

Bidding Requirements, Contract Forms and Conditions of the Contract  
**ADDENDUM**  
Section 00900

ADDENDUM No.   1  

Date October 28, 2014,

City of Austin

Project Name Chilled Water Piping Construction on Customers Distribution Sites

C.I.P. No. 7190.006

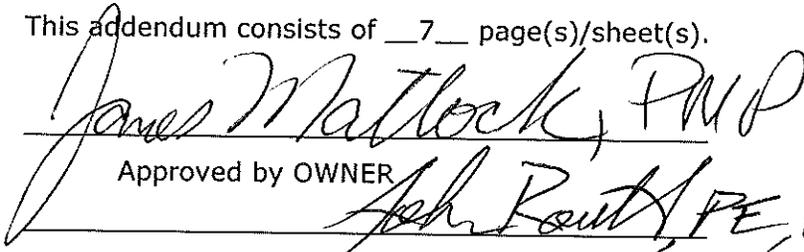
This Addendum forms a part of Contract and clarifies, corrects or modifies original Bid Documents, dated 10/27/14. Acknowledge receipt of this addendum in space provided on bid form. Failure to do so may subject bidder to disqualification.

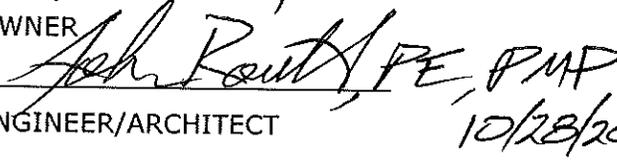
A. Project Manual Revisions:

1. Section IDIQ 00020\_08/20/14 - Pre Bid time has been changed to 2:00 p.m. on November 13, 2014 at 721 Barton Springs, Suite 130, Austin, Texas 78701
2. Delete SS232500 in its entirety and replace with SS232500 attached

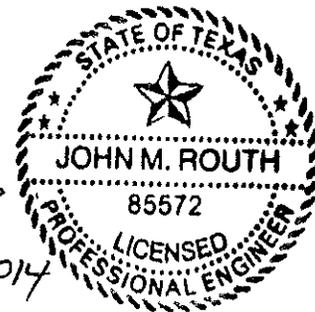
B. Drawing Revisions: None.

This addendum consists of   7   page(s)/sheet(s).

  
Approved by OWNER

  
Approved by ENGINEER/ARCHITECT

10/28/2014



END



**CHILLED WATER FLUSH & CHEMICAL TREATMENT  
SECTION SS 232500**

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**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section governs water and chemical circulation for Pre-Operational Cleaning and Flushing activities for chilled water system piping. The design, installation, and operation of a pump circulation system for purposes of flushing and passivation of chilled water lines prior to service shall be the sole responsibility of the contractor.
- B. The contractor shall contract with the Owner's preferred Chemical Treatment Vendor for all items associated with the Chemical Treatment Vendor's scope of work. The contractor shall coordinate circulation pump size and connection details, chemical pump size and connection details, administration of chemicals, testing locations and ports, sample acquisition, and recommendation of water discharge with the Owner's preferred Chemical Treatment Vendor.
- C. The contractor shall demonstrate or employ the services of a vendor who can demonstrate to the Engineer that he specializes in the design and operation of temporary pumping systems. The Contractor or vendor shall provide a minimum of five (5) references of projects of a similar size and complexity as this project performed by his firm within the past three years.

**1.2 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.3 SUBMITTALS**

- A. Pumping flushing plan including: pump staging location, water source location, water discharge location, pump size and pump sizing calculations, pump capacity, and number of pumps to be on-site.
- B. Pumps shall have cleaning certificate along with serial numbers marked on the pump. Hoses shall be in a bagged, wrapped and sealed package with cleaning certificate. Pumps and hoses must be cleaned of all residues from previous jobs. Owner reserves the right to have all pumps and hoses swabbed for determining their cleanliness.
- C. Calculations of friction losses, discharge, and flow velocity, pump curves, and method of sampling discharge velocity in pumps and/or main piping.
- D. Number, size, material, and connection method of all suction and discharge piping, and suction and discharge manifolds.
- E. Containment plan for isolating circulation system from unauthorized discharges to

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storm sewer.

