBE Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**WBE Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**SBRA Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**MBE Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**WBE Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**SBRA Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Amount: \$

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**MBE Subcontractor:**

Address:

Phone:

Contact Person:

**WBE Subcontractor:**

Address:

Phone:

Contact Person:

**SBRA Subcontractor:**

Address:

Phone:

Contact Person:

Type of Work:

Type of Work:

Type of Work:

Amount: \$

Amount: \$

Amount: \$

**MBE Subcontractor:**

**WBE Subcontractor:**

**SBRA Subcontractor:**

Address:

Address:

Address:

Phone:

Phone:

Phone:

Contact Person:

Contact Person:

Contact Person:

Type of Work:

Type of Work:

Type of Work:

Amount: \$

Amount: \$

Amount: \$

**I understand that a false statement on the above information may be grounds for rejection of this bid proposal or termination of the contract award.**

Typed Name & Title of Authorized Representative

Signature of Bidder's Authorized Representative

Date



**Davis-Bacon Act Certification**

The Contractor acknowledges to and for the benefit of the Owner \_\_\_\_\_ ("Purchaser") and the State of New Mexico (the "State") that it understands the goods and services under this Agreement are being funded with monies made available by the New Mexico Finance Authority Drinking Water State Revolving Loan Fund and such law contains provisions commonly known as the Davis-Bacon Act that requires all contractors and subcontractors performing work on federal construction contracts or federally assisted contracts in excess of \$2,000 to pay their laborers and mechanics not less than the federal prevailing wage rates and fringe benefits for corresponding classes of laborers and mechanics employed on similar projects in the area as determined by the Secretary of Labor.

The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the Davis-Bacon Act, (b) as such has compensated all contractors and sub-contractors performing work on this project not less than the prevailing wage rate and fringe benefits for corresponding classes as determined by the Secretary of Labor, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State 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 State.

\_\_\_\_\_  
**(Contractor Signature & Date)**

\_\_\_\_\_  
**(Owner Signature & Date)**

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EPA Project Control Number

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United States Environmental Protection Agency  
Washington, DC 20460

**Certification Regarding  
Debarment, Suspension, and Other Responsibility Matters**

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

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated or cause or default.

I understand that a false statement on this certification may be ground for rejection of this proposal or termination of the award. In addition, under 18 U SC Sec. 10 01, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

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Typed Name & Title of Authorized Representative, **DUNS Number, and SAM's Registration Number**

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Signature of Bidder's Authorized Representative

Date



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

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

This form is intended to capture the DBE<sup>1</sup> subcontractor's<sup>2</sup> description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Prime Contractor Name		Issuing/Funding Entity:	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA		Meets/ exceeds EPA certification standards?
<input type="radio"/> Other: _____		<input type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Unknown

<sup>1</sup> A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified as described in 40 CFR 33.204-33.205 or certified by EPA. New Mexico State Revolving Loan Funds accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

<sup>2</sup> Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

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

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

<b>Prime Contractor Signature</b>	<b>Print Name</b>
<b>Title</b>	<b>Date</b>

<b>Subcontractor Signature</b>	<b>Print Name</b>
<b>Title</b>	<b>Date</b>

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

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE<sup>1</sup> subcontractors<sup>2</sup> and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	___YES	___NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?

<sup>1</sup> A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified as described in 40 CFR 33.204-33.205 or certified by EPA. New Mexico State Revolving Loan Funds accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

<sup>2</sup> Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

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

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

<b>Prime Contractor Signature</b>	<b>Print Name</b>
<b>Title</b>	<b>Date</b>

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

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

<b>Prime Contractor Signature</b>	<b>Print Name</b>
<b>Title</b>	<b>Date</b>

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

## Telecommunication and Video Surveillance Services Prohibition Certification

The Contractor acknowledges to and for the benefit of the (City, County, or other legal entity) of \_\_\_\_\_ (“Purchaser”) and the State of New Mexico (“State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund or Drinking Water State Revolving Fund that have federal statutory requirements commonly known as “Prohibition on Certain Telecommunication and Video Surveillance Services (2 CRF 200.216);” that 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 \(Sam.gov\)](http://System for Award Management (Sam.gov)) 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.
- 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).
- 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.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover from the Contractor any loss, expense, or cost incurred by the Purchaser or State resulting from any such failure, including loss of funding, whether in whole or in part, from the State or any resultant costs owed to the State by the Purchaser. The Contractor and the Purchaser agree that 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 State.

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Typed Name & Title of Contractor's Authorized Representative

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Signature of Contractor's Authorized Representative

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Date



**American Iron And Steel Certification**

The Contractor acknowledges to and for the benefit of the (City, County, or other legal entity) of \_\_\_\_\_ (“Purchaser”) and the State of New Mexico (“State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Drinking Water State Revolving Fund that have federal statutory requirements commonly known as “American Iron and Steel;” that requires products made primarily of iron or steel be used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement including the AIS final guidance date 3/20/14 from EPA, (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 Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover from the Contractor any loss, expense, or cost incurred by the Purchaser or State resulting from any such failure, including loss of funding, whether in whole or in part, from the State or any resultant costs owed to the State by the Purchaser. The Contractor and the Purchaser agree that 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 State.

\_\_\_\_\_  
Typed Name & Title of Contractor's Authorized Representative

\_\_\_\_\_  
Signature of Contractor's Authorized Representative

\_\_\_\_\_  
Date

**American Iron And Steel Certification - Pay Application #**

The Contractor acknowledges that it understands the goods and services being paid for under this Pay Application are being funded with monies made available by the Clean Water State Revolving Fund or Drinking Water State Revolving Fund that have federal 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 (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State 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 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 Purchaser or the State. Notwithstanding any other provision of th, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover from the Contractor any loss, expense, or cost incurred by the Purchaser or State resulting from any such failure, including loss of funding, whether in whole or in part, from the State or any resultant costs owed to the State by the Purchaser. The Contractor and the Purchaser agree that 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 State.

\_\_\_\_\_  
Typed Name & Title of Contractor's Authorized Representative

\_\_\_\_\_  
Signature of Contractor's Authorized Representative

\_\_\_\_\_  
Date

AIS Pay Application Certification

## Wage Rate Requirements

### (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](http://www.dol.gov).

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The

State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

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

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

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

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the

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

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

(3) Payrolls and basic records.

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

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social

security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

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

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

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

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

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the

required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not



less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.



(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### **4. Contract Provision for Contracts in Excess of \$100,000.**

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for

unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

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

## **5. Compliance Verification**

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the subrecipient should conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates.

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

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

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

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**Region 6**

**MODEL CONTRACT CLAUSE**

Recipients must ensure that, when appropriate, the following clauses or their equivalent are included in each contract.

**1. PRIVACY OF CONTRACT**

This contract is expected to be funded in part with funds from the U.S. Environmental Protection Agency. Neither the United States nor any of its departments, agencies or employees is, or will be, a party to this contract or any lower tier contract. This contract is subject to the applicable EPA procurement regulations in effect on the date of the assistance award for this project.

**2. CHANGES**

*(a) The following clause applies only to contracts for construction.*

1. The recipient may at any time, without notice to any surety, by written order, make any change in the work within the general scope of the contract, including but not limited to changes:

- (i) In the specifications (including drawings and designs);
- (ii) In the time, method or manner of performance of the work;
- (iii) In the recipient-furnished facilities, equipment, materials, services or site, or
- (iv) Directing acceleration in the performance of the work.

2. A change order shall also be any other written order (including direction, instruction, interpretation or determination) from the recipient which causes any change, provided the contractor gives the recipient written notice stating the date, circumstances and source of the order and that the contractor regards the order as a change order.

3. Except as provided in this clause, no order, statement or conduct of the recipient shall be treated as a change under this clause or entitle the contractor to an equitable adjustment.

4. If any change under this clause causes an increase or decrease in the contractor's cost or the time required to perform any part of the work under this contract, whether or not changed by any order, the recipient shall make an equitable adjustment and modify the contract in writing. Except for claims based on defective specifications, no claim for any change under paragraph (a)(2) above shall be allowed for any costs incurred more than 20 days before the contractor gives written notice as required in paragraph (a)(2). In the case of defective specifications for which the recipient is responsible, the equitable adjustment shall include any increased cost the contractor reasonably incurred in attempting to comply with those defective specifications.

5. If the contractor intends to assert a claim for an equitable adjustment under this clause, the contractor must, within 30 days after receipt of a written change order under paragraph (a)(1) or the furnishing of a written notice under paragraph (a)(2), submit a written statement to the recipient setting forth the general nature and monetary extent of such claim. The recipient may extend the 30-day period. The contractor may include the statement of claim in the notice under paragraph (2) of this changes clause.

6. No claim by the contractor for an equitable adjustment shall be allowed if made after final payment under this contract.

b. The following clause applies only to contracts for services.

1. The recipient may at any time, by written order and without notice to the sureties, make changes within the general scope of this contract in the services or work to be performed. If such changes cause an increase or decrease in the contractor's cost or time required to perform any services under this contract, whether or not changed by any order, the recipient shall make an equitable adjustment and modify this contract in writing. The contractor must assert any claim for adjustment under this clause in writing within 30 days from the date it receives the recipient's notification of change, unless the recipient grants additional time before the date of final payment.

2. No claim by the contractor for an equitable adjustment shall be allowed if made after final payment under this contract.

3. No services for which the contractor will charge an additional compensation shall be furnished without the written authorization of the recipient.

c. the following clause applies only to contracts for supplies.

1. The recipient may at any time, by written order and without notice to the sureties, make changes within the general scope of this contract in any one or more of the following:

- (i) Drawings, designs or specifications where the supplies to be furnished are specifically manufactured for the recipient;
- (ii) Method of shipment or packing; and
- (iii) Place of delivery.

2. If any changes cause an increase or decrease in the cost or time required to perform any part of the work under this contract, whether or not changed by such order, the recipient shall make an equitable adjustment in the contract price or delivery schedule, or both, and modify the contract in writing. The contractor must assert any claim for adjustment under this clause within 30 days from the date the contractor receives the recipient's notification of change. If the recipient decides that the facts justify such action, the recipient may receive and act upon any such claim asserted at any time before final payment under this contract. Where the cost of property made obsolete or excess as a result of a change is included in the contractor's claim for adjustment, the recipient has the right to prescribe the manner of disposition of such property. Nothing in this clause shall excuse the contractor from proceeding with the contract as changed.

3. No claim by the contractor for an equitable adjustment shall be allowed if made after final payment under this contract.

### **3. DIFFERING SITE CONDITIONS**

**The following clause applies only to construction contracts.**

- a. The contractor shall promptly, and before such conditions are disturbed, notify the recipient in writing of:
  1. Subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or
  2. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this contract.
- b. The recipient shall promptly investigate the conditions. If it finds that conditions materially differ and will cause an increase or decrease in the contractor's cost or the time required to perform any part of the work under this contract, whether or not changed as a result of such conditions, the recipient shall make an equitable adjustment and modify the contract in writing.
- c. No claim of the contractor under this clause shall be allowed unless the contractor has given the notice required in paragraph (a) of this clause. However, the recipient may extend the time prescribed in paragraph (a).
- d. No claim by the contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

### **4. SUSPENSION OF WORK**

**The following clause applies only to construction contracts.**

- a. The recipient may order the contractor in writing to suspend, delay or interrupt all or any part of the work for such period of time as the recipient may determine to be appropriate for the convenience of the recipient.
- b. If the performance of all or any part of the work is suspended, delayed or interrupted for an unreasonable period of time by an act of the recipient in administration of this contract, or by the recipient's failure to act within the time specified in this contract (or if no time is specified, within a reasonable time), the recipient shall make an adjustment for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay or interruption and modify the sub-agreement in writing. However, no adjustment shall be made under this clause for any suspension, delay or interruption to the extent (1) that performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the contractor, or (2) for which an equitable adjustment is provided for or excluded under any other provision of this contract.
- c. No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the contractor notified the recipient in writing of the act, or failure to act, involved (this requirement does not apply to a claim resulting from a suspension order), and (2) unless the amount claimed is asserted in writing as soon as practicable after the termination of such suspension, delay or interruption, but not later than the date of final payment under the contract.

## **5. TERMINATION**

### **The following clause applies only to contracts over \$10,000.**

- a. This contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this contract through no fault of the terminating party, provided that no termination may be effected unless the other party is given (1) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and (2) an opportunity for consultation with the terminating party prior to termination.
- b. This contract may be terminated in whole or in part in writing by the recipient for its convenience, provided that the contractor is given (1) not less than ten (10) calendar days' written notice (delivered by certified mail, return receipt requested) of intent to terminate, and (2) an opportunity for consultation with the terminating party prior to termination.
- c. If termination for default is effected by the recipient, an equitable adjustment in the price provided for in this contract shall be made, but (1) no amount shall be allowed for anticipated profit on unperformed services or other work, and (2) any payment due to the contractor at the time of termination may be adjusted to cover any additional costs to the recipient because of the contractor's default. If the contractor effects termination for default, or if the recipient effects termination for convenience, the equitable adjustment shall include a reasonable profit for services or other work performed. The equitable adjustment for any termination shall provide for payment to the contractor for services rendered and expenses incurred prior to the termination, in addition to termination settlement costs reasonably incurred by the contractor relating to commitments which had become firm prior to the termination.
- d. Upon receipt of a termination action under paragraphs (a) or (b) above, the contractor shall (1) promptly discontinue all affected work (unless the notice directs otherwise), and (2) deliver or otherwise make available to the recipient all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the contractor in performing this contract, whether completed or in process.
- e. Upon termination under paragraphs (a) or (b) above, the recipient may take over the work and may award another party a contract to complete the work under this contract.
- f. If, after termination for failure of the contractor to fulfill contractual obligations, it is determined that the contractor had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of the recipient. In such event, adjustment of the sub-agreement price shall be made as provided in paragraph (c) of this clause.

## **6. REMEDIES**

### **This clause applies only to contracts over \$25,000.**

Unless otherwise provided in this contract, all claims, counter-claims, disputes and other matters in question between the recipient and the contractor arising out of, or relating to, this contract or the breach of it will be decided, if the parties mutually agree, by arbitration, mediation, or other alternative dispute resolution mechanism; or in a court of competent jurisdiction within the State in which the recipient is located.



## **7. PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA**

**NOTE**- The following clause applies to (1) any contract negotiated between the recipient and its contractor in excess of \$100,000; (2) negotiated contract amendments or change orders in excess of \$100,000 affecting the price of a formally advertised, competitively awarded, fixed price contract, or (3) any lower tier contract or purchase order in excess of \$100,000 under a contract other than a formally advertised, competitively awarded, fixed price contract. This clause does not apply to contracts awarded on the basis of effective price competition.

a. The contractor and subcontractor, where appropriate, assure that the cost and pricing data submitted for evaluation with respect to negotiation of prices for negotiated contracts, lower tier contracts and change orders is based on current, accurate and complete data supported by their books and records. If the recipient or EPA determines that any price (including profit) negotiated in connection with this contract, lower tier contract or amendment there under was increased by any significant sums because the data provided was incomplete, inaccurate or not current at the time of submission, then such price or cost or profit shall be reduced accordingly and the recipient shall modify the contract in writing to reflect such action.

b. Failure to agree on a reduction shall be subject to the remedies clause of this contract.

**NOTE** - Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with lower tier contracts, the contractor may wish to include a clause in each lower tier contract requiring the lower tier contractor to appropriately indemnify the contractor. It is expected that any lower tier contractor subject to such indemnification will generally require substantially similar indemnification for defective cost and pricing data submitted by lower tier contractors.

## **8. AUDIT; ACCESS TO RECORDS**

a. The contractor shall maintain books, records, documents and other evidence directly pertinent to performance on EPA funded work under this contract in accordance with generally accepted accounting principles and practices consistently applied, and the applicable EPA regulations in effect on the date of execution of this contract. The contractor shall also maintain the financial information and data used in the preparation or support of any cost submission required under applicable regulations for negotiated contracts or change orders and a copy of the cost summary submitted to the recipient. The United States Environmental Protection Agency, the Comptroller General of the United States, the United States Department of Labor, the recipient, and [the State] 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.

b. If this is a fixed price contract awarded through sealed bidding or otherwise on the basis of effective price competition, the contractor agrees to make paragraphs (a) through (g) of this clause applicable to all negotiated change orders and contract amendments affecting the contract price. In the case of all other types of prime contracts, the contractor agrees to make paragraphs (a) through (g) applicable to all contract awards in excess of \$10,000, at any tier, and to make paragraphs (a) through (g) of this clause applicable to all change orders directly related to project performance.



- c. Audits conducted under this provision shall be in accordance with generally accepted auditing standards and with established procedures and guidelines of the reviewing or audit agency(ies).
- d. The contractor agrees to disclose all information and reports resulting from access to records under paragraphs (a) and (b) of this clause to any of the agencies referred to in paragraph (a).
- e. Access to records is not limited to the required retention periods. The authorized representatives designated in paragraph (a) of this clause shall have access to records at any reasonable time for as long as the records are maintained.
- f. This right of access clause applies to financial records pertaining to all contracts (except for fixed price contracts awarded through sealed bidding or otherwise on the basis of effective price competition) and all contract change orders regardless of the type of contract, and all contract amendments regardless of the type of contract. In addition this right of access applies to all records pertaining to all contracts, contract change orders and contract amendments:
  - 1. To the extent the records pertain directly to contract performance;
  - 2. If there is any indication that fraud, gross abuse or corrupt practices may be involved;or
  - 3. If the sub-agreement is terminated for default or for convenience.

## **9. COVENANT AGAINST CONTINGENT FEES**

The contractor assures that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee excepting bona fide employees or bona fide established commercial or selling agencies maintained by the contractor for the purpose of securing business. For breach or violation of this assurance, the recipient shall have the right to annul this agreement without liability or, at its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee.

## **10. GRATUITIES**

- a. If the recipient 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 recipient, the State or EPA in an attempt to secure a contract or favorable treatment in awarding, amending or making any determinations related to the performance of this contract, the recipient may, by written notice to the contractor, terminate this contract. The recipient may also pursue other rights and remedies that the law or this contract provides.
- b. In the event this contract is terminated as provided in paragraph (a), the recipient may pursue the same remedies against the contractor as it could pursue in the event of a breach of the contract by the contractor, and as a penalty, in addition to any other damages to which it may be entitled by law, be entitled to exemplary damages in an amount (as determined by the recipient) which shall be not less than three nor more than ten times the costs the contractor incurs in providing any such gratuities to any such officer or employee.

## **11. BUY AMERICAN**

### **This clause applies only to construction contracts award under 40 CFR Part 35, Subparts E and I.**

In accordance with Section 215 of the Clean Water Act (33 U.S.C. 1251 et. seq.) the contractor agrees that preference will be given to domestic construction material by the contractor, subcontractors, material-men and supplies in the performance of this contract.

## **12. RESPONSIBILITY OF THE CONTRACTOR**

### **(a) The following clause applies only to sub-agreements for services.**

1. The contractor is responsible for the professional quality, technical accuracy, timely completion and coordination of all designs, drawings, specifications, reports and other services furnished by the contractor under this contract. The contractor shall, without additional compensation, correct or revise any errors, omissions or other deficiencies in his designs, drawings, specifications, reports and other services.
2. The contractor shall perform the professional services necessary to accomplish the work specified in this contract in accordance with this contract and applicable EPA requirements in effect on the date of execution of the assistance agreement for this project.
3. The owner's or EPA's approval of drawings, designs, specifications, reports and incidental work or materials furnished shall not in any way relieve the contractor of responsibility for the technical adequacy of his work. Neither the owner's nor EPA's review, approval, acceptance or payment for any of the services shall be construed as a waiver of any rights under this agreement or of any cause for action arising out of the performance of this contract.
4. The contractor shall be, and shall remain, liable in accordance with applicable law for all damages to the owner or EPA caused by the contractor's negligent performance of any of the services furnished under this contract, except for errors, omissions or other deficiencies to the extent attributable to the owner, owner-furnished data or any third party. The contractor shall not be responsible for any time delays in the project caused by circumstances beyond the contractor's control.
5. The contractor's obligations under this clause are in addition to the contractor's other express or implied assurances under this contract or State law and in no way diminish any other rights that the owner may have against the contractor for faulty materials, equipment or work.

### **b. The following clause applies only to contracts for construction.**

1. The contractor agrees to perform all work under this contract in accordance with this agreement's designs, drawings and specifications.
2. The contractor guarantees for a period of at least one (1) year from the date of substantial completion of the work that the completed work is free from all defects due to faulty materials, equipment or workmanship and that he shall promptly make whatever adjustments or corrections which may be necessary to cure any defects, including repairs of any damage to other parts of the system resulting from such defects. The owner shall promptly give notice to the contractor of observed defects. In the event that the contractor fails to make adjustments, repairs, corrections or other work made necessary by such defects, the owner may do so and charge the contractor the cost incurred. The performance bond shall remain in full force and effect through the guarantee period.

3. The contractor's obligations under this clause are in addition to the contractor's other express or implied assurances under this contract or State law and in no way diminish any other rights that the owner may have against the contractor for faulty materials, equipment or work.

### **13. FINAL PAYMENT**

Upon satisfactory completion of the work performed under this contract, as a condition before final payment under this contract or as a termination settlement under this contract the contractor shall execute and deliver to the owner a release of all claims against the owner arising under, or by virtue of, this contract, except claims which are specifically exempted by the contractor to be set forth therein. Unless otherwise provided in this contract, by State law or otherwise expressly agreed to by the parties to this contract, final payment under this contract or settlement upon termination of this contract shall not constitute a waiver of the owner's claims against the contractor or his sureties under this contract or applicable performance and payment bonds.

