

**ADDENDUM NO. 3**

**CITY OF GATESVILLE**

**CID 01-STILLHOUSE BRANCH WASTEWATER TREATMENT FACILITY  
IMPROVEMENTS**

**PROJECT NO.: 2-01590 | TWDB CWSRF NO. 73776**

**DATE OF ADDENDUM: JUNE 13, 2023**

**BID OPENING DATE: JUNE 20, 2023**

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This Addendum forms a part of Contract and clarifies, corrects or modifies original Proposal Documents, dated May 8, 2023. Acknowledge receipt of this addendum in space provided on Proposal Form. Failure to do so may subject bidder to disqualification.

**MODIFICATIONS TO PROPOSAL DOCUMENTS**

- 1) Pre-Bid Meeting Sign-in  
REISSUE the Pre-Bid Meeting Sign-in to remove “Mandatory” from the sheet. The original Pre-bid Meeting Sign-in sheet will be deleted from CivCast.
- 2) Project Manual
  - a. Section 40 05 23 – Stainless Steel Process Pipe and Tubing  
INCLUDE the attached Specification “Section 40 05 23 - Stainless Steel Process Pipe and Tubing” to provide information regarding the approved stainless steel details for the low air pressure piping.
  - b. Section 43 25 13.23 – Overhung Close-Coupled Submersible Volute Centrifugal Pumps  
Specification “Section 43 25 13.23 – Overhung Close-Coupled Submersible Volute Centrifugal Pumps” has been REVISED to include information on submersible pumps at Biosolids Drain Pump Station.
  - c. Section 00 52 00 – Agreement  
Specification “Section 00 52 00 - Agreement” has been REVISED to include amount for liquidated damages.
- 3) Drawings
  - a. Sheet AJ-01  
REVISED grit storage building floor plan to include dimensions of the two stairways.
  - b. Sheet G-01  
REVISED drawing index sheet to match all drawings and their respective titles.

- c. Sheets M-03 through M-05

REVISE to include mud valves to valve schedule, include unlined stainless-steel piping for the low air pressure piping in the piping schedule, and update plug valve PV-911 size to 6 inches.

- d. Sheet MA-02

REVISED to include image of existing perforated screen in channel.

- e. Sheet MD-02

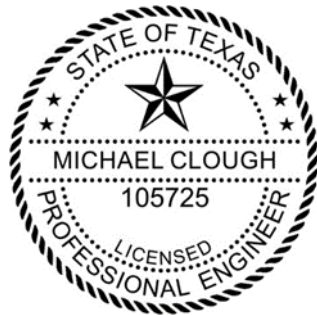
REVISED to include aeration grid information.

- f. Sheet MK-02

REVISED to include trench drain information.

- g. Sheet P-03

REVISED to include mud valves.



Approved by:

A handwritten signature in blue ink, appearing to read "Michael Clough".

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Engineer

ATTENDANCE

NAME	REPRESENTING	MAILING ADDRESS	PHONE, EMAIL
1 Mike Clough	Walker Partners	6504 Bridge Point Parkway, Suite 200, Austin, TX 78730	512-382-0021 mclough@walkerpartners.com
2 Parker Anderson	Walker Partners	6504 Bridge Point Parkway, Suite 200, Austin, TX 78730	512-382-0021 panderson@walkerpartners.com
3 BLAKE FITTS	MATOUS	8602 STATE HWY 317 RECTOR, TX 76513	254.534.1638 blake@matousconstruction.com
4 FJ Bible	All American Pump Solut, bus	1310 N Bell San Angelo Texas 76903	325-656-2160 325-213-1605 Clint
5 JOE GRAVES	GRACON	PO. BOX 36039 DALLAS, TX.	972-222-8533 EXT 108 KGRAVES@GRACON.BIZ
6 Robert Buster	GATSUIT INC	402 Stillhouse Rd	254-448-0041 rbuster@gatesvilletx.com
7 Jeremy Clawson	Gatesville	402 Stillhouse Rd	254-760-6408 jclawson@gatesvilletx.com
8 Scott Albert	Gatesville		
9 Mike Hayslett	Contractor		
10			

**SECTION 40 05 23**  
**STAINLESS STEEL PROCESS PIPE AND TUBING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Section Includes:

1. Stainless-steel pipe and fittings.
2. Stainless-steel tube and fittings.
3. Accessories.

**1.2 REFERENCE STANDARDS**

A. American Welding Society:

1. AWS D1.1/D1.1M - Structural Welding Code – Steel.

B. ASME International:

1. ASME B1.20.1 - Pipe Threads, General Purpose, Inch.
2. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Classes 25, 125, 250 and 800.
3. ASME B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard.
4. ASME B16.9 - Factory-Made Wrought Buttwelding Fittings.
5. ASME B16.11 - Forged Fittings, Socket-Welding and Threaded.
6. ASME B16.20 - Metallic Gaskets for Pipe Flanges: Ring-Joint, Spiral-Wound, and Jacketed.
7. ASME B16.21 - Nonmetallic Flat Gaskets for Pipe Flanges.
8. ASME B31.3 - Process Piping.
9. ASME Boiler and Pressure Vessel Code (BPVC), Section IX - Welding and Brazing Qualifications.

C. ASTM International:

1. ASTM A182/A182M - Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
2. ASTM A193/A193M - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.
3. ASTM A194/A194M - Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
4. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
5. ASTM A312/A312M - Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.

6. ASTM A351/A351M - Standard Specification for Castings, Austenitic, for Pressure-Containing Parts.
7. ASTM A403/A403M - Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings.
8. ASTM A479/A479M - Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels.
9. ASTM A632 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing (Small Diameter) for General Service.
10. ASTM A789/A789M - Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service.
11. ASTM A813/A813M - Standard Specification for Single- or Double-Welded Austenitic Stainless Steel Pipe.
12. ASTM A814/A814M - Standard Specification for Cold-Worked Welded Austenitic Stainless Steel Pipe.
13. ASTM D3308 - Standard Specification for PTFE Resin Skived Tape.

D. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

### 1.3 COORDINATION

- A. Section 40 05 10 – Common Requirements for Process Piping: Requirements in this section related to stainless steel pipe and tubing.

### 1.4 SUBMITTALS

- A. Section 01 33 00 – Submittals: Requirements for submittals.
- B. Section 40 05 10 – Common Requirements for Process Piping; Subsection 1.4 Submittals.
- C. Product Data: Submit manufacturer information on pipe materials, tube materials, and fittings.
- D. Shop Drawings: Indicate layout of piping systems, including equipment, critical dimensions, sizes, and materials lists.
- E. Welder Certificates: Submit welders' certification of compliance with ASME BPVC, Section IX, verifying qualification within previous 12 months.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 – Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of valves, fittings, and appurtenances.

### 1.6 QUALITY ASSURANCE

- A. Section 40 05 10 – Common Products for Process Piping: Requirements of Subsection 1.5 Quality Assurance.

- B. Materials in Contact with Potable Water: Certified according to NSF 61 and NSF 372.

### **1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Section 01 60 00 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Section 40 05 10 – Common Requirements for Process Piping: Requirements of Subsection 1.6 Delivery, Storage, and Handling.
- C. Inspection: Accept materials on Site in manufacturer’s original packaging and inspect for damage.
- D. Store materials according to manufacturer instructions.
- E. Protection:
1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
  2. Protect piping and appurtenances by storing off ground.
  3. Provide additional protection according to manufacturer instructions.

### **1.8 EXISTING CONDITIONS**

- A. Field Measurements:
1. Verify field measurements prior to fabrication.
  2. Indicate field measurements on Shop Drawings.

## **PART 2 - PRODUCTS**

### **2.1 STAINLESS-STEEL PIPE AND FITTINGS**

- A. General Service Piping:
1. 2 1/2" & smaller: Schedule 40S: ASTM A312/A312M, Type 316 seamless, pickled and passivated.
  2. 3" thru 6": Schedule 10S: ASTM A778, “as-welded” grade, Type 316L, pickled and passivated.
  3. 8" & larger: Schedule 5S: ASTM A778, “as-welded” grade, Type 316L, pickled and passivated.
- B. Joints:
1. 1-1/2" & smaller: Threaded or flanged at equipment as required or shown.
  2. 2" & larger: Butt-welded or flanged at valves and equipment.
- C. Fittings:
1. 1-1/2" & smaller: Threaded: Forged 1,000 CWP minimum, ASTM A182/A182M, Grade F316 or cast Class 150, ASTM A351/A351M, Grade CF8M/316.
  2. 2" & 2-1/2": Butt Welded: ASTM A403/A403M, Grade WP316L conforming to ASME B16.9 and MSS SP 43, annealed, pickled and passivated; fitting wall thickness to match adjoining pipe; long radius elbows, unless shown otherwise.
  3. 3" & larger: Butt-Welded: ASTM A774/A774M Grade 316L conforming to MSS SP 43, “as-welded” grade, pickled and passivated; fitting wall thickness to match adjoining pipe; long radius elbows, unless shown otherwise.

D. Branch Connections:

1. 1-1/2" & smaller: Tee or reducing tee in conformance with fittings above.
2. 2" & larger: Butt-welding tee or reducing tee in accordance with fittings above.

E. Flanges:

1. Forged Stainless Steel: ASTM A182/A182M, Grade F316L, ASME B16.5 Class 150 or Class 300, slip-on weld neck or raised face. Weld slip-on flanges inside and outside.
2. Cast Carbon Steel: ASTM A216/A216M Grade WCA, drilled, ASME B16.5 Class 150 or Class 300 Van Stone Type with stainless steel stub ends, ASTM A240 Type 316L "as-welded grade", conforming to MSS SP 43, wall thickness same as pipe.
3. Blind Flanges, exposed to the atmosphere and not buried nor immersed in liquid, may be either stainless steel or Class 125 ductile iron or Class 150 carbon steel with gaskets as specified herein.

F. Unions:

1. 2" & smaller: Threaded Forged: ASTM A182/A182M, Grade F316, 2,000 pound or 3,000 pound WOG, integral ground seats, AAR design meeting the requirements of ASME B16.11, bore to match pipe.

G. Bolting:

1. Forged Flanges: Type 316 stainless steel, ASTM A320/A320M Grade B8M hex head bolts, ASTM A194/A194M Grade 8M hex head nuts and ASTM F436/F436M Type 3 alloy washers at nuts and bolt heads. Achieve 40 percent to 60 percent of bolt minimum yield stress.
2. Van Stone Flanges and anywhere mating flange on equipment is cast iron and gasket is flat ring: Carbon steel ASTM A307 Grade B hex head bolts, ASTM A563 Grade A hex head nuts and ASTM F436/F436M hardened steel washers at nuts and bolt heads. Achieve 40 percent to 60 percent of bolt minimum yield stress.
3. Flanged Joints in Sumps, Wet Wells, and Submerged and Wetted Installations: Type 316 stainless steel, ASTM A320/A320M, Grade B8M hex head bolts and ASTM A194/A194M, Grade 8M hex nuts and ASTM F436/F436M Type 3 alloy washers at nuts and bolt heads. Achieve 40 percent to 60 percent of bolt minimum yield stress.

H. Gaskets:

1. Flanges Flanged, Water, Hot Air, Fuel Gas and Sewage Services: 1/8 inch thick, homogeneous black rubber (EPDM), hardness 60 (Shore A), rated to 250 degrees F. continuous and conforming to ASME B16.21 and ASTM D1330, Steam Grade.
2. Blind flanges shall be gasketed covering entire inside face with gasket cemented to blind flange.

I. Thread Lubricant:

1. 2" & smaller:
  - a. General Service: 100 percent virgin PTFE Teflon tape.
  - b. Fuel Gas Service: Yellow Teflon tape designed for fuel gas service, Air Force A A 58092, AA Thread Seal Tape, Inc.

## 2.2 STAINLESS-STEEL TUBE AND FITTINGS

A. Tube:

1. ASTM A269, Type 316 stainless steel, seamless, fully annealed hydraulic tubing, 0.065 inch wall thickness minimum.
- B. Tubing Joints:
  1. Flareless compression fitting.
- C. Tubing Fittings:
  1. Flareless Compression Type Forged: ASTM A182/A182M, Grade F316, Parker-Hannifin Ferulok, Flodar BA Series.
- D. Tubing Branch Connections:
  1. Compression type tees or reducing tees in accordance with Tubing Fittings above.

### **PART 3 - EXECUTION**

#### **3.1 REQUIREMENTS**

- A. Section 40 05 10 – Common Requirements for Process Piping: Requirements listed in Subsection PART 3 EXECUTION.