- F. Capture plan for capturing accidental discharges of flushing water.
- G. Disposal plan for water used in flushing.
- H. Detailed schedule for installation of circulation system.
- I. A schematic drawing or sketch of the piping and the pump connections that will be cleaned, flushed and treated.

**PART 2 - PRODUCTS**

**2.1 EQUIPMENT REQUIREMENTS**

- A. Engine driven equipment or devices shall be sound attenuated to operate below 70db or current city ordinance db level whichever is lower.
- B. All pumps, piping, hoses, valves, manifolds, connections, and miscellaneous appurtenances in contact with circulation water shall be certified clean by steam cleaning methods prior to mobilization of equipment to the site. Equipment cleaned by methods other than steam will not be accepted.
- C. All pumps, piping, hoses, valves, manifolds, connections, and miscellaneous appurtenances shall be 100% leak proof. Adequate equipment and materials for capturing spills or releases of any kind shall be on hand and available for immediate use. The use of non-leaking secondary containment for pumps and hose connections shall be used.

**2.2 CHEMICAL REQUIREMENTS**

- A. Utilize Owner's preferred Chemical Treatment Vendor:  
  
    NALCO  
    John Davis  
    (512) 818-7234

**PART 3 - EXECUTION**

**3.1 GENERAL REQUIREMENTS**

- A. Contractor shall schedule and attend an on-site meeting with Owner, Contractor's pump vendor, Owner's preferred Chemical Treatment Vendor, and Owner's engineer to coordinate logistics, piping connections, pump and hose placement, etc.
- B. Inspection of pumps and hoses delivered shall be approved by Owner's appointed Inspector before pumps and hoses are connected and placed into service. If

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pump(s) and/or hose(s) fail inspection and/or flow rate physical measurement, all project delay costs resulting from these failure(s) shall be assessed to the Contractor.

- C. Staging and testing of pumps and hoses shall be completed 24-hours prior to start of cleaning and passivation. Circulation system shall be pressure tested prior to operation to ensure leak-proof construction.
- D. Contractor shall provide on-site 24-hour pump watch for the entirety of the flushing operation.
- E. Pump watch may be required to obtain water sample every 4-6 hours in lieu of Owner's preferred Chemical Treatment Vendor. Pump watch shall store samples taken on-site for testing by Owner's preferred Chemical Treatment Vendor.

### 3.2 SYSTEM DESIGN REQUIREMENTS

- A. System shall be capable of circulating water in the largest pipe at a minimum flow rate of 5 feet per second. The design shall include a method of measuring velocity in the system that can be directly related to the velocity in the main piping.
- B. System shall include a chemical pump and connection point for injection of chemicals by the Owner's preferred Chemical Treatment Vendor. Sizing of the chemical pump and injection point shall be coordinated with the Chemical Treatment Vendor.
- C. System shall be 100% leak-proof and shall be hydrostatically tested prior to operation at 1.5 times the system operating pressure. Contractor shall flush hoses prior to connection to chilled water piping system.
- D. System shall feature a containment system to isolate pumps, pipes, hoses, equipment, etc. in the event of an unplanned discharge of circulation water.

### 3.3 SERVICES PERFORMED BY CHEMICAL TREATMENT VENDOR

- A. Chemical treatment will be provided by the Owner's preferred Chemical Treatment Vendor. The Chemical Treatment Vendor will provide the following:
  - 1. Submittals for chemicals and calculation for quantity of chemicals to be used.
  - 2. Chemicals and injection of chemicals after initial flushing and re-filling of pipe by Contractor.
  - 3. Personnel to take samples of water during normal working hours. Contractor is responsible for taking sample every 4-6 hours outside of normal working hours. Sampling bottles are to be provided by Owner (Austin Energy Lab Services).
  - 4. Tests of the water in sample bottles shall be performed at least twice a day. These field test results shall be sent to the Owner's designated

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representative.