## **CROSS-CUTTING FEDERAL AUTHORITIES**

### **Environmental Authorities**

- Archeological and Historic Preservation Act of 1974, Pub. L 86-523, as amended
- Clean Air Act, Pub. L 84-159, as amended
- Coastal Barrier Resources Act, Pub. L 97-348
- Coastal Zone Management Act, Pub. L 92-583, as amended
- Endangered Species Act, Pub. L 93-205, as amended
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Floodplain Management, Executive Order 11988, as amended by Executive Order 12148
- Protection of Wetlands, Executive Order 11990
- Farmland Protection Policy Act, Pub. L. 97-98
- Fish and Wildlife Coordination Act, Pub. L. 85-624, as amended
- National Historic Preservation Act, PL 89-665, as amended
- Safe Drinking Water Act, Pub. L. 93-523, as amended
- Wild and Scenic Rivers Act, Pub. L. 90-542, as amended
- Wilderness Act, Pub. L. 88-577, as amended

### **Economic and Miscellaneous Authorities**

- Demonstration Cities and Metropolitan Development Act of 1966, Pub. L. 89-754, as amended, Executive Order 12372
- Procurement Prohibitions under Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, including Executive Order 11738, Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans
- Uniform Relocation and Real Property Acquisition Policies Act of 1970, Pub. L. 91-646 as amended
- Debarment and Suspension, Executive Order 12549
- New Restriction on Lobbying, Section 319 of Pub. L. 101-121

### **Social Policy Authorities**

- Age Discrimination Act of 1975, Pub. L. 94-135
- Title VI of the Civil Rights Act of 1964, Pub. L. 88-352
- Section 504 of the Rehabilitation Act of 1973, Pub. L. 93-112 (including Executive orders 11914 and 11250)
- The Drug-Free Workplace Act of 1988, Pub. L. 100-690
- Equal Employment Opportunity, Executive Order 11246
- Women's and Minority Business Enterprise, Executive Orders 11625, 12138 and 12432
- Section 129 of the Small Business Administration Reauthorization and Amendment Act of 1988, Pub. L. 100-590





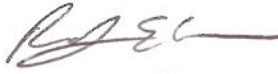
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460


MAR 20 2014

OFFICE OF WATER

**MEMORANDUM**

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

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

Peter C. 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 Federal 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 plans and specifications 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**

#### **1) 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 Federal Fiscal Year 2014, are covered. 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.

#### **2) Does the AIS requirement apply to nonpoint source projects or national estuary projects?**

No. Congress did not include an AIS requirement for nonpoint source and national estuary projects unless the project can also be classified as a 'treatment works' as defined by section 212 of the Clean Water Act.

#### **3) Are any projects for the construction, alteration, maintenance, or repair of a public water system or treatment works excluded from the AIS requirement?**

Any project, whether a treatment works project or a public water system project, for which engineering plans and specifications were approved by the responsible state agency prior to January 17, 2014, is excluded from the AIS requirements.

#### **4) What if the project does not have approved engineering plans and specifications but has signed an assistance agreement with a CWSRF or DWSRF program prior to January 17, 2014?**

The AIS requirements do not apply to any project for which an assistance agreement was signed prior to January 17, 2014.



**5) What if the project does not have approved engineering plans and specifications, but bids were advertised prior to January 17, 2014 and an assistance agreement was signed after January 17, 2014?**

If the project does not require approved engineering plans and specifications, the bid advertisement date will count in lieu of the approval date for purposes of the exemption in section 436(f).

**6) What if the assistance agreement that was signed prior to January 17, 2014, only funded a part of the overall project, where the remainder of the project will be funded later with another SRF loan?**

If the original assistance agreement funded any construction of the project, the date of the original assistance agreement counts for purposes of the exemption. If the original assistance agreement was only for planning and design, the date of that assistance agreement will count for purposes of the exemption only if there is a written commitment or expectation on the part of the assistance recipient to fund the remainder of the project with SRF funds.

**7) What if the assistance agreement that was signed prior to January 17, 2014, funded the first phase of a multi-phase project, where the remaining phases will be funded by SRF assistance in the future?**

In such a case, the phases of the project will be considered a single project if all construction necessary to complete the building or work, regardless of the number of contracts or assistance agreements involved, are closely related in purpose, time and place. However, there are many situations in which major construction activities are clearly undertaken in phases that are distinct in purpose, time, or place. In the case of distinct phases, projects with engineering plans and specifications approval or assistance agreements signed prior to January 17, 2014 would be excluded from AIS requirements while those approved/signed on January 17, 2014, or later would be covered by the AIS requirements.

**8) What if a project has split funding from a non-SRF source?**

Many States intend to fund projects with “split” funding, from the SRF program and from State or other programs. Based on the Act language in section 436, which requires that American iron and steel products be used in any project for the construction, alteration, maintenance, or repair of a public water system or treatment works receiving SRF funding between and including January 17, 2014 and September 30, 2014, any project that is funded in whole or in part with such funds must comply with the AIS requirement. A “project” consists of all construction necessary to complete the building or work regardless of the number of contracts or assistance agreements involved so long as all contracts and assistance agreements awarded are closely related in purpose, time and place. This precludes the intentional splitting of SRF projects into separate and smaller contracts or assistance agreements to avoid AIS coverage on some portion of a larger

project, particularly where the activities are integrally and proximately related to the whole. However, there are many situations in which major construction activities are clearly undertaken in separate phases that are distinct in purpose, time, or place, in which case, separate contracts or assistance agreement for SRF and State or other funding would carry separate requirements.

**9) What about refinancing?**

If a project began construction, financed from a non-SRF source, prior to January 17, 2014, but is refinanced through an SRF assistance agreement executed on or after January 17, 2014 and prior to October 1, 2014, AIS requirements will apply to all construction that occurs on or after January 17, 2014, through completion of construction, unless, as is likely, engineering plans and specifications were approved by a responsible state agency prior to January 17, 2014. There is no retroactive application of the AIS requirements where a refinancing occurs for a project that has completed construction prior to January 17, 2014.

**10) Do the AIS requirements apply to any other EPA programs, besides the SRF program, such as the Tribal Set-aside grants or grants to the Territories and DC?**

No, the AIS requirement only applies to 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)

**Covered Iron and Steel Products**

**11) 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).

**12) 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.

**13) 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.

**14) 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.

**15) 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.

**16) 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.

**17) 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.

**18) 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, 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.

**19) 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;  
Service Boxes;  
Steel Hinged Hatches, Square and Rectangular;  
Steel Riser Rings;  
Trash receptacles;  
Tree Grates;  
Tree Guards;  
Trench Grates; and  
Valve Boxes, Covers and Risers.

## **20) What is ‘structural steel’?**

Structural steel is rolled flanged shapes, having at least one dimension of their cross-section three 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.

## **21) 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, and stationary screens.

## **22) 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)), electric/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, analytical instrumentation, and dewatering equipment.

**23) 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.

**24) 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 bar and wire 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 bar and wire are considered to be a construction material and must be produced in the US.

**Compliance**

**25) 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. Sample language for assistance agreements and contracts can be found in Appendix 3 and 4.

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 the AIS requirement 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 Appendix 5, are sample certifications. These certifications should be collected and maintained by assistance recipients.

Alternatively, the final manufacturer that delivers the iron or steel product to 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.

## **26) How should a State ensure assistance recipients are complying with the AIS requirement?**

In order to ensure compliance with the AIS requirement, States SRF programs must include specific AIS contract language in the assistance agreement. Sample language for assistance agreements can be found in Appendix 3.

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

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

If a potentially non-compliant product is identified, the State should notify the assistance recipient of the apparent unauthorized use of the 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](mailto:OIG_Hotline@epa.gov). More information can be found at this website: <http://www.epa.gov/oig/hotline.htm>.

## **28) 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, on behalf of the assistance recipients, to apply for waivers of the AIS requirement directly to EPA Headquarters. Only waiver requests received from states will be considered. 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 (see Appendix 3 for sample construction contract language). The assistance recipient may receive a waiver at any point before, during, or after the bid process, if one or more of 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 Appendix 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 program. It is strongly recommended that the State designate a single person for all AIS communications. 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](mailto:cwsrfwaiver@epa.gov). For DWSRF waiver requests, please send the application to: [dwsrfwaiver@epa.gov](mailto: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 Appendix 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 three-step process:

1. Posting – After receiving an 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.gov/grants\\_funding/aisrequirement.cfm](http://water.epa.gov/grants_funding/aisrequirement.cfm)
2. Evaluation – After receiving an application for waiver of the AIS requirements, EPA Headquarters will use the checklist in Appendix 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 more time than other waiver requests 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 (US 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](mailto:dorfman.jordan@epa.gov) or (202) 564-0614 or Kiri Anderer, Environmental Engineer, Infrastructure Branch, Drinking Water Protection Division, at [anderer.kirsten@epa.gov](mailto:anderer.kirsten@epa.gov) or (202) 564-3134.

Attachments

## Appendix 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 States 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"> <li>• Waiver request includes the following information:               <ul style="list-style-type: none"> <li>— Description of the foreign and domestic construction materials</li> <li>— Unit of measure</li> <li>— Quantity</li> <li>— Price</li> <li>— Time of delivery or availability</li> <li>— Location of the construction project</li> <li>— Name and address of the proposed supplier</li> <li>— A detailed justification for the use of foreign construction materials</li> </ul> </li> <li>• Waiver request was submitted according to the instructions in the memorandum</li> <li>• 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</li> </ul>		
<p>Cost Waiver Requests</p> <ul style="list-style-type: none"> <li>• Waiver request includes the following information:               <ul style="list-style-type: none"> <li>— Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products</li> <li>— Relevant excerpts from the bid documents used by the contractors to complete the comparison</li> <li>— 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</li> </ul> </li> </ul>		
<p>Availability Waiver Requests</p> <ul style="list-style-type: none"> <li>• 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"> <li>— Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials</li> <li>— 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.</li> <li>— Project schedule</li> <li>— Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials</li> </ul> </li> <li>• Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought</li> <li>• Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?</li> </ul>		

## Appendix 2: 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
<b>Cost Waiver Requests</b> <ul style="list-style-type: none"> <li>• Does the waiver request include the following information?               <ul style="list-style-type: none"> <li>— Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products</li> <li>— Relevant excerpts from the bid documents used by the contractors to complete the comparison</li> <li>— A sufficient number of bid documents or pricing information from domestic sources to constitute a reasonable survey of the market</li> </ul> </li> <li>• Does the Total Domestic Project exceed the Total Foreign Project Cost by more than 25%?</li> </ul>				
<b>Availability Waiver Requests</b> <ul style="list-style-type: none"> <li>• 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"> <li>— Supplier information or other documentation indicating availability/delivery date for materials</li> <li>— Project schedule</li> <li>— Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of materials</li> </ul> </li> <li>• 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?</li> <li>• 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)</li> <li>• 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"> <li>— Multiple waiver requests for the materials described in this waiver request, for comparable projects in the same State</li> <li>— Multiple waiver requests for the materials described in this waiver request, for comparable projects in other States</li> <li>— Correspondence with construction trade associations indicating the non-availability of the materials</li> </ul> </li> <li>• Are the available domestic materials indicated in the bid documents of inadequate quality compared those required by the project plans, specifications, and/or permits?</li> </ul>				

### **Appendix 3: Example Loan Agreement Language**

ALL ASSISTANCE AGREEMENT MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN SRF ASSISTANCE AGREEMENTS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE LAW:

Comply with all federal requirements applicable to the Loan (including those imposed by the 2014 Appropriations Act and related SRF Policy Guidelines) which the Participant understands includes, among other, requirements that all of the iron and steel products used in the Project are to be produced in the United States (“American Iron and Steel Requirement”) unless (i) the Participant has requested and obtained a waiver from the Agency pertaining to the Project or (ii) the Finance Authority has otherwise advised the Participant in writing that the American Iron and Steel Requirement is not applicable to the Project.

Comply with all record keeping and reporting requirements under the Clean Water Act/Safe Drinking Water Act, including any reports required by a Federal agency or the Finance Authority such as performance indicators of program deliverables, information on costs and project progress. The Participant understands that (i) each contract and subcontract related to the Project is subject to audit by appropriate federal and state entities and (ii) failure to comply with the Clean Water Act/Safe Drinking Water Act and this Agreement may be a default hereunder that results in a repayment of the Loan in advance of the maturity of the Bonds and/or other remedial actions.

#### **Appendix 4: Sample Construction Contract Language**

ALL CONTRACTS MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN ALL CONTRACTS IN PROJECTS THAT USE SRF FUNDS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE OR LOCAL LAW:

The Contractor acknowledges to and for the benefit of the City of \_\_\_\_\_ (“Purchaser”) and the \_\_\_\_\_ (the “State”) 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 (“American Iron and Steel Requirement”) 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 Purchaser and the State 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 Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State 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 State.

## Appendix 5: Sample Certifications

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

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

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

Such process took place at the following location:

\_\_\_\_\_

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 AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXXXX)

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

Such process took place at the following location:

\_\_\_\_\_

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



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** De Minimis Waiver of Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA), 2014

**FROM:** Nancy K. Stoner  
Acting Assistant Administrator

The EPA is hereby granting a nationwide waiver pursuant to the “American Iron and Steel (AIS)” requirements of P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), section 436 under the authority of Section 436(b)(1) (public interest waiver) for de minimis incidental components of eligible water infrastructure projects. This action permits the use of products when they occur in de minimis incidental components of such projects funded by the Act that may otherwise be prohibited under section 436(a). Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed 1 percent of the total cost of the materials used in and incorporated into a project.

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 specific domestic iron and steel products that are produced in the United States 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, unless the agency determines it necessary to waive this requirement based on findings set forth in Section 436(b). The Act states, “[the requirements] shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency... finds that— (1) applying subsection (a) would be inconsistent with the public interest” 436(b)(1).

In implementing section 436 of the Act, the EPA must ensure that the section's requirements are applied consistent with congressional intent in adopting this section and in the broader context of the purposes, objectives, and other provisions applicable to projects funded under the SRF. Water infrastructure projects typically contain a relatively small number of high-cost components incorporated into the project. In bid solicitations for a project, these high-cost components are generally described in detail via project specific technical specifications. For these major components, utility owners and their contractors are generally familiar with the conditions of availability, the potential alternatives for each detailed specification, the approximate cost, and the country of manufacture of the available components.

Every water infrastructure project also involves the use of thousands of miscellaneous, generally low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the country of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in bulk, mark them as properly incidental. Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc. Examples of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

The EPA undertook multiple inquiries to identify the approximate scope of de minimis incidental components within water infrastructure projects during the implementation of the American Reinvestment and Recovery Act (ARRA) and its requirements (Buy American provisions, specifically). The inquiries and research conducted in 2009 applies suitably for the case today. In 2009, the EPA consulted informally with many major associations representing equipment manufacturers and suppliers, construction contractors, consulting engineers, and water and wastewater utilities, and performed targeted interviews with several well-established water infrastructure contractors and firms who work in a variety of project sizes, and regional and demographic settings to ask the following questions:

- What percentage of total project costs were consumables or incidental costs?
- What percentage of materials costs were consumables or incidental costs?
- Did these percentages vary by type of project (drinking water vs. wastewater treatment plant vs. pipe)?

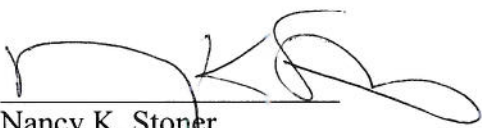
The responses were consistent across the variety of settings and project types, and indicated that the percentage of total costs for drinking water or wastewater infrastructure projects represented by these incidental components is generally not in excess of 5 percent of the total cost of the materials used in and incorporated into a project. In drafting this waiver, the EPA has considered the de minimis proportion of project costs generally represented by each individual type of these incidental components within the many types of such components comprising those percentages, the fact that these types of incidental components are obtained by contractors in many different ways from many different sources, and the disproportionate cost and delay that would be imposed on projects if the EPA did not issue this waiver.

Assistance recipients who wish to use this waiver should in consultation with their contractors determine the items to be covered by this waiver and must retain relevant documentation (i.e., invoices) as to those items in their project files.



If you have any questions concerning the contents of this memorandum, please contact Timothy Connor, Chemical Engineer, Municipal Support Division, at [connor.timothy@epa.gov](mailto:connor.timothy@epa.gov) or (202) 566-1059 or Kirsten Anderer, Environmental Engineer, Drinking Water Protection Division, at [anderer.kirsten@epa.gov](mailto:anderer.kirsten@epa.gov) or (202) 564-3134.

Issued on: APR 15 2014

Approved by:   
Nancy K. Stoner  
Acting Assistant Administrator



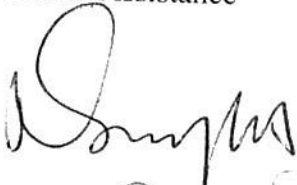
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

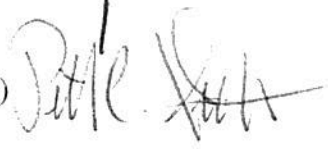
JUN - 3 2015

OFFICE OF WATER

**MEMORANDUM**

SUBJECT: Guidelines for Enhancing Public Awareness of SRF Assistance Agreements

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

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

TO: Water Management Division Directors  
Regions I-X

Last year, the Environmental Protection Agency (EPA) implemented an agency-wide initiative to enhance public awareness of EPA assistance agreements nationwide. The Office of Water has developed guidelines to inform states how this initiative should be implemented in the State Revolving Fund (SRF) Programs.

The guidelines were developed with input from EPA and state SRF staff. The guidelines recognize that each of the state SRF programs and the projects they fund are different and that one implementation method will not work for everyone. Therefore, as a result of input from the states, the guidelines offer a number of options that can be used to enhance public awareness of SRF assistance agreements.

Implementation of these guidelines will begin with the awarding of the FY 2015 SRF capitalization grants. A term and condition on compliance with the guidelines is to be included in all new SRF grants.

Please have your staff provide copies of the guidelines to your states. Questions regarding the guidelines should be directed to Sheila Platt (202/564-0686) or Howard Rubin (202/564-2051).

Attachment

## **Enhancing Public Awareness of SRF Assistance Agreements**

### **Introduction**

The Environmental Protection Agency (EPA) is currently implementing an agency-wide initiative focused on signage to enhance public awareness of EPA assistance agreements nationwide. The intention of this effort is to communicate the positive impact and benefits of EPA funding around the country and increase awareness surrounding the improvements communities receive as a result of State Revolving Fund (SRF) assistance. Projects implemented with Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) monies are included in this initiative, as many CWSRF and DWSRF assistance agreements have direct and tangible benefits to populations around the country.

EPA's Office of Water developed these guidelines as a way to inform states of this directive and how it should be implemented in the SRF programs. The primary objective is to enhance public understanding of the positive benefits of CWSRF and DWSRF funding to towns, cities, municipalities and water systems. To that end, states are presented with a range of options for implementing these guidelines. All of these options achieve the ultimate goal of communicating to a broad audience the positive role EPA funding of the state CWSRF and DWSRF programs plays in communities across the country.

The information in the guidelines was developed with input from EPA and state staff across the country as well as the members of the State-EPA Workgroup. The guidelines recognize the wide range of project types, varied locations and different institutional approaches among states and communities. Therefore, providing states and SRF assistance recipients maximum flexibility is optimal. The guidelines allow selection of the implementation method which best balances two goals. First, it should satisfy the overall objective of communicating EPA's role in funding assistance agreements that achieve positive benefit. Second, the implementation method should be practically and financially viable for states and communities and avoid any overly burdensome investment of time and resources. In some cases, it might be appropriate for a state to select a combination of options listed below, provided this does not result in excessive cost to communities.

### **Project Selection Requirements**

Signage requirements will not be required to apply to all SRF projects. Signage will be considered an equivalency requirement for SRF programs. States should select a set of borrowers and/or projects totaling a funding amount equivalent to the amount of their federal capitalization grant to satisfy the signage requirement. There are no other requirements or restrictions on which projects should or should not participate in this initiative. Therefore, it is at the discretion of the state SRF program to select projects most able to efficiently and effectively comply in a way that



meets the intention to enhance public awareness without significant financial hardship to the state or its borrowers. This can be done either through the selection of specific projects or borrowers, or by setting a threshold within the state for which projects will be requested to meet signage requirements. States should note that they have the option of selecting different implementation options for different borrowers depending on the location, project type and available resources. Borrowers and/or projects complying with the signage requirement must ensure limited English proficient individuals have meaningful access to activities receiving EPA funds, consistent with Executive Order 13166 and EPA Order 1000.32.

In this regard, to increase public awareness of projects serving communities where English is not the predominant language, States should encourage recipients when implementing a particular signage option to translate the language used (excluding the EPA logo or seal) into the appropriate non-English language(s). The costs of such translation are allowable, provided the costs are reasonable.

Although the signage requirement does not apply to all SRF projects, we recommend that states encourage all borrowers/projects to notify the public of the benefits of the projects and the role of the SRF, using one of the options below.

### Summary of Options

The guidelines present a number of options which communities can explore to implement EPA's signage policy. The option selected should meet all of the above basic requirements while remaining cost-effective and accessible to a broad audience. The guidelines describe the following strategies as acceptable options for communities to follow:

- Standard signage
- Posters or wall signage in a public building or location
- Newspaper or periodical advertisement for project construction, groundbreaking ceremony, or operation of the new or improved facility
- Online signage placed on community website or social media outlet
- Press release

Each of these options is described in more detail in the sections below.

### **Implementation Option: Standard Signage**

EPA recommends that large projects that involve significant expansion or construction of a new facility elect to publicize through standard signage. This option should be selected for projects where the sign would be near a major road or thoroughfare or where the facility is in a location at which this would effectively publicize the upgrades. Some facilities will not find this an appropriate or cost-effective solution. For example, investing in a large road sign for a facility that is located in a rural area or where access is limited to a smaller service road would likely not be an optimal solution.

Signs can also be located away from the project site if there is another reasonable alternative. For example, a community may elect to place a sign advertising the project near a body of water that receives discharge from a particular facility.

States selecting projects that will implement this requirement through use of a traditional sign should ensure the following are included:

- The name of the facility, project and community
- Project cost
- The State Agency/SRF administering the program
- The EPA and State Agency logos (EPA logo may only be used on a sign)

If the EPA logo is displayed along with logos of other participating entities, the EPA logo must not be displayed in a manner that implies that EPA itself is conducting the project. Instead, the EPA logo must be accompanied with a statement indicating that the recipient received financial assistance from EPA for the project. As provided in the sign specifications from the EPA Office of Public Affairs (OPA), the EPA logo is the identifier for assistance agreement projects. States are required to ensure that recipients comply with the sign specifications provided by the OPA, available at [http://www.epa.gov/ogd/tc/epa\\_logo\\_seal\\_specifications\\_for\\_infrastructure\\_grants.pdf](http://www.epa.gov/ogd/tc/epa_logo_seal_specifications_for_infrastructure_grants.pdf). To obtain the appropriate EPA logo graphic file, the recipient should send a request directly to OPA and include the EPA Project Officer in the communication.