**END OF SECTION**



SECTION 43 25 13.23 - OVERHUNG CLOSE-COUPLED SUBMERSIBLE VOLUTE  
CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 REFERENCES

- A. The following is a list of standards that may be referenced in this Section:
1. American Bearing Manufacturers Association (ABMA):
    - a. 9, Load Ratings and Fatigue Life for Ball Bearings.
    - b. 11, Load Rating and Fatigue Life for Roller Bearings.
  2. American Society of Mechanical Engineers (ASME): B16.1, Cast Iron Pipe Flanges & Flanged Fittings, Class 125.
  3. ASTM International (ASTM):
    - a. A48, Standard Specification for Gray Iron Castings.
    - b. A576, Standard Specification for Steel Bars, Carbon, Hot- Wrought, Special Quality.
  4. Hydraulic Institute Standards (HIS).
  5. National Electrical Manufacturers Association (NEMA).
  6. National Fire Protection Association (NFPA):
    - a. 70, National Electrical Code.
    - b. 497, Recommended Practice for the Classification of Flammable Liquids, Gases or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas.
  7. Underwriters Laboratories Inc. (UL).

1.2 DEFINITIONS

- A. Terminology pertaining to pumping unit performance and construction shall conform to ratings and nomenclature of Hydraulic Institute Standards.

1.3 SUBMITTALS

- A. Action Submittals:
1. Make, model, weight, and horsepower of each equipment assembly.
  2. Complete catalog information, descriptive literature, specifications, and identification of materials of construction, including cable seal details.
  3. Performance data curves showing head, capacity, horsepower demand, and pump efficiency over entire operating range of pump, from shutoff to maximum capacity. Indicate separately head, capacity, horsepower demand, overall efficiency, and minimum submergence required at guaranteed point.
  4. For variable speed motors provide variable speed curves for every 50 rpm over the operational range.
  5. Power and control wiring diagrams, including terminals and numbers.
  6. Motor data, in accordance with the requirements of Section 26 20 00 - Low-Voltage AC Induction Motors.

7. Adjustable frequency drive data, in accordance with the requirements of Section 26 29 23 – Adjustable Frequency Drives.
8. Factory-finish system.
9. L-10 bearing life calculations per ABMA.

B. Informational Submittals:

1. Special shipping, storage and protection, and handling instructions.
2. Manufacturer's printed installation instructions.
3. Factory and Field Performance Test Reports and Log.
4. Manufacturer's Certification of Compliance that factory finish system meets requirements specified herein.
5. Suggested spare parts list to maintain equipment in service for period of 1 year. Include list of special tools required for checking, testing, parts replacement, and maintenance with current price information.
6. List special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.
7. Operation and Maintenance Data as specified in Section 01 70 00 – Execution and Closeout Requirements.
8. Manufacturer's Certificate of Proper Installation, in accordance with Section 01 70 00 – Execution and Closeout Requirements.

#### 1.4 EXTRA MATERIALS

A. Furnish:

1. For each pump, one set mechanical seals.
2. For each set of pumps, one complete set of any special tools required to dismantle each pump.

#### 1.5 WARRANTY

- A. Warranty on equipment and installation is one (1) year from Final Completion, in accordance with Article 6.19 of the General and Supplemental Conditions.

### PART 2 - PRODUCTS

#### 2.1 GENERAL

- A. Submersible, vertical shaft, centrifugal non-clog type, for pumping wastewater.
- B. Designed for continuous operation under submerged or partially submerged conditions, and intermittent operation when totally dry without damage to pump or motor.
- C. Pump and Electrical Driver: Meet requirements for class, group, and division location in accordance with NFPA 70.
- D. Where adjustable speed drives are required, furnish a coordinated operating system complete with pump, drive, and speed controller.
- E. Pumps furnished under this Section to be provided by a single manufacturer.

## 2.2 SUPPLEMENTS

- A. Specific requirements are attached to this Section as supplements.

## 2.3 COMPONENTS

- A. Equipment consists of pump complete with motor, control system, guide rail, anchoring brackets, base elbow, power cable, and pump lifting cable and control panel and level switches.

- B. Characteristics:

1. Motor and rotating parts shall be removable from motor end of pump.
2. Mating surfaces to be watertight and fitted with nitrile O-rings.
3. Pumps fitted with dynamically balanced non-clog impellers designed to pass coarse solids and stringy materials.

- C. Lifting Arrangement:

1. Stainless steel chain, 2 feet minimum, and one “grip-eye.”
2. Attach chain permanently to pump and access platform with stainless steel wire rope.
3. “Grip-eye” capable of being threaded over and engaging links of stainless-steel chain so pump and motor may be lifted with “grip-eye” and independent hoist.

- D. Sliding Guide Bracket:

1. Integral part of pump unit.
2. Pump unit to be guided by no less than two guide bars, or equivalent cable system, and pressed tightly against discharge connection elbow with metal-to-metal contact or through use of profile-type gasket, provided gasket is attached to pump’s flange and can be easily accessed for inspection when pump is lifted out of wetwell.
3. Pump metal parts that come into contact with guide rail or cable system shall be made of non-sparking materials.

- E. Oil chamber between seals shall be equipped with drain and inspection plug. Plug shall have positive antileak seal and shall be easily accessible from outside.

- F. Motor nameplate horsepower not to be exceeded at head-capacity point on pump curve.

- G. Pump motor and sensor cables shall be suitable for submersible pump application and cable sizing shall conform to NFPA 70 specifications for pump motors. Cables shall be of sufficient length to reach junction boxes without strain or splicing.

- H. Cable Entry System:

1. Junction chamber and motor separated by stator lead sealing gland or terminal board that prevents foreign material entering through pump top.
2. Utilize cable with factory-installed sealing gland with non-shrink epoxy seal system.
3. O-ring compression seal between sealing gland and cable entry point shall also be acceptable.

## 2.4 CONTROL PANEL

- A. Control Panel to be provided by the SI Engineer.
- B. NEMA 12 enclosure, for indoor duty.

- C. Refer to Section 26 24 19 – 480V Motor-Control Centers, for additional panel requirements.
- D. Mount as shown on the Plans.
- E. Features:
  - 1. Fused control power transformer, 120V ac.
  - 2. Alternator and pump lead-lag controls.
  - 3. ON/OFF/AUTO switches.
  - 4. Running lights.
  - 5. High level indication.
  - 6. Normally closed, dry, 5 amps at 120V ac contacts for remote indication of:
    - a. High level alarm.
    - b. Pump failure (temperature or moisture alarm).
  - 7. Terminal strip for interfacing with external wiring.
  - 8. High temperature indication.
  - 9. Moisture alarm indication.
  - 10. Alarm (high temperature, moisture, or high level) beacon located on top of panel.
  - 11. Lightning protection.
  - 12. Intrinsically safe relays as required for UL validation.
  - 13. Alarm silence button.
  - 14. Document pocket located inside panel with pump and panel operation and maintenance manual, and separate laminated pump curve.
  - 15. 110-volt, duplex GFI outlet, weather-protected, and accessible from outside of panel.
  - 16. Run hour meter.
  - 17. 100 watts minimum, condensation heater with thermostat.
  - 18. UL listing mark.
- F. Prewired and factory tested.
- G. Mount control switches, indicating lights, and switches on hinged front panel.
- H. Single Feed: 480 volts, three-phase.

## 2.5 ACCESSORIES

- A. Level Switches: In accordance with 40 70 03- Instrumentation and Control Components for:
  - 1. Low Low Level: Alarm. Pumps off.
  - 2. Medium Level: Reset
  - 3. High High Level: Alarm. Pumps on.
- B. Radar Level Transmitter: In accordance with 40 70 03- Instrumentation and Control Components for:
  - 1. Low Low Level: Alarm. Pumps off.
  - 2. Low Level: Lead Pump On
  - 3. High Level: Lag Pump On

4. High High Level: Alarm. Pumps on.
- C. Equipment Identification Plate: 16-gauge stainless steel with 1/4-inch die- stamped equipment tag number securely mounted in readily visible location.
- D. Anchor Bolts: Type 316 stainless steel, sized by equipment manufacturer, and as specified in Section 05 50 00 - Metal Fabrications. Coat in accordance with Section 09 90 00 - Painting and Coating.

## 2.6 FACTORY FINISHING

- A. Prepare, prime, and finish coat in accordance with Section 09 90 00 - Painting and Coating.
- B. Install manufacturer's standard epoxy system for continuous submergence in corrosive water.

## 2.7 SOURCE QUALITY CONTROL

- A. Control Panel:
  1. Factory Inspections: Inspect control panels for required construction, electrical connection, and intended function.
  2. Factory Tests and Adjustments: Test all control panels actually furnished.
- B. Pump:
  1. Factory Performance Test:
    - a. In accordance with HIS 11.6, Level B for submersible pump tests.
    - b. Include test data sheets, curve test results, and performance test logs.
  2. Conduct on each pump.
  3. Perform under actual or approved simulated operating conditions.
    - a. Throttle discharge valve to obtain pump data points on curve at 2/3, 1/3, and shutoff conditions.
- C. Submersible Motor Functional Test: In accordance with HIS 11.6.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install in accordance with manufacturer's printed instructions.
- B. Mount the discharge elbow to the floor of the wetwell floor with stainless steel bolts.
- C. Connect piping without imposing strain to flanges.
- D. No portion of pump shall bear directly on floor of sump.

### 3.2 FIELD FINISHING

- A. Equipment as specified in Section 09 90 00 - Painting and Coating.

### 3.3 FIELD QUALITY CONTROL

- A. Functional Test: Conduct on each pump.

1. Alignment: Test complete assemblies for correct rotation, proper alignment and connection, and quiet operation.
2. Flow Output: Measured by plant instrumentation and storage volumes.
3. Operating Temperatures: Monitor bearing areas on pump and motor for abnormally high temperatures.
4. Test for continuous 3-hour period
5. Test Report Requirements: In accordance with Hydraulic Institute Standards for submersible pump tests HIS 1.6 and 11.6.

B. Vibration Test:

1. Test with units installed and in normal operation and discharging to connected piping systems at rates between low discharge head and high discharge head conditions specified, shall not develop vibration exceeding limits specified in HIS 11.6.
2. If units exhibit vibration in excess of limits specified adjust or modify as necessary. Units that cannot be adjusted or modified to conform as specified shall be replaced.
3. Flow Output: Measured by plant instrumentation and storage volumes.

3.4 MANUFACTURER'S SERVICES

- A. Manufacturer's Representative: Present at Site for minimum person-days listed below, travel time excluded for each pump system:
1. 2 person-days for installation assistance and inspection.
  2. 2 person-days for functional and performance testing and completion of Manufacturer's Certificate of Proper Installation
- B. Manufacturer's Representative: Present at Site for minimum person-days listed below, travel time excluded for all pump systems (If providing more than 1 pump system, time is for all provided pump systems):
1. 1 person-days for pre-startup Site training.
  2. 2 person-days for facility startup.
  3. 1 person-days for post-startup training of Owner's personnel. Training shall not commence until accepted detailed lesson plan for each training activity has been reviewed by Engineer.
- C. See Section 01 70 00 – Execution and Closeout Requirements.

3.5 SUPPLEMENTS

- A. The supplements listed below, following "End of Section," are part of this Specification.
1. Data sheets: Overhung, Close Coupled Submersible Volute Centrifugal Pump Data Sheets.

END OF SECTION

OVERHUNG CLOSE-COUPLED SUBMERSIBLE VOLUTE CENTRIFUGAL PUMP DATA SHEET, INFLUENT PUMP STATION 43 25 13.23 - 01

Tag Numbers: P-201-01, P-201-02, P201-03

Pump Name: Influent Pump Station Pumps 1, 2 and 3

Manufacturer and Model Number: (1) KSB KRT K 200-403/654XEG-S (Basis of Design)  
(2) Approved Equal

SERVICE CONDITIONS

Liquid Pumped (Material and Percent Solids): Screened Wastewater

Pumping Temperature (Fahrenheit): Normal: 63 Max: 90 Min: 40

Specific Gravity at 70 Degrees F: 62.3 Viscosity Range: \_\_\_\_\_

Vapor Pressure at 70 Degrees F: 0.363 psi pH: 7-11

Abrasive (Y/N): Y Possible Scale Buildup (Y/N): N

Total suspended solids (mg/L) 50-300

Maximum diameter solid pump can pass (inches) 3

Min. NPSH Available (Ft. Absolute): See Plans

Suction Pressure (Ft): Max See Plans Rated See Plans

PERFORMANCE REQUIREMENTS

Capacity (US gpm): Rated 2,810

Total Dynamic Head (Ft): Rated 87

Maximum Shutoff Pressure (Ft): 150

Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): 78.0

Max. Pump Speed at Rated Capacity (rpm): Constant (Y/N): 1,780

Adjustable (Y/N): Y

DESIGN AND MATERIALS

Pump Type: Heavy-Duty Non-clog (Y/N)      Y      Other:

Volute Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Pump Casing Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Motor Housing Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Wear Rings Case (Y/N): Y Material: Grey cast iron EN-JL1030 (A 48 Class 30B)

Wear Ring Impeller (Y/N): Y Material: Stainless steel VG 434 (A 890 Grade 5A)

Elastomers: Nitrile Rubber

Fasteners: Stainless Steel

Impeller:      Type: Single Vane Non-Clog (Y/N): Y Other: \_\_\_\_\_

Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Shaft Material: Stainless steel EN-1.4021+QT800 (A 276 Type 420)

Base Elbow: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Double Mechanical Seal (Y/N): Y Bearing Life (Hrs): 100,000

