City of Canton, GA
Water Pollution Control Plant
Expansion to 6 MGD

November 13, 2020

ADDENDUM NO. 4

This Addendum forms part of the "Bid Documents" and modifies or clarifies the original Bid Documents issued on October 1, 2020. Prospective Bidders shall acknowledge receipt of the total number the Addenda issued for this Project on their Sealed Bids. Failure to do so may subject the Bidder to disqualification.

4-1 SPECIFICATION 00410, BID FORM

- **DELETE** in its entirety, including versions from any previous addendum, and **REPLACE** with a new Bid Form, consisting of 14 pages, attached hereto.

4-2 SPECIFICATION 00800, SUPPLEMENTARY CONDITIONS - EXHIBITS

- **DELETE** Exhibits D and E, found after Exhibit C, Security and Immigration Compliance Act Certification. **REPLACE** with new Exhibits D and E, consisting of 2 pages (1 page each exhibit), attached hereto.

4-3 SPECIFICATION 01410, TESTING LABORATORY SERVICES

- Paragraph 1.01 C.2: **DELETE** paragraph 1.01 C.2 in its entirety.

4-4 SPECIFICATION 01650, FACILITY TESTING AND STARTUP

- Paragraph 1.06 C: **DELETE** "*recommendations for obtaining NPW and establishing pump loops are included in this Section*".

4-5 SPECIFICATION 02050, DEMOLITION AND MODIFICATIONS

- Paragraph 3.03 A. **DELETE** *"Coordinate transfer of pressure wash residuals with Owner and Operations staff for potential disposal at Headworks."*
- **ADD** Paragraph 3.03 D as follows:

  "*D. Contractor is responsible for the removal of liquid, sediment, grit or other debris located within existing tankage. To the extent possible and operationally feasible, Contractor may utilize existing drain system to remove liquid stored in*

existing tankage. Contractor shall coordinate with Owner prior to draining of liquid in tanks to ensure plant operations are not adversely affected."

4-6 SPECIFICATION SECTION 02200, EARTHWORK

- **ADD** Paragraph 3.04 after 3.03 TRENCHING and before 3.04 FILL UNDER STRUCTURES as follows:

3.04 PIPE BEDDING

A. Excavate, shape and compact the subgrade to elevations required to meet bedding elevation. Remove soft material encountered and replace with structural backfill. Fill holes and depressions with specified backfill material.

B. Placing Fill

1. Remove loosened and disturbed materials at the subgrade.

2. Remove form materials and trash before placing any fill or backfill.

C. Fill or backfill around water-holding basins and channels only after specified leakage tests have been conducted.

D. Provide 4 inches of compacted granular fill below buried pipe larger than 3 inches in diameter. Granular fill shall consist of one-inch minus crushed rock or sand.

E. Trench Widths and Utility Bedding

1. Cut trenches to a minimum width equal to the outside diameter of the pipe or cable at the joint plus eight inches for un-sheeted trenches, or 12 inches for sheeted trenches. The maximum width of trench, measured at the top of the pipe or cable, shall not exceed the outside pipe barrel or cable diameter plus two feet, unless otherwise shown on the drawings.

2. Maintain vertical trench walls from the bottom of the trench to a line measured 12 inches above the top of the pipe or cable.

3. *If the trench is excavated below the required grade, refill any part of the trench excavated below the grade at no additional cost to the Owner. Place the refilling material over the* full width of trench in compacted layers not exceeding six inches deep to the established grade with allowance for the pipe base or special bedding.

4-7 SPECIFICATION 07411, INSULATED METAL ROOF PANELS (ADMINISTRATION BUILDING)

- **ADD** New Specification 07411, Insulated Metal Roof Panels (Administration Building), consisting of six (6) pages, attached hereto, after Specification 07210, Building Insulation.

4-8 SPECIFICATION 11202 - SLIDE GATES

- Paragraphs 2.02B, 2.02F, 2.02G, and 203B: **DELETE** "*304*" and **REPLACE** with "*316*".

4-9 SPECIFICATION 11212, VERTICAL TURBINE PUMPS

- **DELETE** in its entirety and **REPLACE** with a new Specification 11212, consisting of 12 pages, attached hereto.

4-10 SPECIFICATION 11331, FINE SCREENS AND CONVEYOR

- Paragraph 2.02.C.6, **ADD** "*i. The spray wash water booster pump shall be controlled and powered from the fine screen control panel specified in Section 2.04.A.*"
- Paragraph 2.04.F **ADD** "*19. Motor controls, pilot devices, and all required control equipment for operation of the spray wash water booster pump.*"

4-11 SPECIFICATION 11370, SLUDGE DEWATERING EQUIPMENT

- Refer to Item 3-18 in Addendum No. 3, in reference to Paragraph 2.01.B: **RETAIN** "*Alfa Laval*", **DELETE** "*AS-H Belt Press KPZ-200*"

4-12 SPECIFICATION 11410, ROTARY DRUM THICKENERS

- Paragraph 2.02B: **DELETE** "*Vulcan; Model No. LFST-6010*" and **REPLACE** with "*Andritz; Model No. PDR 900XL Power Drum*".

4-13 SPECIFICATION 13210, FIBERGLASS REINFORCED PLASTIC FLAT TANK COVERS

- Paragraph 2.02 B: **DELETE** "*Or equal*" and **REPLACE** with "*EDGENG; White Plains, NY; 1. FRP Flat Cover Systems*".
- Paragraph 2.02: **ADD** "*C. Or equal*".

4-14 SPECIFICATION 15100, VALVES, HYDRANT, AND OPERATORS

- Paragraph 3.05A: **DELETE** "*Manufacturer's Representative*" and **REPLACE** with "*Actuator Manufacturer's Representative*".

4-15 SPECIFICATION 16155, LOW VOLTAGE MOTOR CONTROLS

- Paragraph 2.02A, **DELETE** "*or Siemens*" and **REPLACE** with "*Siemens, or Rockwell Automation/Allen Bradley*".

4-16 SPECIFICATION 16157, VARIABLE FREQUENCY DRIVES

- Paragraph 1.06K, **DELETE** "*or Siemens*" and **REPLACE** with "*Siemens, or Rockwell Automation/Allen Bradley*".

4-17 SPECIFICATION 16900, GENERAL CONTROL REQUIREMENTS

- **DELETE** the Instrumentation and Control Attachment and **REPLACE** in its entirety.

4-18 APPENDIX B – BILL OF MATERIALS FOR MBR SYSTEM

- See attached the Bill of Materials from SUEZ for the MBR System. This Bill of Materials lists those items in SUEZ's scope of work.

4-19 CONSTRUCTION DRAWINGS

- On Drawing C-22: **DELETE** callout "16" FM FROM CULWELL PS (RELOCATED)" and **REPLACE** with " 16" FM FROM HARMON PS (RELOCATED)".
- Drawing C-24, NOTES: **ADD** " 6. ROUTE 2" DRAIN LINES FROM POLYMER FILL AREAS AT THE SOLIDS HANDLING FACILITY TO NEAREST SANITARY MANHOLE."
- Drawing 1-M-2, Detail 3: **REPLACE** Notes and Callouts associated with the pad for the pipe support with reference to pad shown on 1-S-1 in Addendum 4.
- Drawing 8-M-2, Section A: **DELETE** callout Note "3" and **REPLACE** with callout Note "2".
- Drawing 15-M-2, Belt Filter Press Partial Plan: **DELETE** " 8" BFY" on the discharge side of the dewatered sludge pumps and **REPLACE** with " 8" KNIFE GATE VALVES".
- Drawings 15-M-2 and 15-M-4, Polymer Truck Fill Areas: Penetrate wall per Standard Detail 405. Provide 2" PVC ball valve and 2" chemical quick connect per specifications. Include 4" containment curb around fill area. Route 2" drain line from each fill area to nearest sanitary manhole.
- On Drawing 15-M-5: **DELETE** "3" ARV" on 10" discharge from the Thickening/Dewatering Drain Pump Station and **REPLACE** with " 2" ARV".
- On Drawing DM-1, Detail 400: **ADD** "NOTE: DETAIL 403 REQUIRED FOR ALL WALL PIPES THAT ARE ABOVE- GRADE."
- Drawing 1-M-2, Detail 3: **REPLACE** Notes and Callouts associated with the pad for the pipe support with reference to pad shown on 1-S-1, which is included in Addendum No. 4.
- **DELETE** the Drawing Sheets listed below and **REPLACE** with the Drawing Sheets attached hereto.
-

DRAWING NUMBER	SHEET TITLE
G-13	HYDRAULIC PROFILE
C-25	PROPOSED YARD PIPING PARTIAL PLAN

DRAWING NUMBER	SHEET TITLE
C-26	PROPOSED YARD PIPING PARTIAL PLAN
C-34	PROPOSED CIVIL SITE PARTIAL PLAN
C-35	PROPOSED CIVIL SITE PARTIAL PLAN
C-36	PROPOSED CIVIL SITE PARTIAL PLAN
C-44	PROPOSED GRADING PARTIAL PLAN
C-46	PROPOSED GRADING PARTIAL PLAN
1-S-1	MODIFICATION TO INFLUENT METERING FLUME UPPER PLAN
4-S-1	FINE SCREENINGS FACILITY PLAN LOWER PLAN
4-S-2	FINE SCREENINGS FACILITY PLAN UPPER PLAN
4-S-3	FINE SCREENINGS FACILITY PLAN SECTIONS
4-S-4	FINE SCREENINGS FACILITY PLAN SECTIONS
5-S-1	BIOLOGICAL REACTOR OVERALL LOWER PLAN
5-S-2	BIOLOGICAL REACTOR PARTIAL LOWER PLAN
5-S-3	BIOLOGICAL REACTOR PARTIAL LOWER PLAN
5-S-4	BIOLOGICAL REACTOR PARTIAL LOWER PLAN
5-S-5	BIOLOGICAL REACTOR PARTIAL LOWER PLAN
5-S-13	BIOLOGICAL REACTOR SECTIONS
5-S-14	BIOLOGICAL REACTOR SECTIONS
5-S-15	BIOLOGICAL REACTOR SECTIONS
6-S-13	BNR NO.4 MODIFICATIONS EFFLUENT CHANNEL DETAILS
7-S-2	MEMBRANE FACILITY UPPER PLAN
7-S-3	MEMBRANE FACILITY UPPER TROLLEY FRAMING PLAN
7-S-4	MEMBRANE FACILITY UPPER TROLLEY SECTIONS
7-S-5	MEMBRANE FACILITY UPPER TROLLEY SECTIONS
7-S-7	MEMBRANE FACILITY INSPECTION PLATFORMS SECTIONS
7-S-8	MEMBRANE FACILITY GANTRY CRANE FRAMING PLAN
8-S-3	RAS SPLITTER BOX UPPER PLAN
8-S-4	RAS SPLITTER BOX SECTIONS
8-S-5	RAS SPLITTER BOX SECTIONS
10-S-1	UVPA FACILITY LOWER PLAN

DRAWING NUMBER	SHEET TITLE
10-S-2	UVPA FACILITY UPPER PLAN
10-S-4	UVPA FACILITY SECTIONS
11-S-2	REUSE WATER WETWELL & WAS STORAGE UPPER PLAN AND SECTIONS
12-S-1	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER LOWER PLAN
12-S-2	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER UPPER PLAN
12-S-3	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER FRAMING PLAN
12-S-10	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER SECTIONS
12-S-11	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER SECTIONS
12-S-12	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER DETAILS
12-S-13	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER DETAILS
12-S-14	SBR NO.2&3 CONVERTED TO AEROBIC DIGESTER DETAILS
15-S-1	SOLIDS HANDLING BUILDING FOUNDATION PLAN
15-S-2	SOLIDS CONTROL BUILDING FLOOR PLAN
15-S-3	SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
15-S-4	SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
15-S-5	SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
15-S-6	SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
15-S-7	SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
15-S-9	SOLIDS CONTROL BUILDING MEZZANINE LEVEL PLAN
15-S-10	SOLIDS CONTROL BUILDING ROOF FRAMING PLAN
15-S-11	SOLIDS CONTROL BUILDIGN ROOF PLAN
15-S-12	SOLIDS CONTROL BUILDING PENESTRATIONS PLAN
15-S-13	SOLIDS CONTROL BUILDIGN ELEVATIONS
15-S-14	SOLIDS CONTROL BUILDIGN ELEVATIONS
15-S-20	SOLIDS CONTROL BUILDING DETAILS
15-S-21	SOLIDS CONTROL BUILDING DETAILS
15-S-22	SOLIDS CONTROL BUILDING DETAILS
15-S-23	SOLIDS CONTROL BUILDING DETAILS
15-S-24	SOLIDS CONTROL BUILDING DETAILS
15-S-25	SOLIDS CONTROL BUILDING DETAILS

DRAWING NUMBER	SHEET TITLE
18-S-1	ODOR FACILITY PLANS AND SECTIONS
4-M-2	FINE SCREENINGS FACILITY SECTIONS
7-H-3	MEMBRANE FACILITY UPPER HVAC PLAN
E-11	ELECTRICAL DUCTBANK 2
E-12	ELECTRICAL OVERHEAD RACEWAY
E-20	MCC-BNR ONE LINE DIAGRAM
E-29	PANELBOARD SCHEDULE 2
E-31	POWER RISER DIAGRAMS 1
E-33	CONDUIT & WIRE SCHEDULE POWER 1
E-34	CONDUIT & WIRE SCHEDULE POWER 2
E-48	CONDUIT & WIRE SCHEDULE CONTROL 1
E-54	CONDUIT & WIRE SCHEDULE CONTROL 7
5-E-1	BNR BASINS 1 – 3 ELECTRICAL PLAN
18-E-1	ODOR CONTROL FACILITY ELECTRICAL PLAN
I-2	CONTROL SYSTEM BLOCK DIAGRAM
1-I-1	P&ID HEADWORKS
5-I-4	P&ID SCUM COLLECTION SYSTEM
14-I-1	P&ID COMPRESSED AIR
15-I-7	P&ID THICKENING/DEWATERING DRAIN PUMP STATION
DS-1	STRUCTURAL STANDARD DETAILS
DS-3	STRUCTURAL STANDARD DETAILS
DS-6	STRUCTURAL STANDARD DETAILS
DS-9	STRUCTURAL STANDARD DETAILS
DS-10	STRUCTURAL STANDARD DETAILS
DM-11	MECHANICAL STANDARD DETAILS
EC-02	EROSION AND SEDIMENT CONTROL PLAN INTERMEDIATE PHASE
EC-03	EROSION AND SEDIMENT CONTROL PLAN FINAL PHASE

End of Addendum No. 4 Cover.

See Attachments

SECTION 00410

BID FORM

PROJECT IDENTIFICATION:

City of Canton, Georgia
Canton WPCP Expansion to 6 MGD

THIS BID IS SUBMITTED TO:

City of Canton, Georgia
110 Academy Street
Canton, GA 30114

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for one hundred and twenty (120) days after the day of Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

   (a) BIDDER has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda receipt of all which is hereby acknowledged: (List Addenda by Addendum Number and Date)

Addendum No.	Date Received	Addendum No.	Date Received

   (b) BIDDER has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work, and bidder has not relied upon any oral representations by employees or agents of Owner or Engineer.

   (c) BIDDER is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

(d) BIDDER has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER's purposes. BIDDER acknowledges that OWNER and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site.

(e) BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary 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 BIDDER and safety precautions and programs incident thereto.

(f) BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.

(g) BIDDER is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

(h) BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

(i) BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

(j) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

4. Unit prices have been computed in accordance with paragraph 11.03 of the General Conditions. All specific cash allowances are included in the price(s) and have been computed in accordance with paragraph 11.02 of the General Conditions.

BIDDER acknowledges that quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

5. BIDDER declares that he understands that the quantities shown on the proposal are subject to adjustment by either increase or decrease, and that should the quantities of any of the items of work be increased, the undersigned proposes to do the additional work at the unit prices stated herein; and should the quantities be decreased, he also understands that payment will be made on actual quantities at the unit price bid and will make no claim for anticipated profits for any decrease in the quantities and that actual quantities will be determined upon completion of work, at which time adjustment will be made to the contract amount by direct increase or decrease.

6. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

7. Bidder has not solicited or induced any individual or entity to refrain from bidding

8. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this paragraph:

   (a) "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process

   (b) "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition

   (c) "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels

   (d) "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

9. BIDDER will complete the Work in accordance with the Contract Documents for the prices listed in the following Bid Schedule.

The remainder of this page is intentionally left blank.

BID SCHEDULE

All bid items shall include all costs for furnishing all labor, materials, equipment, supplies, allowances and all other costs including permit fees, taxes, insurance, miscellaneous costs, overhead and profit incurred for the Work, complete in place and ready for continuous service. Payment shall be in accordance with the General Conditions.

PART 1 – BASE BID

No.	Description	Quantity	Units	Unit Price (in figures)	Total Price (in figures)
1a	Canton Wastewater Treatment Plant Expansion to 6 mgd per Contract Documents including all work shown on the Drawings and as specified, exclusive of those items listed below.	1	LS	$_____	$_____
1b	Pre-selected equipment, including state sales tax: - Suez MBR system - Veolia sludge dryer -Aerzen blowers -Smith & Loveless grit removal system	1	LS	$8,650,700.00	$8,650,700.00
1c	Stormwater Monitoring Program	42	Months	$_____	$_____

Total Price Part 1 – Base Bid (Items 1a through 1c): $_____

Total Price Part 1 – Base Bid in Words: _____

_____

_____

_____

The amount of Part 1 – Base Bid shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern. In the event of a discrepancy between the unit price bid and the extension, the unit price will be deemed intended by the bidder and the extensions adjusted. In the event of a discrepancy between the sum of the extended amounts and the bid total, the sum of the extended amounts shall govern.

PART 2 – ALLOWANCE COSTS

The Bidder shall include in the Total Bid price the lump sum allowances identified below. Payment will be in accordance with the General Conditions and Division 1. Any unused balance of the allowances shall revert to the Owner upon completion of the project.

Cost Item	Description			Total Allowance Price (in figures)
2a	Allowance for correction of unforeseen utility conflicts and utility relocation			$50,000
2b	Allowance for Owner initiated miscellaneous work			$500,000
2c	Allowance for miscellaneous laboratory equipment			$25,000
2d	Allowance for office equipment and furnishings			$50,000
2e	Allowance for office computer equipment			$15,000
2f	Allowance for bulk chemicals for WPCP startup (3-months)			$15,000
2g	Geotechnical / Materials Testing Allowance			$150,000
2h	Utility vehicle allowance (to be provided early in project)			$20,000
2i	Site landscaping			$100,000
2j	Plant Control System Additional Hardware, Software, and Fees			$50,000
2k	Additional Electrical Equipment Required by the Power System Study and Harmonic Analysis			$75,000
2l	Demolition and restoration of existing Sludge Press Building			$50,000
	Total Allowance Cost Items 2a – 2k			**$1,100,000**

Total Allowance Cost in Words: One Million and One Hundred Thousand dollars and zero cents

PART 3 – ADDITIONAL WORK TO BASE BID

The Bidder agrees to furnish unit pricing for items listed below to establish pricing should additional work be required or directed by the Engineer or Owner. The pricing includes all labor and equipment necessary to install complete. Payment will be in accordance with the General Conditions and Division 1. Any unused balance of the unit price items shall revert to the Owner upon completion of the project.

Item	Description	Quantity	Units	Unit Price (in figures)	Total Price (in figures)
3a	Rock Excavation	100	cy	$_____	$_____
3b	Subgrade Stabilizer, #57 Stone	200	cy	$_____	$_____
3c	Subgrade Stabilizer, #3 Stone	200	cy	$_____	$_____
3d	Structural Excavation and Backfill	200	cy	$_____	$_____
3e	Class A concrete including formwork and reinforcing steel	100	cy	$_____	$_____
3f	Ductile iron pipe	4	ton	$_____	$_____
3g	Ductile iron fittings	2	ton	$_____	$_____
3h	12.5 mm Superpave Asphaltic Concrete w/Bit. Tack Coat	60	tons	$_____	$_____
3i	Type A Silt Fence	1,000	lf	$_____	$_____
3j	Type C Silt Fence	1,000	lf	$_____	$_____
3k	Temporary Grassing	1	acre	$_____	$_____
3l	Permanent Grassing	1	acre	$_____	$_____
3m	Rock Check Dams	10	ea	$_____	$_____
3n	Rock Filter Dam	5	ea	$_____	$_____
3o	Erosion Control Matting	1,000	sy	$_____	$_____
3p	Permanent Geotextile Matting	1,000	sy	$_____	$_____

Item	Description	Quantity	Units	Unit Price (in figures)	Total Price (in figures)
3q	Rip Rap Channel Stabilization	500	sy	$_____	$_____
3r	Concrete Channel Stabilization (4 inches thick)	100	sy	$_____	$_____
3s	1.5-inch Mill and Resurface	100	sy	$_____	$_____

Total Price Part 3 – Additional Work to Base Bid (Items 3a through 3r):

$ _____

Total Price Part 3 – Additional Work in Words:

_____

_____

_____

_____

_____

The amount of Part 3 – Additional Work To Base Bid shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern. In the event of a discrepancy between the unit price bid and the extension, the unit price will be deemed intended by the bidder and the extensions adjusted. In the event of a discrepancy between the sum of the extended amounts and the bid total, the sum of the extended amounts shall govern.

BID SUMMARY

Part 1 Base Bid **$**

Part 2 Allowance Items **$ 1,100,000.00**

Part 3 Additional Work **$** _____

TOTAL PRICE: **$** _____

TOTAL PRICE IN WORDS: _____

_____

_____

_____

_____

PART 4 – BASE BID MAJOR EQUIPMENT ITEMS

The Total Bid in Part 1 – Base Bid shall include the costs for the circled Manufacturers/ Suppliers listed in this Major Equipment Schedule, exclusive of any Alternate Bid Items. Should a Bidder fail to indicate which manufacturer or supplier its Bid is based on, or circle more than one listed manufacturer/supplier per equipment item, the Bidder shall provide the first listed (A) manufacturer/supplier for its Bid for the amount included in the Total Bid at no increase in the Contract amount. The Contractor shall submit working drawings in accordance with the General Conditions and Section 01300 for any modifications to the Contract Drawings required due to the submittal of the base bid manufacturers/suppliers. The Bidder is aware that the Owner will award the Contract without consideration of Alternate manufacturers/suppliers.

The Major Equipment Schedule lists the base bid equipment manufacturer/supplier as applicable for major equipment items and key suppliers for the Project. The Bidder must indicate which named manufacturer/supplier it intends to provide by circling one of the manufacturers/suppliers listed.

Specification Section	Equipment Description	Manufacturer/Supplier
03420	Precast Post-Tensioned Tank	A. Dutchland B. Or approved equal
11200	Submersible Pumps	A. Flygt Corporation B. Homa
11202	Slide Gates	A. Rodney Hunt B. WACO C. Waterman
11220	Compressed Air Mixing System	A. EnviroMix B. Pulsair
11212	Vertical Turbine Pumps	A. Goulds B. Flowserve
11231	Chemical Metering Pumps	A. Guardian Equipment B. Watson Marlow
11237	Ultraviolet Disinfection Equipment	A. Wedeco B. Trojan Technologies, Inc.
11307	Centrifugal Chopper Pump	A. Vaughan B. Hayward Gordon
11311	Horizontal Self-Priming Pumps	A. Trillium Wemco B. Gorman-Rupp
11315	Progressive Cavity Pumps	A. Seepex B. Netzsch
11316	Rotary Lobe Pumps	A. Vogelsang B. Boerger

Specification Section	Equipment Description	Manufacturer/Supplier
11331	Fine Screens and Conveyor	A. Enviro-Care B. Huber
11353	Liquid Polymer Feed Systems	A. Velodyne B. Dynablend
11370	Sludge Dewatering Equipment	A. BDP B. Alfa Laval
11410	Rotary Drum Thickeners	A. Parkson B. Vulcan
11440, 11441, & 11442	Diffused Aeration Equipment	A. Sanitaire B. Environmental Dynamics Int
11500	Odor Control Equipment - Headworks	A. Pure Aire Filtration B. BioRem
11501	Odor Control Equipment – Solids Handling Facility	A. BioAir B. BioRem
11600	Biosolids Storage Hopper	A. JMS B. Spirac
11610	Shaftless Spiral Conveyors	A. Spirac B. Keller Sales C. Keystone Conveyors D. JMS
13121 & 13122	Pre-Cast Concrete Buildings Modular Precast Concrete Structures	A. Easi-Set Buildings B. Old Castle Concrete C. Concrete Modular Systems, Inc.
13204	Polyethylene Storage Tanks	A. Poly Processing B. Assmann Corporation
13205	Fiberglass Reinforced Plastic Tanks	A. Augusta Fiberglass B. ECS
16155	Low Voltage Motor Control	A. Eaton B. Square D C. Siemens D. Rockwell Automation/Allen Bradley
16157	Variable Frequency Drives	A. Eaton B. Square D C. Siemens D. Rockwell Automation/Allen Bradley

Specification Section	Equipment Description	Manufacturer/Supplier
16161	Switchboard	A. Eaton B. Square D C. Siemens
16165	Switchgear	A. Eaton B. Square D C. Siemens
16942	Control System Equipment	A. Rockwell Automation
16960	HMI System	A. Rockwell Automation

PART 5 – MAJOR EQUIPMENT MANUFACTURERS SUBSTITUTION

Any Manufacturer, including those not listed as an acceptable manufacturer, may be listed as a substitution with a deduct to the Base Bid. Only substitutions with a DEDUCTIVE quantity should be listed below.

The Bidder understands that within 30 days **after the Contract is awarded**, the Owner may, at its sole discretion, select items of any Manufacturer listed in the following substitute tabulation. If awarded the Contract, the Bidder agrees to furnish and install any substitutions for the price indicated. The BASE BID will be adjusted accordingly.

The Engineer may require detailed information to be submitted for preliminary evaluation of a substitute Manufacturer. This information could include technical and performance details of the equipment and other information deemed necessary by the Engineer and/or described in the Contract Documents.

If an offered substitution included items of equipment of any Manufacturer that may require any modification to or deviation from the Drawings, the undersigned agrees to prepare and submit detailed Drawings to the Engineer showing all modifications to structures, piping, electrical, mechanical, and instrumentation work, required to adapt the plans to the equipment selected. The Bidder further understands that the Engineer will review said detail drawings of modifications and either approve them or indicate changes necessary to comply with the project requirements. Detailed drawings that are not approved will be revised and resubmitted to the Engineer for approval. If the Engineer determines that the substitute equipment cannot be approved, the original Base Bid equipment shall be provided. The prices listed in the following tabulation are "installed" prices and take into consideration any changes that may be required to the original design.

SUBSTITUTION SUMMARY

Equipment Item	Manufacturer	DEDUCT From Base Bid ($)

10. BIDDER agrees that the Work will be substantially complete within **1,215 calendar days** after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions within **1,275 calendar days** after the date when the Contract Times commence to run.

    BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the time(s) specified in the Agreement.

11. The following documents are attached to and made a condition of this Bid:

    (a) Required Bid Security in the form of Bid Bond, Certified Check, Cashier's Check, or Cash. *(Strikeout inapplicable terms)*

    (b) Bidders who submit Bid Security in the form of a Certified check, Cashier's Check, or Cash are bound by the "Terms of Bid Bond" as if submitted on the attached "Bid Bond "form.

    The address of BIDDER indicated below.

    BIDDER'S NAME

    Primary Contact Person: _____

    Secondary Contact Person: _____

    Bidder's Street Address: _____

    _____

    Bidder's Mailing Address: _____

    (if different) _____

    _____

    Bidder's Phone No.: _____

    Bidder's Fax No.: _____

    e-mail address: _____

12. Terms used in this Bid which are defined in the General Conditions or Instructions will have the meanings indicated in the General Conditions or Instructions.

    THIS BID SUBMITTED on _____ , 20 _____

If BIDDER is:

An Individual

Name (typed or printed):_____

By:_____(SEAL)
(Individual's signature)

Doing business as _____

Business address: _____

_____

Phone No.:_____ FAX No.:_____

e-mail address: _____

A Partnership

Partnership Name: _____ (SEAL)

By:_____
(Signature of General Partner)

Name (typed or printed):_____

Business address: _____

_____

Phone No.:_____ FAX No.:_____

e-mail address: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability):_____

By:_____
(Signature)

Name (typed or printed):_____

Title: _____

Attest: _____ (CORPORATE SEAL)
(Signature)

Business Address: _____

_____

Phone No.:_____ FAX No.:_____

e-mail address: _____

Date of Qualification to do business is _____

A Joint Venture

Joint Venture Name:_____ (SEAL)

By:_____
(Signature of joint venture partner)

Name (typed or printed):_____

Title: _____

Business Address: _____

_____

Phone No.:_____ FAX No.:_____

Joint Venture Name:_____ (SEAL)

By:_____
(Signature of joint venture partner)

Name (typed or printed):_____

Title: _____

Business Address: _____

_____

Phone No.:_____ FAX No.:_____

e-mail address: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above).

Contractor Affidavit Under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services on behalf of the City of Canton has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicability provisions and deadlines in O.C.G.A. § 13-10-91.

Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification No.:_____

Date of Authorization:_____

Name of Contractor: _____

Name of Project:_____

Name of Public Employer:_____

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, _____, 20___ in _____ (city), _____(state)

_____

Signature of Authorized Officer or Agent

_____

Printed Name and Title of Authorized Officer or Agent

Sworn to and subscribed before me

This _____day of _____, 20___

_____

Notary Public

My commission expires:_____

Subcontractor Affidavit Under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services under contract with Lanier Contracting Co. on behalf of the City of Canton has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicability provisions and deadlines in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification No.:_____

Date of Authorization:_____

Name of Subcontractor: _____

Name of Project:_____

Name of Public Employer:_____

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20___ in _____ (city), _____ (state)

_____

Signature of Authorized Officer or Agent

_____

Printed Name and Title of Authorized Officer or Agent

Sworn to and subscribed before me

This _____day of _____, 20___

_____

Notary Public

My commission expires:_____

SECTION 07411

INSULATED METAL ROOF PANELS (ADMINISTRATION BUILDING)

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide pre-engineered metal roofing system, consisting of insulated metal roofing panels complete with structural framing (rafters, struts, purlins, girts), prefinished roofing, metal flashings, trim, gutters and downspouts, fasteners, roof and wall accessories and other components and materials required for a complete installation, as shown on the Drawings and as specified and per general structural notes.

1.02 DESCRIPTIONS

A. Building Type: One story Concrete masonry building.

B. Roof Slope: 12 horizontal to 5 vertical.

C. Dimensions at Exterior Walls: As shown on Drawings.

D. Minimum Eave Height: As shown on the Drawings.

1.03 QUALITY ASSURANCE

A. Codes and Standards:

1. AWS D1.1 Section 8, Structural Welding Code-Steel.
2. MBMA Low-Rise Building Systems Manual, Latest Edition.
3. AISI Specifications for the Design of Cold Formed Steel Structural Members, Latest Edition.
4. AISC Steel Construction Manual and Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings.
5. ISC Specifications for Structural Joints Using ASTM A325 or ASTM A490 bolts.
6. International Building Code, latest edition.
7. Requirements of local regulations and of other governing authorities having jurisdiction at project site.
8. Structural Steel Painting Council (SSPC) Standards, as referenced herein.
9. Federal (Fed. Spec.), Military (MIL) and Commercial (CS) Standards and Specifications, as referenced herein.
10. American Society for Testing and Materials (ASTM), Standards as referenced herein.
11. Underwriters' Laboratories, Inc. (UL) and Factory Mutual Research (FM) as specified.

B. Design Loads: As shown on the Drawings and as otherwise required by the International Building Code, latest edition.

C. Qualifications and Experience of Roofing Manufacturer:

1. A firm with at least five years experience in the design and construction of metal roofing systems and presenting satisfactory evidence that it has the skill, reliability, and financial stability to build and guarantee the roof in accordance with the quality required by these Specifications, that it has built completely in its own name in the past five years, and is presently responsible for, a minimum of ten buildings of similar size or larger, which meet these Specifications and which are now giving satisfactory service.
2. A Roofing manufacturer that has on its staff a full-time licensed professional engineer, having no less than five years experience in the design, fabrication and erection of pre-engineered metal buildings, and who shall be in responsible engineering charge of the work to be done. All working & shop drawings and design calculations shall carry the seal of such registered professional engineer, licensed in the United States.
3. Certification: Submit written certification attesting that the building manufacturer meets the above qualifications and experience requirements within seven days after bid opening.

1.04 SUBMITTALS

A. Shop Drawings and Calculations:

1. Submit complete structural design calculations and erection drawings prepared by, or under direct supervision of a registered Professional Engineer, licensed to practice in the United States, with all drawings and calculations bearing his seal and signature. All calculations and drawings shall be reviewed and approved by the Engineer- of- Record, prior to fabrication. Foundation reactions shown on the Drawings are approximate, and therefore are to be verified by the metal building designer/engineer prior to construction of the foundations.
2. Show each type structural building frame required and their locations in the facility, details of anchor bolt settings, sidewall, endwall, and roof framing, diagonal bracing and location within structure, longitudinal and transverse cross sections, details of items penetrating walls and roof including trim, gutters, downspouts, wall and roof coverings, and all accessory items, materials, finishes, construction and installation details; and other pertinent information required for proper and complete fabrication, assembly and erection of metal building system.

B. Material and Color Samples:

1. For each specific material sample requested by Engineer, submit in size, form, and number directed.
2. Submit duplicate color sample sets showing full color range available, for selection purposes.

C. Product Data: Submit manufacturer's specifications and descriptive literature.

D. Certification: Submit written certification, prepared and signed by Registered Professional Engineer licensed to practice in the United States, attesting that building design meets

specified loading requirements, requirements of codes and authorities having jurisdiction at project site, and other requirements specified.

E. Submit metal building manufacturer's certification that design is an approved design and that the roof system shall qualify for UL Class 90 and state construction number.

1.05 PRODUCT HANDLING, DELIVERY AND STORAGE

A. Deliver and store prefabricated components, sheets, and other manufactured items so they will not be damaged or deformed.

B. Stack materials on platforms or pallets above grade or on concrete slab, covered with opaque tarpaulins or other approved weather-resistant ventilated covering.

C. Store metal sheets and panels if subjected to water accumulation in such a manner so they will drain freely. Do not store sheets and panels in contact with other materials which might cause staining.

D. Repair or replace damaged material to the satisfaction of the Engineer.

E. Inspect panels to prevent moisture between panels, and secure as required.

1.06 WARRANTIES

A. All Components: Manufacturer's standard one year workmanship warranty.

B. Roof Panels: Manufacturer's standard 10 year paint finish warranty.

C. Effective Date of All Warranties: Date of final acceptance by Owner.

D. Furnish all warranties to Owner prior to final acceptance.

PART 2 - PRODUCTS AND FABRICATION

2.01 METAL ROOFING

A. Roof Panels: Lap Seam, Exposed Fastener, Foamed-Insulation-Core, Structural metal panels consisting of exterior metal sheet with three major tapered ribs and two minor ribs between each major rib, and interior metal sheet, with factory foamed-in-place polyurethane core in thermally-separated profile, with tongue-and-groove panel edges, attached to supports using exposed fasteners.

Basis of Design: MBCI**, LS-36.** or equal

,

1. Exterior Face Sheet: 22 gauge coated thickness.
2. Interior Face Sheet: 22 gauge coated thickness.
3. Panel Width: 36 inches (914 mm).
4. Panel Thickness: 5 inch (127 mm)

5. Insulating Core: Polyurethane with zero ozone depletion potential blowing agent
   a. Closed Cell Content: 90% or more as determined by ASTM D 6226
   b. Compressive Strength: As required to meet structural performance requirements and with a minimum of 15 psi as determined by ASTM D 1621
   c. Minimum Density: 2.0 pcf (32 kg/m3) as determined by ASTM D 1622
   d. Thermal Resistance (R-Value): R-30

C. Roof Panel Finishes: Manufacturer's standard ASTM A525, Class G-90 galvanized coating with high performance oven-baked epoxy primer on both surfaces. Finish shall be manufacturer's standard oven baked siliconized polyester coating over the primer for a total dry film thickness of not less than 1 mil for exposed surfaces and 0.5 mil for backer coating. Colors will be selected by the Engineer from manufacturer's standard colors.

D. Fasteners: Manufacturer's standard long-life coated self-drilling carbon steel screws. Provide all exposed fasteners with factory colored heads to match color of panels.

E. Sealants, Mastics and Closures: Apply sealants, mastics and closures in strict accordance with manufacturer's drawings and recommendations.

   a. Tube Sealant: A synthetic elastomer based material which becomes tack-free in less than 2 hours at 75 degrees F, but remains flexible. Service range shall be -30 degrees F. to 160 degrees F.
   b. Tape Mastic: Preformed butyl rubber based compound. Service range shall be -30 degrees F. to 160 degrees F.
   c. Panel Closures: Ethylene-Propylene-Diene-Monomer or equivalent closed cell strips formed to match panel configuration.

2.03 ACCESSORIES

A. Gutters and Downspouts:

   1. Gutters: Suspended box sections of 24-gauge stainless steel formed to match the configuration as depicted on the drawings. Attach gutters to the eave strut adapter by means of gutter hangers spaced at 4 feet on center and attached to inside face of gutter and eave adapter by #12 self- drilling stainless steel screws and to outer face of gutter by trim fasteners. Lap gutter sections 2", seal with sealant and then fasten with fasteners as specified on manufacturer's drawings. Seal gutter end closures with sealant and fasten with pop rivets as specified on manufacturer's drawings.
   2. Downspouts / Rain harvest piping: 24-gauge stainless steel with a minimum cross section of 48 square inches, located according to design requirements as specified and shall be attached to a thimble installed in the gutter. Attach downspouts to the wall panel using 26-gauge stainless steel straps on 10-foot centers. Provide a 75-degree elbow at the base of downspouts routed to ground to direct the water flow away from the building.
   3. Finish: Manufacturer's standard siliconized polyester system finish as selected by Engineer.

PART 3 - EXECUTION

3.01 ERECTION

A. General:
   1. For building erection, use a trained, competent erector having a minimum of 5 years experience in erecting metal buildings.
   2. Install all metal building system components in strict compliance with manufacturer's instructions shown on final shop drawings.
   3. Handle and store all materials to avoid damage and replace any damaged materials.
   4. Observe and follow recommendations of the Metal Building Manufacturers Association (MBMA) practice and procedures where applicable.
   5. Do not field cut or alter structural members without approval from manufacturer.

D. Roofing Panels:
   1. General:
      a. Install roof panels in such a manner to permit drainage to eaves of building, with panel ends square to eave.
      b. Arrange and nest side-lap joints away from prevailing winds when possible.
      d. Apply panels and associated items for neat and weathertight enclosure.
      e. Avoid "panel creep" or application not true to grid lines.
      f. Protect factory finishes from mechanical damage or abrasions.
      g. Install approved type closures to exclude weather. Install weather seal under ridge cap. Flash and seal roof panels at eave, gable and perimeter of all openings through roof and elsewhere as required or shown on Drawings. Flash and/or seal wall panels at perimeter of all openings, under eaves and gable trims, along lower panel edges, and elsewhere as required or shown on Drawings, as applicable.
      h. Remove all fastener or cutting shavings from roof and wall as erection is completed.

   2. Roof Panels:
      a. Install panels in full compliance with the manufacturer's drawings and requirements.
      b. Where panel end splices occur, nest panels with 3" end laps. Make splice independent of structure to allow for free expansion and contraction movement of panels without stress on splice.
      c. Provide fasteners at the locations and spacing in compliance with the manufacturer's drawings and requirements, complete with approved sealant to assure positive watertight seals.
      d. Install ridge cover units of approved expansion joint design to accommodate expansion and contraction movement of roof panels without ponding at end splices.
      e. Coordinate installation of accessories and items to be mounted on metal roofing.

E. Accessories: Install gutters, downspouts, flashings, trim, ridge covers, closure strips and other accessories and sheet metal items in accordance with manufacturer's recommendations for positive attachment to building and provide a weathertight mounting.

END OF SECTION

SECTION 11212

VERTICAL TURBINE PUMPS

PART 1: GENERAL

1.01 SECTION INCLUDES

A. Provide two vertical, mixed flow or turbine pumps with appurtenances to convey plant reuse water as needed.

1. Install pumps in the Reuse Water Pump Station as shown on the Drawings.
2. Comply with the Contract Documents.
3. Equipment included are as follows:

Reuse Pump 1	11-RP-P-1
Reuse Pump 2	11-RP-P-2

B. Each pump assembly to include, but not be limited to:

1. Bowl.
2. Column Assembly.
3. Discharge Head with Sole Plate.
4. Motor Including Couplings and Guards.

1.02 QUALITY ASSURANCE

A. Provide standard components of a manufacturer who has built vertical, mixed flow and turbine pumps of an equal or larger capacity for at least five years.

B. Provide proof of experience when requested by the County’s project manager or designee. Provide all pumps from a single manufacturer who shall be responsible for the following:

1. Design.
2. Coordination.
3. Proper operation of the Pumps and Motors.

C. Comply with applicable standards including, but not limited to the most recent edition of the following:

1. Hydraulic Institute (HI).
2. American National Standards Institute (ANSI).
3. American Society of Testing and Materials (ASTM).
4. Anti-friction Bearing Manufacturers Association (AFBMA).
5. American Water Works Association (AWWA)

a. E103-15 Standard for Horizontal and Vertical Line-Shaft Pumps

D. Design to provide satisfactory performance under the specified operating conditions.

1.03 SUBMITTALS

A. Comply with Section 01300 - Submittals. Include the following additional information:

1. Make, model, and weight of each equipment assembly.

2. Manufacturer's catalog information, descriptive literature, specifications, and a complete bill of materials including identification of materials of construction.

3. Certified structural, mechanical, electrical, and erection drawings showing important details of construction, equipment dimensions, size, anchor bolt locations, and locations of connections to other work.

4. Certified pump performance curves showing flow, head, efficiency, and BHP over the manufacturer's recommended operating range of the pump.

a. Indicate limits of stable operation where pumps will operate without cavitation, surging or excessive vibration.

b. Pump performance curves shall clearly indicate the minimum continuous flow rating of the pump

5. Certified NPSH curve based on previous shop test data from similar pumps or actual test data of project pumps.

6. Certification that motors and pumps have been dynamically balanced to the tolerances specified herein.

7. Provide complete Bill of Materials, parts list and assembly drawings for the pumps.

8. Motor data. Identify:

a. Nominal rated horsepower.

b. Rated ambient temperature.

c. Service factor.

d. Power requirements.

e. Required full load current at rated horsepower.

f. Starting code letter.

g. Locked rotor KVA and current.

h. Motor performance curves

i. Bearing life calculation at design point thrust

9. Report documenting dynamic analysis of pump, motor, and structure.

10. Impact test results on each pump and motor assembly to establish its actual Reed critical frequency value.

11. Special shipping, storage and protection, and handling instructions.

12. A list of special tools, materials, and supplies furnished with the equipment for use prior to and during startup, and for future maintenance.

13. Manufacturer's installation instructions.

B. Submit O&M Manuals in accordance with Section 01730 – Operation and Maintenance Manual.

C. Submit manufacturer's certificates. Include:

1. Equipment warranty and certification form in accordance with 01300, Submittals.

2. Manufacturer's certificate of proper installation.

1.04 SPECIAL TOOLS AND SPARE PARTS

A. Provide one (1) set of any special tools required for pump assembly or disassembly.

B. Provide the following spare parts::

1. One (1) complete bowl assembly (coated and tested).

2. Two (2) Mechanical Seals.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver, handle and store the equipment in accordance with the manufacturer's recommendations.

B. Comply with ANSI/HI 2.4

1. Covered, dry, and ventilated storage may be used if stored on site for less than 60 calendar days.

2. Storage on site for longer than 30 days shall require the manufacturer to prepare the equipment for long-term storage prior to shipment.

a. Rotate pump and driver shaft for the duration of long-term storage.

b. Fill motor upper bearing housing with manufacturer recommended oil.

c. Frequency of rotation shall be as recommended by the manufacturer.

d. Temporarily energize the motor space heater circuit.

e. Maintain log indicating time of rotation. The Owner's project manager or designee shall initial log.

3. Should storage exceed sixty (6) days close off all openings on the pump and insert ten (10) pounds of bagged desiccant to maintain the pump interior in a dry condition.

1.06 DYNAMIC ANALYSIS

A. Analyze the line-shafting, pump and motor assembly for harmful natural frequencies in both the lateral and torsional directions prior to fabrication.

1. Comply with Hydraulic Institute recommendations.

2. Assembly shall be designed to ensure no natural frequency occurs within 20 percent above and below the operating speed range of the pumps.

a. Lateral and torsional analyses shall be Level 1, where foundations and bolted joints are assumed to be infinitely stiff.

3. Submit results of analyses for approval.

1.07 WARRANTY

A. All equipment supplied under this Section shall be warranted by the manufacturer from the date that Startup Testing is complete in accordance with Section 01650 to at least one (1) year following issuance of Conditional Acceptance.

PART 2: PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. ITT-Goulds Pump Company; Size: 12CHC (6 stages), basis of design

B. Flowserve

2.02 GENERAL

A. Service Conditions

1. Liquid Pumped – Treated and disinfected wastewater effluent with pH between 7.0 and 8.0.

2. Liquid Temperature

a. Summer – 70 degrees F average.

b. Winter – 55 degrees F average.

3. Controls

a. Reuse water pumps will start and stop automatically in response to either level control signals received from remote reuse water customer or manually by the operator.

b. Refer to Section 16155 for motor controls.

c. The controls provider shall coordinate with the pump provider to ensure both compatibility and proper configuration to protect the motors.

B. Design the discharge head and sole plate to carry the entire weight of the bowl, column assembly, motor, and similar components.

1. Size sole plates for the concrete floor openings shown on the drawings.

2. Size all components to minimize vibration and noise. Vibration requirements are given in the Special Provisions.

C. Design and construct all pumps:

1. To be of premium quality and provide the maximum mechanical run time before failure.

a. Use precision manufacturing for both the pump and motor to minimize vibration.

b. Do not exceed a field installed vibration level of 0.21 inches per second (unfiltered) measured at the motor's lower bearing housing. Test vibration in accordance with Hydraulic Institute recommendations.

2. Operate continuously at any point within the specified flow rates without cavitation, overheating or excessive vibration.

3. Do not exceed the motor nameplate horsepower rating when operating as specified.

D. Provide lifting lugs or eyebolts on all major pump components to facilitate safe handling.

E. Provide a stainless steel nameplate on each pump with the following information:

1. Manufacturers name, address, and telephone number.

2. Pump model number.

3. Pump serial number.

4. Head, capacity and rpm for each specified operating condition.

5. Motor horsepower, rpm, full load amperes, and frame size.

2.03 DESIGN CONDITIONS

A. Reuse Water Pump Station Pumps

Pump Duty Points & Data			
Flow	Total Dynamic Head	Pump Efficiency @ 1100 gpm	Maximum Operating Speed
1. 1320 gpm	352 ft	82.3%	1770 rpm
2. 1100 gpm	410 ft	886.2%	
3. 660 gpm	474 ft	778.9%	
4. Shutoff Head	498 ft		
5. Motor Horsepower	150 hp – 3PH, 60Hz		
6. Motor Horsepower @ 1320 gpm	140 hp – 3PH, 60Hz		
7. Column	8-inch flanged		
8. Discharge	8-inch flanged – 250lb		
9. Number of Stages	6		
10. Minimum Submergence	37.3 inches @ 1320 gpm		
11. Maximum NPSHr @ 1320 gpm	18.4 ft		

2.04 PUMP MATERIALS OF CONSTRUCTION

A. Bowl Assembly

1. Generally, consists of suction bell, impeller housing, impeller, and discharge bowl.

a. Bowl assembly shall be of completely new construction free from sand holes, blowholes, or other faults, and accurately machined and fitted to close tolerances.

b. Bowls shall have enamel or epoxy lined waterways for maximum efficiency and wear protection.

c. Flange type of cast iron ASTM A48, class 30, each section.

d. Bowl assembly shall be capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times shut-off head, whichever is greater.

e. Provide registered fit with sleeve type bearings of ASTM B584 C90300 lead-free bronze and join using 316 SS bolts.

2. Suction Bell

a. Bell shall be designed to permit even flow into the first stage impeller eye and sized to limit entrance velocities above five (5) feet per second at design flow.

b. The suction bearing shall be a grease lubricated sleeve design constructed of ASTM B584 C90300 lead-free bronze with an ASTM A744M Type 304 stainless steel sand collar for protection from foreign material.

c. Fabricate smooth and free of sharp projections that could cause turbulence or cavitation.

d. Provide streamlined guide vanes to direct flow to the impeller eye and support the lower pump shaft bearing.

3. Impeller

a. Construct from ASTM 744M-00 Type 316 stainless steel, enclosed type free from defects.

b. b. Dynamically balance each impeller prior to assembly. Complete assembled pump rotor unbalance shall not exceed ANSI S2.19 Grade G2.5

c. c. Certify that impeller meets specified ASTM and ANSI requirements.

d. d. Provide keyed connection to the bowl shaft with keys of ASTM 582M Type 416 stainless steel.

4. Bowl Shaft

a. Construct of ASTM 582M Type 416 stainless steel.

b. Shaft shall be precision ground and polished with surface finish better than 40 RMS.

c. Shaft diameter shall be a minimum of 1.6875” in diameter with a horsepower rating of 287 or higher.

B. Column Assembly

1. Column

a. Fabricate from ASTM A53 grade B steel pipe.

b. Minimum diameter of eight (8) inches and wall thickness no less 0.3125”.

c. Use flanged connections between sections utilizing ASTM A276 Type 316 stainless steel fasteners.

d. No section shall exceed a nominal length of 5 feet or as determined by the critical frequency analysis

e. Internal column velocity shall be less than ten (10) feet per second at primary design point flow.

2. Line Shaft

a. Line shafting shall be of ASTM 582M Type 416 stainless steel, ground and polished with a surface finish not to exceed 40 RMS.

b. Shaft shall be furnished in interchangeable sections not over five (5) feet in length and shall be coupled with threaded stainless steel couplings machined from solid Type 416 stainless steel bar.

c. Shaft shall have left-hand thread to tighten during pump operation.

d. The diameter of the shaft and coupling shall be designed in according with AWWA E103-15 Standard and no less than 1.500 inches in diameter.

e. Horsepower rating of the line shaft shall be no less than 260 horsepower.

3. Line Shaft Bearings

a. Replaceable fluted ethylene propylene diene monomer (EPDM) rubber type designed to be lubricated by the pumped fluid.

b. The bearing retainer shall be Type 304 stainless steel conforming to ASTM A744M-00.

c. Bearings shall be spaced no more than five (5) feet apart.

d. Line shafting shall be protected in the bearing area by full shaft diameter replaceable sleeves constructed of ASTM A744M Type 304 stainless steel.

C. Discharge Head Assembly

1. Fabricate from ASTM A53 and A36 steel.

2. Design discharge elbow for above-grade discharge as shown on the drawings.

a. Smooth radius type.

b. Flanged discharge connection.

1) Drill per ANSI B16.1

2) Class 250.

3. Design discharge head and sole plate to carry the entire weight of the complete pump and driver in operation.

a. No distortion.

b. Span concrete floor opening shown on the drawings.

c. Comply with Hydraulic Institute vibration limits.

d. Provide outlet flange ANSI class 300.

e. Provide lifting lugs.

4. Stuffing Box.

a. The stuffing box shall be ASTM A48 Class 30 cast iron.

b. The stuffing box bearing shall be constructed of ASTM B584 C90300 lead-free bronze.

c. The stuffing box shall be secured in place with Type 316 stainless steel fasteners and sealed to the discharge head motor support

5. Mechanical Seal

a. The pump stuffing box shall be sealed with a single cartridge type mechanical seal.

b. Seal faces shall be silicon carbide vs. carbon with FKM elastomers and a Type 316 stainless steel gland.

c. Seal shall be Chesterton 155 or John Crane 5610 or equal.

d. Seal shall be rated for service up to 600 PSI.

e. Seal shall be fitted stainless steel tubing to allow drainage of seal water back to the wet well.

6. Spacer Coupling

a. The motor shall be connected to the pump via a four (4) piece spacer type “AS” coupling constructed from ASTM A108 carbon steel.

b. The coupling shall allow for the transmission of torque to the pump shaft, transmittal of pump generated thrust to the motor bearing, adjustment of impeller clearances and the installation and removal of the pump mechanical seal without removing the motor or disturbing alignment.

7. Strainer

a. A suitable basket strainer of ASTM A240M Type 304 stainless steel shall be provided having a free area of at least four times the flow area of the suction pipe.

2.05 MOTOR

A. General

1. The motor rotor shall be statically and dynamically balanced to a Special Balance tolerance to give a vibration amplitude of no more than 0.8 inches measured on the bearing housings at operating RPM an no load when tested at the factory. If the motor manufacturer’s standard tolerances are more stringent, then they shall apply.

2. Provide vertical solid shaft TEFC design.

3. Comply with the most recent NEMA, IEEE, ANSI, and AFBMA Standards where applicable.

4. All motors shall meet the requirements of Section 16220 Electric Motors.

B. Performance Requirements

1. Operate on a 480-volt, three-phase, 60-Hertz power supply with a service factor of 1.15.

2. Efficiency type: premium

3. Free of objectionable noise and vibration. Maximum sound level not to exceed 90 dBA as measured 5 feet from any surface.

4. Maximum temperature of motor windings not to exceed 176 degrees F, as measured by resistance, when the motor is operating continuously at service factor horsepower, rated voltage, and frequency in ambient air temperature of 104 degrees F.

5. Operate within nameplate horsepower of the motor at any point on characteristic curve for impeller furnished.

C. Construction

1. Motor frames shall be cast iron with end shields strong enough to hold all motor components rigidly in proper position.

2. Provide adequate protection for the enclosure.

3. Provide motor suitable for outdoor installation with Class F non-hygroscopic epoxy sealed insulation but limited to Class B temperature rise.

4. Provide insulated windings securely braced to resist failure due to electrical stresses and vibration.

5. Motor Winding Thermal Protection: Windings shall be thermally protected by Normally Closed (NC) thermostats wired in series with one (1) wired in each phase.

6. Provide high-grade machine steel or steel forging adequate size and design to withstand the load stresses normally encountered in motors of the particular rating.

7. Provide epoxy-coated stator and rotor cores made of low-loss, non-aging electrical sheet steel with insulated laminations.

a. Stator coils to be random wound and of size, shape, insulation, and number of turns required.

b. Epoxy seal coils after fabrication.

8. Motor Bearings

a. Made to AFBMA standards.

b. Have ample capacity of the motor rating.

c. Grease lubricated bearings with a minimum B10 bearing life of 50,000 hours.

9. Provide stainless steel nameplate.

10. Provide lifting lugs or “O” type of bolts on all motors.

11. Provide stainless steel screen enclosures.

12. Use all stainless steel fittings, bolts, nuts, and screws.

13. Provide gaskets on conduit boxes and lead wires between motor frame and conduit box.

14. Prevent condensation on the core and winding by providing a space heater sized to prevent condensation on the core and winding.

a. Isolate space heaters from adjacent painted surfaces.

b. Space heater shall operate on 120-volt, 60-Hertz, single-phase power supply.

2.06 SHOP PAINTING

A. Pump Coating:

1. Pump components shall be prepared in accordance with the coating manufacturer’s instructions.

2. All pump assembly component coating shall be polyamide coal tar epoxy. Approved coating is Carboline Bitumastic 300M P900 black.

3. Coating shall be applied in a minimum of two (2) coats with a total dry film thickness (DFT) of sixteen (16) to twenty-four (24) mils. The bowl exterior, column, discharge head and sole plate interior and exterior shall be factory finish coated except for machined surfaces. Factory finish coating allows for complete immersion curing prior to installation and allows pumps to be delivered in a built-up configuration ready for immediate installation.

4. Field coating shall be limited to touch-up of any area damaged in handling or installation.

B. Motor Coating:

1. Motor components shall be prepared in accordance with the motor manufacturer’s instructions.

2. Primer coating shall be Valspar gray oxide or equal with a dry film thickness of 1-3 mils.

3. Final coating shall be Valspar high solids alkyd enamel with a dry film thickness of 2-4 mils.

4. Coating system shall be capable of passing an ASTM-B117 compliant 240-hour salt spray test.

C. Select the primer to be compatible with the specified finish coat.

PART 3: PART 3 - EXECUTION

3.01 SHOP TESTING

A. Test each pump in a test facility in accordance with the latest edition of ANSI/HI 14.6:

1. Hydrostatic Test

a. Maintain hydrostatic test pressure for 5 minutes.

b. Test all liquid containing components.

2. Performance Test

a. Factory standard bowl performance test.

b. Test may be witnessed by the Owner.

1) Provide Owner with 10 calendar days written notice.

2) Owner will pay his or her own expenses to observe testing.

c. Provide certified performance curve for each tested operating speed.

B. Conduct each test in accordance with Hydraulic Institute Standards.

C. Submit all test results to the Engineer. Engineer must approve test results prior to shipping a pump and driver to the project site.

3.02 INSTALLATION

A. Install all pumps and appurtenances in accordance with the manufacturer instructions, ANSI/HI 2.4, and the Contract Documents.

1. The sole plate shall be installed in a level position with the level verified by contractor millwrights utilizing calibrated machinist's levels with divisions no greater than 0.0005 ten thousands of an inch.

2. Tolerance shall be 0.002 thousands per foot of sole plate width.

3. Once leveled, the sole plate shall be grouted in place with non-shrink grout and allowed to cure.

4. Level readings shall be recorded in both X and Y dimensions before and after grouting and tensioning of the anchor bolts.

B. The manufacturer shall supervise installation of all pumps and appurtenances.

C. Coordinate all field electrical work and connections of the motor with the contractor and system integrator for power and control of the new pumps with the existing control panel.

3.03 FIELD PAINTING

A. Field prepare and touch-up manufacturer factory coated surfaces as required.

3.04 FIELD QUALITY CONTROL AND TESTING

A. Perform field inspection and testing in accordance with Section 01650.

B. Demonstrate compliance with all requirements of these specifications.

3.05 MANUFACTURER'S FIELD SERVICES

A. All manufacturers' field services shall be provided and performed in accordance with Sections 01400 Quality Control and 01640 Manufacturer's Services.

