

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

ADDENDUM No. 3

Date October 5, 2016

City of Austin

Project Name Taylor Lane 0.1 MGD Wastewater Treatment Project

C.I.P. No: 3353.095 IFB No.: IFB6100 CLMC600

This Addendum forms a part of the Contract and corrects or modifies original Bid Documents, dated September 5, 2016. 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. Specification 11393, Disk Filter remove and replace with attached
2. Specification 11500, 0.1 MGD Package WWTP, Section 2.2, Design Standards, replace paragraph A, with the following:
 - A. Parameters - The wastewater treatment system shall be of the activated sludge type: conventional activated sludge with enhanced secondary and nitrification process when reactor temperatures are 13° to 15° C, with the following parameters:
 - a) Design (Average flow): 0.1 MGD
 - b) Maximum (2 Hour Peak flow): 0.4 MGD
3. Specification 15105, Wastewater Valves, Section 2.2 Construction Materials add the following:
 - D. Foot Valves shall be CAL-VAL Series 583 or approved equal.

B. Drawing Revisions:

Replace Sheet M-4 with attached

This addendum consists of 1 page(s)/sheet(s).

Phillip Jaeger

Approved by City Project Manager

[Signature]

Approved by OWNER

Susan Turrieta

Approved by ENGINEER/ARCHITECT



END

PART 1 GENERAL

1.1 SCOPE OF WORK:

- A. Contractor to furnish all labor, materials, equipment and incidentals required for the automatic backwash filter system as shown on the drawings and as specified herein, installed, tested and ready for operation.
- B. Each Discfilter shall consist of a central drum onto which the discs with the filter media panels are assembled. The rotating filter drum is supported on the front and rear ends by sleeve bearings. Each filter unit shall include center drum, discs with filter media panels, support frame with cover, backwash spray assembly with pump, backwash trough, drive mechanism, automatic control system and components as specified.
- C. Filter shall be designed for installation as shown on the contract drawings/plans.

1.2 RELATED DOCUMENTS

- A. Drawings and all provisions of the Contract Documents shall apply to this Section.
- B. City of Austin Standard Specifications
- C. 01300 - Submittals
- D. 01660 - Facility Startup/Commissioning
- E. 01730 - Operation and Maintenance Manuals
- F. 16010 - Electrical General Provisions
- G. 16172 – Electrical Motor 200 HP and Less
- H. 16200 – Wire Conductors Cables – 600V and Less
- I. 16205 – Wire and Cable Tagging
- J. 16250 – Boxes and Cabinets
- K. 16263 – 120 VAC Uninterruptible Power Supplies
- L. 16300 – Wiring Devices
- M. 16700 – Common Control Panel Requirements
- N. 17000 - Packaged Systems PLC Programming Criteria
- O. 17100 - Process Control and Instrumentation Systems
- P. 17510 - Manufacturer's PLC-Based Control System Hardware
- Q. 17520 - Manufacturer's PLC-Based Control System Software

1.3 QUALITY ASSURANCE:

- A. Applicable Standards:
 - 1. ASTM -American Society for Testing and Materials
 - 2. AISI -American Iron and Steel Institute
 - 3. AGMA -American Gear Manufacturer's Association
 - 4. NEMA- National Electrical Manufacturer's Association
 - 5. NEC -National Electric Code
 - 6. AWS D1.6 - Structural Welding Code: Stainless Steel
 - 7. OSHA – Occupational Safety and Health Administration
- B. To assure unity of responsibility, center tube, discs with filter media panels, support frame with cover, backwash spray assembly with pump, backwash trough, drive mechanism, automatic control system and components as specified shall be furnished and/or coordinated by a single manufacturer.
- C. All painting shall be per Manufacturer's standards.