DRIVE MOTOR: See Section 26 20 00 - Low-Voltage AC Induction Motors

Horsepower: 87 Voltage: 460 Phase: 3 Synchronous Speed (rpm): 1775

Enclosure: Grey cast iron EN-GJL-250 (A 48 Class 35B)

CLASSIFICATION: Class 1, Group D, Division 1, Groups C, D, T3

Other Features: \_\_\_\_\_ Inverter Duty \_\_\_\_\_

Moisture Detection Switches (Y/N): Y

Thermal Protection Embedded in Windings (Y/N): Y

REMARKS: \_\_\_\_\_

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OVERHUNG CLOSE-COUPLED SUBMERSIBLE VOLUTE CENTRIFUGAL PUMP DATA SHEET, EFFLUENT PUMP STATION 43 25 13.23 - 02

Tag Numbers: P-701-01, P-701-02, P-701-03

Pump Name: Effluent Pump Station Pumps 1, 2 and 3

Manufacturer and Model Number: (1) KSB KRT K 200-316/226XFG-K (Basis of Design)  
(2) Approved Equal

SERVICE CONDITIONS

Liquid Pumped (Material and Percent Solids): Water - 0%

Pumping Temperature (Fahrenheit): Normal: 82 Max: 95 Min: 40

Specific Gravity at 70 Degrees F: 62.3 Viscosity Range: \_\_\_\_\_

Vapor Pressure at 70 Degrees F: 0.363 psi pH: 7-11

Abrasive (Y/N): N Possible Scale Buildup (Y/N): N

Total suspended solids (mg/L) 50

Maximum diameter solid pump can pass (inches) 1

Min. NPSH Available (Ft. Absolute): See Plans

Suction Pressure (Ft): Max See Plans Rated See Plans

PERFORMANCE REQUIREMENTS

Capacity (US gpm): Rated 2,810

Total Dynamic Head (Ft): Rated 22

Maximum Shutoff Pressure (Ft): 56

Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): 79

Max. Pump Speed at Rated Capacity (rpm): Constant (Y/N): 1180

Adjustable (Y/N): Y

DESIGN AND MATERIALS

Pump Type: Heavy-Duty Non-clog (Y/N)      N      Other:

Volute Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Pump Casing Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Motor Housing Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Wear Rings Case (Y/N): Y Material: Grey cast iron EN-JL1030 (A 48 Class 30B)

Wear Ring Impeller (Y/N): Y Material: Semi austenitic CrNi stainless steel VG 434 (A 890 Grade 5A)

Elastomers: Viton

Fasteners: Stainless Steel

Impeller:      Type: Single Vane Non-Clog (Y/N): N Other: \_\_\_\_\_

Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Shaft Material: Stainless steel EN-1.4021+QT800 (A 276 Type 420)

Base Elbow: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Double Mechanical Seal (Y/N): Y Bearing Life (Hrs): 100,000

DRIVE MOTOR: See Section 26 20 00 - Low-Voltage AC Induction Motors

Horsepower: 25 Voltage: 460 Phase: 3 Synchronous Speed (rpm): 1174

Enclosure: Grey cast iron EN-GJL-250 (A 48 Class 35B)

CLASSIFICATION: T3

Other Features: Inverter Duty

Moisture Detection Switches (Y/N): Y

Thermal Protection Embedded in Windings (Y/N): Y

REMARKS: \_\_\_\_\_

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OVERHUNG CLOSE-COUPLED SUBMERSIBLE VOLUTE CENTRIFUGAL PUMP DATA SHEET, RAS PUMP STATION 43 25 13.23 - 03

Tag Numbers: P-901-01, P-901-02, P-901-03

Pump Name: RAS Pump Station Pumps 1, 2 and 3

Manufacturer and Model Number: (1) KSB KRT D 100-253/184XEG-S (Basis of Design)  
(2) Approved Equal

SERVICE CONDITIONS

Liquid Pumped (Material and Percent Solids): Mixed Liquor, 0.4% Solids

Pumping Temperature (Fahrenheit): Normal: 82 Max: 95 Min: 40

Specific Gravity at 70 Degrees F: 62.3 Viscosity Range: \_\_\_\_\_

Vapor Pressure at 70 Degrees F: 0.363 psi pH: 7-11

Abrasive (Y/N): N Possible Scale Buildup (Y/N): N

Total suspended solids (mg/L) 4,000

Maximum diameter solid pump can pass (inches) 3

Min. NPSH Available (Ft. Absolute): See Plans

Suction Pressure (Ft): Max See Plans Rated See Plans

PERFORMANCE REQUIREMENTS

Capacity (US gpm): Rated 1,190

Total Dynamic Head (Ft): Rated 45

Maximum Shutoff Pressure (Ft): 70

Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): 80

Max. Pump Speed at Rated Capacity (rpm): Constant (Y/N): 1,190

Adjustable (Y/N): Y

DESIGN AND MATERIALS

Pump Type: Heavy-Duty Non-clog (Y/N)      Y      Other:

Volute Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Pump Casing Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Motor Housing Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Wear Rings Case (Y/N): Y Material: Grey cast iron EN-JL1030 (A 48 Class 30B)

Wear Ring Impeller (Y/N): Y Material: Semi austenitic CrNi stainless steel VG 434 (A 890 Grade 5A)

Elastomers: Nitrile Rubber

Fasteners: Stainless Steel

Impeller:      Type: Single Vane Non-Clog (Y/N): Y Other: \_\_\_\_\_

Material: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Shaft Material: Stainless steel EN-1.4021+QT800 (A 276 Type 420)

Base Elbow: Grey cast iron EN-GJL-250 (A 48 Class 35B)

Double Mechanical Seal (Y/N): Y Bearing Life (Hrs): 100,000

DRIVE MOTOR: See Section 26 20 00 - Low-Voltage AC Induction Motors

Horsepower: 20 Voltage: 460 Phase: 3 Synchronous Speed (rpm): 1174

Enclosure: Grey cast iron EN-GJL-250 (A 48 Class 35B)

CLASSIFICATION: Class 1, Group D, Division 1, Groups C, D, T3

Other Features: \_\_\_\_\_ Inverter Duty \_\_\_\_\_

Moisture Detection Switches (Y/N): Y

Thermal Protection Embedded in Windings (Y/N): Y

REMARKS: \_\_\_\_\_

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*OVERHUNG CLOSE-COUPLED SUBMERSIBLE VOLUTE CENTRIFUGAL PUMP DATA  
SHEET, BIOSOLIDS PUMP STATION 43 25 13.23 - 04*

Tag Numbers: P-1001-01, P-1001-02

Pump Name: Biosolids Drain Pump Station Pumps land 2

Manufacturer and Model Number: (1) Goulds WS1034BF (Basis of Design)  
(2) Approved Equal

*SERVICE CONDITIONS*

Liquid Pumped (Material and Percent Solids): Sewage

Pumping Temperature (Fahrenheit): Normal: 82 Max: 95 Min: 40

Specific Gravity at 70 Degrees F: 62.3 Viscosity Range: \_\_\_\_\_

Vapor Pressure at 70 Degrees F: 0.363 psi pH: 7-11

Abrasive (Y/N): Y Possible Scale Buildup (Y/N): N

Total suspended solids (mg/L) 4,000

Maximum diameter solid pump can pass (inches) 2

Min. NPSH Available (Ft. Absolute): See Plans

Suction Pressure (Ft): Max See Plans Rated See Plans

*PERFORMANCE REQUIREMENTS*

Capacity (US gpm): Rated 156

Total Dynamic Head (Ft): Rated 16

Maximum Shutoff Pressure (Ft): 40

Min. Rated Pump Hydraulic Efficiency at Rated Capacity (%): 75

Max. Pump Speed at Rated Capacity (rpm): Constant (Y/N): 1,750

Adjustable (Y/N): N

*DESIGN AND MATERIALS*

*Pump Type: Heavy-Duty Non-clog (Y/N)      Other:*

*Volute Material: Grey cast iron*

*Pump Casing Material: Grey cast iron*

*Motor Housing Material: Grey cast iron*

*Wear Rings Case (Y/N): Y Material: Grey cast iron*

*Wear Ring Impeller (Y/N): Material: Grey Cast Iron*

*Elastomers: Nitrile Rubber*

*Fasteners: Stainless Steel*

*Impeller:      Type: Single Vane Non-Clog (Y/N): Y Other: \_\_\_\_\_*

*Material: Grey cast iron*

*Shaft Material: Stainless steel*

*Base Elbow: Grey cast iron*

*Double Mechanical Seal (Y/N): Y      Bearing Life (Hrs): N/A*

*DRIVE MOTOR: See Section 26 20 00 - Low-Voltage AC Induction Motors*

*Horsepower: 1 Voltage: 460 Phase: 3 Synchronous Speed (rpm): 1,750*

*Enclosure: Grey cast iron*

*CLASSIFICATION: Class B*

*Other Features: \_\_\_\_\_*

*Moisture Detection Switches (Y/N): N*

*Thermal Protection Embedded in Windings (Y/N): N*

*REMARKS: \_\_\_\_\_*

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SECTION 00 52 00  
AGREEMENT

THIS AGREEMENT is dated as of by and between City of Gatesville (hereinafter called "OWNER") and \_\_\_\_\_ (hereinafter called "CONTRACTOR"). OWNER and CONTRACTOR, in consideration of covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK. CONTRACTOR shall complete all Work as specified or indicated in Contract Documents. Work is generally described as follows:

2-01590 City of Gatesville – Stillhouse Branch Wastewater Treatment Facility Improvements in accordance with Drawings, Specifications, and terms and conditions related thereto to which reference is hereby made.

ARTICLE 2. ENGINEER AND OWNER'S REPRESENTATIVE. Project has been designed by Walker Partners, 804 Las Cimas Parkway, Suite 150, Austin, TX, 78746 who is hereinafter called "ENGINEER" and who assumes all duties and responsibilities and has rights and authority assigned to ENGINEER in Contract Documents in connection with completion of Work in accordance with Contract Documents. Owner's Representative for Project shall be Walker Partners, LLC.

ARTICLE 3. CONTRACT TIMES. Work will be Substantially Completed within 550 calendar days and CONTRACTOR shall achieve Final Completion within 580 calendar days after date when Contract Time Requirements commence to run as provided in Article 2.03 of General Conditions. OWNER and CONTRACTOR recognize that time is of essence of this Agreement and that OWNER will suffer financial loss including, but not limited to, loss of revenue, additional professional fees, fines, labor costs, insurance premiums, etc. if the Work is not completed within times specified in above paragraph, plus any extensions thereof allowed in accordance with Article 12 of General Conditions. They also recognize delays, expense and difficulties involved in proving actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) and, as a reasonable estimate of such damages, CONTRACTOR shall pay OWNER ONE THOUSAND Dollars (\$1000) for each and every day of delay in CONTRACTOR achieving Substantial Completion of Work and readiness for final payment beyond times specified in above paragraph. OWNER shall have option of deducting the amount of any liquidated damages from any monies that may be owed to CONTRACTOR or to recover such amount from CONTRACTOR or its sureties, at CONTRACTOR'S expense.

ARTICLE 4. CONTRACT AMOUNT. OWNER shall pay CONTRACTOR for completion of Work in accordance with Contract Documents an amount in current funds equal to sum of amounts determined pursuant to Proposal and any subsequent Change Orders and Change Directives thereto in the amount of \_\_\_\_\_ (\$xxxxxxx).

ARTICLE 5. PAYMENT PROCEDURES. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of General Conditions. Applications for Payment will be processed by ENGINEER and as provided in General Conditions and Supplemental Conditions. OWNER shall make progress payments on account of Contract Amount on the basis of CONTRACTOR'S Applications for Payment as recommended by ENGINEER and in conformance with the procedures described in General Conditions. All such payments will be measured by schedule of values established in Article 2.05 of General Conditions (and on number of units of each Unit Price item completed, if unit price contract). Upon final completion and acceptance of Work in accordance with Article 14 of General Conditions, OWNER shall pay the remainder of Contract Amount as recommended by Owner's Representative as provided in said Article 14. In accordance with Texas Water Code Section 49.276 – PAYMENT FOR CONSTRUCTION WORK, Subsection (d), in making progress payments, 5% of estimated amount shall be retained until final completion and acceptance of contract work.

ARTICLE 6. CONTRACTOR'S REPRESENTATIONS. In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- CONTRACTOR has examined and carefully studied Contract Documents (including Addenda listed in Article 7) and other related data identified in Proposal Documents.
- CONTRACTOR has visited site and become familiar with and is satisfied as to general, local, and site conditions that may affect cost, progress, performance, or furnishing of Work.
- CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Legal Requirements that may affect cost, progress, performance, and furnishing of Work.
- CONTRACTOR has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to Site.
- CONTRACTOR acknowledges that such reports and drawings are not Contract Documents, are not warranted or represented in any manner by Owner to accurately show the conditions at Site, and may not be complete for CONTRACTOR'S purposes.
- CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for accuracy or completeness of information and data shown or indicated in Contract Documents with respect to subsurface conditions or Underground Facilities at or contiguous to Site or CONTRACTOR'S interpretation of such information and data.
- CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary research, examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto.
- CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance and furnishing of Work at Contract Amount, within Contract Time Requirements and in accordance with other terms and conditions of Contract Documents.
- CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at Site that relates to Work as indicated in Contract Documents.