B. Manufacturer's Representative: Present at site or classroom designated by Owner, for minimum person-days listed below, travel time excluded:

1. 1 person-days for installation assistance and inspection

2. 1 person-days for functional and performance testing, including, but not limited to, verification of correct rotation, verification of proper alignment, and vibration testing

3. 1/2 person-days for facility startup

4. 1/2 person-day for training of Owner's personnel

END OF SECTION

SUEZ WTS
Engineering Bill of Materials (BOM)

SUEZ WTS
CONTROLLED DOCUMENT

506357 - City of Canton Water Pollution Control Plant - Bill of Materials									
Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
1	1	EA		KIT-P&ID, MEMBRANE BLOWERS					
2	5	EA	CUSTOM	BLOWER-PD,AER,GM 50L DN 150	AERZEN GM 50L BLOWER DRIVE MOTOR: 60HP, 1800RPM, TEFC, 575V/60HZ THERMISTORS - 1/PH BASE WITH INTEGRATED REACTIVE TYPE DISCHARGE SILENCER LOCAL AIR INTAKE INTAKE FILTER SILENCER HINGED MOTOR SUPPORT AS AUTOMATIC BELT TENSIONING DEVICE SET OF VIBRATION ISOLATION MOUNTS NARROW V-BELT DRIVE WITH GUARD - 1 SET SPRING LOADED RELIEF VALVE PRESET TO: 750 MBAR DISCHARGE MANIFOLD WITH EXTERNALLY ACCESSIBLE INTEGRATED CHECK VALVE FLEXIBLE CONNECTOR WITH CLAMPS FOR SCHEDULE 40 PIPE, DISCHARGE ACOUSTIC ENCLOSURE - INDOOR/OUTDOOR INLET FLEXIBLE SLEEVE - DN 200 (8") INSTRUMENTS: 120V PRESSURE GAUGE C/W ISOLATION BALL VALVE (5X) TEMPERATURE SWITCH C/W THERMOWELL - NEMA 4X (5X) DIRTY FILTER INDICATOR (5X) THERMOMETER 2 1/2" (PANEL MOUNT) (5X)	20-B-201-A/B/C/D/E 20-F-201-A/B/C/D/E 20-TI-201-A/B/C/D/E 20-TSH-201-A/B/C/D/E 20-PSV-201-A/B/C/D/E 20-PI-203-A/B/C/D/E 20-CV-201-A/B/C/D/E 20-HV-203-A/B/C/D/E	DS-102,SHT 1 OF 1	A03	A
3	5	EA	3104401	SWITCH-FLOW,BRS,24VDC,N4,KO,3.3-66'/SEC	SWITCH FLOW, KOBOLD PT# KAL-8115-C, 3.3-66 FT/SEC VELOCITY RANGE,0.5"MNPT PROC. CONNECTION, Ni-PLATED BRASS WETTED PARTS, NYLON HOUSING,8-LED FLOW TREND, 2-COLOUR LED SWITCH STATUS, NEMA 4,0.5"NPT CONDUITCONNECTION, 24V DC POWER SUPPLY, 1-SPDT SWITCH, 120 PSIG MAX. OPERATINGPRESSURE, -10 TO +250 DEGREE F. PROCESS TEMPERATURE, +/-1%REPRODUCIBILITY, UP TO 60 SEC. TIME DELAY START UP, CSA APPROVAL ISREQUIRED. SET POINT = FLOW / NO FLOW	20-FSL-201-A/B/C/D/E	DS-102,SHT 1 OF 1	C01	A
4	5	EA	3028820	VALVE-BTFLY,NYL,10.0,GEAR,LG,150,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-390 VALVE SIZE: 10 IN. MATERIAL: BODY- DUCTILE IRON DISC- NYLON COATED DUCTILE IRON STEM- 416SS SEAT- EPDM CONTROL: GEAR CONNECTION: LUG PRESSURE RATING: 150 PSI ADDITIONAL MANUF. INFORMATION: 311000-13010390 - S31 10" DI,NDI,416,EPDM BONDED 040300-21202002 - GEAR OP 30:1 8000 IN-LBS	20-HV-201-A/B/C/D/E	DS-102,SHT 1 OF 1	B04	A
5	1	EA		KIT-P&ID, MEMBRANE TANK					
6	4	EA	3085593	EDUCTOR-VAC,PIAB,PUMP,0.8SEC/FT3TO-9"	PUMP, VACUUM, EJECTOR, PIAB MODEL #P6010 SI32-3X4, PART# P6010.AI.01.LJ.56.XX; 4 COAX SI CARTRIDGES, NON-RETURN VALVES AND VACUUM GAUGE; EVAC. RATE: 0.8 S/FT3 TO -9" HG; MAX VAC: -21"HG; AIR CONS: 12.7 SCFM@ 72 PSI; 1" INLET/DISCH; 1/4" NPSF COMP. AIR INLET; AL BODY, STD MOUNTING NOTE : THE END PLATES NEED TO BE ANODIZE	20-E-801-1/2/3/4	DS-104, SHT 1 0F 1	A10	A
7	4	EA	3156330	VALVE-ANGLE,SS,1.00,A/S,FPT,VTN,BU	VENDOR: BURKERT MATERIAL# 00254247 2/2-WAY-PISTON-OPERATED ANGLE-SEAT VALVE TYPE: 2000 - 2000 CONTROL FUNCTION: A - CLOSED BY SPRING FORCE PATHS/POSITIONS: 2 - 2 WAYS / 2 POSITION ORIFICE SIZE: 25,0 - 25MM (1") SEAL MATERIAL: FF - FKM BODY MATERIAL: VA - STAINLESS STEEL PORT CONNECTION: NM86 - NPT 1 THREADED PORT ACTUATOR VERSION: C - PA-ACTUATOR, VA-THREADED BUSHING AT CONNECTION OF PILOT AIR ACTUATOR SIZE: D - DM 50MM SPECIAL FEATURE: AF12 - SHORT BODY MC13 - FLOW ABOVE SEAT NA02 - VACUUM-VERSION PRESSURE MIN: 0 PSI PRESSURE MAX: 232 PSI PILOT PRES. MIN: 39.15 PSI PILOT PRES. MAX: 145 PSI PILOT PRE. REQ.: 72.5 PSI CV (GPM) 11.63 T MEDIUM MIN: -10 C T MEDIUM MAX: 130 C T AMBIENT MIN: -10 C T AMBIENT MAX: 60 C	20-FV-801-1/2/3/4	DS-104, SHT 1 0F 1	B08	A
8	4	EA	3088953	VALVE-BALL,316,1.00,2PC THD	VALVE, BALL, PINACLE, 1", 2-PC FULL PORT, P/N 13TBV21,NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 110, 1000#WOG, WITH LEVER LOCKING HANDLE.	20-HV-801-1/2/3/4	DS-104, SHT 1 0F 1	B01	A

SUEZ WTS
Engineering Bill of Materials (BOM)

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Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
9	4	EA	3067269	VALVE-BALL,316,0.25,2PC THD	VALVE, BALL, PINACLE, 2-PC FULL PORT, P/N 13TBV2025, NPT,316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 16, 1000# WOG,WITH LEVER.	20-HV-802-1/2/3/4	DS-104, SHT 1 0F 1	B01	A
10	4	EA	3086200	FLT-AIR,COMPRESSED,1/4",40MICRON	FILTER, COMPRESSED AIR, WATTS #F-602-024A, GENERAL PURPOSE, 40 MICRON ELEMENT, 1/4" NPTF CONNECTIONS, C/W SIGHT GAUGE AND TWIST DRAIN, METAL BOWL	20-F-801-1/2/3/4	DS-104, SHT 1 0F 1	B20	A
11	4	EA	3109290	VALVE-SOL,3/2-WY,0.25,24VDC,FPT,6518,BU	VENDOR: BURKERT MATERIAL# 00296534 3/2-WAY-PNEUMATIC VALVE 32 MM TYPE: 6518 CIRCUIT FUNCTION: C - 3/2-WAYS; NORMALLY CLOSED; OUTPUT A BALANCED ORIFICE SIZE: 08,0 - 8,0MM (5/16") PORT CONNECTION P/R: NM82 - NPT 1/4 THREADED PORT PORT CONNECTION A/B: NM82 - NPT 1/4 THREADED PORT MODE OF ACTUATION: B - ELECTROPNEUMATIC / AIR-SPRING + MECH. SPRING COIL SIZE: 5 - 32 MM VOLTAGE: 24 VOLTS FREQUENCY: DC POWER CONSUMPTION: 02 - 2 WATT SPECIAL FEATURE: JG30 - CONNECTOR TYPE 2509 NA38 - COIL FOR HIGHER TEMPERATURES PD24 - UL-LISTED/CSA/FM-EX DIV.2 PRESSURE MIN: 29 PSI PRESSURE MAX: 116 PSI QNN 1,511.90 T MEDIUM MIN: -10 C T MEDIUM MAX: 50 C T AMBIENT MIN: -25 C T AMBIENT MAX: 55 C	20-FV-802-1/2/3/4	DS-104, SHT 1 0F 1	B08	A
12	4	EA	3083238	TRANS-PRESS,SS,0.50,NPT,-15-15PSIG,EH	TRANSMITTER, PRESSURE E&H PT# CERABAR-S PMC71-UAC1KBRAAAA ALUMINUM HOUSING W/ 1/2" NPT PROCESS CONNECTION, CAPACITIVE WETTED SENSOR W/ CERAMIC DIAPHRAGM: 2 BAR G, 200 KPA, 30 PSIG10X OVERLOAD PROOF. LINEARITY = +/- 0.1%, TURNDOWN= 100 :1, HIGH RELIABILITY, 4-20 mA HART OUTPUT W/ LINEARISATION & LCD DISPLAY, CSA CL. I II III, DIV 1, GROUP A-G. SPECIFY FM OR CSA APPROVAL REQUIREMENT.	20-PIT-301-1/2/3/4	DS-104, SHT 1 0F 1	C07	A
13	4	EA	3104364	TRANS-LEVEL,316L,3.00,FLG,0-156H20,EH	TRANSMITTER, LEVEL, E&H PT# DELTAPILOT M FMB51-CA21RD1FGJ85AGJB3A+AA, 316L 3" 150# ANSI FLANGE PROCESS CONNECTION, TRANSMITTER FOR HYDROSTATIC LEVEL MEASUREMENT, TUBE (ROD) VERSION FOR MOUNTING IN TANKS, FLUSH MOUNTED CONTITE-SENSOR W/ METALLIC DIAPHRAGM ALLOY C4, HERMETICALLY WELDED. CSA, CL. 1, DIV 2, GROUP A-D. MEASURING RANGE: 0 TO 13ftH20. CELL W/ LINEARITY < 0.2%, SILICON FILL & VITON SEAL. LOOP POWERED 4-20 MA W/ DISPLAY, HART PROT. 316L SS NEMA 4X HOUSING W/ 1/2" CONDUIT CONNECTION ROD LENGTH: 156" RANGE: 0 TO 156"	20-LIT-203-1/2/3/4	DS-104, SHT 1 0F 1	C09	A
14	8	EA	CUSTOM	SWITCH-FLOAT,PP,120/220VAC,4"FLT	SWITCH, LEVEL, MJK PT# 202810, MODEL 7030, CABLE SUSPENDED 4" Ø FLOAT, POLYPROPYLENE HOUSING, 39 FT LONG OIL RESISTANT PVC CABLE, 120VAC OR 220VAC, 1PH/60Hz, -20oC to 60oC OPERATING TEMPERATURE, INCLUDES WEIGHT FOR AEREATED TANKS	20-LSLL-201-1/2/3/4 20-LSHH-201-1/2/3/4	DS-104, SHT 1 0F 1	C08	A
15	24	EA	3160706	VALVE-BTFLY,316,6.00,MAN,VIC,EPDM	VALVE, BUTTERFLY, VICTAULIC SERIES 700, 6.00" CAST IRON, VICTAULIC GROOVE, 316SS DISC, SS SHAFT, EPDM SEAT, LEVER OPERATOR; PN# V060700XEJ	20-HV-310A-1/2/3/4 20-HV-310B-1/2/3/4 20-HV-310C-1/2/3/4 20-HV-310D-1/2/3/4 20-HV-310E-1/2/3/4 20-HV-310F-1/2/3/4	DS-104, SHT 1 0F 1	B03	A
16	24	EA	3160704	VALVE-BTFLY,316,3.00,MAN,VIC,EPDM	VALVE, BUTTERFLY, VICTAULIC SERIES 700, 3.00" CAST IRON, VICTAULIC GROOVE, 316SS DISC, SS SHAFT, EPDM SEAT, LEVER OPERATOR; PN# V030700XE	20-HV-204A-1/2/3/4 20-HV-204B-1/2/3/4 20-HV-204C-1/2/3/4 20-HV-204D-1/2/3/4 20-HV-204E-1/2/3/4 20-HV-204F-1/2/3/4	DS-104, SHT 1 0F 1	B03	A

SUEZ WTS
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Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
17	4	EA	3109182	VALVE-BTFLY,NYL,10.0,A/A SV,LG,LS,24V,BR	VALVE, BUTTERFLY, BRAY SERIES 390, 10" DUCTILE IRON LUG STYLE BODY, RATED VACUUM TO 150 PSI, NYLON COATED DISC, SS SHAFT, EPDM SEAT, BRAY PNEUMATIC RACK AND PINION DOUBLE ACTING ACTUATOR SERIES 92/160, C/W NAMUR DIRECT MOUNT SOLENOID 24VDC 630250-21524536, DIN PLUG, WITH SPEED CONTROLS AND MICRO SWITCH S50 PRE-WIRED	20-FV-205-1/2/3/4	DS-104, SHT 1 0F 1	B04	A
18	4	EA	CUSTOM	VALVE-KNIFE GATE,CI,18.0,VITON,DZ	DEZURIK KNIFE GATE VALVE VALVE SIZE: 18" BODY MATERIAL: CAST IRON, VITON SEAT PACKING: PTFE END CONNECTION: FLANGED, ANSI CLASS 125/150 CW CYLINDER	20-FV-502-1/2/3/4	DS-104, SHT 1 0F 1	B06	B
19	20	EA	3157511	M/C-ZW500D,370,FLO,52/52,316L,LEAP,6IN			DS-104, SHT 1 0F 1	A01	A
20	4	EA	3164976	M/C-ZW500D,370,FLO,52/32,316L,LEAP,6IN			DS-104, SHT 1 0F 1	A01	A
21	4	EA	3033393	KIT,ZW500D,BLANK,340/370			DS-104, SHT 1 0F 1	A01	A
22	**1**	**EA**		**KIT-P&ID, PROCESS PUMP**					
23	4	EA	3089339	VALVE-BALL,PVC,0.50,A/S SV,SOC,EPDM,24V	VALVE, BALL, 0.5", TRUE UNION, PVC BODY, TEFLON SEATS, EPDM O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, C/W PA11 SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR PT# 199 233 063, ASSEMBLY PT# S199 233 063 C/W TYPE PV95 24 VDC/8 WATTS SOLENOID VALVE PT# 199 190 554, CSA/UL APPROVED.	23-FV-302-1/2/3/4	DS-105,SHT 1 OF 1	B02	A
24	4	EA	CUSTOM	VALVE-BALL,PVC,0.75,A/S SV,SOC,VTN,24V	VALVE, BALL, 0.75", TRUE UNION, PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR, INCLUDES 24VDC SOLENOID.	23-FV-102-1/2/3/4	DS-105,SHT 1 OF 1	B02	A
25	4	EA	3090233	VALVE-CHK,PVC,0.50,CONE,SOC,TU,GF,EPDM	VALVE, CONE CHECK, 0.5", Model: 161 561 102 TRUE UNION, PVC BODY, EPDM SEAL, SOCKET END CONNECTIONS. CV: 13 MF: 9 L/m	23-CV-301-1/2/3/4	DS-105,SHT 1 OF 1	B15	A
26	4	EA	3090240	VALVE-CHK,PVC,0.75,CONE,SOC,TU,GF,VTN	VALVE, CONE CHECK, 0.75" TRUE UNION, GEORGE FISCHER, PT#161 561 113, PVC BODY, FPM SEAL, SOCKET END CONNECTIONS. CV: 26 MF: 13 L/m	23-CV-101-1/2/3/4	DS-105,SHT 1 OF 1	B15	A
27	4	EA	3090183	VALVE-BALL,PVC,0.50,SOC/THD,TU,GF,EPDM	VALVE, BALL, TRUE UNION, 0.5",PVC BODY, TEFLON SEATS, EPDM O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-313-1/2/3/4	DS-105,SHT 1 OF 1	B01	A
28	4	EA	3087943	VALVE-BALL,PVC,0.75SOC/THD,TU,GF,VENTED	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, PT# V161546353, 0.75", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-113-1/2/3/4	DS-105,SHT 1 OF 1	B01	A
29	4	EA	CUSTOM	TRANS-FLOW,14.00,PERMEATE,E+H	PROMAG W 400, 5W4C3F, DN350 14" 5W4C3F-AAELHA0DUA1K0A+AAZ1 ASSIGN LINE 1 VOLUME FLOW ASSIGN LINE 2 TOTALIZER 1 ASSIGN CURRENT OUTPUT VOLUME FLOW CURRENT SPAN 4-20 MA HART US VALUE 20 MA 3,600.00000 USGAL/MIN ASSIGN PULSE OUTPUT VOLUME FLOW PULSE VALUE (PER PULSE) 30.00000 USGAL PULSE WIDTH 100.000 MS OUTPUT SIGNAL PASSIVE - NEGATIVE FAILSAFE MODE CURRENT/PULSE OUTPUT MIN. VALUE ASSIGN TOTALIZER 1 VOLUME FLOW UNIT TOTALIZER 1 USGAL 1X TAG-STAINLESS STEEL LABEL 50105107 AA NON-HAZARDOUS AREA E DESIGN: FIXED FLANGE L POWER SUPPLY: 100-240VAC/24VAC/DC H OUTPUT; INPUT: 4-20MA HART, PULSE/FREQ., SWITCH OUTPUT A HOUSING: COMPACT, ALU, COATED 0 CABLE, REMOTE VERSION: NOT USED D ELECTRICAL CONNECTION: THREAD NPT1/2 U LINER: POLYURETHANE A1K PROCESS CONNECTION: CL.150, CARBON STEEL, FLANGE ASME B16.5 0 ELECTRODES: 1.4435/316L A CALIBRATION FLOW: 0.5% AA >OPERATION LANGUAGE DISPLAY: ENGLISH Z1 >>MARKING: TAGGING (TAG), SEE ADDITIONAL SPEC.	20-FIT-307-1/2/3/4	DS-105,SHT 1 OF 1	C10	A

SUEZ WTS
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Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
30	4	EA	3090294	VALVE-BTFLY,NYL,14.0,GEAR,LG,150,BR	BUTTERFLY VALVE MANUFACTURER: BRAY SERIES: 31-390 VALVE SIZE: 14 IN. MATERIAL: BODY- DUCTILE IRON DISC- NYLON COATED DUCTILE IRON STEM- 416SS SEAT- EPDM CONTROL: GEAR OPERATOR CONNECTION: LUG PRESSURE RATING: 150 PSI	20-HV-301-1/2/3/4	DS-105,SHT 1 OF 1	B04	A
31	8		CUSTOM	GAUGE-PRESS,3.5,BTM,1.00,60PSI,AS	PRESSURE GAUGE, ASHCROFT, SS CASE DIAL(3.5"), VACCUM - 60PSI (DUAL SCALE PSI & kPa) 1" LOWER CONNECTION,GLYCERINE FILLED, 3-2-3% ASME GR B ACCURACY, POLYCARBONATE WINDOW.	20-PI-304-1/2/3/4 20-PI-303-1/2/3/4	DS-105,SHT 1 OF 1	C04	A
32	20	EA	3067260	VALVE-BALL,316,0.50,1PC THD	VALVE, BALL, PINACLE, 1/2", 1-PC REDUCED PORT, P/N 13TBV105, NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 5.5, 800# WOG, WITH LEVER LOCKING HANDLE	20-HV-304-1/2/3/4 20-HV-303-1/2/3/4 20-HV-306-1/2/3/4 20-HV-305-1/2/3/4 20-HV-320-1/2/3/4	DS-105,SHT 1 OF 1	B01	A
33	4	EA	3109184	VALVE-BTFLY,NYL,14.0,A/A SV,LG,LS,24V,BR	VALVE, BUTTERFLY, BRAY SERIES 390, 14" DUCTILE IRON LUG STYLE BODY, RATED VACUUM TO 150 PSI, NYLON COATED DISC, SS SHAFT, EPDM SEAT, BRAY PNEUMATIC RACK AND PINION DOUBLE ACTING ACTUATOR SERIES 92/210, C/W NAMUR DIRECT MOUNT SOLENOID 24VDC 630250-21524536, DIN PLUG, WITH SPEED CONTROLS AND MICRO SWITCH S50 PRE-WIRED	20-HV-302-1/2/3/4	DS-105,SHT 1 OF 1	B04	A
34	8	EA	3103207	SWITCH-PRESS,BRS,N4,UE,40PSIG,J6	UNITED ELECTRIC PT #J6-152-M201, 1/4" FNPT PROCESSOR CONNECTION, BRASS BELLOWS, 0-50 PSIG, ONE SPDT RELAY (15A), 0.1 TO 0.5 PSI FIXED DEAD BAND, 75 PSI PROOF PRESSURE, 1/2" FNPT ELECTRICAL CONNECTION, NEMA4, ALUMINIUM BODY, +-1% REPEATIBILITY. SET POINT = 40 PSIG INCREASING	20-PSH-301-1/2/3/4 20-PSH-302-1/2/3/4	DS-105,SHT 1 OF 1	C11	A
35	4	EA	CUSTOM	PUMP-PD,50HP,460/60/3,BO EL 2250	PE2SARCAAEBEGCCC11 BÖRGER ROTARY LOBE PUMP EL2250 CASING: ONE-PIECE BLOCKCASING FROM GREY CAST IRON ASTM A48-40 B AXIAL CASING PROTECTION LINERS FROM HARD METAL ROTOR GEOMETRY: TRI-LOBE, SCREW FORM, ALMOST PULSATION-FREE, BASEPARTS FROM ASTM A536 60-40-10, WITH PUSHED-ON TIPS, EASILY REPLACEABLE ROTOR COATING: BUNA-N SOLID PASSING CAPABILITY D = 3.2" SHAFT SEAL: SINGLE-ACTING MECHANICAL SEALS, TYPE LW MATERIAL CODE ACCORDING EN 12756 [DIN 24960]: Q2 Q2 P G SEAL FACES: SISIC/SISIC DYNAMIC O-RINGS: BUNA-N SEAL HOLDING BUSHES: AISI 316L STATIONARY O-RINGS: BUNA-N EL2250 TO 12IN ANSI FLANGE B1 CONFIGURATION GALVANIZED CS NORD SK62-320TC-3.72 INLINE REDUCER 1750RPM/470RPM BALDOR CEM4115T 50HP,1775RPM,PREMIUM EFF 3PH,60HZ,230/460V TEFC,326TC,1.15SF MIN CAPACITY: 1007 GPM @ 10.3 PSI MAX CAPACITY: 2413 GPM @ 16.4 PSI	20-P-301-1/2/3/4	DS-105,SHT 1 OF 1	A04	B

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Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
36	8	EA	3109290	VALVE-SOL,3/2-WY,0.25,24VDC,FPT,6518,BU	VENDOR: BURKERT MATERIAL# 00296534 3/2-WAY-PNEUMATIC VALVE 32 MM TYPE: 6518 CIRCUIT FUNCTION: C - 3/2-WAYS; NORMALLY CLOSED; OUTPUT A BALANCED ORIFICE SIZE: 08,0 - 8,0MM (5/16") PORT CONNECTION P/R: NM82 - NPT 1/4 THREADED PORT PORT CONNECTION A/B: NM82 - NPT 1/4 THREADED PORT MODE OF ACTUATION: B - ELECTROPNEUMATIC / AIR-SPRING + MECH. SPRING COIL SIZE: 5 - 32 MM VOLTAGE: 24 VOLTS FREQUENCY: DC POWER CONSUMPTION: 02 - 2 WATT SPECIAL FEATURE: JG30 - CONNECTOR TYPE 2509 NA38 - COIL FOR HIGHER TEMPERATURES PD24 - UL-LISTED/CSA/FM-EX DIV.2 PRESSURE MIN: 29 PSI PRESSURE MAX: 116 PSI QNN 1,511.90 T MEDIUM MIN: -10 C T MEDIUM MAX: 50 C T AMBIENT MIN: -25 C T AMBIENT MAX: 55 C	20-FV-320-1/2/3/4 20-FV-321-1/2/3/4	DS-105,SHT 1 OF 1	B09	A
37	4	EA	1258167	VALVE-NEEDLE,PVC,0.25,THD,CL,HW	NEEDLE VALVE MATERIAL: PVC SIZE: 1/4" MODEL: NGA002	20-HCV-320-1/2/3/4	DS-105,SHT 1 OF 1	B05	A
38	4	EA	3159335	ANLZR-TURBID,120VAC,HACH,TU5300	MANUFACTURER: HACH P/N: LXV445.99.13112 MODEL: TU5300SC LOW RANGE LAZER TURBIDIMETER WITH SYSTEM CHECK AND RFID, EPA VERSION. COMES WITH: P/N: LZY871, WALL MOUNT BRACKET P/N: LZY963, FLOW REGULATOR MODEL: TU5300SC SPECIFICATIONS ACCURACY: ±2% OR 0.01 NTU FROM 0 - 40 NTU / ±10% NTU FROM 40 - 1000 NTU CABLE LENGTH: 1.6 m (5.25 ft) CERTIFICATIONS: CE COMPLIANT, US FDA, EPA, 1420492-000 ISO version, Australian ACMA Marking COMPLIANCE: EPA DIMENSIONS (H X W X D): 249 mm X 268 mm X 190 mm ENCLOSURE RATING: ELECTRONIC COMPARTMENT IP55; ALL OTHER FUNCTIONAL UNITS IP65 FITTING TYPE: SAMPLE QUICK CONNECTOR: ¼-IN. FOR ¼-IN. TUBING LOWER LIMIT OF DETECTION (LOD): 0.002 NTU OPERATING HUMIDITY: RELATIVE HUMIDITY: 5 - 95% AT DIFFERENT TEMPERATURES, NON-CONDENSING OPERATING TEMPERATURE RANGE: 0 - 50 °C (32 - 122 °F) RESOLUTION: 0.0001 NTU / FNU / TE/F / FTU / EBC RESPONSE TIME: T90 <45 SECONDS AT 100 ML/MIN SAMPLE FLOW RATE: 100 - 1000 ML/MIN; OPTIMAL FLOW RATE: 200 - 500 ML/MIN SAMPLE PRESSURE: 6 BAR (87 PSI) MAXIMUM SAMPLE TEMPERATURE: 2 - 60 °C (35 - 140 °F) SIGNAL AVERAGE TIME: 30 - 90 SECONDS STORAGE CONDITIONS: -40 - 60 °C (-40 - 140 °F)	20-AE-320-1/2/3/4	DS-105,SHT 1 OF 1	C15	A
39	4	EA	3090984	CONTROLLER,DUAL 4-20mA,100-240,SC200,HA	CONTROLLER, UNIVERSAL,HACH MODEL SC 200 PT# LXV404.99.00552, DUAL 4-20 mA OUTPUTS (OPTIONAL 4 ADDITIONAL), W/O DIGITAL OUTPUTS, NEMA 4X/IP66 ENCLOSURE, 100-240 VAC 50-60 HZ, MOUNTING HARDWARE FOR CONTROLLER INCLUDED. CAN BE USED WITH DIGITAL AND ANALOG SENSORS AND PROBES (PH,TEMP,DO,TURBIDITY).	20-AIT-320-1/2/3/4	DS-105,SHT 1 OF 1	C15	A

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40	4	EA	3177994	VALVE-NEEDLE,NYL,0.25,TB,HACH,LZY963	MANUFACTURER: HACH P/N: LZY963 KIT, FLOW REGULATOR FOR TU5X00SC, INCLUDES: FLOW REGULATOR AND TUBE 1/4in. OD X 0.13m (5.11in.)	20-HV-320-1/2/3/4 20-HV-321-/2/3/4	DS-105,SHT 1 OF 1	C15	B
41	4	EA	3177995	SENSOR-FLOW,0.25,TB,HACH,LQV160.99.00002	MANUFACTURER: HACH P/N: LQV160.99.00002 FLOW SENSOR KIT, INCLUDES: FLOW SENSOR, FLOW SENSOR CAP, MOUNTING SCREWS AND 1 M (3.3 FT) OF 1/4 in. OD TUBING.	20-FE-320-1/2/3/4	DS-105,SHT 1 OF 1	C16	B
42	4	EA	3178016	VALVE-SOL,BRS,0.25,120VAC,ASC,SC8262H022	SOLENOID VALVE MANUFACTURER: ASCO PT#: SC8262H022 120/60 SERIES: 8262 BODY CONSTRUCTION: 2/2 WAY COIL VOLTAGE: 120/60 VAC, 110/50 VAC OPERATION: NORMALLY CLOSED SIZE: 0.25 F-NPT ORIFICE: 1/8" Cv: 0.35 BODY: BRASS SEAL AND DISCS: NBR CORE TUBE: 305 STAINLESS STEEL CORE AND PLUGNUT: 430F STAINLESS STEEL SPRINGS: 302 STAINLESS STEEL SHADING COIL: COPPER STEM: PA HOUSING: NEMA 4X OPERATING PRESSURE DIFFERENTIAL (@ 131°F): -AIR: 180 PSI -WATER: 180 PSI MAX. FLUID TEMP: 180°F APPROVALS: UL,CSA,CE	20-FV-320-1/2/3/4 20-FV-321-1/2/3/4	DS-105,SHT 1 OF 1	B09	B
43	**1**	**EA**		**KIT-P&ID, PERMEATE COLLECTOR**					
44	1	EA	CUSTOM	TRANS-TEMP,7.50,0.75NPT,122F,E+H	"ENDRESS+HAUSER TEMPERATURE TRANSMITTER, RTD-THERMOWELL & TRANSMITTER ASSEMBLY TH13 TH13-3A21A2EBA1AK* LENGTH 7.5"" [8] THERMOWELL IMMERSION LENGTH U: 7.5 INCH (INCREMENT 0.5) [A2] PROCESS CONNECTION: THREAD 3/4NPT, 316 [1] THERMOWELL SHAPE: STRAIGHT [A] THERMOWELL LAG, T: NOT SELECTED [2] EXTENSION: NIPPLE+UNION+NIPPLE 316 E=4"" [E] SENSOR TYPE: 1 PT100 CLASS B, 4 WIRE, -50-200OC [B] ENCLOSURE; CABLE ENTRY: ALU, E+H BLUE; 1/2NPT [A] ELECTRICAL CONNECTION: PROGRAMMABLE TMT180-CSA GP [1] ADDITIONAL OPTION 1: NOT SELECTED [A] ADDITIONAL OPTION 2: NOT SELECTED [K] VERSION: STANDARD > RANGE 4 TO 20 MA FROM 0 TO 122 DEG F"	20-TIT-001 20-TW-001	DS-107,SHT 1 OF 1	C03	A
45	2	EA	3085762	SWITCH-LEVEL,316,230VAC,IP65,EH,FTL31	LIQUIPHANT , FTL31-1JP7/0 POINT LEVEL SWITCH FOR LIQUIDS MANUFACTURER: ENDRESS+HAUSER MODEL NUMBER: FTL31-CA1V2AAVBJ CA APPROVAL: CSA C/US GENERAL PURPOSE 1 POWER SUPPLY; OUTPUT: 20-253VAC/DC; 2-WIRE V ELECTRICAL CONNECTION: VALVE PLUG ISO4400 NPT1/2, IP65 NEMA TYPE 4X ENCL. 2 SENSOR DESIGN: MAX. PROCESS TEMPERATURE 100oC/212oF AA SENSOR TYPE: COMPACT VERSION 316L Ra<3.2um/126uin VBJ PROCESS CONNECTION: THREAD ASME MNPT3/4, 316L	20-LSL-001 20-LSH-001	DS-107,SHT 1 OF 1	C08	B

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46	1	EA	3090589	VALVE-BTFLY,NYL,24.0,GEAR,FLG,150,BR	VALVE, BUTTERFLY,BRAY SERIES 36-119, 24" CAST IRON FLANGED STYLE BODY, 150 PSI RATED NYLON COATED DISC, SS SHAFT, EPDM SEAT, GEAR OPERATOR; BRAY ASSEMBLY ID 9C240FF119G.	78-HV-001	DS-107,SHT 1 OF 1	B04	A
47	**1**	**EA**		**KIT-P&ID, RAS/DRAIN PUMPS**					
48	8	EA	CUSTOM	GAUGE-PRESS,3.5,BTM,1.00,60PSI,S,AS	PRESSURE GAUGE, ASHCROFT, SS CASE, 3.5" DIAL, VACCUM-60 PSI (DUAL SCALE PSI & KPA), 1" LOWER CONNECTION, GLYCERINEFILLED, 3-2-3% ASME GR B ACCURACY, POLYCARBONATE WINDOW. COMPLETE WITH: DIAPHRAGM SEAL, TYPE 101, CAPSULE TYPE, 1" FNPT PROCESS CONNECTION, DIAPHRAGM AND HOUSING OF 316LSS, INSTRUMENT MOUNTED TO SEAL WITH GLYCERINE FILLING FLUID. GLYCERINE FILL OPERATING TEMPERATURE RANGE 0 TO 400 DEG F (-17 TO 204 DEG C).	20-PI-503-1/2/3/4 20-PI-504-1/2/3/4	DS-110,SHT 1 OF 1	C04	A
49	8	EA	CUSTOM	GAUGE-PRESS,3.5,BTM,1.00,60PSI,D,AS	PRESSURE GAUGE, ASHCROFT, SS CASE, 3.5" DIAL, 0-60 PSI (DUAL SCALE PSI & KPA), 1" LOWER CONNECTION, GLYCERINEFILLED, 3-2-3% ASME GR B ACCURACY, POLYCARBONATE WINDOW. COMPLETE WITH: DIAPHRAGM SEAL, TYPE 101, CAPSULE TYPE, 1" FNPT PROCESS CONNECTION, DIAPHRAGM AND HOUSING OF 316LSS, INSTRUMENT MOUNTED TO SEAL WITH GLYCERINE FILLING FLUID. GLYCERINE FILL OPERATING TEMPERATURE RANGE 0 TO 400 DEG F (-17 TO 204 DEG C).	20-PI-503-1/2/3/4 20-PI-504-1/2/3/4	DS-110,SHT 1 OF 1	C04	A
50	16	EA	3067262	VALVE-BALL,316,1.00,1PC THD	VALVE, BALL, PINACLE, 1", 1-PC REDUCED PORT, P/N 13TBV11,NPT, 316SS BODY & TRIM, PTFE SEAT & SEAL, CV = 15.5,800# WOG, WITH LEVER LOCKING HANDLE.	20-HV-504-1/2/3/4 20-HV-506-1/2/3/4 20-HV-503-1/2/3/4 20-HV-505-1/2/3/4	DS-110,SHT 1 OF 1	B01	A
51	4	EA	CUSTOM	VALVE-CHK,DI,16.00,DZ	EDV SWING CHECK VALVE, FLANGED ASME 125/150, DI BODY, DI DICS, EPDM SEAT, 304SS SHAFT, 304SS SEAT, EPOXY COATED, LEVER & WEIGHT CVS,16,EDV,F1,DI-D1-S1-S1-EPDM*LW	20-CV-501-1/2/3/4	DS-110,SHT 1 OF 1	B11	A
52	4	EA	CUSTOM	TRANS-FLOW,16.00,RAS,E+H	PROMAG W 400, 5W4C4H, DN400 16" 5W4C4H-AAELHA0DUA1K0A+AAZ1 ASSIGN LINE 1 VOLUME FLOW ASSIGN LINE 2 TOTALIZER 1 ASSIGN CURRENT OUTPUT VOLUME FLOW CURRENT SPAN 4-20 MA HART US VALUE 20 MA 4,800.00000 USGAL/MIN ASSIGN PULSE OUTPUT VOLUME FLOW PULSE VALUE (PER PULSE) 50.00000 USGAL PULSE WIDTH 100.000 MS OUTPUT SIGNAL PASSIVE - NEGATIVE FAILSAFE MODE CURRENT/PULSE OUTPUT MIN. VALUE ASSIGN TOTALIZER 1 VOLUME FLOW UNIT TOTALIZER 1 USGAL 1X TAG-STAINLESS STEEL LABEL 50105107 AA NON-HAZARDOUS AREA E DESIGN: FIXED FLANGE L POWER SUPPLY: 100-240VAC/24VAC/DC H OUTPUT; INPUT: 4-20MA HART, PULSE/FREQ., SWITCH OUTPUT A HOUSING: COMPACT, ALU, COATED 0 CABLE, REMOTE VERSION: NOT USED D ELECTRICAL CONNECTION: THREAD NPT1/2 U LINER: POLYURETHANE A1K PROCESS CONNECTION: CL.150, CARBON STEEL, FLANGE ASME B16.5 0 ELECTRODES: 1.4435/316L A CALIBRATION FLOW: 0.5% AA >OPERATION LANGUAGE DISPLAY: ENGLISH Z1 >>MARKING: TAGGING (TAG), SEE ADDITIONAL SPEC.	20-FIT-507-1/2/3/4	DS-110,SHT 1 OF 1	C10	A
53	4	EA	CUSTOM	VALVE-KNIFE GATE,DI,16.0,DZ	URETHANE LINED KNIFE GATE VALVE, MULTI-USE (150 PSI), FLANGED 150, BODY DI, PACKING PTFE TO 500° F, GATE 304 SS, SEAT POLYETHER URETHANE TO 175° F	20-HV-501-1/2/3/4	DS-110,SHT 1 OF 1	B06	B

SUEZ WTS
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54	4	EA	CUSTOM	PUMP-CENT,50HP,480/60/3,SULZER	APT43-12 (SO) END SUCTION SINGLE STAGE CENTRIFUGAL PUMP QUALITY REQUIREMENT: CE 2006/42/EC; EN ISO 5199:2002 CLASS II PUMP AND ACCESSORIES: HYDRAULIC PERFORMANCE ACCEPTANCE GRADE: ISO 9906:2012 / HI 14.6-2011 GRADE 2B IMPELLER: TYPE - SPECIAL OPEN; IMPELLER HOLES - BALANCE HOLES MATERIALS OF CONSTRUCTION: VOLUTE CASE : DUPLEX STEEL (ASTM A890 3A) IMPELLER : DUPLEX STEEL (ASTM A890 3A) WETTED NON CASTED ALLOYS: 316 SS OR BETTER GRADE SHAFT: DUPLEX STEEL (EN1.4460 / AISI 329 / SS2324) BEARING HOUSING : GREY CAST IRON (ASTM A48 CL30B) SURFACE TREATMENT: INSIDE SURFACE TREATMENT: STANDARD PAINTING METHOD: STANDARD, ATMOSPHERIC-CORROSIVITY C4, ISO 12944-2 COLOR SHADE: LIGHT GREY (NCS1700) VOLUTE CASE: FLANGE DRILLING : ASME B16.5 CLASS 150 CASING CONNECTIONS: CASING DRAIN; RECIRCULATION PIPE (DISCHARGE) SHAFT SEAL: SEALING UNIT TYPE: CARTRIDGE SINGLE, OPEN SEAL CHAMBER, SLEEVE INSTALLATION (MS33) SHAFT SEAL FLUID: WITHOUT FLUID (N) MECHANICAL SEAL TYPE: JOHN CRANE, 5610 (FC16) MECHANICAL SEAL BODY: 316/329 SS SHAFT SEAL MATERIAL: SIC/ SIC MECHANICAL SEAL ELASTOMER MATERIAL: EPDM, ETHYLENE PROPYLENE BEARING UNIT: BEARING LUBRICATION TYPE: GREASE BEARING ISOLATION: STANDARD LABYRINTH SEAL OTHER PARTS: O-RING MATERIAL - EPDM, ETHYLENE PROPYLENE; GASKET MATERIAL - REINZ AFM 34; SHAFT SEAL GUARDS MATERIAL - STAINLESS STEEL COUPLING SERVICE FACTOR: 1.20, COUPLING SIZE: REX VIVA VS215, COUPLING GUARD: PAINTED GALVANIZED STEEL, COUPLING GUARD COLOR: YELLOW (RAL1023) BASEPLATE TYPE: STANDARD BASEPLATE FOR PUMP AND MOTOR (SLP), MATERIAL: CARBON STEEL DESIGN DRAINAGE CAPACITY: 1715 GPM @ 19.50 FT TDH MAX CAPACITY: 4167 GPM @ 25.6 FT TDH MOTOR: SIEMENS SEVERE DUTY 8 POLES 5 HP TEFC 404T 460V FOOT-MOUNTED, COMES WITH THERMISTER (3) 1/PH	20-P-501-1/2/3/4	DS-110,SHT 1 OF 1	A06	B
55	1	EA	CUSTOM	VALVE-KNIFE GATE,DI,4.0,DZ	URETHANE LINED KNIFE GATE VALVE, MULTI-USE (150 PSI), FLANGED 150, BODY DI, PACKING PTFE TO 500° F, GATE 304 SS, SEAT POLYETHER URETHANE TO 175° F	16-HV-705	DS-110,SHT 1 OF 1	B06	B
56	1	EA	CUSTOM	TRANS-FLOW,4.00,WAS,E+H	PROMAG W 400, 5W4C1H, DN100 4" 5W4C1H-AAELHA0DUA1K0A+AAZ1 ASSIGN LINE 1 VOLUME FLOW ASSIGN LINE 2 TOTALIZER 1 ASSIGN CURRENT OUTPUT VOLUME FLOW CURRENT SPAN 4-20 MA HART US VALUE 20 MA 4,200.00000 USGAL/MIN ASSIGN PULSE OUTPUT VOLUME FLOW PULSE VALUE (PER PULSE) 50.00000 USGAL PULSE WIDTH 100.000 MS OUTPUT SIGNAL PASSIVE - NEGATIVE FAILSAFE MODE CURRENT/PULSE OUTPUT MIN. VALUE ASSIGN TOTALIZER 1 VOLUME FLOW UNIT TOTALIZER 1 USGAL 1X TAG-STAINLESS STEEL LABEL 50105107 AA NON-HAZARDOUS AREA E DESIGN: FIXED FLANGE L POWER SUPPLY: 100-240VAC/24VAC/DC H OUTPUT; INPUT: 4-20MA HART, PULSE/FREQ., SWITCH OUTPUT A HOUSING: COMPACT, ALU, COATED 0 CABLE, REMOTE VERSION: NOT USED D ELECTRICAL CONNECTION: THREAD NPT1/2 U LINER: POLYURETHANE A1K PROCESS CONNECTION: CL.150, CARBON STEEL, FLANGE ASME B16.5 0 ELECTRODES: 1.4435/316L A CALIBRATION FLOW: 0.5% AA >OPERATION LANGUAGE DISPLAY: ENGLISH Z1 >>MARKING: TAGGING (TAG), SEE ADDITIONAL SPEC.	16-FIT-705	DS-110,SHT 1 OF 1	C10	B
57	1	EA	CUSTOM	VALVE-KNIFE GATE,DI,4.0, CYL,DZ	URETHANE LINED KNIFE GATE VALVE, MULTI-USE (150 PSI), FLANGED 150, BODY DI, PACKING PTFE TO 500° F, GATE 304 SS, SEAT POLYETHER URETHANE TO 175° F, CW CYLINDER	16-FV-705	DS-110,SHT 1 OF 1	B06	B

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58	**1**	**EA**		**KIT-P&ID, CHEMICAL CLEANING SYSTEM, CITRIC ACID**					
59	2	EA	CUSTOM	PUMP-CENT,DB9V,MAG,1HP,460/3/60,FT	VENDOR: FINISH THOMPSON MODEL: DB9V-T-FF-M219 BODY: PVDF IMPELLER BUSHING: PTFE O-RING: FKM CONNECTION: FRP ANSI 150# IMPELLER SIZE: 4.18" MAGNET SET: 8-POLE MOTOR ADAPTER: 56C MOTOR HP: 1.0 460V MOTOR TEFC: 3450/3/60/208-230-460 FLOW RANGE: 2.90 - 3.98 GPM @ 25 PSI	23-P-301-A 23-P-301-B	DS-111, SHT 1 of 2	A09	A
60	6	EA	3087942	VALVE-BALL,PVC,0.50,GF,COMBO,VENTED	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, PT# V161546352, 0.5", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-302-A 23-HV-302-B 23-HV-302-C 23-HV-302-D 23-HV-303-A 23-HV-303-C	DS-111, SHT 1 of 2	B01	B
61	5	EA	3087944	VALVE-BALL,PVC,1.00,GF,COMBO,VENTED	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, OLD PT# V161546354, NEW PT#151546354, 1", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-301-A 23-HV-304-A 23-HV-304-B 23-HV-301-C 23-HV-301-D	DS-111, SHT 1 of 2	B01	B
62	1	EA	3133111	STRAINER-YTYPE,PVC,1.00,SPG,GF,FPM	LINE-STRAINER,PVC,1.00,FPM,GF MESH HOLE DIAMETER-2.2MM GF NO:192306449	23-STR-301-A	DS-111, SHT 1 of 2	B13	B
63	1	EA	CUSTOM	GAUGE-PRESS,GLY,2.5,BTM,0.5,FNPT,VACUUM	GAUGE, PRESSURE, WITH ISOLATOR, ASHCROFT SIZE: 2.5" ISOLATOR MATERIAL: PVC GAUGE MATERIAL: PP FILL: GLYCERIN RANGE: VACUUM-15PSI MOUNT: BOTTOM CONNECTION: 0.5" FNPT DIAPHRAGM: TEFLON	23-PI-301-A	DS-111, SHT 1 of 2	C04	B
64	1		CUSTOM	GAUGE-PRESS,GLY,2.5,BTM,0.5,FNPT,60PSI	GAUGE, PRESSURE, WITH ISOLATOR, ICON PT# OBS-P-0-60 SIZE: 2.5" ISOLATOR MATERIAL: PVC GAUGE MATERIAL: PP FILL: GLYCERIN RANGE: 0-60 PSI MOUNT: BOTTOM CONNECTION: 0.5" FNPT DIAPHRAGM: TEFLON	23-PI-301-B	DS-111, SHT 1 of 2	C04	B
65	2	EA	3090241	VALVE-CHK,PVC,1.00,CONE,SOC,GF,VTN	VALVE, CONE CHECK, 1" TRUE UNION, GEORGE FISCHER, PT# 161 561 114,PVC BODY, FPM SEAL, SOCKET END CONNECTIONS. CV:32 MF: 18 L/m	23-CV-301-A 23-CV-301-B	DS-111, SHT 1 of 2	B15	A
66	1	EA	CUSTOM	TRANS-FLOW,MAG,1.00,FLG,0-50GPM,E+H	P/N: 10P25-ER1A1RA0B5BA PROMAG 10P25, DN25 1" [E] LINER: PTFE [R] PROCESS CONNECTION: CL.150, 316L, FLANGE ANSI B16.5 [1] ELECTRODES: ALLOY C-22 [A] CALIBRATION: 0.5% [1] ADDITIONAL TEST: W/O [R] APPROVAL: FM NI CL. I DIV. 2 / CSA CL. I DIV. 2 [A] HOUSING: COMPACT ALU, IP67 NEMA4X [0] CABLE, REMOTE VERSION: NOT USED [B] CABLE ENTRY: THREAD NPT 1/2 [5] POWER SUPPLY; DISPLAY: 20-28VAC / 11-40VDC; 2-LINE, PUSH BUTTONS [B] ADJUSTMENT; SOFTWARE FEATURE: CUSTOMISED; BASIC VERSION VOLUME FLOW [A] OUTPUT, INPUT: 4-20MA HART + PULSE PASSIVE LANGAUGE: ENGLISH > RANGE 4 TO 20 MA FROM 0 TO 15 USGPM INCLUDES QTY. 2 - DK5GD-25BEL GROUNDING DISCS.	23-FIT-301	DS-111, SHT 1 of 2	C10	A

SUEZ WTS
Engineering Bill of Materials (BOM)

506357 - City of Canton Water Pollution Control Plant - Bill of Materials									
Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
67	1	EA	3089342	VALVE-BALL,PVC,1.00,A/S SV,SOC,FPM,24V	VALVE, BALL, 1", TRUE UNION, PVC BODY, TEFLON SEATS, FPM O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, C/W PA11 SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR PT# 199 233 075, ASSEMBLY PT# S199 233 075 C/W CSA/UL APPROVED SOLENOID PILOT VALVE 24 V/DC TYPE PV95 PT#199190554CSA	23-FV-301	DS-111, SHT 1 of 2	B02	A
68	2	EA	CUSTOM	VALVE-DIAPH,PVC,1.00,MAN,VTN,GF	TYPE 514 GF DIAPHRAHM VALVE A20B01C08D11E02 ORDER CODE.	23-HCV-305 23-HCV-106	DS-111, SHT 1 of 2	B22	A
69	1	EA	3083210	VALVE-RELIEF,BPR,PVC,0.50,CL,VTN	VALVE, BACK PRESSURE RELIEF, CHEMLINE SB12 SERIES, 0.5", PVC BODY, VITON SEAL, -5 to 150 PSI SET PRESSURE RANGE,SOCKET UNION END CONNECTIONS.	23-PSV-301	DS-111, SHT 1 of 2	B21	A
70	**1**	**EA**		**KIT-P&ID, CHEMICAL CLEANING SYSTEM, SODIUM HYPOCHLORITE**					
71	2	EA	CUSTOM	PUMP-CENT,DB9V,MAG,1HP,460/3/60,FT	VENDOR: FINISH THOMPSON MODEL: DB9V-T-FF-M219 BODY: PVDF IMPELLER BUSHING: PTFE O-RING: FKM CONNECTION: FRP ANSI 150# IMPELLER SIZE: 4.18" MAGNET SET: 8-POLE MOTOR ADAPTER: 56C MOTOR HP: 1.0 460V MOTOR TEFC: 3450/3/60/208-230-460 FLOW RANGE: 1.20 - 8.26 GPM @ 25 PSI	23-P-101-A 23-P-101-B	DS-111, SHT 2 of 2	A09	A
72	6	EA	3087942	VALVE-BALL,PVC,0.50,GF,COMBO,VENTED	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, PT# V161546352, 0.5", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-102-A 23-HV-102-B 23-HV-102-C 23-HV-102-D 23-HV-103-A 23-HV-103-C	DS-111, SHT 2 of 2	B01	B
73	5	EA	3087944	VALVE-BALL,PVC,1.00,GF,COMBO,VENTED	VALVE, BALL, TRUE UNION, GEORGE FISCHER TYPE 546 VENTED BALL VALVE, OLD PT# V161546354, NEW PT#151546354, 1", PVC BODY, TEFLON SEATS, VITON O-RINGS, SOCKET/THREADED COMBO END CONNECTIONS.	23-HV-101-A 23-HV-104-A 23-HV-104-B 23-HV-101-C 23-HV-101-D	DS-111, SHT 2 of 2	B01	B
74	1	EA	3133111	STRAINER-YTYPE,PVC,1.00,SPG,GF,FPM	LINE-STRAINER,PVC,1.00,FPM,GF MESH HOLE DIAMETER-2.2MM GF NO:192306449	23-STR-101-A	DS-111, SHT 2 of 2	B13	B

SUEZ WTS
Engineering Bill of Materials (BOM)

506357 - City of Canton Water Pollution Control Plant - Bill of Materials									
Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
75	1	EA	CUSTOM	GAUGE-PRESS,GLY,2.5,BTM,0.5,FNPT,VACUUM	GAUGE, PRESSURE, WITH ISOLATOR, ASHCROFT SIZE: 2.5" ISOLATOR MATERIAL: PVC GAUGE MATERIAL: PP FILL: GLYCERIN RANGE: VACUUM-15PSI MOUNT: BOTTOM CONNECTION: 0.5" FNPT DIAPHRAGM: TEFLON	23-PI-101-A	DS-111, SHT 2 of 2	C04	B
76	1	EA	CUSTOM	GAUGE-PRESS,GLY,2.5,BTM,0.5,FNPT,60PSI	GAUGE, PRESSURE, WITH ISOLATOR, ICON PT# OBS-P-0-60 SIZE: 2.5" ISOLATOR MATERIAL: PVC GAUGE MATERIAL: PP FILL: GLYCERIN RANGE: 0-60 PSI MOUNT: BOTTOM CONNECTION: 0.5" FNPT DIAPHRAGM: TEFLON	23-PI-101-B	DS-111, SHT 2 of 2	C04	B
77	2	EA	3090241	VALVE-CHK,PVC,1.00,CONE,SOC,GF,VTN	VALVE, CONE CHECK, 1" TRUE UNION, GEORGE FISCHER, PT# 161 561 114,PVC BODY, FPM SEAL, SOCKET END CONNECTIONS. CV:32 MF: 18 L/m	23-CV-101-A 23-CV-101-B	DS-111, SHT 2 of 2	B15	A
78	1	EA	CUSTOM	TRANS-FLOW,MAG,1.00,FLG,0-50GPM,E+H	P/N: 10P25-ER1A1RA0B5BA PROMAG 10P25, DN25 1" [E] LINER: PTFE [R] PROCESS CONNECTION: CL.150, 316L, FLANGE ANSI B16.5 [1] ELECTRODES: ALLOY C-22 [A] CALIBRATION: 0.5% [1] ADDITIONAL TEST: W/O [R] APPROVAL: FM NI CL. I DIV. 2 / CSA CL. I DIV. 2 [A] HOUSING: COMPACT ALU, IP67 NEMA4X [0] CABLE, REMOTE VERSION: NOT USED [B] CABLE ENTRY: THREAD NPT 1/2 [5] POWER SUPPLY; DISPLAY: 20-28VAC / 11-40VDC; 2-LINE, PUSH BUTTONS [B] ADJUSTMENT; SOFTWARE FEATURE: CUSTOMISED; BASIC VERSION VOLUME FLOW [A] OUTPUT, INPUT: 4-20MA HART + PULSE PASSIVE LANGAUGE: ENGLISH > RANGE 4 TO 20 MA FROM 0 TO 15 USGPM INCLUDES QTY. 2 - DK5GD-25BEL GROUNDING DISCS.	23-FIT-101	DS-111, SHT 2 of 2	C10	A
79	1	EA	3089342	VALVE-BALL,PVC,1.00,A/S SV,SOC,FPM,24V	VALVE, BALL, 1", TRUE UNION, PVC BODY, TEFLON SEATS, FPM O-RINGS, SOCKETWELD, GEORGE FISCHER TYPE 546, C/W PA11 SPRING RETURN FAIL CLOSE PNEUMATIC RACK AND PINION ACTUATOR PT# 199 233 075, ASSEMBLY PT# S199 233 075 C/W CSA/UL APPROVED SOLENOID PILOT VALVE 24 V/DC TYPE PV95 PT#199190554CSA	23-FV-101	DS-111, SHT 2 of 2	B02	A
80	2	EA	CUSTOM	VALVE-DIAPH,PVC,1.00,MAN,VTN,GF	TYPE 514 GF DIAPHRAHM VALVE A20B01C08D11E02 ORDER CODE.	23-HCV-105 23-HCV-106	DS-111, SHT 2 of 2	B22	A
81	1	EA	3083210	VALVE-RELIEF,BPR,PVC,0.50,CL,VTN	VALVE, BACK PRESSURE RELIEF, CHEMLINE SB12 SERIES, 0.5", PVC BODY, VITON SEAL, -5 to 150 PSI SET PRESSURE RANGE,SOCKET UNION END CONNECTIONS.	23-PSV-101	DS-111, SHT 2 of 2	B21	A

SUEZ WTS
Engineering Bill of Materials (BOM)

506357 - City of Canton Water Pollution Control Plant - Bill of Materials									
Line No.	Total Qty	Unit	SAP Part No.	Primary Description	Complete Description	Equipment Tags	Drawing No.	Cutsheet Location	Rev.
82	1	EA		KIT-P&ID, AIR COMPRESSOR & ASSOCIATED EQUIPMENT					
83	2	EA	CUSTOM	COMPRESSOR-ROTARY VANE,7.5HP,460/60/3,GD	GARDNER DENVER SIMPLEX COMPRESSOR MODEL VR05PURHS-12 WITH ONE AIR-COOLED, OIL INJECTED, FIXED SPEED ROTARY VANE COMPRESSOR PUMP. CAPACITY = 22.2CFM AT 150PSI 7.5HP MOTOR 460/3/60 START\STOP CONTROL VIA PRESSURE SWITCH. NOISE LEVEL 69DBA ALL ABOVE MOUNTED ON A 120GAL HORIZONTAL ASME TANK COMPLETE WITH SAFETY VALVE, OUTLET VALVE, GAUGE AND TIMED ELECTRIC SOLENOID DRAIN 115V. VIBRATION MOUNTS INCLUDED. STARTER EXCLUDED.	90-F-001-A/B 90-AC-001-A/B 90-CV-001-A/B 90-TK-001-A/B 90-FV-001-A/B 90-PI-001-A/B 90-PSL-001-A/B 90-PSV-001-A/B 90-HV-001-A/B	DS-112,SHT 1 of 1	A07	A
84	1	EA	3152435	ASSY-FLT,ALUM,MAIN INST,AIR,70SCFM,PROAX	MAIN COMPRESSED AIR ASSEMBLY, PROAX TECHNOLOGIES PT# 3152435 ASSEMBLED AS PER PROAX DRAWING D1511AM23-11-A1 REV11,ASSEMBLY DESIGNED FOR 70 SCFM , MAIN COMPONENTS CONSIST OF THE FOLLOWING ITEMS: SMC SHUTOFF VALVES: PT# VHS40-N06B-Z AL BODY, CONN; 3/4" FNPT, PROOF PRESSURE: 217 PSI, CV: 5 SMC PRESSURE REGULATOR: PT# AR40K-N06E-Z-B BACKFLOW FUNCTION, AL BODY, CONN: 3/4" FNPT, SQUARE EMBEDDED PRESSURE GAUGE, PRESS RANGE: 7-123 PSI, PROOF PRESS: 217 PSI RELIEVING TYPE SMC MAIN LINE FILTER: PT# AFF11C-N06D-T AL BODY & HOUSING, CONN: 3/4" FNPT, 3 MICRON, 99% EFFICIENCY MAX OPERATING PRESURE: 145 PSI (PROOF PRESS: 217 PSI), ELEMENT SERVICE INDICATOR, AUTO-DRAIN W/10MM PUSH-TO-CONNECT GEMS PRESSURE SWITCH: PT# PS75-30-AMNZ-C-HC-FS90PSIF GENERAL PURPOSE, BRASS BODY, IP65 ELECTRICAL CONN: DIN 43650A WITH 9MM CABLE CLAMP, 5A @ 125/250VOLTS AC, 5A RESISTIVE, 3A INDUCTIVE @ 28V, SPDT, PRESSURE RANGE: 50-150 PSI, DEADBAND: 15 PSIG,cRUus APPROVED. S.P. = 90 PSIG FALLING GEMS PRESSURE SWITCH: PT# PS75-30-AMNZ-C-HC-FS70PSIF GENERAL PURPOSE, BRASS BODY, IP65 ELECTRICAL CONN: DIN 43650A WITH 9MM CABLE CLAMP, 5A @ 125/250VOLTS AC, 5A RESISTIVE, 3A INDUCTIVE @ 28V, SPDT, PRESSURE RANGE: 50-150 PSI, DEADBAND: 15 PSIG,cRUus APPROVED. S.P. = 70 PSIG FALLING	90-HV-004 90-F-020 90-HV-005 90-PSL-001 90-PCV-001 90-PSLL-002 90-HV-006	DS-112,SHT 1 of 1	B42	A
85	4	EA	3067261	VALVE-BALL,316,0.75,1PC THD	VALVE, BALL, PINACLE, 3/4", 1-PC REDUCED PORT, P/N 13TBV1075,NPT, 316SS BODY & TRIM PTFE SEAT & SEAL, CV = 10, 1000# WOG,WITH LEVER LOCKING HANDLE.	90-HV-002-1 90-HV-002-2 90-HV-003-1 90-HV-003-2	DS-112,SHT 1 of 1	B01	A
86	2	EA	CUSTOM	DRYER-AIR,120/60/1,25CFM,GD,RHT025	GARDNER DENVER REFRIGERATED DRYER, MODEL RHT025 CAPACITY 25CFM AT 125PSI 115/1/60 DESIGN DEWPOINT 2-3˚C AUTO DRAIN INCLUDED.	90-DR-001-A 90-DR-001-B	DS-112,SHT 1 of 1	A08	A

SECTION 16900
Instrumentation and Control Attachments

The following attachments are included as part of specification section 16900:

Table 16900 - T1 Input/Output List

Table 16920 – T1 Instrumentation List

Table 16946 – T1 Control Panel List

Suez – MBR
(MBR Documentation is provided under Section 11380 – Membrane System and 11380 Membrane Supplement)

Veolia – Dryer – IO List and P&IDs
(Additional Veolia Documentation is provided under Section 11371 – Sludge Drying Equipment and 11371 Supplement)

Summary
ADDENDUM 3

Enclosure Location	Area / PLC	Equipment/Process	New Signals 8 AI	16 DI	8 AO	16 DO	Network Comm to System MCPs
Ex Admin Bldg	PLC-A	Ex Influent & Headworks IO to Remains (Estimated)	8	32	8	8	
		Ex 750 KW GEN (estimated)	0	5	0	0	
		Plant Drain PS1	4	15	2	2	
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**12**	**56**	**10**	**10**	
		Total Signals+20% /Type	15	68	12	12	
		Total IO Modules /Type	2	5	2	1	
		#slots/ #Racks	10	(1) Rack 13 Slots - 3 spare slots			
		Ethernet Switch Ports	(1) PLC, (1) OIT, (1) Radio, (1) Existing Modicon PLC in Switchboard, (4) - Spare				
Headwoks Area	PLC-IH	Headworks	6	14	1	0	Bar Screen, Grit & Conveyor
		SG-OC Switchgear	0	4	0	1	Power Monitor
		Odor Control	0	0	0	0	Odor Control System
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**6**	**22**	**1**	**1**	
		Total Signals+20% /Type	8	27	2	2	
		Total IO Modules /Type	1	2	1	1	
		#slots/ #Racks	5	(1) Rack 7 Slots - 2 spare slots			
		Ethernet Switch Ports Min	(1) PLC, (2) Bar Screens, (1) Grit & Conv, (1) OC Syst, (1) OC-SWGR, (1) Radio, (5) Spare				
Solids Handling Building	PLC-DW	RDTs	6	18	4	6	RDT 1 & 2
		RDT Polymer System	4	15	3	4	
		BFP Feed Pumps	8	18	3	3	
		BFPs	6	51	2	25	BFP 1 & 2
		Pumps & Dryer System	6	6	2	4	Dryer System
		BFP Polymer System	4	15	3	4	
		BFP Conveyors	0	24	0	8	
		DW Drain PS	4	15	2	2	
		Misc DW Bldg	0	32	0	3	
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**38**	**198**	**19**	**59**	
		Total Signals+20% /Type	46	238	23	71	
		Total IO Modules /Type	6	15	3	5	
		#slots/ #Racks	29	(3) Racks 13 Slots, - 10 spare slots			
		Ethernet Switch Ports Min	(2) BFP, (1) Dryer, (1) PLC, (2) RIOs, (1) OIT, (1) Radio, (1) Odor Control, (1) Hopper, (6) Spare				
BNR/MBR Elec Bldg	PLC-BNR	BNR AT1	13	26	6	4	
		BNR AT2	13	20	6	2	
		BNR AT3	13	20	6	2	
		BNR Blowers	4	10	0	0	(4) BNR Blowers
		MBR System	0	0	0	0	MBR System
		Scum System	1	14	0	5	
		RAS Splitter Box	1	1	0	0	
		WAS Pumps	3	15	3	3	
		BNR Misc	0	4	0	0	
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**48**	**114**	**21**	**16**	
		Total Signals+20% /Type	58	137	26	20	
		Total IO Modules /Type	8	9	4	2	
		#slots/ #Racks	23	(3) Racks 10 Slots - 7 spare slots			
		Ethernet Switch Ports Min	(1) PLC, (2) RIOs, (5) BNR Blw, (2) PLC-FSs, (1) PLC-MBR, (1) OIT, (1) Radio, (3) Spare				
	RIO-BNR1	WAS Holding TK & Reuse PS	3	8	0	0	
		Compressed Air Mixing	0	0	0	0	Compressed Air Mixing System

Summary
ADDENDUM 3

Enclosure Location	Area / PLC	Equipment/Process	New Signals 8 AI	16 DI	8 AO	16 DO	Network Comm to System MCPs
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**3**	**12**	**0**	**0**	
		Total Signals+20% /Type	4	15	0	0	
		Total IO Modules /Type	1	1	0	0	
		#slots/ #Racks	2	(1) Rack 7 Slots - 5 spare slots			
		Ethernet Switch Ports Min	(1) RIOs, (1) Comprssed Air, (1) Radio, (5) Spare				
	RIO-BNR2	Fine Screenings	0	21	0	9	(2) Fine Screening Systems
		Alum System	8	23	6	7	
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**8**	**48**	**6**	**16**	
		Total Signals+20% /Type	10	58	8	20	
		Total IO Modules /Type	2	4	1	2	
		#slots/ #Racks	9	(1) Racks 13 Slots - 4 spare slots			
		Ethernet Switch Ports Min	(1) RIOs, (2) Fine Screening Systems, (1) Radio, (4) Spare				
MCC-H Bldg	PLC-H	BNR AT4	13	18	6	2	
		Digest Tank & Blowers	12	12	4	0	(3) Digest Blowers
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**25**	**34**	**10**	**2**	
		Total Signals+20% /Type	30	41	12	3	
		Total IO Modules /Type	4	3	2	1	
		#slots/ #Racks	10	(2) Racks 7 Slots - 3 spare slots			
		Ethernet Switch Ports Min	(1) PLC-H, (3) Digester Blws, (1) Radio, (1) - RIO, (4) Spare				
WAS Holding Tk	RIO-H1	WAS Holding Tk Blowers	0	0	0	0	(3) WAS Blowers (Ex)
		Ex IO in LCP-H to Remain (Estimated)	12	36	12	12	
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**12**	**40**	**12**	**12**	
		Total Signals+20% /Type	15	48	15	15	
		Total IO Modules /Type	Existing Enclosure				
		#Slots/ #Racks	Existing Enclosure				
		Ethernet Switch Ports Min	(1) RIO, (3) WAS Blws, (1) - PLC - H				
UV/Post Aeration Area	PLC-UVPA	UV & Post Aeration	4	8	1	4	UV System
		Post Aeration Tanks & Blower	3	16	0	4	(3) PA Blower
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**7**	**28**	**1**	**8**	
		Total Signals+20% /Type	9	34	2	10	
		Total IO Modules /Type	2	3	1	1	
		#Slots/ #Racks	7	(1) Rack 10 Slots -3 spare slots			
		Ethernet Switch Ports Min	(3) PA Blw, (1) UV Syst, (1) PLC, (1) Radio, (2) spare				
Main Switchgear	PLC-MSG	SG-Main	0	14	0	3	Main & Gen Power Monitors
		Internal Panel Signals	0	4	0	0	
		Total Signals /Type	**0**	**18**	**0**	**3**	
		Total Signals+20% /Type	0	22	0	4	
		Total IO Modules /Type	0	2	0	1	
		#Slots/ #Racks	3	(1) Rack 7 Slots -4 spare slots			
		Ethernet Switch Ports Min	(2) Power Monitors, (2) PLC, (4) spare				
Total Hardwired IO signals			**159**	**570**	**80**	**127**	
Total Hardwired IO signals + 20%			**195**	**688**	**100**	**157**	

NOTES:
1. FV - For existing Equipment, System integrator shall field verify all ranges of operation for interfacing to new plant control system.

