Scope of Work

ACH – Aluminum Chlorohydrate

W1 – Potable Water

W2 – NO. 2 (NON-POTABLE) WATER

PD – Process Drain

TW – Potable Tepid Water

WHA – Water Hammer Arrestor

HW – Potable Hot Water

GENERAL NOTES

1. Materials Already Procured by Owner
	1. The following materials have been purchased by the Owner and delivered to the Project Site for incorporation in the Work. Contractor shall inspect all materials prior to their installation to ensure their completeness and undamaged condition. Contractor shall immediately notify Owner in writing if incomplete or damaged materials are discovered during material inventory and inspection.
		1. 13 34 23 – Fabricated Structures
			1. Prefabricated FRP Building
				1. Doors
				2. Louvers
				3. Insulation
				4. Ventilation Fan
				5. Unit Heater
				6. Lights
				7. Receptacles
				8. Roof Accessories
				9. Dry Chemical Fire Extinguisher
		2. 22 10 01 – Plumbing Piping and Accessories
			1. Piping
				1. Refer to Section 40 27 00 – Process Piping
			2. Hose Valves and Hydrants
				1. HV-1 – Hose Valve
				2. YH-1 – Sanitary Yard Hydrant
			3. Pipe Hangers and Supports
				1. Refer to Section 40 05 15 – Piping Support Systems
		3. 22 30 00 – Plumbing Equipment
			1. 30-EWH-1 – Electric Water Heater
		4. 22 40 00 – Plumbing Fixtures
			1. SSH-1 – Safety Shower/Eyewash Combination
		5. 26 05 01 – Electrical
			1. Outlet and Device Boxes
			2. Junction and Pull Boxes
			3. Wiring Devices
			4. TX-2 – Dry Type Power Transformers (robots in disguise)
			5. Conduits and Fittings
			6. Grounding
		6. 32 31 13 – Chain Link Fences and Gates
		7. 40 05 15 – Piping Support Systems
			1. FRP Channel Type Supports
		8. 40 27 00 – Process Piping
			1. Schedule 80 PVC Pipe
			2. Schedule 80 CPVC Pipe
		9. 43 40 01 – Polyethylene Storage Tank
			1. ACH Storage Tank 210T – Polyethylene Storage Tank and Accessories
				1. Manway – 24-inch HDPE manway
				2. Fill Line – 2-inch PVC fill line, flange style PVC universal ball dome fitting, EPDM gaskets, Hastelloy C-276 pipe supports
				3. Vent – 2-inch PVC bulkhead fitting and PVC threaded flange adapter
				4. Level Instrument (210 LE/LIT) – Flowline EchoTouch US06 Series Ultrasonic Liquid Level Sensor, 2-inch PVC bulkhead fitting, PVC threaded flange adapter
				5. Pump Feed (Out) – 2-inch B.O.S.S. (Bolted One-Piece Sure Seal) Fitting, PVC siphon leg, Bellows Transition Fitting, PVC threaded flange adapter
				6. Overflow – 3-inch PVC fill line, PVC bulkhead fitting, PVC threaded flange adapter, Hastelloy C-276 pipe supports
				7. Level Instrument (210 LS) – Leak detection sensor, leak detection transmitter, stand (for leak detection transmitter), and 2-inch bulkhead fitting.
				8. Tank Heat Trace – SPX tank heating system
				9. Tank Insulation – 2-inch thick polyfoam insulation with mastic coating
				10. Containment Drain – 2-inch bulkhead fitting
				11. Tank Support and Restraints – stainless-steel L6 x 4 x 3/8 with 5 x 3 x 3/8 stiffener plate and 5/8-inich diameter galvanized steel cables
		10. 40 27 01 – Process Piping Specialties
			1. Chemical Injector System
			2. Process Valves and Operators
				1. Type V330 PVC Ball Valve
		11. 40 90 01 – Instrumentation and Control for Process Systems
			1. 210RTU – Remote Telemetry Unit
			2. 210FP – ACH Fill Panel
			3. PLC/RIO
				1. PLC Processor
				2. I/O Chassis
				3. Power Supply Cabling
				4. I/O Modules
				5. Communication Modules
				6. Specialty Software
				7. Programming Software
		12. 44 44 13.01 – Chemical Metering Pumps
			1. 211FP – ACH Feed Pump
			2. Accessories
				1. Polypropylene Skid