- CONTRACTOR has correlated information known to CONTRACTOR, information and observations obtained from visits to Site, reports, and Drawings identified in Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with Contract Documents.
- CONTRACTOR has provided ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR, and Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of Work.

ARTICLE 7. CONTRACT DOCUMENTS. Contract Documents are comprised of the following:

1. This Agreement.
2. Exhibits to this Agreement:
  - a. Document Title Date Page(s)
3. Performance and Payment Bonds.
4. General Conditions of Contract.
5. Supplemental Conditions, if any.
6. Specifications, prepared by Walker Partners, dated \_\_\_\_\_.
7. Drawings.
8. Addenda: Addendum No. \_\_\_ through Addendum No. \_\_\_\_
9. CONTRACTOR'S Proposal Form pursuant to Request for Proposal.
10. Prevailing Wage Rates.
11. Following which may be delivered or issued after Effective Date of Agreement and are not attached thereto: All written Change Orders or Work Orders pursuant to Article 3.04 of General Conditions. There are no Contract Documents other than those listed in this Article. Contract Documents may only be amended, modified, or supplemented as provided in Article 3.04 of General Conditions.

ARTICLE 8. INDEMNITY PROVISIONS. GENERAL, SPECIAL, AND SUPPLEMENTAL CONDITIONS, IF ANY, INCORPORATED INTO THIS AGREEMENT CONTAIN PROVISIONS THAT MAY RELIEVE ONE PARTY FOR RESPONSIBILITY IT WOULD OTHERWISE HAVE UNDER LAW FOR DAMAGES OR OTHER LIABILITY ARISING OUT OF WORK. EACH OF THE PARTIES HERETO SPECIFICALLY AGREES THAT IT HAS A DUTY TO READ THIS AGREEMENT, GENERAL, SPECIAL, AND SUPPLEMENTAL CONDITIONS, IF ANY, AND ALL OTHER CONTRACT DOCUMENTS AND AGREES THAT IT IS CHARGED WITH NOTICE AND KNOWLEDGE OF TERMS OF THIS AGREEMENT AND ALL CONTRACT DOCUMENTS; THAT IT HAS IN FACT READ THIS AGREEMENT AND ALL CONTRACT DOCUMENTS AND IS FULLY INFORMED AND HAS FULL NOTICE AND KNOWLEDGE OF TERMS, CONDITIONS AND EFFECTS OF THIS AGREEMENT; THAT IT HAS HAD OPPORTUNITY TO BE REPRESENTED BY INDEPENDENT LEGAL COUNSEL OF ITS CHOICE PRECEDING ITS EXECUTION OF THIS AGREEMENT AND HAS RECEIVED OR VOLUNTARILY CHOSEN NOT TO RECEIVE ADVICE OF ITS ATTORNEY IN ENTERING INTO THIS AGREEMENT; AND THAT IT RECOGNIZES THAT CERTAIN TERMS OF THIS AGREEMENT AND CONTRACT DOCUMENTS RESULT IN ONE PARTY ASSUMING THE LIABILITY INHERENT IN SOME ASPECTS OF TRANSACTION AND RELIEVING OTHER PARTY OF ITS RESPONSIBILITY FOR SUCH LIABILITY. EACH PARTY HERETO AGREES AND COVENANTS THAT IT WILL NOT CONTEST VALIDITY OR ENFORCEMENT OF ANY EXCULPATORY PROVISION OF THIS AGREEMENT ON

BASIS THAT THE PARTY HAD NO NOTICE OR KNOWLEDGE OF SUCH PROVISION OR THAT THE PROVISION IS NOT "CONSPICUOUS".

ARTICLE 9. MISCELLANEOUS. Terms used in this Agreement which are defined in Article 1 of General Conditions will have the meanings indicated in General Conditions. CONTRACTOR certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing Contract. For purposes of this Article 9:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in proposal process or in Contract execution;
2. "fraudulent practice" means an intentional misrepresentation of facts made
  - (a) to influence proposal process or execution of Contract to detriment of OWNER,
  - (b) to establish Proposal or Contract prices at artificial noncompetitive levels, or
  - (c) to deprive OWNER of benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Proposers, with or without knowledge of OWNER, a purpose of which is to establish Proposal prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the proposal process or affect execution of Contract.

ARTICLE 10. AMERICAN IRON AND STEEL. The Contractor acknowledges to and for the benefit of the Owner ("Purchaser") and the Texas Water Development Board (TWDB) 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 Owner and the TWDB that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the TWDB. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner to enforce this Agreement and recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the TWDB or any damages owed to the TWDB by the Owner). While the Contractor has no direct contractual privity with the TWDB, as a lender to the Owner for the funding of its project, the Owner and the Contractor agree that the TWDB 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 TWDB.

No assignment by a party hereto of any rights or interests in Contract will be binding on another party hereto without written consent of party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that effect of this restriction may be limited by law), and unless specifically stated to contrary in any written consent to an assignment no assignment will release or discharge assignor from any duty or responsibility under Contract.

OWNER and CONTRACTOR each binds itself, its officers, directors, shareholders, partners, members, successors, assigns, and legal representatives to other party hereto, its officers, directors, shareholders, partners, members, successors, assigns and legal representatives in respect to all covenants, agreements, and obligations contained in Contract Documents. Any provision or part thereof of Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions or parts thereof shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing intention of the stricken provision or part thereof.

IN WITNESS WHEREOF, OWNER, and CONTRACTOR have signed this Agreement in duplicate. One counterpart has been delivered to OWNER, one counterpart has been delivered to CONTRACTOR and one counterpart has been delivered to ENGINEER. All portions of Contract Documents have been signed, initialed, or otherwise clearly identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on \_\_\_\_\_, (which is effective date of Agreement).

OWNER: \_\_\_\_\_

By: \_\_\_\_\_

Attest: \_\_\_\_\_

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

By: \_\_\_\_\_

(CORPORATE SEAL)

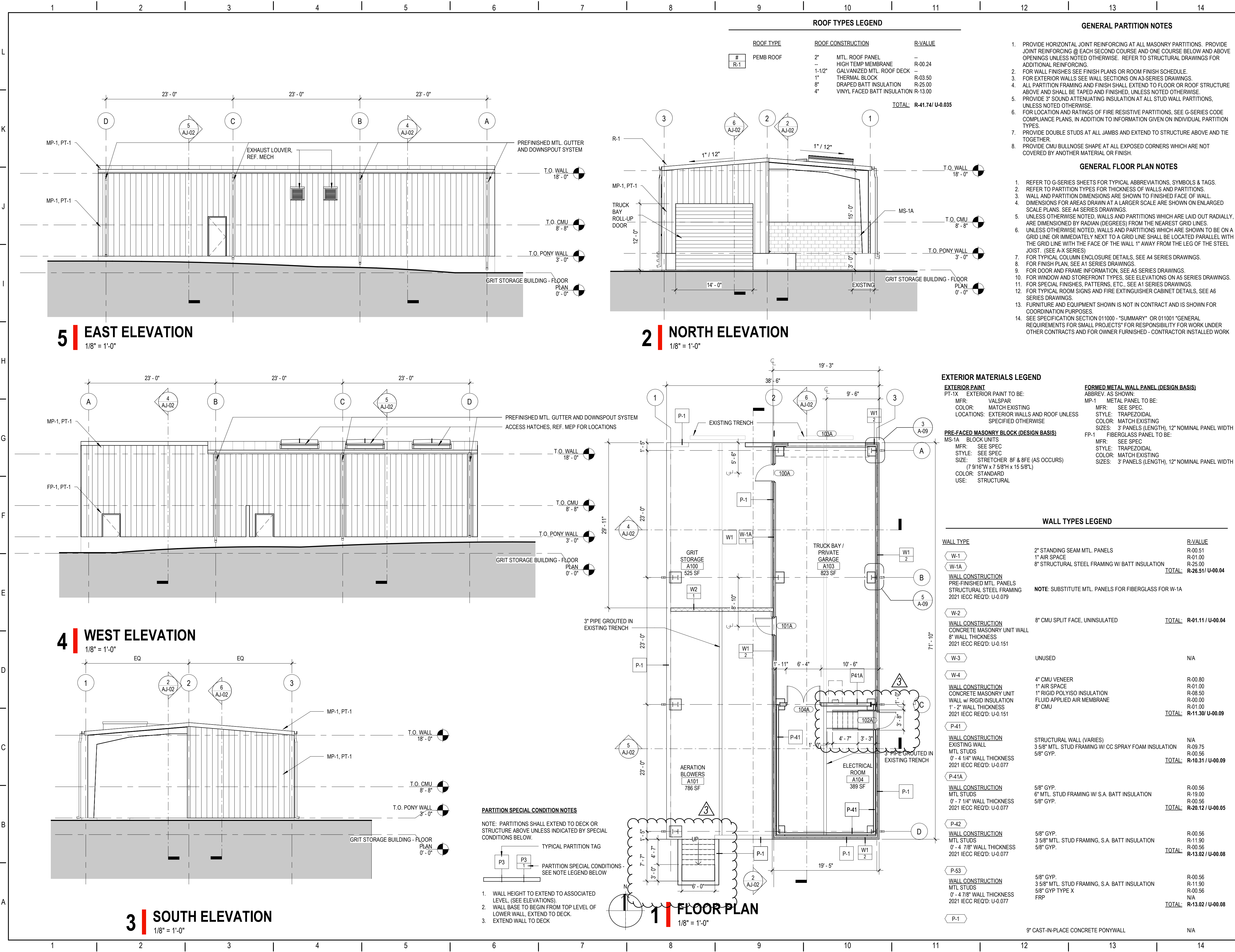
Attest: \_\_\_\_\_

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

END OF SECTION

S:\DOBS\2023\23-3706.01\_GATESVILLE\_WWTF\3.0 DRAWINGS\23-3706.01-AUTOCAD\2-01590 SHEET.DWG, MODEL, #1/14/2021 6:26:33 AM, an.guerrero



**5 | EAST ELEVATION**  
1/8" = 1'-0"

**2 | NORTH ELEVATION**  
1/8" = 1'-0"

**4 | WEST ELEVATION**  
1/8" = 1'-0"

**3 | SOUTH ELEVATION**  
1/8" = 1'-0"

**1 | FLOOR PLAN**  
1/8" = 1'-0"

**ROOF TYPES LEGEND**

#	ROOF TYPE	ROOF CONSTRUCTION	R-VALUE
R-1	PEMB ROOF	2" MTL ROOF PANEL HIGH TEMP MEMBRANE	R-00.24
		1-1/2" GALVANIZED MTL ROOF DECK	
		1" THERMAL BLOCK	R-03.50
		8" DRAPED BATT INSULATION	R-25.00
		4" VINYL FACED BATT INSULATION	R-13.00
<b>TOTAL:</b>			<b>R-41.74 / U-0.035</b>

- GENERAL PARTITION NOTES**
- PROVIDE HORIZONTAL JOINT REINFORCING AT ALL MASONRY PARTITIONS. PROVIDE JOINT REINFORCING @ EACH SECOND COURSE AND ONE COURSE BELOW AND ABOVE OPENINGS UNLESS NOTED OTHERWISE. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REINFORCING.
  - FOR WALL FINISHES SEE FINISH PLANS OR ROOM FINISH SCHEDULE.
  - FOR EXTERIOR WALLS SEE WALL SECTIONS ON A3-SERIES DRAWINGS.
  - ALL PARTITION FRAMING AND FINISH SHALL EXTEND TO FLOOR OR ROOF STRUCTURE ABOVE AND SHALL BE TAPED AND FINISHED, UNLESS NOTED OTHERWISE.
  - PROVIDE 3" SOUND ATTENUATING INSULATION AT ALL STUD WALL PARTITIONS, UNLESS NOTED OTHERWISE.
  - FOR LOCATION AND RATINGS OF FIRE RESISTIVE PARTITIONS, SEE G-SERIES CODE COMPLIANCE PLANS, IN ADDITION TO INFORMATION GIVEN ON INDIVIDUAL PARTITION TYPES.
  - PROVIDE DOUBLE STUDS AT ALL JAMBS AND EXTEND TO STRUCTURE ABOVE AND THE TOGETHER.
  - PROVIDE CMU BULLNOSE SHAPE AT ALL EXPOSED CORNERS WHICH ARE NOT COVERED BY ANOTHER MATERIAL OR FINISH.