Summary
ADDENDUM 3

Enclosure Location	Area / PLC	Equipment/Process	New Signals				Network Comm to System MCPs
			8	16	8	16	
			AI	DI	AO	DO	

2. Not all IO shown refer to P&IDs, Contract Drawings, and Specifications for additional points.
3. Internal Panel IO not included in IO tables, shown as line in summary
4. System Integrator shall coordinate all Network IO with manufacturers ito develop a complete PCS database.
5. Slots/Racks are estimated only, System Integrator shall design PLC/RIO cabinets as required for IO.

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
SG-Main Main Breaker												
XH	2500	XH-2500	Main Breaker Open	DI	PLC-MSG	Off	Open			1		
XL	2500	XL-2500	Main Breaker Close	DI	PLC-MSG	Off	Close			1		
XF	2500	XF-2500	Main Breaker Trip	DI	PLC-MSG	Off	Trip			1		
XC	2500	XC-2500	Main Breaker Open/Closed	DO	PLC-MSG	Close	Open			1		1
SG-Main Main Breaker 1												
XH	2500	XH-2500	Main Breaker Open	DI	PLC-MSG	Off	Open			1		
XL	2500	XL-2500	Main Breaker Close	DI	PLC-MSG	Off	Close			1		
XF	2500	XF-2500	Main Breaker Trip	DI	PLC-MSG	Off	Trip			1		
XC	2500	XC-2500	Main Breaker Open/Closed	DO	PLC-MSG	Close	Open			1		1
SG-Main Main Breaker 1 Power Monitor												
IT	2500	II-2500	Main Breaker Current	AI	PLC-MSG	0	5,000	A	Network			
VT	2500	VI-2500	Main Breaker Voltage	AI	PLC-MSG	0	600	V	Network			
JT	2500	JI-2500	Main Breaker Power	AI	PLC-MSG	0	4,500	KVA	Network			
VL	2500	VL-2500	Main Breaker Undervoltage	DI	PLC-MSG	Off	UnderVolt		Network			
VH	2500	VH-2500	Main Breaker Overvoltage	DI	PLC-MSG	Off	OverVolt		Network			
SG-Main TIE Breaker												
XH	2501	XH-2501	Tie Breaker Open	DI	PLC-MSG	Off	Open			1		
XL	2501	XL-2501	Tie Breaker Close	DI	PLC-MSG	Off	Close			1		
XF	2501	XF-2501	Tie Breaker Trip	DI	PLC-MSG	Off	Trip			1		
XC	2501	XC-2501	Tie Breaker Open/Closed	DO	PLC-MSG	Close	Open			1		1
SG-Main Main Breaker 2												
XH	2502	XH-2502	Tie Breaker Open	DI	PLC-MSG	Off	Open			1		
XL	2502	XL-2502	Tie Breaker Close	DI	PLC-MSG	Off	Close			1		
XF	2502	XF-2502	Tie Breaker Trip	DI	PLC-MSG	Off	Trip			1		
XC	2502	XC-2502	Tie Breaker Open/Closed	DO	PLC-MSG	Close	Open			1		1
SG-Main Main Breaker 2 Power Monitor												
IT	2502	II-2502	Main Breaker Current	AI	PLC-MSG	0	5,000	A	Network			
VT	2502	VI-2502	Main Breaker Voltage	AI	PLC-MSG	0	600	V	Network			
JT	2502	JI-2502	Main Breaker Power	AI	PLC-MSG	0	4,500	KVA	Network			
VL	2502	VL-2502	Main Breaker Undervoltage	DI	PLC-MSG	Off	UnderVolt			1		
VH	2502	VH-2502	Main Breaker Overvoltage	DI	PLC-MSG	Off	OverVolt			1		
					PLC-MSG IO Signals				0	14	0	3

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
SG-OC Main Breaker												
XH	2550	XH-2550	Main Breaker Open	DI	PLC-IH	Off	Open			1		
XL	2550	XL-2550	Main Breaker Close	DI	PLC-IH	Off	Close			1		
XF	2550	XF-2550	Main Breaker Trip	DI	PLC-IH	Off	Trip			1		
XC	2550	XC-2550	Main Breaker Open/Closed	DO	PLC-IH	Close	Open			1		1
SG-OC Main Breaker Power Monitor												
IT	2550	II-2550	Main Breaker Current	AI	PLC-IH	0	3200	A	Network			
VT	2550	VI-2550	Main Breaker Voltage	AI	PLC-IH	0	600	V	Network			
JT	2550	JI-2550	Main Breaker Power	AI	PLC-IH	0	3000	KVA	Network			
VL	2550	VL-2550	Main Breaker Undervoltage	DI	PLC-IH	Off	UnderVolt		Network			
VH	2550	VH-2550	Main Breaker Overvoltage	DI	PLC-IH	Off	OverVolt		Network			
					PLC-IH IO Signals				0	4	0	1

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
750KW Generator												
XN	2560	XN-2560	Generator Run	DI	PLC-A	Off	Run			1		
XF	2560	XF-2560	Generator Fail	DI	PLC-A	Off	Fail			1		
XF	2560	XF-2560	Generator Low Fuel	DI	PLC-A	Off	Low Fuel			1		
XF	2560	XF-2560	Generator Fuel Tank Leak	DI	PLC-A	Off	Tk Leak			1		
XF	2560	XF-2560	Generator Low Battery	DI	PLC-A	Off	Low Batt			1		
					PLC-A IO Signals				0	5	0	0

System Integrator shall field verify all existing IO for Interfacing into new PLC.

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Influent Sampler Flow Meter #1 - 1-ISP-F-1												
FC	100	FC-100	Influent Sampler Flow Meter #1. Flow	AO	PLC-IH	0	FV	GPM			1	
Drain PS 1 Flow Meter #1 - 17-PD1-F-1												
FE/FIT	200	FI-200	Drain PS 1. Flow	AI	PLC-IH	0	FV	GPM	1			
Influent Flow Meter #1 - 1-I-F-1												
FE/FIT	210	FI-201	Influent Flow	AI	PLC-IH	0	FV	GPM	1			
Influent Bar Screen #1												
LE/LIT	303	LI-303	Screen #1 Upstream Level	AI	PLC-IH	0	FV	FT	1			
LSH	303	LH-303	Screen #1 Upstream Hi Level	DI	PLC-IH	Off	Hi Level			1		
LE/LIT	304	FI-304	Screen #1 Downstrem Level	AI	PLC-IH	0	FV	FT	1			
MN	300	MN-300	Screen #1 Run	DI	PLC-IH	Off	Run			1		
MF	300	MF-300	Screen #1 Fail	DI	PLC-IH	Off	Fail			1		
MN	302	MN-300	Screen #1 Conveyor Run	DI	PLC-IH	Off	Run			1		
MF	302	MF-300	Screen #1 Conveyor Fail	DI	PLC-IH	Off	Fail			1		
MC	300	MC-300	Screen #1 Start/Stop	DO	PLC-IH	Stop	Start			1		
Influent Bar Screen #2												
LE/LIT	313	LI-313	Screen #2 Upstrem Level	AI	PLC-IH	0	FV	FT	1			
LSH	313	LH-313	Screen #2 Upstrem Hi Level	DI	PLC-IH	Off	Hi Level			1		
LE/LIT	314	FI-314	Screen #2 Downstrem Level	AI	PLC-IH	0	FV	FT	1			
MN	310	MN-310	Screen #2 Run	DI	PLC-IH	Off	Run			1		
MF	310	MF-310	Screen #2 Fail	DI	PLC-IH	Off	Fail			1		
MN	312	MN-310	Screen #2 Conveyor Run	DI	PLC-IH	Off	Run			1		
MF	312	MF-310	Screen #2 Conveyor Fail	DI	PLC-IH	Off	Fail			1		
MC	310	MC-310	Screen #2 Start/Stop	DO	PLC-IH	Stop	Start			1		
Grit Removal #1 &2												
MN	320	LH-320	Grit Removal #1 Run	DI	PLC-IH	Off	Run		Network			
MF	320	MF-320	Grit Removal #1 Fail	DI	PLC-IH	Off	Fail		Network			
MC	320	MC-320	Grit Removal #1 Start/Stop	DO	PLC-IH	Stop	Start		Network			
MN	330	LH-320	Grit Removal #1 Run	DI	PLC-IH	Off	Run		Network			
MF	330	MF-320	Grit Removal #1 Fail	DI	PLC-IH	Off	Fail		Network			
MC	330	MC-320	Grit Removal #1 Start/Stop	DO	PLC-IH	Stop	Start		Network			
Grit Conveyor 1-GC-M-1												
MN	340	MN-340	Grit Conveyor Run	DI	PLC-IH	Off	Run			1		
MF	340	MF-340	Grit Conveyor Fail	DI	PLC-IH	Off	Fail			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
			PLC-IH IO Signals						6	14	1	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Fine Screenings Influent Channel Sluice Gate #1 4-IFS-SG-1												
MA	401	MA-401	FS1 Influent Sluice Gate 1. Remote	DI	RIO-BNR2	Off	Remote			1		
ZH	401	ZH-401	FS1 Influent Sluice Gate 1. Open	DI	RIO-BNR2	Off	Open			1		
ZL	401	ZL-401	FS1 Influent Sluice Gate 1. Close	DI	RIO-BNR2	Off	Close			1		
ZF	401	ZF-401	FS1 Influent Sluice Gate 1. Fail	DI	RIO-BNR2	Off	Fail			1		
ZO	401	MN-401	FS1 Influent Sluice Gate 1. Open	DO	RIO-BNR2	Off	Open					1
ZC	401	MF-401	FS1 Influent Sluice Gate 1. Close	DO	RIO-BNR2	Off	Close					1
Fine Screenings System #1 - 4-FS-1												
YN	410	YN-410	Fine Screenings #1. Control Power	DI	RIO-BNR2	Off	On		Network			
MA	410	MA-410	Fine Screenings #1. Remote	DI	RIO-BNR2	Off	Remote		Network			
XF	410	XF-410	Fine Screenings #1. Fail	DI	RIO-BNR2	Off	Fail		Network			
LH	410	LH-410	Fine Screenings #1. High Level	DI	RIO-BNR2	Off	Hi Lvl		Network			
LHH	410	LHH-410	Fine Screenings #1. Hi High Level	DI	RIO-BNR2	Off	Hi Hi Lvl		Network			
YN	410	YN-410	Fine Screenings #1. E-Stop	DI	RIO-BNR2	Off	E-Stop		Network			
MN	410	MA-410	Fine Screenings #1. Run	DI	RIO-BNR2	Off	Run		Network			
MN	410	MA-410	Fine Screenings #1. Pump Run	DI	RIO-BNR2	Off	Run		Network			
SI	410	SI-410	Fine Screenings #1. Speed Indication	AI	RIO-BNR2	0	100	%	Network			
MC	1210	MC-410	Fine Screenings #1. Start/Stop	DO	RIO-BNR2	Stop	Start		Network			
SC	410	SC-410	Fine Screenings #1. Speed Control	AO	RIO-BNR2	0	100	%	Network			
Fine Screen Effluent Channel Sluice Gate #1 4-EFS-SG-1												
MA	430	MA-430	FS1 Effluent Sluice Gate 1. Remote	DI	RIO-BNR2	Off	Remote			1		
ZH	430	ZH-430	FS1 Effluent Sluice Gate 1. Open	DI	RIO-BNR2	Off	Open			1		
ZL	430	ZL-430	FS1 Effluent Sluice Gate 1. Close	DI	RIO-BNR2	Off	Close			1		
ZF	430	ZF-430	FS1 Effluent Sluice Gate 1. Fail	DI	RIO-BNR2	Off	Fail			1		
ZO	430	MN-430	FS1 Effluent Sluice Gate 1. Open	DO	RIO-BNR2	Off	Open					1
ZC	430	MF-430	FS1 Effluent Sluice Gate 1. Close	DO	RIO-BNR2	Off	Close					1
Fine Screen Influent Channel Sluice Gate #2 4-IFS-SG-2												
MA	402	MA-402	FS1 Influent Sluice Gate 2. Remote	DI	RIO-BNR2	Off	Remote			1		
ZH	402	ZH-402	FS1 Influent Sluice Gate 2. Open	DI	RIO-BNR2	Off	Open			1		
ZL	402	ZL-402	FS1 Influent Sluice Gate 2. Close	DI	RIO-BNR2	Off	Close			1		
ZF	402	ZF-402	FS1 Influent Sluice Gate 2. Fail	DI	RIO-BNR2	Off	Fail			1		
ZO	402	MN-402	FS1 Influent Sluice Gate 2. Open	DO	RIO-BNR2	Off	Open					1
ZC	402	MF-402	FS1 Influent Sluice Gate 2. Close	DO	RIO-BNR2	Off	Close					1
Fine Screenings System #2 - 4-FS-2												

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
YN	420	YN-420	Fine Screenings #2. Control Power	DI	RIO-BNR2	Off	On		Network			
MA	420	MA-420	Fine Screenings #2. Remote	DI	RIO-BNR2	Off	Remote		Network			
XF	420	XF-420	Fine Screenings #2. Fail	DI	RIO-BNR2	Off	Fail		Network			
LH	420	LH-420	Fine Screenings #2. High Level	DI	RIO-BNR2	Off	Hi Lvl		Network			
LHH	420	LHH-420	Fine Screenings #2. Hi High Level	DI	RIO-BNR2	Off	Hi Hi Lvl		Network			
YN	420	YN-420	Fine Screenings #2. E-Stop	DI	RIO-BNR2	Off	E-Stop		Network			
MN	420	MA-420	Fine Screenings #2. Run	DI	RIO-BNR2	Off	Run		Network			
MN	420	MA-420	Fine Screenings #2. Pump Run	DI	RIO-BNR2	Off	Run		Network			
SI	420	SI-420	Fine Screenings #2. Speed Indication	AI	RIO-BNR2	0	100	%	Network			
MC	1210	MC-1210	Fine Screenings #2. Start/Stop	DO	RIO-BNR2	Stop	Start		Network			
SC	420	SC-420	Fine Screenings #2. Speed Control	AO	RIO-BNR2	0	100	%	Network			
Fine Screenings Effluent Channel Sluice Gate #2 4-EFS-SG-2												
MA	440	MA-440	FS2 Effluent Sluice Gate 1. Remote	DI	RIO-BNR2	Off	Remote			1		
ZH	440	ZH-440	FS2 Effluent Sluice Gate 1. Open	DI	RIO-BNR2	Off	Open			1		
ZL	440	ZL-440	FS2 Effluent Sluice Gate 1. Close	DI	RIO-BNR2	Off	Close			1		
ZF	440	ZF-440	FS2 Effluent Sluice Gate 1. Fail	DI	RIO-BNR2	Off	Fail			1		
ZO	440	MN-440	FS2 Effluent Sluice Gate 1. Open	DO	RIO-BNR2	Off	Open					1
ZC	440	MF-440	FS2 Effluent Sluice Gate 1. Close	DO	RIO-BNR2	Off	Close					1
Fine Screenings Conveyor 4-FS-C-1												
YN	450	YN-450	FS Conveyor Power Power	DI	RIO-BNR2	Off	On			1		
MA	450	MA-450	FS Conveyor Remote	DI	RIO-BNR2	Off	Remote			1		
MN	450	MN-450	FS Conveyor Run	DI	RIO-BNR2	Off	Run			1		
YN	450	YN-450	FS Conveyor E-stop	DI	RIO-BNR2	Off	E-Stop			1		
MF	450	MF-450	FS Conveyor Fail	DI	RIO-BNR2	Off	Fail			1		
MC	450	MC-450	FS Conveyor Start/Sto	DO	RIO-BNR2	Stop	Start					1
					RIO-BNR2 IO Signals				0	21	0	9

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BNR Influent Channel Sluice Gate 1- 5-AT-ISG-1												
ZL	501	ZL-501	BNR Influent Channel Sluice Gate # 1. Closed	DI	PLC-BNR	Off	Close			1		
ZH	501	ZH-501	BNR Influent Channel Sluice Gate # 1. Open	DI	PLC-BNR	Off	Open			1		
AT1 OX-1-1 DO #1 - 5-AT1-DO-1												
AE/AIT	502A	AI-502A	AT1 OX-1-1 DO #1 DO	AI	PLC-BNR	0	10	mg/L	1			
AT1 OX-1-1 DO #2 - 5-AT1-DO-2												
AE/AIT	502B	AI-502B	AT1 OX-1-1 DO #2 DO	AI	PLC-BNR	0	10	mg/L	1			
AT1 OX-1-1 Air Control Valve 1 - 5-AT1-V-1												
ZI	503	SI-503	AT1 OX-1-1 Air Valve # 1. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	503	MA-503	AT1 OX-1-1 Air Valve # 1. Remote	DI	PLC-BNR	Off	Remote			1		
XF	503	XF-503	AT1 OX-1-1 Air Valve # 1. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	503	XC-503	AT1 OX-1-1 Air Valve # 1. Position Control	AO	PLC-BNR	0	100	%			1	
AT1 OX-1-1 Air Control Valve 2 - 5-AT1-V-2												
ZI	504	SI-504	AT1 OX-1-1 Air Valve # 2. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	504	MA-504	AT1 OX-1-1 Air Valve # 2. Remote	DI	PLC-BNR	Off	Remote			1		
XF	504	XF-504	AT1 OX-1-1 Air Valve # 2. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	504	XC-504	AT1 OX-1-1 Air Valve # 2. Position Control	AO	PLC-BNR	0	100	%			1	
AT1 AX-1-1 ORP #1 - 5-AT1-ORP-1												
AE/AIT	505	AI-505	AT1 AX-1-1 ORP #1 ORP	AI	PLC-BNR	0	TBD	mg/L	1			
AT1 OX-1-2 DO #3 - 5-AT1-DO-3												
AE/AIT	508A	AI-508A	AT1 OX-1-2 DO #3 DO	AI	PLC-BNR	0	10	mg/L	1			
AT1 OX-1-2 DO #4 - 5-AT1-DO-4												
AE/AIT	508B	AI-508B	AT1 OX-1-2 DO #4 DO	AI	PLC-BNR	0	10	mg/L	1			
AT1 OX-1-2 Air Control Valve 3 - 5-AT1-V-3												
ZI	509	SI-509	AT1 OX-1-2 Air Valve # 3. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	509	MA-509	AT1 OX-1-2 Air Valve # 3. Remote	DI	PLC-BNR	Off	Remote			1		
XF	509	XF-509	AT1 OX-1-2 Air Valve # 3. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	509	XC-509	AT1 OX-1-2 Air Valve # 3. Position Control	AO	PLC-BNR	0	100	%			1	
AT1 OX-1-2 Air Control Valve 4 - 5-AT1-V-4												
ZI	510	SI-510	AT1 OX-1-2 Air Valve # 4. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	510	MA-510	AT1 OX-1-2 Air Valve # 4. Remote	DI	PLC-BNR	Off	Remote			1		
XF	510	XF-510	AT1 OX-1-2 Air Valve # 4. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	510	XC-510	AT1 OX-1-2 Air Valve # 4. Position Control	AO	PLC-BNR	0	100	%			1	
BNR AT1 Sluice Gate #1 - 5-AT1-SG-1												
ZL	511	ZL-511	AT1 Sluice Gate # 1. Closed	DI	PLC-BNR	Off	Close			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZH	511	ZH-511	AT1 Sluice Gate # 1. Open	DI	PLC-BNR	Off	Open			1		
AT1 AX-1-1 Recycle Flow Meter #1 - 5-AT1-F-5												
FE/FIT	516	FI-516	AT1 AX--11 Recycle Flow Meter #1. Flow	AI	PLC-BNR	0	TBD	GPM	1			
AT1 AX-1-1 Recycle Pump #1 - 5-AT1-P-1												
SI	515	SI-515	AT1 AX-1-1 IR Pump # 1. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	515	MA-515	AT1 AX-1-1 IR Pump # 1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	515	MN-515	AT1 AX-1-1 IR Pump # 1. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	515	TH-515	AT1 AX-1-1 IR Pump # 1. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	515	YF-515	AT1 AX-1-1 IR Pump # 1. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	515	MF-515	AT1 AX-1-1 IR Pump # 1. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	515	MC-515	AT1 AX-1-1 IR Pump # 1. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	515	SC-515	AT1 AX-1-1 IR Pump # 1. Speed Control	AO	PLC-BNR	0	100	%			1	
AT1 OX-1-2 Recycle Flow Meter #2 - 5-AT1-F-6												
FE/FIT	556	FI-556	AT1 OX-1-2 Recycle Flow Meter #2. Flow	AI	PLC-BNR	0	TBD	GPM	1			
AT1 OX-1-2 Recycle Pump #2 - 5-AT1-P-2												
SI	517	SI-517	AT1 OX-1-2 IR Pump # 1. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	517	MA-517	AT1 AX-1-2 IR Pump # 1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	517	MN-517	AT1 OX-1-2 IR Pump # 1. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	517	TH-517	AT1 OX-1-2 IR Pump # 1. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	517	YF-517	AT1 OX-1-2 IR Pump # 1. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	517	MF-517	AT1 OX-1-2 IR Pump # 1. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	517	MC-517	AT1 OX-1-2 IR Pump # 1. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	517	SC-517	AT1 OX-1-2 IR Pump # 1. Speed Control	AO	PLC-BNR	0	100	%			1	
BNR Effluent Channel Sluice Gate #1 4-EAT-SG-1												

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
MA	518	MA-518	BNR Effluent Sluice Gate 1. Remote	DI	PLC-BNR	Off	Remote			1		
ZH	518	ZH-518	BNR Effluent Sluice Gate 1. Open	DI	PLC-BNR	Off	Open			1		
ZL	518	ZL-518	BNR Effluent Sluice Gate 1. Close	DI	PLC-BNR	Off	Close			1		
ZF	518	ZF-518	BNR Effluent Sluice Gate 1. Fail	DI	PLC-BNR	Off	Fail			1		
ZO	518	MN-518	BNR Effluent Sluice Gate 1. Open	DO	PLC-BNR	Off	Open					1
ZC	518	MF-518	BNR Effluent Sluice Gate 1. Close	DO	PLC-BNR	Off	Close					1
					PLC-BNR IO Signals				13	26	6	4

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AT2 OX-2-1 DO #1 - 5-AT2-DO-1												
AE/AIT	522A	AI-522A	AT2 OX-2-1 DO #1 DO	AI	PLC-BNR	0	10	mg/L	1			
AT2 OX-2-1 DO #2 - 5-AT2-DO-2												
AE/AIT	522B	AI-522B	AT2 OX-2-1 DO #2 DO	AI	PLC-BNR	0	10	mg/L	1			
AT2 OX-2-1 Air Control Valve 1 - 5-AT2-V-1												
ZI	523	SI-523	AT2 OX-2-1 Air Valve # 1. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	523	MA-523	AT2 OX-2-1 Air Valve # 1. Remote	DI	PLC-BNR	Off	Remote			1		
XF	523	XF-523	AT2 OX-2-1 Air Valve # 1. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	523	XC-523	AT2 OX-2-1 Air Valve # 1. Position Control	AO	PLC-BNR	0	100	%			1	
AT2 OX-2-1 Control Valve 2 - 5-AT2-V-2												
ZI	524	SI-524	AT2 OX-2-1 Air Valve # 2. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	524	MA-524	AT2 OX-2-1 Air Valve # 2. Remote	DI	PLC-BNR	Off	Remote			1		
XF	524	XF-524	AT2 OX-2-1 Air Valve # 2. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	524	XC-524	AT2 OX-2-1 Air Valve # 2. Position Control	AO	PLC-BNR	0	100	%			1	
AT2 AX-2-1 ORP #1 - 5-AT2-ORP-1												
AE/AIT	525	AI-525	AT2 AX-2-1 ORP #1 ORP	AI	PLC-BNR	0	TBD	mg/L	1			
AT2 OX-2-2 DO #3 - 5-AT2-DO-3												
AE/AIT	528A	AI-528A	AT2 OX-2-2 DO #3 DO	AI	PLC-BNR	0	10	mg/L	1			
AT2 OX-2-2 DO #4 - 5-AT2-DO-4												
AE/AIT	528B	AI-528B	AT2 OX-2-2 DO #4 DO	AI	PLC-BNR	0	10	mg/L	1			
AT2 OX-2-2 Air Control Valve 3 - 5-AT2-V-3												
ZI	529	SI-529	AT2 OX-2-2 Air Valve # 3. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	529	MA-529	AT2 OX-2-2 Air Valve # 3. Remote	DI	PLC-BNR	Off	Remote			1		
XF	529	XF-529	AT2 OX-2-2 Air Valve # 3. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	529	XC-529	AT2 OX-2-2 Air Valve # 3. Position Control	AO	PLC-BNR	0	100	%			1	
AT2 OX-2-2 Air Control Valve 4 - 5-AT2-V-4												
ZI	530	SI-530	AT2 OX-2-2 Air Valve # 4. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	530	MA-530	AT2 OX-2-2 Air Valve # 4. Remote	DI	PLC-BNR	Off	Remote			1		
XF	530	XF-530	AT2 OX-2-2 Air Valve # 4. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	530	XC-530	AT2 OX-2-2 Air Valve # 4. Position Control	AO	PLC-BNR	0	100	%			1	
BNR AT2 Sluice Gate #1 - 5-AT2-SG-1												
ZL	531	ZL-531	AT2 Sluice Gate # 1. Closed	DI	PLC-BNR	Off	Close			1		
ZH	531	ZH-531	AT2 Sluice Gate # 1. Open	DI	PLC-BNR	Off	Open			1		
AT2 AX-2-1 Recycle Flow Meter #1 - 5-AT2-F-5												
FE/FIT	582	FI-582	AT2 AX-2-1 Recycle Flow Meter #1. Flow	AI	PLC-BNR	0	TBD	GPM	1			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AT2 AX-2-1 Recycle Pump #1 - 5-AT2-P-1												
SI	535	SI-535	AT2 AX-2-1 IR Pump # 1. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	535	MA-535	AT2 AX-2-1 IR Pump # 1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	535	MN-535	AT2 AX-2-1 IR Pump # 1. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	535	TH-535	AT2 AX-2-1 IR Pump # 1. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	535	YF-535	AT2 AX-2-1 Pump # 1. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	535	MF-535	AT2 AX-2-1 IR Pump # 1. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	535	MC-535	AT2 AX-2-1 IR Pump # 1. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	535	SC-535	AT2 AX-2-1 IR Pump # 1. Speed Control	AO	PLC-BNR	0	100	%			1	
AT2 OX-2-2 Recycle Flow Meter #2 - 5-AT2-F-6												
FE/FIT	584	FI-584	AT2 OX-2-2 Recycle Flow Meter #2. Flow	AI	PLC-BNR	0	TBD	GPM	1			
AT2 OX-2-2 Recycle Pump #2 - 5-AT2-P-2												
SI	537	SI-537	AT2 OX-2-2 IR Pump # 2. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	537	MA-537	AT2 AX-2-2 IR Pump # 2. Remote	DI	PLC-BNR	Off	Remote			1		
MN	537	MN-537	AT2 OX-2-2 IR Pump # 2. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	537	TH-537	AT2 OX-2-2 IR Pump # 2. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	537	YF-537	AT2 OX-2-2 IR Pump # 2. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	537	MF-537	AT2 OX-2-2 IR Pump # 2. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	537	MC-537	AT2 OX-2-2 IR Pump # 2. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	537	SC-537	AT2 OX-2-2 IR Pump # 2. Speed Control	AO	PLC-BNR	0	100	%			1	
					PLC-BNR IO Signals				13	20	6	2

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AT3 OX-3-1 DO #1 - 5-AT3-DO-1												
AE/AIT	542A	AI-542A	AT3 OX-3-1 DO #1 DO	AI	PLC-BNR	0	10	mg/L	1			
AT3 OX-3-1 DO #2 - 5-AT3-DO-2												
AE/AIT	542B	AI-542B	AT3 OX-3-1 DO #2 DO	AI	PLC-BNR	0	10	mg/L	1			
AT3 OX-3-1 Air Control Valve 1 - 5-AT3-V-1												
ZI	543	SI-543	AT3 OX-3-1 Air Valve # 1. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	543	MA-543	AT3 OX-3-1 Air Valve # 1. Remote	DI	PLC-BNR	Off	Remote			1		
XF	543	XF-543	AT3 OX-3-1 Air Valve # 1. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	543	XC-543	AT3 OX-3-1 Air Valve # 1. Position Control	AO	PLC-BNR	0	100	%			1	
AT3 OX-3-1 Air Control Valve 2 - 5-AT3-V-2												
ZI	544	SI-544	AT3 OX-3-1 Air Valve # 2. Position Indication	AI	PLC-BNR	0	100	%	1			
HMS	544	MA-544	AT3 OX-3-1 Air Valve # 2. Remote	DI	PLC-BNR	Off	Remote			1		
XF	544	XF-544	AT3 OX-3-1 Air Valve # 2. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	544	XC-544	AT3 OX-3-1 Air Valve # 2. Position Control	AO	PLC-BNR	0	100	%			1	
AT3 AX-3-A ORP #1 - 5-AT3-ORP-1												
AE/AIT	545	AI-545	AT3 AX-3-1 ORP #1 ORP	AI	PLC-BNR	0	TBD	mg/L	1			
AT3 OX-3-2 DO #3 - 5-AT3-DO-3												
AE/AIT	548A	AI-548A	AT3 OX-3-2 DO #3 DO	AI	PLC-BNR	0	10	mg/L	1			
AT3 OX-3-2 DO #4 - 5-AT3-DO-4												
AE/AIT	548B	AI-548B	AT3 OX-3-2 DO #4 DO	AI	PLC-BNR	0	10	mg/L	1			
AT3 OX-3-2 Air Control Valve 3 - 5-AT3-V-3												
ZI	549	SI-549	AT3 OX-3-2 Air Valve # 3. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	549	MA-549	AT3 OX-3-2 Air Valve # 3. Remote	DI	PLC-BNR	Off	Remote			1		
XF	549	XF-549	AT3 OX-3-2 Air Valve # 3. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	549	XC-549	AT3 OX-3-2 Air Valve # 3. Position Control	AO	PLC-BNR	0	100	%			1	
AT3 OX-3-2 Air Control Valve 4 - 5-AT3-V-4												
ZI	550	SI-550	AT3 OX-3-2 Air Valve # 4. Position Ind	AI	PLC-BNR	0	100	%	1			
HMS	550	MA-550	AT3 OX-3-2 Air Valve # 4. Remote	DI	PLC-BNR	Off	Remote			1		
XF	550	XF-550	AT3 OX-3-2 Air Valve # 4. Valve Failure	DI	PLC-BNR	Off	Fail			1		
XC	550	XC-550	AT3 OX-3-2 Air Valve # 4. Position Control	AO	PLC-BNR	0	100	%			1	
BNR AT3 Sluice Gate #1 - 5-AT3-SG-1												
ZL	551	ZL-551	AT3 Sluice Gate # 1. Closed	DI	PLC-BNR	Off	Close			1		
ZH	551	ZH-551	AT3 Sluice Gate # 1. Open	DI	PLC-BNR	Off	Open			1		
AT3 AX-3-1 Recycle Flow Meter #1 - 5-AT3-F-5												
FE/FIT	588	FI-588	AT3 AX-3-1 Recycle Flow Meter #1. Flow	AI	PLC-BNR	0	TBD	GPM	1			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AT3 AX-3-1 Recycle Pump #1 - 5-AT3-P-1												
SI	555	SI-555	AT3 AX-3-1 IR Pump # 1. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	555	MA-555	AT3 AX-3-1 IR Pump # 1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	555	MN-555	AT3 AX-3-1 IR Pump # 1. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	555	TH-555	AT3 AX-3-1 IR Pump # 1. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	555	YF-555	AT3 AX-3-1 IR Pump # 1. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	555	MF-555	AT3 AX-3-1 IR Pump # 1. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	555	MC-555	AT3 AX-3-1 IR Pump # 1. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	555	SC-555	AT3 AX-3-1 IR Pump # 1. Speed Control	AO	PLC-BNR	0	100	%			1	
AT3 OX-3-2 Recycle Flow Meter #2 - 5-AT3-F-6												
FE/FIT	590	FI-586	AT3 OX-3-2 Recycle Flow Meter #2. Flow	AI	PLC-BNR	0	TBD	GPM	1			
AT3 OX-3-2 Recycle Pump #2 - 5-AT3-P-2												
SI	557	SI-557	AT3 OX-3-2 IR Pump # 1. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	557	MA-557	AT3 AX-3-1 IR Pump # 1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	557	MN-557	AT3 OX-3-2 IR Pump # 1. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	557	TH-557	AT3 OX-3-2 IR Pump # 1. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	557	YF-557	AT3 OX-3-2 IR Pump # 1. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	557	MF-557	AT3 OX-3-2 IR Pump # 1. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	557	MC-557	AT3 OX-3-2 IR Pump # 1. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	557	SC-557	AT3 OX-3-2 IR Pump # 1. Speed Control	AO	PLC-BNR	0	100	%			1	
					PLC-BNR IO Signals				13	20	6	2

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AT4 OX-4-1 DO #1 - 6-AT4-DO-1												
AE/AIT	562A	AI-562A	AT4 OX-4-1 DO #1 DO	AI	PLC-H	0	10	mg/L	1			
AT4 OX-4-1 DO #2 - 6-AT4-DO-2												
AE/AIT	562B	AI-562B	AT4 OX-4-1 DO #2 DO	AI	PLC-H	0	10	mg/L	1			
AT4 OX-4-1 Air Control Valve 1 - 6-AT4-V-1												
ZI	563	SI-563	AT4 OX-4-1 Air Valve # 1. Position Ind	AI	PLC-H	0	100	%	1			
HMS	563	MA-563	AT4 OX-4-1 Air Valve # 1. Remote	DI	PLC-H	Off	Remote			1		
XF	563	XF-563	AT4 OX-4-1 Air Valve # 1. Valve Failure	DI	PLC-H	Off	Fail			1		
XC	563	XC-563	AT4 OX-4-1 Air Valve # 1. Position Control	AO	PLC-H	0	100	%			1	
AT4 OX-4-1 Air Control Valve 2 - 6-AT4-V-2												
ZI	564	SI-564	AT4 OX-4-1 Air Valve # 2. Position Ind	AI	PLC-H	0	100	%	1			
HMS	564	MA-564	AT4 OX-4-1 Air Valve # 2. Remote	DI	PLC-H	Off	Remote			1		
XF	564	XF-564	AT4 OX-4-1 Air Valve # 2. Valve Failure	DI	PLC-H	Off	Fail			1		
XC	564	XC-564	AT4 OX-4-1 Air Valve # 2. Position Control	AO	PLC-H	0	100	%			1	
AT4 AX-4-1 ORP #1 - 6-AT4-ORP-1												
AE/AIT	565	AI-565	AT4 AX-4-1 ORP #1 ORP	AI	PLC-H	0	TBD	mg/L	1			
AT4 OX-4-2 DO #3 - 6-AT4-DO-3												
AE/AIT	568A	AI-568A	AT4 OX-4-2 DO #3 DO	AI	PLC-H	0	10	mg/L	1			
AT4 OX-4-2 DO #4 - 6-AT4-DO-4												
AE/AIT	568B	AI-568B	AT4 OX-4-2 DO #4 DO	AI	PLC-H	0	10	mg/L	1			
AT4 OX-4-2 Air Control Valve 3 - 6-AT4-V-3												
ZI	569	SI-569	AT4 OX-4-2 Air Valve # 3. Position Ind	AI	PLC-H	0	100	%	1			
HMS	569	MA-569	AT4 OX-4-2 Air Valve # 3. Remote	DI	PLC-H	Off	Remote			1		
XF	569	XF-569	AT4 OX-4-2 Air Valve # 3. Valve Failure	DI	PLC-H	Off	Fail			1		
XC	569	XC-569	AT4 OX-4-2 Air Valve # 3. Position Control	AO	PLC-H	0	100	%			1	
AT4 OX-4-2 Air Control Valve 4 - 6-AT4-V-4												
ZI	570	SI-570	AT4 OX-4-2 Air Valve # 4. Position Ind	AI	PLC-H	0	100	%	1			
HMS	570	MA-570	AT4 OX-4-2 Air Valve # 4. Remote	DI	PLC-H	Off	Remote			1		
XF	570	XF-570	AT4 OX-4-2 Air Valve # 4. Valve Failure	DI	PLC-H	Off	Fail			1		
XC	570	XC-570	AT4 OX-4-2 Air Valve # 4. Position Control	AO	PLC-H	0	100	%			1	
AT4 AX-4-1 Recycle Flow Meter #1 - 6-AT4-F-5												
FE/FIT	594	FI-594	AT4 AX-4-1 Recycle Flow Meter #1. Flow	AI	PLC-H	0	TBD	GPM	1			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AT4 AX-4-1 Recycle Pump #1 - 6-AT4-P-1												
SI	575	SI-575	AT4 AX-4-1 IR Pump # 1. Speed Indication	AI	PLC-H	0	100	%	1			
HMS	575	MA-575	AT4 AX-4-1 IR Pump # 1. Remote	DI	PLC-H	Off	Remote			1		
MN	575	MN-575	AT4 AX-4-1 IR Pump # 1. Run Status	DI	PLC-H	Off	Run			1		
TSH	575	TH-575	AT4 AX-4-1 IR Pump # 1. Hi Temperaure	DI	PLC-H	Off	Hi Temp			1		
YF	575	YF-575	AT4 AX-4-1 IR Pump # 1. Seal Leak	DI	PLC-H	Off	Seal Fail			1		
MF	575	MF-575	AT4 AX-4-1 IR Pump # 1. VFD Fail	DI	PLC-H	Off	Fail			1		
MC	575	MC-575	AT4 AX-4-1 IR Pump # 1. Motor Control	DO	PLC-H	Stop	Start					1
SC	575	SC-575	AT4 AX-4-1 IR Pump # 1. Speed Control	AO	PLC-H	0	100	%			1	
AT4 OX-4-2 Recycle Flow Meter #2 - 6-AT4-F-6												
FE/FIT	596	FI-596	AT4 OX-4-2 Recycle Flow Meter #2. Flow	AI	PLC-H	0	TBD	GPM	1			
AT4 OX-4-2 Recycle Pump #2 - 6-AT4-P-2												
SI	577	SI-577	AT4 OX-4-2 IR Pump # 1. Speed Indication	AI	PLC-H	0	100	%	1			
HMS	577	MA-577	AT4 AX-4-1 IR Pump # 1. Remote	DI	PLC-H	Off	Remote			1		
MN	577	MN-577	AT4 OX-4-2 IR Pump # 1. Run Status	DI	PLC-H	Off	Run			1		
TSH	577	TH-577	AT4 OX-4-2 IR Pump # 1. Hi Temperaure	DI	PLC-H	Off	Hi Temp			1		
YF	577	YF-577	AT4 OX-4-2 IR Pump # 1. Seal Leak	DI	PLC-H	Off	Seal Fail			1		
MF	577	MF-577	AT4 OX-4-2 IR Pump # 1. VFD Fail	DI	PLC-H	Off	Fail			1		
MC	577	MC-577	AT4 OX-4-2 IR Pump # 1. Motor Control	DO	PLC-H	Stop	Start					1
SC	577	SC-577	AT4 OX-4-2 IR Pump # 1. Speed Control	AO	PLC-H	0	100	%			1	
					PLC-H IO Signals				13	18	6	2

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Alum Tank #1 Level - 17-TK1-L-1												
LE/LIT	700	LI-700	Alum Day Tank #1. Level	AI	RIO-BNR2	0	TBD	FT	1			
Ex Alum Tank #2 Level - 17-TK2-L-1												
LE/LIT	701	LI-701	Alum Storage Tank #2. Level	AI	RIO-BNR2	0	TBD	FT	1			
Emergency Eyewash Safety Shower 1												
FSH	702	FH-702	Emergency Eyewash 1. Hi Flow	DI	RIO-BNR2	Off	Hi Flow			1		
Emergency Eyewash Safety Shower 2												
FSH	703	FH-703	Emergency Eyewash 2. Hi Flow	DI	RIO-BNR2	Off	Hi Flow			1		
Alum Tanks Transfer Pump - 17-TK-P-1												
HMS	705	MA-705	Alum Tks Transfer Pump #1. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	705	MN-705	Alum Tks Transfer Pump #1. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	705	MF-705	Alum Tks Transfer Pump #1. Fail	DI	RIO-BNR2	Off	Fail			1		
MC	705	MC-705	Alum Tks Transfer Pump #1. Control Motor	DO	RIO-BNR2	Stop	Start					1
Alum Skid 1 Pump #1 - 17-AL-P-1												
HMS	710	MA-710	Skid Alum Pump #1. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	710	MN-710	Skid Alum Pump #1. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	710	MF-710	Skid Alum Pump #1. Fail	DI	RIO-BNR2	Off	Fail			1		
SI	710	SI-710	Skid Alum Pump #1. Speed Indication	AI	RIO-BNR2	0	100	%	1			
SC	710	SC-710	Skid Alum Pump #1. Speed Control	AO	RIO-BNR2	0	100	%			1	
MC	710	MC-710	Skid Alum Pump #1. Control Motor	DO	RIO-BNR2	Stop	Start					1
Alum Skid 1 Pump #2 - 17-AL-P-2												
HMS	720	MA-720	Skid Alum Pump #2. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	720	MN-720	Skid Alum Pump #2. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	720	MF-720	Skid Alum Pump #2. Fail	DI	RIO-BNR2	Off	Fail			1		
SI	720	SI-720	Skid Alum Pump #2. Speed Indication	AI	RIO-BNR2	0	100	%	1			
SC	720	SC-720	Skid Alum Pump #2. Speed Control	AO	RIO-BNR2	0	100	%			1	
MC	720	MC-720	Skid Alum Pump #2. Control Motor	DO	RIO-BNR2	Stop	Start					1
Alum Skid 1 Pump #3 - 17-AL-P-3												
HMS	730	MA-730	Skid Alum Pump #3. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	730	MN-730	Skid Alum Pump #3. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	730	MF-730	Skid Alum Pump #3. Fail	DI	RIO-BNR2	Off	Fail			1		
SI	730	SI-730	Skid Alum Pump #3. Speed Indication	AI	RIO-BNR2	0	100	%	1			
SC	730	SC-730	Skid Alum Pump #3. Speed Control	AO	RIO-BNR2	0	100	%			1	
MC	730	MC-730	Skid Alum Pump #3. Control Motor	DO	RIO-BNR2	Stop	Start					1
Alum Skid 2 Pump #1 - 17-AL-P-4												

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
HMS	740	MA-740	Skid Alum Pump #4. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	740	MN-740	Skid Alum Pump #4. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	740	MF-740	Skid Alum Pump #4. Fail	DI	RIO-BNR2	Off	Fail			1		
SI	740	SI-740	Skid Alum Pump #4. Speed Indication	AI	RIO-BNR2	0	100	%	1			
SC	740	SC-740	Skid Alum Pump #4. Speed Control	AO	RIO-BNR2	0	100	%			1	
MC	740	MC-740	Skid Alum Pump #4. Control Motor	DO	RIO-BNR2	Stop	Start					1
Alum Skid 2 Pump #2 - 17-AL-P-5												
HMS	750	MA-750	Skid Alum Pump #5. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	750	MN-750	Skid Alum Pump #5. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	750	MF-750	Skid Alum Pump #5. Fail	DI	RIO-BNR2	Off	Fail			1		
SI	750	SI-750	Skid Alum Pump #5. Speed Indication	AI	RIO-BNR2	0	100	%	1			
SC	750	SC-750	Skid Alum Pump #5. Speed Control	AO	RIO-BNR2	0	100	%			1	
MC	750	MC-750	Skid Alum Pump #5. Control Motor	DO	RIO-BNR2	Stop	Start					1
Alum Skid 2 Pump #3 - 17-AL-P-6												
HMS	760	MA-760	Skid Alum Pump #6. Remote	DI	RIO-BNR2	Off	Remote			1		
MN	760	MN-760	Skid Alum Pump #6. Run Status	DI	RIO-BNR2	Off	Run			1		
MF	760	MF-760	Skid Alum Pump #6. Fail	DI	RIO-BNR2	Off	Fail			1		
SI	760	SI-760	Skid Alum Pump #6. Speed Indication	AI	RIO-BNR2	0	100	%	1			
SC	760	SC-760	Skid Alum Pump #6. Speed Control	AO	RIO-BNR2	0	100	%			1	
MC	760	MC-760	Skid Alum Pump #6. Control Motor	DO	RIO-BNR2	Stop	Start					1
					RIO-BNR2 IO Signals				8	23	6	7

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Membrane Bldg Emergency Eyewash Safety Shower 1												
FSH	2181	FH-2081	Emergency Eyewash 1. Hi Flow	DI	PLC-BNR	0	Hi Flow			1		
Membrane Bldg Emergency Eyewash Safety Shower 2												
FSH	2082	FH-2082	Emergency Eyewash 5. Hi Flow	DI	PLC-BNR	0	Hi Flow			1		
Electrical Room High Temperature Switch 1 (5-BNR-TS-1)												
TSH	2183	TH-2183	Electrical Room High Temp	DI	PLC-BNR	0	Hi Temp			1		
Electrical Room Low Temperature Switch 2 (5-BNR-TS-2)												
TSL	2184	TL-2184	Electrical Room Low Temp	DI	PLC-BNR	0	Low Temp			1		
				PLC-BNR IO Signals					0	4	0	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BNR Air Supply Pressure #1 - 5-A-PT-1												
PIT	601	PI-601	BNR Air Supply Presssure	AI	PLC-BNR	0	TBD	PSI	1			
BNR Air Supply Pressure #2 - 5-A-PT-2												
PIT	602	PI-602	BNR Air Supply Presssure	AI	PLC-BNR	0	TBD	PSI	1			
BNR Air Supply Pressure #3 - 5-A-PT-3												
PIT	603	PI-603	BNR Air Supply Presssure	AI	PLC-BNR	0	TBD	PSI	1			
BNR Air Supply Pressure #4 - 5-A-PT-4												
PIT	604	PI-604	BNR Air Supply Presssure	AI	PLC-BNR	0	TBD	PSI	1			
BNR Blower #1 Valve 5-A-V-1												
ZL	610	ZL-610	Blower #1 Air Valve. Closed	DI	PLC-BNR	Off	Open			1		
ZH	610	ZH-610	Blower #1 Air Valve. Open	DI	PLC-BNR	Off	Close			1		
BNR Blower #1 5-A-BL-1												
HMS	610	MA-610	Blower #1. Remote	DI	PLC-BNR	Off	Remote		Network			
PDT	611	PD-611	Blower #1. Filter Alarm	DI	PLC-BNR	Off	Filter Alm		Network			
MN	610	MN-610	Blower #1. Run Status	DI	PLC-BNR	Off	Run		Network			
PIT	612	PI-612	Blower #1. Suction Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	613	TI-613	Blower #1. Oil Temperature	AI	PLC-BNR	0	TBD	F	Network			
PIT	614	PI-614	Blower #1. Discharge Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	615	TI-615	Blower #1. Discharge Temperature	AI	PLC-BNR	0	TBD	F	Network			
XF	610	XF-610	Blower #1. System Fail	DI	PLC-BNR	Off	Fail		Network			
XW	610	XW-610	Blower #1. System Warnig	DI	PLC-BNR	Off	Warning		Network			
SI	610	SI-610	Blower #1. Speed Indication	AI	PLC-BNR	0	100	%	Network			
MC	610	MC-610	Blower #1. Start/Stop	DO	PLC-BNR	Stop	Start		Network			
SC	610	SC-610	Blower #1. Speed Control	AO	PLC-BNR	0	100	%	Network			
BNR Blower #2 Valve 5-A-V-2												
ZL	620	ZL-620	Blower #2 Air Valve. Closed	DI	PLC-BNR	Off	Open			1		
ZH	620	ZH-620	Blower #2 Air Valve. Open	DI	PLC-BNR	Off	Close			1		
BNR Blower #2 5-A-BL-2												
HMS	620	MA-620	Blower #2. Remote	DI	PLC-BNR	Off	Remote		Network			
PDT	621	PD-621	Blower #2. Filter Alarm	DI	PLC-BNR	Off	Filter Alm		Network			
MN	620	MN-620	Blower #2. Run Status	DI	PLC-BNR	Off	Run		Network			
PIT	622	PI-622	Blower #2. Suction Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	623	TI-623	Blower #2. Oil Temperature	AI	PLC-BNR	0	TBD	F	Network			
PIT	624	PI-624	Blower #2. Discharge Pressure	AI	PLC-BNR	0	TBD	PSI	Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
TIT	625	TI-625	Blower #2. Discharge Temperature	AI	PLC-BNR	0	TBD	F	Network			
XF	620	XF-620	Blower #2. System Fail	DI	PLC-BNR	Off	Fail		Network			
XW	620	XW-620	Blower #2. System Warnig	DI	PLC-BNR	Off	Warning		Network			
SI	620	SI-620	Blower #2. Speed Indication	AI	PLC-BNR	0	100	%	Network			
MC	620	MC-620	Blower #2. Start/Stop	DO	PLC-BNR	Stop	Start		Network			
SC	620	SC-620	Blower #2. Speed Control	AO	PLC-BNR	0	100	%	Network			
BNR Blower #3 Valve 5-A-V-3												
ZL	630	ZL-630	Blower #3 Air Valve. Closed	DI	PLC-BNR	Off	Open			1		
ZH	630	ZH-630	Blower #3 Air Valve. Open	DI	PLC-BNR	Off	Close			1		
BNR Blower #3 5-A-BL-3												
HMS	630	MA-630	Blower #3. Remote	DI	PLC-BNR	Off	Remote		Network			
PDT	631	PD-631	Blower #3. Filter Alarm	DI	PLC-BNR	Off	Filter Alm		Network			
MN	630	MN-630	Blower #3. Run Status	DI	PLC-BNR	Off	Run		Network			
PIT	632	PI-632	Blower #3. Suction Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	633	TI-633	Blower #3. Oil Temperature	AI	PLC-BNR	0	TBD	F	Network			
PIT	634	PI-634	Blower #3. Discharge Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	635	TI-635	Blower #3. Discharge Temperature	AI	PLC-BNR	0	TBD	F	Network			
XF	630	XF-630	Blower #3. System Fail	DI	PLC-BNR	Off	Fail		Network			
XW	630	XW-630	Blower #3. System Warnig	DI	PLC-BNR	Off	Warning		Network			
SI	630	SI-630	Blower #3. Speed Indication	AI	PLC-BNR	0	100	%	Network			
MC	630	MC-630	Blower #3. Start/Stop	DO	PLC-BNR	Stop	Start		Network			
SC	630	SC-630	Blower #3. Speed Control	AO	PLC-BNR	0	100	%	Network			
BNR Blower #4 Valve 5-A-V-4												
ZL	640	ZL-640	Blower #4 Air Valve. Closed	DI	PLC-BNR	Off	Open			1		
ZH	640	ZH-640	Blower #4 Air Valve. Open	DI	PLC-BNR	Off	Close			1		
BNR Blower #4 5-A-BL-4												
HMS	640	MA-640	Blower #4. Remote	DI	PLC-BNR	Off	Remote		Network			
PDT	641	PD-641	Blower #4. Filter Alarm	DI	PLC-BNR	Off	Filter Alm		Network			
MN	640	MN-640	Blower #4. Run Status	DI	PLC-BNR	Off	Run		Network			
PIT	642	PI-642	Blower #4. Suction Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	643	TI-643	Blower #4. Oil Temperature	AI	PLC-BNR	0	TBD	F	Network			
PIT	644	PI-644	Blower #4. Discharge Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	645	TI-645	Blower #4. Discharge Temperature	AI	PLC-BNR	0	TBD	F	Network			
XF	640	XF-640	Blower #4. System Fail	DI	PLC-BNR	Off	Fail		Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
XW	640	XW-640	Blower #4. System Warnig	DI	PLC-BNR	Off	Warning		Network			
SI	640	SI-640	Blower #4. Speed Indication	AI	PLC-BNR	0	100	%	Network			
MC	640	MC-640	Blower #4. Start/Stop	DO	PLC-BNR	Stop	Start		Network			
SC	640	SC-640	Blower #4. Speed Control	AO	PLC-BNR	0	100	%	Network			
BNR Blower #5 Valve 5-A-V-5												
ZL	650	ZL-650	Blower #5 Air Valve. Closed	DI	PLC-BNR	Off	Open			1		
ZH	650	ZH-650	Blower #5 Air Valve. Open	DI	PLC-BNR	Off	Close			1		
BNR Blower #5 5-A-BL-5												
HMS	650	MA-650	Blower #5. Remote	DI	PLC-BNR	Off	Remote		Network			
PDT	651	PD-651	Blower #5. Filter Alarm	DI	PLC-BNR	Off	Filter Alm		Network			
MN	650	MN-650	Blower #5. Run Status	DI	PLC-BNR	Off	Run		Network			
PIT	652	PI-652	Blower #5. Suction Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	653	TI-653	Blower #5. Oil Temperature	AI	PLC-BNR	0	TBD	F	Network			
PIT	654	PI-654	Blower #5. Discharge Pressure	AI	PLC-BNR	0	TBD	PSI	Network			
TIT	655	TI-655	Blower #5. Discharge Temperature	AI	PLC-BNR	0	TBD	F	Network			
XF	650	XF-650	Blower #5. System Fail	DI	PLC-BNR	Off	Fail		Network			
XW	650	XW-650	Blower #5. System Warnig	DI	PLC-BNR	Off	Warning		Network			
SI	650	SI-650	Blower #5. Speed Indication	AI	PLC-BNR	0	100	%	Network			
MC	650	MC-650	Blower #5. Start/Stop	DO	PLC-BNR	Stop	Start		Network			
SC	650	SC-650	Blower #5. Speed Control	AO	PLC-BNR	0	100	%	Network			
					PLC-BNR IO Signals				4	10	0	0