CP 211FP – Pump Skid Control Panel

1/2-inch PVC piping

PVC Ball Valves

PVC Y-Strainer

Pressure Relief Valve

Backpressure Valve

Pressure Gauge / High Pressure Switch / Pressure Diaphragm Element Assembly

Calibration Column

Anchor Bolts

1. Materials to be Procured by Contractor
	1. The following materials remain to be purchased for incorporation in the Work and shall be purchased by the Contractor.
		1. 10 14 00 – Signage
			1. Type C – Fiberglass Sign
			2. Type H – Hazardous Material Sign
		2. 22 07 00 – Plumbing Piping Insulation
			1. Pipe Insulation
				1. Type P3 – Elastomeric
			2. Insulation Finish System
				1. Type F1 – PVC Jacketing
				2. Type F3 – Aluminum Jacketing
		3. 22 10 01 – Plumbing Piping and Accessories
			1. Piping
				1. Refer to Section 40 27 00 – Process Piping
			2. Valves
				1. Ball Valves
				2. 30-TMV-1 – Thermostatic Mixing Valve Assembly
			3. Miscellaneous Piping Specialties
				1. Strainers for Water Service
				2. Vacuum Breakers
				3. 30-WHA-1 – Water Hammer Arresters
				4. Water Hose
				5. Insulating Dielectic Unions and Flanges
				6. Pipe Joint Sealer
				7. Rubber Gaskets
		4. 22 30 00 – Plumbing Equipment
			1. 30-ET-1 – Domestic Water Expansion Tank
			2. 30-RPBP-1 and 30-RPBP-2 – Backflow Preventers
		5. 26 05 01 – Electrical
			1. LP-2 – Lighting and Distribution Panelboard
				1. Cabinet
				2. Bus Bar
				3. Circuit Breakers
				4. Surge Arresters
			2. Nonfused Switch, Individual, 0 to 600 Volts
			3. Support and Framing Channels
			4. Nameplates
			5. Metal Wireways
			6. Conductors and Cables
		6. 32 11 23 – Aggregate Base Courses
			1. Gravel Surfacing
		7. 40 05 15 – Piping Support Systems
			1. FRP Channel Type Support Post Bases
			2. Pipe Clamps
			3. Anchors
			4. Fasteners
			5. Appurtenances
		8. 40 05 33 – Pipe Heat Tracing
			1. Electrical Heating Tape
			2. Connection System
				1. Power connection kit
				2. Splice Kit
				3. Tee Kit
				4. End Seal Kit
				5. Lighted End Seal Kit
			3. Securing Tape
			4. Pipe Mounted Thermostat
			5. Ambient Thermostat
		9. 40 27 00 – Process Piping
			1. Schedule 80 PVC Double Wall Containment Pipe
			2. Polyethylene Tubing
		10. 40 27 02 – Process Valves and Operators
			1. Type V332 Double Contained PVC Ball Valve
		11. 40 42 13 – Process Piping Insulation
			1. Pipe Insulation
				1. Type 2 – Fiberglass
				2. Type 3 – Foamglass
			2. Insulation Finish System
				1. Type F1 – PVC
				2. Type F4 – Foamglass
	2. Submittals: Contractor shall direct submittals to Engineer in electronic format prior to purchasing or ordering materials to be procured by Contractor. Materials procured by Owner do not require the transmittal of submittals by Contractor to Engineer. Engineer will provide available submittal data for materials procured by Owner to Contractor for coordination purposes; additional information required for the complete installation of materials procured by Owner and to be installed by Contractor shall be the responsibility of Contractor to procure.
		1. Package submittal information by individual Specification section. Do not combine different Specification sections in submittal package.
		2. Provide submittals in a clear and thorough manner and in sufficient detail to show kind, size, arrangement, and function of components, materials, and devices, and compliance with Contract Documents.
		3. Engineer will act upon Contractor’s submittal and transmit response to Contractor not later than 7 days after receipt.
2. Construction Progress Schedule
	1. Contractor shall provide a Progress Schedule indicating the times for starting and completing the various stages of the Scope of Work defined herein.
		1. It is agreed and understood the Progress Schedule for the Scope of Work defined herein shall be independent of the ongoing Work at W.J. Hooper WPP and Terry R. Hicks HHUV WPP. Contractor will not be assessed liquidated damages in the event the Scope of Work defined herein is completed after the Contract Times expire, provided the Work at W.J. Hooper WPP and Terry R. Hicks HHUV WPP is satisfactorily completed in accordance with the Contract at said time.
3. Payments to Contractor
	1. Contractor shall be paid a lump sum for completion of the Work defined herein upon satisfactory installation, testing, start-up, and Owner acceptance of all the elements defined herein.
4. Process Integration and Controls System (PICS) Vendor
	1. MR Systems is performing all PICS-related components of the Work under an existing annual contract with Owner. Contractor shall coordinate and schedule all PICS-related activities with MR Systems.