D. Experience of Equipment Manufacturers:

1. It is the intent of the contract documents to procure the best equipment and services that are available. The filtration equipment shall be furnished by a manufacturer who shall have at least ten (10) years experience in the United States or fifteen (15) years experience elsewhere in the design, production, assembly and field service of equipment of like type, size and capacity in similar applications. The equipment manufacturer must supply a list of at least fifty (50) successful installations in the United States utilizing equipment of like type in similar applications. In addition, the equipment manufacturer must have provided at least five (5) installation sites in the state of Texas.
2. The equipment supplier must have manufacturing and warehouse facilities located in the United States including parts inventory, and personnel based in the United States and employed by the supplier to provide direct technical and field support. The equipment manufacturer must provide information supporting their ability to provide these services.
3. The disc filtration technology shall be accepted filtration technology for compliance with the Texas Commission on Environmental Quality.
4. Any equipment manufacturer that does not meet the experience requirements stated within this specification shall provide the following items:
 - a. Performance Bond or other suitable means of financial guarantee that the disc filtration system will meet the performance requirements described above. The Performance Bond shall be for a duration of 36 months after system startup.
 - b. Dunn & Bradstreet Report
 - c. Current Annual Financial Statement
 - d. Credit Report

E. Acceptable Manufacturer:

1. Disk Filter: Packaged system consisting of center drum, discs with filter media panels, support frame with cover, backwash spray assembly with pump, backwash trough, drive mechanism, automatic control system, specified electric controls with internal components, and other components as specified herein.
 - a. Kruger, Inc. Model No. HSF2208/3-1F
 - b. Evoqua Forty-X™ Disc Filter
 - c. Approved equal.
2. The equipment detailed in this Section, and shown on the PLANS is specified by proprietary name, trade name, and/or name of one or more manufacturers. These items are so specified for reasons of obtaining desirable features best suited to the specific location requirements and for operation and maintenance. Un-named manufacturers must comply with the specifications and include cost for any necessary coordination, design, installation or construction of all

necessary modifications to foundations, structures, piping, electrical service, and controls to provide a complete, installed functioning unit at no additional cost to the OWNER in accordance with the Contract General Conditions.

F. Equipment:

1. PLC shall be Modicon M340 w/ BMX P342020 Processor with no exceptions.
2. HMI shall be a 15 Magelis XBT-GT-7340 with no exceptions.

1.4 SUBMITTALS

- A. Submit as specified in Division , Section 01300, Submittals
- B. The Contractor shall furnish shop drawings, catalog data, operation and maintenance manuals, installation instructions, parts list, layout drawings, equipment design data, testing data and reports to show full compliance with these specifications.

1.5 PERFORMANCE REQUIREMENTS

- A. The Discfilter System shall be capable of meeting the following phased performance requirements within one unit.

Performance Criteria, System	Phase I	Phase II
Peak Flowrate, MGD* (gpm)	0.4 (278)	2.0 (1,389)
Average Flowrate, MGD* (gpm)	0.1 (69)	0.5 (347)
Maximum Influent TSS*, mg/L	≤40	≤40
Daily Average Influent TSS*, mg/L	≤20	≤20
Daily Average Effluent TSS*, mg/L	≤5	≤5
7 Day Average Effluent TSS* mg/l	≤10	≤10
Daily Max Effluent TSS* mg/l	≤20	≤20
Single Grab Effluent TSS* mg/l	≤30	≤30

Filter Design Data	Phase I	Phase II
Filter Pore Size, μm	10	10
Filter Cloth Material	Polyester	Polyester
Number of Units	1	1
Number of Filter Discs per unit	3	8
Filter Disc Diameter, m	2.2	2.2
Submerged Filter Surface Area per unit, ft ²	117	313
Filter Drive Unit		
Drive Motor (1 per unit)	1.5 HP, 460v, 3 phase	1.5 HP, 460v, 3 phase
Drive Motor Service Factor	1.3	1.3
Drive Assembly	Drive Chain and Sprocket	Drive Chain and Sprocket

Backwash Cleaning System		
Number of Backwash Nozzles (per Disc)	10	10
Backwash Pump (1 per unit)	3 HP, 460v, 3 phase	7.5 HP, 460v, 3 phase
Backwash Pressure, psi	110	110
Design Backwash Flowrate, gpm	20	53

*Average TSS concentrations are based on analysis of 24 hr composite samples. Meeting the performance requirements is contingent on the upstream process providing influent to the filters with characteristics suitable for filtration, i.e., particles of sufficient size and strength to allow retention on the specified 10 um media surface.