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Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Scum Collection Box Level - 5-SC-L-1												
LE/LIT	660	LI-660	Scum Collection Box. Level	AI	PLC-BNR	0	TBD	FT	1			
Scum Collection Box Hi Level - 5-SC-LS-1												
LSH	661	LH-661	Scum Collection Box. Hi Level	DI	RIO-H1	Off	Hi Level			1		
Scum Collection Box PW Solenoid Valve - 5-PW-V-1												
ZC	663	ZC-663	Scum Box Potable Water Valve	DO	PLC-BNR	Close	Open					1
Scum Collection Box PW low Flow - 5-PW-FS-1												
FSL	662	FL-662	Scum Box Potable Low Flow	DI	PLC-BNR	Off	Low Flow			1		
PW Valve - 5-SCUM-V-1												
MA	660	MA-660	PW Scum Valve Remote	DI	RIO-BNR	Off	Remote			1		
ZH	660	ZH-660	PW Scum Valve Open	DI	RIO-BNR	Off	Open			1		
ZL	660	ZL-660	PW Scum Valve Close	DI	RIO-BNR	Off	Close			1		
ZF	660	ZF-660	PW Scum Valve Fail	DI	RIO-BNR	Off	Fail			1		
ZO	660	MN-660	PW Scum Valve Open	DO	RIO-BNR	Off	Open					1
ZC	660	MF-660	PW Scum Valve Close	DO	RIO-BNR	Off	Close					1
Scum Pump 1 - 5-SC-P-1												
HMS	670	MA-670	Scum Pump #1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	670	MN-670	Scum Pump #1. Run Status	DI	PLC-BNR	Off	Run			1		
MF	670	MF-670	Scum Pump #1. Fail	DI	PLC-BNR	Off	Fail			1		
MO	671	PL-671	Scum Pump #1. Low Pressure	DI	PLC-BNR	Off	Lo Press			1		
MC	670	MC-670	Scum Pump #1. Motor Control	DO	PLC-BNR	Stop	Start					1
Scum Pump 2 - 5-SC-P-2												
HMS	680	MA-680	Scum Pump #2. Remote	DI	PLC-BNR	Off	Remote			1		
MN	680	MN-680	Scum Pump #2. Run Status	DI	PLC-BNR	Off	Run			1		
MF	680	MF-680	Scum Pump #2. Fail	DI	PLC-BNR	Off	Fail			1		
MO	681	PL-681	Scum Pump #2. Low Pressure	DI	PLC-BNR	Off	Lo Press			1		
MC	680	MC-680	Scum Pump #2. Motor Control	DO	PLC-BNR	Stop	Start					1
					PLC-BNR IO Signals				1	14	0	5

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
RAS Splitte Box Level - 5-RAS-L-1												
LE/LIT	660	LI-660	RAS Splitter Box. Level	AI	PLC-BNR	0	TBD	FT	1			
RAS Splitter Box Hi Level - 5-RAS-LS-1												
LSH	661	LH-661	RAS Splitter Box. Hi Level	DI	PLC-BNR	Off	Hi Level			1		
					PLC-BNR IO Signals				1	1	0	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
UV Influent Flow 10-IUV-F-1												
FE/FIT	1000	FI-1000	UV Influent Flow	AI	PLC-UVPA	0	TBD	GPM	1			
UV Disinfection System												
LE/LIT	1001	LI-1011	UV System Influent Level	AI	PLC-UVPA	0	TBD	FT	Network			
LE/LIT	1002	LI-1012	UV System Effluent Level	AI	PLC-UVPA	0	TBD	FT	Network			
LSL	1003	LL-1013	UV System Low Level	DI	PLC-UVPA	Off	Low Lvl		Network			
AE/AIT	1010	AI-1011	UV System Transmittance	AI	PLC-UVPA	0	TBD	%	Network			
JN	1010	JN-1010	UV System. Control Power	DI	PLC-UVPA	Off	Pwr		Network			
XA	1010	XA-1010	UV System. Remote	DI	PLC-UVPA	Off	Rem		Network			
YN	1010	YN-1010	UV System. E-Stop	DI	PLC-UVPA	Off	E-Stop		Network			
XF	1010	XF-1010	UV System. Fail	DI	PLC-UVPA	Off	Fail		Network			
XC	1010	XC-1010	UV System. Start/Stop	DO	PLC-UVPA	Stop	Start		Network			
YN	1010	YN-1010	Lamp Status ON	DI	PLC-UVPA	Off	On		Network			
YF	1010	YF-1010	Wiper Fault	DI	PLC-UVPA	Off	Fail		Network			
YN	1010	YA-1010	Cleaning Auto	DI	PLC-UVPA	Off	Auto		Network			
AE/AIT	1010	AI-1010	Lamp UV Intensity	AI	PLC-UVPA	0	100	%	Network			
UV Channel Effluent Sluice Gate #1 10-UV-SG-1												
MA	1014	MA-1014	UV Effluent Sluice Gate 1. Remote	DI	PLC-UVPA	Off	Remote		Network			
ZH	1014	ZH-1014	UV Effluent Sluice Gate 1. Open	DI	PLC-UVPA	Off	Open		Network			
ZL	1014	ZL-1014	UV Effluent Sluice Gate 1. Close	DI	PLC-UVPA	Off	Close		Network			
ZF	1014	ZF-1014	UV Effluent Sluice Gate 1. Fail	DI	PLC-UVPA	Off	Fail		Network			
ZO	1014	MN-1014	UV Effluent Sluice Gate 1. Open	DO	PLC-UVPA	Off	Open		Network			
ZC	1014	MF-1014	UV Effluent Sluice Gate 1. Close	DO	PLC-UVPA	Off	Close		Network			
PA Tank 1 Sluice Gate #1 10-PA-SG-1												
MA	1015	MA-1015	PA Tank 1 Sluice Gate 1. Remote	DI	PLC-UVPA	Off	Remote			1		
ZH	1015	ZH-1015	PA Tank 1 Sluice Gate 1. Open	DI	PLC-UVPA	Off	Open			1		
ZL	1015	ZL-1015	PA Tank 1 Sluice Gate 1. Close	DI	PLC-UVPA	Off	Close			1		
ZF	1015	ZF-1015	PA Tank 1 Sluice Gate 1. Fail	DI	PLC-UVPA	Off	Fail			1		
ZO	1015	MN-1015	PA Tank 1 Sluice Gate 1. Open	DO	PLC-UVPA	Off	Open					1
ZC	1015	MF-1015	PA Tank 1 Sluice Gate 1. Close	DO	PLC-UVPA	Off	Close					1
Post Aeration Tank 1 DO #1 - 10-PA-DO-1												
AE/AIT	1020	AI-1020	Post Aeration Tk 1 DO Level	AI	PLC-UVPA	0	10	mg/L	1			
PA Tank 1 Sluice Gate #1 10-PA-SG-1												
MA	1025	MA-1025	PATank 2 Sluice Gate 1. Remote	DI	PLC-UVPA	Off	Remote			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZH	1025	ZH-1025	PATank 2 Sluice Gate 1. Open	DI	PLC-UVPA	Off	Open			1		
ZL	1025	ZL-1025	PATank 2 Sluice Gate 1. Close	DI	PLC-UVPA	Off	Close			1		
ZF	1025	ZF-1025	PATank 2 Sluice Gate 1. Fail	DI	PLC-UVPA	Off	Fail			1		
ZO	1025	MN-1025	PATank 2 Sluice Gate 1. Open	DO	PLC-UVPA	Off	Open					1
ZC	1025	MF-1025	PATank 2 Sluice Gate 1. Close	DO	PLC-UVPA	Off	Close					1
Post Aeration Tank 2 DO #2 - 10-PA-DO-2												
AE/AIT	1030	AI-1030	Post Aeration Tk 2 DO Level	AI	PLC-UVPA	0	10	mg/L	1			
Post Aeration Sampler Flow Pace 10-PASP-F-1												
FC	1040	FC-1040	Post Aeration Sample Flow	AO	PLC-UVPA	0	100	%			1	
Post Aeration Tank Dropbox Turbidity - 10-PA-TURB-1												
AE/AIT	1040	AI-1040	Post Aeration Dropbox Turbidity	AI	PLC-UVPA				1			
					PLC-PA IO Signals				4	8	1	4

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
UVPA Air Supply Pressure #1 - 10-A-PT-1												
PIT	1047	PI-1047	PA Air Supply Presssure 1	AI	PLC-UVPA	0	TBD	PSI	1			
PA Air Valve 5 10-PA-V-5												
MA	1048	MA-1048	PA Air Valve 5. Remote	DI	PLC-UVPA	Off	Remote			1		
ZH	1048	ZH-1048	PA Air Valve 5. Open	DI	PLC-UVPA	Off	Open			1		
ZL	1048	ZL-1048	PA Air Valve 5. Close	DI	PLC-UVPA	Off	Close			1		
ZF	1048	ZF-1048	PA Air Valve 5. Fail	DI	PLC-UVPA	Off	Fail			1		
ZO	1048	MN-1048	PA Air Valve 5. Open	DO	PLC-UVPA	Off	Open					1
ZC	1048	MF-1048	PA Air Valve 5. Close	DO	PLC-UVPA	Off	Close					1
UVPA Aeration Blower #1 Valve 10-A-V-1												
ZL	1040	ZL-1040	Blower #1 Air Valve 1. Closed	DI	PLC-PA	Off	Open			1		
ZH	1040	ZH-1040	Blower #1 Air Valve 1. Open	DI	PLC-PA	Off	Close			1		
UVPA Aeration Blower #1 10-A-BL-1												
HMS	1040	MA-1040	Blower #1. Remote	DI	PLC-PA	Off	Remote		Network			
PDT	1041	PD-1041	Blower #1. Filter Alarm	DI	PLC-PA	Off	Filter Alm		Network			
MN	1040	MN-1040	Blower #1. Run Status	DI	PLC-PA	Off	Run		Network			
PIT	1042	PI-1042	Blower #1. Suction Pressure	AI	PLC-PA	0	TBD	PSI	Network			
TIT	1043	TI-1043	Blower #1. Oil Temperature	AI	PLC-PA	0	TBD	F	Network			
PIT	1044	PI-1044	Blower #1. Discharge Pressure	AI	PLC-PA	0	TBD	PSI	Network			
TIT	1045	TI-1045	Blower #1. Discharge Temperature	AI	PLC-PA	0	TBD	F	Network			
XF	1040	XF-1040	Blower #1. System Fail	DI	PLC-PA	Off	Fail		Network			
XW	1040	XW-1040	Blower #1. System Warnig	DI	PLC-PA	Off	Warning		Network			
SI	1040	SI-1040	Blower #1. Speed Indication	AI	PLC-PA	0	100	%	Network			
MC	1040	MC-1040	Blower #1. Start/Stop	DO	PLC-PA	Stop	Start		Network			
SC	1040	SC-1040	Blower #1. Speed Control	AO	PLC-PA	0	100	%	Network			
UVPA Air Supply Pressure #1 - 10-A-PT-2												
PIT	1057	PI-1057	PA Air Supply Presssure 2	AI	PLC-PA	0	TBD	PSI	1			
UVPA Aeration Blower #2 Valve 10-A-V-2												
ZL	1050	ZL-1050	Blower #2 Air Valve 2. Closed	DI	PLC-PA	Off	Open			1		
ZH	1050	ZH-1050	Blower #2 Air Valve 2. Open	DI	PLC-PA	Off	Close			1		
UVPA Aeration Blower #2 10-A-BL-2												
HMS	1050	MA-1050	Blower #2. Remote	DI	PLC-PA	Off	Remote		Network			
PDT	1051	PD-1051	Blower #2. Filter Alarm	DI	PLC-PA	Off	Filter Alm		Network			
MN	1050	MN-1050	Blower #2. Run Status	DI	PLC-PA	Off	Run		Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
PIT	1052	PI-1052	Blower #2. Suction Pressure	AI	PLC-PA	0	TBD	PSI	Network			
TIT	1053	TI-1053	Blower #2. Oil Temperature	AI	PLC-PA	0	TBD	F	Network			
PIT	1054	PI-1054	Blower #2. Discharge Pressure	AI	PLC-PA	0	TBD	PSI	Network			
TIT	1055	TI-1055	Blower #2. Discharge Temperature	AI	PLC-PA	0	TBD	F	Network			
XF	1050	XF-1050	Blower #2. System Fail	DI	PLC-PA	Off	Fail		Network			
XW	1050	XW-1050	Blower #2. System Warnig	DI	PLC-PA	Off	Warning		Network			
SI	1050	SI-1050	Blower #2. Speed Indication	AI	PLC-PA	0	100	%	Network			
MC	1050	MC-1050	Blower #2. Start/Stop	DO	PLC-PA	Stop	Start		Network			
SC	1050	SC-1050	Blower #2. Speed Control	AO	PLC-PA	0	100	%	Network			
UVPA Aeration Blower #3 Valve 10-A-V-3												
ZL	1060	ZL-1060	Blower #3 Air Valve 3. Closed	DI	PLC-PA	Off	Open			1		
ZH	1060	ZH-1060	Blower #3 Air Valve 3. Open	DI	PLC-PA	Off	Close			1		
UVPA Aeration Blower #3 Valve 10-A-V-4												
ZL	1069	ZL-1069	Blower #3 Air Valve 4. Closed	DI	PLC-PA	Off	Open			1		
ZH	1069	ZH-1069	Blower #3 Air Valve 4. Open	DI	PLC-PA	Off	Close			1		
UVPA Aeration Blower #3 10-A-BL-3												
HMS	1060	MA-1060	Blower #3. Remote	DI	PLC-PA	Off	Remote		Network			
PDT	1061	PD-1061	Blower #3. Filter Alarm	DI	PLC-PA	Off	Filter Alm		Network			
MN	1060	MN-1060	Blower #3. Run Status	DI	PLC-PA	Off	Run		Network			
PIT	1062	PI-1062	Blower #3. Suction Pressure	AI	PLC-PA	0	TBD	PSI	Network			
TIT	1063	TI-1063	Blower #3. Oil Temperature	AI	PLC-PA	0	TBD	F	Network			
PIT	1064	PI-1064	Blower #3. Discharge Pressure	AI	PLC-PA	0	TBD	PSI	Network			
TIT	1065	TI-1065	Blower #3. Discharge Temperature	AI	PLC-PA	0	TBD	F	Network			
XF	1060	XF-1060	Blower #3. System Fail	DI	PLC-PA	Off	Fail		Network			
XW	1060	XW-1060	Blower #3. System Warnig	DI	PLC-PA	Off	Warning		Network			
SI	1060	SI-1060	Blower #3. Speed Indication	AI	PLC-PA	0	100	%	Network			
MC	1060	MC-1060	Blower #3. Start/Stop	DO	PLC-PA	Stop	Start		Network			
SC	1060	SC-1060	Blower #3. Speed Control	AO	PLC-PA	0	100	%	Network			
PA Air Valve 6 10-PA-V-6												
MA	1058	MA-1058	PA Air Valve 6. Remote	DI	PLC-UVPA	Off	Remote			1		
ZH	1058	ZH-1058	PA Air Valve 6. Open	DI	PLC-UVPA	Off	Open			1		
ZL	1058	ZL-1058	PA Air Valve 6. Close	DI	PLC-UVPA	Off	Close			1		
ZF	1058	ZF-1058	PA Air Valve 6. Fail	DI	PLC-UVPA	Off	Fail			1		
ZO	1058	MN-1058	PA Air Valve 6. Open	DO	PLC-UVPA	Off	Open					1

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZC	1058	MF-1058	PA Air Valve 6. Close	DO	PLC-UVPA	Off	Close					1
Post Aeration Tank Dropbox Turbidity - 10-PA-TURB-1												
AE/AIT	1040	AI-1040	Post Aeration Dropbox Turbidity	AI	PLC-UVPA	0	TBD	NTU	1			
					PLC-UVPA IO Signals				3	16	0	4

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Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
WAS Storage Tank Level - 11-WT-L-1												
LE/LIT	1100	LI-1100	WAS Storage Tank. Level	AI	RIO-BNR1	0	TBD	FT	1			
WAS Storage Tank Hi Level - 11-WT-LS-1												
LSH	1101	LH-1101	WAS Storage Tank. Hi Level	DI	RIO-BNR1	Off	Hi Level			1		
WAS Bypass Flow Meter #1 - 11-WB-F-1												
FE/FIT	1160	FI-1160	WAS Bypass Flow	AI	RIO-BNR1	0	TBD	GPM	1			
Reuse Flow Meter #1 - 11-RP-F-1												
FE/FIT	1159	FI-1159	Reuse Pump Flow	AI	RIO-BNR1	0	TBD	GPM	1			
Reuse Pumps #1 & 2 - 11-RP-P-1&2												
PSH	1140	MA-1140	Reuse Pump Station Disch Hi Press	DI	RIO-BNR1	Off	Hi Press			1		
PSL	1140	MA-1140	Reuse Pump Station Disch Lo Press	DI	RIO-BNR1	Off	Lo Press			1		
LSL	1140	MA-1140	Reuse Pump Station Low Level	DI	RIO-BNR1	Off	Lo Level			1		
MN	1140	MN-1140	Reuse Pump Station Pump #1. Run Status	DI	RIO-BNR1	Off	Run			1		
MF	1140	MF-1140	Reuse Pump Station Pump #1. Fail	DI	RIO-BNR1	Off	Fail			1		
MN	1150	MN-1150	Reuse Pump Station Pump #2. Run Status	DI	RIO-BNR1	Off	Run			1		
MF	1150	MF-1150	Reuse Pump Station Pump #2. Fail	DI	RIO-BNR1	Off	Fail			1		
					RIO-BNR IO Signals				3	8	0	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Sludge Feed Pump #1 - 11-SF-P-1												
SI	1110	SI-1110	Sludge Feed Pump #1. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	1110	MA-1110	Sludge Feed Pump #1. Remote	DI	PLC-BNR	Off	Remote			1		
MN	1110	MN-1110	Sludge Feed Pump #1. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	1110	TH-1110	Sludge Feed Pump #1. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	1110	YF-1110	Sludge Feed Pump #1. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	1110	MF-1110	Sludge Feed Pump #1. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	1110	MC-1110	Sludge Feed Pump #1. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	1110	SC-1110	Sludge Feed Pump #1. Speed Control	AO	PLC-BNR	0	100	%			1	
Sludge Feed Pump #2 - 11-SF-P-2												
SI	1120	SI-1120	Sludge Feed Pump #2. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	1120	MA-1120	Sludge Feed Pump #2. Remote	DI	PLC-BNR	Off	Remote			1		
MN	1120	MN-1120	Sludge Feed Pump #2. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	1120	TH-1120	Sludge Feed Pump #2. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	1120	YF-1120	Sludge Feed Pump #2. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	1120	MF-1120	Sludge Feed Pump #2. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	1120	MC-1120	Sludge Feed Pump #2. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	1120	SC-1120	Sludge Feed Pump #2. Speed Control	AO	PLC-BNR	0	100	%			1	
Sludge Feed Pump #3 - 11-SF-P-3												
SI	1130	SI-1130	Sludge Feed Pump #3. Speed Indication	AI	PLC-BNR	0	100	%	1			
HMS	1130	MA-1130	Sludge Feed Pump #3. Remote	DI	PLC-BNR	Off	Remote			1		
MN	1130	MN-1130	Sludge Feed Pump #3. Run Status	DI	PLC-BNR	Off	Run			1		
TSH	1130	TH-1130	Sludge Feed Pump #3. Hi Temperaure	DI	PLC-BNR	Off	Hi Temp			1		
YF	1130	YF-1130	Sludge Feed Pump #3. Seal Leak	DI	PLC-BNR	Off	Seal Fail			1		
MF	1130	MF-1130	Sludge Feed Pump #3. VFD Fail	DI	PLC-BNR	Off	Fail			1		
MC	1130	MC-1130	Sludge Feed Pump #3. Motor Control	DO	PLC-BNR	Stop	Start					1
SC	1130	SC-1130	Sludge Feed Pump #3. Speed Control	AO	PLC-BNR	0	100	%			1	
					RIO-BNR IO Signals				3	15	3	3

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
WAS Blower #1 11-A-BL-1 (*)												
HMS	1160	MA-1160	Blower #1. Remote	DI	RIO-H1	Off	Remote		Network			
PDT	1161	PD-1161	Blower #1. Filter Alarm	DI	RIO-H1	Off	Filter Alm		Network			
MN	1160	MN-1160	Blower #1. Run Status	DI	RIO-H1	Off	Run		Network			
PIT	1162	PI-1162	Blower #1. Suction Pressure	AI	RIO-H1	0	TBD	PSI	Network			
TIT	1163	TI-1163	Blower #1. Oil Temperature	AI	RIO-H1	0	TBD	F	Network			
PIT	1164	PI-1164	Blower #1. Discharge Pressure	AI	RIO-H1	0	TBD	PSI	Network			
TIT	1165	TI-1165	Blower #1. Discharge Temperature	AI	RIO-H1	0	TBD	F	Network			
XF	1160	XF-1160	Blower #1. System Fail	DI	RIO-H1	Off	Fail		Network			
XW	1160	XW-1160	Blower #1. System Warnig	DI	RIO-H1	Off	Warning		Network			
MC	1160	MC-1160	Blower #1. Start/Stop	DO	RIO-H1	Stop	Start		Network			
WAS Blower #2 11-A-BL-2 (*)												
HMS	1170	MA-1170	Blower #2. Remote	DI	RIO-H1	Off	Remote		Network			
PDT	1171	PD-1171	Blower #2. Filter Alarm	DI	RIO-H1	Off	Filter Alm		Network			
MN	1170	MN-1170	Blower #2. Run Status	DI	RIO-H1	Off	Run		Network			
PIT	1172	PI-1172	Blower #2. Suction Pressure	AI	RIO-H1	0	TBD	PSI	Network			
TIT	1173	TI-1173	Blower #2. Oil Temperature	AI	RIO-H1	0	TBD	F	Network			
PIT	1174	PI-1174	Blower #2. Discharge Pressure	AI	RIO-H1	0	TBD	PSI	Network			
TIT	1175	TI-1175	Blower #2. Discharge Temperature	AI	RIO-H1	0	TBD	F	Network			
XF	1170	XF-1170	Blower #2. System Fail	DI	RIO-H1	Off	Fail		Network			
XW	1170	XW-1170	Blower #2. System Warnig	DI	RIO-H1	Off	Warning		Network			
MC	1170	MC-1170	Blower #2. Start/Stop	DO	RIO-H1	Stop	Start		Network			
WAS Blower #3 11-A-BL-3 (*)												
HMS	1180	MA-1180	Blower #3. Remote	DI	RIO-H1	Off	Remote		Network			
PDT	1181	PD-1181	Blower #3. Filter Alarm	DI	RIO-H1	Off	Filter Alm		Network			
MN	1180	MN-1180	Blower #3. Run Status	DI	RIO-H1	Off	Run		Network			
PIT	1182	PI-1182	Blower #3. Suction Pressure	AI	RIO-H1	0	TBD	PSI	Network			
TIT	1183	TI-1183	Blower #3. Oil Temperature	AI	RIO-H1	0	TBD	F	Network			
PIT	1184	PI-1184	Blower #3. Discharge Pressure	AI	RIO-H1	0	TBD	PSI	Network			
TIT	1185	TI-1185	Blower #3. Discharge Temperature	AI	RIO-H1	0	TBD	F	Network			
XF	1180	XF-1180	Blower #3. System Fail	DI	RIO-H1	Off	Fail		Network			
XW	1180	XW-1180	Blower #3. System Warnig	DI	RIO-H1	Off	Warning		Network			
MC	1180	MC-1180	Blower #3. Start/Stop	DO	RIO-H1	Stop	Start		Network			
(*) : Existing Blowers connected to ex LCP-H to become RIO-H1				RIO-H1 IO Signals					0	0	0	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO

Existing EQ Blower Not shown - existing points connected to RIO-H1

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Aerobic Digester Tank #1 Level - 12-AD-L-1												
LE/LIT	1200	LI-1200	Aerobic Digester Tank 1. Level	AI	PLC-H	0	TBD	FT	1			
Aerobic Digester Tank #1 Hi Level - 12-AD-LS-1												
LSH	1201	LH-1201	Aerobic Digester Tank 1. Hi Level	AI	PLC-H	Off	Hi Lvl			1		
Aerobic Digester Tank #1 DO - 12-AD-DO-1												
AE/AIT	1202A	AI-1202A	Aerobic Digester Tank 1 DO #1	AI	PLC-H	0	10	mg/L	1			
Aerobic Digester Tank #1 DO - 12-AD-DO-2												
AE/AIT	1202B	AI-1202B	Aerobic Digester Tank 1 DO #2	AI	PLC-H	0	10	mg/L	1			
Aerobic Digester Tank 1 Air Pressure - 12-AD-PT-1												
PIT	1236	PI-1236	Aerobic Digester Tk 2 Air Supply Press	AI	PLC-H	0	20	PSI	1			
Aerobic Digester Blower #1 Valve 1 12-AD-V-1												
ZL	1210	ZL-1210	Digester Blower #1 Air Valve 1. Closed	DI	PLC-H	Off	Open			1		
ZH	1210	ZH-1210	Digester Blower #1 Air Valve 1. Open	DI	PLC-H	Off	Close			1		
ZI	1210	ZI-1210	Digester Blower #1 Air Valve 1 Indication	AI	PLC-H	0	100		1			
ZC	1210	ZC-1210	Digester Blower #1 Air Valve 1 Control	AO	PLC-H	0	100				1	
Aerobic Digester Blower #1 12-A-BL-1												
HMS	1210	MA-1210	Blower #1. Remote	DI	PLC-H	Off	Remote		Network			
PDT	1211	PD-1211	Blower #1. Filter Alarm	DI	PLC-H	Off	Filter Alm		Network			
MN	1210	MN-1210	Blower #1. Run Status	DI	PLC-H	Off	Run		Network			
PIT	1212	PI-1212	Blower #1. Suction Pressure	AI	PLC-H	0	TBD	PSI	Network			
TIT	1212	TI-1212	Blower #1. Oil Temperature	AI	PLC-H	0	TBD	F	Network			
PIT	1214	PI-1214	Blower #1. Discharge Pressure	AI	PLC-H	0	TBD	PSI	Network			
TIT	1215	TI-1215	Blower #1. Discharge Temperature	AI	PLC-H	0	TBD	F	Network			
XF	1210	XF-1210	Blower #1. System Fail	DI	PLC-H	Off	Fail		Network			
XW	1210	XW-1210	Blower #1. System Warnig	DI	PLC-H	Off	Warning		Network			
SI	1210	SI-1210	Blower #1. Speed Indication	AI	PLC-H	0	100	%	Network			
MC	1210	MC-1210	Blower #1. Start/Stop	DO	PLC-H	Stop	Start		Network			
SC	1210	SC-1210	Blower #1. Speed Control	AO	PLC-H	0	100	%	Network			
Aerobic Digester Tank #2 Level - 12-A-L-2												
LE/LIT	1203	LI-1203	Aerobic Digester Tank 2. Level	AI	PLC-H	0	TBD	FT	1			
Aerobic Digester Tank #2 Hi Level - 12-AD-LS-2												
LSH	1204	LH-1204	Aerobic Digester Tank 2. Hi Level	AI	PLC-H	Off	Hi Lvl			1		
Aerobic Digester Tank #2 DO 3 - 12-AD-DO-3												
AE/AIT	1205A	AI-1205A	Aerobic Digester Tank 2 DO #3	AI	PLC-H	0	10	mg/L	1			
Aerobic Digester Tank #4 DO - 12-AD-DO-4												

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AE/AIT	1205B	AI-1205B	Aerobic Digester Tank 2 DO #4	AI	PLC-H	0	10	mg/L	1			
Aerobic Digester Tank 2 Air Pressure - 12-AD-PT-2												
PIT	1237	PI-1237	Aerobic Digester Tk 2 Air Supply Press	AI	PLC-H	0	20	PSI	1			
Aerobic Digester Blower #2 Valve 2 12-AD-V-2												
ZL	1220	ZL-1220	Digester Blower #1 Air Valve 2. Closed	DI	PLC-H	Off	Open			1		
ZH	1220	ZH-1220	Digester Blower #1 Air Valve 2. Open	DI	PLC-H	Off	Close			1		
ZI	1220	ZI-1220	Digester Blower #1 Air Valve 2 Indication	AI	PLC-H	0	100		1			
ZC	1220	ZC-1220	Digester Blower #1 Air Valve 2 Control	AO	PLC-H	0	100				1	
Aerobic Digester Blower #2 12-AD-BL-2												
HMS	1220	MA-1220	Blower #2. Remote	DI	PLC-H	Off	Remote		Network			
PDT	1221	PD-1221	Blower #2. Filter Alarm	DI	PLC-H	Off	Filter Alm		Network			
MN	1220	MN-1220	Blower #2. Run Status	DI	PLC-H	Off	Run		Network			
PIT	1222	PI-1222	Blower #2. Suction Pressure	AI	PLC-H	0	TBD	PSI	Network			
TIT	1223	TI-1223	Blower #2. Oil Temperature	AI	PLC-H	0	TBD	F	Network			
PIT	1224	PI-1224	Blower #2. Discharge Pressure	AI	PLC-H	0	TBD	PSI	Network			
TIT	1225	TI-1225	Blower #2. Discharge Temperature	AI	PLC-H	0	TBD	F	Network			
XF	1220	XF-1220	Blower #2. System Fail	DI	PLC-H	Off	Fail		Network			
XW	1220	XW-1220	Blower #2. System Warnig	DI	PLC-H	Off	Warning		Network			
SI	1220	SI-1220	Blower #2. Speed Indication	AI	PLC-H	0	100	%	Network			
MC	1220	MC-1220	Blower #2. Start/Stop	DO	PLC-H	Stop	Start		Network			
SC	1220	SC-1220	Blower #2. Speed Control	AO	PLC-H	0	100	%	Network			
Aerobic Digester Blower #3 Valve 3 12-AD-V-3												
ZL	1230	ZL-1230	WAS Blower #2 Air Valvec3. Closed	DI	PLC-H	Off	Open			1		
ZH	1230	ZH-1230	WAS Blower #2 Air Valve 3. Open	DI	PLC-H	Off	Close			1		
Aerobic Digester Blower #3 12-AD-BL-3												
HMS	1230	MA-1230	Blower #3. Remote	DI	PLC-H	Off	Remote		Network			
PDT	1231	PD-1231	Blower #3. Filter Alarm	DI	PLC-H	Off	Filter Alm		Network			
MN	1230	MN-1230	Blower #3. Run Status	DI	PLC-H	Off	Run		Network			
PIT	1232	PI-1232	Blower #3. Suction Pressure	AI	PLC-H	0	TBD	PSI	Network			
TIT	1233	TI-1233	Blower #3. Oil Temperature	AI	PLC-H	0	TBD	F	Network			
PIT	1234	PI-1234	Blower #3. Discharge Pressure	AI	PLC-H	0	TBD	PSI	Network			
TIT	1235	TI-1235	Blower #3. Discharge Temperature	AI	PLC-H	0	TBD	F	Network			
XF	1230	XF-1230	Blower #3. System Fail	DI	PLC-H	Off	Fail		Network			
XW	1230	XW-1230	Blower #3. System Warnig	DI	PLC-H	Off	Warning		Network			
SI	1230	SI-1230	Blower #3. Speed Indication	AI	PLC-H	0	100	%	Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
MC	1230	MC-1230	Blower #3. Start/Stop	DO	PLC-H	Stop	Start		Network			
SC	1230	SC-1230	Blower #3. Speed Control	AO	PLC-H	0	100	%	Network			
Aerobic Digester Blower Valve 4 12-AD-V-4												
ZL	1216	ZL-1216	Digester Blower #2 Air Valve 1. Closed	DI	PLC-H	Off	Open			1		
ZH	1216	ZH-1216	Digester Blower #2 Air Valve 1. Open	DI	PLC-H	Off	Close			1		
ZI	1216	ZI-1216	Digester Blower #2 Air Valve 1 Indication	AI	PLC-H	0	100		1			
ZC	1216	ZC-1216	Digester Blower #2 Air Valve 1 Control	AO	PLC-H	0	100				1	
Aerobic Digester Blower Valve 5 12-AD-V-5												
ZL	1217	ZL-1217	Digester Blower #2 Air Valve 2. Closed	DI	PLC-H	Off	Open			1		
ZH	1217	ZH-1217	Digester Blower #2 Air Valve 2. Open	DI	PLC-H	Off	Close			1		
ZI	1217	ZI-1217	Digester Blower #2 Air Valve 2 Indication	AI	PLC-H	0	100		1			
ZC	1217	ZC-1217	Digester Blower #2 Air Valve 2 Control	AO	PLC-H	0	100				1	
					PLC-H IO Signals				12	12	4	0

Coordinate Blower Network IO with Blower Manufacturer and other sections of the contract documents

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Compressed Air Mixing Receiver Tank Pressure Transmitter - 14-CA-PT-1												
PIT	1900	PI-1900	Compressed Air Receiver Tank . Pressure	AI	PLC-BNR1	0	150	PSI	Network			
Compressed Air Mixing Receiver Tank Valve - 14-CA-RT-1												
ZH	1900	MF-1900	Compressed Air Receiver Tank Valve. Open	DI	PLC-BNR1	Off	Open		Network			
ZL	1900	YN-1900	Compressed Air Receiver Tank Valve. Close	DI	PLC-BNR1	Off	Close		Network			
ZF	1900	YX-1900	Compressed Air Receiver Tank Valve. Fail	DO	PLC-BNR1	Close	Open		Network			
Compressed Air Mixing Compresssor 1 - 14-CA-M-1												
MN	1901	MN-1901	Compressed Air Compressor 1. Run	DI	PLC-BNR1	Off	Run		Network			
MF	1901	MF-1901	Compressed Air Compressor 1. Fault	DI	PLC-BNR1	Off	Fail		Network			
YN	1901	YN-1901	Compressed Air Compressor 1. Load	DI	PLC-BNR1	Off	Load		Network			
YX	1901	YX-1901	Compressed Air Compressor 1. Enable/Disable	DO	PLC-BNR1	Disable	Enable		Network			
Compressed Air Mixing Compresssor 2 - 14-CA-M-2												
MN	1902	MN-1902	Compressed Air Compressor 2. Run	DI	PLC-BNR1	Off	Run		Network			
MF	1902	MF-1902	Compressed Air Compressor 2. Fault	DI	PLC-BNR1	Off	Fail		Network			
YN	1902	YN-1902	Compressed Air Compressor 2. Load	DI	PLC-BNR1	Off	Load		Network			
YX	1902	YX-1902	Compressed Air Compressor 2. Enable/Disable	DO	PLC-BNR1	Disable	Enable		Network			
Compressed Air Mixing Valve Module 1 - 14-CA-VM-1												
ZC	1911	ZC-1911	Compressed Air VM-1. Valve 1	DO	PLC-BNR1	Close	Open		Network			
PIT	1911	PIT-1911	Compressed Air VM-1. Valve 1	AI	PLC-BNR1	Close	Open		Network			
ZC	1912	ZC-1912	Compressed Air VM-1. Valve 2	DO	PLC-BNR1	Close	Open		Network			
PIT	1912	PIT-1912	Compressed Air VM-1. Valve 2	AI	PLC-BNR1	Close	Open		Network			
ZC	1913	ZC-1913	Compressed Air VM-1. Valve 3	DO	PLC-BNR1	Close	Open		Network			
PIT	1913	PIT-1913	Compressed Air VM-1. Valve 3	AI	PLC-BNR1	Close	Open		Network			
ZC	1914	ZC-1914	Compressed Air VM-1. Valve 4	DO	PLC-BNR1	Close	Open		Network			
PIT	1914	PIT-1914	Compressed Air VM-1. Valve 4	AI	PLC-BNR1	Close	Open		Network			
ZC	1915	ZC-1915	Compressed Air VM-1. Valve 5	DO	PLC-BNR1	Close	Open		Network			
PIT	1915	PIT-1915	Compressed Air VM-1. Valve 5	AI	PLC-BNR1	Close	Open		Network			
ZC	1916	ZC-1916	Compressed Air VM-1. Valve 6	DO	PLC-BNR1	Close	Open		Network			
PIT	1916	PIT-1916	Compressed Air VM-1. Valve 6	AI	PLC-BNR1	Close	Open		Network			
Compressed Air Mixing Valve Module 2 - 14-CA-VM-2												
ZC	1921	ZC-1921	Compressed Air VM-2. Valve 1	DO	PLC-BNR1	Close	Open		Network			
PIT	1921	PIT-1921	Compressed Air VM-2. Valve 1	AI	PLC-BNR1	Close	Open		Network			
ZC	1922	ZC-1922	Compressed Air VM-2. Valve 2	DO	PLC-BNR1	Close	Open		Network			
PIT	1922	PIT-1922	Compressed Air VM-2. Valve 2	AI	PLC-BNR1	Close	Open		Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZC	1923	ZC-1923	Compressed Air VM-2. Valve 3	DO	PLC-BNR1	Close	Open		Network			
PIT	1923	PIT-1923	Compressed Air VM-2. Valve 3	AI	PLC-BNR1	Close	Open		Network			
Compressed Air Mixing Valve Module 3 - 14-CA-VM-3												
ZC	1931	ZC-1931	Compressed Air VM-3. Valve 1	DO	PLC-BNR1	Close	Open		Network			
PIT	1931	PIT-1931	Compressed Air VM-3. Valve 1	AI	PLC-BNR1	Close	Open		Network			
ZC	1932	ZC-1932	Compressed Air VM-3. Valve 2	DO	PLC-BNR1	Close	Open		Network			
PIT	1932	PIT-1932	Compressed Air VM-3. Valve 2	AI	PLC-BNR1	Close	Open		Network			
ZC	1933	ZC-1933	Compressed Air VM-3. Valve 3	DO	PLC-BNR1	Close	Open		Network			
PIT	1933	PIT-1933	Compressed Air VM-3. Valve 3	AI	PLC-BNR1	Close	Open		Network			
ZC	1934	ZC-1934	Compressed Air VM-3. Valve 4	DO	PLC-BNR1	Close	Open		Network			
PIT	1934	PIT-1934	Compressed Air VM-3. Valve 4	AI	PLC-BNR1	Close	Open		Network			
ZC	1935	ZC-1935	Compressed Air VM-3. Valve 5	DO	PLC-BNR1	Close	Open		Network			
PIT	1935	PIT-1935	Compressed Air VM-3. Valve 5	AI	PLC-BNR1	Close	Open		Network			
ZC	1936	ZC-1936	Compressed Air VM-3. Valve 6	DO	PLC-BNR1	Close	Open		Network			
PIT	1936	PIT-1936	Compressed Air VM-3. Valve 6	AI	PLC-BNR1	Close	Open		Network			
ZC	1937	ZC-1937	Compressed Air VM-3. Valve 7	DO	PLC-BNR1	Close	Open		Network			
PIT	1937	PIT-1937	Compressed Air VM-3. Valve 7	AI	PLC-BNR1	Close	Open		Network			
ZC	1938	ZC-1938	Compressed Air VM-3. Valve 8	DO	PLC-BNR1	Close	Open		Network			
PIT	1938	PIT-1938	Compressed Air VM-3. Valve 8	AI	PLC-BNR1	Close	Open		Network			
ZC	1939	ZC-1939	Compressed Air VM-3. Valve 9	DO	PLC-BNR1	Close	Open		Network			
PIT	1939	PIT-1939	Compressed Air VM-3. Valve 9	AI	PLC-BNR1	Close	Open		Network			
ZC	1940	ZC-1940	Compressed Air VM-3. Valve 10	DO	PLC-BNR1	Close	Open		Network			
PIT	1940	PIT-1940	Compressed Air VM-3. Valve 10	AI	PLC-BNR1	Close	Open		Network			
ZC	1941	ZC-1941	Compressed Air VM-3. Valve 11	DO	PLC-BNR1	Close	Open		Network			
PIT	1941	PIT-1941	Compressed Air VM-3. Valve 11	AI	PLC-BNR1	Close	Open		Network			
ZC	1942	ZC-1942	Compressed Air VM-3. Valve 12	DO	PLC-BNR1	Close	Open		Network			
PIT	1942	PIT-1942	Compressed Air VM-3. Valve 12	AI	PLC-BNR1	Close	Open		Network			
Compressed Air Mixing Valve Module 4 - 14-CA-VM-4												
ZC	1951	ZC-1951	Compressed Air VM-4. Valve 1	DO	PLC-BNR1	Close	Open		Network			
PIT	1951	PIT-1951	Compressed Air VM-4. Valve 1	AI	PLC-BNR1	Close	Open		Network			
ZC	1952	ZC-1952	Compressed Air VM-4. Valve 2	DO	PLC-BNR1	Close	Open		Network			
PIT	1952	PIT-1952	Compressed Air VM-4. Valve 2	AI	PLC-BNR1	Close	Open		Network			
ZC	1953	ZC-1953	Compressed Air VM-4. Valve 3	DO	PLC-BNR1	Close	Open		Network			
PIT	1953	PIT-1953	Compressed Air VM-4. Valve 3	AI	PLC-BNR1	Close	Open		Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZC	1954	ZC-1954	Compressed Air VM-4. Valve 4	DO	PLC-BNR1	Close	Open		Network			
PIT	1954	PIT-1954	Compressed Air VM-4. Valve 4	AI	PLC-BNR1	Close	Open		Network			
ZC	1955	ZC-1955	Compressed Air VM-4. Valve 5	DO	PLC-BNR1	Close	Open		Network			
PIT	1955	PIT-1955	Compressed Air VM-4. Valve 5	AI	PLC-BNR1	Close	Open		Network			
ZC	1956	ZC-1956	Compressed Air VM-4. Valve 6	DO	PLC-BNR1	Close	Open		Network			
PIT	1956	PIT-1956	Compressed Air VM-4. Valve 6	AI	PLC-BNR1	Close	Open		Network			
ZC	1957	ZC-1957	Compressed Air VM-4. Valve 7	DO	PLC-BNR1	Close	Open		Network			
PIT	1957	PIT-1957	Compressed Air VM-4. Valve 7	AI	PLC-BNR1	Close	Open		Network			
ZC	1958	ZC-1958	Compressed Air VM-4. Valve 8	DO	PLC-BNR1	Close	Open		Network			
PIT	1958	PIT-1958	Compressed Air VM-4. Valve 8	AI	PLC-BNR1	Close	Open		Network			
ZC	1959	ZC-1959	Compressed Air VM-4. Valve 9	DO	PLC-BNR1	Close	Open		Network			
PIT	1959	PIT-1959	Compressed Air VM-4. Valve 9	AI	PLC-BNR1	Close	Open		Network			
ZC	1960	ZC-1960	Compressed Air VM-4. Valve 10	DO	PLC-BNR1	Close	Open		Network			
PIT	1960	PIT-1960	Compressed Air VM-4. Valve 10	AI	PLC-BNR1	Close	Open		Network			
ZC	1961	ZC-1961	Compressed Air VM-4. Valve 11	DO	PLC-BNR1	Close	Open		Network			
PIT	1961	PIT-1961	Compressed Air VM-4. Valve 11	AI	PLC-BNR1	Close	Open		Network			
ZC	1962	ZC-1962	Compressed Air VM-4. Valve 12	DO	PLC-BNR1	Close	Open		Network			
PIT	1962	PIT-1962	Compressed Air VM-4. Valve 12	AI	PLC-BNR1	Close	Open		Network			
					PLC-BNR1 Signals				0	0	0	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
RDT # 1 Influent Flow 15-RDT-F-1												
FE/FIT	1300	FI-1300	RDT # 1 Flow	AI	PLC-DW	0	TBD	GPM	1			
RDT # 1 System - 15-RDT-1												
MA	1310	MA-1310	RDT #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1310	MN-1310	RDT #1. Run	DI	PLC-DW	Off	Run			1		
MF	1310	MF-1310	RDT #1. Fail	DI	PLC-DW	Off	Fail			1		
SI	1310	SI-1310	RDT #1. Speed Indication	AI	PLC-DW	0	100	%	1			
MC	1310	MC-1310	RDT #1. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1310	SC-1310	RDT #1. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1311	MC-1311	RDT #1. Booster Pump Start/Stop	DO	PLC-DW	Stop	Start					1
MA	1311	MA-1311	RDT #1. Booster Pump Remote	DI	PLC-DW	Off	Remote			1		
MN	1311	MN-1311	RDT #1. Booster Pump Run	DI	PLC-DW	Off	Run			1		
XF	1311	XF-1311	RDT #1. Booster Pump Fail	DI	PLC-DW	Off	Fail			1		
MC	1312	MC-1312	RDT #1. Poly Pump Remote	DI	PLC-DW	Off	Remote			1		
MC	1312	MC-1312	RDT #1. Poly Pump Start/Stop	DO	PLC-DW	Stop	Start					1
SI	1312	SI-1312	RDT #1. Poly Pump Speed Control	AI	PLC-DW	0	100	%	1			
SC	1312	SC-1312	RDT #1. Poly Pump Speed Indication	AO	PLC-DW	0	100	%			1	
XN	1312	XN-1312	RDT #1. Poly Pump Run	DI	PLC-DW	Off	Run			1		
XF	1312	XF-1312	RDT #1. Poly Pump Fail	DI	PLC-DW	Off	Fail			1		
RDT # 2 Influent Flow 15-RDT-F-2												
FE/FIT	1301	FI-1301	RDT # 2 Flow	AI	PLC-DW	0	TBD	GPM	1			
RDT # 2 System - 15-RDT-2												
MA	1320	MA-1320	RDT #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1320	MN-1320	RDT #2. Run	DI	PLC-DW	Off	Run			1		
MF	1320	MF-1320	RDT #2. Fail	DI	PLC-DW	Off	Fail			1		
SI	1320	SI-1320	RDT #2. Speed Indication	AI	PLC-DW	0	100	%	1			
MC	1320	MC-1320	RDT #2. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1320	SC-1320	RDT #2. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1321	MC-1321	RDT #2. Booster Pump Start/Stop	DO	PLC-DW	Stop	Start					1
MA	1321	MA-1321	RDT #2. Booster Pump Remote	DI	PLC-DW	Off	Remote			1		
MN	1321	MN-1321	RDT #2. Booster Pump Run	DI	PLC-DW	Off	Run			1		
XF	1321	XF-1321	RDT #2. Booster Pump Fail	DI	PLC-DW	Off	Fail			1		
MC	1322	MC-1322	RDT #2. Poly Pump Remote	DI	PLC-DW	Off	Remote			1		
MC	1322	MC-1322	RDT #2. Poly Pump Start/Stop	DO	PLC-DW	Stop	Start					1

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
SI	1322	SI-1322	RDT #2. Poly Pump Speed Control	AI	PLC-DW	0	100	%	1			
SC	1322	SC-1322	RDT #2. Poly Pump Speed Indication	AO	PLC-DW	0	100	%			1	
XN	1322	XN-1322	RDT #2. Poly Pump Run	DI	PLC-DW	Off	Run			1		
XF	1322	XF-1322	RDT #2. Poly Pump Fail	DI	PLC-DW	Off	Fail			1		
					PLC-DW	IO Signals			6	18	4	6

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
RDT Polymer Tank #1 Level - 15-TK-L-1												
LE/LIT	1350	LI-1350	PolymerTank #1. Level	AI	PLC-DW	0	TBD	FT	1			
RDT Polymer Tank Recirculation Pump - 15-TK-P-4												
HMS	1360	MA-1355	Poly Recirc Pump #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1360	MN-1355	Poly Recirc Pump #1. Run Status	DI	PLC-DW	Off	Run			1		
MF	1360	MF-1355	Poly Recirc Pump #1. Fail	DI	PLC-DW	Off	Fail			1		
MC	1360	MC-1355	Poly Recirc Pump #1. Control Motor	DO	PLC-DW	Stop	Start					1
RDT Poly Skid Pump #1 - 15-POLY-P-1												
HMS	1370	MA-1370	Poly Pump #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1370	MN-1370	Poly Pump #1. Run Status	DI	PLC-DW	Off	Run			1		
MF	1370	MF-1370	Poly Pump #1. Loss of Water	DI	PLC-DW	Off	Fail			1		
MF	1370	MF-1370	Poly Pump #1. Loss of Polymer	DI	PLC-DW	Off	Fail			1		
SI	1370	SI-1370	Poly Pump #1. Speed Indication	AI	PLC-DW	0	100	%	1			
SC	1370	SC-1370	Poly Pump #1. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1370	MC-1370	Poly Pump #1. Control Motor	DO	PLC-DW	Stop	Start					1
RDT Poly Skid Pump #2 - 15-POLY-P-2												
HMS	1380	MA-1380	Poly Pump #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1380	MN-1380	Poly Pump #2. Run Status	DI	PLC-DW	Off	Run			1		
MF	1380	MF-1380	Poly Pump #2. Loss of Water	DI	PLC-DW	Off	Fail			1		
MF	1380	MF-1380	Poly Pump #2. Loss of Polymer	DI	PLC-DW	Off	Fail			1		
SI	1380	SI-1380	Poly Pump #2. Speed Indication	AI	PLC-DW	0	100	%	1			
SC	1380	SC-1380	Poly Pump #2. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1380	MC-1380	Poly Pump #2. Control Motor	DO	PLC-DW	Stop	Start					1
RDT Poly Skid Pump #3 - 15-POLY-P-3												
HMS	1390	MA-1390	Poly Pump #3. Remote	DI	PLC-DW	Off	Remote			1		
MN	1390	MN-1390	Poly Pump #3. Run Status	DI	PLC-DW	Off	Run			1		
MF	1390	MF-1390	Poly Pump #3. Loss of Water	DI	PLC-DW	Off	Fail			1		
MF	1390	MF-1390	Poly Pump #3. Loss of Polymer	DI	PLC-DW	Off	Fail			1		
SI	1390	SI-1390	Poly Pump #3. Speed Indication	AI	PLC-DW	0	100	%	1			
SC	1390	SC-1390	Poly Pump #3. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1390	MC-1390	Poly Pump #3. Control Motor	DO	PLC-DW	Stop	Start					1
					PLC-DW IO Signals				4	15	3	4

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BFP Feed Pumps Flow 1 Discharge - 15-BFP-F-1												
FE/FEI	1450	FI-1450	BFP Feed Pump Flow 1	AI	PLC-DW	0	TBD	GPM	1			
BFP Feed Pumps Flow 2 Discharge - 15-BFP-F-2												
FE/FEI	1460	FI-1460	BFP Feed Pump Flow 2	AI	PLC-DW	0	TBD	GPM	1			
BFP Feed Pump #1 - 15-BFP-P-1												
SI	1410	SI-1410	BFP Feed Pump #1. Speed Ind	AI	PLC-DW	0	100	%	1			
HMS	1410	MA-1410	BFP Feed Pump #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1410	MN-1410	BFP Feed Pump #1. Run Status	DI	PLC-DW	Off	Run			1		
MF	1410	MF-1410	BFP Feed Pump #1. Fail	DI	PLC-DW	Off	Lockout			1		
MO	1410	MO-1410	BFP Feed Pump #1. Hi Temp	DI	PLC-DW	Off	Hi Temp			1		
YF	1410	YF-1410	BFP Feed Pump #1. Hi Press	DI	PLC-DW	Off	Hi Press			1		
MF	1410	MF-1410	BFP Feed Pump #1. VFD Fail	DI	PLC-DW	Off	Fail			1		
MC	1410	MC-1410	BFP Feed Pump #1. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1410	SC-1410	BFP Feed Pump #1. Speed Ctr	AO	PLC-DW	0	100	%			1	
BFP Feed Pump #1 Discharge Pressure- 15-BFP-PT-1												
PIT	1412	PI-1412	BFP Feed Pump #1. Disch Press	AI	PLC-DW	0	TBD	PSI	1			
BFP Feed Pump #2 - 15-BFP-P-2												
SI	1420	SI-1420	BFP Feed Pump #2. Speed Ind	AI	PLC-DW	0	100	%	1			
HMS	1420	MA-1420	BFP Feed Pump #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1420	MN-1420	BFP Feed Pump #2. Run Status	DI	PLC-DW	Off	Run			1		
MF	1420	MF-1420	BFP Feed Pump #2. Fail	DI	PLC-DW	Off	Lockout			1		
MO	1420	MO-1420	BFP Feed Pump #2. Hi Temp	DI	PLC-DW	Off	Hi Temp			1		
YF	1420	YF-1420	BFP Feed Pump #2. Hi Press	DI	PLC-DW	Off	Hi Press			1		
MF	1420	MF-1420	BFP Feed Pump #2. VFD Fail	DI	PLC-DW	Off	Fail			1		
MC	1420	MC-1420	BFP Feed Pump #2. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1420	SC-1420	BFP Feed Pump #2. Speed Ctr	AO	PLC-DW	0	100	%			1	
BFP Feed Pump #2 Discharge Pressure- 15-BFP-PT-2												
PIT	1422	PI-1422	BFP Feed Pump #2. Disch Press	AI	PLC-DW	0	TBD	PSI	1			
BFP Feed Pump #3 - 15-BFP-P-3												
SI	1430	SI-1430	BFP Feed Pump #3. Speed Ind	AI	PLC-DW	0	100	%	1			
HMS	1430	MA-1430	BFP Feed Pump #3. Remote	DI	PLC-DW	Off	Remote			1		
MN	1430	MN-1430	BFP Feed Pump #3. Run Status	DI	PLC-DW	Off	Run			1		
MF	1430	MF-1430	BFP Feed Pump #3. Fail	DI	PLC-DW	Off	Lockout			1		
MO	1430	MO-1430	BFP Feed Pump #3. Hi Temp	DI	PLC-DW	Off	Hi Temp			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
YF	1430	YF-1430	BFP Feed Pump #3. Hi Press	DI	PLC-DW	Off	Hi Press			1		
MF	1430	MF-1430	BFP Feed Pump #3. VFD Fail	DI	PLC-DW	Off	Fail			1		
MC	1430	MC-1430	BFP Feed Pump #3. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1430	SC-1430	BFP Feed Pump #3. Speed Ctr	AO	PLC-DW	0	100	%			1	
BFP Feed Pump #3 Discharge Pressure- 15-BFP-PT-3												
PIT	1432	PI-1432	BFP Feed Pump #3. Disch Press	AI	PLC-DW	0	TBD	PSI	1			
					PLC-DW IO Signals				8	18	3	3

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BFP #1 Valve 1 - 15-BFP-V-1												
HMS	1561	MA-1561	BFP #1 Valve. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1561	MN-1561	BFP #1 Valve. Close	DI	PLC-DW	Off	Close			1		
ZH	1561	MF-1561	BFP #1 Valve. Open	DI	PLC-DW	Off	Open			1		
ZF	1561	MC-1561	BFP #1 Valve. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1561	ZO-1561	BFP #1 Valve. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1561	ZC-1561	BFP #1 Valve. Valve Closed	DO	PLC-DW	Off	Close					1
BFP # 1 System - 15-BFP-1												
MA	1510	MA-1510	BFP #1. Remote	DI	PLC-DW	Off	Remote		Network			
MN	1510	MN-1510	BFP #1. Run	DI	PLC-DW	Off	Run		Network			
MF	1510	MF-1510	BFP #1. Fail	DI	PLC-DW	Off	Fail		Network			
SI	1510	SI-1510	BFP #1. Speed Indication	AI	PLC-DW	0	100	%	Network			
MC	1510	MC-1510	BFP #1. Motor Control	DO	PLC-DW	Stop	Start		Network			
SC	1510	SC-1510	BFP #1. Speed Control	AO	PLC-DW	0	100	%	Network			
YN	1510	YN-1200	BFP #1. Permissive	DO	PLC-DW	Off	Permssive		Network			
MC	1510	MC-1510	BFP #1. Water Booster Pump Start/Stop	DI	PLC-DW	Stop	Start		Network			
XN	1510	XN-1510	BFP #1. Water Booster Pump Run	DO	PLC-DW	Off	Run		Network			
XF	1510	XF-1510	BFP #1. Water Booter Pump Fail	DO	PLC-DW	Off	Fail		Network			
MC	1510	MC-1510	BFP #1. Water Valve Open/Close	DI	PLC-DW	Close	Open		Network			
SI	1510	SI-1510	BFP #1. Water Valve Open	DO	PLC-DW	Off	Open		Network			
SC	1510	SC-1510	BFP #1. Water Valve Close	DO	PLC-DW	Off	Close		Network			
XN	1510	XN-1510	BFP #1. Hydraulic Pump Run	DO	PLC-DW	Off	Run		Network			
XF	1510	XF-1510	BFP #1. Hydraulic Pump Fail	DO	PLC-DW	Off	Fail		Network			
BFP #2 Valve 2 - 15-BFP-V-2												
HMS	1562	MA-1571	BFP #2 Valve. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1562	MN-1571	BFP #2 Valve. Close	DI	PLC-DW	Off	Close			1		
ZH	1562	MF-1571	BFP #2 Valve. Open	DI	PLC-DW	Off	Open			1		
ZF	1562	MC-1571	BFP #2 Valve. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1562	ZO-1571	BFP #2 Valve. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1562	ZC-1571	BFP #2 Valve. Valve Closed	DO	PLC-DW	Off	Close					1
BFP # 2 System - 15-BFP-2												
MA	1520	MA-1520	BFP #2. Remote	DI	PLC-DW	Off	Remote		Network			
MN	1520	MN-1520	BFP #2. Run	DI	PLC-DW	Off	Run		Network			
MF	1520	MF-1520	BFP #2. Fail	DI	PLC-DW	Off	Fail		Network			

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
SI	1520	SI-1520	BFP #2. Speed Indication	AI	PLC-DW	0	100	%	Network			
MC	1520	MC-1520	BFP #2. Motor Control	DO	PLC-DW	Stop	Start		Network			
SC	1520	SC-1520	BFP #2. Speed Control	AO	PLC-DW	0	100	%	Network			
YN	1520	YN-1200	BFP #2. Permissive	DO	PLC-DW	Off	Permssive		Network			
MC	1520	MC-1520	BFP #2. Water Booster Pump Start/Stop	DI	PLC-DW	Stop	Start		Network			
XN	1520	XN-1520	BFP #2. Water Booster Pump Run	DO	PLC-DW	Off	Run		Network			
XF	1520	XF-1520	BFP #2. Water Booter Pump Fail	DO	PLC-DW	Off	Fail		Network			
MC	1520	MC-1520	BFP #2. Water Valve Open/Close	DI	PLC-DW	Close	Open		Network			
SI	1520	SI-1520	BFP #2. Water Valve Open	DO	PLC-DW	Off	Open		Network			
SC	1520	SC-1520	BFP #2. Water Valve Close	DO	PLC-DW	Off	Close		Network			
XN	1520	XN-1520	BFP #2. Hydraulic Pump Run	DO	PLC-DW	Off	Run		Network			
XF	1520	XF-1520	BFP #2. Hydraulic Pump Fail	DO	PLC-DW	Off	Fail		Network			
BFP Water Booster Pump 1 - 15-BFP-BP-1												
HMS	1530	MA-1530	BFP Water Booster Pump #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1530	MN-1530	BFP Water Booster Pump #1. Run Status	DI	PLC-DW	Off	Run			1		
MF	1530	MF-1530	BFP Water Booster Pump #1. Fail	DI	PLC-DW	Off	Fail			1		
MC	1530	MC-1530	BFP Water Booster Pump #1. Control Motor	DO	PLC-DW	Stop	Start					1
BFP Water Booster Pump 2 - 15-BFP-BP-2												
HMS	1540	MA-1540	BFP Water Booster Pump #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1540	MN-1540	BFP Water Booster Pump #2. Run Status	DI	PLC-DW	Off	Run			1		
MF	1540	MF-1540	BFP Water Booster Pump #2. Fail	DI	PLC-DW	Off	Fail			1		
MC	1540	MC-1540	BFP Water Booster Pump #2. Control Motor	DO	PLC-DW	Stop	Start					1
BFP Water Booster Pump 3 - 15-BFP-BP-3												
HMS	1550	MA-1550	BFP Water Booster Pump #3. Remote	DI	PLC-DW	Off	Remote			1		
MN	1550	MN-1550	BFP Water Booster Pump #3. Run Status	DI	PLC-DW	Off	Run			1		
MF	1550	MF-1550	BFP Water Booster Pump #3. Fail	DI	PLC-DW	Off	Fail			1		
MC	1550	MC-1550		DO	PLC-DW	Stop	Start					1
BFP Water Valve 1 - 15-BFP-V-3												
HMS	1560	MA-1560	BFP Water Valve #1. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1560	MN-1560	BFP Water Valve #1. Close	DI	PLC-DW	Off	Close			1		
ZH	1560	MF-1560	BFP Water Valve #1. Open	DI	PLC-DW	Off	Open			1		
ZF	1560	MC-1560	BFP Water Valve #1. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1560	ZO-1560	BFP Water Valve #1. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1560	ZC-1560	BFP Water Valve #1. Valve Closed	DO	PLC-DW	Off	Close					1