DRAWING 05-C-201 – OVERALL CIVIL SITE PLAN (Sheet 11 of 26)

1. PROCESS PIPING – YARD
	* ACH (PE)
		+ Furnish and install 1/2-inch polyethylene tubing with a minimum wall thickness of 1/16-inch and a minimum working pressure of 90-psi at 73-degrees F. Furnish and install complete with fittings made of PVC, CPVC, PTFE, PE, Hastelloy-C276, or HDPE with a pressure rating to meet or exceed that of the tubing.
			- Owner’s personnel have installed and backfilled the 3-inch PVC containment piping between the slab penetration at the prefabricated FRP building and the Injection Vault. Contractor shall route the 1/2-inch ACH polyethylene tubing (duty and spare) through the 3-inch PVC containment piping as shown on the Drawings.
2. FINISH GRADING
	* Owner’s personnel have prepared the subgrade and placed/compacted gravel surfacing.
	* Contractor shall place a 4-inch layer of Graded Aggregate Base (GAB) as specified for Group I Aggregates in Section 815 of the Standard Specifications.
		+ Grade to establish and maintain slopes and drainage as shown on the Drawings.
		+ Blade lightly and roll surface until material is thoroughly compacted. Apply water as needed to ensure proper compaction.
		+ Slope fill away from Chemical Facility, manhole structures, and chemical vaults.

DRAWING 05-E-201 – OVERALL ELECTRICAL SITE PLAN (Sheet 12 of 26)

DRAWING 06-E-001 – CHEMICAL FEED SYSTEM ONE-LINE DIAGRAM AND PANEL SCHEDULES (Sheet 13 of 26)

DRAWING 20-D-201 – EXISTING SPLITTER BOX PLAN AND SECTION (Sheet 15 of 26)

1. RETRACTABLE CHEMICAL INJECTOR (DETAIL 4027-957)
	* Owner has acquired a retractable injection quill, tapping saddle, and HDPE flexible tubing. Further, Owner has contracted the tapping of the 54-inch DIP and installation of the tapping saddle and retractable injection quill to occur under a separate contract outside of this Scope of Work.
	* Contractor shall provide the labor to support the installation of all items upstream of the retractable injection quill, including but not limited to:
		+ MPT hose barbs
		+ 1/2-inch HDPE flexible tubing
		+ Stainless steel hose clamps
		+ Hose assembly isolation valve (Type V330 PVC ball valve)
	* Contractor shall provide all materials, labor, equipment, and appurtenances required for the coatings application as shown on the Drawings.
		+ Contractor shall apply Tnemec Series FC22 along all DIP surfaces exposed or otherwise impacted during tapping of the 54-DIP. All interior DIP surfaces within a 3-inch radius, or larger if necessary, of the tapping location shall receive Tnemec Series FC22.
		+ Application of the specified product requires a confined space entry into the existing Splitter Box at the Huie Wetlands facility to access the 54-inch DIP TE line where specified product is to be applied. Contractor shall coordinate the necessary shutdown with the Owner in such a fashion as to minimize disruption to Owner’s operations.
2. MICRO-MESH FRP MOLDED GRATING
	* Owner has contracted for the procurement and installation of the micro-mesh FRP molded grating, including all necessary equipment and competent personnel required for a confined space entry, outside of this Scope of Work.
		+ Contractor shall coordinate with Hall Construction to ensure Work required for items 1 and 2 under the heading “DRAWING 20-D-201 – EXISTING SPLITTER BOX PLAN AND SECTION (Sheet 15 of 26)” are completed in a single shut down of the Splitter Box, if the shut down time allotted by Owner permits, and in the proper sequence.
			- Hall Construction
				* Mark Hall
				* 770-616-7531
				* Hallconst1@gmail.com