#### **Implementation Option: Posters or Brochures**

Smaller projects, projects located in rural areas, and other efforts may find that it is more cost-effective and practical to advertise efforts through creation of a poster or smaller sign. If the project involves nonpoint source or green infrastructure components, those can be described at the discretion of the state or community.

The poster or brochure and acknowledgement should be visible, as well as a website or other source of information for individuals that may be curious about the SRF program. The community could also implement this option as a short pamphlet or brochure that is placed in one of these locations for community members to read.

Posters or brochures should be placed in a public location that is accessible to a wide audience of community members. This can include, but is not limited to:

- Town or City Hall
- Community Center
- Locally owned or operated park or recreational facility
- Public Library
- County/municipal government facilities
- Court house or other public meeting space



Given the low cost for producing multiple copies of the same poster, pamphlet, or brochure, communities can explore options for displaying these posters in several locations simultaneously. This would achieve the overall objective of reaching a broad audience and publicizing the project.

States have the option of creating a template verbiage and layout to provide to borrowers, particularly smaller or disadvantaged communities. This could reduce the burden on small municipalities which may or may not have the staffing capacity to meet signage requirements on their own.

States selecting projects that will implement this requirement through use of posters or brochures should ensure the following are included:

- Name of facility, project and community
- State SRF administering the program
- Project is wholly or partially funded with EPA funding
- Brief description of project
- Brief description of the water quality benefits the project will achieve

#### **Implementation Option: Newsletter, Periodical or Press Release**

For communities where there is no suitable public space or where advertisement through signage is unlikely to reach community members effectively, projects can be advertised in a community newsletter or similar periodical. States can use guidelines from their standard public notice practices. For new construction, if a groundbreaking ceremony is to be held, an announcement could publicize or accompany publicity for this event.

In some cases, it may be appropriate for the state agency to issue a formal press release announcing construction of a new facility. Distributing a single prepared statement concisely summarizing the project purpose and the joint funding from EPA and state resources can reach a wide audience as the statement goes through multiple news outlets. Programs should consider whether or not this is an option that is likely to effectively publicize the CWSRF or DWSRF program in local news sources.

If a recipient decides on a public or media event to publicize the accomplishment of significant events related to construction as a result of EPA support, EPA must be provided with at least a ten working day notice of the event and provided the opportunity to attend and participate in the event.

States selecting projects that will implement this requirement through use of a newsletter, periodical or press release should ensure the following are included:

- Name of facility, project and community
- State SRF administering the program

- Project is wholly or partially funded with EPA funding
- Brief description of the project
- Brief listing of water quality benefits to be achieved

**Implementation Option: Insert or Pamphlet in Water/Sewer Bill**

Utilities can consider including a single-page insert within water and sewer bills that are mailed to residents and users in the area. This approach would effectively publicize the project to those individuals directly benefitting from the project. The flyer or insert could emphasize the interest rate and financial savings that the community achieved by taking advantage of SRF funds as well as the environmental and public health benefits to the community.

States selecting projects that will implement this requirement through use of an insert or pamphlet in water/sewer bill should ensure the following are included:

- Name of facility, project and community
- State SRF administering the program
- Project is wholly or partially funded with EPA funding
- Brief description of the project
- Brief listing of water quality benefits to be achieved

**Implementation Option: Online & Social Media Publicity**

Many communities are increasingly finding that the online forum is the most cost-effective approach to publicizing their SRF programs and reaching a broad audience of stakeholders. Online “signage” should follow the minimum information guidelines above and may appear on the town, community or facility website if available. In some cases, communities may be active on social media sites such as Facebook or Twitter. These can be used as an opportunity for publicizing projects and information about how SRF funds are being used in the community. These online announcements/notices may be appropriate for settings where physical signage would not be visible to a wide audience. They can be a more cost-effective option than traditional signs or publicity in print media outlets. This option may be most useful where the community’s website is a well-recognized source of information for its residents.

In the case of some projects, such as nonpoint source or sponsorship projects, there might be additional opportunities for online publicity through partner agencies or organizations. This could take place either on the organization’s website or again through social media outlets.

States selecting projects that will implement this requirement through use of online & social media publicity should ensure the following are included:

- Name of facility, project and community
- State SRF administering the program
- Project was wholly or partially funded with EPA funding
- Brief description of the project



- Brief listing of water quality benefits to be achieved

### **Suggested Language for Alternate Options**

For any of the alternate implementation options listed above, SRF programs have discretion to structure their signage as they see appropriate. The language below is offered as an option for use in posters, pamphlets, brochures, press releases, or online materials. States may consider using the following:

“Construction of upgrades and improvements to the [Name of Facility, Project Location, or WWTP] were financed by the [Clean Water/Drinking Water] State Revolving Fund. The [CWSRF/DWSRF] program is administered by [State Agency] with joint funding from the U.S. Environmental Protection Agency and [State Name]. This project will (description of project) and will provide water quality benefits [details specifying particular benefits] for community residents and businesses in and near [name of town, city, and/or water body or watershed to benefit from project.] [CWSRF/DWSRF] programs operate around the country to provide states and communities the resources necessary to maintain and improve the infrastructure that protects our valuable water resources nationwide. “

For projects in certain areas, states should consider whether or not it is appropriate to include additional details about the projects. Specific benefits, such as reduction of CSO events, lessening of nutrient pollution, reducing contaminant levels or water pumping costs, or improvements to a particular water body, may be of interest to community residents. In these cases, including them would further serve to showcase positive efforts financed by the SRF programs. Additionally, for projects with components that meet Green Project Reserve (GPR) criteria, States may elect to detail these particular improvements. For example, the state could include quantitative improvements in energy efficiency or water conservation achieved by project upgrades. If the project includes green infrastructure components such as rain gardens and green roofs that have environmental and aesthetic benefits to the community, these can be described briefly as well. Again, this additional information can be included at the discretion of the state when it is appropriate, given the project type, location, and the type of signage or publicity effort selected.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF WATER

**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

KIRSTEN  
ANDERER

Digitally signed by KIRSTEN  
ANDERER  
Date: 2020.12.11 07:55:52  
-05'00'

Michael Deane, Branch Chief  
State Revolving Fund Branch, OWM

MICHAEL DEANE

Digitally signed by MICHAEL  
DEANE  
Date: 2020.12.11 17:56:38 -05'00'

**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](mailto:Deane.Michael@epa.gov) or Kiri Anderer at [Anderer.Kirsten@epa.gov](mailto:Anderer.Kirsten@epa.gov).



**LABOR RELATIONS DIVISION**

401 Broadway NE  
 Albuquerque, NM 87102  
 Phone: 505-841-4400  
 Fax: 505-841-4424

226 South Alameda Blvd  
 Las Cruces, NM 88005  
 Phone: 575-524-6195  
 Fax: 575-524-6194

**WWW.DWS.STATE.NM.US**

1596 Pacheco St, Suite 103  
 Santa Fe, NM 87505  
 Phone: 505-827-6817  
 Fax: 505-827-9676

**Wage Decision Approval Summary**

1) Project Title: Las Vegas Treatment Plant SCADA Intergration  
 Requested Date: 04/05/2023  
 Approved Date: 04/06/2023  
 Approved Wage Decision Number: SM-23-1043-B

**Wage Decision Expiration Date for Bids: 08/04/2023**

2) Physical Location of Jobsite for Project:  
 Job Site Address: 381 New Mexico 65 Highway  
 Job Site City: Las Vegas  
 Job Site County: San Miguel

3) Contracting Agency Name (Department or Bureau): City of Las Vegas  
 Contracting Agency Contact's Name: Marvin Cordova  
 Contracting Agency Contact's Phone: (505) 454-1401 Ext.

4) Estimated Contract Award Date: 04/19/2023

5) Estimated total project cost: \$970,872.00  
 a. Are any federal funds involved?: Yes - \$970,872.00  
 b. Does this project involve a building?: Yes - Electrical work in existing building  
 c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No  
 d. Are there any other Public Works Wage Decisions related to this project?: No  
 e. What is the ultimate purpose or functional use of the construction once it is completed?: The intent of these system control upgrades, improvements, and additions is to provide a process control system network allowing existing and upgraded controllers to communicate on an ethernet fiber ring network. Existing controllers will be upgraded to the latest platform, and a supervisory control and data acquisition (SCADA) system for local and remote Operator interface to the process controllers and access to historical compliance data will be provided. These new SCADA system and control system upgrades, improvements, and additions will be performed during normal water treatment plant operations with the least amount of impact to the water treatment process as possible.

6) Classifications of Construction:

Classification Type and Cost Total	Description
<b>General Building (B)</b> <b>Cost: \$970,872.00</b>	The intent of these system control upgrades, improvements, and additions is to provide a process control system network allowing existing and upgraded controllers to communicate on an ethernet fiber ring network. Existing controllers will be upgraded to the latest platform, and a supervisory control and data acquisition (SCADA) system for local and remote Operator interface to the process controllers and access to historical compliance data will be provided. These new SCADA system and control system upgrades, improvements, and additions will be performed during normal water treatment plant operations with the least amount of impact to the water treatment process as possible.



**TYPE “B” – GENERAL BUILDING**

**Effective January 1, 2023**

<b>Trade Classification</b>	<b>Base Rate</b>	<b>Fringe Rate</b>	<b>Apprenticeship</b>
<b>Asbestos Workers/Heat and Frost insulators</b>	35.56	12.26	0.60
<b>Asbestos Workers/Heat and Frost insulators: Los Alamos County</b>	37.99	12.26	0.60
<b>Boilermaker/blacksmith</b>	35.88	32.28	0.60
<b>Boilermaker/blacksmith: San Juan County</b>	36.83	31.88	0.60
<b>Bricklayer/Block layer/Stonemason</b>	24.97	9.50	0.60
<b>Carpenter/Lather</b>	27.73	12.14	0.60
<b>Carpenter: Los Alamos County</b>	33.18	13.58	0.60
<b>Millwright/pile driver</b>	37.10	28.30	0.60
<b>Cement Mason</b>	23.04	11.30	0.60
<b>Electricians-Outside Classifications: Zone 1</b>			
Ground man	25.43	11.76	0.60
Equipment Operator	36.48	16.09	0.60
Lineman or technician	46.09	18.52	0.60
Cable Splicer	47.22	18.81	0.60
<b>Electricians-Outside Classification: Zone 2</b>			
Ground man	25.43	11.76	0.60
Equipment Operator	36.48	16.09	0.60
Lineman or technician	46.09	18.52	0.60

Cable Splicer	47.22	18.81	0.60
<b>Electricians-Outside Classifications: Los Alamos County</b>			
Ground man	26.15	11.78	0.60
Equipment Operator	37.54	16.13	0.60
Lineman or technician	47.29	18.82	0.60
Cable Splicer	51.93	19.98	0.60
<b>Electricians-Inside Classifications: Zone 1</b>			
Wireman/low voltage technician	36.75	12.40	0.60
Cable Splicer	40.43	12.51	0.60
<b>Electricians-Inside Classification: Zone 2</b>			
Wireman/low voltage technician	40.06	12.50	0.60
Cable Splicer	43.74	12.61	0.60
<b>Electricians-Inside Classification: Zone 3</b>			
Wireman/low voltage technician	42.26	12.57	0.60
Cable Splicer	45.94	12.68	0.60
<b>Electricians-Inside Classification: Zone 4</b>			
Wireman/low voltage technician	46.31	12.69	0.60
Cable Splicer	49.99	12.80	0.60
<b>Electricians-Inside Classification: Dona Ana, Hidalgo, Luna and Otero Counties</b>			
Wireman/low voltage technician	32.07	9.81	0.60
Cable splicer	32.07	9.81	0.60
<b>Electricians-Inside Classification: Los Alamos County</b>			
Wireman/low voltage technician	42.26	14.68	0.60
Cable Splicer	45.94	14.98	0.60
<b>Elevator Constructor</b>	48.93	37.49	0.60



<b>Elevator Constructor Helper</b>	39.14	37.49	0.60
<b>Glazier</b>			
Journeyman/Fabricator	21.25	6.70	0.60
Delivery Driver	12.00	6.70	0.60
<b>Glazier: Los Alamos county</b>	21.25	6.70	0.60
<b>Ironworker</b>	28.05	18.30	0.60
<b>Painter</b>	18.25	8.50	0.60
<b>Painter: Los Alamos county</b>	29.51	10.35	0.60
<b>Paper Hanger</b>	18.25	8.50	0.60
<b>Paper Hanger: Los Alamos county</b>	30.33	10.35	0.60
<b>Drywall Finisher/Taper - Light Commercial &amp; Residential</b>			
Ames tool operator	26.82	8.40	0.60
Hand finisher/machine texture	25.82	8.40	0.60
<b>Drywall Finisher/Taper – Light Commercial &amp; Residential: Los Alamos county</b>	29.51	10.35	0.60
<b>Plasterer</b>	24.34	9.79	0.60
<b>Plumber/Pipefitter</b>	35.11	13.40	0.60
<b>Roofer</b>	26.94	9.36	0.60
<b>Sheet metal worker</b>			
Zone 1	35.44	19.00	0.60
Zone 2 – Industrial	36.44	19.00	0.60
Zone 3 – Los Alamos County	37.44	19.00	0.60
<b>Soft Floor Layer</b>	21.00	9.20	0.60
<b>Soft Floor Layer: Los Alamos county</b>	29.55	10.45	0.60
<b>Sprinkler Fitter</b>	34.18	24.44	0.60
<b>Tile Setter</b>	24.46	8.81	0.60
<b>Tile Setter Helper/Finisher</b>	16.53	8.81	0.60
<b>Laborers</b>			
Group I- Unskilled	19.25	7.93	0.60

Group II – Semi-skilled	19.25	7.93	0.60
Group III- Skilled	20.25	7.93	0.60
Group IV - Specialty	22.50	7.93	0.60
<b>Masonry Laborers</b>			
Group I- Unskilled and Semi-Skilled	19.75	8.09	0.60
Group II- Skilled	21.50	8.09	0.60
Group III- Specialty	22.00	8.09	0.60
<b>Operators</b>			
Group I	23.32	7.67	0.60
Group II	25.48	7.67	0.60
Group III	25.94	7.67	0.60
Group IV	26.38	7.67	0.60
Group V	26.57	7.67	0.60
Group VI	26.78	7.67	0.60
Group VII	26.89	7.67	0.60
Group VIII	29.93	7.67	0.60
Group IX	32.32	7.67	0.60
Group X	35.72	7.67	0.60
<b>Truck Drivers</b>			
Group I-VII	16.65	8.27	0.60
Group VIII	16.71	8.27	0.60
Group IX	18.65	8.27	0.60

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**NOTE: All contractors are required to pay SUBSISTENCE, ZONE AND INCENTIVE PAY according to the particular trade. Details are located in a PDF attachment at [WWW.DWS.STATE.NM.US](http://WWW.DWS.STATE.NM.US). Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.**

For more information about the Subsistence, Zone, and Incentive Pay rates, or to file a wage claim, contact the Labor Relations Division at (505) 841-4400 or visit us online at [www.dws.state.nm.us](http://www.dws.state.nm.us).



## **2023 SUBSISTENCE, ZONE AND INCENTIVE PAY RATES**

All contractors are required to pay subsistence, zone, and incentive pay according to the particular trade

### **Asbestos workers or heat and frost insulators**

- (1) Zone 1 shall consist of the area lying within the city limits of a circle whose radius is 66 miles from the city hall in Albuquerque or the city hall in El Paso - \$0.00 per day.
- (2) Zone 2 shall consist of Los Alamos county - \$40.00 per day if not furnished a company owned vehicle.
- (3) Zone 3 shall consist of the area lying beyond a circle whose radius is over 66 miles from the city hall in Albuquerque or the city hall in El Paso - \$85.00 per day.

### **Boilermakers/Blacksmiths**

- (1) Per diem is calculated from city hall of the dispatch city or the employee's home address, whichever is closer to the job location,
- (2) Per diem is \$55.00 per day for travel between 70 and 120 miles and \$85.00 per day for travel over 120 miles.

### **Bricklayers**

- (1) Between 70 and 120 miles, \$55.00 per day
- (2) 121 or more miles, \$70.00 per day

### **Cement Masons**

- (1) For employees who travel to Santa Fe from Albuquerque or vice versa, \$20.00 per day.
- (2) In all other work performed more than 50 miles from the employer's main office, \$50.00 per day.
- (3) Mutually agreed-upon lodging or transportation paid for by the employer will substitute for subsistence pay.

### **Drywall Finishers and Tapers**

- (1) \$40.00 per day (\$5.00 per hour for eight hours work) for over 60 miles over the most typically traveled route, or other mutually agreed upon suitable lodging or transportation.
- (2) If an employee has worked the full week on four 10-hour days, the employee shall be paid the full week of per diem of \$200.00.
- (3) Special provision for Santa Fe and Albuquerque: Employees who travel between Santa Fe and Albuquerque will be paid \$15.00 per day or other mutually agreed upon lodging or transportation.

### **Electricians (inside classifications)**

- (1) For Albuquerque only:
  - (a) Zone 1 is classified as being within 40 miles from the main post office.
  - (b) Zone 2 shall extend up to 10 miles beyond zone 1. Work performed within zone 2 shall be compensated nine percent above the journeyman rate for zone 1.
  - (c) Zone 3 shall extend up to 20 miles beyond zone 1. Work performed within zone 3 shall be compensated fifteen percent above the journeyman rate for zone 1.
  - (d) Zone 4 shall extend 20 miles or more beyond zone 1. Work performed within zone 4 shall be compensated twenty six percent above the journeyman rate for zone 1.
- (2) For Los Alamos County only: work performed within the county shall be compensated fifteen percent above the zone 1 journeyman rate.
- (3) For all other counties:
  - (a) Zone 1 is:
    - (i) within six miles from the main post office for Raton, Tucumcari, and Farmington.
    - (ii) within eight miles from the main post office for Las Vegas.
    - (iii) within ten miles from the main post office for Santa Fe and Gallup.
    - (iv) within twelve miles from the main post office for Belen, Carrizozo, Clovis, Los Lunas, Portales, Roswell, Ruidoso, Artesia, Carlsbad, Hobbs, and Lovington.
    - (v) within fourteen miles from the main post office for Espanola.
  - (b) Zone 2 shall extend up to 20 miles beyond zone 1. Work performed within zone 2 shall be compensated nine percent above the journeyman rate for zone 1.
  - (c) Zone 3 shall extend up to 30 miles from zone 1. Work performed within zone 3 shall be compensated fifteen percent above the journeyman rate for zone 1.
  - (d) Zone 4 shall extend beyond 30 miles from zone 1. Work performed within zone 4 shall be compensated twenty six percent above the journeyman rate for zone 1.
- (4) When workers are ordered to report to the shop and then to the job and from job to job, and return to the shop, they shall be paid for the time spent traveling and shall be furnished transportation by the Employer. Under these conditions the Zone 1 rate and any applicable overtime will be paid.

### **Electricians (outside classification)**

Zone 2: \$50.00 per diem to be paid for work 30 miles outside of Santa Fe and 60 miles outside of Albuquerque. No per diem in Los Alamos county.

## **Glaziers**

- (1) When out-of-town travel is required, the employer shall pay the employee for suitable lodging with no more than two people per room and \$20.00 per night for food.
- (2) Employees required to use a personal vehicle for travel to a jobsite beyond a 30 mile radius of the main post office in town where the employer's shop is located shall be compensated at the current Internal Revenue Service (IRS) rate for actual mileage incurred beyond the 30 mile radius, plus their regular rate of pay for travel time.

## **Ironworkers**

- (1) Travel more than 50 miles from the interchange of Interstate 40 and Interstate 25 or from the employee's home should be paid at \$9.00 per hour.
- (2) If travel is within Santa Fe county, travel time shall be paid at \$3.00 per hour.

## **Laborers**

- (1) Type A:
  - (a) Work travel between 50 and 85 miles from the employer's primary address should be compensated at \$3.50 per hour.
  - (b) Work travel 86 miles or greater from the employer's primary address should be compensated at \$5.00 per hour.
- (2) Types B and C:
  - (a) Work travel under 50 miles is a "free zone";
  - (b) The municipal limit of the city of Santa Fe is \$30.00 per day;
  - (c) Work travel between 50 and 75 miles from the union hall to include the municipal limits of Estancia, Grants, and Socorro is \$40.00 per day.
  - (d) All work over 75 miles from the union hall is \$50.00 per day.
- (3) Type H – no zone subsistence pay:
- (4) If an employer provides the employee transportation and mutually agreeable, suitable lodging in areas where overnight stays are necessary, subsistence rates do not apply.

## **Millwrights**

- (1) Work travel between 76 and 150 miles should be compensated at \$50.00 per day.
- (2) Work travel greater than 150 miles should be compensated at \$75.00 per day.

## **Operating Engineers**

- (1) Type A operators should be compensated for zone and subsistence as follows:
  - (a) Work travel between 50 and 85 miles from the interchange of Interstate 25 and Interstate 40 in Albuquerque, or from the Farmington City Hall in Farmington, should be compensated at \$2.50 per hour.
  - (b) Work travel 86 miles or more from the interchange of Interstate 25 and Interstate 40 in Albuquerque or from the Farmington City Hall in Farmington, should be compensated at \$4.00 per hour.
- (2) Type B and C operators:
  - (a) Base points for operators are 30 miles and beyond:
    - (i) Bernalillo county courthouse in Albuquerque;
    - (ii) State capital building in Santa Fe;
    - (iii) City hall in Farmington.
  - (b) Zone and subsistence for Albuquerque and Santa Fe are as follows:
    - (i) work travel between 30 and 50 miles from the base point compensated at \$20.00 per day;
    - (ii) work travel between 51 and 100 miles from the base point compensated at \$45.00 per day;
    - (iii) work travel over 100 miles from the base point that involves an overnight stay compensated at \$75.00 per day.
  - (c) Zone and subsistence for Los Alamos county, \$50.00 per day.
  - (d) Zone and subsistence for Farmington is as follows:
    - (i) work travel between 35 and 75 miles from the base point compensated at \$45.00 per day,
    - (ii) work travel over 100 miles from the base point compensated at \$75.00 per day.
  - (e) If an employer provides the employee transportation and mutually agreeable, suitable lodging in areas where overnight stays are necessary, subsistence rates do not apply.
- (3) Type H operators are not eligible for zone and subsistence pay.