- GENERAL FLOOR PLAN NOTES**
- REFER TO G-SERIES SHEETS FOR TYPICAL ABBREVIATIONS, SYMBOLS & TAGS.
  - REFER TO PARTITION TYPES FOR THICKNESS OF WALLS AND PARTITIONS.
  - WALL AND PARTITION DIMENSIONS ARE SHOWN TO FINISHED FACE OF WALL.
  - DIMENSIONS FOR AREAS DRAWN AT A LARGER SCALE ARE SHOWN ON ENLARGED SCALE PLANS. SEE A4 SERIES DRAWINGS.
  - UNLESS OTHERWISE NOTED, WALLS AND PARTITIONS WHICH ARE LAID OUT RADIIALLY, ARE DIMENSIONED BY RADIAN (DEGREES) FROM THE NEAREST GRID LINES.
  - UNLESS OTHERWISE NOTED, WALLS AND PARTITIONS WHICH ARE SHOWN TO BE ON A GRID LINE OR IMMEDIATELY NEXT TO A GRID LINE SHALL BE LOCATED PARALLEL WITH THE GRID LINE WITH THE FACE OF THE WALL 1" AWAY FROM THE LEG OF THE STEEL JOIST. (SEE A-X SERIES)
  - FOR TYPICAL COLUMN ENCLOSURE DETAILS, SEE A4 SERIES DRAWINGS.
  - FOR FINISH PLAN, SEE A1 SERIES DRAWINGS.
  - FOR DOOR AND FRAME INFORMATION, SEE A5 SERIES DRAWINGS.
  - FOR WINDOW AND STOREFRONT TYPES, SEE ELEVATIONS ON A5 SERIES DRAWINGS.
  - FOR SPECIAL FINISHES, PATTERNS, ETC. SEE A1 SERIES DRAWINGS.
  - FOR TYPICAL ROOM SIGNS AND FIRE EXTINGUISHER CABINET DETAILS, SEE A6 SERIES DRAWINGS.
  - FURNITURE AND EQUIPMENT SHOWN IS NOT IN CONTRACT AND IS SHOWN FOR COORDINATION PURPOSES.
  - FOR SPECIAL FINISHES, PATTERNS, ETC. SEE A1 SERIES DRAWINGS.
  - FOR TYPICAL ROOM SIGNS AND FIRE EXTINGUISHER CABINET DETAILS, SEE A6 SERIES DRAWINGS.
  - FURNITURE AND EQUIPMENT SHOWN IS NOT IN CONTRACT AND IS SHOWN FOR COORDINATION PURPOSES.
  - SEE SPECIFICATION SECTION 011000 - "SUMMARY" OR 011001 "GENERAL REQUIREMENTS FOR SMALL PROJECTS" FOR RESPONSIBILITY FOR WORK UNDER OTHER CONTRACTS AND FOR OWNER FURNISHED - CONTRACTOR INSTALLED WORK.

**EXTERIOR MATERIALS LEGEND**

EXTERIOR PAINT	FORMED METAL WALL PANEL (DESIGN BASIS)
PT-1X EXTERIOR PAINT TO BE: MFR: VALSPAR COLOR: MATCH EXISTING LOCATIONS: EXTERIOR WALLS AND ROOF UNLESS SPECIFIED OTHERWISE	MP-1 METAL PANEL TO BE: MFR: SEE SPEC STYLE: TRAPEZOIDAL COLOR: MATCH EXISTING SIZES: 3 PANELS (LENGTH), 12" NOMINAL PANEL WIDTH
PRE-FACED MASONRY BLOCK (DESIGN BASIS) MS-1A BLOCK UNITS MFR: SEE SPEC STYLE: SEE SPEC SIZE: STRETCHER 8" & 8" (AS OCCURS) (7 9/16" W x 7 5/8" H x 15 5/8" L) COLOR: STANDARD USE: STRUCTURAL	FP-1 FIBERGLASS PANEL TO BE: MFR: SEE SPEC STYLE: TRAPEZOIDAL COLOR: MATCH EXISTING SIZES: 3 PANELS (LENGTH), 12" NOMINAL PANEL WIDTH

**WALL TYPES LEGEND**

WALL TYPE	R-VALUE
W-1 2" STANDING SEAM MTL PANELS	R-00.51
W-1A 1" AIR SPACE	R-01.00
W-1A 8" STRUCTURAL STEEL FRAMING W/ BATT INSULATION	R-25.00
<b>TOTAL: R-26.51 / U-0.04</b>	
W-2 8" CMU SPLIT FACE, UNINSULATED	R-01.11 / U-0.04
W-3 UNUSED	N/A
W-4 4" CMU VENEER	R-00.80
W-4 1" AIR SPACE	R-01.00
W-4 1" RIGID POLYISO INSULATION	R-08.50
W-4 1" RIGID POLYISO INSULATION	R-00.00
W-4 1" 2" WALL THICKNESS	R-01.00
W-4 2021 IECC REQ'D: U-0.151	
<b>TOTAL: R-11.30 / U-0.09</b>	
W-41A 5/8" GYP.	R-00.56
W-41A 6" MTL STUD FRAMING W/ S.A. BATT INSULATION	R-19.00
W-41A 5/8" GYP.	R-00.56
<b>TOTAL: R-20.12 / U-0.05</b>	
W-42 5/8" GYP.	R-00.56
W-42 3 5/8" MTL STUD FRAMING, S.A. BATT INSULATION	R-11.90
W-42 5/8" GYP.	R-00.56
<b>TOTAL: R-13.02 / U-0.08</b>	
W-43 5/8" GYP.	R-00.56
W-43 3 5/8" MTL STUD FRAMING, S.A. BATT INSULATION	R-11.90
W-43 5/8" GYP.	R-00.56
<b>TOTAL: R-13.02 / U-0.08</b>	
W-44 5/8" GYP.	R-00.56
W-44 3 5/8" MTL STUD FRAMING, S.A. BATT INSULATION	R-11.90
W-44 5/8" GYP.	R-00.56
<b>TOTAL: R-13.02 / U-0.08</b>	
W-45 9" CAST-IN-PLACE CONCRETE PONY WALL	N/A

- PARTITION SPECIAL CONDITION NOTES**
- NOTE: PARTITIONS SHALL EXTEND TO DECK OR STRUCTURE ABOVE UNLESS INDICATED BY SPECIAL CONDITIONS BELOW.
- TYPICAL PARTITION TAG
- PARTITION SPECIAL CONDITIONS - SEE NOTE LEGEND BELOW
- WALL HEIGHT TO EXTEND TO ASSOCIATED LEVEL. (SEE ELEVATIONS).
  - WALL BASE TO BEGIN FROM TOP LEVEL OF LOWER WALL. EXTEND TO DECK.
  - EXTEND WALL TO DECK

**fgma**

**FGM Architects Inc.**  
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REV.	DESCRIPTION	DATE
ADDENDUM #3		6-13-23
ADDENDUM #2		6-1-23
ADDENDUM #1		5-23-23

**Walker Partners**  
engineers | surveyors  
T.P.E. Registration No. 8053

**CITY OF GATESVILLE**

**CITY OF GATESVILLE - STILLHOUSE WWTF UPGRADE AND EXPANSION**

**GRIT STORAGE BUILDING - GSEB**

**PRELIMINARY FOR REVIEW ONLY**

DESIGNED	J. PALOMO
DRAWN	A. GUERRERO
CHECKED	L. DEBICKERO
PROJECT NO.	2-01590
DRAWING NO.	AJ-01

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ES-10	MCC #2 SCHEMATICS
ES-11	MCC #2 SCHEMATICS
ES-12	MCC #2 SCHEMATICS
ES-13	MCC #2 SCHEMATICS
ES-14	MCC #2 SCHEMATICS
ES-15	MCC #3 SCHEMATICS
ES-16	MCC #3 SCHEMATICS
ES-17	MCC #3 SCHEMATICS
ES-18	MCC #4 SCHEMATICS
ES-19	MCC #4 SCHEMATICS
ES-20	MCC #4 SCHEMATICS
ES-21	MCC #4 SCHEMATICS
ES-22	MCC #4 SCHEMATICS
ES-23	MCC #5 SCHEMATICS
ES-24	MCC #5 SCHEMATICS
ES-25	MCC #5 SCHEMATICS
ES-26	MCC #5 SCHEMATICS
ES-27	MCC #5 SCHEMATICS
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ES-30	MCC #5 SCHEMATICS
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ES-37	RAS PUMP SCHEMATIC
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ES-39	BLOWER SCHEMATIC
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ET-02	BELT PRESS BUILDING OID DISPLAY
ET-03	OID DISPLAYS
ET-04	OID DISPLAYS
ET-05	OID DISPLAYS
ET-06	OID DISPLAYS
ET-07	OID DISPLAYS
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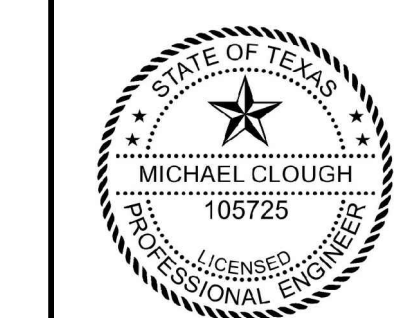
ADDENDUM #3	6-13-23	
ADDENDUM #2	6-1-23	
ADDENDUM #1	5-23-23	
REV.	DESCRIPTION	DATE



CITY OF GATESVILLE  
CITY OF GATESVILLE - STILLHOUSE  
WWTF UPGRADE AND EXPANSION

## DRAWING INDEX

5-8-23	DATE	MICHAEL CLOUGH
PM	J. JENKINS	
DESIGNED	M. CLOUGH	
DRAFTED	TFG, PA	
CHECKED	J. JENKINS	
PROJECT NO.	2-01590	
DRAWING NO.	G-01	



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# PIPING SCHEDULE

Service	Legend	Exposure	Size(s) (In.)	Piping Material <sup>1</sup>	Pipe Lining	Specification Section	Operating Pressure (psig)	Test Pressure and Type (psig-x) where X=H for Hydrostatic and x=P for Pneumatic	Pipe Label	Pipe Colors	Insulation Service Type	
Floor Drains	DRN	Underground	3 - 8	PVC	N/A	40 05 31	Gravity	Hydrostatic	N/A	N/A	N/A	
Sample	SA	All	< 2	HDPE	N/A	40 05 31	60	100	Sample	N/A	EXP - HT / P-3, J-4	
Liquid Chlorine Dioxide <sup>2</sup>	CLO2	All	As noted	PVC	N/A	40 05 31	60	100	Chlorine	Yellow	Outdoor EXP - HT / P-3, J-4	
Liquid Sulfur Dioxide <sup>2</sup>	SO2	All	As noted	PVC	N/A	40 05 31	60	100	Sulfur Dioxide	Yellow w/ Red Bands	Outdoor EXP - HT / P-3, J-4	
Chemical / Sample Containment	CP	All	All	CPVC	N/A	40 05 31	Gravity	Hydrostatic	N/A	N/A	N/A	
Sanitary Sewer Gravity	SS	Underground	< 12	PVC	N/A	22 13 16	Gravity	Hydrostatic	N/A	N/A	N/A	
Screened Raw Sewage	SRS	Aboveground	> 12	DI	CE	40 05 19	15	100	Sewer	Green	N/A	
				WS	CE	40 05 24	15	100	Sewer	Green	N/A	
		Underground	> 12	DI	CE	40 05 19	15	100	N/A	N/A	N/A	N/A
				WS	CE	40 05 24	15	100	N/A	N/A	N/A	N/A
Mixed Liquor	ML	Aboveground	30	DI	CM	40 05 19	Gravity	Hydrostatic	Mixed Liquor	Brown	N/A	
				WS	CM	40 05 24	Gravity	Hydrostatic	Mixed Liquor	Brown	N/A	
		Underground	30	DI	CM	40 05 19	Gravity	Hydrostatic	N/A	N/A	N/A	N/A
				WS	CM	40 05 24	Gravity	Hydrostatic	N/A	N/A	N/A	N/A
Secondary Effluent	SEFF	Aboveground	30	DI	CM	40 05 19	Gravity	Hydrostatic	Secondary Effluent	Aqua	N/A	
				WS	CM	40 05 24	Gravity	Hydrostatic	Secondary Effluent	Aqua	N/A	
		Underground	30	DI	CM	40 05 19	Gravity	Hydrostatic	N/A	N/A	N/A	N/A
				WS	CM	40 05 24	Gravity	Hydrostatic	N/A	N/A	N/A	N/A
Low-Pressure Air	ALP	Aboveground	3-12	DI	CM	40 05 19	15	25-P	Process Air	Dark Green	N/A	
				WS	CM	40 05 24	15	25-P	Process Air	Dark Green	N/A	
		Underground	3	DI	CM	40 05 19	15	25-P	N/A	N/A	N/A	N/A
				WS	CM	40 05 24	15	25-P	N/A	N/A	N/A	N/A
Return Activated Sludge	RAS	Aboveground	10-16	DI	CM	40 05 19	20	100	RAS	Brown	N/A	
				WS	CM	40 05 24	20	100	RAS	Brown	N/A	
		Underground	10-16	DI	CM	40 05 19	20	100	N/A	N/A	N/A	N/A
				WS	CM	40 05 24	20	100	N/A	N/A	N/A	N/A
Waste Activated Sludge	WAS	Aboveground	8	DI	CM	40 05 19	15	50	Plant Effluent	Blue w/ Black Bands	N/A	
				WS	CM	40 05 24	15	50	Plant Effluent	Blue w/ Black Bands	N/A	
		Underground	8	DI	CM	40 05 19	15	50	N/A	N/A	N/A	N/A
				WS	CM	40 05 24	15	50	N/A	N/A	N/A	N/A
Plant Effluent	PEFF	Aboveground	30	DI	CM	40 05 19	15	50	N/A	N/A	N/A	
				WS	CM	40 05 24	15	50	N/A	N/A	N/A	N/A
		Underground	30	DI	N/A	40 05 19	60	100	Nonpotable Water	Blue w/ Black Bands	N/A	N/A
				PVC	N/A	40 05 31	60	100	Nonpotable Water	Blue w/ Black Bands	N/A	N/A
Plant Water System	PW	Aboveground	2-6	DI	N/A	40 05 19	60	100	N/A	N/A	N/A	
				PVC	N/A	40 05 31	60	100	N/A	N/A	N/A	N/A
		Underground	2-6	DI	N/A	40 05 19	60	100	N/A	N/A	N/A	N/A
				PVC	N/A	40 05 31	60	100	N/A	N/A	N/A	N/A