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BFP Water Valve 2 - 15-BFP-V-4												
HMS	1570	MA-1570	BFP Water Valve #2. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1570	MN-1570	BFP Water Valve #2. Close	DI	PLC-DW	Off	Close			1		
ZH	1570	MF-1570	BFP Water Valve #2. Open	DI	PLC-DW	Off	Open			1		
ZF	1570	MC-1570	BFP Water Valve #2. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1570	ZO-1570	BFP Water Valve #2. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1570	ZC-1570	BFP Water Valve #2. Valve Closed	DO	PLC-DW	Off	Close					1
Dewatered Sludge Pump #1 - 15-DS-P-1												
MN	1580	MN-1580	Dewatered Sludge Pump #1. Run	DI	PLC-DW	Off	Run			1		
MF	1580	MF-1580	Dewatered Sludge Pump #1. Fail	DI	PLC-DW	Off	Fail			1		
HA	1580	HA-1580	Dewatered Sludge Pump #1. Auto	DI	PLC-DW	Manual	Auto			1		
MC	1580	MC-1580	Dewatered Sludge Pump #1. Start/Stop	DO	PLC-DW	Stop	Start					1
TIC	1580	TIC-1580	Dewatered Sludge Pump #1. Hi Temp	DO	PLC-DW	Interlock	Off					1
TE	1580	TE-1580	Dewatered Sludge Pump #1. Temperature sensor	AI	PLC-DW	0	250	F	1			
SI	1580	SI-1580	Dewatered Sludge Pump #1. Speed Ind	AI	PLC-DW	0	100	%	1			
SC	1580	SC-1580	Dewatered Sludge Pump #1. Speed Control	AO	PLC-DW	0	100	%			1	
Dewatered Sludge Pump #1 Pressure - 15-DS-PT-1												
PIT	1581	PI-1581	Dewatered Sludge Pump #1. Pressure	AI	PLC-DW	0	100	PSI	1			
Dewatered Sludge Pump #2 - 15-DS-P-2												
MN	1590	MN-1590	Dewatered Sludge Pump #2. Run	DI	PLC-DW	Off	Run			1		
MF	1590	MF-1590	Dewatered Sludge Pump #2. Fail	DI	PLC-DW	Off	Fail			1		
HA	1590	HA-1590	Dewatered Sludge Pump #2. Auto	DI	PLC-DW	Manual	Auto			1		
MC	1590	MC-1590	Dewatered Sludge Pump #2. Start/Stop	DO	PLC-DW	Stop	Start					1
TIC	1590	TIC-1590	Dewatered Sludge Pump #2. Hi Temp	DO	PLC-DW	Interlock	Off					1
TE	1590	TE-1590	Dewatered Sludge Pump #2. Temperature sensor	AI	PLC-DW	0	250	F	1			
SI	1590	SI-1590	Dewatered Sludge Pump #2. Speed Ind	AI	PLC-DW	0	100	%	1			
SC	1590	SC-1590	Dewatered Sludge Pump #2. Speed Control	AO	PLC-DW	0	100	%			1	
Dewatered Sludge Pump #1 Inlet Pressure - 15-DS-PT-2												
PIT	1591	PI-1591	Dewatered Sludge Pump #2. Inlet Pressure	AI	PLC-DW	0	100	PSI	1			
Dewater Sludge Pump 1 Valve 1 - 15-DS1-V-1												
MA	1585	MA-1585	DS1 Valve 1 Remote	DI	RIO-PW	Off	Remote			1		
ZH	1585	ZH-1585	DS1 Valve 1 Open	DI	RIO-PW	Off	Open			1		
ZL	1585	ZL-1585	DS1 Valve 1 Close	DI	RIO-PW	Off	Close			1		
ZF	1585	ZF-1585	DS1 Valve 1 Fail	DI	RIO-PW	Off	Fail			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZO	1585	MN-1585	DS1 Valve 1 Open	DO	RIO-PW	Off	Open					1
ZC	1585	MF-1585	DS1 Valve 1 Close	DO	RIO-PW	Off	Close					1
Dewater Sludge Pump 1 Valve 2 - 15-DS1-V-2												
MA	1586	MA-1586	DS1 Valve 2 Remote	DI	RIO-PW	Off	Remote			1		
ZH	1586	ZH-1586	DS1 Valve 2 Open	DI	RIO-PW	Off	Open			1		
ZL	1586	ZL-1586	DS1 Valve 2 Close	DI	RIO-PW	Off	Close			1		
ZF	1586	ZF-1586	DS1 Valve 2 Fail	DI	RIO-PW	Off	Fail			1		
ZO	1586	MN-1586	DS1 Valve 2 Open	DO	RIO-PW	Off	Open					1
ZC	1586	MF-1586	DS1 Valve 2 Close	DO	RIO-PW	Off	Close					1
Dewater Sludge Pump 2 Valve 1 - 15-DS2-V-1												
MA	1595	MA-1595	DS2 Valve 1 Remote	DI	RIO-PW	Off	Remote			1		
ZH	1595	ZH-1595	DS2 Valve 1 Open	DI	RIO-PW	Off	Open			1		
ZL	1595	ZL-1595	DS2 Valve 1 Close	DI	RIO-PW	Off	Close			1		
ZF	1595	ZF-1595	DS2 Valve 1 Fail	DI	RIO-PW	Off	Fail			1		
ZO	1595	MN-1595	DS2 Valve 1 Open	DO	RIO-PW	Off	Open					1
ZC	1595	MF-1595	DS2 Valve 1 Close	DO	RIO-PW	Off	Close					1
Dewater Sludge Pump 2 Valve 2 - 15-DS2-V-2												
MA	1596	MA-1596	DS2 Valve 2 Remote	DI	RIO-PW	Off	Remote			1		
ZH	1596	ZH-1596	DS2 Valve 2 Open	DI	RIO-PW	Off	Open			1		
ZL	1596	ZL-1596	DS2 Valve 2 Close	DI	RIO-PW	Off	Close			1		
ZF	1596	ZF-1596	DS2 Valve 2 Fail	DI	RIO-PW	Off	Fail			1		
ZO	1596	MN-1596	DS2 Valve 2 Open	DO	RIO-PW	Off	Open					1
ZC	1596	MF-1596	DS2 Valve 2 Close	DO	RIO-PW	Off	Close					1
Hopper Plant Water Valve - 15-PW-M-1												
MA	1599	MA-1599	PW Valve Remote	DI	RIO-PW	Off	Remote			1		
ZH	1599	ZH-1599	PW Valve Open	DI	RIO-PW	Off	Open			1		
ZL	1599	ZL-1599	PW Valve Close	DI	RIO-PW	Off	Close			1		
ZF	1599	ZF-1599	PW Valve Fail	DI	RIO-PW	Off	Fail			1		
ZO	1599	MN-1599	PW Valve Open	DO	RIO-PW	Off	Open					1
ZC	1599	MF-1599	PW Valve Close	DO	RIO-PW	Off	Close					1
			PLC-DW IO Signals						6	51	2	25

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BFP Polymer Tank #2 Level - 15-TK-L-2												
LE/LIT	1600	LI-1600	PolymerTank #1. Level	AI	PLC-DW	0	TBD	FT	1			
RDT Polymer Tank Recirculation Pump - 15-TK-P-4												
HMS	1605	MA-1605	Poly Recirc Pump #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1605	MN-1605	Poly Recirc Pump #2. Run Status	DI	PLC-DW	Off	Run			1		
MF	1605	MF-1605	Poly Recirc Pump #2. Fail	DI	PLC-DW	Off	Fail			1		
MC	1605	MC-1605	Poly Recirc Pump #2. Control Motor	DO	PLC-DW	Stop	Start					1
RDT Poly Skid Pump #1 - 15-POLY-P-1												
HMS	1610	MA-1610	Poly Pump #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1610	MN-1610	Poly Pump #1. Run Status	DI	PLC-DW	Off	Run			1		
MF	1610	MF-1610	Poly Pump #1. Loss of Water	DI	PLC-DW	Off	Fail			1		
MF	1610	MF-1610	Poly Pump #1. Loss of Polymer	DI	PLC-DW	Off	Fail			1		
SI	1610	SI-1610	Poly Pump #1. Speed Indication	AI	PLC-DW	0	100	%	1			
SC	1610	SC-1610	Poly Pump #1. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1610	MC-1610	Poly Pump #1. Control Motor	DO	PLC-DW	Stop	Start					1
RDT Poly Skid Pump #2 - 15-POLY-P-2												
HMS	1620	MA-1620	Poly Pump #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1620	MN-1620	Poly Pump #2. Run Status	DI	PLC-DW	Off	Run			1		
MF	1620	MF-1620	Poly Pump #2. Loss of Water	DI	PLC-DW	Off	Fail			1		
MF	1620	MF-1620	Poly Pump #2. Loss of Polymer	DI	PLC-DW	Off	Fail			1		
SI	1620	SI-1620	Poly Pump #2. Speed Indication	AI	PLC-DW	0	100	%	1			
SC	1620	SC-1620	Poly Pump #2. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1620	MC-1620	Poly Pump #2. Control Motor	DO	PLC-DW	Stop	Start					1
RDT Poly Skid Pump #3 - 15-POLY-P-3												
HMS	1630	MA-1630	Poly Pump #3. Remote	DI	PLC-DW	Off	Remote			1		
MN	1630	MN-1630	Poly Pump #3. Run Status	DI	PLC-DW	Off	Run			1		
MF	1630	MF-1630	Poly Pump #3. Loss of Water	DI	PLC-DW	Off	Fail			1		
MF	1630	MF-1630	Poly Pump #3. Loss of Polymer	DI	PLC-DW	Off	Fail			1		
SI	1630	SI-1630	Poly Pump #3. Speed Indication	AI	PLC-DW	0	100	%	1			
SC	1630	SC-1630	Poly Pump #3. Speed Control	AO	PLC-DW	0	100	%			1	
MC	1630	MC-1630	Poly Pump #3. Control Motor	DO	PLC-DW	Stop	Start					1
					PLC-DW IO Signals				4	15	3	4

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
BFP Screw Conveyor #1 - 15-BFP-C-1												
HMS	1710	MA-1710	BFP Screw Conveyor 1. Remote	DI	PLC-DW	Off	Comp			1		
MN	1710	MN-1710	BFP Screw Conveyor 1. Run Status	DI	PLC-DW	Off	Run			1		
TH	1710	TH-1710	BFP Screw Conveyor 1. Hi Temp	DI	PLC-DW	Off	Hi Temp			1		
MF	1710	MF-1710	BFP Screw Conveyor 1. Starter Overload	DI	PLC-DW	Off	Fail			1		
YN	1710	YN-1710	BFP Screw Conveyor 1. E-Stop	DI	PLC-DW	Off	Fail			1		
SL	1710	SL-1710	BFP Screw Conveyor 1. Zero Speed	DI	PLC-DW	Off	Alarm			1		
MC	1710	MC-1710	BFP Screw Conveyor 1. Control Motor	DO	PLC-DW	Stop	Start					1
BFP Inclined Screw Conveyor - 15-BFP-C-2												
HMS	1720	MA-1720	BFP Inclined Screw Conveyor 2. Remote	DI	PLC-DW	Off	Comp			1		
MN	1720	MN-1720	BFP Inclined Screw Conveyor 2. Run Status	DI	PLC-DW	Off	Run			1		
TH	1720	TH-1720	BFP Inclined Screw Conveyor 2. Hi Temp	DI	PLC-DW	Off	Hi Temp			1		
MF	1720	MF-1720	BFP Inclined Screw Conveyor 2. Starter Overload	DI	PLC-DW	Off	Fail			1		
YN	1720	YN-1720	BFP Inclined Screw Conveyor 2. E-Stop	DI	PLC-DW	Off	Fail			1		
SL	1720	SL-1720	BFP Inclined Screw Conveyor 2. Zero Speed	DI	PLC-DW	Off	Alarm			1		
MC	1720	MC-1720	BFP Inclined Screw Conveyor 2. Control Motor	DO	PLC-DW	Stop	Start					1
Sludge Conveyor Knife Valve 1 - 15-SC-V-1												
HMS	1721	MA-1721	Sludge Coveyor Valve #1. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1721	MN-1721	Sludge Coveyor Valve #1. Close	DI	PLC-DW	Off	Close			1		
ZH	1721	MF-1721	Sludge Coveyor Valve #1. Open	DI	PLC-DW	Off	Open			1		
ZF	1721	MC-1721	Sludge Coveyor Valve #1. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1721	ZO-1721	Sludge Coveyor Valve #1. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1721	ZC-1721	Sludge Coveyor Valve #1. Valve Closed	DO	PLC-DW	Off	Close					1
Sludge Conveyor Knife Valve 2 - 15-SC-V-2												
HMS	1722	MA-1722	Sludge Coveyor Valve #2. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1722	MN-1722	Sludge Coveyor Valve #2. Close	DI	PLC-DW	Off	Close			1		
ZH	1722	MF-1722	Sludge Coveyor Valve #2. Open	DI	PLC-DW	Off	Open			1		
ZF	1722	MC-1722	Sludge Coveyor Valve #2. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1722	ZO-1722	Sludge Coveyor Valve #2. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1722	ZC-1722	Sludge Coveyor Valve #2. Valve Closed	DO	PLC-DW	Off	Close					1
Sludge Conveyor Knife Valve 3 - 15-SC-V-3												
HMS	1723	MA-1723	Sludge Coveyor Valve #3. Remote	DI	PLC-DW	Off	Remote			1		
ZL	1723	MN-1723	Sludge Coveyor Valve #3. Close	DI	PLC-DW	Off	Close			1		
ZH	1723	MF-1723	Sludge Coveyor Valve #3. Open	DI	PLC-DW	Off	Open			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
ZF	1723	MC-1723	Sludge Coveyor Valve #3. Fail	DI	PLC-DW	Off	Fail			1		
ZO	1723	ZO-1723	Sludge Coveyor Valve #3. Valve Open	DO	PLC-DW	Off	Open					1
ZC	1723	ZC-1723	Sludge Coveyor Valve #3. Valve Closed	DO	PLC-DW	Off	Close					1
					PLC-DW IO Signals				**0**	**24**	**0**	**8**

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
T/D Drain Wetwell Level 15-DP-L-1												
LE/LIT	1750	LI-1750	T/D Drain Wetwell. Level	AI	PLC-DW	0	TBD	FT	1			
T/D Drain Wetwell Hi Level - 15-DP-LS-1												
LSH	1751	LH-1751	T/D Drain Wetwell. Hi Level	DI	PLC-DW	Off	Hi Level			1		
T/D Drain Wetwell Low Level - 15-DP-LS-2												
LSL	1752	LL-1752	T/D Drain Wetwell. Low Level	DI	PLC-DW	Off	Low Level			1		
T/D Drain Wetwell Hatch Switch - 15-DP-ZS-1												
ZS	1753	ZC-1753	T/D Drain Wetwell Hatch. Closed	DI	PLC-DW	Open	Closed			1		
T/D Drain PS Discharge Flow 15-DP-F-1												
FE/FIT	1780	FI-1780	T/D Drain Dain PS. Flow	AI	PLC-DW	0	TBD	GPM	1			
T/D Drain PS Pump #1 - 15-DP-P-1												
SI	1760	SI-1760	DW Drain Pump #1. Speed Indication	AI	PLC-DW	0	100	%	1			
HMS	1760	MA-1760	DW Drain Pump #1. Remote	DI	PLC-DW	Off	Remote			1		
MN	1760	MN-1760	DW Drain Pump #1. Run Status	DI	PLC-DW	Off	Run			1		
MF	1760	MF-1760	DW Drain Pump #1. Fail	DI	PLC-DW	Off	Lockout			1		
MO	1760	MO-1760	DW Drain Pump #1. Hi Temp	DI	PLC-DW	Off	Hi Temp			1		
YF	1760	YF-1760	DW Drain Pump #1. Seal Leak	DI	PLC-DW	Off	Seal Fail			1		
MF	1760	MF-1760	DW Drain Pump #1. VFD Fail	DI	PLC-DW	Off	Fail			1		
MC	1760	MC-1760	DW Drain Pump #1. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1760	SC-1760	DW Drain Pump #1. Speed Control	AO	PLC-DW	0	100	%			1	
T/D Drain PS Pump #2 - 15-DP-P-2												
SI	1770	SI-1770	DW Drain Pump #2. Speed Indication	AI	PLC-DW	0	100	%	1			
HMS	1770	MA-1770	DW Drain Pump #2. Remote	DI	PLC-DW	Off	Remote			1		
MN	1770	MN-1770	DW Drain Pump #2. Run Status	DI	PLC-DW	Off	Run			1		
MF	1770	MF-1770	DW Drain Pump #2. Fail	DI	PLC-DW	Off	Lockout			1		
MO	1770	MO-1770	DW Drain Pump #2. OverTemperaure	DI	PLC-DW	Off	Hi Temp			1		
YF	1770	YF-1770	DW Drain Pump #2. Seal Leak	DI	PLC-DW	Off	Seal Fail			1		
MF	1770	MF-1770	DW Drain Pump #2. VFD Fail	DI	PLC-DW	Off	Fail			1		
MC	1770	MC-1770	DW Drain Pump #2. Motor Control	DO	PLC-DW	Stop	Start					1
SC	1820	SC-1770	DW Drain Pump #2. Speed Control	AO	PLC-DW	0	100	%			1	
					PLC-DW IO Signals				4	15	2	2

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Plant Drain PS1 Wetwell Level 17-DPS1-L-1												
LE/LIT	2100	LI-2100	Plant Drain PS1 Wetwell. Level	AI	PLC-A	0	TBD	FT	1			
Plant Drain PS1 Wetwell Hi Level - 17-DPS1-LS-1												
LSH	2101	LH-2101	Plant Drain PS1 Wetwell. Hi Level	DI	PLC-A	Off	Hi Level			1		
Plant Drain PS1 Wetwell Low Level - 17-DPS1-LS-2												
LSL	2102	LL-2102	Plant Drain PS1 Wetwell. Low Level	DI	PLC-A	Off	Low Level			1		
Plant Drain PS1 Wetwell Hatch Switch - 17-DPS1-ZS-1												
ZS	2103	ZH-2103	Plant Drain PS1 Wetwell Hatch. Closed	DI	PLC-A	Open	Closed			1		
Plant Drain PS1 Discharge Flow 15-DPS1-F-1												
FE/FIT	2104	FI-2104	Plant Drain PS1. Flow	AI	PLC-A	0	TBD	GPM	1			
Plant Drain PS1 Pump #1 - 17-DPS1-P-1												
SI	2110	SI-2110	Plant Drain PS1 Pump #1. Speed Indication	AI	PLC-A	0	100	%	1			
HMS	2110	MA-2110	Plant Drain PS1 Pump #1. Remote	DI	PLC-A	Off	Remote			1		
MN	2110	MN-2110	Plant Drain PS1 Pump #1. Run Status	DI	PLC-A	Off	Run			1		
MF	2110	MF-2110	Plant Drain PS1 Pump #1. Fail	DI	PLC-A	Off	Lockout			1		
MO	2110	MO-2110	Plant Drain PS1 Pump #1. Hi Temp	DI	PLC-A	Off	Hi Temp			1		
YF	2110	YF-2110	Plant Drain PS1 Pump #1. Seal Leak	DI	PLC-A	Off	Seal Fail			1		
MF	2110	MF-2110	Plant Drain PS1 Pump #1. VFD Fail	DI	PLC-A	Off	Fail			1		
MC	2110	MC-2110	Plant Drain PS1 Pump #1. Motor Control	DO	PLC-A	Stop	Start					1
SC	2110	SC-2110	Plant Drain PS1 Pump #1. Speed Control	AO	PLC-A	0	100	%			1	
Plant Drain PS1 Pump #2 - 17-DPS1-P-2												
SI	2120	SI-2120	Plant Drain PS1 Pump #2. Speed Ind	AI	PLC-A	0	100	%	1			
HMS	2120	MA-2120	Plant Drain PS1 Pump #2. Remote	DI	PLC-A	Off	Remote			1		
MN	2120	MN-2120	Plant Drain PS1 Pump #2. Run Status	DI	PLC-A	Off	Run			1		
MF	2120	MF-2120	Plant Drain PS1 Pump #2. Fail	DI	PLC-A	Off	Lockout			1		
MO	2120	MO-2120	Plant Drain PS1 Pump #2. OverTemp	DI	PLC-A	Off	Hi Temp			1		
YF	2120	YF-2120	Plant Drain PS1 Pump #2. Seal Leak	DI	PLC-A	Off	Seal Fail			1		
MF	2120	MF-2120	Plant Drain PS1 Pump #2. VFD Fail	DI	PLC-A	Off	Fail			1		
MC	2120	MC-2120	Plant Drain PS1 Pump #2. Motor Control	DO	PLC-A	Stop	Start					1
SC	2120	SC-2120	Plant Drain PS1 Pump #2. Speed Control	AO	PLC-A	0	100	%			1	
					PLC-A IO Signals				4	15	2	2

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Dryer Feed Pump #1 - 15-DF-P-1												
MN	1610	MN-1610	Dryer Feed Pump #1. Run	DI	PLC-DW	Off	Run			1		
MF	1610	MF-1610	Dryer Feed Pump #1. Fail	DI	PLC-DW	Off	Fail			1		
HA	1610	HA-1610	Dryer Feed Pump #1. Auto	DI	PLC-DW	Manual	Auto			1		
MC	1610	MC-1610	Dryer Feed Pump #1. Start/Stop	DO	PLC-DW	Stop	Start					1
TIC	1610	TIC-1610	Dryer Feed Pump #1. Hi Temp	DO	PLC-DW	Interlock	Off					1
TE	1610	TE-1610	Dryer Feed Pump #1. Temperature sensor	AI	PLC-DW	0	70	F	1			
SI	1610	SI-1610	Dryer Feed Pump #1. Speed Ind	AI	PLC-DW	0	100	%	1			
SC	1610	SC-1610	Dryer Feed Pump #1. Speed Control	AO	PLC-DW	0	100	%			1	
Dryer Feed Pump #1 Outlet Pressure - 15-DF-PT-1												
PIT	1611	PI-1611	Dryer Feed Pumps #1. Outlet Pressure	AI	PLC-DW	0	350	PSI	1			
Dryer Feed Pump #2 - 15-DF-P-2												
MN	1620	MN-1620	Dryer Feed Pump #2. Run	DI	PLC-DW	Off	Run			1		
MF	1620	MF-1620	Dryer Feed Pump #2. Fail	DI	PLC-DW	Off	Fail			1		
HA	1620	HA-1620	Dryer Feed Pump #2. Auto	DI	PLC-DW	Manual	Auto			1		
MC	1620	MC-1620	Dryer Feed Pump #2. Start/Stop	DO	PLC-DW	Stop	Start					1
TIC	1620	TIC-1620	Dryer Feed Pump #2. Hi Temp	DO	PLC-DW	Interlock	Off					1
TE	1620	TE-1620	Dryer Feed Pump #2. Temperature sensor	AI	PLC-DW	0	70	F	1			
SI	1620	SI-1620	Dryer Feed Pump #2. Speed Ind	AI	PLC-DW	0	100	%	1			
SC	1620	SC-1620	Dryer Feed Pump #2. Speed Control	AO	PLC-DW	0	100	%			1	
Dryer Feed Pump #2 Outlet Pressure - 15-DF-PT-2												
PIT	1621	PI-1621	Dryer Feed Pumps #1. Outlet Pressure	AI	PLC-DW	0	350	PSI	1			
Dryer Feed Mainfold 1 Valve 1 - 15-DF-V-1												
ZH	3003	ZH-3003	Dryer Feed Pump Valve 1. Open	DI	PLC-DRYER	Off	Open			Network		
ZL	3003	ZL-3003	Dryer Feed Pump Valve 1. Close	DI	PLC-DRYER	Off	Close			Network		
ZC	3003	ZC-3003	Dryer Feed Pump Valve 1. Open/Close	DO	PLC-DRYER	Open	Close			Network		
Dryer Feed Mainfold 2 Valve 1 - 15-DF-V-2												
ZH	3006	ZH-3006	Dryer Feed Pump Valve 2. Open	DI	PLC-DRYER	Off	Open			Network		
ZL	3006	ZL-3006	Dryer Feed Pump Valve 2. Close	DI	PLC-DRYER	Off	Close			Network		
ZC	3006	ZC-3006	Dryer Feed Pump Valve 2. Open/Close	DO	PLC-DRYER	Open	Close			Network		
Dryer Bypass Valve - 15-DB-V-1												
ZH	3007	ZH-3007	Dryer Bypass Valve. Open	DI	PLC-DRYER	Off	Open			Network		
ZL	3007	ZL-3007	Dryer Bypass Valve. Close	DI	PLC-DRYER	Off	Close			Network		
Manifold 1 NPW Flush Valve 1												
ZC	3008	ZC-3008	Manifold 1 NPW Valve 1. Open/Close	DO	PLC-DRYER	Close	Open			Network		

Manifold 1 NPW Flush Valve 2									
ZC	3009	ZC-3009	Manifold 1 NPW Valve 2. Open/Close	DO	PLC-DRYER	Close	Open		Network
Manifold 1 Pressure Relieve Valve 1									
ZH	3010	ZH-3010	Manifold 1 Valve 1. Open	DI	PLC-DRYER	Off	Open		Network
ZL	3010	ZL-3010	Manifold 1 Valve 1. Close	DI	PLC-DRYER	Off	Close		Network
ZC	3010	ZC-3010	Manifold 1 Valve 1. Open/Close	DO	PLC-DRYER	Open	Close		Network
Manifold 1 Pressure Relieve Valve 2									
ZH	3011	ZH-3011	Manifold 1 Valve 2. Open	DI	PLC-DRYER	Off	Open		Network
ZL	3011	ZL-3011	Manifold 1 Valve 2. Close	DI	PLC-DRYER	Off	Close		Network
ZC	3011	ZC-3011	Manifold 1 Valve 2. Open/Close	DO	PLC-DRYER	Open	Close		Network
Manifold 1 Pressure - 15-MF1-PT-1									
PIT	3012	PI-3012	Manifold 1. Pressure	AI	PLC-DRYER	0	70	PSI	Network
Manifold 2 NPW Valve 3									
ZC	3013	ZC-3013	Manifold 2 NPW Valve 3. Open/Close	DO	PLC-DRYER	Close	Open		Network
Manifold 2 NPW Valve 4									
ZC	3014	ZC-3014	Manifold 2 NPW Valve 4. Open/Close	DO	PLC-DRYER	Close	Open		Network
Manifold 2 Valve 1									
ZH	3015	ZH-3015	Manifold 2 Valve 1. Open	DI	PLC-DRYER	Off	Open		Network
ZL	3015	ZL-3015	Manifold 2 Valve 1. Close	DI	PLC-DRYER	Off	Close		Network
ZC	3015	ZC-3015	Manifold 2 Valve 1. Open/Close	DO	PLC-DRYER	Open	Close		Network
Manifold 2 Valve 2									
ZH	3016	ZH-3016	Manifold 2 Valve 2. Open	DI	PLC-DRYER	Off	Open		Network
ZL	3016	ZL-3016	Manifold 2 Valve 2. Close	DI	PLC-DRYER	Off	Close		Network
ZC	3016	ZC-3016	Manifold 2 Valve 2. Open/Close	DO	PLC-DRYER	Open	Close		Network
Manifold 2 Pressure - 15-MF2-PT-1									
PIT	3017	PI-3017	Manifold 2. Pressure	AI	PLC-DRYER	0	70	PSI	Network
Dosing Pump #1 - 15-D-P-1									
MN	3021	MN-3021	Dosing Pump #1. Run	DI	PLC-DRYER	Off	Run		Network
MF	3021	MF-3021	Dosing Pump #1. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3021	HA-3021	Dosing Pump #1. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3021	MC-3021	Dosing Pump #1. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3021	TIC-3021	Dosing Pump #1. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3021	TE-3021	Dosing Pump #1. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3021	SI-3021	Dosing Pump #1. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3021	SC-3021	Dosing Pump #1. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #1 Discharge Pressure - 15-D-PT-1									
PIT	3022	PI-3022	Dosing Pump #1. Pressure	AI	PLC-DRYER	0	350	PSI	Network

Dosing Pump #2 - 15-D-P-2									
MN	3023	MN-3023	Dosing Pump #2. Run	DI	PLC-DRYER	Off	Run		Network
MF	3023	MF-3023	Dosing Pump #2. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3023	HA-3023	Dosing Pump #2. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3023	MC-3023	Dosing Pump #2. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3023	TIC-3023	Dosing Pump #2. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3023	TE-3023	Dosing Pump #2. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3023	SI-3023	Dosing Pump #2. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3023	SC-3023	Dosing Pump #2. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #2 Discharge Pressure - 15-D-PT-2									
PIT	3024	PI-3024	Dosing Pump #2. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Dosing Pump #3 - 15-D-P-3									
MN	3025	MN-3023	Dosing Pump #3. Run	DI	PLC-DRYER	Off	Run		Network
MF	3025	MF-3023	Dosing Pump #3. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3025	HA-3023	Dosing Pump #3. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3025	MC-3023	Dosing Pump #3. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3025	TIC-3023	Dosing Pump #3. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3025	TE-3023	Dosing Pump #3. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3025	SI-3023	Dosing Pump #3. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3025	SC-3023	Dosing Pump #3. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #3 Discharge Pressure - 15-D-PT-3									
PIT	3026	PI-3026	Dosing Pump #3. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Dosing Pump #4 - 15-D-P-4									
MN	3027	MN-3027	Dosing Pump #4. Run	DI	PLC-DRYER	Off	Run		Network
MF	3027	MF-3027	Dosing Pump #4. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3027	HA-3027	Dosing Pump #4. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3027	MC-3027	Dosing Pump #4. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3027	TIC-3027	Dosing Pump #4. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3027	TE-3027	Dosing Pump #4. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3027	SI-3027	Dosing Pump #4. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3027	SC-3027	Dosing Pump #4. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #4 Discharge Pressure - 15-D-PT-4									
PIT	3028	PI-3028	Dosing Pump #4. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Dosing Pump #5 - 15-D-P-5									
MN	3029	MN-3029	Dosing Pump #5. Run	DI	PLC-DRYER	Off	Run		Network
MF	3029	MF-3029	Dosing Pump #5. Fail	DI	PLC-DRYER	Off	Fail		Network

HA	3029	HA-3029	Dosing Pump #5. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3029	MC-3029	Dosing Pump #5. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3029	TIC-3029	Dosing Pump #5. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3029	TE-3029	Dosing Pump #5. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3029	SI-3029	Dosing Pump #5. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3029	SC-3029	Dosing Pump #5. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #5 Discharge Pressure - 15-D-PT-5									
PIT	3030	PI-3030	Dosing Pump #5. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Dosing Pump #6 - 15-D-P-6									
MN	3031	MN-3031	Dosing Pump #6. Run	DI	PLC-DRYER	Off	Run		Network
MF	3031	MF-3031	Dosing Pump #6. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3031	HA-3031	Dosing Pump #6. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3031	MC-3031	Dosing Pump #6. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3031	TIC-3031	Dosing Pump #6. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3031	TE-3031	Dosing Pump #6. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3031	SI-3031	Dosing Pump #6. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3031	SC-3031	Dosing Pump #6. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #6 Discharge Pressure - 15-D-PT-6									
PIT	3032	PI-3032	Dosing Pump #6. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Dosing Pump #7 - 15-D-P-7									
MN	3033	MN-3033	Dosing Pump #7. Run	DI	PLC-DRYER	Off	Run		Network
MF	3033	MF-3033	Dosing Pump #7. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3033	HA-3033	Dosing Pump #7. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3033	MC-3033	Dosing Pump #7. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3033	TIC-3033	Dosing Pump #7. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network
TE	3033	TE-3033	Dosing Pump #7. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3033	SI-3033	Dosing Pump #7. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3033	SC-3033	Dosing Pump #7. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #7 Discharge Pressure - 15-D-PT-7									
PIT	3034	PI-3034	Dosing Pump #7. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Dosing Pump #8 - 15-D-P-8									
MN	3035	MN-3035	Dosing Pump #8. Run	DI	PLC-DRYER	Off	Run		Network
MF	3035	MF-3035	Dosing Pump #8. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3035	HA-3035	Dosing Pump #8. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3035	MC-3035	Dosing Pump #8. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
TIC	3035	TIC-3035	Dosing Pump #8. Hi Temp	DO	PLC-DRYER	Interlock	Off		Network

TE	3035	TE-3035	Dosing Pump #8. Temperature sensor	AI	PLC-DRYER	0	70	F	Network
SI	3035	SI-3035	Dosing Pump #8. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3035	SC-3035	Dosing Pump #8. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dosing Pump #8 Discharge Pressure - 15-D-PT-8									
PIT	3036	PI-3036	Dosing Pump #8. Pressure	AI	PLC-DRYER	0	350	PSI	Network
Rotating Depositer Shaft - 15-RDS-M-1									
MN	3037	MN-3037	Rotating Depositer Shaft. Run	DI	PLC-DRYER	Off	Run		Network
MF	3037	MF-3037	Rotating Depositer Shaft. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3037	HA-3037	Rotating Depositer Shaft. Auto	DI	PLC-DRYER	Manual	Auto		Network
ZS	3037	ZA-3037	Rotating Depositer Shaft. Rev Over-Travel	DI	PLC-DRYER	Off	Rev O/T		Network
ZS	3037	ZA-3037	Rotating Depositer Shaft. Forward Over-Travel	DI	PLC-DRYER	Off	FWR O/T		Network
MC	3037	MC-3037	Rotating Depositer Shaft. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3037	SI-3037	Rotating Depositer Shaft. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3037	SC-3037	Rotating Depositer Shaft. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer Top Belt Drive - 15-DTB-D-1									
MN	3100	MN-3100	Dryer Top Belt Drive. Run	DI	PLC-DRYER	Off	Run		Network
MF	3100	MF-3100	Dryer Top Belt Drive. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3100	HA-3100	Dryer Top Belt Drive. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3100	MC-3100	Dryer Top Belt Drive. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3100	SI-3100	Dryer Top Belt Drive. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3100	SC-3100	Dryer Top Belt Drive. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer Top Belt Drive Slow Speed - 15-DTB-SL-1									
SSL	3100	SL-3100	Dryer Top Belt Drive. Slow Speed	DI	PLC-DRYER	Off	Slow Speed		Network
Dryer Pressure 1 - 15-D-PT-1									
PIT	3101	PI-3101	Dryer Pressure	AI	PLC-DRYER	0	XXX	PSI	Network
Dryer Top Belt Drive Hi Temperature - 15-DTB-TS-1									
TSH	3103	TH-3103	Dryer Top Belt Drive. Hi Temperature 1	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Top Belt Drive Hi Temperature - 15-DTB-TS-2									
TSH	3104	TH-3104	Dryer Top Belt Drive. Hi Temperature 2	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Top Belt Drive Hi Temperature - 15-DTB-TS-3									
TSH	3105	TH-3105	Dryer Top Belt Drive. Hi Temperature 3	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Top Belt Drive Hi Temperature - 15-DTB-TS-4									
TSH	3106	TH-3106	Dryer Top Belt Drive. Hi Temperature 4	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Top Belt Drive Hi Level - 15-DTB-LS-1&2									
LSH	3107	LH-3107	Dryer Top Belt Drive. Hi Level	DI	PLC-DRYER	Off	Hi Level		Network
Dryer Bottom Belt Drive - 15-DBB-D-1									
MN	3110	MN-3110	Dryer Bottom Belt Drive. Run	DI	PLC-DRYER	Off	Run		Network

MF	3110	MF-3110	Dryer Bottom Belt Drive. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3110	HA-3110	Dryer Bottom Belt Drive. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3110	MC-3110	Dryer Bottom Belt Drive. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3110	SI-3110	Dryer Bottom Belt Drive. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3110	SC-3110	Dryer Bottom Belt Drive. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer Bottom Belt Drive Slow Speed - 15-DBB-SL-1									
SSL	3110	SL-3110	Dryer Bottom Belt Drive. Slow Speed	DI	PLC-DRYER	Off	Slow Speed		Network
Dryer Bottom Belt Drive Hi Level - 15-DBB-LS-1&2									
LSH	3111	LH-3111	Dryer Bottom Belt Drive. Hi Level	DI	PLC-DRYER	Off	Hi Level		Network
Dryer Bottom Belt Drive Temperature Sensor - 15-DBB-TE-1									
TE	3113	TE-3113	Dryer Bottom Belt Drive. Temperature sensor 1	AI	PLC-DRYER	0	XXX	F	Network
Dryer Bottom Belt Drive Temperature Sensor - 15-DBB-TE-2									
TE	3114	TE-3114	Dryer Bottom Belt Drive. Temperature sensor 2	AI	PLC-DRYER	0	XXX	F	Network
Dryer Temerature 1 - 15-DBB-T-1									
TIT	3115	TI-3115	Dryer Bottom Belt Drive. Temperature 1	AI	PLC-DRYER	0	XXX	F	Network
Dryer Temerature 2 - 15-DBB-T-2									
TIT	3116	TI-3116	Dryer Bottom Belt Drive. Temperature 2	AI	PLC-DRYER	0	XXX	F	Network
Dryer Temerature 3 - 15-DBB-T-3									
TIT	3117	TI-3117	Dryer Bottom Belt Drive. Temperature 3	AI	PLC-DRYER	0	XXX	F	Network
Dryer Temerature 4 - 15-DBB-T-4									
TIT	3118	TI-3118	Dryer Bottom Belt Drive. Temperature 4	AI	PLC-DRYER	0	XXX	F	Network
Dryer Hi Temperature 1 - 15-D-TS-1									
TSH	3117	TH-3117	Dryer. Hi Temperature 1	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Hi Temperature 2 - 15-D-TS-2									
TSH	3119	TH-3119	Dryer. Hi Temperature 2	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Hi Level - 15-D-LS-1&2									
LSH	3121	LH-3120	Dryer. Hi Level 1&2	DI	PLC-DRYER	Off	Hi Level		Network
Dryer Warn Zone Fan #1- 15-WZ-F-1									
MN	3123	MN-3123	Dryer Warm Zone Fan #1. Run	DI	PLC-DRYER	Off	Run		Network
MF	3123	MF-3123	Dryer Warm Zone Fan #1. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3123	HA-3123	Dryer Warm Zone Fan #1. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3123	MC-3123	Dryer Warm Zone Fan #1. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3123	SI-3123	Dryer Warm Zone Fan #1. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3123	SC-3123	Dryer Warm Zone Fan #1. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer Warn Zone Fan #2- 15-DWZ-F-2									
MN	3124	MN-3124	Dryer Warm Zone Fan #2. Run	DI	PLC-DRYER	Off	Run		Network
MF	3124	MF-3124	Dryer Warm Zone Fan #2. Fail	DI	PLC-DRYER	Off	Fail		Network

HA	3124	HA-3124	Dryer Warm Zone Fan #2. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3124	MC-3124	Dryer Warm Zone Fan #2. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3124	SI-3124	Dryer Warm Zone Fan #2. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3124	SC-3124	Dryer Warm Zone Fan #2. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer End Zone Fan #1- 15-DEZ-F-1									
MN	3125	MN-3125	Dryer End Zone Fan #1. Run	DI	PLC-DRYER	Off	Run		Network
MF	3125	MF-3125	Dryer End Zone Fan #1. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3125	HA-3125	Dryer End Zone Fan #1. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3125	MC-3125	Dryer End Zone Fan #1. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3125	SI-3125	Dryer End Zone Fan #1. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3125	SC-3125	Dryer End Zone Fan #1. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer End Zone Fan #2- 15-DEZ-F-2									
MN	3126	MN-3126	Dryer End Zone Fan #2. Run	DI	PLC-DRYER	Off	Run		Network
MF	3126	MF-3126	Dryer End Zone Fan #2. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3126	HA-3126	Dryer End Zone Fan #2. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3126	MC-3126	Dryer End Zone Fan #2. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3126	SI-3126	Dryer End Zone Fan #2. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3126	SC-3126	Dryer End Zone Fan #2. Speed Control	AO	PLC-DRYER	0	100	%	Network
Dryer Extraction Screw - 15-DES-M-1									
MN	3130	MN-3130	Dryer Extraction Screw. Run	DI	PLC-DRYER	Off	Run		Network
MF	3130	MF-3130	Dryer Extraction Screw. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3130	HA-3130	Dryer Extraction Screw. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3130	MC-3130	Dryer Extraction Screw. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3130	SI-3130	Dryer Extraction Screw. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3130	SC-3130	Dryer Extraction Screw. Speed Control	AO	PLC-DRYER	0	100	%	Network
YN	3130	YN-3130	Dryer Extraction Screw. Speed Control	DI	PLC-DRYER	Off	E-Stop		Network
Dryer Extraction Screw Temperature - 15-DES-T-1									
TIT	3131	TI-3131	Dryer Extraction Screw. Temperature 1	AI	PLC-DRYER	0	XXX	F	Network
Dryer Extraction Screw Temperature - 15-DES-T-2									
TIT	3132	TI-3132	Dryer Extraction Screw. Temperature 2	AI	PLC-DRYER	0	XXX	F	Network
Dryer Extraction Screw Temperature - 15-DES-T-3									
TIT	3133	TI-3133	Dryer Extraction Screw. Temperature 3	AI	PLC-DRYER	0	XXX	F	Network
Dryer Extraction Screw Hi Level - 15-DES-LS-1									
LSH	3134	LH-3134	Dryer Extraction Screw. Hi Level	DI	PLC-DRYER	Off	Hi Level		Network
Dryer Extraction Screw Hi Level - 15-DES-LS-2									
LSHH	3135	LH-3135	Dryer Extraction Screw. Hi Hi Level	DI	PLC-DRYER	Off	Hi Hi Level		Network
Dryer Extraction Screw Hi Temperature - 15-DES-TS-1									

TSH	3136	TH-3136	Dryer Extraction Screw. Hi Temperature 1	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Extraction Screw Hi Temperature - 15-DES-TS-2									
TSH	3137	TH-3137	Dryer Extraction Screw. Hi Temperature 2	DI	PLC-DRYER	Off	Hi Temp		Network
Dryer Extraction Screw Valve 1 - 15-DES-V-1									
ZH	3138	ZH-3138	Dryer Extraction Screw Valve 1. Open	DI	PLC-MBR	Off	Open		Network
ZL	3138	ZL-3138	Dryer Extraction Screw Valve 1. Close	DI	PLC-MBR	Off	Close		Network
ZA	3138	ZL-3138	Dryer Extraction Screw Valve 1. Auto	DI	PLC-MBR	Off	Auto		Network
ZC	3138	ZC-3138	Dryer Extraction Screw Valve 1. Open/Close	DO	PLC-MBR	Open	Close		Network
Air Cooler Temperature 1 - 15-AC-T-1									
TIT	3150	TI-3150	Air Cooler. Temperature 1	AI	PLC-DRYER	0	XXX	F	Network
Condenser NPW Valve 5 - 15-NPW-V-5									
ZC	3151	ZC-3151	Condenser NPW Valve 5. Open/Close	DO	PLC-MBR	Close	Open		Network
Condenser NPW Flow 1 - 15-NPW-F-1									
FE/FIT	3152	FI-3152	Condenser NPW Flow	AI	PLC-DRYER	0	XXX	GPM	Network
Condenser NPW Temperature 1 - 15-NPW-T-1									
TIT	3153	TI-3153	Condenser NPW. Temperature 1	AI	PLC-DRYER	0	XXX	F	Network
Condenser NPW Valve 6 - 15-NPW-V-6									
ZC	3154	ZC-3154	Condenser NPW Valve 6. Open/Close	DO	PLC-MBR	Close	Open		Network
Condenser Differential Pressure 1 - 15-COND-DP-1									
DPIT	3155	DPI-3155	Condenser. Differential Pressure 1	AI	PLC-DRYER	0	XXX	PSI	Network
Condenser Differential Pressure 2 - 15-COND-DP-2									
DPIT	3156	DPI-3156	Condenser. Differential Pressure 2	AI	PLC-DRYER	0	XXX	PSI	Network
Condenser Hi Level - 15-COND-LS-1									
LSH	3157	LH-3157	Condenser. Hi Level	DI	PLC-DRYER	Off	Hi Level		Network
Condenser Discharge Temperature - 15-COND-T-1									
TIT	3158	TI-3158	Condenser. Temperature 1	AI	PLC-DRYER	0	XXX	F	Network
Condenser Discharge Temperature - 15-COND-T-1									
TIT	3159	TI-3159	Condenser. Temperature 2	AI	PLC-DRYER	0	XXX	F	Network
Drying Air Treatment Fan- 15-DA-F-1									
MN	3160	MN-3160	Drying Air Treatment Fan. Run	DI	PLC-DRYER	Off	Run		Network
MF	3160	MF-3160	Drying Air Treatment Fan. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3160	HA-3160	Drying Air Treatment Fan. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3160	MC-3160	Drying Air Treatment Fan. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3160	SI-3160	Drying Air Treatment Fan. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3160	SC-3160	Drying Air Treatment Fan. Speed Control	AO	PLC-DRYER	0	100	%	Network
Vacuum Fan- 15-V-F-1									
MN	3161	MN-3161	Vacuum Fan. Run	DI	PLC-DRYER	Off	Run		Network

MF	3161	MF-3161	Vacuum Fan. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3161	HA-3161	Vacuum Fan. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3161	MC-3161	Vacuum Fan. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3161	SI-3161	Vacuum Fan. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3161	SC-3161	Vacuum Fan. Speed Control	AO	PLC-DRYER	0	100	%	Network
Heat Exchange Inlet Air Temperature 1 - 15-HE-T-1									
TIT	3162	TI-3162	Heat Exchange Inlet Air. Temperature 1	AI	PLC-DRYER	0	XXX	F	Network
Heat Exchange Temperature 2 - 15-HE-T-2									
TIT	3163	TI-31623	Heat Exchange. Temperature 2	AI	PLC-DRYER	0	XXX	F	Network
Heat Exchange Differential Pressure 1 - 15-HE-DP-1									
DPIT	3164	DPI-3164	Heat Exchange. Differential Pressure 1	AI	PLC-DRYER	0	XXX	PSI	Network
Heat Exchange Differential Pressure 2 - 15-HE-DP-2									
DPIT	3165	DPI-3165	Heat Exchange. Differential Pressure 2	AI	PLC-DRYER	0	XXX	PSI	Network
Heat Exchange Temperature 3 - 15-HE-T-3									
TIT	3166	TI-3166	Heat Exchange. Temperature 3	AI	PLC-DRYER	0	XXX	F	Network
Heat Exchange Outlet Air Temperature 4 - 15-HE-T-4									
TIT	3167	TI-3167	Heat Exchange. Temperature 4	AI	PLC-DRYER	0	XXX	F	Network
Dryer Warm Zone NPW Valve 7 - 15-NPW-V-7									
ZC	3168	ZC-3168	Dryer Warm Zone NPW Valve 7. Open/Close	DO	PLC-DRYER	Close	Open		Network
Dryer NPW Low Pressure - 15-NPW-PS-7									
PSL	3169	PL-3169	Dryer NPW. Low Pressure	DI	PLC-DRYER	Off	Low Press		Network
Dryer End Zone NPW Valve 8 - 15-NPW-V-8									
ZC	3170	ZC-3170	Dryer End Zone NPW Valve 8. Open/Close	DO	PLC-DRYER	Close	Open		Network
Wet Cake Bin Level 1 (15-WCB-LS-1)									
LSH	3201	LH-3201	Wet Cake Bin. Hi Level 1	DI	PLC-DRYER	Off	Hi Level		Network
Wet Cake Bin Level 2 (15-WCB-LS-2)									
LSH	3202	LH-3202	Wet Cake Bin. Hi Level 2	DI	PLC-DRYER	Off	Hi Level		Network
Wet Cake Bin Level 3 (15-WCB-LS-3)									
LSH	3203	LH-3203	Wet Cake Bin. Hi Level 3	DI	PLC-DRYER	Off	Hi Level		Network
Wet Cake Bin Level 4 (15-WCB-LS-4)									
LSH	3204	LH-3204	Wet Cake Bin. Hi Level 4	DI	PLC-DRYER	Off	Hi Level		Network
Wet Cake Bin Weight (15-WCB-W-1)									
WIT	3205	WI-3205	Wet Cake Bin. Weight	AI	PLC-DRYER	0	XXX	LBS	Network
Wet Cake Bin Bottom Screw 1 (15-BBS-M-1)									
MN	3211	MN-3211	Wet Cake Bin Bottom Screw 1. Run	DI	PLC-DRYER	Off	Run		Network
MF	3211	MF-3211	Wet Cake Bin Bottom Screw 1. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3211	HA-3211	Wet Cake Bin Bottom Screw 1. Auto	DI	PLC-DRYER	Manual	Auto		Network

MC	3211	MC-3211	Wet Cake Bin Bottom Screw 1. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3211	SI-3211	Wet Cake Bin Bottom Screw 1. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3211	SC-3211	Wet Cake Bin Bottom Screw 1. Speed Control	AO	PLC-DRYER	0	100	%	Network
YN	3211	YN-3211A	Wet Cake Bin Bottom Screw 1. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
YN	3211	YN-3211B	Wet Cake Bin Bottom Screw 1. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
SSL	3211	SL-3211B	Wet Cake Bin Bottom Screw 1. Low Speed	DI	PLC-DRYER	Off	Lo Speed		Network
Wet Cake Bin Bottom Screw 2 (15-BBS-M-2)									
MN	3212	MN-3212	Wet Cake Bin Bottom Screw 2. Run	DI	PLC-DRYER	Off	Run		Network
MF	3212	MF-3212	Wet Cake Bin Bottom Screw 2. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3212	HA-3212	Wet Cake Bin Bottom Screw 2. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3212	MC-3212	Wet Cake Bin Bottom Screw 2. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3212	SI-3212	Wet Cake Bin Bottom Screw 2. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3212	SC-3212	Wet Cake Bin Bottom Screw 2. Speed Control	AO	PLC-DRYER	0	100	%	Network
YN	3212	YN-3212A	Wet Cake Bin Bottom Screw 2. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
YN	3212	YN-3212B	Wet Cake Bin Bottom Screw 2. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
SSL	3212	SL-3212B	Wet Cake Bin Bottom Screw 2. Low Speed	DI	PLC-DRYER	Off	Lo Speed		Network
Wet Cake Bin Leveling Screw 1 (15-BLS-M-1)									
MN	3213	MN-3213	Wet Cake Bin Leveling Screw 1. Run	DI	PLC-DRYER	Off	Run		Network
MF	3213	MF-3213	Wet Cake Bin Leveling Screw 1. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3213	HA-3213	Wet Cake Bin Leveling Screw 1. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3213	MC-3213	Wet Cake Bin Leveling Screw 1. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3213	SI-3213	Wet Cake Bin Leveling Screw 1. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3213	SC-3213	Wet Cake Bin Leveling Screw 1. Speed Control	AO	PLC-DRYER	0	100	%	Network
YN	3213	YN-3213A	Wet Cake Bin Leveling Screw 1. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
YN	3213	YN-3213B	Wet Cake Bin Leveling Screw 1. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
SSL	3213	SL-3213B	Wet Cake Bin Leveling Screw 1. Low Speed	DI	PLC-DRYER	Off	Lo Speed		Network
Wet Cake Bin Leveling Screw 2 (15-BLS-M-2)									
MN	3214	MN-3214	Wet Cake Bin Leveling Screw 2. Run	DI	PLC-DRYER	Off	Run		Network
MF	3214	MF-3214	Wet Cake Bin Leveling Screw 2. Fail	DI	PLC-DRYER	Off	Fail		Network
HA	3214	HA-3214	Wet Cake Bin Leveling Screw 2. Auto	DI	PLC-DRYER	Manual	Auto		Network
MC	3214	MC-3214	Wet Cake Bin Leveling Screw 2. Start/Stop	DO	PLC-DRYER	Stop	Start		Network
SI	3214	SI-3214	Wet Cake Bin Leveling Screw 2. Speed Ind	AI	PLC-DRYER	0	100	%	Network
SC	3214	SC-3214	Wet Cake Bin Leveling Screw 2. Speed Control	AO	PLC-DRYER	0	100	%	Network
YN	3214	YN-3214A	Wet Cake Bin Leveling Screw 2. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
YN	3214	YN-3214B	Wet Cake Bin Leveling Screw 2. E-Stop	DI	PLC-DRYER	Off	E-Stop		Network
SSL	3214	SL-3214B	Wet Cake Bin Leveling Screw 2. Low Speed	DI	PLC-DRYER	Off	Lo Speed		Network

PLC-DW IO Signals	6	6	2	4

Notes:

1.- Dryer IO is based on Veolia information, only one PLC panel shown, Coordinate with Manufacturer and IO List in the attachment for points and PLC enclosures. Dryer IO signals are hardwired to Dryer PLC MCP (15-Dryer MCP). 15-Dryer MCP is connected to PLC-DW via network.