DRAWING 30-D-201 – PROCESS MECHANICAL – CHEMICAL FEED SYSTEM PLAN (Sheet 16 of 26)

1. FILL STATION (DETAIL 4444-100)
	* Owner has acquired a stainless-steel fill station that Contractor shall procure from Owner install.
	* Contractor shall provide the following to complete the installation:
		+ Coordination with Owner to procure the fill station.
		+ Furnish and install 2- 1/2-inch adhesive anchors required to mount the fill station to the concrete SOG.
		+ Furnish and install 1/2-inch anchors required to mount the fill station to its support structure.
		+ Furnish and install components inside the fill station enclosure, including but not limited to:
			- Slip-on flanges
			- 2-inch Type V330 PVC ball valve
			- 2-inch quick connect coupling
			- 1-inch PVC tubing, 1-inch nipple, hose clamp, and 5-gallon bucket with lid
2. PROCESS PIPING – EXTERIOR EXPOSURE
	* ACH
		+ Contractor shall coordinate with Owner to procure 2-inch ACH piping, fittings, solvent cement, thread lubricant, gaskets, flanges, and all other appurtenances required for a complete installation.
		+ Contractor shall provide the following labor to complete the installation:
			- The HDPE tank is provided with an external 2-inch PVC fill line which connects to the fill nozzle on the dome of the tank and extends to 4-feet above the base of the tank. Flange style universal ball dome fittings, gaskets, and hardware are provided to facilitate connection of the pipe to the tank. Stabilizer brackets to support fill line piping are also provided with the HDPE tank. Listed materials have been delivered to the Project Sight by Owner.
				* Contractor shall install the fill line, universal ball dome fittings, gaskets, hardware, and stabilizer brackets provided with the HDPE tank.
			- Furnish and install 2-inch strainer.
	* ACH (DWC)
		+ Furnish and install 2-inch ACH (double wall containment) piping, guides, flanges, bolts, gaskets, solvent cement, and all other appurtenances required for a complete installation.
			- The HDPE tank is provided with a B.O.S.S. Fitting (Bolted One-Piece Sure Seal) Assembly and an Enhanced Bellows Transition Fitting which connect to the pump feed nozzle at the base of the tank. Listed materials have been delivered to the Project Sight by Owner.
				* Contractor shall install the B.O.S.S. Fitting Assembly and Enhanced Bellows Transition Fitting provided with the HDPE tank.
		+ Furnish and install 2-inch Type V332 double contained PVC ball valve.
		+ Furnish and install 2-inch quick connect.
	* OF
		+ Contractor shall coordinate with Owner to procure 3-inch OF piping, fittings, solvent cement, thread lubricant, gaskets, flanges, and all other appurtenances required for a complete installation.
		+ Contractor shall provide the following labor to complete the installation:
			- The HDPE tank is provided is provided with an external 3-inch PVC overflow line which connects to the overflow nozzle on the sidewall of the tank and extends to 6-inches above the base of the tank. Bulkhead fittings, flange adapters, gaskets, and hardware are provided to facilitate connection of the pipe to the tank. Stabilizer brackets to support fill line piping are also provided with the HDPE tank. Listed materials have been delivered to the Project Sight by Owner.
				* Contractor shall install the overflow line, flange fittings, flange adapters, gaskets, hardware, and stabilizer brackets provided with the HDPE tank.
	* PD
		+ Contractor shall coordinate with Owner to procure 2-inch PD piping, 2-inch Type V330 ball valve, 2-inch quick disconnect, fittings, solvent cement, thread lubricant, gaskets, flanges, and all other appurtenances required for a complete installation.
		+ Contractor shall provide the following labor to complete the installation:
			- The HDPE tank is provided with bulkhead fittings to facilitate connection of the pipe to the tank. Listed materials have been delivered to the Project Sight by Owner.
				* Contractor shall install the bulkhead fittings provided with the tank.
	* Pipe Supports
		+ Install FRP channel pipe support systems.
			- Owner has procured and delivered FRP channel pipe support posts to the Project Site.
			- Contractor shall furnish post bases, pipe clamps, anchors, fasteners, and all other appurtenances required to provide a complete pipe support system.
		+ Contractor shall install a complete pipe support system in accordance with the spacing and anchoring requirements of the manufacturer’s published data.
3. PROCESS PIPING – INTERIOR EXPOSURE
	* ACH (DWC)
		+ Furnish and install 2-inch ACH (double wall containment) piping, guides, flanges, bolts, gaskets, solvent cement, and all other appurtenances required for a complete installation.
			- Contractor shall route piping system from exterior to interior conditions in a continuous fashion through the prefabricated FRP enclosure walls as shown on the Drawings.
				* Contractor shall penetrate the prefabricated FRP enclosure by providing a core through the enclosure walls equivalent to the outside diameter of the double-walled containment piping plus 1/2-inches.