- B. The automatic backwash filter system shall be suitable for filtering domestic wastewater after secondary treatment and clarification. Each filter shall be designed to operate on a continuous basis and shall be designed to operate while receiving varying flows.
- C. The proposed disc filtration system shall not exceed a hydraulic loading rate of 5.90 gpm/sf at peak flow.
- D. Filtration system shall utilize an "inside-out" flow pattern in which influent flows by gravity into the filter discs from the center drum. Solids are separated from the water by partially submerged filter media. Filtration systems with fully submerged media utilizing an "outside-in" flow pattern shall not be acceptable due to accumulation of solids in the tank, resulting in a dirty and unsanitary work environment for the plant operation staff.
- E. In order to minimize electrical and operation costs, filtration systems that employ a "dynamic tangential filtration" design shall not be accepted.
- F. Any equipment manufacturer that does not meet the experience requirements stated within this specification shall provide a Performance Bond or other suitable means of financial guarantee that the disc filtration system will meet the performance requirements described above. The Performance Bond shall be for a duration of 36 months after system startup.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. All fabricated metal shall be minimum grade AISI 304 stainless steel, unless otherwise stated in this specification. All welding of structural members shall conform to the latest requirements of AWS D1.6. Filter panels shall be polyester filter cloth mounted on plastic frames with integrated rubber seals. Filter disc segments shall be injection molded ABS plastic.
- B. The valves, equipment, materials of construction and controls specified under this section supersede valves, equipment, materials of construction and controls specified elsewhere in the contract documents. Purchased components such as gear reducers, pumps, motors, valves, and actuators shall be provided with standard recommended manufacturers paint, unless otherwise specified within this section.
- C. The disc filtration units shall be fully preassembled and factory inspected prior

to shipping the filtration units. Drive motor and backwash pump are to be installed at factory and provided integral to filtration unit.

- D. Flange connections to be provided with AISI 316L stainless steel stub ends and loose galvanized flange collar rings.

2.2 CENTER DRUM

- A. The center drum shall be a water tight, one piece, structural welded, AISI 304 stainless steel fabrication, open at one end to allow the influent to enter, and have openings to the filter discs for water distribution to the filter media. The center drum shall have lubricated bearings, which must be externally accessible via grease tubing and fittings for routine lubrication.

2.3 DISC ASSEMBLY

- A. The filter shall be composed of modular and removable discs. Each disc shall consist of disc segments that can be easily mounted or dismounted as required. The segments of one disc will be bolted to each other, and the completed disc assembly will be secured to the center drum with stainless steel band straps and hardware.
- B. Filter panels (filter media) shall be mounted on the sides of the disc segments. The filter panels shall consist of plastic frames with PET monofilament filter fabric attached to the frames. Systems with pleated media, corrugated media, pile cloth media, or stainless steel media shall not be acceptable. Stainless steel media shall also not be accepted due to its susceptibility to corrosion and short life span caused by mechanical fatigue failure. Each panel shall be equipped with a rubber gasket integral to the media frame to provide a watertight seal between the filter panels and disc segments. The panels will be held in place by a top cover.
- C. Nominal media pore size shall not exceed 10 microns. Filtration systems utilizing media greater than 10 microns shall not be accepted.
- D. The replacement of filter media must be possible from outside the filter tank by unfastening two bolts, removing the retaining cap and sliding panels from filter frame.
- E. Filter discs must be constructed of modular segments and each disc segment must include a substantially open area along the length of the radial support to allow the liquid to flow from one section to the other as the discs are rotated.