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
Membrane Blower #1 - 7-A-BL-1													**20-B-201-A**
MN	2010	MN-2010	MBR Blower #1. Run	DI	PLC-MBR	Off	Run			Network			20-YA-201-A
MC	2010	MC-2010	MBR Blower #1. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-201-A
SC	2010	SC-2010	MBR Blower #1. Speed Control	AO	PLC-MBR	0	100	%		Network			20-B-201-A
Membrane Blower #1 High Temperature - 7-BL-TS-1													**20-LSH-201-A**
TSH	2010	TH-2010	MBR Blower #1. Hi Temp	DI	PLC-MBR	Off	Hi Temp			Network			20-TAH-201-A
Membrane Blower #1 Low Flow - 7-BL-FS-1													**20-FSL-201-A**
FSL	2011	FL-2011	MBR Blower #1. Low Flow	DI	PLC-MBR	Off	Lo Flow			Network			20-FAL-201-A
Membrane Blower #2 - 7-A-BL-2													**20-B-201-B**
MN	2020	MN-2020	MBR Blower #2. Run	DI	PLC-MBR	Off	Run			Network			20-YA-201-B
MC	2020	MC-2020	MBR Blower #2. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-201-B
SC	2020	SC-2020	MBR Blower #2. Speed Control	AO	PLC-MBR	0	100	%		Network			20-B-201-B
Membrane Blower #2 High Temperature - 7-BL-TS-2													**20-LSH-201-B**
TSH	2020	TH-2020	MBR Blower #2. Hi Temp	DI	PLC-MBR	Off	Hi Temp			Network			20-TAH-201-B
Membrane Blower #2 Low Flow - 7-BL-FS-2													**20-FSL-201-B**
FSL	2021	FL-2011	MBR Blower #2. Low Flow	DI	PLC-MBR	Off	Lo Flow			Network			20-FAL-201-B
Membrane Blower #3 - 7-A-BL-3													**20-C-201-C**
MN	2030	MN-2030	MBR Blower #3. Run	DI	PLC-MBR	Off	Run			Network			20-YA-201-C
MC	2030	MC-2030	MBR Blower #3. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-201-C
SC	2030	SC-2030	MBR Blower #3. Speed Control	AO	PLC-MBR	0	100	%		Network			20-C-201-C
Membrane Blower #3 High Temperature - 7-BL-TS-3													**20-LSH-201-C**
TSH	2030	TH-2030	MBR Blower #3. Hi Temp	DI	PLC-MBR	Off	Hi Temp			Network			20-TAH-201-C
Membrane Blower #3 Low Flow - 7-BL-FS-3													**20-FSL-201-C**
FSL	2031	FL-2031	MBR Blower #3. Low Flow	DI	PLC-MBR	Off	Lo Flow			Network			20-FAL-201-C
Membrane Blower #4 - 7-A-BL-4													**20-D-201-D**
MN	2040	MN-2040	MBR Blower #4. Run	DI	PLC-MBR	Off	Run			Network			20-YA-201-D
MC	2040	MC-2040	MBR Blower #4. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-201-D
SC	2040	SC-2040	MBR Blower #4. Speed Control	AO	PLC-MBR	0	100	%		Network			20-D-201-D
Membrane Blower #4 High Temperature - 7-BL-TS-4													**20-LSH-201-D**
TSH	2040	TH-2040	MBR Blower #4. Hi Temp	DI	PLC-MBR	Off	Hi Temp			Network			20-TAH-201-D
Membrane Blower #4 Low Flow - 7-BL-FS-4													**20-FSL-201-D**
FSL	2041	FL-2041	MBR Blower #4. Low Flow	DI	PLC-MBR	Off	Lo Flow			Network			20-FAL-201-D
Membrane Blower #5 - 7-A-BL-5													**20-E-201-E**
MN	2050	MN-2050	MBR Blower #5. Run	DI	PLC-MBR	Off	Run			Network			20-YA-201-E
MC	2050	MC-2050	MBR Blower #5. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-201-E

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
SC	2050	SC-2050	MBR Blower #5. Speed Control	AO	PLC-MBR	0	100	%	Network				20-E-201-E
Membrane Blower #5 High Temperature - 7-BL-TS-5													**20-LSH-201-E**
TSH	2050	TH-2050	MBR Blower #5. Hi Temp	DI	PLC-MBR	Off	Hi Temp		Network				20-TAH-201-E
Membrane Blower #5Low Flow - 7-BL-FS-5													**20-FSL-201-E**
FSL	2051	FL-2051	MBR Blower #5. Low Flow	DI	PLC-MBR	Off	Lo Flow		Network				20-FAL-201-E
Membrane Tank #1 Air Blower Valve- 7-TK1-V-1													**20-FV-205-1**
ZH	2100	ZH-2100	Mambrane Tank 1 Air Valve. Open	DI	PLC-MBR	Off	Open		Network				20-ZAO-205-1
ZL	2100	ZL-2100	Mambrane Tank 1 Air Valve. Close	DI	PLC-MBR	Off	Close		Network				20-ZAC-205-1
ZC	2100	ZC-2100	Mambrane Tank 1 Air Valve. Open/Close	DO	PLC-MBR	Close	Open		Network				20-FV-205-1
Membrane Tank #1 Sluice Gate 1- 7-TK1-SG-1													**20-FV-209-1**
ZH	2101	ZH-2101	Mambrane Tank 1 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open		Network				20-ZAO-209-1
ZL	2101	ZL-2101	Mambrane Tank 1 Sluice Gate 1. Close	DI	PLC-MBR	Off	Close		Network				20-ZAC-209-1
ZOC	2101	ZCO-2101	Mambrane Tank 1 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open		Network				20-FV-209-1
ZCC	2101	ZCC-2101	Mambrane Tank 1 Sluice Gate 1. Close	DI	PLC-MBR	Off	Open		Network				20-FV-209-1
Membrane Tank #1 Hi Level - 7-TK1-LS-1													**20-LSHH-201-1**
LSH	2102	LSH-2102	Membran Tank #1. Hi Level	DI	PLC-MBR	Off	Hi Level		Network				20-LAHH-201-1
Membrane Tank #1 Low Level - 7-TK1-LS-2													**20-LSLL-201-1**
LSL	2103	LSL-2103	Membran Tank #1. Low Level	DI	PLC-MBR	Off	Low Level		Network				20-LALL-201-1
Membrane Tank #1 Level- 7-TK1-L-1													**20-LIT-203-1**
LIT	2104	LI-2104	Membran Tank #1. Level	AI	PLC-MBR	0	13	FT	Network				20-LI-203-1
Membrane Tank #1 RAS/Drain Valve- 7-TK1-V-2													**20-FV-502-1**
ZC	2105	ZC-2105	Mambrane Tank 1 RAS/Drain Valve. Open/Close	DI	PLC-MBR	Close	Open		Network				20-FV-502-1
Membrane Tank #1 Instrumentation Air Solenoid Valve- 7-TK1-SV-1													**20-SV-802-1**
ZC	2106	ZC-2106	Mambrane Tank 1 Inst Solenoid Valve. Open/Clos	DO	PLC-MBR	Close	Open		Network				20-SV-802-1
Membrane Tank #1 Permeate/Backpulse Pressure - 7-TK1-PT-1													**20-PIT-301-1**
ZC	2107	ZC-2107	Mambrane Tank 1 Permeante/Backpulse. Press	AI	PLC-MBR	-15	15	PSI	Network				20-PI-301-1
Membrane Tank #1 Citric Acid Valve - 7-TK1-V-3													**23-FV-302-1**
ZC	2108	ZC-2108	Mambrane Tank 1 Citric acid Valve. Open/Close	DO	PLC-MBR	Close	Open		Network				23-FV-302-1
Membrane Tank #1 Sodium HypoCl Valve - 7-TK1-V-4													**23-FV-102-1**
ZC	2109	ZC-2109	Mambrane Tank 1 Sodiu HypoCl Valve. Open/Clos	DO	PLC-MBR	Close	Open		Network				23-FV-102-1
Membrane Process Pump #1 Flow- 7-PR-F-1													**20-FIT-307-1**
FE/FIT	2110	FI-2110	Mambrane Process Pump #1. Flow	AI	PLC-MBR	0	3000	GPM	Network				20-FIC-307-1
Membrane Tank #1 Process Pump 1- 7-PR-P-1													**20-P-301-1**
MN	2111	MN-2111	Process Pump #1. Run	DI	PLC-MBR	Off	Run		Network				20-YA-301-1
MC	2111	MC-2111	Process Pump #1.. Start Forward/Stop	DO	PLC-MBR	Stop	Forward		Network				20-KQI-301-1

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
MC	2111	MC-2111	Process Pump #1.. Start Reverse/Stop	DO	PLC-MBR	Stop	Reverse			Network			20-KQI-301-1
SC	2111	SC-2111	Process Pump #1.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-301-1
Membrane Tank #1 Turbidity- 7-TK1-TU-1													**20-AIT-320-1**
AE/AIT	2115	AI-2115	Mambrane Tank 1 Permeate Discharge.Turbidity	AI	PLC-MBR	0	10	NTU		Network			20-AI-320-1
Membrane Tank #1 Permeate Discharge Valve - 7-TK1-V-5													**23-FV-302-1**
ZH	2117	ZH-2117	Mambrane Tank 1 Permeate Dish Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-302-1
ZL	2117	ZL-2117	Mambrane Tank 1 Permeate Dish Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-302-1
ZC	2117	ZC-2117	Mambrane Tank 1 Permeate Dish Valve. Open/Clo	DO	PLC-MBR	Close	Open			Network			20-FV-302-1
Membrane Tank #1 RAS Pump 1- 7-RAS-P-1													**20-P-501-1**
MN	2118	MN-2118	Process Pump #1. Run	DI	PLC-MBR	Off	Run			Network			20-YA-501-1
MC	2118	MC-2118	Process Pump #1.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-501-1
SC	2118	SC-2118	Process Pump #1.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-501-1
Membrane Tank #1 RAS Flow- 7-RAS-F-1													**20-FIT-307-1**
FE/FIT	2119	FI-2119	Mambrane Tank 1 RAS Discharge. Flow	AI	PLC-MBR	0	TBD	GPM		Network			20-FIC-507-1
Membrane Process Collector Temperature - 7-PC-T-1													**20-TIT-001**
TE/TIT	2125	FI-2119	Mambrane Process Collector. Temperature	AI	PLC-MBR	0	122	F		Network			20-TI-001
Membrane Process Collector Low Level - 7-PC-LS-1													**20-LSL-001**
TE/TIT	2126	FI-2119	Mambrane Process Collector. LoW Level	AI	PLC-MBR	Off	Lo Level			Network			20-LSL-001
Membrane Citric Acid Pump 1 - 7-CA-P-1													**23-P-301-A**
MN	2131	MN-2131	Citric Acid Pump #1. Run	DI	PLC-MBR	Off	Run			Network			23-YA-301-A
MC	2131	MC-2131	Citric Acid Pump #1.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			23-KQI-301-A
SC	2131	SC-2131	Citric Acid Pump #1.. Speed Control	AO	PLC-MBR	0	100	%		Network			23-P-301-A
Membrane Citric Acid Pump 2 - 7-CA-P-2													**23-P-301-B**
MN	2132	MN-2132	Citric Acid Pump #2. Run	DI	PLC-MBR	Off	Run			Network			23-YA-301-B
MC	2132	MC-2132	Citric Acid Pump #2.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			23-KQI-301-B
SC	2132	SC-2132	Citric Acid Pump #2.. Speed Control	AO	PLC-MBR	0	100	%		Network			23-P-301-B
Membrane Citric Acid Pumps Discharge Flow - 7-CA-F-1													**23-FIT-301-1**
FE/FIT	2133	FI-2133	Citric Acid Pump Discharge. Flow	AI	PLC-MBR	0	10	GPM		Network			23-FI-301
Membrane Citric Acid Valve - 7-CA-V-1													**23-FV-301**
ZC	2134	ZC-2134	Mambrane Citric Acid Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			23-FV-301
Membrane Sodium HypoChlorite Pump 1 - 7-SHC-P-1													**23-P-101-A**
MN	2141	MN-2141	Sodium HypoChlorite Pump #1. Run	DI	PLC-MBR	Off	Run			Network			23-YA-101-A
MC	2141	MC-2141	Sodium HypoChlorite Pump #1.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			23-KQI-101-A
SC	2141	SC-2141	Sodium HypoChlorite Pump #1.. Speed Control	AO	PLC-MBR	0	100	%		Network			23-P-101-A
Membrane Sodium HypoChlorite Pump 2 - 7-SHC-P-2													**23-P-101-B**

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
MN	2142	MN-2142	Sodium HypoChlorite Pump #2. Run	DI	PLC-MBR	Off	Run			Network			23-YA-101-B
MC	2142	MC-2142	Sodium HypoChlorite Pump #2.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			23-KQI-101-B
SC	2142	SC-2142	Sodium HypoChlorite Pump #2.. Speed Control	AO	PLC-MBR	0	100	%		Network			23-P-101-B
Membrane Sodium HypoChlorite Pumps Discharge Flow - 7-SHC-F-1													**23-FIT-101-1**
FE/FIT	2143	FI-2143	Sodium HypoChlorite Pump Discharge. Flow	AI	PLC-MBR	0	15	GPM		Network			23-FI-101
Membrane Sodium HypoChlorite Valve - 7-SHC-V-1													**23-FV-101**
ZC	2144	ZC-2144	Mambrane Sodium HypoChlorite Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			23-FV-101
Membrane Air Compressor 1 - 7-AC-M-1													**90-AC-001-A**
MN	2151	MN-2151	Mambrane Air Compressor 1. Run	DI	PLC-MBR	Off	Run			Network			90-YA-001-A
MF	2151	MF-2151	Mambrane Air Compressor 1. Fail	DI	PLC-MBR	Off	Fail			Network			90-AC-001-A
MC	2151	MC-2151	Mambrane Air Compressor 1. Start/Stop	DO	PLC-MBR	Stop	Start			Network			90-AC-001-A
Membrane Air Compressor 2 - 7-AC-M-2													**90-AC-001-B**
MN	2152	MN-2152	Mambrane Air Compressor 2. Run	DI	PLC-MBR	Off	Run			Network			90-YA-001-B
MF	2152	MF-2152	Mambrane Air Compressor 2. Fail	DI	PLC-MBR	Off	Fail			Network			90-AC-001-B
MC	2152	MC-2152	Mambrane Air Compressor 2. Start/Stop	DO	PLC-MBR	Stop	Start			Network			90-AC-001-B
Membrane Air Compressor 1 Low Pressure - 7-AC-PS-1													**90-PSL-001**
PSL	2153	PL-2153	Mambrane Air Compressors Disch. Low Press	DI	PLC-MBR	Off	Lo Press			Network			90-PAL-001
Membrane Air Compressor 1 Low Low Pressure - 7-AC-PS-2													**90-PSLL-002**
PSLL	2154	PLL-2154	Mambrane Air Compressors Disch. Lo Low Press	DI	PLC-MBR	Off	Lo Lo Press			Network			90-PALL-002
Membrane Tank #2 Air Blower Valve- 7-TK2-V-1													**20-FV-205-2**
ZH	2200	ZH-2200	Mambrane Tank 2 Air Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-205-2
ZL	2200	ZL-2200	Mambrane Tank 2 Air Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-205-2
ZC	2200	ZC-2200	Mambrane Tank 2 Air Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			20-FV-205-2
Membrane Tank #2 Sluice Gate 1- 7-TK2-SG-1													**20-FV-209-2**
ZH	2201	ZH-2201	Mambrane Tank 2 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-209-2
ZL	2201	ZL-2201	Mambrane Tank 2 Sluice Gate 1. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-209-2
ZOC	2201	ZCO-2201	Mambrane Tank 2 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open			Network			20-FV-209-2
ZCC	2201	ZCC-2201	Mambrane Tank 2 Sluice Gate 1. Close	DI	PLC-MBR	Off	Open			Network			20-FV-209-2
Membrane Tank #2 Hi Level - 7-TK2-LS-1													**20-LSHH-201-2**
LSH	2202	LSH-2202	Membran Tank #2. Hi Level	DI	PLC-MBR	Off	Hi Level			Network			20-LAHH-201-2
Membrane Tank #2 Low Level - 7-TK2-LS-2													**20-LSLL-201-2**
LSL	2203	LSL-2203	Membran Tank #2. Low Level	DI	PLC-MBR	Off	Low Level			Network			20-LALL-201-2
Membrane Tank #2 Level- 7-TK2-L-1													**20-LIT-203-2**
LIT	2204	LI-2204	Membran Tank #2. Level	AI	PLC-MBR	0	13	FT		Network			20-LI-203-2

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
Membrane Tank #2 RAS/Drain Valve- 7-TK2-V-2													**20-FV-502-2**
ZC	2205	ZC-2205	Mambrane Tank 2 RAS/Drain Valve. Open/Close	DI	PLC-MBR	Close	Open			Network			20-FV-502-2
Membrane Tank #2 Instrumentation Air Solenoid Valve- 7-TK2-SV-1													**20-SV-802-2**
ZC	2206	ZC-2206	Mambrane Tank 2 Inst Solenoid Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			20-SV-802-2
Membrane Tank #2 Permeate/Backpulse Pressure - 7-TK2-PT-1													**20-PIT-301-2**
ZC	2207	ZC-2207	Mambrane Tank 2 Permeante/Backpulse. Press	AI	PLC-MBR	-15	15	PSI		Network			20-PI-301-2
Membrane Tank #2 Citric Acid Valve - 7-TK2-V-3													**23-FV-302-2**
ZC	2208	ZC-2208	Mambrane Tank 2 Citric acid Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			23-FV-302-2
Membrane Tank #2 Sodium HypoCl Valve - 7-TK2-V-4													**23-FV-202-2**
ZC	2209	ZC-2209	Mambrane Tank 2 Sodiu HypoCl Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			23-FV-202-2
Membrane Process Pump #2 Flow- 7-PR-F-2													**20-FIT-307-2**
FE/FIT	2210	FI-2210	Mambrane Process Pump #2. Flow	AI	PLC-MBR	0	3000	GPM		Network			20-FIC-307-2
Membrane Tank #2 Process Pump 1- 7-PR-P-2													**20-P-301-2**
MN	2211	MN-2211	Process Pump #2. Run	DI	PLC-MBR	Off	Run			Network			20-YA-301-2
MC	2211	MC-2211	Process Pump #2.. Start Forward/Stop	DO	PLC-MBR	Stop	Forward			Network			20-KQI-301-2
MC	2211	MC-2211	Process Pump #2.. Start Reverse/Stop	DO	PLC-MBR	Stop	Reverse			Network			20-KQI-301-2
SC	2211	SC-2211	Process Pump #2.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-301-2
Membrane Tank #2 Turbidity- 7-TK2-TU-1													**20-AIT-320-2**
AE/AIT	2215	AI-2215	Mambrane Tank 2 Permeate Discharge.Turbidity	AI	PLC-MBR	0	10	NTU		Network			20-AI-320-2
Membrane Tank #2 Permeate Discharge Valve - 7-TK2-V-5													**23-FV-302-2**
ZH	2217	ZH-2217	Mambrane Tank 2 Permeate Dish Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-302-2
ZL	2217	ZL-2217	Mambrane Tank 2 Permeate Dish Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-302-2
ZC	2217	ZC-2217	Mambrane Tank 2 Permeate Dish Valve. Open/Clo	DO	PLC-MBR	Close	Open			Network			20-FV-302-2
Membrane Tank #2 RAS Pump 1- 7-RAS-P-2													**20-P-501-2**
MN	2218	MN-2218	Process Pump #2. Run	DI	PLC-MBR	Off	Run			Network			20-YA-501-2
MC	2218	MC-2218	Process Pump #2.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-501-2
SC	2218	SC-2218	Process Pump #2.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-501-2
Membrane Tank #2 RAS Flow- 7-RAS-F-2													**20-FIT-307-2**
FE/FIT	2219	FI-2219	Mambrane Tank 2 RAS Discharge. Flow	AI	PLC-MBR	0	TBD	GPM		Network			20-FIC-507-2
Membrane Tank #3 Air Blower Valve- 7-TK3-V-1													**20-FV-305-3**
ZH	2300	ZH-2300	Mambrane Tank 3 Air Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-305-3
ZL	2300	ZL-2300	Mambrane Tank 3 Air Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-305-3
ZC	2300	ZC-2300	Mambrane Tank 3 Air Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			20-FV-305-3
Membrane Tank #3 Sluice Gate 1- 7-TK3-SG-1													**20-FV-309-3**

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
ZH	2301	ZH-2301	Mambrane Tank 3 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-309-3
ZL	2301	ZL-2301	Mambrane Tank 3 Sluice Gate 1. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-309-3
ZOC	2301	ZCO-2301	Mambrane Tank 3 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open			Network			20-FV-309-3
ZCC	2301	ZCC-2301	Mambrane Tank 3 Sluice Gate 1. Close	DI	PLC-MBR	Off	Open			Network			20-FV-309-3
Membrane Tank #3 Hi Level - 7-TK3-LS-1													**20-LSHH-301-3**
LSH	2302	LSH-2302	Membran Tank #3. Hi Level	DI	PLC-MBR	Off	Hi Level			Network			20-LAHH-301-3
Membrane Tank #3 Low Level - 7-TK3-LS-2													**20-LSLL-301-3**
LSL	2303	LSL-2303	Membran Tank #3. Low Level	DI	PLC-MBR	Off	Low Level			Network			20-LALL-301-3
Membrane Tank #3 Level- 7-TK3-L-1													**20-LIT-303-3**
LIT	2304	LI-2304	Membran Tank #3. Level	AI	PLC-MBR	0	13	FT		Network			20-LI-303-3
Membrane Tank #3 RAS/Drain Valve- 7-TK3-V-2													**20-FV-502-3**
ZC	2305	ZC-2305	Mambrane Tank 3 RAS/Drain Valve. Open/Close	DI	PLC-MBR	Close	Open			Network			20-FV-502-3
Membrane Tank #3 Instrumentation Air Solenoid Valve- 7-TK3-SV-1													**20-SV-802-3**
ZC	2306	ZC-2306	Mambrane Tank 3 Inst Solenoid Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			20-SV-802-3
Membrane Tank #3 Permeate/Backpulse Pressure - 7-TK3-PT-1													**20-PIT-301-3**
ZC	2307	ZC-2307	Mambrane Tank 3 Permeante/Backpulse. Press	AI	PLC-MBR	-15	15	PSI		Network			20-PI-301-3
Membrane Tank #3 Citric Acid Valve - 7-TK3-V-3													**23-FV-302-3**
ZC	2308	ZC-2308	Mambrane Tank 3 Citric acid Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			23-FV-302-3
Membrane Tank #3 Sodium HypoCl Valve - 7-TK3-V-4													**23-FV-302-3**
ZC	2309	ZC-2309	Mambrane Tank 3 Sodiu HypoCl Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			23-FV-302-3
Membrane Process Pump #3 Flow- 7-PR-F-3													**20-FIT-307-3**
FE/FIT	2310	FI-2310	Mambrane Process Pimp #3. Flow	AI	PLC-MBR	0	3000	GPM		Network			20-FIC-307-3
Membrane Tank #3 Process Pump 1- 7-PR-P-3													**20-P-301-3**
MN	2311	MN-2311	Process Pump #3. Run	DI	PLC-MBR	Off	Run			Network			20-YA-301-3
MC	2311	MC-2311	Process Pump #3.. Start Forward/Stop	DO	PLC-MBR	Stop	Forward			Network			20-KQI-301-3
MC	2311	MC-2311	Process Pump #3.. Start Reverse/Stop	DO	PLC-MBR	Stop	Reverse			Network			20-KQI-301-3
SC	2311	SC-2311	Process Pump #3.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-301-3
Membrane Tank #3 Turbidity- 7-TK3-TU-1													**20-AIT-320-3**
AE/AIT	2315	AI-2315	Mambrane Tank 3 Permeate Discharge.Turbidity	AI	PLC-MBR	0	10	NTU		Network			20-AI-320-3
Membrane Tank #3 Permeate Discharge Valve - 7-TK3-V-5													**23-FV-302-3**
ZH	2317	ZH-2317	Mambrane Tank 3 Permeate Dish Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-302-3
ZL	2317	ZL-2317	Mambrane Tank 3 Permeate Dish Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-302-3
ZC	2317	ZC-2317	Mambrane Tank 3 Permeate Dish Valve. Open/Clo	DO	PLC-MBR	Close	Open			Network			20-FV-302-3
Membrane Tank #3 RAS Pump 1- 7-RAS-P-3													**20-P-501-3**

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
MN	2318	MN-2318	Process Pump #3. Run	DI	PLC-MBR	Off	Run			Network			20-YA-501-3
MC	2318	MC-2318	Process Pump #3.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-501-3
SC	2318	SC-2318	Process Pump #3.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-501-3
Membrane Tank #3 RAS Flow- 7-RAS-F-3													**20-FIT-307-3**
FE/FIT	2319	FI-2319	Mambrane Tank 3 RAS Discharge. Flow	AI	PLC-MBR	0	TBD	GPM		Network			20-FIC-507-3
Membrane Tank #4 Air Blower Valve- 7-TK4-V-1													**20-FV-305-3**
ZH	2400	ZH-2400	Mambrane Tank 4 Air Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-305-3
ZL	2400	ZL-2400	Mambrane Tank 4 Air Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-305-3
ZC	2400	ZC-2400	Mambrane Tank 4 Air Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			20-FV-305-3
Membrane Tank #4 Sluice Gate 1- 7-TK4-SG-1													**20-FV-309-3**
ZH	2401	ZH-2401	Mambrane Tank 4 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-309-3
ZL	2401	ZL-2401	Mambrane Tank 4 Sluice Gate 1. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-309-3
ZOC	2401	ZCO-2401	Mambrane Tank 4 Sluice Gate 1. Open	DI	PLC-MBR	Off	Open			Network			20-FV-309-3
ZCC	2401	ZCC-2401	Mambrane Tank 4 Sluice Gate 1. Close	DI	PLC-MBR	Off	Open			Network			20-FV-309-3
Membrane Tank #4 Hi Level - 7-TK4-LS-1													**20-LSHH-301-3**
LSH	2402	LSH-2402	Membran Tank #4. Hi Level	DI	PLC-MBR	Off	Hi Level			Network			20-LAHH-301-3
Membrane Tank #4 Low Level - 7-TK4-LS-2													**20-LSLL-301-3**
LSL	2403	LSL-2403	Membran Tank #4. Low Level	DI	PLC-MBR	Off	Low Level			Network			20-LALL-301-3
Membrane Tank #4 Level- 7-TK4-L-1													**20-LIT-303-3**
LIT	2404	LI-2404	Membran Tank #4. Level	AI	PLC-MBR	0	13	FT		Network			20-LI-303-3
Membrane Tank #4 RAS/Drain Valve- 7-TK4-V-2													**20-FV-502-3**
ZC	2405	ZC-2405	Mambrane Tank 4 RAS/Drain Valve. Open/Close	DI	PLC-MBR	Close	Open			Network			20-FV-502-3
Membrane Tank #4 Instrumentation Air Solenoid Valve- 7-TK4-SV-1													**20-SV-802-3**
ZC	2406	ZC-2406	Mambrane Tank 4 Inst Solenoid Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			20-SV-802-3
Membrane Tank #4 Permeate/Backpulse Pressure - 7-TK4-PT-1													**20-PIT-301-3**
ZC	2407	ZC-2407	Mambrane Tank 4 Permeante/Backpulse. Press	AI	PLC-MBR	-15	15	PSI		Network			20-PI-301-3
Membrane Tank #4 Citric Acid Valve - 7-TK4-V-3													**24-FV-302-3**
ZC	2408	ZC-2408	Mambrane Tank 4 Citric acid Valve. Open/Close	DO	PLC-MBR	Close	Open			Network			24-FV-302-3
Membrane Tank #4 Sodium HypoCl Valve - 7-TK4-V-4													**24-FV-302-3**
ZC	2409	ZC-2409	Mambrane Tank 4 Sodiu HypoCl Valve. Open/Clos	DO	PLC-MBR	Close	Open			Network			24-FV-302-3
Membrane Permeate/Backpulse Flow- 7-PR-F-4													**20-FIT-307-3**
FE/FIT	2410	FI-2410	Mambrane Process Pump #4. Flow	AI	PLC-MBR	0	3000	GPM		Network			20-FIC-307-3
Membrane Tank #4 Process Pump 1- 7-PR-P-4													**20-P-301-3**
MN	2411	MN-2411	Process Pump #4. Run	DI	PLC-MBR	Off	Run			Network			20-YA-301-3

Tagname		HMI	See Note 1	Signal	PLC	Data Field Range		ENG	IO Signals				MBR System
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO	Tagname
MC	2411	MC-2411	Process Pump #4.. Start Forward/Stop	DO	PLC-MBR	Stop	Forward			Network			20-KQI-301-3
MC	2411	MC-2411	Process Pump #4.. Start Reverse/Stop	DO	PLC-MBR	Stop	Reverse			Network			20-KQI-301-3
SC	2411	SC-2411	Process Pump #4.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-301-3
Membrane Tank #4 Turbidity- 7-TK4-TU-1													**20-AIT-320-3**
AE/AIT	2415	AI-2415	Mambrane Tank 4 Permeate Discharge.Turbidity	AI	PLC-MBR	0	10	NTU		Network			20-AI-320-3
Membrane Tank #4 Permeate Discharge Valve - 7-TK4-V-5													**24-FV-302-3**
ZH	2417	ZH-2417	Mambrane Tank 4 Permeate Dish Valve. Open	DI	PLC-MBR	Off	Open			Network			20-ZAO-302-3
ZL	2417	ZL-2417	Mambrane Tank 4 Permeate Dish Valve. Close	DI	PLC-MBR	Off	Close			Network			20-ZAC-302-3
ZC	2417	ZC-2417	Mambrane Tank 4 Permeate Dish Valve. Open/Clo	DO	PLC-MBR	Close	Open			Network			20-FV-302-3
Membrane Tank #4 RAS Pump 1- 7-RAS-P-4													**20-P-501-3**
MN	2418	MN-2418	Process Pump #4. Run	DI	PLC-MBR	Off	Run			Network			20-YA-501-3
MC	2418	MC-2418	Process Pump #4.. Start/Stop	DO	PLC-MBR	Stop	Start			Network			20-KQI-501-3
SC	2418	SC-2418	Process Pump #4.. Speed Control	AO	PLC-MBR	0	100	%		Network			20-P-501-3
Membrane Tank #4 RAS Flow- 7-RAS-F-4													**20-FIT-307-3**
FE/FIT	2419	FI-2419	Mambrane Tank 4 RAS Discharge. Flow	AI	PLC-MBR	0	TBD	GPM		Network			20-FIC-507-3
Membrane Miscelaneous													
YN	2060	YN-2060	Mambrane System. E-Stop	DI	PLC-MBR	E-Stop	Off			Network			Note 2
YN	2070	YN-2070	Mambrane System. Surge Suppressor	DI	PLC-MBR	Off	Alarm			Network			Note 2
Notes:					PLC-MBR Signals				0	0	0	0	

1.- IO Based on Suez June 2020 Submittal, only one PLC panel shown, Coordinate with Manufacturer, number of PLC & RIO enclosures

2.- Only (1) E-Stop and Surge Suppressor IO signals shown, Total IO to be Coordinate with Manufacture.

3.- Obtain all analog ranges from Suez for implementation into plant control system.

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
DW Hi Sump Float Switch												
LSH	1800	LH-1800	DW Flooding Alarm	DI	PLC-DW	0	Hi Level			1		
Emergency Eyewash Safety Shower 1												
FSH	1804	FH-1804	Emergency Eyewash 1. Hi Flow	DI	PLC-DW	0	Hi Flow			1		
Emergency Eyewash Safety Shower 2												
FSH	1805	FH-1805	Emergency Eyewash 2. Hi Flow	DI	PLC-DW	0	Hi Flow			1		
Emergency Eyewash Safety Shower 3												
FSH	1806	FH-1806	Emergency Eyewash 3. Hi Flow	DI	PLC-DW	0	Hi Flow			1		
Emergency Eyewash Safety Shower 4												
FSH	1807	FH-1807	Emergency Eyewash 4. Hi Flow	DI	PLC-DW	0	Hi Flow			1		
Electrical Room High Temperature Switch 1 (15-DW-TS-1)												
TSH	1812	TH-1812	Electrical Room High Temp	DI	PLC-DW	0	Hi Temp			1		
Electrical Room Low Temperature Switch 2 (15-DW-TS-2)												
TSL	**1813**	**TL-1813**	Electrical Room Low Temp	DI	PLC-DW	0	Low Temp			1		
DW Gas Monitor System												
AF	1801	AF-1801	BFP Area Combustible Trouble	DI	PLC-DW	0	Trouble			1		
AW	1801	AW-1801	BFP Area Combustible Warning	DI	PLC-DW	0	Warning			1		
AA	1801	AA-1801	BFP Area Combustible Alarm	DI	PLC-DW	0	Alarm			1		
AF	1802	AF-1802	BFP Area Oxygen Trouble	DI	PLC-DW	0	Trouble			1		
AW	1802	AW-1802	BFP Area Oxygen Warning	DI	PLC-DW	0	Warning			1		
AA	1802	AA-1802	BFP Area Oxygen Alarm	DI	PLC-DW	0	Alarm			1		
AF	1803	AF-1803	BFP Area H2S Trouble	DI	PLC-DW	0	Trouble			1		
AW	1803	AW-1803	BFP Area H2S Warning	DI	PLC-DW	0	Warning			1		
AA	1803	AA-1803	BFP Area H2S Alarm	DI	PLC-DW	0	Alarm			1		
AF	1808	AF-1808	Dryer Area Combustible Trouble	DI	PLC-DW	0	Trouble			1		
AW	1808	AW-1808	Dryer Area Combustible Warning	DI	PLC-DW	0	Warning			1		
AA	1808	AA-1808	Dryer Area Combustible Alarm	DI	PLC-DW	0	Alarm			1		
AF	1809	AF-1809	Dryer Area Oxygen Trouble	DI	PLC-DW	0	Trouble			1		
AW	1809	AW-1809	Dryer Area Oxygen Warning	DI	PLC-DW	0	Warning			1		
AA	1809	AA-1809	Dryer Area Oxygen Alarm	DI	PLC-DW	0	Alarm			1		
AF	1810	AF-1810	Dryer Area H2S Trouble	DI	PLC-DW	0	Trouble			1		
AW	1810	AW-1810	Dryer Area H2S Warning	DI	PLC-DW	0	Warning			1		
AA	1810	AA-1810	Dryer Area H2S Alarm	DI	PLC-DW	0	Alarm			1		
AF	1811	AF-1811	Truck Loading CO Trouble	DI	PLC-DW	0	Trouble			1		

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
AW	1811	AW-1811	Truck Loading CO Warning	DI	PLC-DW	0	Warning			1		
AA	1811	AA-1811	Truck Loading CO Alarm	DI	PLC-DW	0	Alarm			1		
NPW Solenoid Valve 1 15-NPW-SV-1												
ZC	1819	ZC-1819	NPW Solenoid Valve 1. Open/Close	DI	PLC-DW	Close	Open					1
Air Compressor 1 15-CA-M-1												
MN	1820	MN-1820	Air Compressor 1. Run	DI	PLC-DW	Off	Run			1		
MF	1820	MF-1820	Air Compressor 1. Fail	DI	PLC-DW	Off	Fail			1		
MC	1820	MC-1820	Air Compressor 1. Start/Stop	DI	PLC-DW	Stop	Start					1
Air Compressor 2 15-CA-M-2												
MN	1821	MN-1821	Air Compressor 2. Run	DI	PLC-DW	Off	Run			1		
MF	1821	MF-1821	Air Compressor 2. Fail	DI	PLC-DW	Off	Fail			1		
MC	1821	MC-1821	Air Compressor 2. Start/Stop	DI	PLC-DW	Stop	Start					1
					PLC-DW IO Signals				0	32	0	3

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Odor Control System												
MN	2000	MN-2000	Odor Control System Run	DI	PLC-IH	Off	Run		Network			
MF	2000	MF-2000	Odor Control System Fail	DI	PLC-IH	Off	Fail		Network			
MC	2000	MC-2000	Odor Control System Start/Stop	DO	PLC-IH	Stop	Start		Network			
					PLC-IH IO Signals				0	0	0	0

Wet Cake Bin Level 1 (15-WCB-LS-1)												
LSH	3201	LH-3201	Wet Cake Bin. Hi Level 1	DI	PLC-HOPPER	Off	Hi Level		Network			
Wet Cake Bin Level 2 (15-WCB-LS-2)												
LSH	3202	LH-3202	Wet Cake Bin. Hi Level 2	DI	PLC-HOPPER	Off	Hi Level		Network			
Wet Cake Bin Level 3 (15-WCB-LS-3)												
LSH	3203	LH-3203	Wet Cake Bin. Hi Level 3	DI	PLC-HOPPER	Off	Hi Level		Network			
Wet Cake Bin Level 4 (15-WCB-LS-4)												
LSH	3204	LH-3204	Wet Cake Bin. Hi Level 4	DI	PLC-HOPPER	Off	Hi Level		Network			
Wet Cake Bin Weight (15-WCB-W-1) (Typical 6)												
WIT	3205 A-F	WI-3205	Wet Cake Bin. Weight	AI	PLC-HOPPER	0	2000	LBS	Network			
Wet Cake Bin Bottom Screw 1 (15-BBS-M-1)												
MN	3211	MN-3211	Wet Cake Bin Bottom Screw 1. Run	DI	PLC-HOPPER	Off	Run		Network			
MF	3211	MF-3211	Wet Cake Bin Bottom Screw 1. Fail	DI	PLC-HOPPER	Off	Fail		Network			
HA	3211	HA-3211	Wet Cake Bin Bottom Screw 1. Auto	DI	PLC-HOPPER	Manual	Auto		Network			
MC	3211	MC-3211	Wet Cake Bin Bottom Screw 1. Start/Stop	DO	PLC-HOPPER	Stop	Start		Network			
SI	3211	SI-3211	Wet Cake Bin Bottom Screw 1. Speed Ind	AI	PLC-HOPPER	0	100	%	Network			
SC	3211	SC-3211	Wet Cake Bin Bottom Screw 1. Speed Control	AO	PLC-HOPPER	0	100	%	Network			
YN	3211	YN-3211A	Wet Cake Bin Bottom Screw 1. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
YN	3211	YN-3211B	Wet Cake Bin Bottom Screw 1. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
SSL	3211	SL-3211B	Wet Cake Bin Bottom Screw 1. Low Speed	DI	PLC-HOPPER	Off	Lo Speed		Network			
Wet Cake Bin Bottom Screw 2 (15-BBS-M-2)												
MN	3212	MN-3212	Wet Cake Bin Bottom Screw 2. Run	DI	PLC-HOPPER	Off	Run		Network			
MF	3212	MF-3212	Wet Cake Bin Bottom Screw 2. Fail	DI	PLC-HOPPER	Off	Fail		Network			
HA	3212	HA-3212	Wet Cake Bin Bottom Screw 2. Auto	DI	PLC-HOPPER	Manual	Auto		Network			
MC	3212	MC-3212	Wet Cake Bin Bottom Screw 2. Start/Stop	DO	PLC-HOPPER	Stop	Start		Network			

SI	3212	SI-3212	Wet Cake Bin Bottom Screw 2. Speed Ind	AI	PLC-HOPPER	0	100	%	Network			
SC	3212	SC-3212	Wet Cake Bin Bottom Screw 2. Speed Control	AO	PLC-HOPPER	0	100	%	Network			
YN	3212	YN-3212A	Wet Cake Bin Bottom Screw 2. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
YN	3212	YN-3212B	Wet Cake Bin Bottom Screw 2. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
SSL	3212	SL-3212B	Wet Cake Bin Bottom Screw 2. Low Speed	DI	PLC-HOPPER	Off	Lo Speed		Network			
Wet Cake Bin Leveling Screw 1 (15-BLS-M-1)												
MN	3213	MN-3213	Wet Cake Bin Leveling Screw 1. Run	DI	PLC-HOPPER	Off	Run		Network			
MF	3213	MF-3213	Wet Cake Bin Leveling Screw 1. Fail	DI	PLC-HOPPER	Off	Fail		Network			
HA	3213	HA-3213	Wet Cake Bin Leveling Screw 1. Auto	DI	PLC-HOPPER	Manual	Auto		Network			
MC	3213	MC-3213	Wet Cake Bin Leveling Screw 1. Start/Stop	DO	PLC-HOPPER	Stop	Start		Network			
SI	3213	SI-3213	Wet Cake Bin Leveling Screw 1. Speed Ind	AI	PLC-HOPPER	0	100	%	Network			
SC	3213	SC-3213	Wet Cake Bin Leveling Screw 1. Speed Control	AO	PLC-HOPPER	0	100	%	Network			
YN	3213	YN-3213A	Wet Cake Bin Leveling Screw 1. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
YN	3213	YN-3213B	Wet Cake Bin Leveling Screw 1. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
SSL	3213	SL-3213B	Wet Cake Bin Leveling Screw 1. Low Speed	DI	PLC-HOPPER	Off	Lo Speed		Network			
Wet Cake Bin Leveling Screw 2 (15-BLS-M-2)												
MN	3214	MN-3214	Wet Cake Bin Leveling Screw 2. Run	DI	PLC-HOPPER	Off	Run		Network			
MF	3214	MF-3214	Wet Cake Bin Leveling Screw 2. Fail	DI	PLC-HOPPER	Off	Fail		Network			
HA	3214	HA-3214	Wet Cake Bin Leveling Screw 2. Auto	DI	PLC-HOPPER	Manual	Auto		Network			
MC	3214	MC-3214	Wet Cake Bin Leveling Screw 2. Start/Stop	DO	PLC-HOPPER	Stop	Start		Network			
SI	3214	SI-3214	Wet Cake Bin Leveling Screw 2. Speed Ind	AI	PLC-HOPPER	0	100	%	Network			
SC	3214	SC-3214	Wet Cake Bin Leveling Screw 2. Speed Control	AO	PLC-HOPPER	0	100	%	Network			
YN	3214	YN-3214A	Wet Cake Bin Leveling Screw 2. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
YN	3214	YN-3214B	Wet Cake Bin Leveling Screw 2. E-Stop	DI	PLC-HOPPER	Off	E-Stop		Network			
SSL	3214	SL-3214B	Wet Cake Bin Leveling Screw 2. Low Speed	DI	PLC-HOPPER	Off	Lo Speed		Network			
					PLC-HOPPER Signals				0	0	0	0

Tagname		HMI		Signal	PLC	Data Field Range		ENG	IO Signals			
Funct	Loop No.	Tagname	Description	Type	Cabinet	Low	High	Units	AI	DI	AO	DO
Odorous Air Fan 15-OC-OF-1												
MN	3300	MN-3300	Odorous Air Fan. Auto	DI	PLC-HSOC	Off	Run		Network			
MN	3300	MN-3300	Odorous Air Fan. Run	DI	PLC-HSOC	Off	Run		Network			
MF	3300	MF-3300	Odorous Air Fan. Fail	DI	PLC-HSOC	Off	Fail		Network			
MC	3300	MC-3300	Odorous Air Fan. Start/Stop	DO	PLC-HSOC	Stop	Start		Network			
SI	3300	SI-3300	Odorous Air Fan. Speed Ind	AI	PLC-HSOC	0	100	%	Network			
SC	3300	SC-3300	Odorous Air Fan. Speed Control	AO	PLC-HSOC	0	100	%	Network			
Nutrient Pump 15-OC-NP-1												
MN	3301	MN-3301	Nutrient Pump. Auto	DI	PLC-HSOC	Off	Run		Network			
MN	3301	MN-3301	Nutrient Pump. Run	DI	PLC-HSOC	Off	Run		Network			
MF	3301	MF-3301	Nutrient Pump. Fail	DI	PLC-HSOC	Off	Fail		Network			
MC	3301	MC-3301	Nutrient Pump. Start/Stop	DO	PLC-HSOC	Stop	Start		Network			
SI	3301	SI-3301	Nutrient Pump. Speed Ind	AI	PLC-HSOC	0	100	%	Network			
SC	3301	SC-3301	Nutrient Pump. Speed Control	AO	PLC-HSOC	0	100	%	Network			
MC	3301	MC-3301	Nutrient Pump Start/Stop	DO	PLC-HSOC	Stop	Start		Network			
Odor Control Flow 1 15-OC-F-1												
FE/FIT	3302	FI-3302	Odor Control. Flow 1	AI	PLC-HSOC	0	XXX	GPM	Network			
Odor Control Flow 1 15-OC-F-2												
FE/FIT	3303	FI-3303	Odor Control. Flow 3	AI	PLC-HSOC	0	XXX	GPM	Network			
Odor Control Valve 1 15-OC-SV-1												
ZC	3304	MC-3304	Odor Control. Valve 1 Open/Close	DO	PLC-HSOC	Close	Open		Network			
					PLC-HSOC IO Signals				0	0	0	0

ULTRASONIC LEVEL TRANSMITTER

Items	Equipment Tag	IO Tag #	Calibration Range (ft)	Mounting	Service	Specification Section	Supplier	Electrical Requirements	Model/Manufacturer
1	8-RAS-L-1	LE/LIT-0561	0-8 FT	XMTR on Equipment Rack	RAS Splitter Box Level	16920 - 2.08	Contractor/System Integrator	120 VAC LP-BNR	Prosonic FMU90 / E&H; Or equal
2	10-IUV-F-1	LE/LIT-1000	XXX FT	Sensor on grating / Xmtr on wall	Influent UV Channel Parshall Flume			120 VAC LP-UV	
3	11-WT-L-1	LE/LIT-1100	0-24 FT	Sensor above tank / Xmtr on wall	WAS Storage Tank Level			120 VAC LP-H1	
4	12-AD-L-1	LE/LIT-1200	0-24 FT	Sensor above tank / Xmtr on Handrail	Aerobic Digester Tank 1 Level			120 VAC LP-H	
5	12-AD-L-2	LE/LIT-1203	0-24 FT	Sensor above tank / Xmtr on Handrail	Aerobic Digester Tank 2 Level			120 VAC LP-H	
6	15-POLY-L-1	LE/LIT-1350	0-8 FT	Sensor above tank / Xmtr on Tank	RDT Polymer Tank 1 Level			120 VAC / LP-DW	
7	15-POLY-L-2	LE/LIT-1600	0-8 FT	Sensor above tank / Xmtr on Tank	BFP Polymer Tank 1 Level			120 VAC / LP-DW	
8	17-AL-L-1	LE/LIT-0701	0-24 FT	Sensor above tank / Xmtr on Tank	Alum Tank 1 Level			120 VAC LP-AL	
9	17-AL-L-2	LE/LIT-0702	0-24 FT	Sensor above tank / Xmtr on Tank	Alum Tank 2 Level			120 VAC LP-AL	

TURBIDITY ANALYZER

Item	Equipment Tag	IO Tag #	Calibration Range (NTU)	Mounting	Service	Specification Section	Supplier	Electrical Requirements	Model/Manufacturer
9	10-PA-TURB-1	AE/-1040 & AIT-1040	0-50 NTU	Sensor Immersion Post Aeration Tank Dropbox / XMTR on Equipment Rack	Post Aeration Tanks Dropbox	16920-2.14	Contractor/System Integrator	120 VAC LP-UV	Immersion Solitax SC probe with SC-200 Transmitter Manufacturer by Hach or Equal

ORP ANALYZER

Item	Equipment Tag	IO Tag #	Calibration Range (mV)	Mounting	Service	Specification Section	Supplier	Electrical Requirements	Model/Manufacturer
10	5-AT1-ORP-1	AE/-0505 & AIT-0505	-600 to +600 mV	Sensor Immersion at Zone AX-1-1 / XMTR on Handrail	Basin 1 / Zone AX-1-1	16920-2.13	Contractor/System Integrator	120 VAC LP-BNR	Immersion Convertible Digital Combination ORP probe with and SC-200 Transmitter manufactured by Hach or Equal
11	5-AT2-ORP-1	AE/-0525 & AIT-0525	-600 to +600 mV	Sensor Immersion at Zone AX-2-1 / XMTR on Handrail	Basin 2 / Zone AX-2-1			120 VAC LP-BNR	
12	5-AT3-ORP-1	AE/-0545 & AIT-0545	-600 to +600 mV	Sensor Immersion at Zone AX-3-1 / XMTR on Handrail	Basin 3 / Zone AX-3-1			120 VAC LP-BNR	
13	6-AT4-ORP-1	AE/-0565 & AIT-0565	-600 to +600 mV	Sensor Immersion at Zone AX-4-1 / XMTR on Handrail	Basin 4 / Zone AX-4-1			120 VAC LP-H1	

DO ANALYZER

Item	Equipment Tag	IO Tag #	Calibration Range (mg/L)	Mounting	Service	Specification Section	Supplier	Electrical Requirements	Model/Manufacturer
14	5-AT1-DO-1 & 2	AE-0502 A&B AIT-0502	0 to 10 mg/L	Sensor Immersion at Zone OX-1-1 / XMTR on Handrail	Basin 1 / Zone OX-1-1	16920 - 2.11	Contractor/System Integrator	120 VAC LP-BNR	Probe LDO Probe, Xtmr SC-1000 manufactured by Hach, or Equal
15	5-AT1-DO-3 & 4	AE-0508 A&B AIT-0508	0 to 10 mg/L	Sensor Immersion at Zone OX-1-2 / XMTR on Handrail	Basin 1 / Zone OX-1-2			120 VAC LP-BNR	
16	5-AT2-DO-1 & 2	AE-0522 A&B AIT-0522	0 to 10 mg/L	Sensor Immersion at Zone OX-2-1 / XMTR on Handrail	Basin 2 / Zone OX-2-1			120 VAC LP-BNR	
17	5-AT2-DO-3 & 4	AE-0528 A&B AIT-0528	0 to 10 mg/L	Sensor Immersion at Zone OX-2-2 / XMTR on Handrail	Basin 2 / Zone OX-2-2			120 VAC LP-BNR	

DO ANALYZER

Item	Equipment Tag	IO Tag #	Calibration Range (mg/L)	Mounting	Service	Specification Section	Supplier	Electrical Requirements	Model/Manufacturer
18	5-AT3-DO-1 & 2	AE-0542 A&B AIT-0542	0 to 10 mg/L	Sensor Immersion at Zone OX-3-1 / XMTR on Handrail	Basin 3 / Zone OX-3-1			120 VAC LP-BNR	
19	5-AT3-DO-3 & 4	AE-0548 A&B AIT-0548	0 to 10 mg/L	Sensor Immersion at Zone OX-3-2 / XMTR on Handrail	Basin 3 / Zone OX-3-2			120 VAC LP-BNR	
20	6-AT4-DO-1 & 2	AE-0562 A&B AIT-0562	0 to 10 mg/L	Sensor Immersion at Zone OX-4-1 / XMTR on Handrail	Basin 4 / Zone OX-4-1			120 VAC LP-H1	
21	6-AT4-DO-3 & 4	AE-0568 A&B AIT-0568	0 to 10 mg/L	Sensor Immersion at Zone OX-4-2 / XMTR on Handrail	Basin 4 / Zone OX-4-2			120 VAC LP-H1	
22	10-PA-DO-1	AE/AIT-1020	0 to 10 mg/L	Sensor Immersion at Post Aeration Tank 1 XMTR on Handrail	Post Aeration Tank 1 DO			120 VAC LP-UV	
23	10-PA-DO-2	AE/AIT-1030	0 to 10 mg/L	Sensor Immersion at Post Aeration Tank 2 XMTR on Handrail	Post Aeration Tank 2 DO			120 VAC LP-UV	
24	12-AD-DO-1A&B	AE/AIT-1202A&B	0 to 10 mg/L	Sensor Immersion At Digester Tank 1 XMTR on Handrail	Digester Tank 1 DO			120 VAC LP-H1	
25	12-AD-DO-2A&B	AE/AIT-1205A&B	0 to 10 mg/L	Sensor Immersion At Digester Tank 2 XMTR on Handrail	Digester Tank 2 DO	16920 - 2.11	Contractor/System Integrator	120 VAC LP-H1	Probe LDO Probe, Xtmr SC-1000 manufactured by Hach, or Equal

ELECTROMAGNETIC FLOW METER

Item	Equipment Tag	IO Tag #	Calibration Range (GPM)	Mounting	Service	Specification Section	Supplier	Electrical Requirements	Model/Manufacturer
26	5-AT1-F-5	FE/FIT-0516	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 1 / Zone AX-1-1			120 VAC LP-BNR	
27	5-AT1-F-6	FE/FIT-0556	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 1 / Zone AN-1-1			120 VAC LP-BNR	
28	5-AT2-F-5	FE/FIT-0582	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 2 / Zone AX-2-1			120 VAC LP-BNR	
29	5-AT2-F-6	FE/FIT-0584	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 2 / Zone AN-2-1			120 VAC LP-BNR	
30	5-AT3-F-5	FE/FIT-0588	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 3 / Zone AX-3-1			120 VAC LP-BNR	
31	5-AT3-F-6	FE/FIT-0586	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 3 / Zone AN-3-1			120 VAC LP-BNR	
32	6-AT4-F-5	FE/FIT-0594	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 4 / Zone AX-4-1			120 VAC LP-H1	
33	6-AT4-F-6	FE/FIT-0596	0-2400 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Basin 4 / Zone AN-4-1			120 VAC LP-H1	
34	15-RDT-F-1	FE/FIT-1300	0-500 GPM	Flow Tube - Flange / XMTR on Equipment Rack	RDT 1 Influent Flow			120 VAC LP-H1	
35	15-RDT-F-2	FE/FIT-1301	0-500 GPM	Flow Tube - Flange / XMTR on Equipment Rack	RDT 2 Influent Flow			120 VAC LP-H1	
36	15-BFP-F-1	FE/FIT-1450	0-250 GPM	Flow Tube - Flange / XMTR on Equipment Rack	BFP 1 Influent Flow	16920 - 2.06	Contractor/System Integrator	120 VAC / LP-DW	Endress & Hauser Model Promag 53 W, Rosemount Series 8750, or Equal

ELECTROMAGNETIC FLOW METER									
Item	**Equipment Tag**	**IO Tag #**	**Calibration Range (GPM)**	**Mounting**	**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
37	15-BFP-F-2	FE/FIT-1460	0-250 GPM	Flow Tube - Flange / XMTR on Equipment Rack	BFP 2 Influent Flow	16920 - 2.06	Contractor/System Integrator	120 VAC / LP-DW	Endress & Hauser Model Promag 53 W, Rosemount Series 8750, or Equal
38	15-DP-F-1	FE/FIT-1780	0-1500 GPM	Flow Tube - Flange / XMTR on Equipment Rack	Drain Pumping Station Discharge Flow			120 VAC / LP-DW	
39	15-NPW-F-1	FE/FIT-1780	Verify with Pump Mfr.	Flow Tube - Flange / XMTR on Equipment Rack	Drain Pumping Station Discharge Flow			120 VAC / LP-DW	
PRESSURE TRANSMITTER									
Item	**Equipment Tag**	**IO Tag #**	**Calibration Range (psi)**	**Mounting**	**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
40	5-A-PT-1	PIT-0601	0-15 psi	1/2" NPT on pipe	BNR Blower 1 Discharge Pressure	16920 - 2.10	Contractor/System Integrator	Loop Power	3051 Smart manufactured by Rosemount, PMP71 manufactured by Endress and Hauser, or Equal
41	5-A-PT-2	PIT-0602	0-15 psi		BNR Blower 2 Discharge Pressure				
40	5-A-PT-3	PIT-0603	0-15 psi		BNR Blower 3 Discharge Pressure				
41	5-A-PT-4	PIT-0604	0-15 psi		BNR Blower 4 Discharge Pressure				
42	10-A-PT-1	PIT-1047	0-15 psi		UVPA Blower Discharge Pressure To PA Tank 1				
43	10-A-PT-2	PIT-1057	0-15 psi		UVPA Blower Discharge Pressure to PA Tank 2				
44	15-DS-PIT-1	PIT-1581	0-100 psi		Solids Dryer Sludge Pump Discharge Pressure				
45	15-DS-PIT-2	PIT-1591	0-100 psi		Solids Dryer Sludge Pump Discharge Pressure				
46	15-DF-PIT-1	PIT-1582	0-100 psi		Solids Dryer Feed Pump Discharge Pressure				
47	15-DF-PIT-2	PIT-1583	0-100 psi		Solids Dryer Feed Pump Discharge Pressure				
FLOW SWITCH									
Item	**Equipment Tag**	**IO Tag #**	**Calibration Range (GPM)**	**Mounting**	**Service**	**Specification Section**	**Supplier**		**Model/Manufacturer**
48	5-PW-FS-1	FSL-0662	10 GPM SP	On Pipe	Scum Collection Box Spray Water	16920 - 2.20	Contractor/System Integrator		W.E. Anderson Model V6 or equal.
49	7-MBR-FS-1	FSH-2081	Verify with Eyewash Mfr.	On Pipe	MBR Emer Eyewash & Safety Shower 1 High Flow				
50	7-MBR-FS-2	FSH-2081	Verify with Eyewash Mfr.	On Pipe	MBR Emer Eyewash & Safety Shower 2 High Flow				
51	15-DW-FS-1	FSH-1804	Verify with Eyewash Mfr.	On Pipe	Solid Handling Bldg. Emer Eyewash & Safety Shower 1 High Flow				
52	15-DW-FS-2	FSH-1805	Verify with Eyewash Mfr.	On Pipe	Solid Handling Bldg. Emer Eyewash & Safety Shower 2 High Flow				
53	15-DW-FS-3	FSH-1806	Verify with Eyewash Mfr.	On Pipe	Solid Handling Bldg. Emer Eyewash & Safety Shower 3 High Flow				
54	15-DW-FS-4	FSH-1807	Verify with Eyewash Mfr.	On Pipe	Solid Handling Bldg. Emer Eyewash & Safety Shower 4 High Flow				
55	17-AL-FS-1	FSH-0702	Verify with Eyewash Mfr.	On Pipe	Alum Facility Emer Eyewash & Safety Shower 1 High Flow				
PRESSURE SWITCH									

Item	Equipment Tag	IO Tag #	Calibration (psi)	Mounting	Service	Specification Section	Supplier		Model/Manufacturer
56	5-SC-PS-1	PSL-671	1 psi SP	On Pipe	Scum Pump 1 Inlet Low Pressure	16920-2.17	Contractor/System Integrator		Corp, Or equal
LIMIT SWITCH									
Item	**Equipment Tag**	**IO Tag #**	**Range/Type**	**Mounting**	**Service**	**Specification Section**	**Supplier**		**Model/Manufacturer**
57	5-AT-ISG-1	ZSH/ZSL-0511	Open and Close Valve status	On Sluice Gate or Valve	BNR Basin Influent Feed Channel	16920-2.21	Contractor/System Integrator / Coordinate with Valve/Gate Manufacturer		Coordinate System Supplier and Valve Manufacturer
58	5-AT1-SG-1	ZSH/ZSL-0511			BNR Basin 1 / Zone AN-1-1				
59	5-AT2-SG-1	ZSH/ZSL-0531			BNR Basin 2 / Zone AN-2-1				
LIMIT SWITCH									
Item	**Equipment Tag**	**IO Tag #**	**Range/Type**	**Mounting**	**Service**	**Specification Section**	**Supplier**		**Model/Manufacturer**
60	5-AT3-SG-1	ZSH/ZSL-0555	Open and Close Valve status	On Sluice Gate or Valve	BNR Basin 3 / Zone AN-3-1	16920-2.21	Contractor/System Integrator / Coordinate with Valve/Gate Manufacturer		Coordinate System Supplier and Valve Manufacturer
61	5-A-V-1	ZSH/ZSL-0610			BNR Blower 1 & 2 Valve status				
62	5-A-V-2	ZSH/ZSL-0620			BNR Blower 2 Valve status				
63	5-A-V-3	ZSH/ZSL-0630			BNR Blower 2 & 3 Valve status				
64	5-A-V-4	ZSH/ZSL-0640			BNR Blower 3 Valve status				
65	5-A-V-5	ZSH/ZSL-0650			BNR Blower 3, 4 & 5 Valve status				
66	5-A-V-6	ZSH/ZSL-0660			BNR Blower 4 Valve status				
LIMIT SWITCH									
Item	**Equipment Tag**	**IO Tag #**	**Range/Type**	**Mounting**	**Service**	**Specification Section**	**Supplier**		**Model/Manufacturer**
67	10-A-V-1	ZSH/ZSL-1040	Open and Close Valve status	On Sluice Gate or Valve	UVPA Blower 1 Valve 1 Status	16920-2.21	Contractor/System Integrator / Coordinate with Valve/Gate Manufacturer		Coordinate System Supplier and Valve Manufacturer
68	10-A-V-2	ZSH/ZSL-1050			UVPA Blower 2 Valve 2 Status				
69	10-A-V-3	ZSH/ZSL-1069			UVPA Blower 3 Valve 3 Status				
70	10-A-V-4	ZSH/ZSL-1069			UVPA Blower 3 Valve 4 Status				
71	10-AD-V-1	ZSH/ZSL-1210			Aeration Digester Blower 1 Discharge Valve 1 Status				
72	10-AD-V-2	ZSH/ZSL-1220			Aeration Digester Blower 2 Discharge Valve 2 Status				
73	10-AD-V-3	ZSH/ZSL-1230			Aeration Digester Blower 3 Discharge Valve 3 Status				
74	10-AD-V-4	ZSH/ZSL-1216			Aeration Digester Blowers 1 & 3 Discharge Valve 4 Status				
75	10-AD-V-5	ZSH/ZSL-1217			Aeration Digester Blowers 2 & 3 Discharge Valve 5 Status				
FLOAT LEVEL SWITCH									
Item	**Equipment Tag**	**IO Tag #**	**Elevation/Type**	**Mounting**	**Service**	**Specification Section**	**Supplier**		**Model/Manufacturer**

76	5-SC-LS-1	LSH-0661	El. 882.0	Scum Collection Box	Scum Collection Box High Float Level				
77	8-RAS-LS-1	LSH-0560	El. 898.0	RAS Splitter Box	RAS Splitter Box High Float Level				Eco Float Manufactured by Anchor Scientific, Model 7030 Manufactured by MJK Automation, SM Manufactured by Ames/Messco - SM, or Equal
78	11-WT-LS-1	LSH-1101	El. 881.0	WAS Storage Tank	WAS Storage Tank High Float Level				
79	11-RP-LS-1	LSH-1155	El. 876.5	Reuse Pumping Station	Reuse Pumping Station High Float Level	16920-2.18	Contractor/System Integrator		
80	12-AD-LS-1	LSH-1201	El. 880.0	Aerobic Digester Tank 1	Aerobic Digester Tank 1 High Level	16920-2.18	Contractor/System Integrator		Eco Float Manufactured by Anchor Scientific, Model 7030 Manufactured by MJK
81	12-AD-LS-2	LSH-1204	El. 880.0	Aerobic Digester Tank 2	Aerobic Digester Tank 2 High Level				
82	15-DP-LS-1	LSH-1751	El. 875.0	Drain Well Float Switch	Solids Handling Bldg. Drain Pumping Station High Level				
83	15-DP-LS-2	LSL-1752	El. 866.0	Drain Well Float Switch	Solids Handling Bldg. Drain Pumping Station Low Level				Eco Float Manufactured by Anchor Scientific, Model 7030 Manufactured by MJK Automation, SM Manufactured by Ames/Messco - SM, or Equal
84	15-DW-LS-2	LSH-1800	El. 865.0	High Sump Float Switch	Solid Handling Bldg. Sump Pump High Level	16920-2.18	Contractor/System Integrator		
HYDROSTATIC LEVEL TRANSDUCER									
Item	**Equipment Tag**	**IO Tag #**		**Mounting**	**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
85	5-SC-L-1	LI-0660		Scum Collection Box in Stilling-well pipe	Scum Collection Box Level				
86	11-RP-L-1	LI-1155		Reuse Pumping Station Tank in Stilling-well pipe	Reuse Pumping Station				
87	15-DP-L-1	LI-1750		Drain Pumping Station Well in Stilling-well pipe	Solids Drain Pumping Station	16920-2.09	Contractor/System Integrator	Loop Power	Provide Endress & Hauser Model Water Pilot FMX21, or equal.
REFRIGERATED SAMPLER									
Item	**Equipment Tag**	**IO Tag #**			**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
88	10-PA-SP-1				Post Aeration Sampler			120 VAC LP-UV	
89	11-WAS-SP-1				Reuse Pumping Station Sampler	16920-2.04	Contractor/System Integrator	120 VAC LP-H1	Refrigerated sampler – 5800 series by Isco or equal
GAS MONITOR SYSTEM									
Item	**Equipment Tag**	**IO Tag #**		**Mounting**	**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
90	15-DW-GT-1	AE/AIT-1801		On Wall	Gas Monitor Solid Handing Bldg. BFP Area Comb Sensor				
91	15-DW-GT-2	AE/AIT-1802		On Wall	Gas Monitor Solid Handing Bldg. BFP Area O2 Sensor				
92	15-DW-GT-3	AE/AIT-1803		On Wall	Gas Monitor Solid Handing Bldg. BFP Area H2S Sensor			120 VAC	
93	15-DW-GT-4	AE/AIT-1808		On Wall	Gas Monitor Solid Handing Bldg. Dryer Area Comb Sensor	16920-2.15	Contractor/System Integrator	LP-DW Power Gas Monitor MCP	Model Ultima X5000 series sensor and Gasgard Receiver Manufacturer by MSA
GAS MONITOR SYSTEM									
Item	**Equipment Tag**	**IO Tag #**		**Mounting**	**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
94	15-DW-GT-5	AE/AIT-1809		On Wall	Gas Monitor Solid Handing Bldg. Dryer Area O2 Sensor				
95	15-DW-GT-6	AE/AIT-1810		On Wall	Gas Monitor Solid Handing Bldg. Dryer Area H2S Sensor			120 VAC	

96	15-DW-GT-7	AE/AIT-1811		On Wall	Gas Monitor Solid Handing Bldg. Truck Loading Area CO Sensor	16920-2.15	Contractor/System Integrator	LP-DW Power Gas Monitor MCP	Model Ultima X5000 series sensor and Gasgard Receiver Manufacturer by MSA
TEMPERATURE SWITCH									
Item	**Equipment Tag**	**IO Tag #**		**Mounting**	**Service**	**Specification Section**	**Supplier**	**Electrical Requirements**	**Model/Manufacturer**
97	5-BNR-TS-1	TH-2183		On Wall	Solids Bldg. Electrical Room Temperature Switch				
98	5-BNR-TS-2	TL-2184		On Wall	BNR Electrical Room Temperature Switch				
99	15-DW-TS-1	TH-1808		On Wall	Solids Bldg. Electrical Room Temperature Switch				
100	15-DW-TS-2	TL-1809		On Wall	BNR Electrical Room Temperature Switch	16920-2.19	Contractor/System Integrator		Manufacturer by Johnson Controls, Dayton, Honeywell or equal

NOTES

ıufacturers, suppliers, and existing and proposed conditions.
ification that all ranges are verified and accurate.
with all drawings, specifications, and contract documents.