Contractor shall employ means and methods in coring operations that do not damage or degrade FRP or foam core components of the enclosure’s interior or exterior walls.

* + ACH (PVC)
		- Contractor shall coordinate with Owner to procure 1/2-inch piping, guides, flanges, bolts, gaskets, solvent cement, and all other appurtenances required for a complete installation.
		- Contractor shall provide the following labor to complete the installation:
			* Install 1/2-inch piping, guides, flanges, bolts, gaskets, solvent cement, and all other appurtenances required for a complete installation.
			* Contractor shall provide a sealed termination of double-walled containment piping system and continue interior piping system to connect to chemical metering pump skid piping suction connection.
			* Contractor shall continue discharge piping system from the discharge connection provided on the chemical metering pump skid.
			* All piping provided with the chemical metering pumps as part of the skid assembly shall remain unaltered by the Contractor.
			* Furnish and install 1/2-inch Type V330 ball valves upstream and downstream of the suction and discharge connections, respectively, provided on the chemical metering pump skids.
	+ ACH (PE)
		- Furnish and install 1/2-inch polyethylene tubing with a minimum wall thickness of 1/16-inch and a minimum working pressure of 90-psi at 73-degrees F. Furnish and install complete with fittings made of PVC, CPVC, PTFE, PE, Hastelloy-C276, or HDPE with a pressure rating to meet or exceed that of the tubing.
	+ Pipe Supports
		- Install FRP channel pipe support systems.
			* Owner has procured and delivered FRP channel pipe support posts to the Project Site.
			* Contractor shall furnish post bases, pipe clamps, anchors, fasteners, and all other appurtenances required to provide a complete pipe support system.
		- Contractor shall install a complete pipe support system in accordance with the spacing and anchoring requirements of the manufacturer’s published data.
1. 210T: ACH STORAGE TANK
	* ACH Storage Tank 210T has been fabricated and mounted/anchored on its concrete equipment pad by Owner’s personnel.
	* Contractor shall provide the following to complete the installation:
		+ 210-LS
			- See Item 3 under heading “DRAWING 30-E-201 – CHEMICAL FEED SYSTEM PLAN (Sheet 18 of 26)”.
		+ 210-LIT
			- See Item 3 under heading “DRAWING 30-E-201 – CHEMICAL FEED SYSTEM PLAN (Sheet 18 of 26)”.
		+ Coordination and scheduling of tank manufacturer’s field representative for inspection of tank and tank connections, and observation of any required adjustments to tank and/or tank connections.
			- Following the inspection and necessary corrective work, provide the following:
				* tank manufacturer’s field representative inspection report
				* Certificate of Proper Installation
				* O&M manual
				* 2-year warranty submittals
		+ Hydrostatic Test – Contractor shall fill tank with clean water to the overflow level after all connections have been made. There shall be no leakage, no signs of weeping, and no signs of capillary action over a period of 48 hours.