2.4 SUPPORT FRAME WITH ENCLOSED TANK AND COVER

- A. The support frame and tank shall be one piece, structural welded, 304 stainless steel. Onto the support frame shall be welded 304 stainless steel base plates for back-wash pump, drive gear box, and center shaft bearing house. Tank thickness shall be a minimum of 1/8" thickness. Carbon steel construction shall not be acceptable in order to minimize maintenance efforts associated with corrosion and painting.
- B. The filter shall be furnished with a gel coated GRP (Glass fiber Reinforced Plastic) lockable cover as a means to prevent algal growth and to eliminate the presence of filter flies. One side of the cover shall have a single access lid that can be opened to allow operator access to all of the discs and backwash nozzles. The lid must include an assembly that provides the following: mechanical advantage to assist personnel in lifting the lid, full support of the

lid when in the open position, and mechanical resistance/support when lowering the lid. This feature is important for ease of access and improved operator safety. Designs that incorporate removable lids, sliding lids, or propped lids (without mechanical lifting mechanism) will not be accepted.

- C. Anchor bolts shall be provided by the contractor.

2.5 BACKWASH CLEANING SYSTEM

- A. The Discfilter shall be equipped with a single oscillating back-washing system with non-motorized moving spray headers for efficient cleaning of the filter cloth and for reduction of the consumption of backwash water. All panels shall receive 110 psi pressure backwash spray. Systems with separate solids removal and backwash discharge systems shall not be acceptable.
- B. The backwash system shall be comprised of 304 stainless steel backwash spray headers installed between the discs. The spray headers shall oscillate in an upward and downward motion during drum rotation. The spray header oscillation shall be operated by a cam system that is connected to the drum drive. Systems with stationary spray headers or with separate drive motors to oscillate the spray headers shall not be acceptable. Each header shall have flat pattern spray nozzles for each disc side. The spray nozzles shall consist of ceramic nozzle tips, mounting cap for quick removal, nozzle body and seals. The nozzle system shall be Spraying Systems Co., Quick TeeJet, or approved equal. The replacement of spray nozzles must be possible from outside the filter tank. A swivel joint shall allow the spray header manifold to rotate out for nozzle access without disassembly of the manifold or headers.
- C. Each filter shall have one externally mounted low-pressure Grundfos Model MTR10-22/6 immersible centrifugal pump for the backwash system and shall be installed at the factory. The backwash pump shall be of the vertical multi-stage design with the motor mounted directly to the top of the pump. The pump discharge fitting shall be 2" NPT. The pump discharge chamber, motor stool and pump shaft coupling shall be constructed of cast iron. The impellers, pump shaft, diffuser chambers, outer discharge sleeve and impeller seal rings or seal ring retainers shall be constructed of stainless steel. The impellers shall be secured directly to the pump shaft by means of a splined shaft arrangement. Pump shall be equipped with an O-ring, fixed seal driver mechanical seal assembly with Cemented Tungsten Carbide/Cemented Tungsten Carbide seal faces and FKM rubber O-rings mounted in stainless steel components. The motor shall be supplied by Grundfos integral with the pump. The motor shall be standard efficiency rated for 5 HP, 460V, 3 phase, 60 HZ operation and shall be NEMA C face design, Totally Enclosed Fan Cooled (TEFC) with a minimum service factor of 1.15. Filtered water shall be discharged from the pump to the backwash header piping constructed of 304 stainless steel. A ball valve and pressure gauge shall be installed in the backwash header piping downstream of the pump in order to regulate to the desired nozzle pressure.
- D. The Discfilter shall be equipped with a backwash-collecting trough for removing solids. The trough shall be constructed of 304 stainless steel. The trough length shall be sufficient to capture reject water from all filter discs. The trough shall be elevated to prevent contact with the influent stream. The reject water shall leave the trough by gravity via the backwash outlet connection. Piping from the trough to the outlet connection shall be 304 stainless steel connected with stainless steel shielded, flexible elastomeric

PVC couplings. The backwash outlet connection shall be a 6 inch ANSI loose flange. Systems with separate solids removal and backwash discharge systems shall not be acceptable.