## **Painters**

- (1) Zone 1: Base pay for an area within a 30 mile radius from the main post office in the city or town where the employee permanently resides. Albuquerque, Santa Fe, and Belen shall be considered Zone I.
- (2) Zone 2: Work travel between 30 and 75 miles from the main post office in the town where an employee permanently resides shall be compensated at \$1.00 per hour above base pay.
- (3) Zone 3: Work travel 75 miles or more from the main post office in the town where an employee permanently resides shall be compensated at \$2.50 per hour above base pay.



- (4) When the employee is required to stay overnight, the employer should provide and pay for suitable lodging.
- (5) Employer will furnish transportation or gasoline for all work performed beyond the 30 mile radius that encompasses the free cities of Albuquerque, Santa Fe or Belen.

### **Paper hangers**

- (1) Zone 1: Base pay for an area within a 30 mile radius from the main post office in the city or town where the employee permanently resides. Albuquerque, Santa Fe, and Belen shall be considered Zone I.
- (2) Zone 2: Work travel between 30 and 75 miles from the main post office in the town where an employee permanently resides shall be compensated at \$1.00 per hour above base pay.
- (3) Zone 3: Work travel 75 miles or more from the main post office in the town where an employee permanently resides shall be compensated at \$2.50 per hour above base pay.
- (4) When the employee is required to stay overnight, the employer should provide and pay for suitable lodging.
- (5) Employer will furnish transportation or gasoline for all work performed beyond the 30 mile radius that encompasses the free cities of Albuquerque, Santa Fe or Belen.

### **Plasterers**

- (1) Employees who travel from Albuquerque to Santa Fe should be compensated at \$20.00 per day.
- (2) Except for employees who travel from Santa Fe to Albuquerque, work travel 75 miles or more from the employer's office over the most typically traveled route should be compensated at \$5.00 per hour and capped at \$40.00 per day.

### **Plumbers and pipefitters**

- (1) Work travel for 90 or more miles from an employee's primary residence, and involving an overnight stay, should be compensated at \$80.00 per day.
- (2) No zone or subsistence pay is required should the employer elect to cover the room cost.
- (3) Los Alamos county workers receive \$0.80 per hour incentive pay plus base and fringe.

### **Roofers**

Work travel requiring an overnight stay should be compensated at \$35.00 per day for food. Employer should provide and pay for a suitable hotel. When employees are assigned to jobs located 60 or more miles from the employer's place of business, transportation to and from the job site must be provided.

### **Sheet metal workers**

- (1) Work travel 90 miles or more from contractor's home base and employee's home, should be paid at \$80.00 per day subsistence pay plus base and fringe, regardless of county.
- (2) Los Alamos county: \$2.00 per hour incentive pay plus base and fringe.
- (3) Workers living 60 or more miles from a San Juan county job site receive \$3.00 per hour subsistence pay plus base and fringe.

### **Soft floor layer**

- (1) Zone 1: Base pay for an area within a 30 mile radius from the main post office in the city or town where the employee permanently resides. Albuquerque, Santa Fe, and Belen shall be considered Zone I.
- (2) Zone 2: Work travel between 30 and 75 miles from the main post office in the town where an employee permanently resides shall be compensated at \$1.00 per hour above base pay.
- (3) Zone 3: Work travel 75 miles or more from the main post office in the town where an employee permanently resides shall be compensated at \$3.13 per hour above base pay.
- (4) Employer will furnish transportation or gasoline for all work performed beyond the 30 mile radius that encompasses the free cities of Albuquerque, Santa Fe or Belen.
- (5) When the employee is directed to report to a job site and the distance to the job site requires the employee to stay out of town overnight, the employer shall provide housing arrangements for the affected employees.

### **Sprinkler fitters**

- (1) Work travel between 60 and 80 miles from the employee's primary residence should be compensated at \$22.00 per day.
- (2) Work travel between 81 and 100 miles from the employee's primary residence should be compensated at \$32.00 per day.
- (3) Work travel of 101 miles or more from the employee's primary residence should be compensated at \$120.00 per day.
- (4) No zone or subsistence pay shall be paid when the employer provides daily transportation and the employee elects to travel back and forth from home.





STATE OF NEW MEXICO  
NEW MEXICO DEPARTMENT OF  
WORKFORCE SOLUTIONS  
Labor Relations Division  
121 Tijeras Ave NE, Suite 3000  
Albuquerque, NM 87102  
[www.dws.state.nm.us](http://www.dws.state.nm.us)

## PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than \$60,000 in the State of New Mexico, the following list addresses many of the responsibilities that are defined by statute or regulation to each project stakeholder.

### Contracting Agency

- Ensure that all Contractors wishing to bid on a Public Works project when the project is \$60,000 or more are actively registered with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> (Contractor Registration) prior to bidding.
- Please submit Notice of Award (NOA) and Subcontractor List(s) to the PWAA website promptly after the project is awarded.
- Please update the Subcontractor List(s) on the PWAA website whenever changes occur.
- All Sub-Contractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.
- Ninety days after project completion please go into the PWAA system and close the project. Only Contracting Agencies are allowed to close the project. Agents or Contractors are not allowed to close projects.

### General Contractor

- Provide a complete Subcontractor List and Statements of Intent (SOI) to Pay Prevailing Wages for all Contractors, regardless of amount of work, to the Contracting Agency within 3 (three) days of award.
- Ensure that all Subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Submit weekly certified payroll bi-weekly to the Contracting Agency.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- Confirm the Wage Rate poster, provided in PWAA, is displayed at the job site in an easily accessible place.
- Make sure, when a project has been completed, the Affidavits of Wages Paid (AWP) are sent to the Contracting Agency.



STATE OF NEW MEXICO  
NEW MEXICO DEPARTMENT OF  
WORKFORCE SOLUTIONS  
Labor Relations Division  
121 Tijeras Ave NE, Suite 3000  
Albuquerque, NM 87102  
[www.dws.state.nm.us](http://www.dws.state.nm.us)

- All Subcontractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.

### **Subcontractor**

- Ensure that all Subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Submit weekly certified payroll bi-weekly to the General Contractor(s).
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- All Subcontractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.

### **Additional Information**

Reference material and forms may be found at New Mexico Department of Workforce Solutions Public Works web pages at: <https://www.dws.state.nm.us/Labor-Relations/Labor-Information/Public-Works>.

### **CONTACT INFORMATION**

Contact the Labor Relations Division for any questions relating to Public Works projects by email at [public.works@dws.nm.gov](mailto:public.works@dws.nm.gov) or call (505) 841-4400.

"General Decision Number: NM20230028 03/31/2023

Superseded General Decision Number: NM20220028

State: New Mexico

Construction Type: Building

County: San Miguel County in New Mexico.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

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)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 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 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 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 2023.

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	01/06/2023
1	03/03/2023
2	03/31/2023

CARP1353-005 06/01/2018

	Rates	Fringes
CARPENTER		
Drywall Hanging and Drywall Finishing/Taping Only.....	\$ 24.08	10.79

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ELEC0611-019 01/01/2023

	Rates	Fringes
ELECTRICIAN		
Zone 1.....	\$ 36.75	12.77

ZONE 1: Mileage calculated from the main post office in the following towns: Albuquerque-40 miles, Artesia-12 miles, Belen-12 miles, Carlsbad-12 miles, Carrizozo-12 miles, Clovis-12 miles, Espanola-14 miles, Farmington-6 miles, Gallup-10 miles, Hobbs-12 miles, Las Vegas-8 miles, Los Lunas-12 miles, Lovington-12 miles, Portales-12 miles, Raton-6 miles, Roswell-12 miles, Ruidoso-12 miles, Santa Fe-10 miles, Tucumcari-6 miles.

ZONE 2: Extending up to 20 miles beyond Zone 1, EXCEPT ALBURQUERQUE, shall receive 9% above Zone 1 rate.

ZONE 3: Extending up to 30 miles beyond Zone 1, EXCEPT ALBURQUERQUE, shall receive 15% above Zone 1 rate.

ZONE 4: Extending more than 30 miles beyond Zone 1, EXCEPT ALBURQUERQUE, shall receive 26% above Zone 1 rate.

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ENGI0953-013 06/01/2016

	Rates	Fringes
Power Equipment Operator (2) Roller(Dirt and Grade Compaction).....	\$ 21.97	6.10
(4) Bobcat/Skid Loader.....	\$ 22.81	6.10

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IRON0495-010 01/01/2021

	Rates	Fringes
IRONWORKER, STRUCTURAL AND ORNAMENTAL.....	\$ 27.35	17.30

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LABO0016-005 06/01/2017

	Rates	Fringes
Laborer, Mason Tender Brick (3).....	\$ 20.25	5.66

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PAIN0823-007 04/01/2020

	Rates	Fringes
PAINTER: Brush and Roller, Excludes Drywall Finishing/Taping.....	\$ 24.08	7.50

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PLUM0412-007 01/01/2022

	Rates	Fringes
PIPEFITTER (Including HVAC Pipe Installation).....	\$ 36.40	13.90
PLUMBER (Excluding HVAC Pipe Installation).....	\$ 36.40	13.90

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\* SHEE0049-012 01/01/2023

	Rates	Fringes
Sheet Metal Worker (HVAC Duct and System Installation Only)....	\$ 35.44	18.42

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\* SUNM2010-016 11/09/2010

	Rates	Fringes
ACOUSTICAL CEILING MECHANIC.....	\$ 12.00 **	0.00
BOILERMAKER.....	\$ 21.77	3.98
BRICKLAYER.....	\$ 20.80	5.10
CARPENTER (Batt Insulation Only).....	\$ 26.07	5.96
CARPENTER (Form Work Only).....	\$ 18.80	5.61
CARPENTER, Excludes Acoustical Ceiling Installation, Batt Insulation, Drywall Finishing/Taping, Drywall Hanging, and Form Work.....	\$ 19.27	4.29
CEMENT MASON/CONCRETE FINISHER...\$	16.27	3.94
DRYWALL FINISHER/TAPER.....\$	18.34	4.38
FLOOR LAYER: Carpet.....\$	18.05	4.49
GLAZIER.....\$	20.15	3.63
IRONWORKER, REINFORCING.....\$	19.75	8.71
LABORER: Asphalt Raker.....\$	10.25 **	0.00
LABORER: Common or General.....\$	13.78 **	3.56
LABORER: Landscape & Irrigation.....\$	12.42 **	1.47
LABORER: Mason Tender - Cement/Concrete.....\$	11.51 **	0.85
LABORER: Pipelayer.....\$	13.78 **	2.20
OPERATOR: Backhoe.....\$	18.79	3.47
OPERATOR: Crane.....\$	24.38	4.60
OPERATOR: Forklift.....\$	20.86	4.60
OPERATOR: Grader/Blade.....\$	20.33	4.94

OPERATOR: Loader (Front End)....	\$ 19.76	4.84
PAINTER: Spray (Excludes Drywall Finishing/Taping).....	\$ 15.47 **	2.09
PLASTERER.....	\$ 17.65	5.29
ROOFER.....	\$ 18.84	0.00
SHEET METAL WORKER, Excludes HVAC Duct and Unit Installation.....	\$ 22.01	9.65
SPRINKLER FITTER (Fire Sprinklers).....	\$ 20.00	4.16
TILE FINISHER.....	\$ 14.02 **	0.00
TILE SETTER.....	\$ 14.30 **	1.02
TRUCK DRIVER: Dump Truck.....	\$ 11.00 **	0.00
TRUCK DRIVER: Pickup Truck.....	\$ 15.91 **	3.13
TRUCK DRIVER: Water Truck.....	\$ 15.16 **	4.69

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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 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

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) (ii)).

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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.

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#### 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 DECISIO"

## SECTION 01 12 16

### WORK SEQUENCE – ADDENDUM #1

#### PART 1 GENERAL

##### 1.01 WORK SEQUENCE

- A. All work shall be accomplished with the following considerations:
1. Treatment and Distribution of water cannot be interrupted.
  2. Demolition and removal of existing equipment and installation of new equipment will be coordinated by the Contractor with Las Vegas Utilities (CLV) Operations.
  3. Contractor shall get approval from the Engineer and CLV Operations on final sequence of work.
  4. Exact location of equipment connections shall be verified prior to the start of construction.
  5. Exact setpoints, delay times, transducer ranges, and general operation of equipment shall be observed and recorded and confirmed with the Operator by the Contractor prior to starting work.
  6. Take receipt of all Owner-furnished materials and equipment. Document Owner provided equipment and condition of all materials.
  7. Work sequencing other than that described in this specification will be considered if the contractor has an alternate sequencing plan to simplify the process.
- B. Base Bid work will be performed before other major project work such as replacing or modifying control panels, and accomplished in the following general sequence:
1. Begin installing process network equipment and enable internet connection.
  2. Temporarily move master and filter control panels to the center of the aisle between the filters and extend power and control conductors to the temporary control panel locations so that the filters and related equipment will remain under control of the existing control panels until the new control panels have been tested and commissioned. Provide rubber cable ramps and trip hazard warning signs to protect wiring and Operators from harm.
  3. Each control should be moved, reconnected, and tested prior to moving the next control panel.
  4. Ensure that the existing master and filter control panels are connected and functional each day before leaving the project site so that normal filter and backwash operations will continue to occur automatically. Provide the Operator with an emergency contact person that is familiar with the

project and water filtration process and qualified to perform the electrical work necessary to diagnose and repair the temporary controls and power connections in case of a problem occurring after hours. That person must arrive on site within six (6) hours of an after-hours emergency call to diagnose and repair the system.

5. Install Filter Master Control Panel. At this point Contractor will provide labor forces to assist CLV Operations in manually backwashing the filters by manually operating valves in the pipe gallery as directed by the Operator.
6. Install a single Filter Local Control Panel and bring into operation.
7. Install remaining Filter Local Control Panel and continue to assist the Operator in manual backwashing of filters until all control panels have been tested and the filter building equipment is in complete automatic control.

C. Bid Alternate #1 work may be performed after the Base Bid work is complete and tested and functional:

1. Demolition and installation work may begin within CP-100 but the SCADA system must be functional before changing control to the new PLC.
2. Replace CP-200 and connect to the process network and SCADA.
3. Temporarily move master control panel to the back of the electrical room and extend power and control conductors to the temporary control panel locations so that the pumps and related equipment will remain under control of the existing control panel until the new control panel has been tested and commissioned. Provide rubber cable ramps and trip hazard warning signs to protect wiring and Operators from harm.
4. Ensure that the existing master and filter control panels are connected and functional each day before leaving the project site so that normal filter and backwash operations will continue to occur automatically. Provide the Operator with an emergency contact person that is familiar with the project and water filtration process and qualified to perform the electrical work necessary to diagnose and repair the temporary controls and power connections in case of a problem occurring after hours. That person must arrive on site within six (6) hours of an after-hours emergency call to diagnose and repair the system.
- 5.

D. Bid Alternate #2 work may be performed after the Base Bid work is complete and tested and functional:

1. Replace CP-700 and connect to the process network and SCADA.
2. Replace CP-800 and connect to the process network and SCADA.
3. Install full plant SCADA system.

E. Bid Alternate #3 work may be completed during Base Bid or other Bid Alternate work:

1. Install CP-500 and connect to the process network and SCADA.

1.02 SUBMITTALS

- A. Contractor shall submit for approval a plan in writing addressing all points in section 1.01. The plan shall include estimated work lengths for all work outlined in this specification, number of workers to be supplied by Contractor, days and times of Work for coordination and scheduling of CLV Operations staff.
- B. Contractor may submit for approval an alternate sequence plan in the event that installations may be accomplished in phases to better facilitate work or minimize the inconvenience to CLV Operations staff and customers.

END OF SECTION

SECTION 01 58 13

PROJECT SIGN – ADDEDNDUM #1

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Construct one project sign as shown on the accompanying diagram and incorporate funding agency requirements.
- B. Sign is to bear the following names and logos as indicated in diagram.

1.02 RELATED REQUIREMENTS

- A. Funding agency supplemental conditions may contain additional requirements.

1.03 PROJECT SIGN

- A. Painted sign of size, design, lettering, as scheduled.
- B. Install sign at a location designated by the Owner

1.04 QUALITY ASSURANCE

- A. Sign Painter: professional experience in type of work required.
- B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

1.05 PAYMENT

- A. Incidental to contract. No separate payment,

## PART 2 PRODUCTS

### 2.01 SIGN MATERIALS AND CONSTRUCTION

- A. Unless otherwise scheduled:
  - 1. Sign size: 4 foot by 8 foot.
  - 2. Sign material: 0.75-inch thick exterior grade plywood.
  - 3. Supports: Two 4-inch by 4-inch supports, sign bolted to supports.
  - 4. Sign to be minimum of 36 inches off the ground.
  - 5. Lettering: Minimum 2-inches height.

## PART 3 EXECUTION

### 3.01 PRIOR APPROVALS

- A. Provide a design layout of the sign for prior approval from Owner and/or Owner's representative before constructing.

### 3.02 MAINTENANCE

- A. Maintain sign and supports in a neat, clean condition; repair damages to structure, framing, or sign.
- B. Relocate sign if required by progress of the work.

### 3.03 REMOVAL

- A. Remove signs if required by progress of the work.

### 3.04 SCHEDULE

- A. As shown on attached diagram on the next page.

END OF SECTION

## SECTION 26 05 19

### LOW-VOLTAGE WIRE AND CABLE – ADDENDUM #1

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish, install, connect and test all wire and cable operating at 600 volts or less.
- B. Furnish wire and cable for all systems except:
  - 1. Where supplied as part of an equipment or system.
  - 2. Where specifically stated otherwise in other parts of the specifications or on the Drawings.

##### 1.02 RELATED WORK

- A. Section 01 33 00: Shop Drawings, Product Data, and Samples.
- B. Section 26 05 53: Electrical Identification.
- C. Section 26 27 26 : Wiring Devices, Connectors, and Accessories

##### 1.03 REFERENCES

- 1. ANSI/NFPA 70 - National Electrical Code.
- 2. NEMA WC 5 - Thermoplastic-insulated wire and cable for the transmission and distribution of electrical energy.
- 3. UL 83 - Thermoplastic-Insulated Wires and Cables.

##### 1.04 REGULATORY REQUIREMENTS

- 1. Conform to requirements of ANSI/NFPA 70.
- 2. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

##### 1.05 SUBMITTALS FOR RELEASE

- 1. Submit in accordance with Specification Section 26 05 00: General Electrical Requirements.
- 2. Catalog Data: Include data for power and lighting wire, control wire and cable, and ground wire.



## PART 2 PRODUCTS

### 2.01 GENERAL

- A. Conductors: Copper only.
- B. Color Coding and Marking: Conform with Specification Section 26 05 53: Electrical Identification.

### 2.02 600V POWER AND GENERAL PURPOSE WIRE

- A. General:
  - 1. Conductors: Copper only.
  - 2. Color Coding: Conform with Section 26 05 53.
- B. Power and Lighting Wire:
  - 1. NEMA WC 5, UL 83, Type THWN/THHN, minimum #12 AWG, unless otherwise noted.
  - 2. #12 AWG and #10 AWG: Solid or Class B stranded conductor.
  - 3. #8 AWG or larger: Class B stranded conductor.
- C. Control and Instrumentation Wire: NEMA WC 5, UL 83, Type THWN/THHN, #14 AWG stranded conductor, unless otherwise noted.
- D. Fixture Wires: Factory installed by fixture manufacturer and labeled for application.
- E. Ground Wire:
  - 1. Main Ground, Bonding and Raceway Conductor:
    - a. #12 AWG and #10 AWG: Solid or Class B stranded conductor; thermoplastic insulated, NEMA WC 5, UL 83, 600 V, Type THWN/THHN. Green solid color compound throughout conductor length.
    - b. #8 AWG: Class B stranded conductor; thermoplastic insulated, NEMA WC 5, UL 83, 600 V, Type THWN/THHN. Green solid color compound throughout conductor length.
    - c. #6 AWG and larger: Class B stranded conductor; bare.
  - 2. Ground Counterpoise Conductor: Class B solid or stranded conductor; bare. For required type and size, see Section 16452.
  - 3. Internal Perimeter Ground Conductor (Halo): Class B solid or stranded conductor; bare. For required type and size, see Section 16452.
- F. Manufacturer:
  - 1. Southwire Inc. or equal.

- G. Variable Frequency Drive Wire:
  - 1. Cross-Linked polyethylene (XLPE) insulation.
  - 2. Tinned copper shielded multicable with 300% symmetrical grounds per Drawings, Manufacturer's Reference Belden VFD Cable.

2.03 CONTROL WIRE AND CABLE:

- A. Single Conductors: NEMA WC 5, UL 83, Type THWN/THHN, 14 AWG stranded conductor, UL Listed, unless otherwise noted.
- B. Two 16 AWG stranded 19 x 29 tinned copper conductors, PVC insulated with overall aluminum polyester foil shield; 100 percent shield coverage; stranded 18 AWG tinned copper stranded drain wire; overall PVC jacket; color coded black and clear and numbered at one-inch intervals. Manufacturer's reference; Belden #8719.
- C. RS-485 Cable: Category 5e Ethernet cable with appropriate connectors.
- D. UL Listed.

2.04 DATA NETWORK CABLE

- A. Per TIA 568.C.2, NEMA WC-63.1 Category 5e.
- B. Four pair, 24 AWG insulated solid bare copper.
- C. Shielded unless otherwise indicated.
- D. Jacket: Low Smoke FR-PVC, polyester rip cord installed under jacket.
- E. UL Listed.

2.05 TRAY CABLE (TC)

- A. Per NEC 340, 318, 501, 725 and 760.
- B. UL Listed:
  - 1. Type TC.
  - 2. Suitable for direct burial in sizes 14 AWG and larger.
- C. Flame, moisture and sunlight resistant; meet IEEE 383 flame test at 210,000 BTU.
- D. Ratings:
  - 1. 600V.
  - 2. 90° C dry locations; 75° C wet locations.