**NOTES**  
 1. Contract allows multiple pipe materials listed for each service type  
 2. Outdoor Exposed requires insulation

**ABBREVIATIONS**  
**PIPE MATERIAL**  
 DI Ductile Iron  
 CS Carbon Steel  
 WS Welded Steel  
 PVC Polyvinyl Chloride  
 HDPE High Density Polyethylene  
 CPVC Chlorinated PVC  
 SS Stainless Steel

**PIPE LINING**  
 CM Cement Mortar  
 CE Ceramic Epoxy  
**OTHER**  
 HT Heat Trace  
 INS Insulate



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A	ADDENDUM #3	6-13-23
B	ADDENDUM #2	6-1-23
C	ADDENDUM #1	5-23-23
D	REV.	DATE



**CITY OF GATESVILLE**  
 CITY OF GATESVILLE - STILLHOUSE  
 WWTF UPGRADE AND EXPANSION

**PIPING SCHEDULE**

5-8-23	 MICHAEL CLOUGH DATE
	PM J. JENKINS DESIGNED M. CLOUGH DRAFTED TFG, PA CHECKED J. JENKINS PROJECT NO. 2-01590 DRAWING NO. <b>M-03</b>

# VALVE SCHEDULE 1

Key Note No.	Tag No.	Valve Type	Size (inches)	Inlet Pressure (psig)	Outlet Pressure (psig)	Valve Rated (psig)	Flow (gpm)	Fluid	Location	Sheets	Specification Section	Remarks
	CK-201-01	Check Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 65, 2.5 (A)	
	CK-201-02	Check Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 65, 2.5 (A)	
	CK-201-03	Check Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 65, 2.5 (A)	
	PV-201-01	Plug Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 62, 2.1 (B)	
	PV-201-02	Plug Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 62, 2.1 (B)	
	PV-201-03	Plug Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 62, 2.1 (B)	
	ARV-201	Combination Air Vacuum Valve	2	20	20	150	0-9000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 78, 2.2 (A)	
	ARV-210	Combination Air Vacuum Valve	2	20	20	150	0-9000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 78, 2.2 (A)	
	PV-201-04	Plug Valve	12	20	20	150	0-3000	Screened Sewage	Influent Pump discharge header	MB-02, MB-03, P-01	40 05 62, 2.1 (B)	
	BFV-401	Butterfly Valve	10	10	10	150	1,535 CFM	Air	Aeration Basin #1 Air Supply	MD-02, MD-03, P-02	40 05 64, 2.2 (G)	Modulating Actuator
	BFV-402	Butterfly Valve	10	10	10	150	1,535 CFM	Air	Aeration Basin #2 Air Supply	MD-02, MD-03, P-02	40 05 64, 2.2 (G)	Modulating Actuator
	BFV-410-01	Butterfly Valve	8	10	10	150	1,535 CFM	Air	Blower B-410-01 Isolation	MD-02, MD-03, P-02	40 05 64, 2.2 (G)	
	BFV-410-02	Butterfly Valve	8	10	10	150	1,535 CFM	Air	Blower B-410-02 Isolation	MD-02, MD-03, P-02	40 05 64, 2.2 (G)	
	BFV-410-03	Butterfly Valve	8	10	10	150	1,535 CFM	Air	Blower B-410-03 Isolation	MD-02, MD-03, P-02	40 05 64, 2.2 (G)	Alternate Bid Item
	MV-610-01	Mud Valve	6	20	20	150	0-3000	Drain	Chlorine Contact Basin	MF-06, P-03	40 05 81, 2.6 (B)	
	MV-610-02	Mud Valve	6	20	20	150	0-3000	Drain	Chlorine Contact Basin	MF-06, P-03	40 05 81, 2.6 (B)	
	BFV-621-02	Butterfly Valve	30	20	20	150	0-9000	Plant Effluent	SO2 MH Discharge	C-16, P-04	40 05 64, 2.2 (A)	Relocate Existing Valve
	CK-701-01	Check Valve	12	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 65, 2.5 (A)	
	CK-701-02	Check Valve	12	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 65, 2.5 (A)	
	CK-701-03	Check Valve	12	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 65, 2.5 (A)	
	GV-701-01	Gate Valve	12	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 61, 2.1 (A)	
	GV-701-02	Gate Valve	12	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 61, 2.1 (A)	
	GV-701-03	Gate Valve	12	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 61, 2.1 (A)	
	ARV-701-01	Combination Air Vacuum Valve	2	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 78, 2.2 (A)	
	ARV-701-02	Combination Air Vacuum Valve	2	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 78, 2.2 (A)	
	ARV-701-03	Combination Air Vacuum Valve	2	20	20	150	0-3000	Plant Effluent	Effluent Pump Station	MG-02, P-04	40 05 78, 2.2 (A)	
	BFV-801	Butterfly Valve	3	20	20	150	70 CFM	Air	Reaeration Basin Air Supply	C-19, P-04	40 05 64, 2.2 (G)	
	CK-901-01	Check Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 65, 2.5 (A)	

**NOTES:**

1. Schedule only contains valves 4 inches in diameter and larger and specialty valves.
2. Schedule only contains new valves or relocated existing valves required for this project.
3. See specifications for all valve requirements and for information on valves less than 4 inch in diameter.
4. All valves shall have minimum design working pressure rating of 200 psi and flanged valves shall have ANSI Class 125 Flanged ends.
5. Operating pressures for smaller valves can be determined from pressures on piping schedule.
6. All valves associated with building plumbing are in separate specifications and in the ME series drawings.
7. For valves noted as to be vendor supplied are listed for informational purposes, these valves may be inclusive of all valves supplied by equipment manufacturers and should be updated upon completion of project.

REV.	DESCRIPTION	DATE
3	ADDENDUM #3	6-13-23
2	ADDENDUM #2	6-1-23
1	ADDENDUM #1	5-23-23



**CITY OF GATESVILLE**  
CITY OF GATESVILLE - STILLHOUSE WWTF UPGRADE AND EXPANSION

**VALVE SCHEDULE 1**

DATE	5-8-23
DESIGNED	J. JENKINS
DRAFTED	M. CLOUGH
CHECKED	J. JENKINS
PROJECT NO.	2-01590
DRAWING NO.	M-04



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# VALVE SCHEDULE 2

Key Note No.	Tag No.	Valve Type	Size (inches)	Inlet Pressure (psig)	Outlet Pressure (psig)	Valve Rated (psig)	Flow (gpm)	Fluid	Location	Sheets	Specification Section	Remarks
	CK-901-02	Check Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 65, 2.5 (A)	
	CK-901-03	Check Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 65, 2.5 (A)	
	PV-901-01	Plug Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 62, 2.1 (B)	
	PV-901-02	Plug Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 62, 2.1 (B)	
	PV-901-03	Plug Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 62, 2.1 (B)	
	PV-901-04	Plug Valve	12	20	20	150	0-1200	RAS	RAS Pump Station	MI-04, P-05	40 05 62, 2.1 (B)	
	PV-910	Plug Valve	8	20	20	150	0-800	WAS	RAS Pump Station	P-05, MI-04	40 05 62, 2.1 (B)	
	PV-911	Plug Valve	6	20	20	150	0-3000	WAS	Valve Vault #2	P-05, MZ-07	40 05 62, 2.1 (B)	Replace Existing Valve
	ARV-940	Combination Air Vacuum Valve	2	20	20	150	0-9000	RAS	Splitter Box #1	MC-02, P-01	40 05 78, 2.2 (A)	
	PV-940	Plug Valve	16	20	20	150	0-3000	RAS	Splitter Box #1	MC-02, P-01	40 05 62, 2.1 (C)	

**NOTES:**

- Schedule only contains valves 4 inches in diameter and larger and specialty valves.
- Schedule only contains new valves or relocated existing valves required for this project.
- See specifications for all valve requirements and for information on valves less than 4 inch in diameter.
- All valves shall have minimum design working pressure rating of 200 psi and flanged valves shall have ANSI Class 125 Flanged ends.
- Operating pressures for smaller valves can be determined from pressures on piping schedule.
- All valves associated with building plumbing are in separate specifications and in the ME series drawings.
- For valves noted as to be vendor supplied are listed for informational purposes, these valves may be inclusive of all valves supplied by equipment manufacturers and should be updated upon completion of project.