Item	Panel ID	Description / Location	Mounting	NEMA	Minimum Size HxWxD (inch) (See Note 1 and 2)	Power	Supplier
INFLUENT AND HEADWORKS FACILITY (1)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1and 2)**	**Power**	**Supplier**
1	PLC-IH	Headworks PCS PLC Enclosure / Next to SWGR-OC	Freestanding	NEMA 4X SST	60x36x24	120VAC LP-OC	Contractor/SI
2	1-GR-MCP	Grit Removal Main Control Panel / Grit Removal Facility	Freestanding	NEMA 4X SST	72x48x16	480VAC, 3PH SWGR-OC	Grir Removal Manufacture
3	1-OC-MCP	Odor Control Main Control Panel/ Headworks Odor Control Facility	Freestanding	NEMA 4X SST	Verify with Manufactuer	480VAC, 3PH SWGR-OC	Odor Control Manufacture
SOLID HANDLING BUILDING (15)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
4	PLC-DW	Solid Handling PCS PLC Enclosure / Solid Handling Bldg Electrical Room	Freestanding	NEMA 12	80x112x20	120VAC LP-DW	Contractor/SI
5	15-RDT-1 MCP	RDT 1 Main Control Panel / Digester Tanks Area	On Equipment Rack	NEMA 4X SST	30x24x12	480VAC, 3PH MCC-DW	RDT Manufacturer
6	15-RDT-2 MCP	RDT 2 Main Control Panel / Digester Tanks Area	On Equipment Rack	NEMA 4X SST	30x24x12	480VAC, 3PH MCC-DW	RDT Manufacturer
7	15-BFP 1&2 MCP	BFP 1 & 2 Main Control Panel / Solid Handling Bldg/Process Area	Freestanding	NEMA 4X SST	72x70x12	480VAC, 3PH MCC-DW	BNR Manufacturer
8	15 DRYER MCP	Dryer Main Control Panel / Solid Handling Bldg/Process Area	Freestanding	NEMA 4X SST	90x72x24	480VAC, 3PH MCC-DW	DRYER Manufacturer
9	15-BFP-P-1,2 & 3 LCP	BFP Feed Pumps 1 thur 3 LCP / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	24x20x8	480VAC, 3PH MCC-DW	Contractor/SI
10	15-POLY-T-1 LCP	Polymer Tank 1 Fill Tank LCP / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	16x16x8	120VAC LP-DW Ckt 4	Contractor/SI
11	15-POLY-RP-1 LCS	Polymer Tank Recirculation Pump 1 LCS / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	8x4x4-3/4	480VAC, 3PH MCC-DW	Contractor/SI
11	15-BFP-BP-1,2 & 3 LCP	BFP Booster Pumps 1 thur 3 LCP / Solid Handling Bldg/Process Area	Freestanding	NEMA 4X SST	24x20x8	480VAC, 3PH MCC-DW	Contractor/SI
12	15-POLY-T-2 LCP	Polymer Tank 2 Fill Tank LCP / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	16x16x8	120VAC LP-DW Ckt 5	Contractor/SI
13	15-POLY-RP-2 LCS	Polymer Tank Recirculation Pump 2 LCS / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	8x4x4-3/4	480VAC, 3PH MCC-DW	Contractor/SI
13	15-S-C-1 LCP	Sludge Conveyor 1 LCP / Solid Handling Bldg/Process Area	On Wall	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-DW	Contractor/SI
14	15-S-C-2 LCP	Sludge Conveyor 2 LCP / Solid Handling Bldg/Process Area	On Wall	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-DW	Contractor/SI
15	15-DP-2 LCP	SH Drain Pumping Station 2 LCP / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	20x16x8	480VAC, 3PH MCC-DW	Contractor/SI
16	15-SC-P-1 &2 LCP	SH Drain Pumping Station 2 LCP / Solid Handling Bldg/Process Area	On Equipment Rack	NEMA 4X SST	20x16x8	480VAC, 3PH MCC-DW	Contractor/SI
17	15-DW-GM MCP	Solid Handling Bldg/Main Entry	On Wall	NEMA 4X SST	30x24x10	120VAC LP-DW	Contractor/SI
18	15-DW-OC MCP	SH Odor Control Main Control Panel / Solid Handling Bldg/Outdoor	Verify with Manufactuer	NEMA 4X SST	Verify with Manufactuer	480VAC, 3PH MCC-DW	Odor Control Manufacturer
19	15-TO MCP	Thermal Oil Manin Control Panel/Solid Handling building	Verify with Manufactuer	NEMA 4X SST	Verify with Manufactuer	480VAC, 3PH MCC-DW	Thermal Oil Manufacturer
20	15-HOPPER MCP	Sludge Hopper Main Control Panel / Solid Handling Bldg	On Equipment Rack	NEMA 4X SST	36x30x12	120VAC LP-DW	Sludge Hopper Manufacturer
BNR/MBR ELEC BUILDING							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
21	PLC-BNR	BNR PCS PLC Enclosures / Electrical Room	Freestanding	NEMA 12	(2) 90x72x24 (Note 8)	120VAC LP-BNR	Contractor/SI

Item	Panel ID	Description / Location	Mounting	NEMA	Minimum Size HxWxD (inch) (See Note 1 and 2)	Power	Supplier
22	7-MBR MCP	MBR Main Contro Panel / Electrical Room	Wall Mount	NEMA 12	72x36x12	120VAC LP-BNR	MBR Manufacturer
WAS STORAGE FACILITY (11)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
23	RIO -BNR1	RIO BNR PCS Enclosure / WAS Storage Facility	Freestanding	NEMA 4X SST	60x36x24	120VAC LP-H1	Contractor/SI
24	14-CA MCP	Compressed Air Main Control Panel / WAS Storage Facility	On Equipment Rack	NEMA 4X SST	42x36x13	120VAC LP-H1	Compressed Air Manufacturer
25	11-SF-P-1 LCP	Sldge Feed Pump 1 LCP / WAS Storage Facility	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
26	11-SF-P-2 LCP	Sldge Feed Pump 2 LCP / WAS Storage Facility	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
27	11-SF-P-3 LCP	Sldge Feed Pump 3 LCP / WAS Storage Facility	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
FINE SCREENING FACILITY (4)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
28	RIO-BNR2	RIO BNR2 PCS Enclosure / Fine Screening Facility	Freestanding	NEMA 4X SST	72x48x24	120VAC LP-BNR	Contractor/SI
29	4-FS-1 MCP	Fine Screening 1 Main Control Panel / Fine Screening Facility	On Equipment Rack	NEMA 4X SST	36"x30"12"	480VAC, 3PH MCC-BNR	Fine Screening Manufacturer
30	4-FS-2 MCP	Fine Screening 2 Main Control Panel / Fine Screening Facility	On Equipment Rack	NEMA 4X SST	36"x30"12"	480VAC, 3PH MCC-BNR	Fine Screening Manufacturer
31	4-FS-C-1 LCP	Fine Screening Conveyor LCP / Fine Screening Facility	On Equipment Rack	NEMA 4X SST	13x9x10	480VAC, 3PH MCC-BNR	Fine Screening Manufacturer
MBR FACILITY (7)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
32	7-MBR-RIO-1 (CP-11)	MBR RIO 1 Enclosure / MBR Facility	Wall Mount	NEMA 4X SST	36x36x10	120VAC LP-MBR	MBR Manufacturer
33	7-MBR-RIO-2 (CP-12)	MBR RIO 2 Enclosure / MBR Facility	Wall Mount	NEMA 4X SST	36x36x10	120VAC LP-MBR	MBR Manufacturer
34	7-MBR-RIO-3 (CP-13)	MBR RIO 3 Enclosure / MBR Facility	Wall Mount	NEMA 4X SST	36x36x10	120VAC LP-MBR	MBR Manufacturer
35	7-MBR-RIO-4 (CP-14)	MBR RIO 4 Enclosure / MBR Facility	Wall Mount	NEMA 4X SST	36x36x10	120VAC LP-MBR	MBR Manufacturer
MCC-H BUILDING (14)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
36	PLC-H	PCS PLC H / MCC-H Area	Freestanding	NEMA 4X SST	72x72x24	120VAC LP-H	Contractor/SI
37	RIO-H1	Existing LCP-H / MCC-H Area	Freestanding	NEMA 4X SST	48x36x12 (Note 3)	Ex 120VAC LP-H	Modified by Contractor/SI
UV/POST AERATION AREA (10)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
38	PLC-UVPA	PCS PLC UVPA Enclosure / UV Control Room	Freestanding	NEMA 12	72x36x24	120VAC LP-UV	Contractor/SI
39	10-UV-MCP	UV System Main Control Panel / UV Control Room	Freestanding	NEMA 12	72x48x24	N/A	UV Manufacture
MAIN SWITCHGEAR (23)							

Item	Panel ID	Description / Location	Mounting	NEMA	Minimum Size HxWxD (inch) (See Note 1 and 2)	Power	Supplier
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
40	PLC-MSG	PCS PLC Main Switchgear Enclosure / Main Switchgear	Inside SWGR Enclouser	NEMA 12	See Note 7	120VAC LP-MSG	Contractor/SI
41	PLC-MMSG	Main Switchgear PLC / Main Switchgear	Inside SWGR Enclouser	NEMA 12	See Note 6	120VAC LP-MSG	SGWR Manufacturer
EX ADMIN BUILDING							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
42	PLC-A	Existing Adm Building	Ex Freestanding	NEMA 12	42x30x10 (Note 4)	Ex 120VAC LP-A	Modified by Contractor/SI
BNR BASIN FACILITY (5)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
43	5-AT1-P-1 LCP	AT1 Recycle Pump 1 / BNR Basin 1	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
44	5-AT1-P-2 LCP	AT1 Recycle Pump 2 / BNR Basin 1	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
45	5-AT2-P-1 LCP	AT2 Recycle Pump 1 / BNR Basin 2	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
46	5-AT2-P-2 LCP	AT2 Recycle Pump 2 / BNR Basin 2	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
47	5-AT3-P-1 LCP	AT3 Recycle Pump 1 / BNR Basin 3	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
48	5-AT3-P-2 LCP	AT3 Recycle Pump 2 / BNR Basin 3	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
49	6-AT4-P-1 LCP	AT4 Recycle Pump 1 / BNR Basin 4	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
50	6-AT4-P-2 LCP	AT4 Recycle Pump 2 / BNR Basin 4	On Equipment Rack	NEMA 4X SST	16x16x8	480VAC, 3PH MCC-BNR	Contractor/SI
51	5-SC-P-1 &2 LCS	Scum Pumps LCS / Scum Pumping Station	On Equipment Rack	NEMA 4X SST	8x4x4-3/4	480VAC, 3PH MCC-BNR	Contractor/SI
ALUM FACILITY (17)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
52	17-AL-T-1 LCP	Alum Tank 1 Fill LCP / Alum Facility	On Equipment Rack	NEMA 4X SST	16x16x8	120VAC LP-AL	Contractor/SI
53	17-AL-T-2 LCP	Alum Tank 2 Fill LCP / Alum Facility	On Equipment Rack	NEMA 4X SST	16x16x8	120VAC LP-AL	Contractor/SI
PLANT DRAIN PUMPING STATION 1 (17)							
Item	**Panel ID**	**Description / Location**	**Mounting**	**NEMA**	**Minimum Size HxWxD (inch) (See Note 1 and 2)**	**Power**	**Supplier**
54	17-DP-1 LCP	Plant Drain Pumping Station 1 LCP / Drain Pumping Station 1 Area	On Equipment Rack	NEMA 4X SST	36x24x12	Ex 120VAC LP-A	Contractor/SI

Notes:
1.- Minimum Panels size shown. The panel size shall be determined by panel manufacturer or Contractor per contract specifications. Contractor to coordinate panel dimensions with space available for panel installation.
2.- Provide Air Conditioning Units for all Contractor/SI PLC and RIO control panels which are NEMA 4X.
3.- Contractor shall modified existing LCP-H enclosure removing IO signals of equipment to be demolished and adding terminal blocks for new signals. Provide conduits and wires for connections to new PLC enclosures.
4.- Replace existing PLC-A, Install new PLC A Enclosure next to existing. Change existing PLC-A enclosure to Terminal Cabinet (TC). Provide wire/conduit from new TC to new PLC-A.
5.- The Control List is not all inclusive of all required Control Panels for the project. Refer to P&IDs, Contract Drawings, and other Specifications for control panel requirements.
6.- PLC to operate breakers in Main Switchgear to be provided by the Switchgear manufacturer as part of the equipment.
7.- PLC-MSG provided by System Integrator, coordinate with Switchgear manufacturer to provide adequate space for isntallation back panel in switchgear or seperated NEMA 12 enclosure inside of walk in switchgear.
8.- PLC-BNR is designed with 2 panels due to the amount of IO. Provide 2 seperate 120 volt feeds to the panel and label IO accordingly. Contractor may submit single panel if space available for all IO.

Canton, GA Preliminary I/O List

5700110005

PLC CP

		Equipment Tag					Instrument Tag											
Location	Equipment	Prefix	Number	Suffix	Tag	Signal	Prefix	Number	Suffix	Tag	I/O Type	Signal	Range/Off Status	Units/On Status	Suggested Field Wiring	Source	Destination	Notes
WCH	Wet Cake Bin 25CY Level Alarm 1	BN			BN	High Level	LSH	1101		LSH-1101	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Switch	PLC CP	
WCH	Wet Cake Bin 25CY Level Alarm 2	BN			BN	High Level	LSH	1102		LSH-1102	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Switch	PLC CP	
WCH	Wet Cake Bin 25CY Level Alarm 3	BN			BN	High Level	LSH	1201		LSH-1201	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Switch	PLC CP	
WCH	Wet Cake Bin 25CY Level Alarm 4	BN			BN	High Level	LSH	1202		LSH-1202	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Switch	PLC CP	
WCH	Wet Cake Bin 25CY Weight (Level)	WE			WE	Weight	WI	1000		WI-1000	AI	4-20 mA	-	lbs	Cable/Twisted Shielded Pair 18 Gauge	Weigh Scale Panel	PLC CP	
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Run Status	YS	1101		YS-1101	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Fail Status	XS	1101		XS-1101	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Auto Status	HS	1101		HS-1101	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Run Command	HC	1101		HC-1101	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Speed Reference	SC	1101		SC-1101	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Speed Feedback	SI	1101		SI-1101	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	E-Stop	XSA	1101		XSA-1101	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	E-Stop	XSB	1101		XSB-1101	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 1	M	1101		M1101	Speed Switch Low	SSL	1101		SSL-1101	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Speed Switch	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Run Status	YS	1102		YS-1102	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Fail Status	XS	1102		XS-1102	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Auto Status	HS	1102		HS-1102	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Run Command	HC	1102		HC-1102	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Speed Reference	SC	1102		SC-1102	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Speed Feedback	SI	1102		SI-1102	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	E-Stop	XSA	1102		XSA-1102	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	E-Stop	XSB	1102		XSB-1102	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 2	M	1102		M1102	Speed Switch Low	SSL	1102		SSL-1102	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Speed Switch	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Run Status	YS	1201		YS-1201	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Fail Status	XS	1201		XS-1201	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Auto Status	HS	1201		HS-1201	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Run Command	HC	1201		HC-1201	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Speed Reference	SC	1201		SC-1201	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Speed Feedback	SI	1201		SI-1201	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	E-Stop	XSA	1201		XSA-1201	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	E-Stop	XSB	1201		XSB-1201	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 3	M	1201		M1201	Speed Switch Low	SSL	1201		SSL-1201	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Speed Switch	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Run Status	YS	1202		YS-1202	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Fail Status	XS	1202		XS-1202	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Auto Status	HS	1202		HS-1202	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Run Command	HC	1202		HC-1202	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Speed Reference	SC	1202		SC-1202	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Speed Feedback	SI	1202		SI-1202	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	E-Stop	XSA	1202		XSA-1202	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	E-Stop	XSB	1202		XSB-1202	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Live Bottom Screw 4	M	1202		M1202	Speed Switch Low	SSL	1202		SSL-1202	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Speed Switch	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	Run Status	YS	1001		YS-1001	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	Fail Status	XS	1001		XS-1001	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	Auto Status	HS	1001		HS-1001	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	Run Command	HC	1001		HC-1001	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	E-Stop	XSA	1001		XSA-1001	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	E-Stop	XSB	1001		XSB-1001	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 1	M	1001		M1001	Speed Switch Low	SSL	1001		SSL-1001	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Speed Switch	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	Run Status	YS	1002		YS-1002	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	Fail Status	XS	1002		XS-1002	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	Auto Status	HS	1002		HS-1002	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	Run Command	HC	1002		HC-1002	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	E-Stop	XSA	1002		XSA-1002	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	E-Stop	XSB	1002		XSB-1002	DI	Contact	Running	Stopped	Two #14 Stranded Wire	Pull Cord	PLC CP	Not in Veolia Scope
WCH	Wet Cake Bin 25CY Leveling Screw 2	M	1002		M1002	Speed Switch Low	SSL	1002		SSL-1002	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Speed Switch	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Temperature	TSH	1121		TSH-1121	DI	mV	-	Alarm	Two #14 Stranded Wire	Transmitter	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Run Status	YS	1121		YS-1121	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Fail Status	XS	1121		XS-1121	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Auto Status	HS	1121		HS-1121	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Run Command	HC	1121		HC-1121	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Speed Reference	SC	1121		SC-1121	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 1	M	1121		M1121	Speed Feedback	SI	1121		SI-1121	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Temperature	TSH	1122		TSH-1122	DI	mV	-	°F	Two #14 Stranded Wire	Transmitter	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Run Status	YS	1122		YS-1122	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Fail Status	XS	1122		XS-1122	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Auto Status	HS	1122		HS-1122	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Run Command	HC	1122		HC-1122	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Speed Reference	SC	1122		SC-1122	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pump 2	M	1122		M1122	Speed Feedback	SI	1122		SI-1122	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	Not in Veolia Scope
WCH	Wet Cake Pumps 1 Inlet					Pressure	PIT	1103		PIT-1103	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Transmitter	PLC CP	
WCH	Wet Cake Pumps 2 Inlet					Pressure	PIT	1104		PIT-1104	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Transmitter	PLC CP	
WCH	Wet Cake Pumps 1 Discharge					Pressure	PIT	1121		PIT-1121	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Transmitter	PLC CP	
WCH	Wet Cake Pumps 2 Discharge					Pressure	PIT	1122		PIT-1122	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Transmitter	PLC CP	
WCH	Wet Cake to Dosing Header 1 Valve	AV	1121		AV1121	Open Status	ZSO	1121		ZSO-1121	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Wet Cake to Dosing Header 1 Valve	AV	1121		AV1121	Closed Status	ZSC	1121		ZSC-1121	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Wet Cake to Dosing Header 1 Valve	AV	1121		AV1121	Close Command	HC	1121		HC-1121	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Wet Cake to Dosing Header 2 Valve	AV	1122		AV1122	Open Status	ZSO	1122		ZSO-1122	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Wet Cake to Dosing Header 2 Valve	AV	1122		AV1122	Closed Status	ZSC	1122		ZSC-1122	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Wet Cake to Dosing Header 2 Valve	AV	1122		AV1122	Close Command	HC	1122		HC-1122	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Wet Cake Dryer Bypass Valve	AV	1123		AV1123	Open Status	ZSO	1123		ZSO-1123	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Wet Cake Dryer Bypass Valve	AV	1123		AV1123	Closed Status	ZSC	1123		ZSC-1123	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	

Canton, GA Preliminary I/O List

5700110005

PLC CP

		Equipment Tag					Instrument Tag											
Location	Equipment	Prefix	Number	Suffix	Tag	Signal	Prefix	Number	Suffix	Tag	I/O Type	Signal	Range/Off Status	Units/On Status	Suggested Field Wiring	Source	Destination	Notes
WCH	Dosing Header 1 Plant Effluent Flush Valve 1	AV	2114		AV2114	Open Command	HC	2114		HC-2114	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 1 Plant Effluent Flush Valve 2	AV	2115		AV2115	Open Command	HC	2115		HC-2115	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 1 Pressure Relief Valve 1	AV	2112		AV2112	Open Status	ZSO	2112		ZSO-2112	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 1 Pressure Relief Valve 1	AV	2112		AV2112	Closed Status	ZSC	2112		ZSC-2112	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 1 Pressure Relief Valve 1	AV	2112		AV2112	Open Command	HC	2112		HC-2112	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 1 Pressure Relief Valve 2	AV	2113		AV2113	Open Status	ZSO	2113		ZSO-2113	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 1 Pressure Relief Valve 2	AV	2113		AV2113	Closed Status	ZSC	2113		ZSC-2113	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 1 Pressure Relief Valve 2	AV	2113		AV2113	Open Command	HC	2113		HC-2113	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 1 Pressure					Pressure	PIT	2110		PIT-2110	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Transmitter	PLC CP	
WCH	Dosing Header 2 Plant Effluent Flush Valve 1	AV	2124		AV2124	Open Command	HC	2124		HC-2124	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 2 Plant Effluent Flush Valve 2	AV	2125		AV2125	Open Command	HC	2125		HC-2125	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 2 Pressure Relief Valve 1	AV	2122		AV2122	Open Status	ZSO	2122		ZSO-2122	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 2 Pressure Relief Valve 1	AV	2122		AV2122	Closed Status	ZSC	2122		ZSC-2122	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 2 Pressure Relief Valve 1	AV	2122		AV2122	Open Command	HC	2122		HC-2122	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 2 Pressure Relief Valve 2	AV	2123		AV2123	Open Status	ZSO	2123		ZSO-2123	DI	Contact	Not Fully Open	Fully Open	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 2 Pressure Relief Valve 2	AV	2123		AV2123	Closed Status	ZSC	2123		ZSC-2123	DI	Contact	Not Fully Closed	Fully Closed	Two #14 Stranded Wire	Valve Actuator	PLC CP	
WCH	Dosing Header 2 Pressure Relief Valve 2	AV	2123		AV2123	Open Command	HC	2123		HC-2123	DO	Contact	-	Opened	Two #14 Stranded Wire	PLC CP	Valve Actuator	
WCH	Dosing Header 2 Pressure					Pressure	PIT	2120		PIT-2120	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Transmitter	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Temperature	TSH	2131		TSH-2131	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Run Status	YS	2131		YS-2131	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Fail Status	XS	2131		XS-2131	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Auto Status	HS	2131		HS-2131	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Run Command	HC	2131		HC-2131	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 1	M	2131		M2131	Speed Reference	SC	2131		SC-2131	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Speed Feedback	SI	2131		SI-2131	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 1	M	2131		M2131	Discharge Pressure	PIT	2131		PIT-2131	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Temperature	TSH	2132		TSH-2132	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Run Status	YS	2132		YS-2132	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Fail Status	XS	2132		XS-2132	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Auto Status	HS	2132		HS-2132	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Run Command	HC	2132		HC-2132	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 2	M	2132		M2132	Speed Reference	SC	2132		SC-2132	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Speed Feedback	SI	2132		SI-2132	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 2	M	2132		M2132	Discharge Pressure	PIT	2132		PIT-2132	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Temperature	TSH	2133		TSH-2133	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Run Status	YS	2133		YS-2133	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Fail Status	XS	2133		XS-2133	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Auto Status	HS	2133		HS-2133	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Run Command	HC	2133		HC-2133	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 3	M	2133		M2133	Speed Reference	SC	2133		SC-2133	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Speed Feedback	SI	2133		SI-2133	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 3	M	2133		M2133	Discharge Pressure	PIT	2133		PIT-2133	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Temperature	TSH	2134		TSH-2134	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Run Status	YS	2134		YS-2134	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Fail Status	XS	2134		XS-2134	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Auto Status	HS	2134		HS-2134	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Run Command	HC	2134		HC-2134	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 4	M	2134		M2134	Speed Reference	SC	2134		SC-2134	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Speed Feedback	SI	2134		SI-2134	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 4	M	2134		M2134	Discharge Pressure	PIT	2134		PIT-2134	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Temperature	TSH	2135		TSH-2135	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Run Status	YS	2135		YS-2135	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Fail Status	XS	2135		XS-2135	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Auto Status	HS	2135		HS-2135	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Run Command	HC	2135		HC-2135	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 5	M	2135		M2135	Speed Reference	SC	2135		SC-2135	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Speed Feedback	SI	2135		SI-2135	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 5	M	2135		M2135	Discharge Pressure	PIT	2135		PIT-2135	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Temperature	TSH	2136		TSH-2136	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Run Status	YS	2136		YS-2136	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Fail Status	XS	2136		XS-2136	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Auto Status	HS	2136		HS-2136	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Run Command	HC	2136		HC-2136	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 6	M	2136		M2136	Speed Reference	SC	2136		SC-2136	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Speed Feedback	SI	2136		SI-2136	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 6	M	2136		M2136	Discharge Pressure	PIT	2136		PIT-2136	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Temperature	TSH	2137		TSH-2137	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Run Status	YS	2137		YS-2137	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Fail Status	XS	2137		XS-2137	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Auto Status	HS	2137		HS-2137	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Run Command	HC	2137		HC-2137	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 7	M	2137		M2137	Speed Reference	SC	2137		SC-2137	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Speed Feedback	SI	2137		SI-2137	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 7	M	2137		M2137	Discharge Pressure	PIT	2137		PIT-2137	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 8	M	2138		M2138	Temperature	TSH	2138		TSH-2138	DI	mV	-	°F	Two #14 Stranded Wire	Dosing Platform JB	PLC CP	
WCH	Dosing Pump 8	M	2138		M2138	Run Status	YS	2138		YS-2138	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 8	M	2138		M2138	Fail Status	XS	2138		XS-2138	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	

Canton, GA Preliminary I/O List

5700110005

PLC CP

		Equipment Tag					Instrument Tag											
Location	**Equipment**	**Prefix**	**Number**	**Suffix**	**Tag**	**Signal**	**Prefix**	**Number**	**Suffix**	**Tag**	**I/O Type**	**Signal**	**Range/Off Status**	**Units/On Status**	**Suggested Field Wiring**	**Source**	**Destination**	**Notes**
WCH	Dosing Pump 8	M	2138		M2138	Auto Status	HS	2138		HS-2138	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Dosing Pump 8	M	2138		M2138	Run Command	HC	2138		HC-2138	DO	Contact	Stopped	Running	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Dosing Pump 8	M	2138		M2138	Speed Reference	SC	2138		SC-2138	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 8	M	2138		M2138	Speed Feedback	SI	2138		SI-2138	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Dosing Pump 8	M	2138		M2138	Discharge Pressure	PIT	2138		PIT-2138	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Dosing Platform JB	PLC CP	
WCH	Depositor	M	2139		M2139	Forward Travel Limit	ZS	2139	C	ZS-2139C	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Depositor Control Box	PLC CP	
WCH	Depositor	M	2139		M2139	Reverse Travel Limit	ZS	2139	B	ZS-2139B	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Depositor Control Box	PLC CP	
WCH	Depositor	M	2139		M2139	Forward Over Travel Limit	ZS	2139	D	ZS-2139D	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Depositor Control Box	PLC CP	
WCH	Depositor	M	2139		M2139	Reverse Over Travel Limit	ZS	2139	A	ZS-2139A	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Depositor Control Box	PLC CP	
WCH	Depositor	M	2139		M2139	Run Status	YS	2139		YS-2139	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Depositor	M	2139		M2139	Fail Status	XS	2139		XS-2139	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Depositor	M	2139		M2139	Auto Status	HS	2139		HS-2139	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
WCH	Depositor	M	2139		M2139	Run Command	HC	2139		HC-2139	DO	Contact	Not Forward	Forward Start/Stop	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Depositor	M	2139		M2139	Reverse Command	HCR	2139		HCR-2139	DO	Contact	Not Reverse	Reverse Start/Stop	Two #14 Stranded Wire	PLC CP	MCC	
WCH	Depositor	M	2139		M2139	Speed Reference	SC	2139		SC-2139	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
WCH	Depositor	M	2139		M2139	Speed Feedback	SI	2139		SI-2139	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
										-								
	Air Pre-Heater/Cooler Inlet					Temperature	TE/TIT	5112		TE/TIT-5112	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
	Air Pre-Heater/Cooler Outlet					Temperature	TE/TIT	5111		TE/TIT-5111	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
	Air Pre-Heater/Cooler					Differential Pressure	DPIT	5110A		DPIT-5110A	AI	4-20 mA		PSI	Cable/Twisted Shielded Pair 18 Gauge	Differential Pressure Trans	PLC CP	
Inst Air	Air Compressor	M	6001		M6001	Run Status	YS	6001		YS-6001	DI	Contact	Stopped	Running	Two #14 Stranded Wire	Compressor	PLC CP	
Inst Air	Air Compressor	M	6001		M6001	Fail Status	XS	6001		XS-6001	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Compressor	PLC CP	
										-								
Dryer	Warm Zone Sprinkler Valve	AV	6102		AV6102	Open Command	HC	6102		HC-6102	DO	Contact	Open	Close	Two #14 Stranded Wire	PLC CP	Valve Actuator	
Dryer	End Zone Sprinkler Valve	AV	6101		AV6101	Open Command	HC	6101		HC-6101	DO	Contact	Open	Close	Two #14 Stranded Wire	PLC CP	Valve Actuator	
Dryer	Sprinkler Water					Low Pressure	PSL	6100		PSL-6100	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Pressure Switch	PLC CP	
										-								
Dryer	Top Belt Drive	M	3101		M3101	Run Status	YS	3101		YS-3101	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Top Belt Drive	M	3101		M3101	Fail Status	XS	3101		XS-3101	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Top Belt Drive	M	3101		M3101	Auto Status	HS	3101		HS-3101	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Top Belt Drive	M	3101		M3101	Run Command	HC	3101		HC-3101	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	Top Belt Drive	M	3101		M3101	Speed Feedback	SI	3101		SI-3101	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
Dryer	Top Belt Drive	M	3101		M3101	Speed Reference	SC	3101		SC-3101	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	Top Belt Drive	M	3101		M3101	Low Speed	SSL	3101		SSL-3101	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Proximity Switch	PLC CP	
										-								
Dryer	Bottom Belt Drive	M	3102		M3102	Run Status	YS	3102		YS-3102	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Bottom Belt Drive	M	3102		M3102	Fail Status	XS	3102		XS-3102	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Bottom Belt Drive	M	3102		M3102	Auto Status	HS	3102		HS-3102	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Bottom Belt Drive	M	3102		M3102	Run Command	HC	3102		HC-3102	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	Bottom Belt Drive	M	3102		M3102	Speed Feedback	SI	3102		SI-3102	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
Dryer	Bottom Belt Drive	M	3102		M3102	Speed Reference	SC	3102		SC-3102	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	Bottom Belt Drive	M	3102		M3102	Low Speed	SSL	3102		SSL-3102	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Proximity Switch	PLC CP	
										-								
Dryer	Dryer					Pressure	PIT	3100		PIT-3100	AI	4-20 mA	-	psi	Cable/Twisted Shielded Pair 18 Gauge	Pressure Transmitter	PLC CP	
Dryer	End Zone Bottom Belt					High Temperature 1	TSH	3110		TSH-3110	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	End Zone Bottom Belt					High Temperature 2	TSH	3120		TSH-3120	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	Warm Zone Heat Exchanger Inlet	HTX			HTX	Temperature	TE/TIT	3118		TE/TIT-3118	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
Dryer	Warm Zone Heat Exchanger Outlet	HTX			HTX	Temperature	TE/TIT	3128		TE/TIT-3128	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
Dryer	Warm Zone					High Temperature 1	TSH	3150		TSH-3150	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	Warm Zone					High Temperature 2	TSH	3160		TSH-3160	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	End Zone Top Belt					High Temperature 1	TSH	3130		TSH-3130	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	End Zone Top Belt					High Temperature 2	TSH	3140		TSH-3140	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	Warm Zone Top Belt					High Level 1	LSH	3111		LSH-3111	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Level Switch	PLC CP	
								3121										
Dryer	End Zone Top Belt					High Level 1	LSH	3112		LSH-3112	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Level Switch	PLC CP	
								3122		-3122								
Dryer	Warm Zone Fan 1	M	3113		M3113	Run Status	YS	3113		YS-3113	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Warm Zone Fan 1	M	3113		M3113	Fail Status	XS	3113		XS-3113	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Warm Zone Fan 1	M	3113		M3113	Auto Status	HS	3113		HS-3113	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Warm Zone Fan 1	M	3113		M3113	Run Command	HC	3113		HC-3113	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	Warm Zone Fan 1	M	3113		M3113	Speed Feedback	SI	3113		SI-3113	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
Dryer	Warm Zone Fan 1	M	3113		M3113	Speed Reference	SC	3113		SC-3113	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	Warm Zone Fan 2	M	3123		M3123	Run Status	YS	3123		YS-3123	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Warm Zone Fan 2	M	3123		M3123	Fail Status	XS	3123		XS-3123	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Warm Zone Fan 2	M	3123		M3123	Auto Status	HS	3123		HS-3123	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Warm Zone Fan 2	M	3123		M3123	Run Command	HC	3123		HC-3123	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	Warm Zone Fan 2	M	3123		M3123	Speed Feedback	SI	3123		SI-3123	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
Dryer	Warm Zone Fan 2	M	3123		M3123	Speed Reference	SC	3123		SC-3123	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	End Zone Heat Exchanger Inlet	HTX			HTX	Temperature	TE/TIT	3119		TE/TIT-3119	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
Dryer	End Zone Heat Exchanger Outlet	HTX			HTX	Temperature	TE/TIT	3129		TE/TIT-3129	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
Dryer	Bottom Belt					Temperature 2 (IR)	TE/TIT	3112		TE/TIT-3112	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
Dryer	Bottom Belt					Temperature 1 (IR)	TE/TIT	3122		TE/TIT-3122	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
										-								
Dryer	End Zone Fan 1	M	3114		M3114	Run Status	YS	3114		YS-3114	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	End Zone Fan 1	M	3114		M3114	Fail Status	XS	3114		XS-3114	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	End Zone Fan 1	M	3114		M3114	Auto Status	HS	3114		HS-3114	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	End Zone Fan 1	M	3114		M3114	Run Command	HC	3114		HC-3114	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	End Zone Fan 1	M	3114		M3114	Speed Feedback	SI	3114		SI-3114	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
Dryer	End Zone Fan 1	M	3114		M3114	Speed Reference	SC	3114		SC-3114	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	End Zone Fan 2	M	3124		M3124	Run Status	YS	3124		YS-3124	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	End Zone Fan 2	M	3124		M3124	Fail Status	XS	3124		XS-3124	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	End Zone Fan 2	M	3124		M3124	Auto Status	HS	3124		HS-3124	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	End Zone Fan 2	M	3124		M3124	Run Command	HC	3124		HC-3124	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	End Zone Fan 2	M	3124		M3124	Speed Feedback	SI	3124		SI-3124	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	

Canton, GA Preliminary I/O List

5700110005

PLC CP

		Equipment Tag					Instrument Tag											
Location	**Equipment**	**Prefix**	**Number**	**Suffix**	**Tag**	**Signal**	**Prefix**	**Number**	**Suffix**	**Tag**	**I/O Type**	**Signal**	**Range/Off Status**	**Units/On Status**	**Suggested Field Wiring**	**Source**	**Destination**	**Notes**
Dryer	End Zone Fan 2	M	3124		M3124	Speed Reference	SC	3124		SC-3124	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	Extraction Screw Hopper					High Temperature 1	TSH	3115		TSH-3115	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	Extraction Screw Hopper					High Temperature 2	TSH	3125		TSH-3125	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Temperature Switch	PLC CP	
Dryer	Extraction Screw Hopper					High Level	LSH	3115		LSH-3115	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Level Switch	PLC CP	
								3125										
DSH	Extraction Screw (Dry Product)	M	3106		M3106	High Level	LSH	3107		LSH-3107	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Level Switch	PLC CP	
DSH	Extraction Screw (Dry Product)	M	3106		M3106	Temperature 1	TE/TIT	3116		TE/TIT-3116	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
DSH	Extraction Screw (Dry Product)	M	3106		M3106	Temperature 2	TE/TIT	3126		TE/TIT-3126	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
DSH	Extraction Screw (Dry Product)	M	3106		M3106	Temperature 3	TE/TIT	3136		TE/TIT-3136	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
Dryer	Extraction Screw	M	3106		M3106	Run Status	YS	3106		YS-3106	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Extraction Screw	M	3106		M3106	Fail Status	XS	3106		XS-3106	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Extraction Screw	M	3106		M3106	Auto Status	HS	3106		HS-3106	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Dryer	Extraction Screw	M	3106		M3106	Run Command	HC	3106		HC-3106	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
Dryer	Extraction Screw	M	3106		M3106	Speed Feedback	SI	3106		SI-3106	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
Dryer	Extraction Screw	M	3106		M3106	Speed Reference	SC	3106		SC-3106	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Dryer	Extraction Screw	M	3106		M3106	E-Stop	XSA	3106		XSA-3106	DI	Contact	Alarm	Normal	Two #14 Stranded Wire	Switch	PLC CP	
DAT	Condenser Inlet Air					Temperature	TE/TIT	5106		TE/TIT-5106	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
DAT	Condenser Outlet Air					Temperature	TE/TIT	5107		TE/TIT-5107	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
DAT	Condenser Inlet Water					Temperature	TE/TIT	5100		TE/TIT-5100	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
DAT	Condenser Inlet Water					Flow	FE/FIT	5101		FE/FIT-5101	AI	4-20 mA	-	MGD	Cable/Twisted Shielded Pair 18 Gauge	Flow Meter	PLC CP	
DAT	Condenser Water Valve	CV	5101		CV5101	Position Reference	ZC	5101		ZC-5101	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	CV8001	
DAT	Demister Water Valve	AV	5100		AV5100	Open Command	HC	5100		HC-5100	DO	Contact	0	Open	Two #14 Stranded Wire	PLC CP	Valve Actuator	
DAT	Condenser Water (Drain)					Temperature	TE/TIT	5105		TE/TIT-5105	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Temperature Transmitter	PLC CP	
DAT	Condenser Water					High Level	LSH	5104		LSH-5104	DI	Contact	-	°F	Two #14 Stranded Wire	Level Switch	PLC CP	
DAT	Condenser Column					Differential Pressure	DPIT	5103		DPIT-5103	AI	4-20 mA		PSI	Cable/Twisted Shielded Pair 18 Gauge	Differential Pressure Trans	PLC CP	
DAT	Demistor					Differential Pressure	DPIT	5102		DPIT-5102	AI	4-20 mA		PSI	Cable/Twisted Shielded Pair 18 Gauge	Differential Pressure Trans	PLC CP	
DAT	Drying Air Treatment Fan	M	5108		M5108	Run Status	YS	5108		YS-5108	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
DAT	Drying Air Treatment Fan	M	5108		M5108	Fail Status	XS	5108		XS-5108	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
DAT	Drying Air Treatment Fan	M	5108		M5108	Auto Status	HS	5108		HS-5108	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
DAT	Drying Air Treatment Fan	M	5108		M5108	Run Command	HC	5108		HC-5108	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
DAT	Drying Air Treatment Fan	M	5108		M5108	Speed Feedback	SI	5108		SI-5108	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
DAT	Drying Air Treatment Fan	M	5108		M5108	Speed Reference	SC	5108		SC-5108	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
DAT	Vacuum Fan	M	5109		M5109	Run Status	YS	5109		YS-5109	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
DAT	Vacuum Fan	M	5109		M5109	Fail Status	XS	5109		XS-5109	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
DAT	Vacuum Fan	M	5109		M5109	Auto Status	HS	5109		HS-5109	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
DAT	Vacuum Fan	M	5109		M5109	Run Command	HC	5109		HC-5109	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
DAT	Vacuum Fan	M	5109		M5109	Speed Feedback	SI	5109		SI-5109	AI	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	MCC	PLC CP	
DAT	Vacuum Fan	M	5109		M5109	Speed Reference	SC	5109		SC-5109	AO	4-20 mA	0-100	%	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	MCC	
Air Heater	Thermal Oil System Thermal Heater Flow Alarm					Alarm Status	XSA			XSA-	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Siemens Controller Alarm					Alarm Status	XSB			XSB-	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Main Oil Valves On					Open Status	ZSO			ZSO-	DI	Contact	Closed	Open	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Remote Control Mode On					Remote Status	YSA			YSA-	DI	Contact	Local	Remote	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Heater Remote Setpoint Selected					Remote Status	YSB			YSB-	DI	Contact	Local	Remote	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Secondary Loop Heat Mode					Run Status	YSC			YSC-	DI	Contact	Off	Running	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Secondary Loop Remote Setpoint Enabled					Remote Status	YSD			YSD-	DI	Contact	Local	Remote	Two #14 Stranded Wire	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Remote Start/Stop (Maintained)					Start/Stop	HCA			HCA-	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	Thermal Oil LCP	
Air Heater	Thermal Oil System Remote Thermal Pump Start (Momentary)					Start	HCB			HCB-	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	Thermal Oil LCP	
Air Heater	Thermal Oil System Remote Burner Start/Stop (Maintained)					Start/Stop	HCC			HCC-	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	Thermal Oil LCP	
Air Heater	Thermal Oil System 3-way Valve Setpoint					Temperature	TC	4008		TC-4008	AO	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	Thermal Oil LCP	
Air Heater	Thermal Oil System Stack Temperature (0-1400°F)					Temperature	TI	4030		TI-4030	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Outlet Temperature (0-650°F)					Temperature	TI	4015		TI-4015	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Heater Remote Setpoint (32-650°F)					Temperature	TC	4001		TC-4001	AO	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	Thermal Oil LCP	
Air Heater	Thermal Oil System Secondary Loop Temperature (0-650°F)					Temperature	TI	4018		TI-4018	AI	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	Thermal Oil LCP	PLC CP	
Air Heater	Thermal Oil System Secondary Loop Setpoint (0-600°F)					Position	TC	4018		TC-4018	AO	4-20 mA	-	°F	Cable/Twisted Shielded Pair 18 Gauge	PLC CP	Control Valve	
Air Heater	Thermal Oil System Fill Pump	M	4040		M4040	Run Status	YS	4040		YS-4040	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
Air Heater	Thermal Oil System Fill Pump	M	4040		M4040	Fail Status	XS	4040		XS-4040	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
Air Heater	Thermal Oil System Fill Pump	M	4040		M4040	Auto Status	HS	4040		HS-4040	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	
Air Heater	Thermal Oil System Fill Pump	M	4040		M4040	Run Command	HC	4040		HC-4040	DO	Contact	Stop	Start	Two #14 Stranded Wire	PLC CP	MCC	
DSH	Rotary Valve	M	3107		M3107	Run Status	YS	3107		YS-3107	DI	Contact	Stopped	Running	Two #14 Stranded Wire	MCC	PLC CP	
DSH	Rotary Valve	M	3107		M3107	Fail Status	XS	3107		XS-3107	DI	Contact	Normal	Alarm	Two #14 Stranded Wire	MCC	PLC CP	
DSH	Rotary Valve	M	3107		M3107	Auto Status	HS	3107		HS-3107	DI	Contact	Hand/Off	Auto	Two #14 Stranded Wire	MCC	PLC CP	

I/O Totals		Totals	With 20% Spare	PLC Cards	
Digital Inputs	DI	160	192	12	16 Pt Digital Input
Digital Outputs	DO	45	54	4	16 Pt Digital Output
Analog Inputs	AI	62	75	5	16 Pt Analog Input
Analog Outputs	AO	28	34	5	8 Pt Analog Output
		Card Totals	355	26	

PACKAGE NAME: CANTON PID
PROJECT NUMBER: 5700110005
PROJECT NAME: CANTON, GA

MD TABLE OF CONTENTS

REVISION: D
CREATED BY: MJG

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2	PID-1102	P&ID SYMBOL LEGEND, EQUIPMENT SYMBOLS	19
3	850P-0000	PROCESS FLOW DIAGRAM	C
4	850P-1000	PIPING & INSTRUMENTATION DIAGRAM, WET CAKE HANDLING (WCH)	C
5	850P-1001	PIPING & INSTRUMENTATION DIAGRAM, WET CAKE HANDLING (WCH)	C
6	850P-2100	PIPING & INSTRUMENTATION DIAGRAM, DOSING PUMP MANIFOLD 1	B
7	850P-2101	PIPING & INSTRUMENTATION DIAGRAM, DOSING PUMP MANIFOLD 2	B
8	850P-2102	PIPING & INSTRUMENTATION DIAGRAM, DOSING PUMPS (1-4)	A
9	850P-2103	PIPING & INSTRUMENTATION DIAGRAM, DOSING PUMPS (5-8)	A
10	850P-2104	PIPING & INSTRUMENTATION DIAGRAM, DEPOSITORS	A
11	850P-3100	PIPING & INSTRUMENTATION DIAGRAM, SLUDGE DRYER	B
12	850P-4100	PIPING & INSTRUMENTATION DIAGRAM, THERMAL FLUID HEATER SKID	A
13	850P-5100	PIPING & INSTRUMENTATION DIAGRAM, DRYING AIR TREATMENT	D
14	850P-5101	PIPING & INSTRUMENTATION DIAGRAM, DRYER AIR LOOP	A
15	850P-6000	PIPING & INSTRUMENTATION DIAGRAM, NOZZLE CLEANING AND SPRINKLER WATER	C
16	T43-550835	PIPING DIAGRAM FOR FT-0800-CU HEATER, FT-1500-L DA TANK, DEANS 3X4X8.5 PUMP WITH 50 HP MOTOR, 6" SUCTION/ 4" DISCHARGE, AND SECONDARY LOOP (EXAMPLE)	B
17	T43-550835	PIPING DIAGRAM FOR FT-0800-CU HEATER, FT-1500-L DA TANK, DEANS 3X4X8.5 PUMP WITH 50 HP MOTOR, 6" SUCTION/ 4" DISCHARGE, AND SECONDARY LOOP (LEGEND) (EXAMPLE)	B

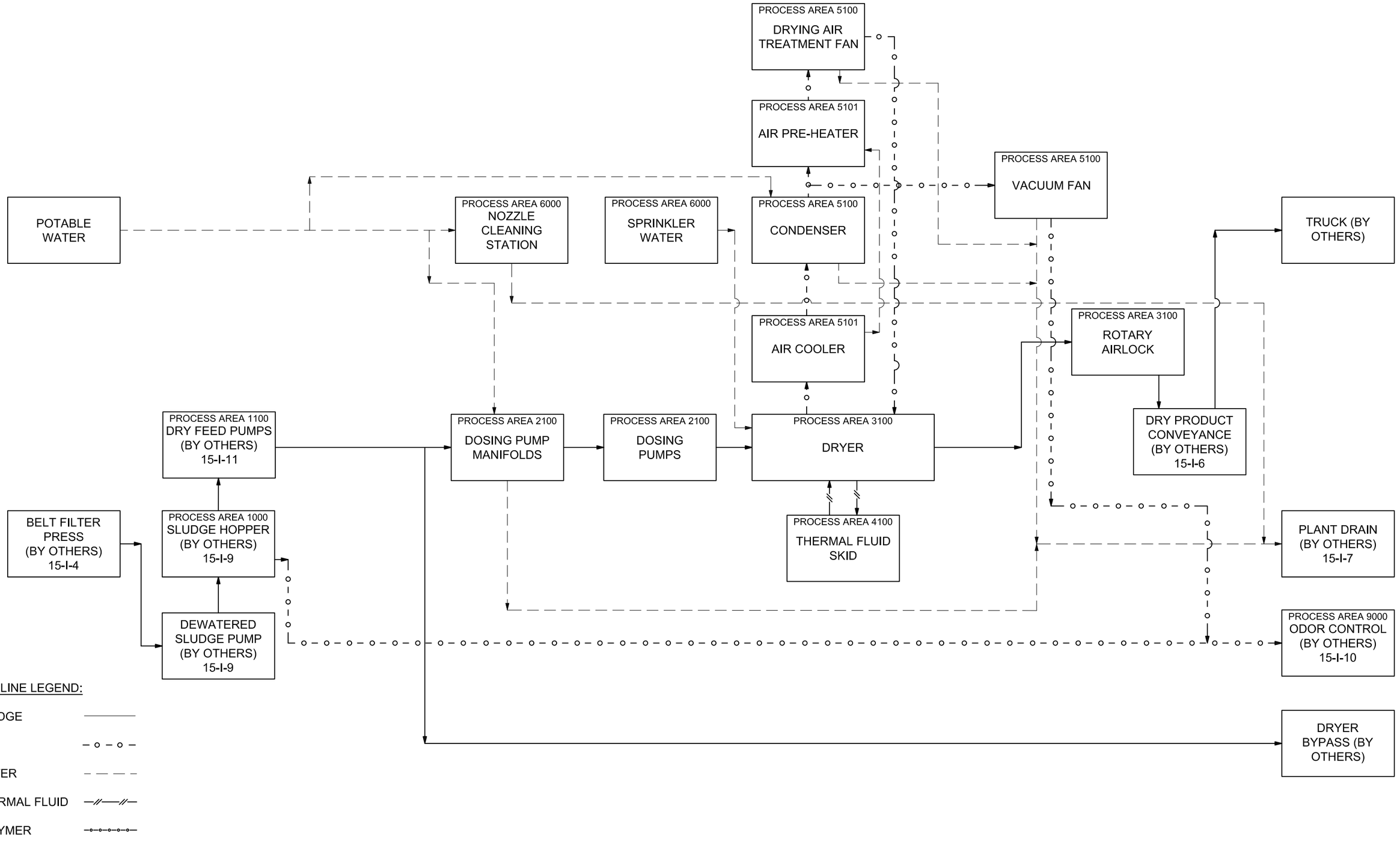
KRÜGER

PACKAGE NAME: CANTON PID
PROJECT NUMBER: 5700110005
PROJECT NAME: CANTON, GA

MD TABLE OF CONTENTS
REVISION TABLE

REV	CREATED	APPR	DATE	DESCRIPTION
A	MJG	HJH	06.15.20	PRELIMINARY RELEASE
B	MAB	HJH	06.26.20	ADDED TURBO HTXs. VARIOUS MARKUPS.
C	MJG	HJH	09.10.20	UPDATED VALVES SHEETS 5100 & 6000
D	SRW	HJH	10.28.20	UPDATED PER ENGINEER'S MARKUPS.

KRÜGER



REV	DESCRIPTION	DRAWN	APPR	DATE
C	REVISED PER ENGINEER'S MARKUPS	SRW	MRJB	10.28.20
B	ADDED TURBO HTX LOOP	MAB	HJH	06.26.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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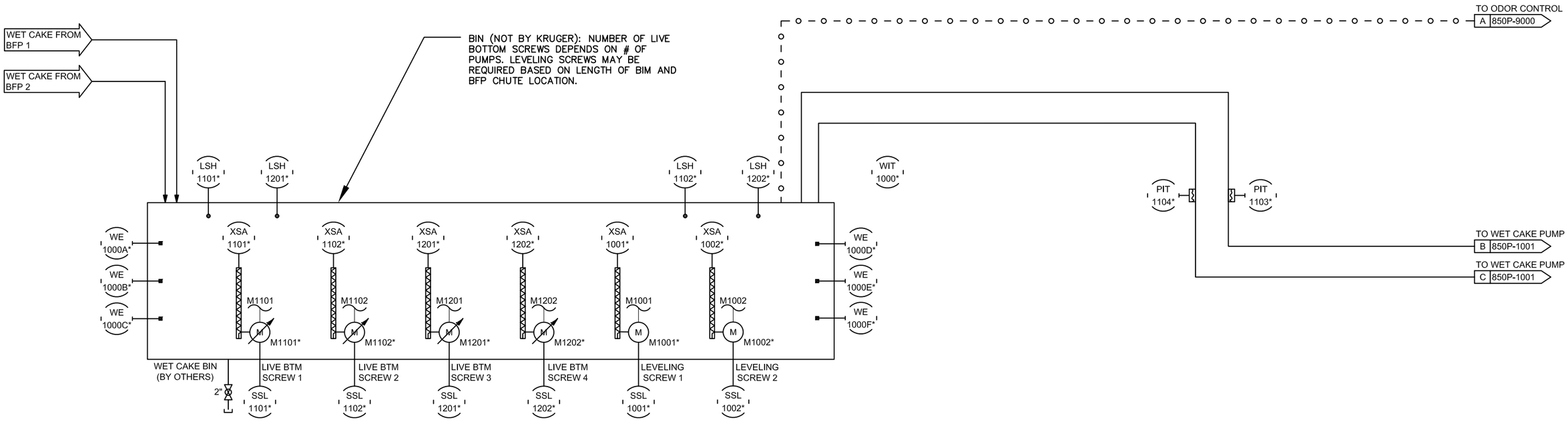
BIOCON
PROCESS FLOW DIAGRAM

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	NTS	850P-0000	1 of 1	C



NOTES:

1. FOR EXAMPLE ONLY. SEE ATKIN'S DRAWING 15-I-9 FOR DETAILS.
2. AIR LINES, REGULATOR/FILTER COMBO, AND ISOLATION VALVES FOR KRUGER SUPPLIED PNEUMATICALLY ACTUATED VALVES ARE TO BE PROVIDED BY THE INSTALLATION CONTRACTOR.
3. ITEMS WITHOUT TAG NUMBERS ARE SUPPLIED AND INSTALLED BY INSTALLATION CONTRACTOR.
4. PROCESS PIPING SCOPE OF SUPPLY IS DESIGNATED BY LINETYPE.
5. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
6. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
7. SIGNALS ARE DUPLICATED VIA CONTACTS & TERMINALS AND DIRECT WIRED TO EACH PLC PANEL.

* PREFERRED TAG NUMBER BY CONTROLS. TO BE SUPPLIED BY OTHERS.

REV	DESCRIPTION	DRAWN	APPR	DATE
C	REVISED PER ENGINEER'S MARKUPS, ADDED NOTE 1	SRW	MRJB	10.27.20
B	REMOVED NOTE 7	MAB	HJH	06.26.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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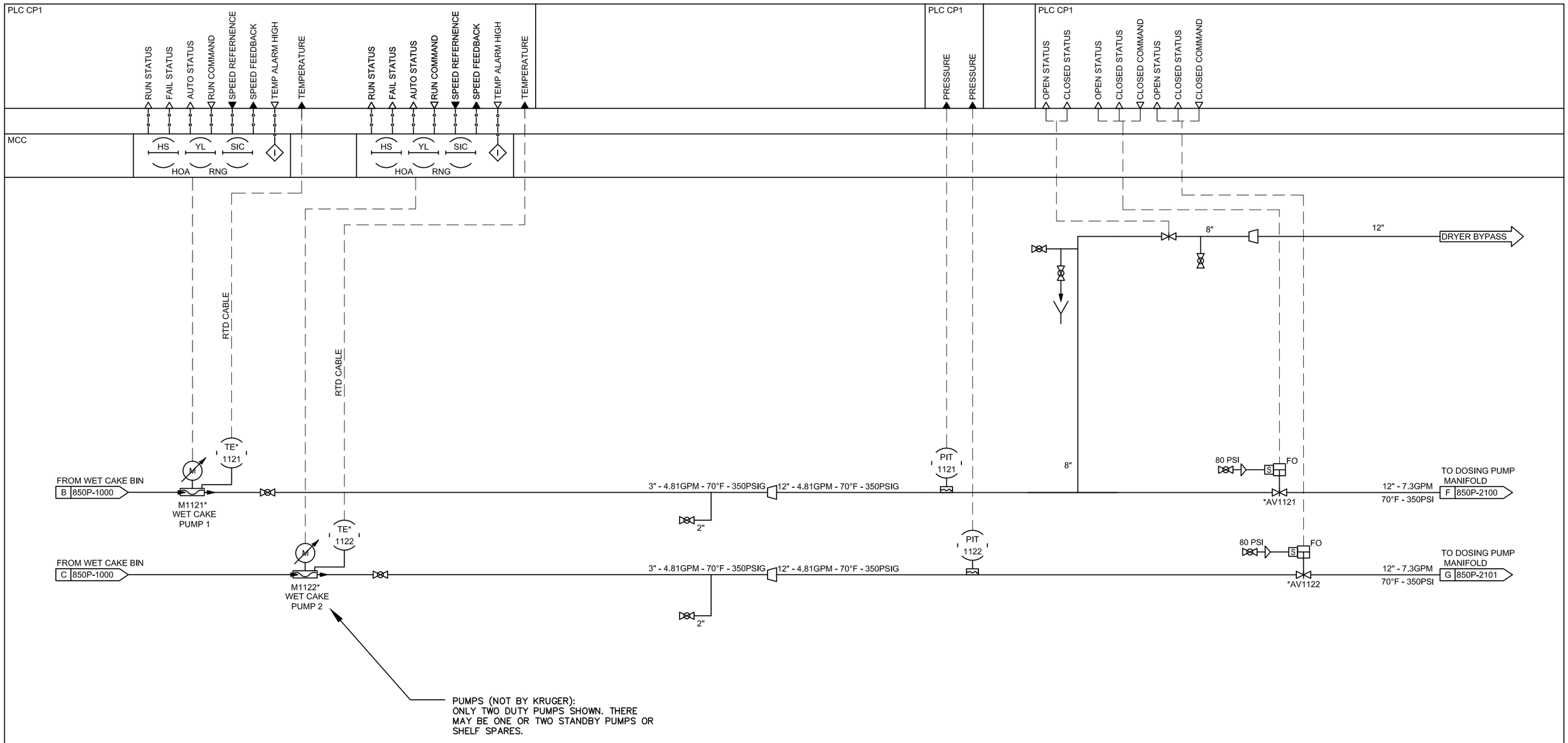
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
WET CAKE HANDLING (WCH)

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-1000	1 of 1	C



NOTES:

1. FOR EXAMPLE ONLY. SEE ATKIN'S DRAWING 15-I-11 FOR DETAILS.
2. AIR LINES, REGULATOR/FILTER COMBO, AND ISOLATION VALVES FOR KRUGER SUPPLIED PNEUMATICALLY ACTUATED VALVES ARE TO BE PROVIDED BY THE INSTALLATION CONTRACTOR.
3. ITEMS WITHOUT TAG NUMBERS ARE SUPPLIED AND INSTALLED BY INSTALLATION CONTRACTOR.
4. PROCESS PIPING SCOPE OF SUPPLY IS DESIGNATED BY LINETYPE.
5. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
6. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
7. RTD CABLE TO TEMPERATURE LIMIT ALARM LOCATED IN PLC PANEL.
8. POLYMER SUPPLY AND DELIVERY METHOD BY OTHERS. POLYMER TUBING LINES AND ISOLATION VALVES NOT SHOWN FOR CLARITY.

* PREFERRED TAG NUMBER BY CONTROLS. TO BE SUPPLIED BY OTHERS.

REV	DESCRIPTION	DRAWN	APPR	DATE
C	REVISED PER ENGINEER'S MARKUPS, ADDED NOTE 1	SRW	MRJB	10.27.20
B	REMOVED CLOSED STATUS FROM I/O	MAB	HJH	06.26.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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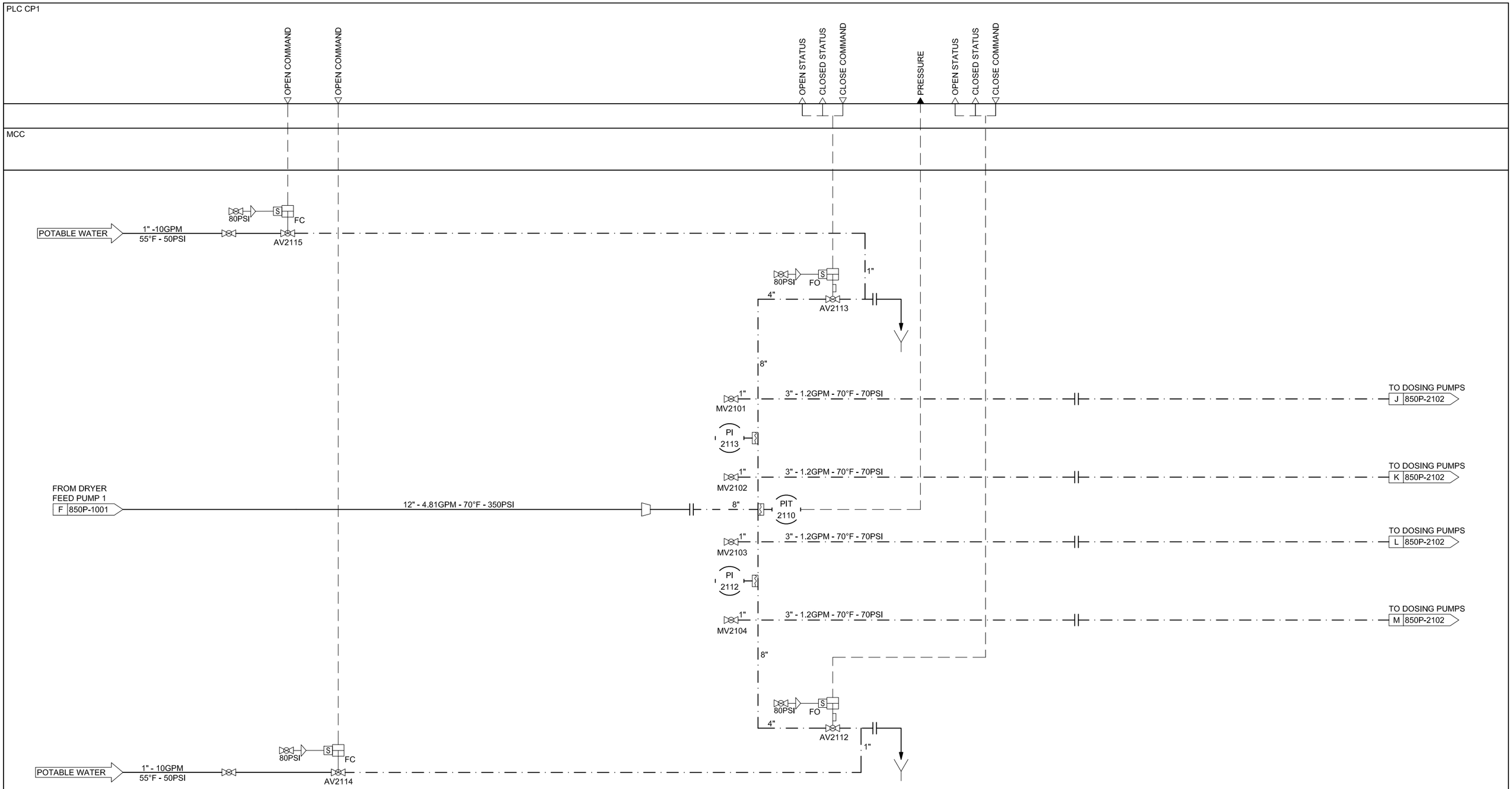
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
WET CAKE HANDLING (WCH)

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-1001	1 of 1	C



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6. POLYMER SUPPLY AND DELIVERY METHOD BY OTHERS. POLYMER LINES AND ISOLATION VALVES NOT SHOWN FOR CLARITY.