2.6 DRIVE MECHANISM

- A. The drive assembly shall consist of a single gearmotor, polyamide drive sprockets, and investment cast stainless steel drive chain. The chain link and barrel material shall be 15-5 PH stainless steel. The chain pin material shall be 17-4 PH stainless steel material. Link, pin, and barrel hardness shall be 415 BHN. The chain shall have an ultimate strength of 35,000 lb and an ASME working load of 4,500 lbs. Manufacturing method, material type, hardness, strength, and working load requirements are essential to provide durability, abrasion resistance, corrosion resistance, and long life for this application. Alternative chain casting type, materials, hardness, strength, and working load specifications shall not be allowed. Assemblies utilizing belt drives shall not be acceptable due to risk of stretching and failure when driving loads of this magnitude.
- B. The drive assembly shall also provide oscillation of the backwash spray headers without the need for a separate drive motor in order to provide for efficient cleaning of the filter media with minimal water usage and minimal energy usage. Systems with stationary spray headers and/or separate drive motors shall not be acceptable for use.
- C. The gear motor shall be SEW Eurodrive shaft mounted helical worm gear with integral standard AC induction motor, SEW gear motor model S77DRE90M4. The drive motor shall be provided integral to the Discfilter unit and shall be installed at the factory. The gear ratio shall be 189.09. The motor shall be standard efficiency TEFC rated for 1.5 HP, 460V, 3 phase, 60HZ operation.
- D. Reducer design end rating shall equal or exceed AGMA requirements. Speed reducers shall be selected for not more than AGMA class I service.

2.7 FLOW BYPASS

- A. A bypass chamber shall be supplied integral to the filter unit to allow for diversion of unexpected high inlet water level without contamination of the filtered effluent. The bypass chamber shall be at the inlet side of the filter unit. The bypass connection shall be a 14 inch ANSI loose flange.

2.8 DISCFILTER SPARE PARTS

- A. The following spare parts will be supplied: 4 Backwash Spray Nozzles, 4 Filter Panels. Parts inventory shall be based in the United States.

2.9 CONTROL PANEL AND OPERATION

- A. The Discfilter operation shall be managed by an automated control system. Programmable Logic Controller (PLC) shall be Modicon M340 w/ BMX P342020 Processor with no exceptions.
- B. The control system is an integral part of the Discfilter system and shall be provided in a UL labeled, NEMA 4X 304 Stainless Steel enclosure. Each Discfilter unit shall include a control system which shall consist of a programmable controller, fused main disconnect, control transformer, branch circuit breakers, IEC motor starter/protector, hand-off-automatic switches, and liquid level sensor relay for initiating backwash. The power feed to the control panel shall be 480VAC 60Hz 3 phase, control voltage shall be 120VAC