DRAWING 30-E-201 – ELECTRICAL – CHEMICAL FEED SYSTEM PLAN (Sheet 18 of 26)

1. 210FP: ACH FILL PANEL
* ACH Fill Panel 210FP has been fabricated and mounted on stainless steel strut channel supports by Owner’s personnel.
* Contractor shall provide the following to complete the installation:
	+ Cut existing PVC conduit stub-ups to extend no more than 6-inches above finished concrete.
	+ Furnish and install PVC to PVC-coated rigid galvanized steel transition couplings.
	+ Install PVC-coated rigid galvanized steel conduit, fittings, and appurtenances to tie into ACH Fill Panel 210FP.
		- Owner has procured and delivered PVC-coated rigid steel conduit to the Project Site.
		- Contractor shall furnish fittings, junction boxes, pull boxes, and all other required appurtenances required to complete the conduit installation.
	+ Furnish and install all power, analog, and control wiring connecting the fill panel to the required devices and control panels.
	+ Coordination, including scheduling, with electrical subcontractor and PICS vendor for testing and startup of the fill panel.
1. SITE AREA POLE MOUNTED LIGHT FIXTURES (DETAIL 2656-216)
	* Owner has procured and delivered the site area pole mounted light fixtures to the Project Site.
	* Concrete for site area pole mounted light fixture footings has been placed; electrical conduit, anchor bolts, and #6 ground wire were completed with placement of concrete.
		+ Contractor shall mount the site area pole mounted light fixtures, level them, and anchor them to the concrete-embedded anchor bolts as required by pole manufacturer.
		+ Contractor shall furnish and install all power wiring connecting the site area pole mounted light fixtures to their corresponding control panel.
2. 210T: ACH STORAGE TANK
	* 210-LS
		+ The HDPE tank is provided with a leak detection sensor, leak detection transmitter, and stand to mount the transmitter. A 2-inch bulkhead fitting is provided to facilitate connection of the leak detection sensor to the sidewall of the tank. Listed materials have been delivered to the Project Sight by Owner.
			- Contractor shall install the 2-inch leak detection sensor, leak detection transmitter, and stand provided with the HDPE tank.
			- Contractor shall furnish and install power and control wiring connecting the leak detection assembly to its corresponding power and control panels.
			- Contractor shall schedule and coordinate with PICS vendor for testing and startup of the leak detection assembly.
	* 210-LIT
		+ The HDPE tank is provided with an ultrasonic level transmitter. A 2-inch threaded flange adapter and bulkhead fitting are provided to facilitate connection of the level transmitter to the provided nozzle on the top of the tank. Listed materials have been delivered to the Project Sight by Owner.
			- Contractor shall install the 2-inch flange adapter, bulkhead fitting, and level transmitter.
			- Contractor shall furnish and install power and communication wiring between its corresponding power and communications panels.
			- Contractor shall schedule and coordinate with PICS vendor for testing and startup of the ultrasonic level transmitter.
	* Tank Heat Trace – Verify if heat trace needs to be installed or already installed (see page 53 of tank submittal)
		+ Wiring
		+ Silicone pad heaters install
		+ Temperature controller and t-stats install and programming
3. PREFABRICATED FRP ENCLOSURE
	* INCLUDE GENERAL NOTES SECTION FOR PROCESS MECHANICAL AND ELECTRICAL SCOPES
	* Contractor shall coordinate routing of all interior conduit required to connect devices inside the prefabricated FRP enclosure to their corresponding power and/or control panel(s).
		+ Contractor shall review proposed conduit routing path with and obtain Owner’s written approval prior to commencing with conduit installation.
	* Panel LP-2
		+ Electrical rough-in for Panel LP-2 has been completed by Owner’s personnel.
			- Contractor shall provide the following to complete the installation:
				* Cut existing PVC conduit stub-ups to extend no more than 6-inches above finished concrete.
				* Furnish and install PVC to PVC-coated rigid galvanized steel transition couplings.
				* Install PVC-coated rigid galvanized steel conduit, fittings, and appurtenances to tie into Panel LP-2.

Owner has procured and delivered PVC-coated rigid steel conduit to the Project Site.

Contractor shall furnish fittings, junction boxes, pull boxes, and all other required appurtenances required to complete the conduit installation.

* + - * + Furnish and install all components for lighting and distribution panelboard LP-2.
				+ Furnish and install all line side and load side wiring connecting the panel to the required devices.
				+ Test panelboard, switches, and circuit breakers to confirm equipment is suitable for energization, operates properly, and conforms to the requirements of the Contract Documents and NFPA 70.
	+ RTU-210
		- Panel RTU-210 has been fabricated and mounted on the interior walls of the prefabricated FRP building by Owner’s personnel. Electrical rough-in for RTU-210 has also been completed by Owner’s personnel.
			* Contractor shall provide the following to complete the installation:
				+ Cut existing PVC conduit stub-ups to extend no more than 6-inches above finished concrete.
				+ Furnish and install PVC to PVC-coated rigid galvanized steel transition couplings.
				+ Install PVC-coated rigid galvanized steel conduit, fittings, and appurtenances to tie into 210-RTU.