- E. Construction:
  - 1. Conductor: stranded soft annealed copper.
  - 2. Insulation: PVC with 5 mil nylon jacket.
  - 3. Jacket: PVC.
- F. Conductor Identification:
  - 1. 8 AWG and larger: ICEA Method 4.
  - 2. 10 AWG and smaller: ICEA Table K 2, Methods 1 and 4.
- G. Manufacturer:
  - 1. Southwire Inc. "TC"
  - 2. or equal.
- H. Sometimes referred to on Drawings as "TC".

## 2.06 DIRECT BURIAL SIGNAL CABLE

- A. 12 each: 22 AWG solid copper conductors, each insulated with color-coded, high-molecular-weight polyethylene.
- B. Conductors twisted into six pairs with staggered pair lay.
- C. Core air space filled with PE/PJ compound.
- D. 0.006" alloy 194 copper shield (97.5% copper, 2.35% iron, 0.12% zinc, 0.03% phosphorus).
- E. Black, weather-resistant, extruded polyethylene jacket.
- F. Ratings:
  - 1. Comply with REA PE 39 requirements.
  - 2. 60° C to +80° C.
  - 3. 300 working volts.
  - 4. Resist acid, alkali, moisture and fungus.
  - 5. Suitable for direct burial.
- G. UL Listed.

## 2.07 SPECIAL CABLES

- A. As supplied by equipment suppliers or as required on the Drawings.

## 2.08 FIBER OPTIC CABLE

- A. Cable Type: Loose Tube, Gel-Filled.

- B. Design and Test Criteria: ANSI/ICEA S-87-640.
- C. Outer Jacket:
  - 1. Material: Continuous polyethylene jacket (PE, LDPE, or LLDPE).
  - 2. Moisture resistant, non-nutrient to fungus, nontoxic, electrically nonconductive, and ultraviolet light resistant.
  - 3. Color: Black.
- D. Temperature:
  - 1. Installation: -30°C to 60°C.
  - 2. Operation: -40°C to 75°C.
- E. Mechanical Characteristics:
  - 1. Nominal Outside Diameter: 0.41 in.
  - 2. Minimum Bend Radius Installation: 6".
  - 3. Minimum Bend Radius Operation: 4".
  - 4. Maximum Load (long term): 120 lb.
  - 5. Weight: (84 kg/km).
- F. Optical Fibers:
  - 1. Type: Multi Mode (OM3).
  - 2. Attenuation:
    - a. 1.0 dB/km, maximum, at 1300 nm.
    - b. 3.0 dB/km, maximum, at 850 nm.
  - 3. 50 micron core size, Six strand.
- G. Manufacturer's Reference: Berk-Tek or Engineer approved equal.

## 2.09 FIBER OPTIC PATCH CORDS

- A. General: Provide factory-connectorized fiber optic patch cords with OFNR rating.
- B. Single Patch Cord: Single fiber jacket cable with dielectric strength member.
- C. Duplex Patch Cord: Two single fiber cables joined, factory terminated in duplex connector with strain relief boot.
- D. Fiber type:
  - 1. 50/125 micron multimode 850 nm laser-optimized (OM3), color: aqua.
- E. Connectors: As specified.
- F. Length: As needed.

## PART 3 EXECUTION

### 3.01 GENERAL WIRING METHODS

- A. Run wiring in raceways, unless otherwise indicated on Drawings.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work which will injure conductors has been completed.
- C. Do not install conductors in raceways until concrete and plaster work is complete.
- D. Completely and thoroughly swab raceway system before installing conductors.
- E. Pull all conductors into a raceway at the same time.
- F. Do not exceed manufacturer's maximum pulling tension.
- G. Use wire pulling lubricant for pulling building wire 4 AWG and larger.
- H. Clean exposed conductors in equipment and enclosures when wire pulling lubricant has been used.
- I. Use separate conduit for each function (AC power, DC power, analog signals, digital signals, and communication signals).
- J. Neatly train and lace wiring inside boxes, enclosures and equipment, and panelboards. Lace no more than six current carrying conductors 12 AWG and 10 AWG sizes. Lace larger sizes with no more than three conductors.

### 3.02 BUILDING WIRING

- A. Place an equal number of conductors for each phase of a circuit in same raceway or cable.
- B. Make conductor lengths for parallel circuits equal.
- C. For branch circuits, provide number of phase and neutral conductors required to implement circuiting, unless otherwise noted.
- D. Splice building wire only in accessible junction and outlet boxes and wireways. Do not splice in panelboards, cabinets, control panels and enclosures.

3.03 CONTROL AND INSTRUMENTATION WIRING

- A. Install control and instrument wire and cable in continuous lengths from field devices, or terminal blocks of intermediate junction boxes where so indicated on the Drawings, to terminal blocks in Control Panels and Terminal Boards. Except for installations where new cable must be spliced into an existing instrument loop or where otherwise indicated on the Drawings, do not splice instrument cable unless specifically approved.
- B. Terminate shielded cables at terminal block only, unless otherwise indicated.

3.04 CABLE INSTALLATION

- A. Bending radii: not less than permitted by ICEA or as recommended by cable manufacturer.
- B. Cable in trenches, (such as under the MCC's) handhold and manholes:
  - 1. Except for individual THWN grounding conductors, all conductors shall be TC or PLTC.
  - 2. Maintain separation between AC and DC cables.
- C. Cable Pulling:
  - 1. Reels: firmly mount on portable stand and secure against displacement.
  - 2. Use pulling grips.
  - 3. Pulling tension shall not exceed manufacturer's recommendations.
  - 4. Lubricate as recommended by the lubricant manufacturer to minimize mechanical stress that may lead to future cable faults.
- D. Splicing:
  - 1. General:
    - a. Permissible only in boxes, enclosures, or similar accessible, protected locations.
    - b. Splicing in conduit bodies not permitted.
    - c. Splicing in underground handholds and manholes not allowed unless specifically allowed in other Sections of this specification or on the Drawings, or proposed by the Contractor and allowed by the Engineer.
    - d. Splices shall be made in strict accordance with manufacturer's instructions.
  - 2. 480V Circuits:
    - a. Splicing allowed at motors: Section 26 27 26 2.12.
    - b. Other splicing allowed only where specifically shown on Drawings, or by approval of Engineer.
      - i. If allowed: see Section 26 27 26 2.10 and 2.11.
  - 3. 277V Lighting Circuits:
    - a. If allowed on Drawings: Section 26 27 26 2.10 and 2.11.

- b. Otherwise, use terminal boards, same as required for control circuits below.
- 4. 120/208/240V lighting and power circuits: Section 26 27 26 2.10 and 2.11.
- 5. Control circuits:
  - a. No splicing allowed without specific approval of Engineer.
  - b. If splicing approved, provide enclosure as approved by Engineer and terminal blocks (Section 26 27 26 ).
  - c. Mark wiring as in Section 26 05 19 3.02.
  - d. Mark terminal boards as in Section 26 27 26.
- 6. Instrument wiring:
  - a. No splicing allowed without specific approval of Engineer.
  - b. If splicing approved, provide enclosure as approved by Engineer and terminal blocks (Section 26 27 26 ).
  - c. Mark wiring as in Section 26 05 53.
  - d. Mark terminal boards as in Section 26 27 26.

### 3.05 WIRING CONNECTIONS AND TERMINATIONS

- A. Use only approved wire connectors.
- B. Thoroughly clean wires before installing lugs and connectors.
- C. Install crimp-on ring tongue terminals on all control wiring connected to terminations with screw connections. Use ratcheting crimp tool.
- D. Install crimp-on male adapter terminals on all control wiring connected to terminal blocks with pressure-type block lug connections. Use ratcheting crimp tool.
- E. Make splices, taps and terminations to carry full capacity of conductors.
- F. Terminate spare conductors with insulated wire connectors.
- G. Install wire connectors in accordance with manufacturer's instructions. Use tools and accessories recommended.
- H. Shielded Control Wire Termination:
  - 1. Open Ground Termination at Field Device: Pull cable shield and drain wire back one inch over outside jacket of cable. Cover shield and drain wire completely with heat shrink cable marker. Do not terminate drain wire.
  - 2. Open Ground Termination at Terminal Block: Pull cable shield back one inch over outside jacket of cable. Cover shield completely with heat shrink cable marker. Terminate drain wire on terminal block.

3.06 PULL ROPE INSTALLATION

- A. Install pull ropes in empty conduits and ducts.
- B. Leave at least 12 inches slack each end of run, unless more is indicated on Drawings.

3.07 FIELD QUALITY CONTROL

- A. Torque test conductor connections and terminations to manufacturer's recommended values.
- B. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

END OF SECTION



## SECTION 26 05 19

### LOW-VOLTAGE WIRE AND CABLE – ADDENDUM #1

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish, install, connect and test all wire and cable operating at 600 volts or less.
- B. Furnish wire and cable for all systems except:
  - 1. Where supplied as part of an equipment or system.
  - 2. Where specifically stated otherwise in other parts of the specifications or on the Drawings.

##### 1.02 RELATED WORK

- A. Section 01 33 00: Shop Drawings, Product Data, and Samples.
- B. Section 26 05 53: Electrical Identification.
- C. Section 26 27 26 : Wiring Devices, Connectors, and Accessories

##### 1.03 REFERENCES

- 1. ANSI/NFPA 70 - National Electrical Code.
- 2. NEMA WC 5 - Thermoplastic-insulated wire and cable for the transmission and distribution of electrical energy.
- 3. UL 83 - Thermoplastic-Insulated Wires and Cables.

##### 1.04 REGULATORY REQUIREMENTS

- 1. Conform to requirements of ANSI/NFPA 70.
- 2. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

##### 1.05 SUBMITTALS FOR RELEASE

- 1. Submit in accordance with Specification Section 26 05 00: General Electrical Requirements.
- 2. Catalog Data: Include data for power and lighting wire, control wire and cable, and ground wire.

## PART 2 PRODUCTS

### 2.01 GENERAL

- A. Conductors: Copper only.
- B. Color Coding and Marking: Conform with Specification Section 26 05 53: Electrical Identification.

### 2.02 600V POWER AND GENERAL PURPOSE WIRE

- A. General:
  - 1. Conductors: Copper only.
  - 2. Color Coding: Conform with Section 26 05 53.
- B. Power and Lighting Wire:
  - 1. NEMA WC 5, UL 83, Type THWN/THHN, minimum #12 AWG, unless otherwise noted.
  - 2. #12 AWG and #10 AWG: Solid or Class B stranded conductor.
  - 3. #8 AWG or larger: Class B stranded conductor.
- C. Control and Instrumentation Wire: NEMA WC 5, UL 83, Type THWN/THHN, #14 AWG stranded conductor, unless otherwise noted.
- D. Fixture Wires: Factory installed by fixture manufacturer and labeled for application.
- E. Ground Wire:
  - 1. Main Ground, Bonding and Raceway Conductor:
    - a. #12 AWG and #10 AWG: Solid or Class B stranded conductor; thermoplastic insulated, NEMA WC 5, UL 83, 600 V, Type THWN/THHN. Green solid color compound throughout conductor length.
    - b. #8 AWG: Class B stranded conductor; thermoplastic insulated, NEMA WC 5, UL 83, 600 V, Type THWN/THHN. Green solid color compound throughout conductor length.
    - c. #6 AWG and larger: Class B stranded conductor; bare.
  - 2. Ground Counterpoise Conductor: Class B solid or stranded conductor; bare. For required type and size, see Section 16452.
  - 3. Internal Perimeter Ground Conductor (Halo): Class B solid or stranded conductor; bare. For required type and size, see Section 16452.
- F. Manufacturer:
  - 1. Southwire Inc. or equal.

- G. Variable Frequency Drive Wire:
  - 1. Cross-Linked polyethylene (XLPE) insulation.
  - 2. Tinned copper shielded multicable with 300% symmetrical grounds per Drawings, Manufacturer's Reference Belden VFD Cable.

2.03 CONTROL WIRE AND CABLE:

- A. Single Conductors: NEMA WC 5, UL 83, Type THWN/THHN, 14 AWG stranded conductor, UL Listed, unless otherwise noted.
- B. Two 16 AWG stranded 19 x 29 tinned copper conductors, PVC insulated with overall aluminum polyester foil shield; 100 percent shield coverage; stranded 18 AWG tinned copper stranded drain wire; overall PVC jacket; color coded black and clear and numbered at one-inch intervals. Manufacturer's reference; Belden #8719.
- C. RS-485 Cable: Category 5e Ethernet cable with appropriate connectors.
- D. UL Listed.

2.04 DATA NETWORK CABLE

- A. Per TIA 568.C.2, NEMA WC-63.1 Category 5e.
- B. Four pair, 24 AWG insulated solid bare copper.
- C. Shielded unless otherwise indicated.
- D. Jacket: Low Smoke FR-PVC, polyester rip cord installed under jacket.
- E. UL Listed.

2.05 TRAY CABLE (TC)

- A. Per NEC 340, 318, 501, 725 and 760.
- B. UL Listed:
  - 1. Type TC.
  - 2. Suitable for direct burial in sizes 14 AWG and larger.
- C. Flame, moisture and sunlight resistant; meet IEEE 383 flame test at 210,000 BTU.
- D. Ratings:
  - 1. 600V.
  - 2. 90° C dry locations; 75° C wet locations.

- E. Construction:
  - 1. Conductor: stranded soft annealed copper.
  - 2. Insulation: PVC with 5 mil nylon jacket.
  - 3. Jacket: PVC.
- F. Conductor Identification:
  - 1. 8 AWG and larger: ICEA Method 4.
  - 2. 10 AWG and smaller: ICEA Table K 2, Methods 1 and 4.
- G. Manufacturer:
  - 1. Southwire Inc. "TC"
  - 2. or equal.
- H. Sometimes referred to on Drawings as "TC".

## 2.06 DIRECT BURIAL SIGNAL CABLE

- A. 12 each: 22 AWG solid copper conductors, each insulated with color-coded, high-molecular-weight polyethylene.
- B. Conductors twisted into six pairs with staggered pair lay.
- C. Core air space filled with PE/PJ compound.
- D. 0.006" alloy 194 copper shield (97.5% copper, 2.35% iron, 0.12% zinc, 0.03% phosphorus).
- E. Black, weather-resistant, extruded polyethylene jacket.
- F. Ratings:
  - 1. Comply with REA PE 39 requirements.
  - 2. 60° C to +80° C.
  - 3. 300 working volts.
  - 4. Resist acid, alkali, moisture and fungus.
  - 5. Suitable for direct burial.
- G. UL Listed.

## 2.07 SPECIAL CABLES

- A. As supplied by equipment suppliers or as required on the Drawings.

## 2.08 FIBER OPTIC CABLE

- A. Cable Type: Loose Tube, Gel-Filled.

- B. Design and Test Criteria: ANSI/ICEA S-87-640.
- C. Outer Jacket:
  - 1. Material: Continuous polyethylene jacket (PE, LDPE, or LLDPE).
  - 2. Moisture resistant, non-nutrient to fungus, nontoxic, electrically nonconductive, and ultraviolet light resistant.
  - 3. Color: Black.
- D. Temperature:
  - 1. Installation: -30°C to 60°C.
  - 2. Operation: -40°C to 75°C.
- E. Mechanical Characteristics:
  - 1. Nominal Outside Diameter: 0.41 in.
  - 2. Minimum Bend Radius Installation: 6".
  - 3. Minimum Bend Radius Operation: 4".
  - 4. Maximum Load (long term): 120 lb.
  - 5. Weight: (84 kg/km).
- F. Optical Fibers:
  - 1. Type: Multi Mode (OM3).
  - 2. Attenuation:
    - a. 1.0 dB/km, maximum, at 1300 nm.
    - b. 3.0 dB/km, maximum, at 850 nm.
  - 3. 50 micron core size, Six strand.
- G. Manufacturer's Reference: Berk-Tek or Engineer approved equal.

## 2.09 FIBER OPTIC PATCH CORDS

- A. General: Provide factory-connectorized fiber optic patch cords with OFNR rating.
- B. Single Patch Cord: Single fiber jacket cable with dielectric strength member.
- C. Duplex Patch Cord: Two single fiber cables joined, factory terminated in duplex connector with strain relief boot.
- D. Fiber type:
  - 1. 50/125 micron multimode 850 nm laser-optimized (OM3), color: aqua.
- E. Connectors: As specified.
- F. Length: As needed.

## PART 3 EXECUTION

### 3.01 GENERAL WIRING METHODS

- A. Run wiring in raceways, unless otherwise indicated on Drawings.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work which will injure conductors has been completed.
- C. Do not install conductors in raceways until concrete and plaster work is complete.
- D. Completely and thoroughly swab raceway system before installing conductors.
- E. Pull all conductors into a raceway at the same time.
- F. Do not exceed manufacturer's maximum pulling tension.
- G. Use wire pulling lubricant for pulling building wire 4 AWG and larger.
- H. Clean exposed conductors in equipment and enclosures when wire pulling lubricant has been used.
- I. Use separate conduit for each function (AC power, DC power, analog signals, digital signals, and communication signals).
- J. Neatly train and lace wiring inside boxes, enclosures and equipment, and panelboards. Lace no more than six current carrying conductors 12 AWG and 10 AWG sizes. Lace larger sizes with no more than three conductors.

### 3.02 BUILDING WIRING

- A. Place an equal number of conductors for each phase of a circuit in same raceway or cable.
- B. Make conductor lengths for parallel circuits equal.
- C. For branch circuits, provide number of phase and neutral conductors required to implement circuiting, unless otherwise noted.
- D. Splice building wire only in accessible junction and outlet boxes and wireways. Do not splice in panelboards, cabinets, control panels and enclosures.

3.03 CONTROL AND INSTRUMENTATION WIRING

- A. Install control and instrument wire and cable in continuous lengths from field devices, or terminal blocks of intermediate junction boxes where so indicated on the Drawings, to terminal blocks in Control Panels and Terminal Boards. Except for installations where new cable must be spliced into an existing instrument loop or where otherwise indicated on the Drawings, do not splice instrument cable unless specifically approved.
- B. Terminate shielded cables at terminal block only, unless otherwise indicated.

3.04 CABLE INSTALLATION

- A. Bending radii: not less than permitted by ICEA or as recommended by cable manufacturer.
- B. Cable in trenches, (such as under the MCC's) handhold and manholes:
  - 1. Except for individual THWN grounding conductors, all conductors shall be TC or PLTC.
  - 2. Maintain separation between AC and DC cables.
- C. Cable Pulling:
  - 1. Reels: firmly mount on portable stand and secure against displacement.
  - 2. Use pulling grips.
  - 3. Pulling tension shall not exceed manufacturer's recommendations.
  - 4. Lubricate as recommended by the lubricant manufacturer to minimize mechanical stress that may lead to future cable faults.
- D. Splicing:
  - 1. General:
    - a. Permissible only in boxes, enclosures, or similar accessible, protected locations.
    - b. Splicing in conduit bodies not permitted.
    - c. Splicing in underground handholds and manholes not allowed unless specifically allowed in other Sections of this specification or on the Drawings, or proposed by the Contractor and allowed by the Engineer.
    - d. Splices shall be made in strict accordance with manufacturer's instructions.
  - 2. 480V Circuits:
    - a. Splicing allowed at motors: Section 26 27 26 2.12.
    - b. Other splicing allowed only where specifically shown on Drawings, or by approval of Engineer.
      - i. If allowed: see Section 26 27 26 2.10 and 2.11.
  - 3. 277V Lighting Circuits:
    - a. If allowed on Drawings: Section 26 27 26 2.10 and 2.11.



- b. Otherwise, use terminal boards, same as required for control circuits below.
- 4. 120/208/240V lighting and power circuits: Section 26 27 26 2.10 and 2.11.
- 5. Control circuits:
  - a. No splicing allowed without specific approval of Engineer.
  - b. If splicing approved, provide enclosure as approved by Engineer and terminal blocks (Section 26 27 26 ).
  - c. Mark wiring as in Section 26 05 19 3.02.
  - d. Mark terminal boards as in Section 26 27 26.
- 6. Instrument wiring:
  - a. No splicing allowed without specific approval of Engineer.
  - b. If splicing approved, provide enclosure as approved by Engineer and terminal blocks (Section 26 27 26 ).
  - c. Mark wiring as in Section 26 05 53.
  - d. Mark terminal boards as in Section 26 27 26.

### 3.05 WIRING CONNECTIONS AND TERMINATIONS

- A. Use only approved wire connectors.
- B. Thoroughly clean wires before installing lugs and connectors.
- C. Install crimp-on ring tongue terminals on all control wiring connected to terminations with screw connections. Use ratcheting crimp tool.
- D. Install crimp-on male adapter terminals on all control wiring connected to terminal blocks with pressure-type block lug connections. Use ratcheting crimp tool.
- E. Make splices, taps and terminations to carry full capacity of conductors.
- F. Terminate spare conductors with insulated wire connectors.
- G. Install wire connectors in accordance with manufacturer's instructions. Use tools and accessories recommended.
- H. Shielded Control Wire Termination:
  - 1. Open Ground Termination at Field Device: Pull cable shield and drain wire back one inch over outside jacket of cable. Cover shield and drain wire completely with heat shrink cable marker. Do not terminate drain wire.
  - 2. Open Ground Termination at Terminal Block: Pull cable shield back one inch over outside jacket of cable. Cover shield completely with heat shrink cable marker. Terminate drain wire on terminal block.

3.06 PULL ROPE INSTALLATION

- A. Install pull ropes in empty conduits and ducts.
- B. Leave at least 12 inches slack each end of run, unless more is indicated on Drawings.

3.07 FIELD QUALITY CONTROL

- A. Torque test conductor connections and terminations to manufacturer's recommended values.
- B. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

END OF SECTION

SILVER  
(PMS 423)

BURGUNDY  
(PMS 229)

BLUE  
LETTERING

BLUE

New Mexico  
FINANCE



AUTHORITY

**Project Name**  
**Project Number**



GREEN

DARK  
BLUE

*Community Name and Department*  
Community Contact: \_\_\_\_\_

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

Architect or Engineer: \_\_\_\_\_

Contractor: \_\_\_\_\_

Contractor Contact: \_\_\_\_\_

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

Type of Project (i.e. DWSRF, STAG, etc.) Amount: \$ \_\_\_\_\_

DARK BLUE  
LETTERING

**a State of New Mexico project jointly financed by:**  
**The New Mexico Finance Authority and the U.S. Environmental Protection Agency**

DARK  
GREEN  
LETTERING

This institution is an equal opportunity provider.