60 Hz 1 phase.

- C. The control panel enclosure shall meet the following criteria, 304 Stainless Steel, seams continuously welded and ground smooth, seamless foam-in-place gasket for watertight dust-tight seal, door opens 180°, quarter turn latches opened or closed using a screw driver, and NEMA Type 4X , UL Listed 4X. Saginaw SCE42EL3612SSLP or approved equal.
- D. The main disconnect shall be enclosed in the control panel, with a handle mechanism extending through the door. The main disconnect shall be a fused disconnect rated for 30 Amps 3-Pole. The main disconnect shall be composed of three primary components; 30A fused disconnect, extension shaft, NEMA 4X operating handle. Square D 9421 NC3 fused disconnect, 9421 NW2 disconnect handle and 9421 NS36 disconnect shaft or approved equal.
- E. Each filter shall be equipped with an adjustable water level sensor located in the influent chamber for the purpose of backwash initiation. The high level sensor shall be a height adjustable PVC encapsulated 316 SS Rod with a diameter of 5/16" and length of 12", and shall include a PVC encapsulated copper conductor with control wire connected at top of probe. The installing Contractor is to provide wiring and conduit to connect the level sensor to a liquid level relay located in the Discfilter Control Panel. The liquid level relay is activated when the level sensor comes in contact with water in the influent chamber. The liquid level relay for backwash shall be SSAC LLC44A5A with relay base or approved equal.
- F. Each filter unit will be supplied with a high high level sensor. The device used for the high high level sensor will be the same part(s) and number used for the high level sensor. The high high level sensor will be mounted in such a way as to insure that the device indicates when the water reaches a height above the backwash level sensor and has entered a high level scenario. When the high high level sensor is activated, it will activate a relay inside the control cabinet and a pilot light on the front of the control panel will illuminate. The pilot light will be labeled "Discfilter High High Level". The high high level relay will have a spare set of normally open dry contacts available for monitoring. The liquid level relay shall be SSAC LLC44A5A with relay base or approved equal.
- G. Each filter unit will be supplied with a BW pump dry run protection level sensor. The device used for the dry run protection sensor will be the same part(s) and number used for the backwash level sensor. The sensor will be mounted in such a way as to insure that the device indicates when the water reaches a height below the effluent weir that would risk pump dry run. When the sensor is activated, it will activate a relay inside the control cabinet to prevent running the pump. The level relay will have a spare set of normally open dry contacts available for monitoring.
- H. Field wiring terminal blocks for the Discfilter Control Panel will be din rail mountable, individually numbered, rated for 600 Volts 30 Amps. The field wiring terminal blocks shall be Phoenix UTTB4 3044814 or approved equal.
- I. Motor wiring terminal blocks for the Discfilter Control Panel will be din rail mountable, individually numbered, rated for 600 Volts 65 Amps. The field wiring terminal blocks shall be Phoenix UT10 3044160 or approved equal.
- J. A motor starter located in the Discfilter Control Panel will manage the start/stop of the Backwash Pump motor. The motor starter will be sized

appropriately to match the requirements of the Backwash Pump motor. The motor starter will be an IEC starter, rated 0.1 ~ 25Amps @ 460VAC 3 phase, ½ ~ 20HP @ 460VAC 3 phase, rotary handle operator, visible trip indication, protection by overload, short circuit, undervoltage and shunt. The motor starter will be equipped with auxiliary contacts for monitoring and control. The IEC motor starter shall be Square D TeSys U or approved equal.

- K. A VFD located in the Discfilter Control Panel will manage the start/stop of the Filter Drum motor. The VFD will be sized appropriately to match the requirements of the Filter Drum motor. The VFD will be equipped with an integral keypad display for VFD interface and configuration, use sensorless flux vector technology, use with 3-phase asynchronous motors, monitoring and control inputs and outputs, motor and drive protection. The VFD will not require input/output filters or harmonic testing. The VFD will be hardwired for control and monitoring and will not require any communication protocols such as Ethernet, DeviceNet, and Modbus. The VFD shall be Square D Altivar 312 or approved equal.
- L. The control panel shall have external pilot lights mounted on the door indicating run status of the filter unit and backwash pump. The pilot lights will be NEMA 4X, 120VAC, standard (no push to test) and 30mm. The pilot lights shall be Square D 9001 SKP1x31 or approved equal.
- M. The control panel shall have external selector switches (Hand-Off-Automatic). The selector switches will be NEMA 4X, 30mm, non-illuminated, manual return and equipped with contact blocks. The selector switches shall be Square D 9001 SKS43BH2 or approved equal. The control panel selector switches will allow the drum drive and backwash motor to be operated in Hand mode.
- N. The completed control panel shall be UL labeled per UL508A. The completed control panel will be factory tested and configured.
- O. The Programmable Controller will perform logic, timing, counting and real time clock operations. The Programmable Controller will be programmed using software to allow configuration of a downloadable program featuring input instructions, output instructions, timer instructions, counter instructions and counter instructions. The Programmable Controller will be equipped with a embedded 10/100 Base –T EtherNet/IP Port as well as USB programming port. The Programmable Controller will be equipped with a minimum fourteen 14 Digital Inputs (120VAC) and ten (10) Relay Outputs, additional I/O can be added via I/O expansion modules.
- P. The Control System will be supplied with one Operator Interface. The Operator Interface will be capable of communicating with the Programmable Controller. The Operator Interface will be capable of displaying text and graphics, allow operator setpoint entry, and provide system status display. The Operator Interface will be a color touchscreen display, minimum four (4) inch diagonal, 10/100 Base-T Ethernet Port and mount to the panel front.
- Q. Control system will also allow for continuous back washing in HAND mode.
- R. The Contractor is responsible for providing Interconnecting wiring and/or conduit between the supplied control panel and Discfilter equipment. The Contractor shall provide any junction or pull boxes or any other like device needed to supply the interconnecting wiring.