5. Once the Iron levels have stabilized, the water sample shall be sent to an approved testing laboratory. The laboratory shall provide water testing reports.
6. A recommendation to Austin Energy as to when water used in the flushing operation is safe to discharge to the sanitary sewer.
7. Addition of post-cleaning and final operational chemicals.
8. Written documentation of all cleaning and flushing procedures and results.

**3.4 SERVICES PERFORMED BY CONTRACTOR**

A. Contractor will provide the following:

1. Coordination with Chemical Treatment Vendor.
2. Install piping and valves per contract drawings and specifications in such a manner as to facilitate installation of chemicals by the Chemical Treatment Vendor. Install, delay installation of, or temporarily remove, flanges, valves, fittings, etc. as required to facilitate cleaning and flushing connections and activities.
3. Deployment of equipment or material as needed to contain spills or releases of any kind.
4. A piped source of city water, at local city water pressure, with shutoff valve, meter, and certified backflow preventer in location to allow filling of piping system by contractor.
5. Filling of piping system with water. Circulation of water through pipe for 2-4 hours or longer as needed until water flows clear to remove dirt, sand, silt, gravel, welding slag, construction debris, etc. Flow rate shall be sufficient to suspend any settled debris to discharge.
6. Discharge of initial circulation water directly to the sanitary sewer at a rate not to exceed that specified by the Owner. No testing is required for discharging of water used in the initial flushing of the facilities.
7. Re-fill pipe with water and coordinate with Chemical Treatment Vendor for injection of initial cleaning chemicals.
8. Circulate water for a minimum of 48-hours. Following the 48-hour circulation period and confirmation from Chemical Treatment Vendor that water is safe to discharge, discharge water to sanitary sewer at a rate not to exceed that specified by the Owner.
9. Before discharge of water to sanitary sewer, Owner shall determine if submitted disposal plan is sufficient for current conditions. If current

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conditions require an alternative disposal plan, Owner shall determine best method for disposal and Contractor shall implement Owner's altered disposal plan.

10. Immediately following discharge of cleaning water, fill pipe with water and circulate water for 1-hour. Following 1-hour of circulation, discharge the water to the sanitary sewer. Flow rate shall be sufficient to suspend any settled debris to discharge.
11. Re-fill system with water and circulate for an additional 1-hour. Following 1-hour of circulation, discharge water to the sanitary sewer.
12. Re-fill system with water and coordinate with Chemical Treatment Vendor for injection of final operational chemicals.
13. No pumps or hoses shall be removed without the consent of Owner's preferred Chemical Treatment Vendor or Owner's designated representative.
14. Re-install flanges, valves, piping, etc. that were removed for flushing operation to the final condition as specified in the drawings and specifications.

**3.5 PARAMETERS OF DISCHARGED WATER**

- A. Discharge of flushing water to the City's sanitary system is subject to the prohibitions described in Chapter 15-10 of the Austin City Code.
- B. Owner's preferred treatment vendor shall be required to acquire an Austin Water Utility (AWU) permit and shall provide the Owner with a valid permit number to Owner's designated representative.
- C. Discharges must be approved by the Special Services Division prior to any and all discharges related to the flushing operation. The following parameters are required to be analyzed on all samples collected from the activities described herein:

<b>PARAMETER</b>	<b>LIMIT</b>
pH	6.0 - 11.5 std. units
Copper	1.1 mg/L
Lead	0.4 mg/L
Manganese	6.1 mg/L
Zinc	2.3 mg/L

**3.6 PAYMENT**

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A. Chilled water chemical treatment

1. Services included herein will be paid for at the unit bid price for each cleaning, flushing and chemical treatment. Payment shall include compensation for design, installation, maintenance, and operation of the circulation system, as well as all materials, equipment, labor, power, fuel, supervision, maintenance, and coordination with Owner's preferred Chemical Treatment Vendor, etc., for a full and working final installation as per the Intent of the drawings and specifications.

B. Payment, when included as a Contract pay Item, will be under the following:

<b>Pay Item No. SS232500-CHEM:</b>	<b>Chemical Treatment of Pipe</b>	<b>Each</b>
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**End**