Michelle Lujan Grisham, Governor of New Mexico  
Katherine Miller, NMFA Board Chair

SCALE 1"=1'

SIGN DIMENSIONS: 4' x 8' x 3/4" (1200mm x 2400mm x 19mm )

PLYWOOD PANEL (APA RATED A-B GRADE - EXTERIOR)

WHITE WITH BLACK LETTERING EXCEPT AS NOTED

# Bohannon Huston

## Process Control Narrative

### Raw Water Intake Building

CP-100

CP-200

PLC-400

### Pre-Treatment Facility

CP-500

### Filter Building

CP-600

FCP-610, FCP-620, FCP-630, FCP-640

### Clear Well Building

CP-700

CP-800

City of Las Vegas NM  
Water Treatment Plant

Revision	Date	Description	Author	Checked	Reviewed	Approved
1 (Addendum #1)	4/7/23	Remove VFD from BW Process narrative in 4.2.1 and 5.4	ETF	ETF	PDS	MRT

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## 1. GENERAL PROCESS DESCRIPTION

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### 1.1. DEFINITIONS

- CLV: City of Las Vegas NM
- CP: Control Panel
- Control System: SCADA, PLC Controls, Manual Controls
- FCP: Filter Control Panel
- F#: Filter, Number (1-4)
- HOA: Hand-Off Auto
- I/O: input-output
- OIT: Operator Interface Terminal (Touchscreen computer also referred to as HMI)
- P&ID: Process and Instrumentation Diagram
- PID: Proportional–Integral–Derivative
- PLC: Programmable Logic Controller
- SCADA: Supervisory Control and Data Acquisition
- UPS: Uninterruptible Power Supply
- VFD: Variable Frequency Drive

### 1.2. PROCESS OVERVIEW

The City of Las Vegas NM Water Treatment Plant supplies the City of Las Vegas and immediate surroundings with surface water from the Gallinas River. The river water fills Bradner Reservoir and Pederson Reservoir which supply the plant through the Raw Water Intake Station. After recording the flow, measuring the turbidity, and delivering a preliminary dose of chemical disinfection, the water continues to the Pre-Treatment Facility clarifier where coagulation and flocculation chemicals are mixed with the water to prepare for filtration.

The pre-treated water continues to the Filter Building and is measured again for turbidity before entering the splitter box where it is distributed to the four water filters. The effluent flow from the filters

is controlled by a modulating effluent valve after each filter, and the valves are controlled to maintain a constant level in the filters.

Periodically each filter needs a backwash cycle to ensure that water is properly filtered. The backwash cycle occurs after one of three following conditions is met; a set period time (currently 100 hours), if the differential pressure indicates a high loss of head pressure, or by manual initiation by an Operator.

After the filters the water is measured again for turbidity and flow, and filtered water continues to the Clear Well Building. Immediately prior to entering the clear well, the water receives final disinfection. Within the clear well the water endures the appropriate disinfection contact time before it is pumped to the Cabin Site Tank for potable distribution.

The plant is automatically controlled by the following control panels, each with its own PLC. A brief description of equipment function is also listed:

- CP-100 – Existing Control Panel, located in the RWIS, monitors incoming flows, controls intake valves, and injection of coagulation and flocculation chemicals.  
The existing panel CP-100 contains an existing PLC that also controls three water lift pumps that are to remain in service. A new PLC, HMI, ethernet switch, and related components will be installed within CP-100, and control of equipment as described will be changed from the existing PLC to the new PLC, but the existing PLC and control of the water lift pumps will remain undisturbed.
- CP-200 – New Control Panel, located in the RWIS, controls the preliminary disinfection chemical injection.
- CP-400 – Existing Control Panel, located in the RWIS, monitors and controls the Bradner Reservoir intake valves and instrumentation (This controller also communicates with CP-401 which is located on the Bradner intake tower). The plant elements controlled and monitored by this control panel will be integrated into the plant SCADA.
- CP-500 – New Control Panel, to be located at the Pre-Treatment Facility, will monitor the pre-treatment process.
- CP-600 – Replacement Control Panel, located in the filter building, monitors and controls filter process and backwash cycles.
- FCP-610, FCP-620, FCP-630, FCP-640 – Replacement of local Filter Control Panels, located in the Filter Building, they control the process associated with each filter.



- CP-700 – New Control Panel, to be located in the Clear Well Building, controls the final disinfection chemical injection.
- CP-800 - Existing Control Panel with a replacement PLC, HMI, ethernet switch, and related components, located in the Clear Well Building, monitors the clear well instrumentation, controls the high lift pumps.
- CP-910 and CP-920 – Existing Control Panels, located in HCL Generation Room, control the HCL generation process. The plant elements controlled and monitored by this control panel will be integrated into the plant SCADA for monitoring.

Presently the control panels are not in network communication and conditions in one area of the plant are unknown to controllers in other areas of the plant (With the exception of CP-401 to CP-400). The goal of this project is to have all controllers in network communication so that the plant controllers can make real time automatic process adjustments as operating conditions vary.

### 1.3. PROCESS NETWORK & SCADA

#### 1.3.1. REFERENCES

The following documents are used as references for this SCADA and network process control narrative:

- Network Diagram, Drawing G-105
- Clear Well Building Plan, Drawing I-231
- Section 40 66 10: Network and Communication Equipment
- Section 40 68 10: Process Control Software

#### 1.3.2. PROCESS NETWORK

The main SCADA servers will be installed within the Clear Well Building, within existing rooms to be modified for this installation. A new internet service with static IP address will be initiated and installed in the Clear Well Building. Configure the ISP modem to function in bridge mode. Configure the firewall appliance to block connections not initiated by the VPN, and rule-based intrusion prevention. Outgoing traffic to the web is not allowed unless specifically needed for SCADA. The Remote Access VPN server is installed on the unsecured side of the network to

allow for Operator connection to SCADA. Provide VPN connection for mobile apps to plant Operators and provide written instructions for Operators to configure connections and also to add and remove VPN remote access users.

The network router should have redundant security protocols to the firewall appliance configured but ensure to disable any network services that are not needed. The network time server receives time data through GPS protocol and is the time server for all network attached devices.

The main network switch NS-001 is a managed switched configured for port security and VLANs with unused ports disabled. The network attaches storage (NAS) is configured for live backups of all network system configurations, PLC and OIT programming, SCADA server and terminal configurations, and historical data.

See Sections 40 66 10 and 40 68 10 for information on the computer and network equipment configurations.

#### 1.3.3. SCADA TERMINAL OIT-600

The OIT installed within the main filter controller CP-600 will be a panel mount computer, which is a full functioning All-In-One touchscreen personal computer running Windows operating system and a complete instance of the SCADA software platform. This OIT will be connected to the Process Control Network and monitor all of the plant controllers and give the Operator the ability to control certain elements from its location.

This OIT will also display the standard functions in an identical format that are present on the other control panel OITs.

#### 1.3.4. SCADA TERMINAL PC-1 AND PC-2

The computers PC-1 and PC-2 are SCADA Thin Clients for use in the electrical room of the Clear Well Building. This computer is configured for Operator access to the SCADA system to perform monitoring and control of the system. PC-1 is also configured with office productivity tools to create reports of historical data. Confirm with Operator the desired format and information to be displayed on the reports.

#### 1.3.5. SCADA RACK SERVER 1

Server 1 is a virtual host rack mounted server with two virtual machines, SC-1 is the live plant SCADA server, SC-2 is the primary domain controller.

### 1.3.6. SCADA RACK SERVER 2

Server 2 is a virtual host rack mounted server with three virtual machines, SC-1 is the live plant SCADA server, SC-3 is a hot backup of SC-1. SC-3 will automatically copy any changes made to SC-1 and automatically become the primary SCADA server if SC-1 fails.

SC-4 is the secondary domain controller and is the failover to the primary domain controller SC-2.

SC-5 runs the backup and recovery software. Configure the backups to the network attached storage device for all configured computer, PLCs, and OITs and other network devices.

### 1.3.7. SCADA RACK SERVER 3

Server 3 is a virtual host rack mounted server with two virtual machines, SC-6 is the live plant VPN server and SC-7 is remote access manager.

## 2. RAW WATER INTAKE STATION

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### 2.1. REFERENCES

The following documents are used as references for this RWIS process control narrative:

- P&ID 1-3, Drawings I-310, I-311, and I-312
- RWIS Plan I-200
- Electrical Details 4, Drawing I-403

### 2.2. MAIN CONTROL CP-100

The existing control panel CP-100 is used to monitor influent flow monitoring, control of the pipeline flow control valves and the operation of the alum and polymer injection pumps. There are three water lift pumps that the existing PLC and OIT control, and the existing control of these pumps will remain in place and the control of the water lift pumps will not be impacted, but all other I/O signals will be moved to the new PLC. The new PLC and touchscreen OIT will be installed in empty locations within the existing panel and connected to the plant process network for communication to the other plant controllers and SCADA.

### 2.2.1. Influent Flow Control

The plant required flow rate is calculated by PLC-100 by examining the Cabin Tank rate of level change and influent flow rates and opening or closing the Pederson and or Bradner flow control valves in response to an increasing or decreasing Cabin Tank level using a proportional relationship.

The flow control valves shall close and remain closed until the Operator addresses the condition and clears the alarms under the following conditions:

- Plant Shutdown from Clear Well
- Disinfection Alarm from CP-200
- Both Alum Pumps Selected and no running signal received
- Both Polymer Pumps Selected and no running signal received
- High Turbidity in RWIS
- Shutdown from disinfection control panel CP-200.

Either flow control valve (Pederson or Bradner) will close if a corresponding flow meter fails high or low.

### 2.2.2. Chemical Pump Control

The Alum pumps will operate in alternating sequence and start with a minimum influent flow rate detected, with speed selected in proportion to the total influent flow, and the speed is checked and adjusted by examining Alum flow rate. The Polymer pumps also operate in alternating sequence and start with a minimum influent flow rate detected, however they run in a fixed speed set locally by the Operator. Observe existing system operation and repeat variables for minimum flow rate to start pumps, pump start delay, pump fail delay, and alum flow proportion.

### 2.2.3. Flow Totalization, Equipment Statistics, and Trending

All flow rates shall accumulate and be available to view on the OIT and SCADA in one gallon increments, for each influent source, the total of both influent sources, each Alum pump, the total of both Alum pumps, each Polymer pump and the total of both Polymer pumps. The totals for each total can be reset by the Operator with a passcode. Record the time, date, and Operator that performed the reset.

Equipment statistics for viewing on the OIT and SCADA include PLC uptime, number of starts and run hours for each pump, and AC power fails.

Trend lines for analog values of all flows, sums of relative flows, and turbidity shall store and be available for viewing on the OIT and SCADA.

**2.2.4. Alarms**

Alarms and their corresponding priority level shall show on the OIT and SCADA. The following alarms shall only be cleared by acknowledging on the OIT by Operator with passcode:

- Alum Pump fault or fail to start
- Polymer Pump fault or fail to start
- Raw Water High Turbidity
- Shutdown Alarm from Clear Well
- General Alarm from CP-200

All other alarms will automatically clear when the condition no longer exists. Alarms will log on the OIT and SCADA, along with the information pertaining to when, who, and how they were cleared.

**2.2.5. PLC Digital Inputs**

The following table describes the digital (discrete) inputs to the PLC-100. The alarm priority levels shown must be confirmed by the Operator.

Table 1. CP-100 PLC Digital Input Signals							
Description	State 0	State 1	OIT	SCADA	Alarm	Priority	Trend/Record
AC Power Fail	Alarm	Normal	X	X	X	1	X
DC Power Fail	Alarm	Normal	X	X	X	2	X
SPD Fail Alarm	Normal	Alarm	X	X	X	3	X
Plant Shutdown Command From Clear Well PLC-800	Normal	Alarm	X	X	X	1	X

Table 1. CP-100 PLC Digital Input Signals							
Description	State 0	State 1	OIT	SCADA	Alarm	Priority	Trend/Record
Disinfection Fail Alarm from CP-200	Alarm	Normal	X	X	X	1	X
Alum Pump 1 Fault	Normal	Alarm	X	X	X	1	X
Alum Pump 2 Fault	Normal	Alarm	X	X	X	1	X
Polymer Pump 1 Fault	Normal	Alarm	X	X	X	1	X
Polymer Pump 2 Fault	Normal	Alarm	X	X	X	1	X
Alum Pump 1 Running	Not Running	Running	X	X			X
Alum Pump 2 Running	Not Running	Running	X	X			X
Polymer Pump 1 Running	Not Running	Running	X	X			X
Polymer Pump 2 Running	Not Running	Running	X	X			X
Alum Pump 1 In Auto	Not Auto	Auto	X	X			
Alum Pump 2 In Auto	Not Auto	Auto	X	X			
Polymer Pump 1 In Auto	Not Auto	Auto	X	X			
Polymer Pump 2 In Auto	Not Auto	Auto	X	X			
Pederson FCV Closed	Closed	Open	X	X			X
Bradner FCV Closed	Closed	Open	X	X			X

2.2.6. PLC Digital Outputs

The following table describes the digital (discrete) outputs from the PLC-100. The alarm priority levels shown must be confirmed by the Operator. Entries labeled (Message) are output on the plant network.

Table 2. CP-100 PLC Digital Output Signals							
Description	State 0	State 1	OIT	SCADA	Alarm	Priority	Trend/Record
Disinfection Fail Alarm	Alarm	Normal	X	X	X	1	X
Alum Pump 1 Start	No Command	Command	X	X			X
Alum Pump 2 Start	No Command	Command	X	X			X
Polymer Pump 1 Start	No Command	Command	X	X			X
Polymer Pump 2 Start	No Command	Command	X	X			X
Pederson FCV Open	No Command	Command	X	X			X
Pederson FCV Close	No Command	Command	X	X			X
Bradner FCV Open	No Command	Command	X	X			X
Bradner FCV Close	No Command	Command	X	X			X
Pederson Flowmeter fail Hi or Lo (Message)	Alarm	Normal	X	X	X	1	X
Bradner Flowmeter fail Hi or Lo (Message)	Alarm	Normal	X	X	X	1	X
Alum 1 Flowmeter fail Hi or Lo (Message)	Alarm	Normal	X	X	X	2	X
Alum 2 Flowmeter fail Hi or Lo (Message)	Alarm	Normal	X	X	X	2	X
Poly 1 Flowmeter fail Hi or Lo (Message)	Alarm	Normal	X	X	X	2	X
Poly 2 Flowmeter fail Hi or Lo (Message)	Alarm	Normal	X	X	X	2	X

### 2.2.7. PLC Analog Inputs

The following table describes the analog inputs to the PLC-100. The operation and alarm setpoints must be confirmed by the Operator. Observe the existing process and confirm all ranges through observation.

Table 3. CP-100 PLC Analog Input Signals									
Description	Range	Units	Alarm Setpoints				OIT	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Cabin Tank Level	0-40	feet					X	X	X
Pederson Flow Rate	0-4500	GPM					X	X	X
Bradner Flow Rate	0-4500	GPM					X	X	X
Alum 1 Flow Rate	0-XX	GPH					X	X	X
Alum 2 Flow Rate	0-XX	GPH					X	X	X
Poly 1 Flow Rate	0-XX	GPH					X	X	X
Poly 2 Flow Rate	0-XX	GPH					X	X	X
Alum 1 Speed Ref	0-100	%					X	X	X
Alum 2 Speed Ref	0-100	%					X	X	X
Raw Water Turbidity	0-XX	NTU					X	X	X

### 2.2.8. PLC Analog Outputs

The following table describes the analog outputs from the PLC-100. The operation and alarm setpoints must be confirmed by the Operator.

Table 4. CP-100 PLC Analog Output Signals									
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Description	Range	Units	Alarm Setpoints				OIT	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Alum 1 Speed	0-100	%					X	X	
Alum 2 Speed	0-100	%					X	X	

### 2.3. DISINFECTION PROCESS CP-200

The existing control panel CP-200 monitors and controls the disinfection chemical injection process. This panel will be replaced with a new control panel CP-200 with a new PLC, OIT, and connected to the process network for communication to the other plant controllers and SCADA.

#### 2.3.1. Disinfection Pump Control

The injection pumps will operate in alternating sequence and start with a minimum influent flow rate detected from the Pederson and Bradner flow rates, with VFD pump speed selected in proportion to the total influent flow, and the speed is checked and adjusted by examining disinfection chemical flow rate. Observe existing system operation and repeat variables for minimum flow rate to start pumps, pump start delay, pump fail delay, and HCL flow proportion.

The pumps also function in a Lead-Lag configuration to maintain the necessary amount of chemical injected in proportion to the total influent flow rate.

#### 2.3.2. Flow Totalization, Equipment Statistics, and Trending

All flow rates shall accumulate and be available to view on the OIT and SCADA in one gallon increments, for each chemical pump. The totals for each total can be reset by the Operator with a passcode. Record the time, date, and Operator that performed the reset.

Equipment statistics for viewing on the OIT and SCADA include PLC uptime, number of starts and run hours for each pump.

Trend lines for analog values of all flows and sums of relative flows be available for viewing on the OIT and SCADA.

#### 2.3.3. Alarms

Alarms and their corresponding priority level shall show on the OIT and SCADA. The following alarms shall only be cleared by acknowledging on the OIT by Operator with passcode:

- Chemical Pump fault or fail to start
- Shutdown Alarm from Clear Well
- General Alarm from CP-200

All other alarms will automatically clear when the condition no longer exists. Alarms will log on the OIT and SCADA, along with the information pertaining to when, who, and how they were cleared.

### 2.3.4. PLC Digital Inputs

The following table describes the digital (discrete) inputs to the PLC-200. The alarm priority levels shown must be confirmed by the Operator.

Table 5. CP-200 PLC Digital Input Signals							
Description	State 0	State 1	OIT	SCADA	Alarm	Priority	Trend/Record
DC Power Fail	Alarm	Normal	X	X	X	1	X
SPD Fail Alarm	Normal	Alarm	X	X	X	3	X
HCL Pump 1 Running	Not Running	Running	X	X			X
HCL Pump 2 Running	Not Running	Running	X	X			X
HCL Pump 1 In Auto	Not Auto	Auto	X	X			
HCL Pump 2 In Auto	Not Auto	Auto	X	X			
HCL Pump 1 Fault	Normal	Alarm	X	X	X	1	X
HCL Pump 2 Fault	Normal	Alarm	X	X	X	1	X

### 2.3.5. PLC Digital Outputs

The following table describes the digital (discrete) outputs to the PLC-100. The alarm priority levels shown must be confirmed by the Operator. Entries labeled (Message) are output on the plant network.

Table 6. CP-200 PLC Digital Output Signals							
Description	State 0	State 1	OIT	SCADA	Alarm	Priority	Trend/Record
Disinfection Fail Alarm	Alarm	Normal	X	X	X	1	X
HCL Pump 1 Start	No Command	Command	X	X			X
HCL Pump 2 Start	No Command	Command	X	X			X
HCL Pump 1 In Auto	No Command	Command	X	X			
HCL Pump 2 In Auto	No Command	Command	X	X			
HCL Pump 1 Fault	Normal	Alarm	X	X	X	1	X
HCL Pump 2 Fault	Normal	Alarm	X	X	X	1	X
HCL 1 Flow Meter Fail (Message)	Alarm	Normal	X	X	X	1	X
HCL 2 Flow Meter Fail (Message)	Alarm	Normal	X	X	X	1	X

### 2.3.6. PLC Analog Inputs

The following table describes the analog inputs from the PLC-200. The operation and alarm setpoints must be confirmed by the Operator. Observe the existing process and confirm all ranges through observation.

Table 7. CP-200 PLC Analog Input Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Pederson Flow Rate	0-4500	GPM					X	X	X
Bradner Flow Rate	0-4500	GPM					X	X	X
HCL 1 Flow Rate	0-XX	GPM					X	X	X
HCL 2 Flow Rate	0-XX	GPM					X	X	X
HCL 1 Speed Ref	0-100	%					X	X	X
HCL 2 Speed Ref	0-100	%					X	X	X

### 2.3.7. PLC Analog Outputs

The following table describes the analog outputs from the PLC-200. The operation and alarm setpoints must be confirmed by the Operator.

Table 8. CP-200 PLC Analog Output Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
HCL 1 Speed	0-100	%					X	X	X
HCL 2 Speed	0-100	%					X	X	X

2.4. BRADNER DAM CP-400

The existing CP-400 will be connected to the Process Control Network for connection to SCADA. The existing signals as shown on the P&ID Drawings will be integrated into SCADA. Control of the following inputs from SCADA will be initiated by the Operator with a passcode.

The following table displays digital inputs to be added from the process network and SCADA.

Table 9. CP-400 PLC Network Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
Reset Valves (Message)	No Command	Command	X	X			X
Clear Alarms (Message)	No Command	Command	X	X			X

### 3. PRE-TREATMENT FACILITY

#### 3.1. REFERENCES

The following documents are used as references for this Filter Building process control narrative:

- P&ID 4, Drawing I-313
- Pre-Treatment Facility Plan, Drawing I-210
- Electrical Details 3, Drawing I-402

#### 3.2. CP-500 OPERATION

The PLC at the located at the Clarifier (Pre-Treatment Facility) is for monitoring and alarm generation purposes only. The Clarifier consists of two separate trains, presently only one train is in operation at a time. During normal operation of a single train, all seven mixers run continuously. Any mixer that does not report as running will generate an alarm, so on SCADA a selection must be made for “Train out of Service” so that those mixers intentionally turned off will not generate alarms. The alarm priority level for each mixer must be coordinated with and confirmed by the Operator.

##### 3.2.1 PLC Digital Inputs

The following table describes the digital (discrete) inputs to the PLC-500. The alarm priority levels shown must be confirmed by the Operator.