- S. All field connections/terminations to the supplied control panels, the Discfilter equipment and between the Discfilter and supplied control panels shall be the responsibility of the Contractor.

PART 3 EXECUTION

3.1 GENERAL

- A. Contractor shall install the Discfilter system per the Equipment Manufacturer's directions and the drawings. The Contractor will provide all supports and anchoring required to install the Discfilter unit. The plumbing/interconnecting piping, electrical connections, grating and handrails shall be provided by the Contractor as detailed on the drawings and specifications including winterization such as piping insulation or heat tracing/heat tape. The Equipment Manufacturer will provide adequate protection of the equipment for shipment to the project site. Installation instructions will be provided that specifically outline installation of the Discfilter. Lifting instructions will be provided to assist the Contractor.

3.2 FIELD SERVICES

- A. The Equipment Manufacturer shall furnish the services of a factory-trained representative based in the United States and employed by the manufacturer, for a minimum of four (4) working days and two (2) separate trips. These two trips shall consist of one (1) trip to monitor the installation and one (1) trip for start-up, instruction of plant operating personnel, and operation and maintenance training. The Contractor will provide to the Equipment Manufacturer a minimum prior notice of three (3) weeks in order to schedule these services.

PART 4 WARRANTY

4.1 GENERAL

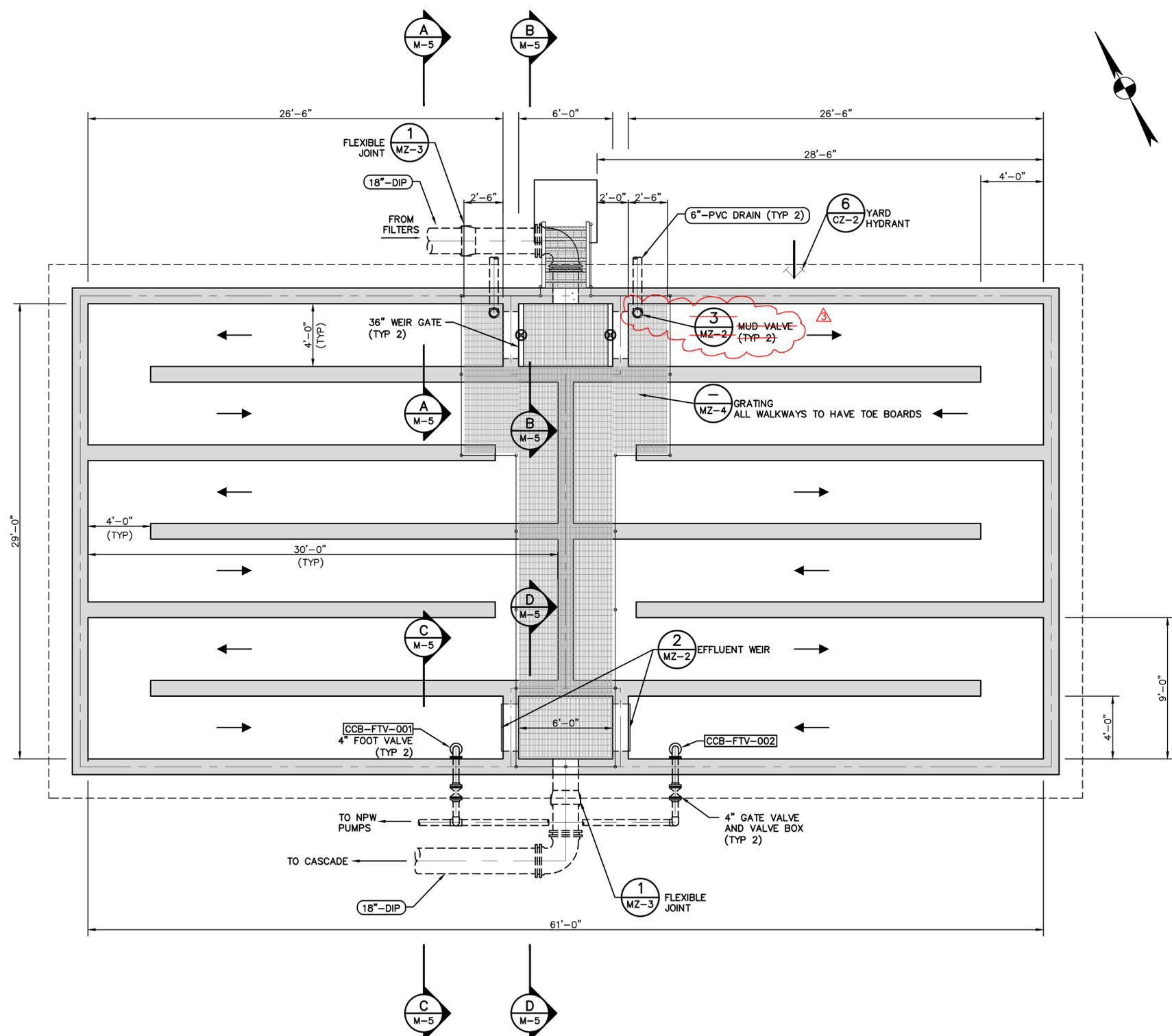
- A. The Equipment shall materially conform to the description in this Specification and the Contract Documentation and shall be free from defects in material and workmanship. Warranty periods are 1 year from acceptance, whichever occurs first.

END OF SECTION

GATE SCHEDULE										
AREA CODE	EQUIPMENT CODE	UNIT CODE	SIZE		DIRECTION TO OPEN	SERVICE	MOUNTING TYPE	OPERATOR / STEM	HEAD (FEET)	
			WIDTH (in)	HEIGHT (in)					SEATING MAX	UNSEATING MAX
CCB	WG	001	36	36	DOWN	CHLORINE CONTACT	CWM	HW	2	3
CCB	WG	002	36	36	DOWN	CHLORINE CONTACT	CWM	HW	2	3

LEGEND

EQUIPMENT		PROCESS AREA	
CWM	CONCRETE WALL MOUNTED	CCB	CHLORINE CONTACT BASIN
HW	HANDWHEEL	HW	HEADWORKS
SG	SLUICE GATE		
WG	WEIR GATE		



PLAN
SCALE: 1/4"=1'-0"

REV	DATE	BY	DESCRIPTION	APPROVED
ADD 3	OCTOBER 5, 2016	SST	ADDENDUM NO. 3 REMOVED MUD VALVE	

VERIFY SCALES
0 1"
IF BAR DOES NOT MEASURE ONE INCH ON THIS SHEET, ADJUST ACCORDINGLY.



DRAWN BY: RR
DESIGNED BY: SST
REVIEWED BY: SST
PROJECT NO: SST# XXXXX

SMITH TURRIETA ENGINEERING
P.O. BOX 5902, AUSTIN, TEXAS 78763
TELEPHONE: (512) 569-9022
Texas Registration Number, F-16076

CITY OF AUSTIN, TEXAS
TAYLOR LANE 0.1 MGD WASTEWATER TREATMENT PLANT PROJECT
CHLORINE CONTACT BASIN PLAN

DWG. NO.
M-4
SHEET **46** OF **79**

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