ADDENDUM #3	6-13-23	
ADDENDUM #2	6-1-23	
ADDENDUM #1	5-23-23	
REV.	DESCRIPTION	DATE



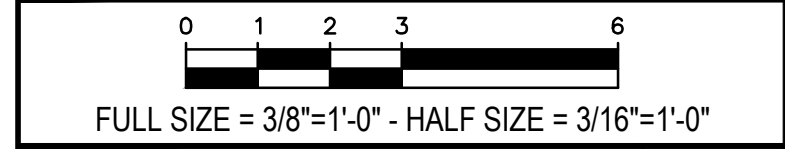
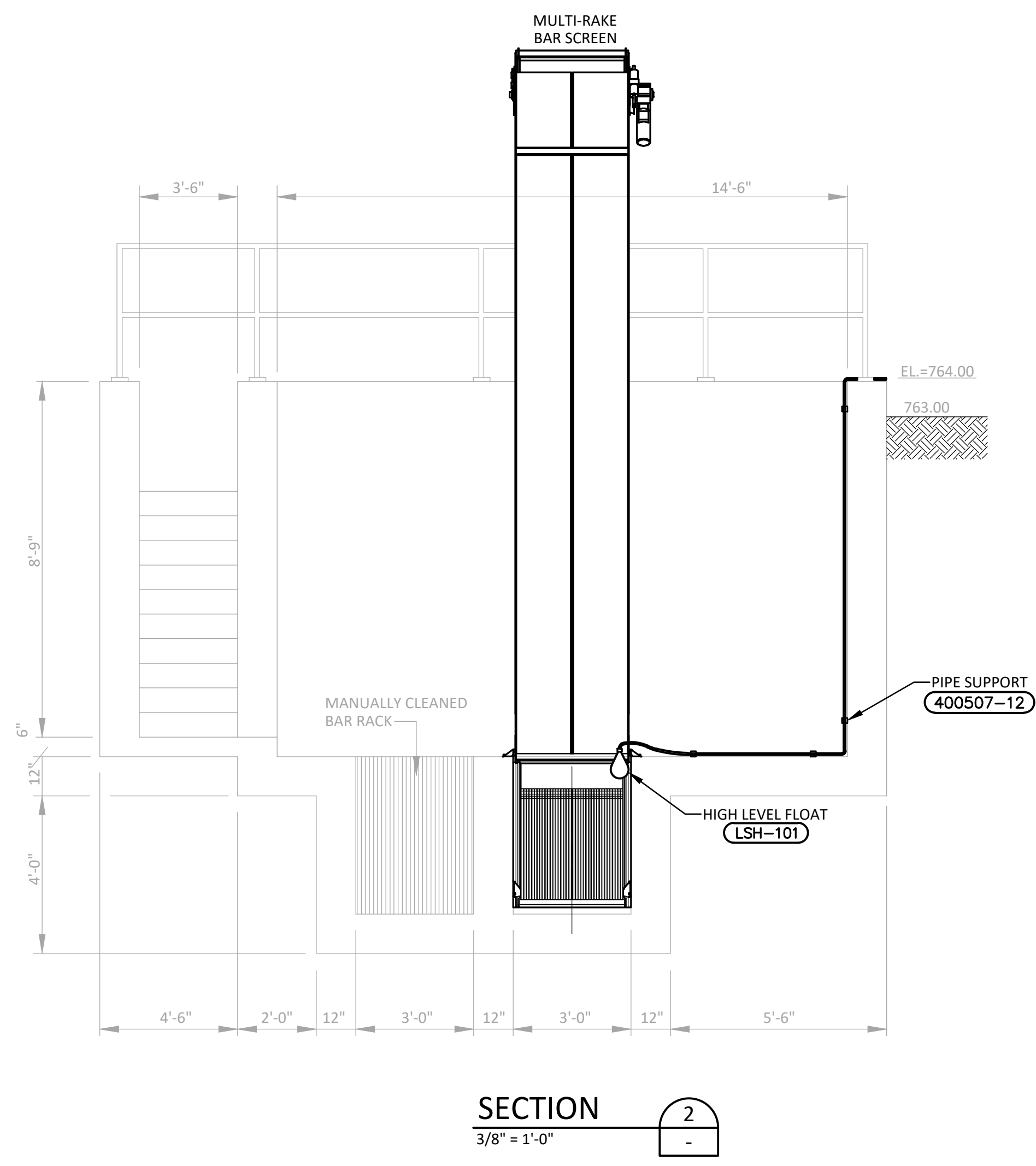
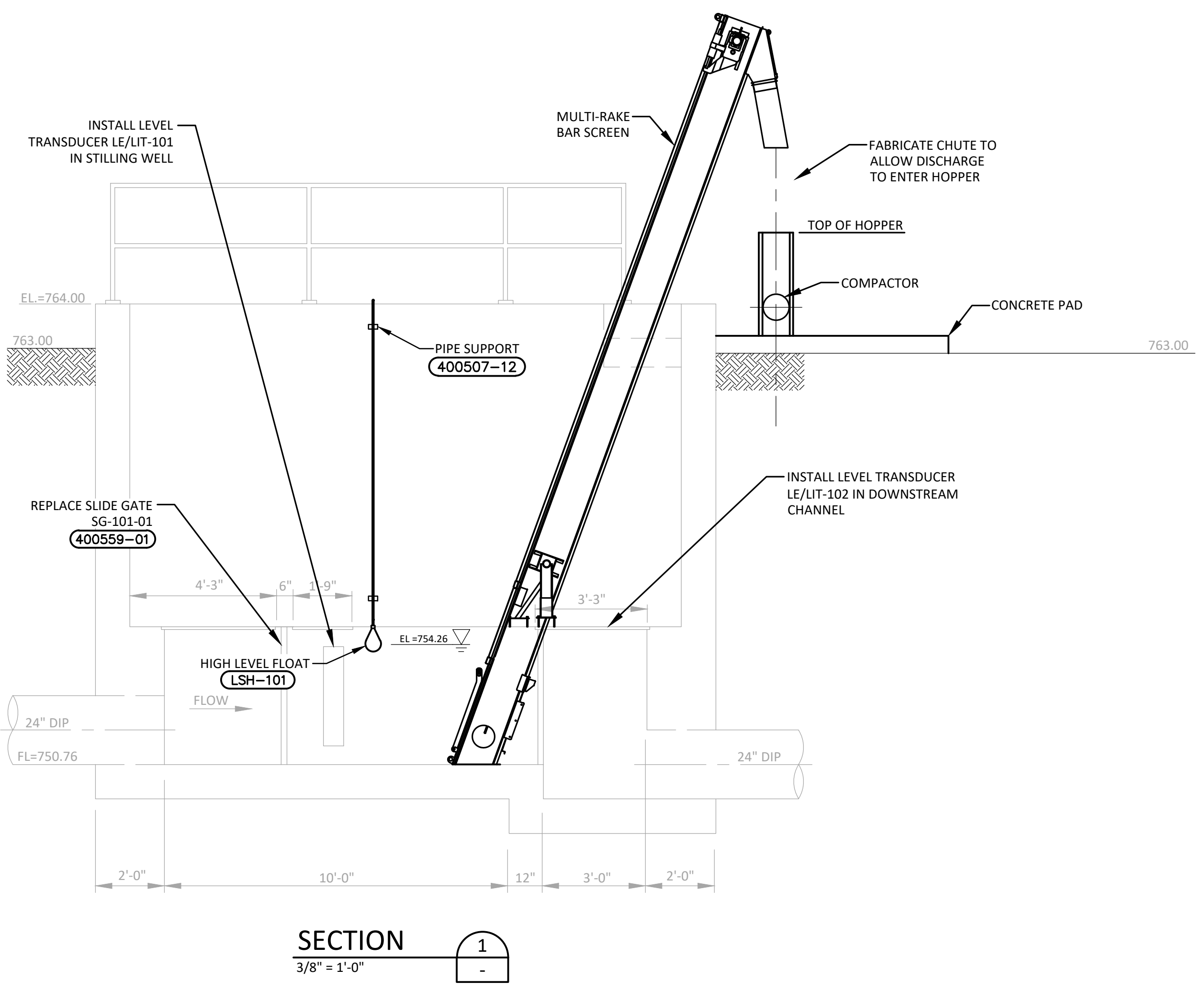
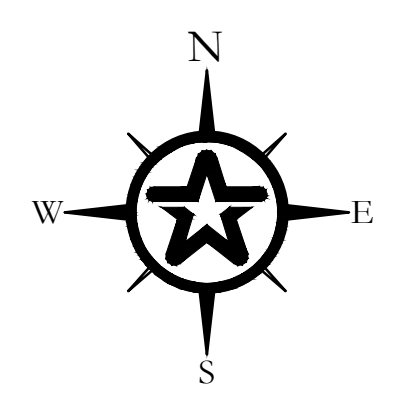
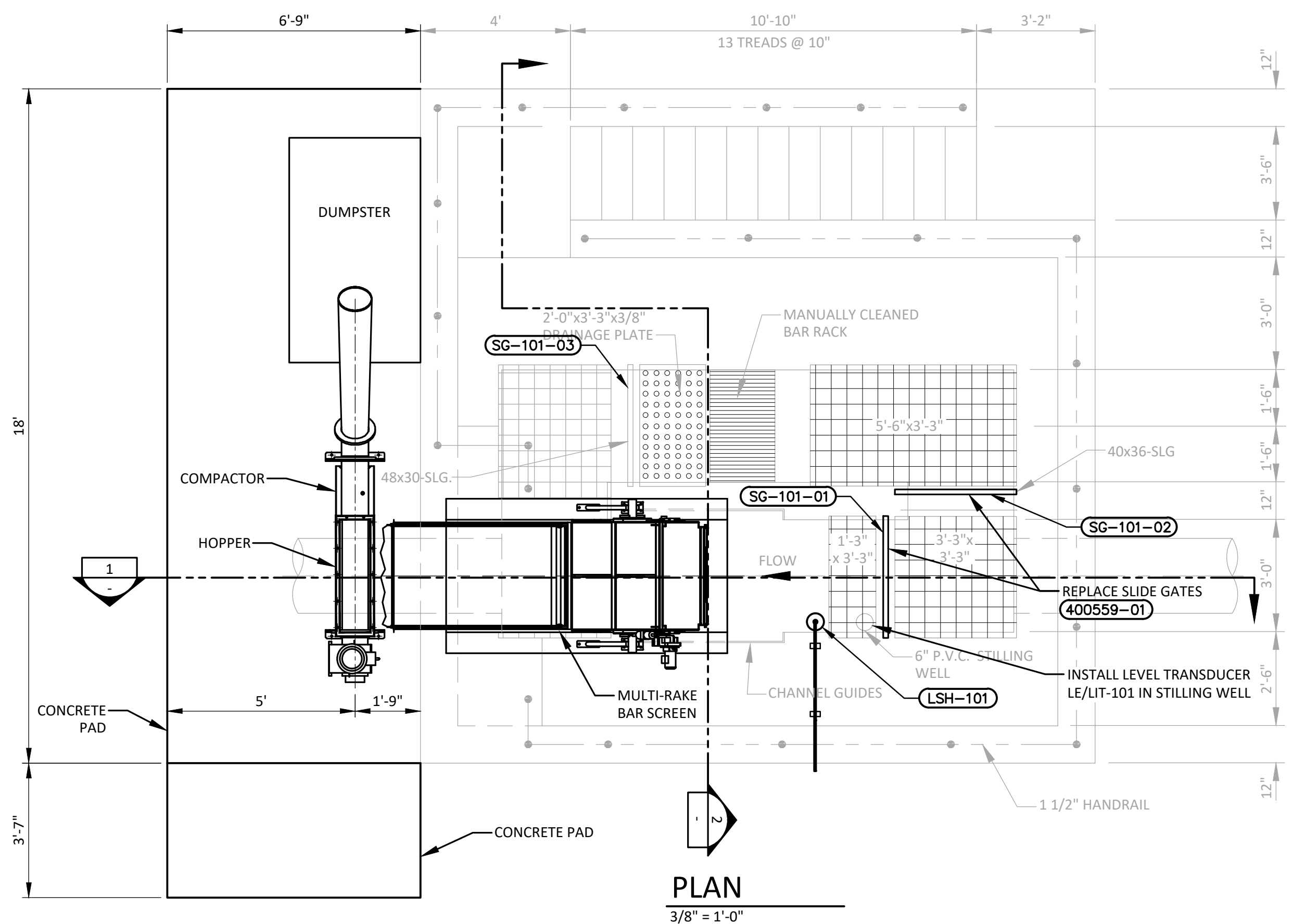
**CITY OF GATESVILLE**  
CITY OF GATESVILLE - STILLHOUSE WWTFF UPGRADE AND EXPANSION

**VALVE SCHEDULE 2**

5-8-23	DATE		MICHAEL CLOUGH
	DESIGNED	J. JENKINS	PM
	DRAFTED	M. CLOUGH	
	CHECKED	J. JENKINS	
	PROJECT NO.	2-01590	
	DRAWING NO.	<b>M-05</b>	

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REV.	DESCRIPTION	DATE
ADDENDUM #3		6-13-23
ADDENDUM #2		6-1-23
ADDENDUM #1		5-23-23



**CITY OF GATESVILLE**  
CITY OF GATESVILLE - STILLHOUSE WWTF UPGRADE AND EXPANSION  
BAR SCREEN INSTALLATION

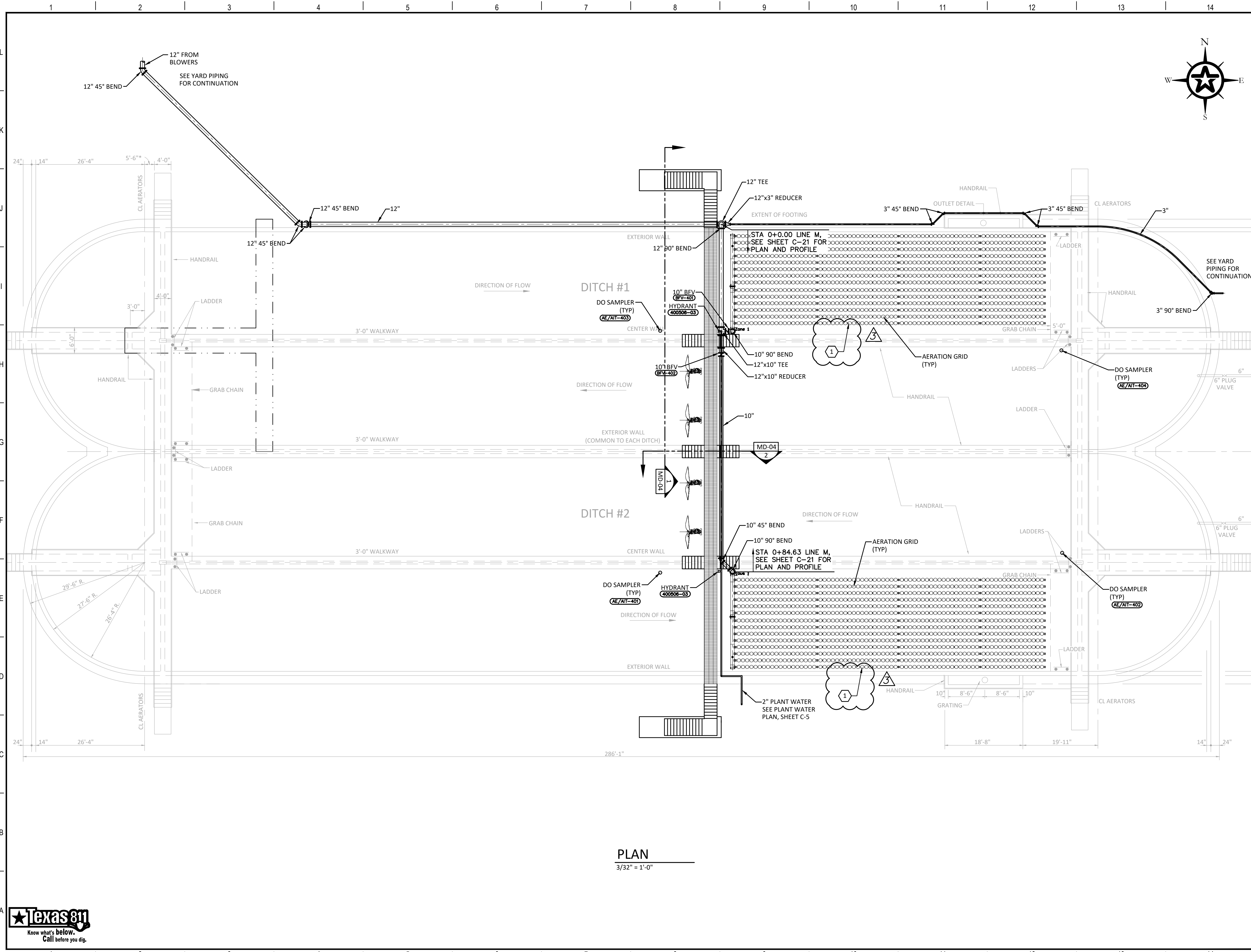
5-8-23  
DATE  
MICHAEL CLOUGH  
DATE

	DESIGNED	J. JENKINS
	DRAFTED	M. CLOUGH
	CHECKED	TFG, PA
	PROJECT NO.	J. JENKINS
	DRAWING NO.	2-01590

**MA-02**

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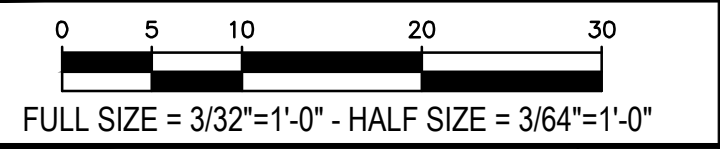
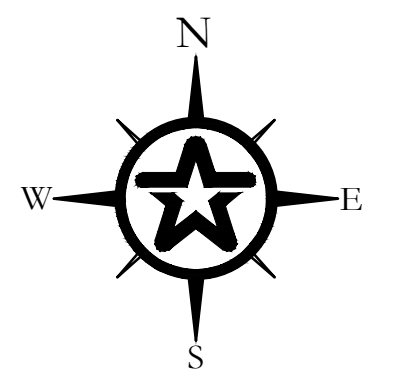
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**PLAN**  
3/32" = 1'-0"