Table 10. CP-500 PLC Digital Input Signals							
Description	State 0	State 1	---	SCADA	Alarm	Priority	Trend/Record
DC Power Fail	Alarm	Normal		X	X	3	X
SPD Fail Alarm	Normal	Alarm	X	X	X	3	X
Heat Trace Fail	Alarm	Normal		X	X	1	X
Vac-Trac Train1 Running	Not Running	Running		X		--	X
Vac-Trac Train2 Running	Not Running	Running		X		--	X

Table 10. CP-500 PLC Digital Input Signals							
Description	State 0	State 1	---	SCADA	Alarm	Priority	Trend/Record
Vac-Trac Train1 Alarm	Alarm	Normal		X	X	2	X
Vac-Trac Train2 Alarm	Alarm	Normal		X	X	2	X
Mixer T1-1 Running	Alarm	Normal		X	X	--	X
Mixer T1-2 Running	Alarm	Normal		X	X	--	X
Mixer T1-3 Running	Alarm	Normal		X	X	--	X
Mixer T1-4 Running	Alarm	Normal		X	X	--	X
Mixer T1-5 Running	Alarm	Normal		X	X	--	X
Mixer T1-6 Running	Alarm	Normal		X	X	--	X
Mixer T1-7 Running	Alarm	Normal		X	X	--	X
Mixer T2-1 Running	Alarm	Normal		X	X	--	X
Mixer T2-2 Running	Alarm	Normal		X	X	--	X
Mixer T2-3 Running	Alarm	Normal		X	X	--	X
Mixer T2-4 Running	Alarm	Normal		X	X	--	X
Mixer T2-5 Running	Alarm	Normal		X	X	--	X
Mixer T2-6 Running	Alarm	Normal		X	X	--	X
Mixer T2-7 Running	Alarm	Normal		X	X	--	X

### 3.2.2 PLC Analog Inputs

The following table describes the analog inputs to the PLC-500. The operation and alarm setpoints must be confirmed by the Operator.

**Table 11. CP-500 PLC Analog Input Signals**

Description	Range	Units	Alarm Setpoints				---	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Train 1 Level	0-XX	Feet						X	X
Train 2 Level	0-XX	Feet						X	X

## 4. FILTER BUILDING

### 4.1. REFERENCES

The following documents are used as references for this Filter Building process control narrative:

- Filter Building Plans, Drawings I-220, I-221
- Control Diagrams 1-4, Drawings I-250, I-251, I-252, I-253
- P&IDs 4-9, Drawings I-313, I-314, I-315, I-316, I-317, I-318
- P&ID 13, Drawing I-322
- Control Panel Details, Drawing I-400

### 4.2. CP-600 OPERATION

During normal operation (all filters filtering), all influent gates are open and each filter level is maintained by modulating the effluent valve using the filter level transducer as the control signal. A high level from the level transducer or high float switch will close the corresponding influent gate. Alarm conditions from digital inputs are denoted in table 4. An automatic backwash cycle is triggered in a particular filter by either maximum time count of 100 hours or a loss of head pressure, either value is settable by the Operator. A high pre-filtered turbidity level will close all



influent gates. A high post-filter turbidity will close the influent gate and effluent valve of the particular filter.

#### 4.2.1. Backwash

When a backwash is determined necessary, the Clear Well low level alarm cannot be active. The influent gate will be closed. After influent gate closed signal is received the effluent control valve is opened to 100% and the drawdown timer begins. If the drawdown does not occur within the set time, the filter alarm is triggered and the filter remains offline until Operator acknowledges alarm, and effluent valve stays open. If the bottom float tips down within the drawdown period the effluent valve closes, when that is closed the backwash to waste valve opens. When those two conditions are met the air scour valve opens. Then the blower starts with the main air valve is modulated to regulate the air flow setpoint. After a delay period the backwash pump starts and the ~~low~~ backwash low flow rate is controlled by the backwash control valve. When the low backwash filter level is reached the high backwash flow rate begins by continuing to modulate~~ing~~ the backwash control valve ~~and the speed of the backwash pump VFD~~. The high backwash flowrate will change based on the influent water temperature. After a delay period the backwash control valve and backwash-to-waste valve closes. After receiving valves closed confirmation and the appropriate delay the influent gate opens. When the middle float tips up the filter to waste valve opens, the middle float will drop and when it tips up again the filter to waste valve close and the filter will leave backwash mode and reset the time until next backwash. The effluent valve will begin to modulate and the filtering mode will begin again. Observe operation of existing system to determine delay periods.

#### 4.2.2. Air Flow Control

When backwashing, the proper air flow rate to the filters is maintained by adjusting the air control valve position to match the desired air flow rate. The air control valve position is adjusted in proportion to the rate of flow reported by the air flow meter to keep the flow rate constant at the desired rate. This is normally performed by the PLC but the corresponding backup PID controller is also programmed to perform the function upon loss of the PLC signal. Observe existing process and confirm the proper air flow rate with the Operator.

#### 4.2.3. Backwash Flow Control

When backwashing, the proper finish water flow rate to the filters is maintained by adjusting the backwash control valve position to match the desired flow rate. A second process variable is the

water temperature as reported by the temperature sensor in the splitter box. The air control valve position is adjusted in proportion to the rate of flow reported by the air flow meter to keep the flow rate constant at the desired rate. Based on linear interpolation, a low water temperature of 3 degrees C is equal to a flow rate of 2,700 GPM, and a high water temperature of 19 degrees C is equal to 3,650 GPM. This is normally performed by the PLC but the corresponding backup PID controller is also programmed to perform the function upon loss of the PLC signal.

4.2.4. Alarms

Alarms shall generate for each valve command if the corresponding state, open or closed, is not received back to the PLC in an appropriate amount of time. Alarms shall generate from high float switches, and from low float switches unless a backwash request has begun. Alarms shall generate from analog alarm setpoints and analog values that are out of range.

4.2.5 PLC Digital Inputs

The following table describes the digital (discrete) inputs to the PLC-600. The alarm priority levels shown must be confirmed by the Operator.

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
UPS On Battery Alarm	Alarm	Normal	X	X	X	1	X
UPS Low Battery Alarm	Normal	Alarm	X	X	X	3	X
SPD Fail Alarm	Normal	Alarm	X	X	X	3	X
F1 High Level LSH-711	Alarm (Up)	Normal (Down)	X	X	X	1	X
F1 Mid Level LSL-711	Up	Down	X	X			
F1 Low Level LSLL-711	Up	Start BW (Down)	X	X	X		X

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F1 Inf Gate Open ZSO-101	Not Open	Open	X	X			
F1 Inf Gate Closed ZSC-101	Not Closed	Closed	X	X			
F1 BW to Waste Open ZSO-103	Not Open	Open	X	X			
F1 BW to Waste Closed ZSC-103	Not Closed	Closed	X	X			
F1 BW Valve Open ZSO-104	Not Open	Open	X	X			
F1 BW Valve Closed ZSC-104	Not Closed	Closed	X	X			
F1 Effluent Valve Closed ZSC-105	Not Closed	Closed	X	X			
F1 to Waste Closed ZSC-106	Not Closed	Closed	X	X			
F1 AS Valve Closed ZSC-611	Not Closed	Closed	X	X			
F2 High Level LSH-721	Alarm (Up)	Normal (Down)	X	X	X		X
F2 Mid Level LSL-721	Up	Down	X	X			
F2 Low Level LSLL-721	Up	Start BW (Down)	X	X			X

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F2 Inf Gate Open ZSO-201	Not Open	Open	X	X			
F2 Inf Gate Closed ZSC-201	Not Closed	Closed	X	X			
F2 BW to Waste Open ZSO-203	Not Open	Open	X	X			
F2 BW to Waste Closed ZSC-203	Not Closed	Closed	X	X			
F2 BW Valve Open ZSO-204	Not Open	Open	X	X			
F2 BW Valve Closed ZSC-204	Not Closed	Closed	X	X			
F2 Effluent Valve Closed ZSC-205	Not Closed	Closed	X	X			
F2 to Waste Closed ZSC-206	Not Closed	Closed	X	X			
F2 AS Valve Closed ZSC-621	Not Closed	Closed	X	X			
F2 BW Seq Started	Not Started	Started	X	X			
F2 BW Abort	Not Abort	Abort	X	X			

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F2 BW Manual Mode	Not Manual	Manual	X	X			
F2 BW Auto Mode	Not Auto	Auto	X	X			
F3 High Level LSH-731	Alarm (Up)	Normal (Down)	X	X	X		X
F3 Mid Level LSL-731	Up	Down	X	X			
F3 Low Level LSLL-731	Up	Start BW (Down)	X	X	X		X
F3 Inf Gate Open ZSO-301	Not Open	Open	X	X			
F3 Inf Gate Closed ZSC-301	Not Closed	Closed	X	X			
F3 BW to Waste Open ZSO-303	Not Open	Open	X	X			
F3 BW to Waste Closed ZSC-303	Not Closed	Closed	X	X			
F3 BW Valve Open ZSO-304	Not Open	Open	X	X			
F3 BW Valve Closed ZSC-304	Not Closed	Closed	X	X			
F3 Effluent Valve Closed ZSC-305	Not Closed	Closed	X	X			

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F3 to Waste Closed ZSC-306	Not Closed	Closed	X	X			
F3 AS Valve Closed ZSC-631	Not Closed	Closed	X	X			
F3 BW Seq Started	Not Started	Started	X	X			
F3 BW Abort	Not Abort	Abort	X	X			
F3 BW Auto Mode	Not Auto	Auto	X	X			
F3 BW Manual Mode	Not Manual	Manual	X	X			
F4 High Level LSH-741	Alarm (Up)	Normal (Down)	X	X	X		X
F4 Mid Level LSL-741	Up	Down	X	X			
F4 Low Level LSLL-741	Up	Start BW (Down)	X	X	X		X
F4 Inf Gate Open ZSO-401	Not Open	Open	X	X			
F4 Inf Gate Closed ZSC-401	Not Closed	Closed	X	X			
F4 BW to Waste Open ZSO-403	Not Open	Open	X	X			

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F4 BW to Waste Closed ZSC-403	Not Closed	Closed	X	X			
F4 BW Valve Open ZSO-404	Not Open	Open	X	X			
F4 BW Valve Closed ZSC-404	Not Closed	Closed	X	X			
F4 Effluent Valve Closed ZSC-405	Not Closed	Closed	X	X			
F4 to Waste Closed ZSC-406	Not Closed	Closed	X	X			
F4 AS Valve Closed ZSC-641	Not Closed	Closed	X	X			
F4 BW Seq Started	Not Started	Started	X	X			
F4 BW Abort	Not Abort	Abort	X	X			
F4 BW Auto Mode	Not Auto	Auto	X	X			
F4 BW Manual Mode	Not Manual	Manual	X	X			
Alarm Ack/Reset	Not Reset	Reset		X			
Blower/Air Ready	Not Ready	Ready	X	X			

Table 12. CP-600 PLC Digital Input Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
BW Control Valve Closed	Not Closed	Closed	X	X			
Power Supply Fail	Fail	Not Fail	X	X	X		
Clear Well Low Level LSLL-101	Up	BW Inhibit (Down)	X	X	X		

4.2.6 PLC Digital Outputs

The following table describes the digital outputs from the PLC-600. The alarm priority levels shown must be confirmed by the Operator. Entries labeled (Message) are output on the plant network.

Table 13. CP-600 PLC Digital Output Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F1 Open Inf Gate MSO-101	No Command	Open Command	X				
F1 Close Inf Gate LSL-711	No Command	Close Command	X	X			
F1 Close BW to Waste Valve FV-103	No Command	Close Command	X				
F1 Open AS Valve FV-611	No Command	Open Command	X				
F1 Open BW Valve SV-104	No Command	Open Command	X				
F1 Open F1 to Waste Valve SV-106	No Command	Open Command	X	X			
F1 Filtering	Not Filtering	Filtering	X	X			X



Table 13. CP-600 PLC Digital Output Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F1 BW Required	Not Required	Required	X	X			
F1 Backwashing	Not Backwashing	Backwashing	X	X			X
F1 Loss of Head	Normal	Head Loss	X	X	X		X
F1 Filter General Alarm	Normal	Alarm	X	X	X		X
F2 Open Inf Gate MSO-201	No Command	Open Command	X				
F2 Close Inf Gate LSL-721	No Command	Close Command	X	X			
F2 Close BW to Waste Valve FV-203	No Command	Close Command	X				
F2 Open AS Valve FV-621	No Command	Open Command	X				
F2 Open BW Valve SV-204	No Command	Open Command	X				
F2 Open F2 to Waste Valve SV-206	No Command	Open Command	X	X			
F2 Filtering	Not Filtering	Filtering	X	X			X
F2 BW Required	Not Required	Required	X	X			
F2 Backwashing	Not Backwashing	Backwashing	X	X			X
F2 Loss of Head	Normal	Head Loss	X	X	X		X

Table 13. CP-600 PLC Digital Output Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F2 Filter General Alarm	Normal	Alarm	X	X	X		X
F3 Open Inf Gate MSO-301	No Command	Open Command	X				
F3 Close Inf Gate LSL-731	No Command	Close Command	X	X			
F3 Close BW to Waste Valve FV-303	No Command	Close Command	X				
F3 Open AS Valve FV-631	No Command	Open Command	X				
F3 Open BW Valve SV-304	No Command	Open Command	X				
F3 Open F3 to Waste Valve SV-306	No Command	Open Command	X	X			
F3 Filtering	Not Filtering	Filtering	X	X			X
F3 BW Required	Not Required	Required	X	X			
F3 Backwashing	Not Backwashing	Backwashing	X	X			X
F3 Loss of Head	Normal	Head Loss	X	X	X		X
F3 Filter General Alarm	Normal	Alarm	X	X	X		X
F4 Open Inf Gate MSO-401	No Command	Open Command	X				
F4 Close Inf Gate LSL-741	No Command	Close Command	X	X			

Table 13. CP-600 PLC Digital Output Signals							
Description / Tag	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
F4 Close BW to Waste Valve FV-403	No Command	Close Command	X				
F4 Open AS Valve FV-641	No Command	Open Command	X				
F4 Open BW Valve SV-404	No Command	Open Command	X				
F4 Open F4 to Waste Valve SV-406	No Command	Open Command	X	X			
F4 Filtering	Not Filtering	Filtering	X	X			X
F4 BW Required	Not Required	Required	X	X			
F4 Backwashing	Not Backwashing	Backwashing	X	X			X
F4 Loss of Head	Normal	Head Loss	X	X	X		X
F4 Filter General Alarm	Normal	Alarm	X	X	X		X
Blower Start Request	No Command	Start Command	X				
BW Pump Start Request	No Command	Start Command	X				
Common Filter Alarm	Normal	Alarm	X	X	X		X

4.2.7 PLC Analog Inputs

The following table describes the analog inputs to the PLC-600. The operation and alarm setpoints must be confirmed by the Operator. Observe the existing process and confirm all ranges through observation.

Table 14. CP-600 PLC Analog Input Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
F1 Level LE-101	0-15	feet					X	X	X
F1 Loss of Head PDT-712	0-10	PSI					X	X	X
F1 Turbidity AIT-713	0-2	NTU					X	X	X
F1 Waste Turbidity AIT-106	0-2	NTU					X	X	X
F2 Level LE-201	0-15	feet					X	X	X
F2 Loss of Head PDT-722	0-10	feet					X	X	X
F2 Turbidity AIT-723	0-2	NTU					X	X	X
F2 Waste Turbidity AIT-206	0-2	NTU					X	X	X
F3 Level LE-301	0-15	feet					X	X	X
F3 Loss of Head PDT-732	0-10	feet					X	X	X
F3 Turbidity AIT-733	0-2	NTU					X	X	X
F2 Waste Turbidity AIT-306	0-2	NTU					X	X	X

**Table 14. CP-600 PLC Analog Input Signals**

F4 Level LE-401	0-15	feet					X	X	X
F4 Loss of Head PDT-742	0-10	feet					X	X	X
F4 Turbidity AIT-743	0-2	NTU					X	X	X
F4 Waste Turbidity AIT-406	0-2	NTU					X	X	X
Influent Turbidity AIT-PREF	0-2	NTU					X	X	X
Air Flow Rate FT-501	0-1,000	CFS					X	X	X
BW Flow Rate FT-111	0-4,500	GPM					X	X	X
BW Pump Speed (Message)	0-100	%					X	X	X
Inf Water Temp TI-801	3-19	Deg C					X	X	X
Filter 1+2 Flow Rate FIT-593	0-4,500	GPM					X	X	X
Filter 3+4 Flow Rate FIT-597	0-4,500	GPM					X	X	X

#### 4.2.8 PLC Analog Outputs

The following table describes the analog outputs from the PLC-600. The operation and alarm setpoints must be confirmed by the Operator.

Table 15. CP-600 PLC Analog Output Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
F1 Effluent Valve Control ZC-105	0-100	%					X	X	X
F1 Filter Waste Valve Control ZC-106	0-100	%					X	X	X
F2 Effluent Valve Control ZC-205	0-100	%					X	X	X
F2 Filter Waste Valve Control ZC-206	0-100	%					X	X	X
F3 Effluent Valve Control ZC-305	0-100	%					X	X	X
F3 Filter Waste Valve Control ZC-306	0-100	%					X	X	X
F4 Effluent Valve Control ZC-405	0-100	%					X	X	X
F4 Filter Waste Valve Control ZC-406	0-100	%					X	X	X
AS Valve Control ZC-501	0-100	%					X	X	X
BW Valve Control ZC-111	0-100	%					X	X	X
BW Pump Speed (Message)	0-100	%					X	X	X

### 4.3. FILTER CONTROL

#### 4.3.1. LOCAL CONTROL PANELS

Each filter has local control through the use of hand switches, indicator lights, panel mounted analog displays, and backup PID controllers. The hand switches will override any PLC command, and the PLC commands will only impact the system if the hand switch for a particular function is in "AUTO".

The analog and digital signals within each filter control panel are connected to a Remote I/O (RIO) unit also installed within each local control panel, which then connected by network protocol directly to the network switch within CP-600, and the signals are passed to PLC-600. Under normal operating conditions the control of each filter process is performed from the OIT on CP-600.

During normal operation, the backup PID controllers act as a pass through for the analog control signals to the equipment. In a case where the network signal from the PLC to the RIOs, or a PLC or RIO fails, the backup PID controllers will continue to control the process loops and provide an Operator interface to control connected equipment.

#### 4.3.2. FILTER LEVEL CONTROL

When not backwashing, the proper level in the filters is maintained by adjusting the effluent valve position to match the influent flow rate. Since the influent flow rate is not adjustable by the Operator, the effluent valve position is adjusted in proportion to the rate of level change to keep the filter level constant. This is normally performed by the PLC but the corresponding backup PID controller is also programmed to perform the function upon loss of the PLC signal.

#### 4.3.3. FILTER WASTE VALVE CONTROL

When the backwash process finishes, the Filter to Waste valve is opened to waste the remaining water in the filter. The Filter to Waste valve position is adjusted by the examining the level of turbidity read from a sensor in the Filter to Waste pipe as the turbidity begins to fall the valve will slowly be closed until a turbidity level chosen by the Operator to be acceptable for normal filter operation to resume is reached, and the valve will be closed.

## 5. CLEAR WELL BUILDING

### 5.1. REFERENCES

The following documents are used as references for these Loop Descriptions:

- Clear Well Building Plans, Drawings I-230, I-231
- P&IDs 10 - 15, Drawings I-319, I-320, I-321, I-322, I-323, I-324
- Electrical Details 4-5, Drawings I403, I-404

### 5.2. PROCESS OVERVIEW

The Clear Well receives filtered water from the filter building. Final disinfection chemical is injected before entering the clear well where it remains in contact with the finished water before being pumped by the water lift pumps 1-4 to the Cabin Tank for distribution. The back wash pump is located in the clear well and it delivers finished water pressure for backwashing of the filters.

The water quality in the clear well is monitored for turbidity, residual chlorine, and pH.

### 5.3. PLC-700 OPERATION

CP-700 controls the disinfection chemical injection in the Clear Well Building and operates identically to CP-200 in the Raw Water Intake Station, with the exception that only a single flow meter is input for process control, see part 2 for more information.

#### 5.3.1. PLC DIGITAL INPUTS

The following table describes the digital (discrete) inputs to the PLC-700. The alarm priority levels shown must be confirmed by the Operator.

Table 16. CP-700 PLC Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
DC Power Fail	Alarm	Normal	X	X	X	1	X
SPD Fail Alarm	Normal	Alarm	X	X	X	3	X
HCL Pump 3 Running	Not Running	Running	X	X			X



Table 16. CP-700 PLC Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
HCL Pump 4 Running	Not Running	Running	X	X			X
HCL Pump 3 In Auto	Not Auto	Auto	X	X			
HCL Pump 4 In Auto	Not Auto	Auto	X	X			
HCL Pump 3 Fault	Normal	Alarm	X	X	X	1	X
HCL Pump 4 Fault	Normal	Alarm	X	X	X	1	X

### 5.3.2. PLC DIGITAL OUTPUTS

The following table describes the digital outputs from the PLC-700. The alarm priority levels shown must be confirmed by the Operator. Entries labeled (Message) are output on the plant network.

Table 17. CP-700 PLC Digital Output Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
General Alarm	Alarm	Normal	X	X	X	1	X
HCL Pump 2 Start	No Command	Command	X	X			X
HCL Pump 4 Start	No Command	Command	X	X			X
HCL 1 Flow Meter Fail (Message)	Alarm	Normal	X	X	X	1	X
HCL 2 Flow Meter Fail (Message)	Alarm	Normal	X	X	X	1	X

5.3.3. PLC ANALOG INPUTS

The following table describes the analog inputs to the PLC-700. The operation and alarm setpoints must be confirmed by the Operator. Observe the existing process and confirm all ranges through observation.

Table 18. CP-700 PLC Analog Input Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Filtered Water Flow Rate	0-4500	GPM					X	X	X
HCL 3 Flow Rate	0-XX	GPM					X	X	X
HCL 4 Flow Rate	0-XX	GPM					X	X	X
HCL 3 Speed Ref	0-100	%					X	X	X
HCL 4 Speed Ref	0-100	%					X	X	X

5.3.4. PLC ANALOG OUTPUTS

The following table describes the analog outputs from the PLC-700. The operation and alarm setpoints must be confirmed by the Operator.

Table 19. CP-700 PLC Analog Output Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
HCL 3 Speed	0-100	%					X	X	X
HCL 4 Speed	0-100	%					X	X	X

#### 5.4. CP-800 OPERATION

The PLC-800 controls the water lift pumps in the clear well, monitors site electric power, and monitors water quality in the clear well. The level signal from the Cabin Tank arrives from an existing remote telemetry unit located in the electrical room. The water lift pumps operate in a Lead-Lag-Lag1-Lag2 operation, and alternate positions on each start. Each pump is connected to a second contactor that will switch it to operate from a VFD. The lead pump is operated from the VFD with the pump speed proportional to the level in the clear well. If the water is at maximum level it will cause the VFD to operate at max speed, and slow down in proportion to the rate of level change in the clear well.