Owner has procured and delivered PVC-coated rigid steel conduit to the Project Site.

Contractor shall furnish fittings, junction boxes, pull boxes, and all other required appurtenances required to complete the conduit installation.

* + - * + Furnish and install all power, analog, and control wiring connecting RTU-210 to the required devices and control panels.
				+ Coordination, including scheduling, with electrical subcontractor and PICS vendor for testing and startup of the fill panel.

MR Systems is performing all Process Instrumentation and Control (PIC) Work under an existing annual contract with Owner. Contractor is only required to coordinated and schedule PIC-related activities with MR Systems.

* + 211P: ACH FEED PUMP
	+ CP 211FP: Pump Skid Control Panel
		- Pump skid 211P has been fabricated and delivered to the Project Site. Pump Skid Control Panel CP 211FP is mounted on the backboard of the pump skid.
		- Contractor shall provide the following to complete the installation:
			* Install PVC-coated rigid galvanized steel conduit, fittings, and appurtenances between:
				+ LP-2 and CP 211FP
				+ RTU-210 and CP211FP
			* Furnish and install all power, analog, and control wiring connecting CP 211FP to LP-2 and RTU-210.
			* Coordination and scheduling with electrical subcontractor, PICS vendor and pump skid vendor for testing and startup of the pump skid.
	+ 30-EWH-1
		- See Item ## under heading “DRAWING 30-P-201 – CHEMICAL FACILITY FLOOR PLAN (Sheet 19 of 26)”.
		- SEE PLUMBING SECTION
	+ 30HT-2, 30HT-3: Pipe Heat Tracing

DRAWING 30-P-201 – PLUMBING – CHEMICAL FACILITY FLOOR PLAN (Sheet 19 of 26)

SECTION A of CHEMICAL FEED SYSTEM PLAN

1. 2 x TYP (4005-495): Pipe Support
2. 3 x 1/2”-V330: PVC Ball Valve
3. FLUSHING CONNECTION
4. ACH (PVC)
5. ACH (PE)
6. 4027-623: PVC Floor Pipe

CHEMICAL FEED SYSTEM PLAN (Sheet 19)

1. SSH-1 (2245-410): Emergency Shower/Eyewash Unit
2. 1 1/4" TW
3. 2 x 2” HD-1
4. 30-EWH-1 (2230-189): Water Heater
5. 30-ET-1
6. 3/4" W2, UNDERGROUND
7. 30-TMV-1
8. 30-RPBP-1; 30-RPBP-2; STACKED 2211-100: Water Supply Heater
9. 3/4” HV-1
10. 2” W1, CL EL 941.9 SEE 05-C-201 FOR CONTINUTATION
11. 2” W1 UP, PROVIDE SHUT OFF VALVE IN VERTICAL
12. 4” CO-1 (2213-180): Exterior Cleanout
13. 4” PD, IE 943.6 SEE 05-C-201 FOR CONTINUATION
14. 4” PD
15. 30-WHA-1
16. INTAKE LOUVER BY BLDG MFG
17. 3000 WATT HEATER BY BUILDING MFG

SECTION A of CHEMICAL FEED SYSTEM PLAN (Sheet 19)

1. SSH-1 2245-412
2. 2 X 1 1/4” W1
3. 1 1/4" TW
4. 1 1/4" HW
5. 30-RPBP-2
6. 3/4" W2
7. 2 x W1
8. 30-RPBP-1
9. 2 x 2” HD-1
10. 2 x 2” PD
11. 4” CO-1
12. 4” PD
13. 2” W1
14. 3/4” W2 TO YARD HYDRANT

SECTION B of CHEMICAL FEED SYSTEM PLAN (Sheet 19)

1. 4” FD-1
2. 2 x HD-1
3. 3/4" HV-1

SECTION C of CHEMICAL FEED SYSTEM PLAN (Sheet 19)

1. 3/4" YH-1
2. 3/4" W2