**KEY NOTES**

1 ACTUAL DIMENSIONS AND LOCATIONS OF AERATION GRIDS TO BE DETERMINED DURING SHOP DRAWING SUBMITTAL BY MANUFACTURER. LOCATION OF DROP LEGS AND WALKWAY SHALL NOT CHANGE 3



ADDENDUM #3	6-13-23
ADDENDUM #2	6-1-23
ADDENDUM #1	5-23-23
REV. DESCRIPTION	DATE



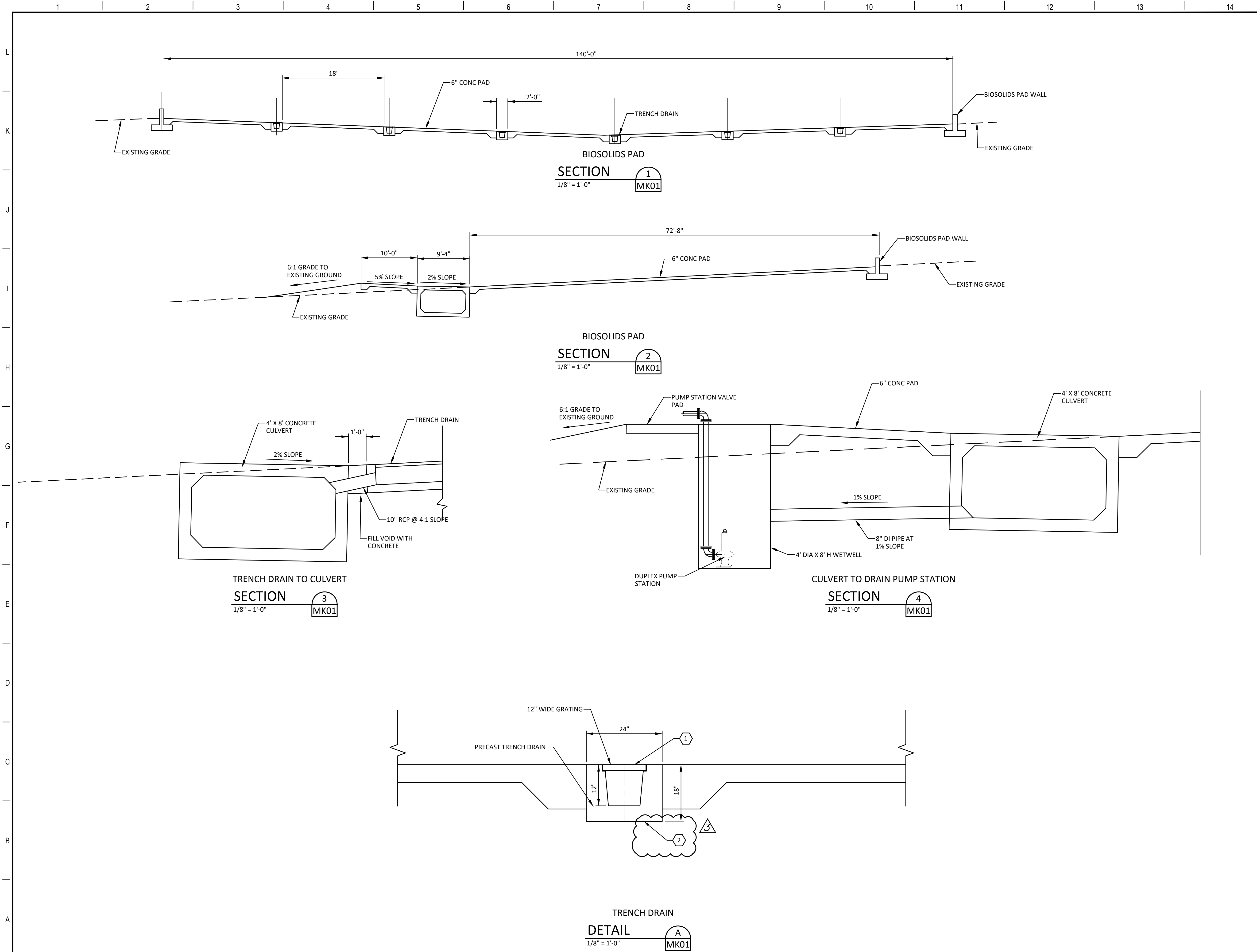
**CITY OF GATESVILLE**  
CITY OF GATESVILLE - STILLHOUSE WWTF UPGRADE AND EXPANSION  
AERATION BASINS PLAN

5-8-23  
DATE  
MICHAEL CLOUGH  
DATE  
MICHAEL CLOUGH

	DESIGNED	J. JENKINS
	DRAFTED	M. CLOUGH
	CHECKED	TFG, PA
	PROJECT NO.	2-01590
	DRAWING NO.	MD-02

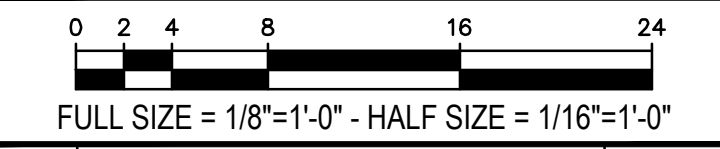


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**KEY NOTES**

- 1 SEE GRATING SPECIFICATION.
- 2 PRECAST CONCRETE SALES CO. DRAWING 142 OR EQUAL
- 3



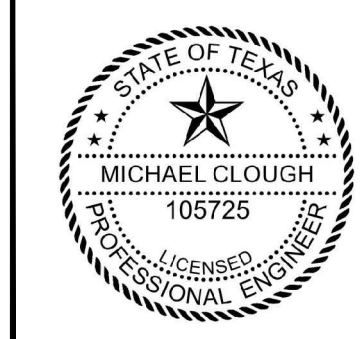
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ADDENDUM #2	6-1-23
ADDENDUM #1	5-23-23
REV. DESCRIPTION	DATE



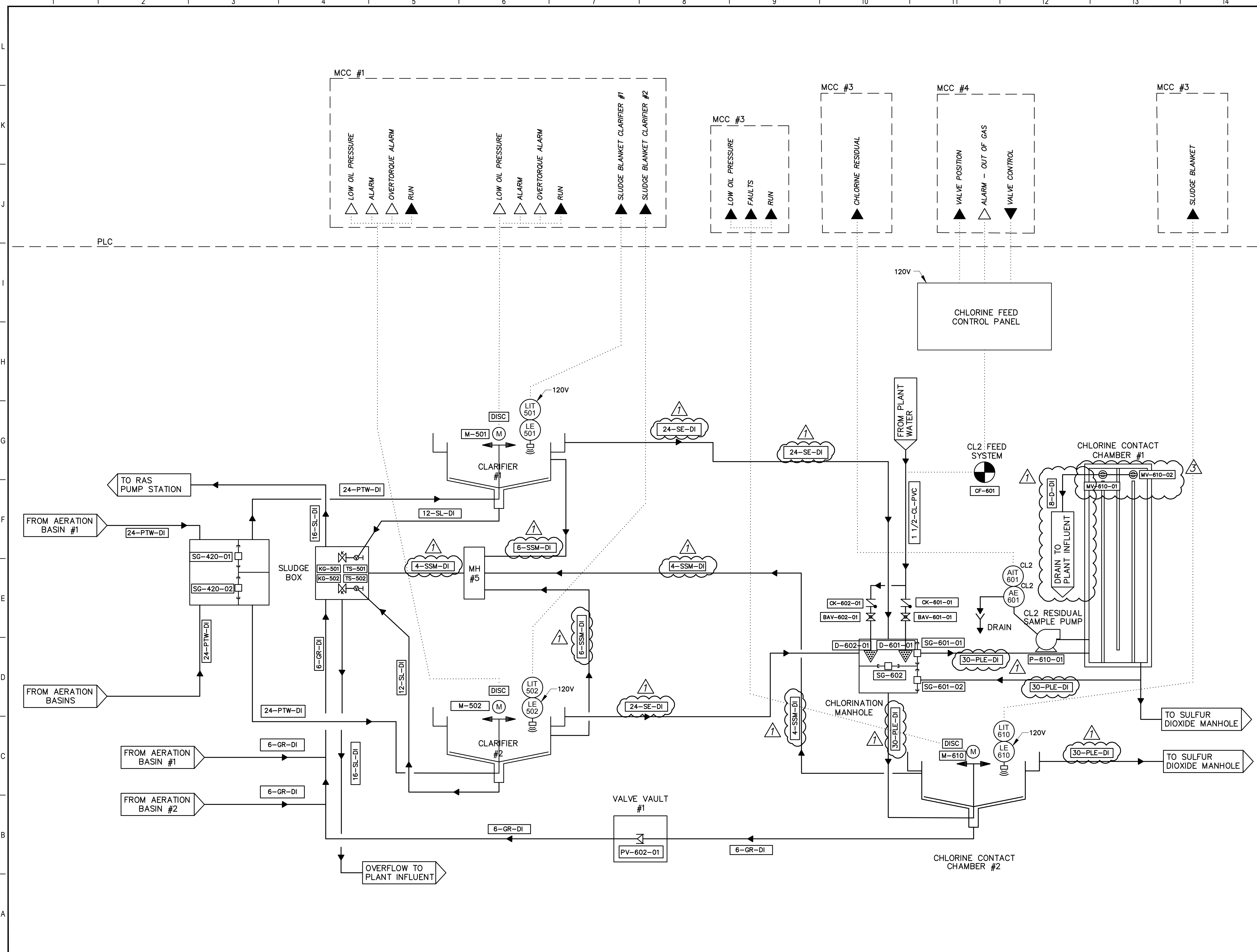
**CITY OF GATESVILLE**  
 CITY OF GATESVILLE - STILLHOUSE WWTF UPGRADE AND EXPANSION

**BIOSOLIDS STORAGE AREA SECTIONS AND DETAILS**

5-8-23 DATE	MICHAEL CLOUGH
PM	J. JENKINS
DESIGNED	M. CLOUGH
DRAFTED	TFG, PA
CHECKED	J. JENKINS
PROJECT NO.	2-01590
DRAWING NO.	<b>MK-02</b>



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### PLC I/O LEGEND

- ▲ ANALOG INPUT
- ▼ ANALOG OUTPUT
- △ DIGITAL INPUT
- ▽ DIGITAL OUTPUT
- ⬜ EXISTING CONTROL PANEL, MCC OR EQUIPMENT
- ⬜ PROPOSED CONTROL PANEL, MCC OR EQUIPMENT
- EXISTING CONTROL WIRING
- ⋯ PROPOSED CONTROL WIRING
- DIRECTION OF FLOW

REV.	DESCRIPTION	DATE
3	ADDENDUM #3	6-13-23
2	ADDENDUM #2	6-1-23
1	ADDENDUM #1	5-23-23



**CITY OF GATESVILLE**  
CITY OF GATESVILLE - STILLHOUSE WWTF UPGRADE AND EXPANSION

### P&ID CHLORINATION SYSTEM

5-8-23	DATE	MICHAEL CLOUGH
J. JENKINS	DESIGNED	M. CLOUGH
TFG, PA	DRAFTED	J. JENKINS
2-01590	PROJECT NO.	2-01590
<b>P-03</b>	DRAWING NO.	