~~Currently, the backwash pump VFD speed command is generated by PLC-800. PLC-800 will communicate with PLC-600 on the process network to determine the speed settings of the backwash pump VFD.~~

PLC-800 is also connected to CP-100 in the Raw Water Intake Station by a master plant shutdown signal that will cause the influent valves to close and stop the process in the case of a water quality issue in the plant. Confirm all plant shut down conditions with the Operator.

PLC -800 will also be connected to the two hypochlorite generator PLCs in CP-910 and CP-920 by serial to ethernet converters. The signals shown are for monitoring only.

The valve ZS-FILT located directly upstream of the clear well is currently not functional but programming should be included to incorporate the valve signals and close on high post filter turbidity or other conditions dictated by the Operator.

##### 5.4.1. Flow Totalization, Equipment Statistics, and Trending

All flow rates shall accumulate and be available to view on the OIT and SCADA in one gallon increments for the effluent water leaving the plant. The total can be reset by the Operator with a passcode. Record the time, date, and Operator that performed the reset.

Equipment statistics for viewing on the OIT and SCADA include PLC uptime, number of starts and run hours for each pump, and AC power fails and circuit breaker trips.

Trend lines for analog values of all flows, analytic quantities, and generator statistics shall store and be available for viewing on the OIT and SCADA.

5.4.2. Alarms

Alarms and their corresponding priority level shall show on the OIT and SCADA. The following alarms shall only be cleared by acknowledging on the OIT by Operator with passcode:

- Water Lift Pumps 1-4 Fault (VFD or Starter)
- Turbidity High
- Chlorine High
- Chlorine Low
- pH High
- pH Low
- Disinfection System General Alarms
- Water Lift Pumps High Pressure
- Analytic Transducer Fail High OR Fail Low

All other alarms will automatically clear when the condition no longer exists. Alarms will log on the OIT and SCADA, along with the information pertaining to when, who, and how they were cleared.

The alarms from hypochlorite generators PLC-910 and PLC-920 are labeled with the simple names of Alarm 1 – Alarm 8. Configure actual alarm values and priority for each the hypochlorite alarms per operator direction.

5.4.3. PLC Digital Inputs

The following table describes the digital (discrete) inputs to the PLC-800. The alarm priority levels shown must be confirmed by the Operator.

Table 20. CP-800 PLC Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
DC Power Fail	Alarm	Normal	X	X	X	1	X
SPD Fail Alarm	Normal	Alarm	X	X	X	3	X
Pump 1 Running Line	Not Running	Running	X	X			X
Pump 1 Running VFD	Not Running	Running	X	X			X

Table 20. CP-800 PLC Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
Pump 1 In Auto	Not Auto	Auto	X	X			
Pump 1 Hi Pressure	Normal	Alarm	X	X	X	1	X
Pump 2 Running Line	Not Running	Running	X	X			X
Pump 2 Running VFD	Not Running	Running	X	X			X
Pump 2 In Auto	Not Auto	Auto	X	X			
Pump 2 Hi Pressure	Normal	Alarm	X	X	X	1	X
Pump 3 Running Line	Not Running	Running	X	X			X
Pump 3 Running VFD	Not Running	Running	X	X			X
Pump 3 In Auto	Not Auto	Auto	X	X			
Pump 3 Hi Pressure	Normal	Alarm	X	X	X	1	X
Pump 4 Running Line	Not Running	Running	X	X			X
Pump 4 Running VFD	Not Running	Running	X	X			X
Pump 4 In Auto	Not Auto	Auto	X	X			
Pump 4 Hi Pressure	Normal	Alarm	X	X	X	1	X
VFD Select Pump 1	No Command	Command	X	X			
VFD Select Pump 2	No Command	Command	X	X			
VFD Select Pump 3	No Command	Command	X	X			
VFD Select Pump 4	No Command	Command	X	X			
VFD Fault	Alarm	Normal	X	X	X	1	X
VFD Ready	No Command	Command	X	X			

Table 20. CP-800 PLC Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
BW Pump Running	Not Running	Running	X	X			X
Pump 5 In Auto	Not Auto	Auto	X	X			
Pump 5 Hi Pressure	Normal	Alarm	X	X	X	1	X
Circuit Breaker 1 Trip	Alarm	Normal	X	X	X	1	X
Circuit Breaker 2 Trip	Alarm	Normal	X	X	X	1	X
Circuit Breaker 3 Trip	Alarm	Normal	X	X	X	1	X
Circuit Breaker 4 Trip	Alarm	Normal	X	X	X	1	X
Circuit Breaker 5 Trip	Alarm	Normal	X	X	X	1	X
Circuit Breaker 6 Trip	Alarm	Normal	X	X	X	1	X
Generator Running	Not Running	Running	X	X		1	X
Generator Fail	Alarm	Normal	X	X	X	1	X
ATS Not in Normal	Alarm	Normal	X	X	X	1	X
Clear Well Hi	Alarm	Normal	X	X	X	1	X
Clear Well Lo	Alarm	Normal	X	X	X	1	X
Filter Alarm	Alarm	Normal	X	X	X	1	X
Conductivity Alarm	Alarm	Normal	X	X	X	1	X
Cabin Tank Lo	Normal	Alarm	X	X	X	1	X
pH Lo	Normal	Alarm	X	X	X	1	X
pH Hi	Normal	Alarm	X	X	X	1	X
Backwash Request	No Command	Command	X	X			

Table 20. CP-800 PLC Digital Input Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
(Message)							
Backwash In Progress (Message)	No Command	Command	X	X			
HCL Un it 1 Running	Not Running	Running	X	X			X
Tank 1 Enabled Lead	No Command	Command	X	X			
Alarm 1	Normal	Alarm	X	X	X	1	X
Alarm 2	Normal	Alarm	X	X	X	1	X
Alarm 3	Normal	Alarm	X	X	X	1	X
Alarm 4	Normal	Alarm	X	X	X	1	X
HCL Un it 2 Running	Not Running	Running	X	X			X
Tank 2 Enabled Lead	No Command	Command	X	X			
Alarm 5	Normal	Alarm	X	X	X	1	X
Alarm 6	Normal	Alarm	X	X	X	1	X
Alarm 7	Normal	Alarm	X	X	X	1	X
Alarm 8	Normal	Alarm	X	X	X	1	X
Valve Open ZSH-FILT	Not Open	Open	X	X			
Valve Close ZSL-FILT	Not Closed	Closed	X	X			
Valve in Auto ZSI-FILT	Not Auto	Auto	X	X			

#### 5.4.4. PLC Digital Outputs

The following table describes the digital outputs from the PLC-800. The alarm priority levels shown must be confirmed by the Operator. Entries labeled (Message) are output on the plant network.

Table 21. CP-800 PLC Digital Output Signals							
Description	State 0	State 1	LOI	SCADA	Alarm	Priority	Trend/Record
General Alarm	Alarm	Normal	X	X	X	1	X
Pump 1 Start	No Command	Command	X	X			X
Pump 2 Start	No Command	Command	X	X			X
Pump 3 Start	No Command	Command	X	X			X
Pump 4 Start	No Command	Command	X	X			X
BW Pump Start	No Command	Command	X	X			X
Open Valve ZSO-FILT	No Command	Command	X	X			X
Close Valve ZSC-FILT	No Command	Command	X	X			X

#### 5.4.5. PLC Analog Inputs

The following table describes the analog outputs from the PLC-800. The operation and alarm setpoints must be confirmed by the Operator.



**Table 22. CP-800 PLC Analog Input Signals**

Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Cabin Tank Level	0-40	Feet					X	X	X
Clear Well Level	0-12	Feet					X	X	X
Lift Pump Pressure	0-XX	PSI					X	X	X
Finish Water Flow Rate	0-XX	GPM					X	X	X
Chlorine Residual	0-XX	PPM					X	X	X
pH	0-XX	pH					X	X	X
Turbidity	0-2	NTU					X	X	X
Conductivity	0-100	mΩ/m					X	X	X
Water Temp	3-19	Deg C					X	X	X
HCL 1 Cell Flow Rate	0-XX	GPH					X	X	X
HCL 1 Run Hours	0-	Hours					X	X	X
Hypo Tank 1 Level	0-100	%					X	X	X
Hypo Tank 2 Level	0-100	%					X	X	X
HCL 2 Cell Flow Rate	0-XX	GPH					X	X	X
HCL 2 Run Hours	0-	Hours					X	X	X
Hypo Tank 1 Level	0-100	%					X	X	X

Hypo Tank 2 Level	0-100	%					X	X	X
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5.4.6. PLC Analog Outputs

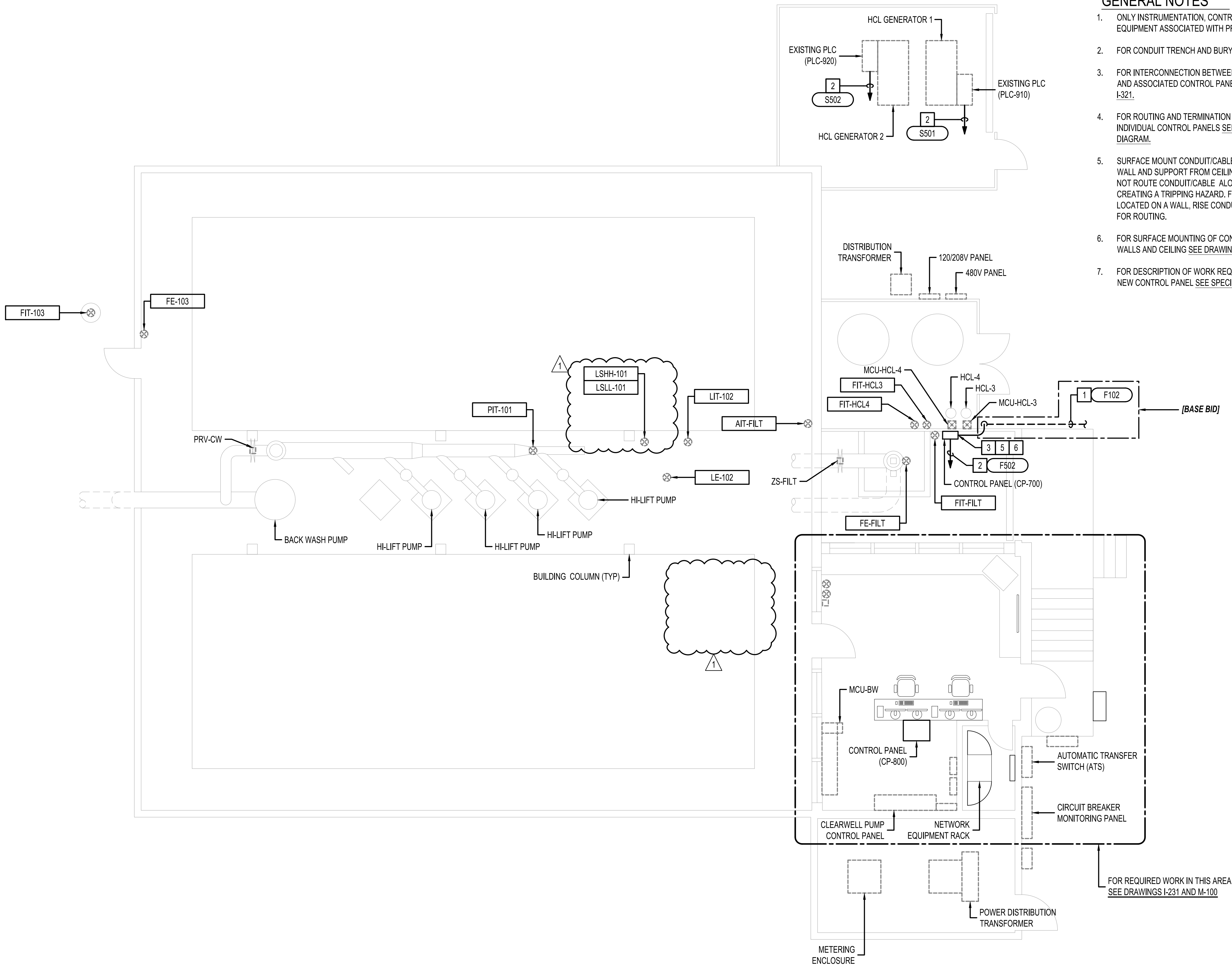
The following table describes the analog outputs from the PLC-800. The operation and alarm setpoints must be confirmed by the Operator.

Table 23. CP-800 PLC Analog Output Signals									
Description	Range	Units	Alarm Setpoints				LOI	SCADA	Trend /Record
			Lo-Lo	Lo	Hi	Hi-Hi			
Lift Pump VFD Speed	0-100	%					X	X	
BW Pump VFD Speed	0-100	%					X	X	

End of Section





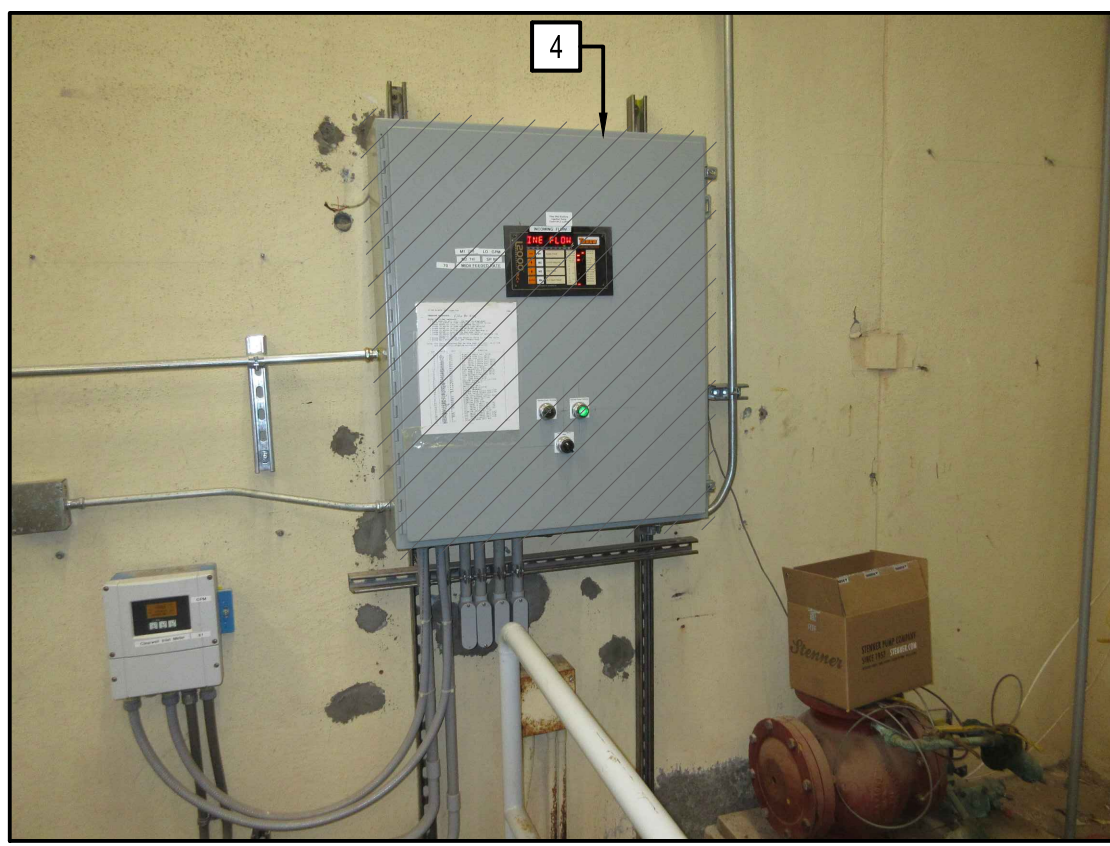
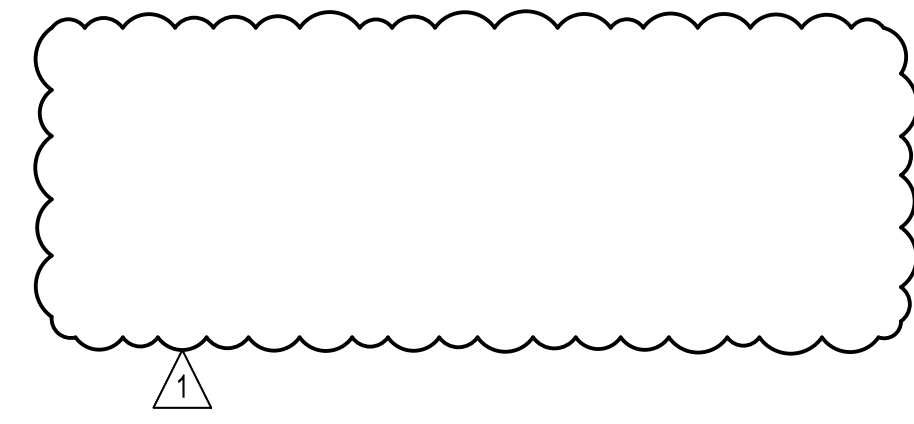


**GENERAL NOTES**

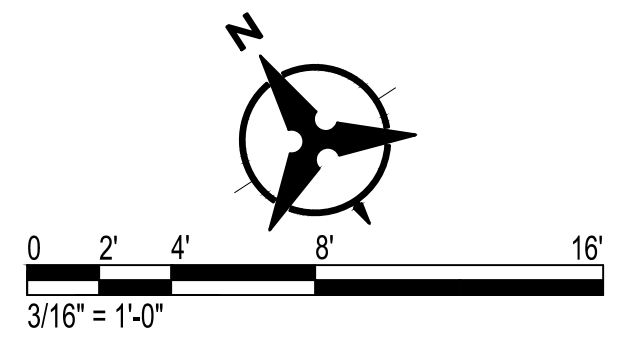
- ONLY INSTRUMENTATION, CONTROLS AND ELECTRICAL EQUIPMENT ASSOCIATED WITH PROJECT HAVE BEEN SHOWN.
- FOR CONDUIT TRENCH AND BURY SEE DRAWING I-401, DETAIL 1.
- FOR INTERCONNECTION BETWEEN INSTRUMENTS/EQUIPMENT AND ASSOCIATED CONTROL PANEL, SEE DRAWINGS I-319 AND I-321.
- FOR ROUTING AND TERMINATION REQUIREMENTS WITHIN INDIVIDUAL CONTROL PANELS SEE DRAWING G-106, NETWORK DIAGRAM.
- SURFACE MOUNT CONDUIT/CABLE WITHIN STATION ALONG WALL AND SUPPORT FROM CEILING WHERE APPLICABLE. DO NOT ROUTE CONDUIT/CABLE ALONG FLOOR TO AVOID CREATING A TRIPPING HAZARD. FOR EQUIPMENT THAT IS NOT LOCATED ON A WALL, RISE CONDUIT VERTICALLY TO CEILING FOR ROUTING.
- FOR SURFACE MOUNTING OF CONDUIT TO CONCRETE/CMU WALLS AND CEILING SEE DRAWING I-402, DETAIL 2.
- FOR DESCRIPTION OF WORK REQUIRED AT EACH EXISTING AND NEW CONTROL PANEL SEE SPECIFICATION SECTION 409513.

**KEYED NOTES**

- CONDUIT/FIBER OPTIC CABLE TO CONTROL PANEL (CP-600) IN FILTER BUILDING. FOR CONTINUATION SEE DRAWING I-100, SITE PLAN. FOR EXTERIOR WALL PENETRATION SEE DRAWING I-401, DETAIL 2.
- CONDUIT/FIBER OPTIC CABLE TO CONTROL PANEL (CP-800).
- REMOVE AND REPLACE EXISTING HCL CONTROL PANEL. MOUNT PANEL ON VERTICAL FRAMING CHANNEL SPANNING FROM FLOOR TO CONCRETE BEAM ABOVE. RE-TERMINATE CONDUIT/CONDUCTOR AS REQUIRED AFTER INSTALLATION. FOR ELEVATION SEE DRAWING I-403, DETAIL 1. FOR PANEL REMOVAL SEE THIS DRAWING, PHOTO 2.
- TAG ALL CONDUIT/CONDUCTOR TERMINATED IN HCL CONTROL PANEL FOR REMOVAL AND REPLACEMENT OF PANEL.
- EXTEND EXISTING CONDUIT/CONDUCTOR CURRENTLY FEEDING EXISTING PANEL AND RE-TERMINATE AS REQUIRED AFTER INSTALLATION OF NEW PANEL.
- ADD/REPLACE INSTRUMENT WIRE TAGS ON EXISTING CONDUCTORS ON EACH END OF CONDUCTORS REPRESENTING NEW EQUIPMENT NAMING CONVENTION AND ACTUAL TERMINATION POINTS. FIELD VERIFY CONDUCTOR TERMINATIONS AS REQUIRED.



**2 HCL CONTROL PANEL**  
SCALE: NOT TO SCALE



**1 CLEARWELL BUILDING PLAN**  
SCALE: 3/16"=1'-0"

**ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN BID ALTERNATE 2 UNLESS INDICATED OTHERWISE**

NOTICE OF EXTENDED PAYMENT PROVISION: THIS CONTRACT ALLOWS THE OWNERS TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT

**BENCH MARKS**

SURVEY NOT COMPLETED

**ENGINEER'S SEAL**



**AS-BUILT INFORMATION**

CONTRACTOR

DATE

WORK STAMPED BY

DATE

INSPECTORS ACCEPTANCE BY

DATE

FIELD VERIFICATION BY

DATE

DRAWINGS CORRECTED BY

DATE

**REVISIONS**

BY

DATE

NO.

DATE

DESCRIPTION

1

04/05/23

ADDENDUM 1: REVISED LEVEL SWITCH FLOATS FROM NEW TO EXISTING

**DESIGN**

DESIGNED BY

ETf

CHECKED BY

MRT

DRAWN BY

PDS



**CITY OF LAS VEGAS**  
**LAS VEGAS WATER TREATMENT PLANT - SCADA INTEGRATION**  
**CLEAR WELL PLAN**

BHI PROJECT NO. 20210452 DWG NO. I-230-R1 SHEET 14 OF 41