REV	DESCRIPTION	DRAWN	APPR	DATE
B	REVISED PER ENGINEER'S MARKUPS.	SRW	MRJB	10.27.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DOSING PUMP MANIFOLD 1

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-2100	1 of 1	B

PLC CP1

MCC

OPEN COMMAND

OPEN COMMAND

OPEN STATUS

CLOSED STATUS

CLOSE COMMAND

PRESSURE

OPEN STATUS

CLOSED STATUS

CLOSE COMMAND

POTABLE WATER

1" - 10GPM
55°F - 50PSI

80PSI

S

FC

AV2125

80PSI

S

FO

AV2123

1"

4"

8"

1"

MV2107

3" - 1.2GPM - 70°F - 70PSI

TO DOSING PUMPS
N 850P-2103

PI
2123

1"

MV2106

3" - 1.2GPM - 70°F - 70PSI

TO DOSING PUMPS
O 850P-2103

FROM DRYER
FEED PUMP 2
G 850P-1001

12" - 4.81GPM - 70°F - 350PSI

8"

PIT
2120

1"

MV2107

3" - 1.2GPM - 70°F - 70PSI

TO DOSING PUMPS
P 850P-2103

PI
2122

1"

MV2108

3" - 1.2GPM - 70°F - 70PSI

TO DOSING PUMPS
Q 850P-2103

8"

80PSI

S

FO

4"

AV2122

1"

80PSI

S

FC

POTABLE WATER

1" - 10GPM
55°F - 50PSI

AV2124

NOTES:

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6. POLYMER SUPPLY AND DELIVERY METHOD BY OTHERS. POLYMER LINES AND ISOLATION VALVES NOT SHOWN FOR CLARITY.

REV	DESCRIPTION	DRAWN	APPR	DATE
B	REVISED PER ENGINEER'S MARKUPS	SRW	MRJB	10.27.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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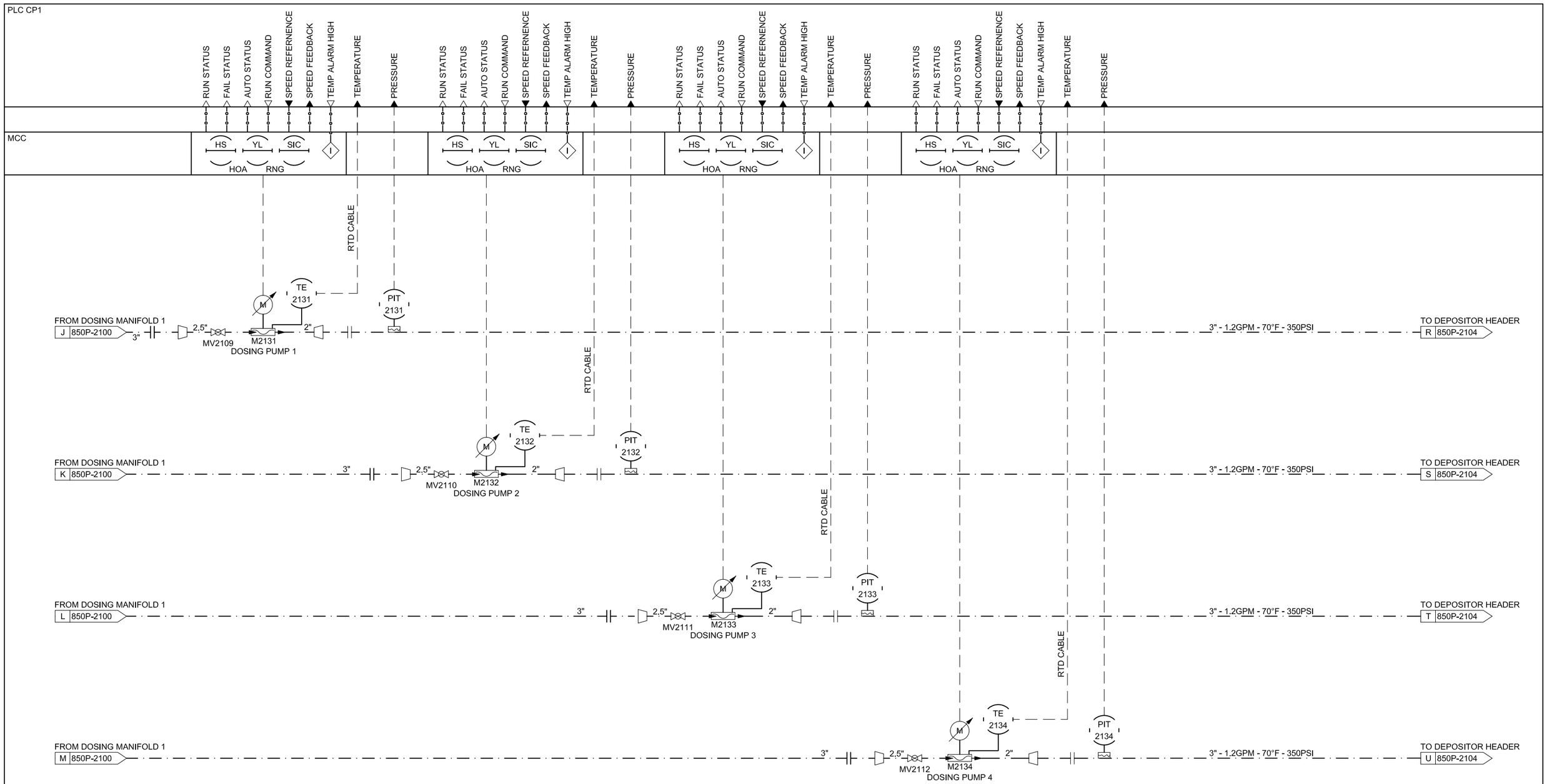
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DOSING PUMP MANIFOLD 2

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-2101	1 of 1	B



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4. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
5. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
6. RTD CABLE TO TEMPERATURE LIMIT ALARM LOCATED IN PLC PANEL.

REV	DESCRIPTION	DRAWN	APPR	DATE
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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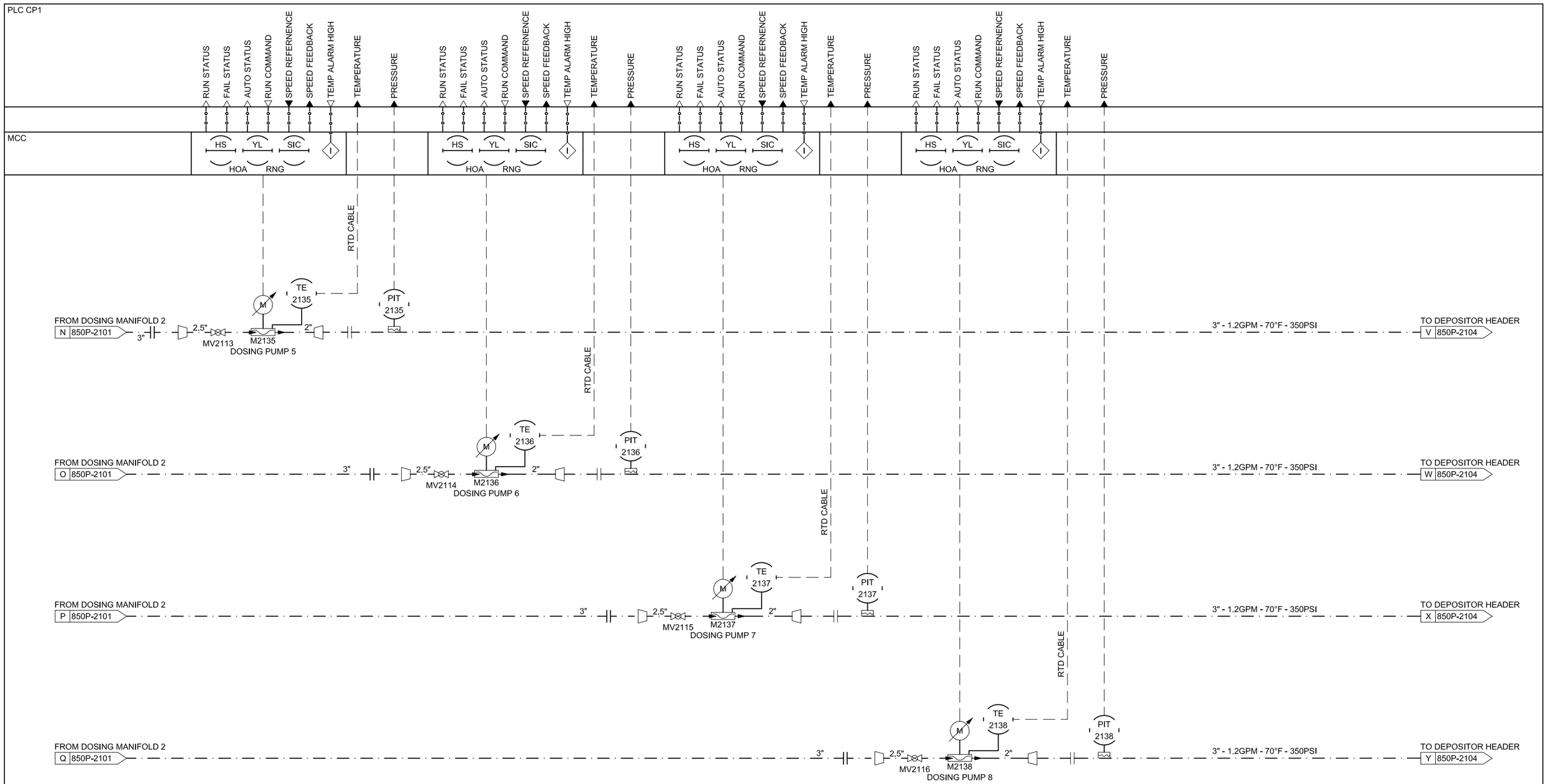
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DOSING PUMP (1-4)

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-2102	1 of 1	A



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REV	DESCRIPTION	DRAWN	APPR	DATE
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DOSING PUMPS (5-8)

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-2103	1 of 1	A

PLC CP1

MCC

RUN STATUS
FAIL STATUS
AUTO STATUS
SPEED REFERNENCE
SPEED FEEDBACK
RUN COMMAND
DEPOSITOR FORWARD OVER-TRAVEL
DEPOSITOR REVERSE OVER-TRAVEL

HS HOA
YL RNG
SIC
HS RST
I

FROM DOSING PUMP 1
R 850P-2102
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 2
S 850P-2102
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 3
T 850P-2102
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 4
U 850P-2102
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 5
V 850P-2103
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 6
W 850P-2103
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 7
X 850P-2103
3" - 1.2GPM - 70°F - 250PSI

FROM DOSING PUMP 8
Y 850P-2103
3" - 1.2GPM - 70°F - 250PSI

MV2117 MV2118 MV2119 MV2120 MV2121 MV2122 CATCH TRAY
MV2123 MV2124 MV2125 MV2126 MV2127 MV2128 CATCH TRAY
MV2129 MV2130 MV2131 MV2132 MV2133 MV2134 CATCH TRAY
MV2135 MV2136 MV2137 MV2138 MV2139 MV2140 CATCH TRAY

1" MV2141
1" MV2142
1" MV2143
1" MV2144
1" MV2145
1" MV2146
1" MV2147
1" MV2148

ROTATING DEPOSITER SHAFTS, GEAR BOX & CONNECTING LINKAGE

M M2139

DEPOSITOR
ZS 2139A FWD O/T
ZS 2139B FWD LIMIT
ZS 2139C REV LIMIT
ZS 2139D REV O/T

TO DRYER BELT
Z 850P-3100

NOTES:
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3. PROCESS PIPING SCOPE OF SUPPLY IS DESIGNATED BY LINETYPE.
4. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
5. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.

REV	DESCRIPTION	DRAWN	APPR	DATE
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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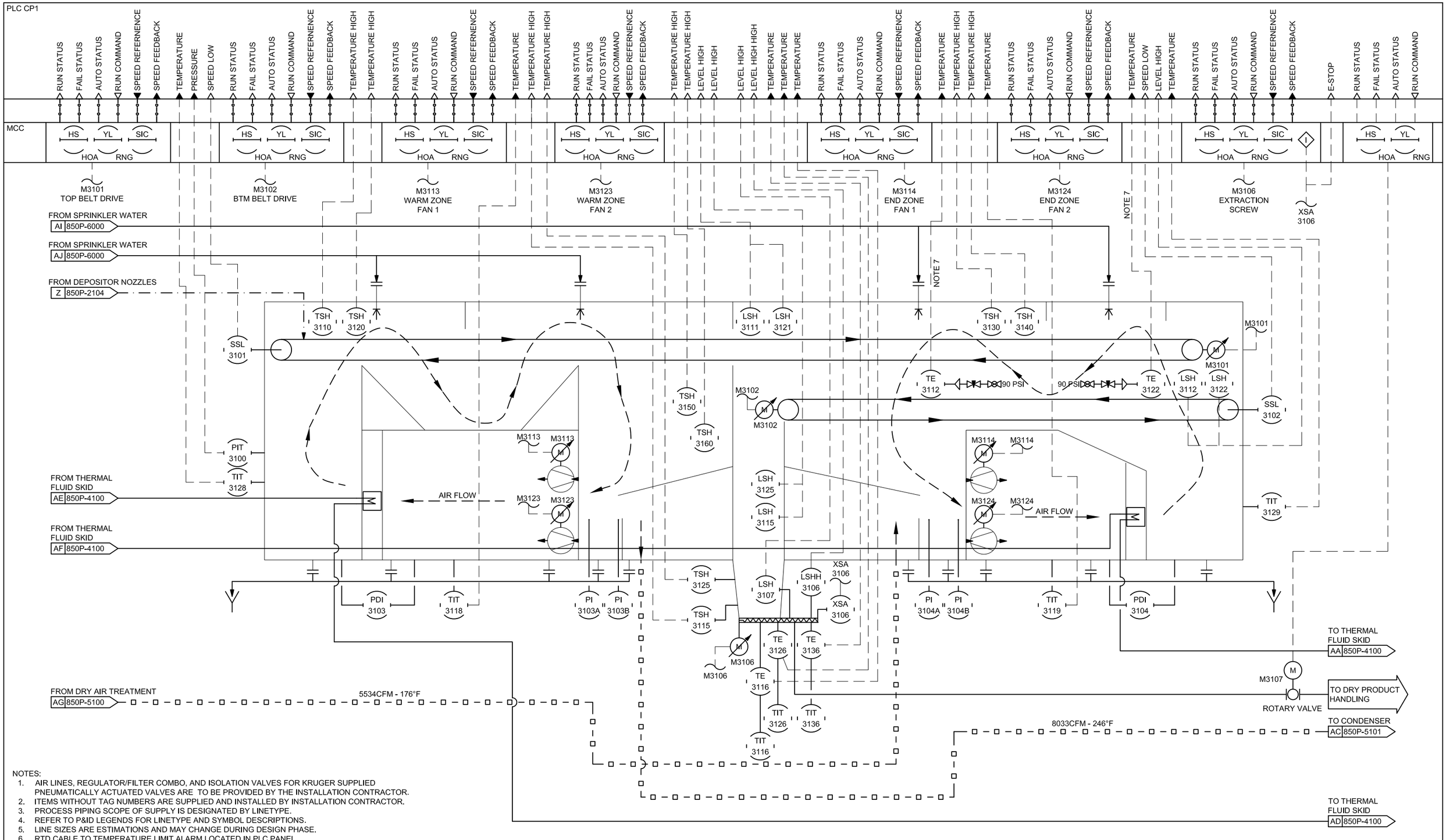
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DEPOSITORS

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-2104	1 of 1	A



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5. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
6. RTD CABLE TO TEMPERATURE LIMIT ALARM LOCATED IN PLC PANEL.
7. THERMOCOUPLE WIRE ONLY.

REV	DESCRIPTION	DRAWN	APPR	DATE
B	UPDATED LINES AG AND AC	MJG	MAB	06.26.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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BIOCON
PIPING & INSTRUMENTATION DIAGRAM
SLUDGE DRYER

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-3100	1 of 1	B

PLC CP1

MCC

FLUID FLOW ALARM
RUN STATUS
SYSTEM FAULT
SYSTEM ENABLE
ENABLE BURNER
START/STOP
SECONDARY LOOP TEMPERATURE
STACK TEMPERATURE
HEATER TEMPERATURE
MAIN LOOP SET POINT TEMPERATURE
TEMPERATURE VALVE SET POINT
SEC LOOP SETPOINT TEMPERATURE

FROM DRYER WARM ZONE HTX
AA 850P-3100

FROM DRYER END ZONE HTX
AD 850P-3100

REFER TO FULTON P&ID

TO DRYER WARM ZONE HTX
AE 850P-3100

TO DRYER END ZONE HTX
AF 850P-3100

THERMAL FLUID HEATER SKID

NOTES:
1. PROCESS PIPING SCOPE OF SUPPLY IS DESIGNATED BY LINETYPE.
2. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
3. REFER TO MANUFACTURER'S P&ID FOR FULL PIPING AND INSTRUMENTS LAYOUT.

REV	DESCRIPTION	DRAWN	APPR	DATE
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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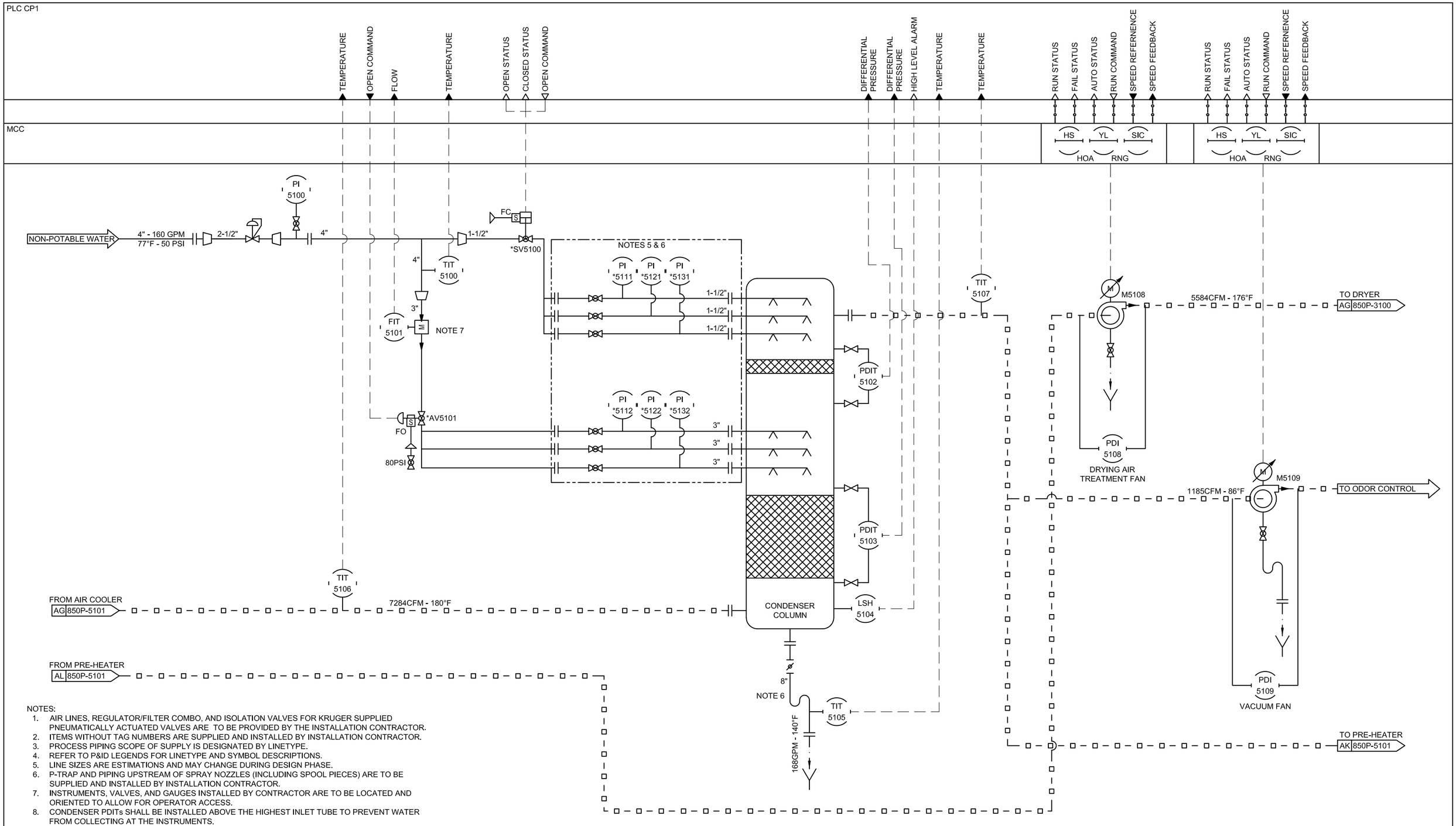
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
THERMAL FLUID HEATER SKID

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-4100	1 of 1	A



NOTES:

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4. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
5. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
6. P-TRAP AND PIPING UPSTREAM OF SPRAY NOZZLES (INCLUDING SPOOL PIECES) ARE TO BE SUPPLIED AND INSTALLED BY INSTALLATION CONTRACTOR.
7. INSTRUMENTS, VALVES, AND GAUGES INSTALLED BY CONTRACTOR ARE TO BE LOCATED AND ORIENTED TO ALLOW FOR OPERATOR ACCESS.
8. CONDENSER PDITs SHALL BE INSTALLED ABOVE THE HIGHEST INLET TUBE TO PREVENT WATER FROM COLLECTING AT THE INSTRUMENTS.

* PREFERRED TAG NUMBER BY CONTROLS. TO BE SUPPLIED BY OTHERS.

REV	DESCRIPTION	DRAWN	APPR	DATE
D	UPDATED MIST ELEMINIATOR VALVE TO PNEUMATIC	MJG	HJH	09.10.20
C	REVISED ODOR CONTROL DUCTING	SRW	HJH	07.29.20
B	ADDED TURBO HTX LOOP, UPDATED NOTES	MAB	HJH	06.26.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

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BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DRYING AIR TREATMENT

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-5100	1 of 1	D

PLC CP1

TEMPERATURE

OPEN STATUS

CLOSED STATUS

OPEN COMMAND

PRESSURE

TEMPERATURE

PRESSURE

MCC

DPIT 5110A

TIT 5111

FROM CONDENSER AK 850P-5100

4752CFM - 86°F

5534CFM - 176°F

TO DRYER AL 850P-5100

AIR PRE-HEATER AND AIR COOLER

FC S

POTABLE WATER

(BY OTHERS)

(BY KRUGER)

TIT 5112

FROM DRYER AC 850P-3100

8033CFM - 246°F

7284CFM - 180°F

TO CONDENSER AG 850P-5100

DPIT 5110B

NOTES:

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5. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
6. RTD CABLE TO TEMPERATURE LIMIT ALARM LOCATED IN PLC PANEL.
7. THERMOCOUPLE WIRE ONLY.
8. DPITs SHALL BE INSTALLED ABOVE THE HIGHEST INLET TUBE TO PREVENT CONDENSATION FROM COLLECTING AT THE INSTRUMENTS.

REV	DESCRIPTION	DRAWN	APPR	DATE
B	REVISED AIR HEATER/COOLER. ADDED SOL VALVE	SRW	HJH	07.29.20
A	PRELIMINARY RELEASE	MJG	HJH	06.26.20

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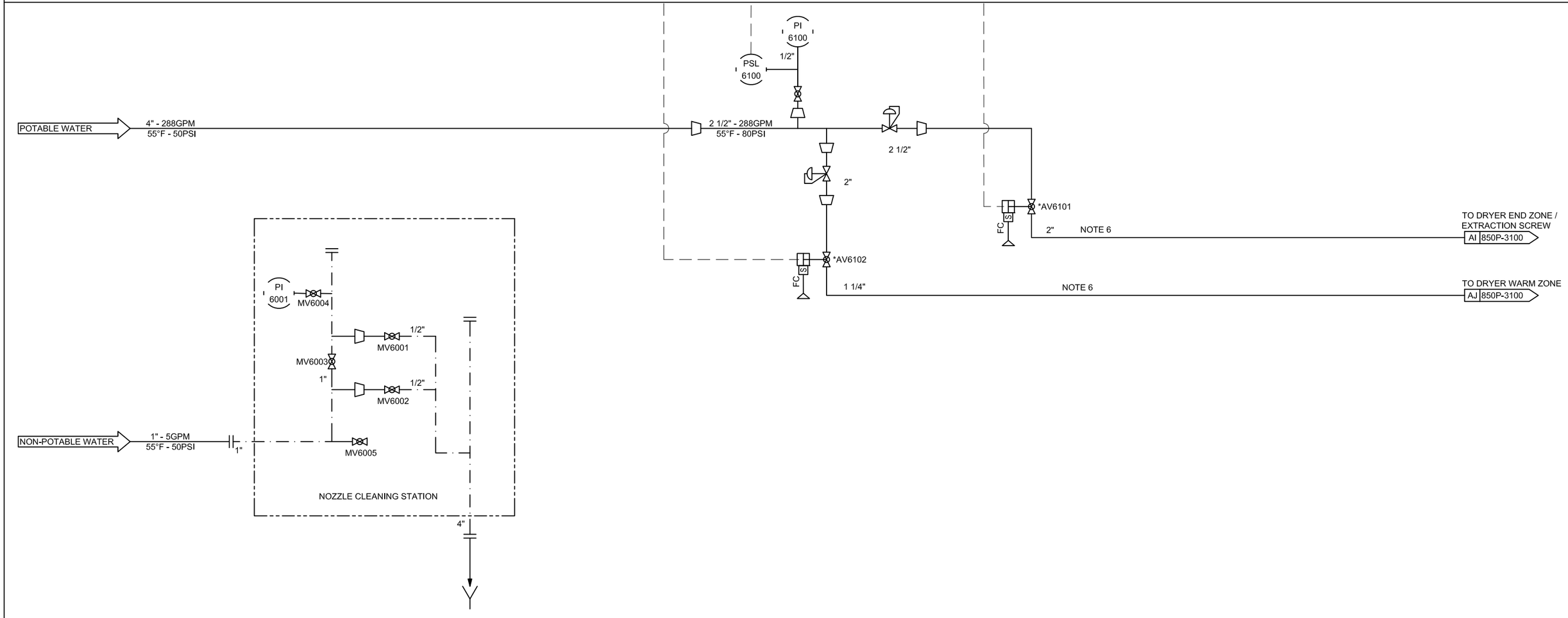
BIOCON
PIPING & INSTRUMENTATION DIAGRAM
DRYING AIR LOOP

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-5101	1 of 1	A

PLC CP1

OPEN STATUS | CLOSED STATUS | OPEN COMMAND | PRESSURE LOW | OPEN STATUS | CLOSED STATUS | OPEN COMMAND

MCC



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4. REFER TO P&ID LEGENDS FOR LINETYPE AND SYMBOL DESCRIPTIONS.
5. LINE SIZES ARE ESTIMATIONS AND MAY CHANGE DURING DESIGN PHASE.
6. STAINLESS STEEL PIPING REQUIRED FOR ALL PIPING DOWNSTREAM FROM SOLENOID VALVES.

* PREFERRED TAG NUMBER BY CONTROLS. TO BE SUPPLIED BY OTHERS.

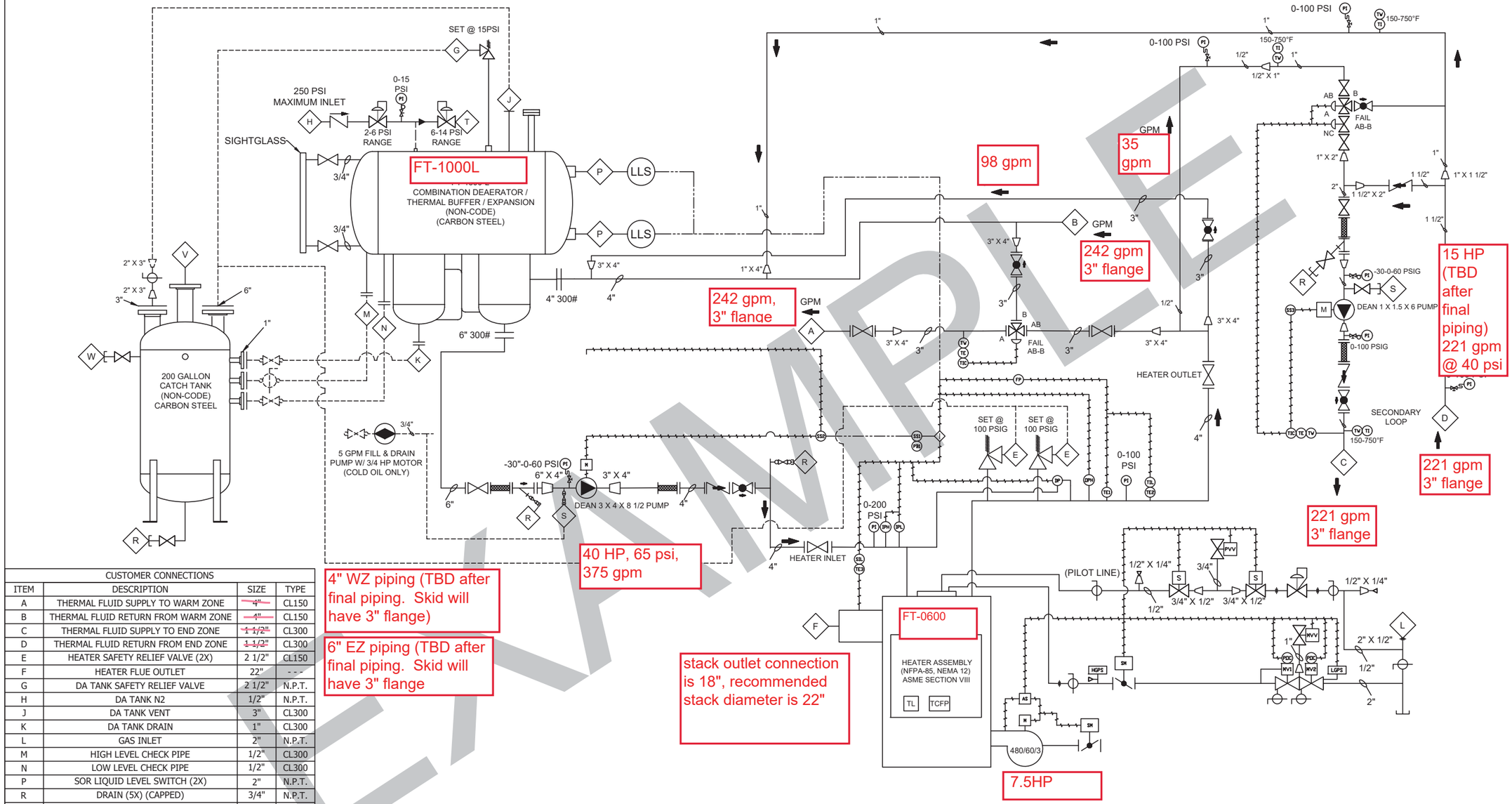
REV	DESCRIPTION	DRAWN	APPR	DATE
C	UPDATED VALVES TO PHEUMATIC	MJG	HJH	09.10.20
B	UPDATED NOTE	MAB	HJH	08.19.20
A	PRELIMINARY RELEASE	MJG	HJH	06.15.20

VEOLIA
I. KRUGER, INC.
4001 WESTON PARKWAY
CARY, NC 27513
(919) 677-8310

5700110005
CANTON, GA

BIOCON
PIPING & INSTRUMENTATION DIAGRAM
NOZZLE CLEANING AND SPRINKLER WATER

DRAWN	CHECKED	SCALE	DRAWING NO	SHEET	REV
MJG	HJH	1 : 2	850P-6000	1 of 1	C



CUSTOMER CONNECTIONS			
ITEM	DESCRIPTION	SIZE	TYPE
A	THERMAL FLUID SUPPLY TO WARM ZONE	~~4"~~	CL150
B	THERMAL FLUID RETURN FROM WARM ZONE	~~4"~~	CL150
C	THERMAL FLUID SUPPLY TO END ZONE	~~1 1/2"~~	CL300
D	THERMAL FLUID RETURN FROM END ZONE	~~1 1/2"~~	CL300
E	HEATER SAFETY RELIEF VALVE (2X)	2 1/2"	CL150
F	HEATER FLUE OUTLET	22"	- - -
G	DA TANK SAFETY RELIEF VALVE	2 1/2"	N.P.T.
H	DA TANK N2	1/2"	N.P.T.
J	DA TANK VENT	3"	CL300
K	DA TANK DRAIN	1"	CL300
L	GAS INLET	2"	N.P.T.
M	HIGH LEVEL CHECK PIPE	1/2"	CL300
N	LOW LEVEL CHECK PIPE	1/2"	CL300
P	SOR LIQUID LEVEL SWITCH (2X)	2"	N.P.T.
R	DRAIN (5X) (CAPPED)	3/4"	N.P.T.
S	DRAIN AND FILL (3X) (CAPPED)	3/4"	N.P.T.
T	N2 KIT	1/2"	N.P.T.
V	CATCHMENT TANK VENT	6"	CL150
W	CATCHMENT TANK OVERFLOW (CAPPED)	3/4"	N.P.T.

NOTES:
1. (- - -) REPRESENTS PIPING BY OTHERS
2. (—•—) REPRESENTS WIRING BY FULTON
3. (-----) REPRESENTS WIRING BY OTHERS

REV	REVISION DESCRIPTION	B.O.M.	ELEC. ENG	MECH. ENG	CHECKED	APPROVED
B	UPDATED CONTROL VALVES ON END ZONE PER CUSTOMER REQUEST D. HARRINGTON 12/3/19	N/A	LNL 12/4/19	N/A	N/A	RJF 12/4/19

REVISION HISTORY

DRAWN BY: D. HARRINGTON 9/21/2019	MECH. ENG: N/A	JOB NUMBER: 550835	DESCRIPTION: CANTON,GA - MARK UP
CHECKED BY: N/A	ELEC. ENG: LNL 9/30/2019	PROJECT NAME: VEOLIA WATER TECH	
B.O.M. REVIEW: N/A	APPROVED BY: GW 9/30/2019	PROJECT MANAGER: G. WILSON	SHEET 1 OF 2

The Fulton Companies
972 Centerville Road
Pulaski, New York USA 13142

DRAWING NUMBER: T43-550835 REV: B

LEGEND

ITEM	DESCRIPTION
AAS	AMBIENT AIR SENSOR
AFS	AIR FILTER SWITCH
AG	AGITATOR
AH	ALARM HORN
ALWCO	AUXILIARY LOW WATER CUT OFF
AS	AIR SWITCH
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
CAP	CAPACITANCE SENSOR
CS	CONDUCTIVITY SENSOR
CQ	CHEMICAL INJECTION QUILL
DP	DIFFERENTIAL PRESSURE SWITCH
FC	FAIL CLOSED
FFA	FLAME FAILURE ALARM
FM	FLOW METER
FO	FAIL OPEN
FOP	FLAME OBSERVATION PORT
FP	FLAME PROGRAMMER
HGPS	HIGH GAS PRESSURE SWITCH
HLAQ	HIGH LIMIT AQUASTAT
HLPC	HIGH LIMIT PRESSURE CONTROL
IR	INFRARED SCANNER
IT	IGNITION TRANSFORMER

ITEM	DESCRIPTION
LCON	LEVEL CONTROL ON
LCOFF	LEVEL CONTROL OFF
LG	LEVEL GLASS
LGPS	LOW GAS PRESSURE SWITCH
LLS	LIQUID LEVEL SWITCH
LWCO	LOW WATER CUTOFF
M	MOTOR
MA	MAGNESIUM ANODE
MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE
MPC	MODULATING PRESSURE CONTROL
MV	MAIN SAFETY SHUTOFF VALVE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPT	NATIONAL PIPE THREAD
O2	O2 TRIM SENSOR
OAQ	OPERATING AQUASTAT
OPC	OPERATING PRESSURE CONTROL
PC	PRESSURE CONTROLLER
PE	PRESSURE ELEMENT / PRESSURE SENSOR
PI	PRESSURE INDICATOR
PIC	PRESSURE INDICATING CONTROLLER
PLWCO	PRIMARY LOW WATER CUTOFF

ITEM	DESCRIPTION
POC	PROOF OF CLOSURE
PS	PRESSURE SWITCH
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PT	PRESSURE TRANSDUCER
PV	PILOT SHUTOFF VALVE
PVV	PILOT VENT VALVE
SBDC	SURFACE BLOWDOWN CONTROLLER
SDT	STEPDOWN TRANSFORMER
SM	SERVO MOTOR
TC	TEMPERATURE CONTROLLER
TCFP	TEMP. CONTROL / FLAME PROGRAMMER
TE	TEMPERATURE ELEMENT
TL	TEMPERATURE LIMIT
TV	THERMOSTATIC VENT
VB	VACUUM BREAKER
VL	VENT LIMITER
UV	UV SCANNER
WM	WATER METER

ITEM	DESCRIPTION
	ANGLE STOP / CHECK VALVE
	ANGLE VALVE
	BALL VALVE
	BLOCK AND BLEED VALVE
	BLOWDOWN VALVE
	BUTTERFLY VALVE
	CAP
P M	COMBINATION REGULATOR / SHUTOFF VALVE
CS	CONDUCTIVITY SENSOR
	CONTROL VALVE
	DIAPHRAGM VALVE
	DOUBLE BODY VALVE
	FLANGE
	FLEX LINE
	FLOAT SWITCH
	GATE VALVE
	GLOBE VALVE
	LIQUID LEVEL
L	LIQUID LEVEL DRAINER
	MECHANICAL FLOAT VALVE
M	MOTORIZED VALVE
	NEEDLE VALVE

ITEM	DESCRIPTION
	KNIFE TYPE VALVE
	ORIFICE
	ORIFICE VENT VALVE
	PLUG
	PRESSURE GAUGE
P	PRESSURE REDUCING VALVE (EXTERNAL TAP)
P	PRESSURE REDUCING VALVE (SELF-CONTAINED)
	PRESSURE RELIEF VALVE
	PUMP
	PUMP (BI-ROTATIONAL)
	REDUCER
SM	SERVO MOTOR
S	SOLENOID VALVE
S	STEAM TRAP
	STRAINER (BASKET TYPE)
	STOP / CHECK VALVE
	SUCTION DIFFUSER
	SYPHON LOOP
T	TEMPERATURE REGULATING VALVE
	THERMOMETER
	TRIPLE DUTY VALVE
	UNION
	Y-STRAINER

REV	REVISION DESCRIPTION	B.O.M.	ELEC. ENG	MECH. ENG	CHECKED	APPROVED
B	UPDATED CONTROL VALVES ON END ZONE PER CUSTOMER REQUEST D. HARRINGTON 12/3/19	N/A	LNL 12/4/19	N/A	N/A	RJF 12/4/19

REVISION HISTORY

UNLESS OTHERWISE NOTED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/16
(2) PLACE DEC. ± .01
(3) PLACE DEC. ± .005
ANGLES ± 2 DEG.
SURFACE FINISH
250 MICRO-INCHES

THIRD ANGLE PROJECTION

DRAWN BY: D. HARRINGTON 9/21/2019	MECH. ENG: N/A	JOB NUMBER: 550835
CHECKED BY: N/A	ELEC. ENG: LNL 9/30/2019	PROJECT NAME: VEOLIA WATER TECH
B.O.M. REVIEW: N/A	APPROVED BY: GW 9/30/2019	PROJECT MANAGER: G. WILSON

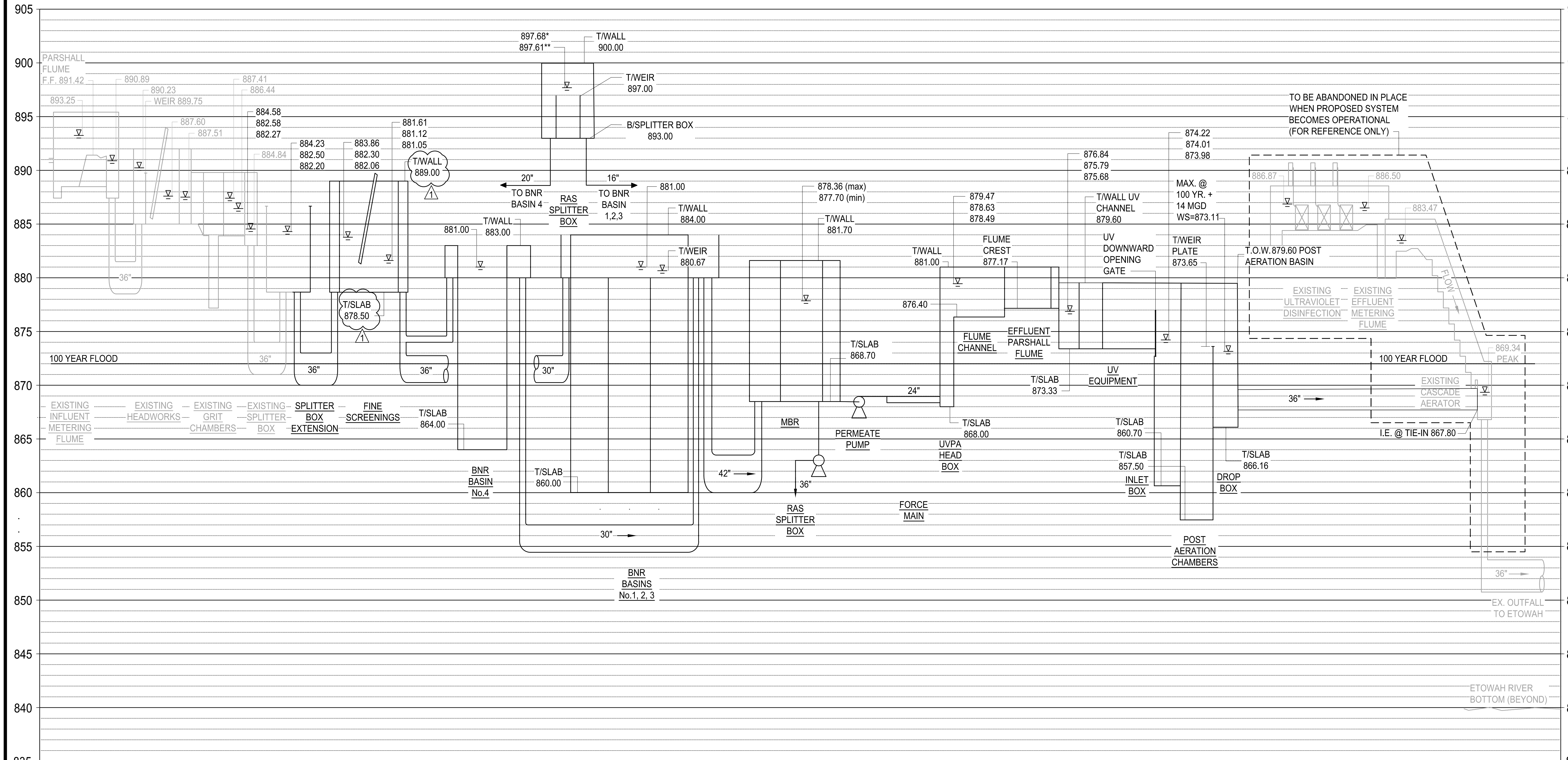
DESCRIPTION: CANTON,GA - MARK UP

SHEET 2 OF 2

The Fulton Companies
972 Centerville Road
Pulaski, New York USA 13142

DRAWING NUMBER: T43-550835

REV: B



NOTE:

884.58	WATER SURFACE ELEVATION AT 14 MGD
882.58	WATER SURFACE ELEVATION AT 7 MGD
882.27	WATER SURFACE ELEVATION AT 6 MGD

897.68* SPLITTER BOX WATER SURFACE ELEVATION AT 28 MGD
897.61** SPLITTER BOX WATER SURFACE ELEVATION AT 24 MGD

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 042364 HECTOR H. CASABLANCA 11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

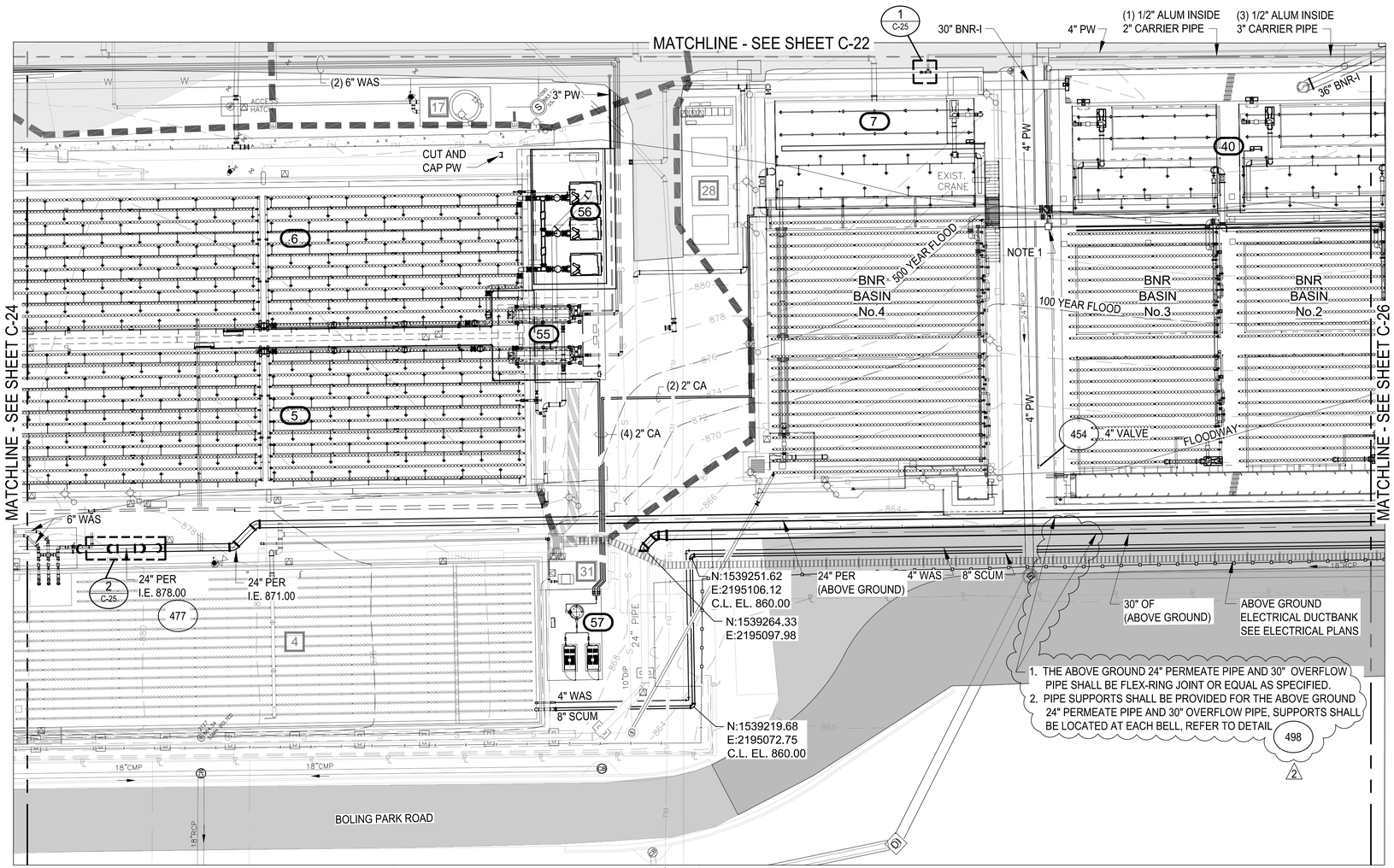
PROJ. NO.: 100061831
DESIGNED BY: DT
DRAWN BY: JN
CHECKED BY: VS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: NONE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

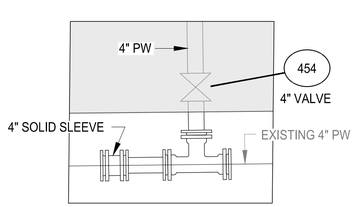
HYDRAULIC PROFILE

SHEET NO.
G-13

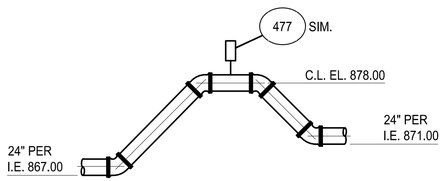
File Name: C:\PW_WORK\ATKNAGA01\NEWM7492\DMS35898\0100 – G-13.DWG|Tab: G-13|Plotted: November 12, 2020 2:29pm



PROPOSED YARD PIPING PARTIAL PLAN
SCALE: 1"=20'



DETAIL 1 C-25
SCALE: NTS



DETAIL 2 C-25
SCALE: NTS
(LOOKING NORTHEAST)

GENERAL NOTES:
1. FOR AND ADDITIONAL INFORMATION AND IDENTIFICATION OF EXISTING, REPURPOSED, MODIFIED, AND PROPOSED STRUCTURES AND EQUIPMENT SEE SHEET C-20.
2. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING STRUCTURES, PIPELINES, ELECTRICAL DUCT BANKS AND CONDUIT.
3. REMOVE ALL ABANDONED PIPE EXPOSED OR UNCOVERED DURING CONSTRUCTION ACTIVITIES.
4. HEAT TRACE AND INSULATE PIPING PER SPECIFICATION SECTION 15250.
5. CONTRACTOR TO COORDINATE WITH ENGINEER ON BURIED PIPING WITH LESS THAN 3 FEET OF COVER.

NOTES:
1. H-20 PULL BOX FOR ALUM LINES SIMILAR TO DETAIL 1 ON C-23.
2. 30" OF - CONNECT TO EXISTING SBR No.4 24" EFFLUENT PIPE.

GEORGIA REGISTERED No. 042364 PROFESSIONAL ENGINEER HECTOR M. CARBALLANCA
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
198 LOG CABIN CIRCLE
DALLAS, GEORGIA
(443) 249-3111

CERTIFICATE OF AUTHORIZATION: #PEF003892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.		
REVISION	DATE	
ADDENDUM No.3	10/30/20	
ADDENDUM No.4	11/13/20	

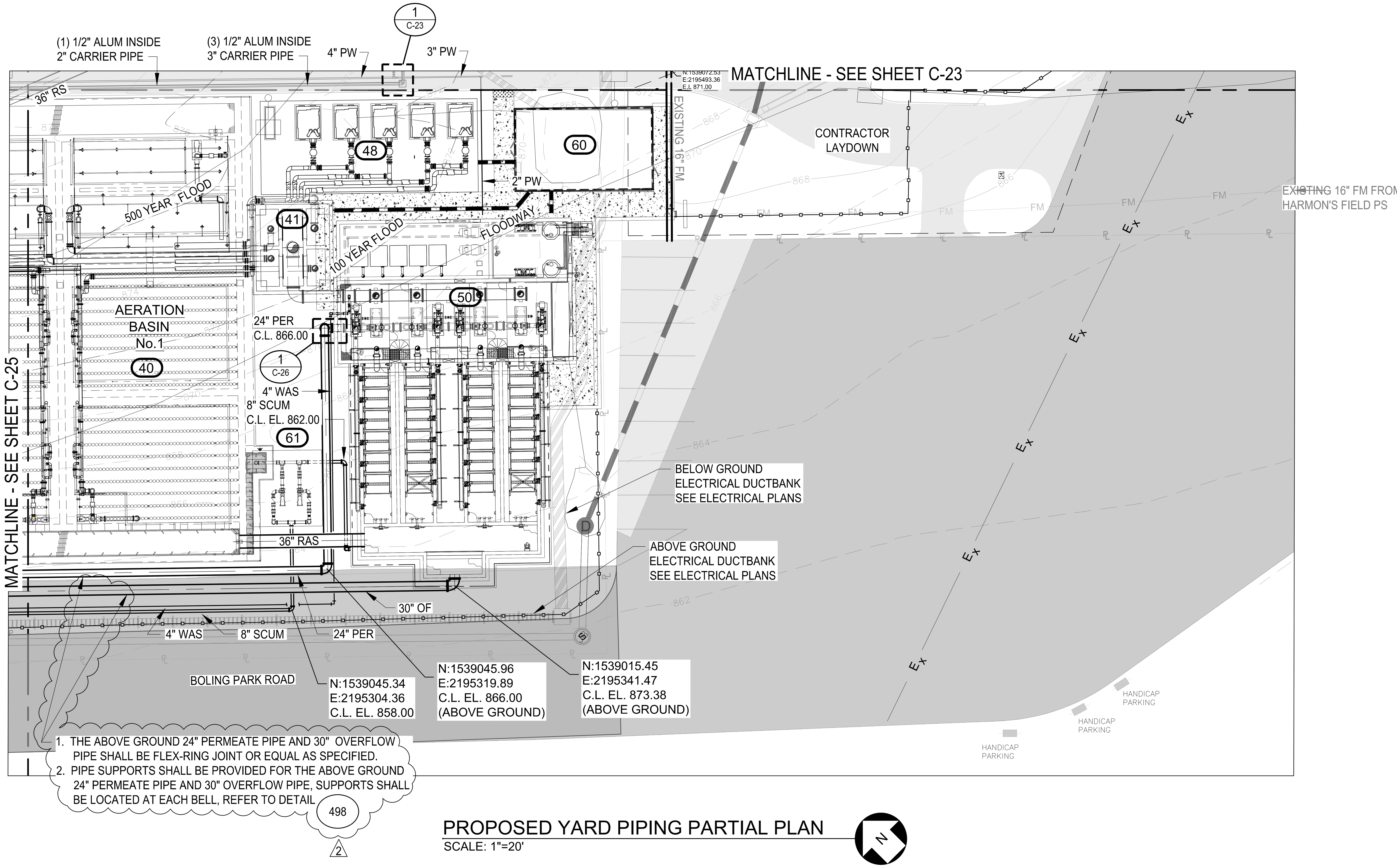
PROJ. NO.: 100061831
DESIGNED BY: YP
DRAWN BY: JN
CHECKED BY: HC
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED YARD PIPING PARTIAL PLAN

SHEET NO.
C-25

File Name: C:\PW_WORK\ATKNAGA01\NEWM7492\DMS35899\0200 - C-20, 21, 22, 23, 24, 25, 26.DWG|Tab:C-25|Plotted: November 12, 2020 4:23pm

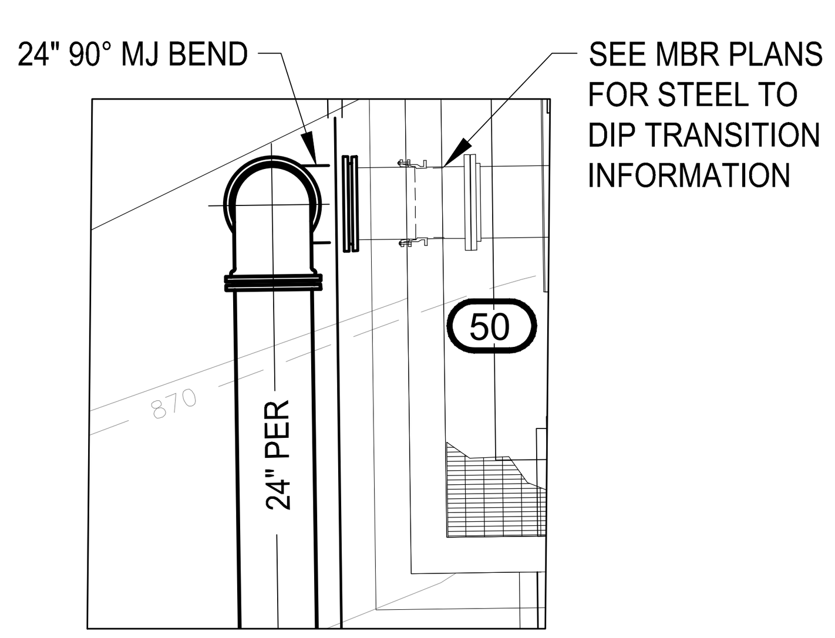


PROPOSED YARD PIPING PARTIAL PLAN

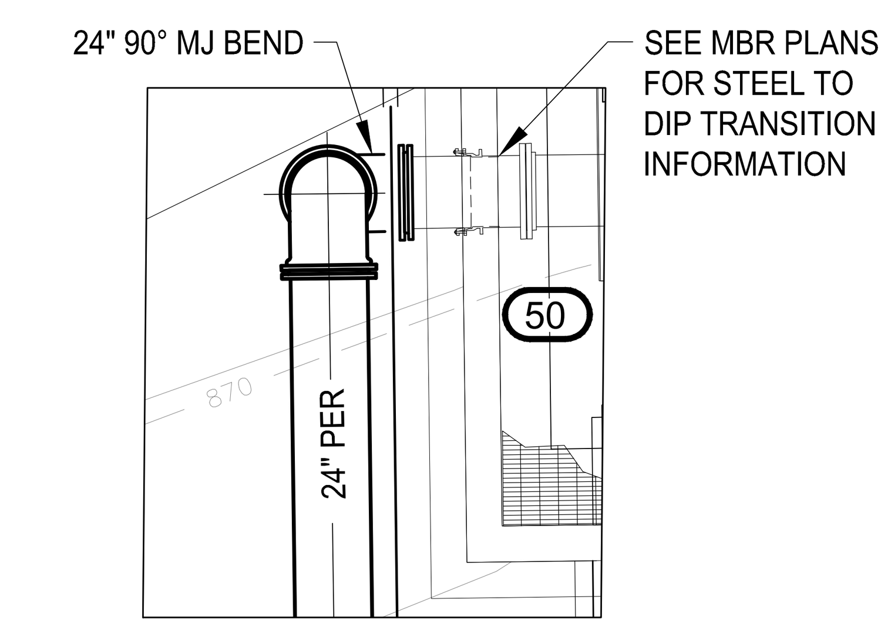
SCALE: 1"=20'

GENERAL NOTES:

1. FOR ADDITIONAL INFORMATION AND IDENTIFICATION OF EXISTING, REPURPOSED, MODIFIED, AND PROPOSED STRUCTURES AND EQUIPMENT SEE SHEET C-20.
2. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING STRUCTURES, PIPELINES, ELECTRICAL DUCT BANKS AND CONDUIT.
3. REMOVE ALL ABANDONED PIPE EXPOSED OR UNCOVERED DURING CONSTRUCTION ACTIVITIES.
4. HEAT TRACE AND INSULATE PIPING PER SPECIFICATION SECTION 15250.
5. CONTRACTOR TO COORDINATE WITH ENGINEER ON BURIED PIPING WITH LESS THAN 3 FEET OF COVER.



DETAIL 1 C-26
SCALE: NTS



DETAIL 1 C-26
SCALE: NTS

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 042364 HECTOR M. CASABLANCA
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700 Atlanta, Ga 30328 P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF003002 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
3	ADDENDUM No.3	10/30/20
4	ADDENDUM No.4	11/13/20

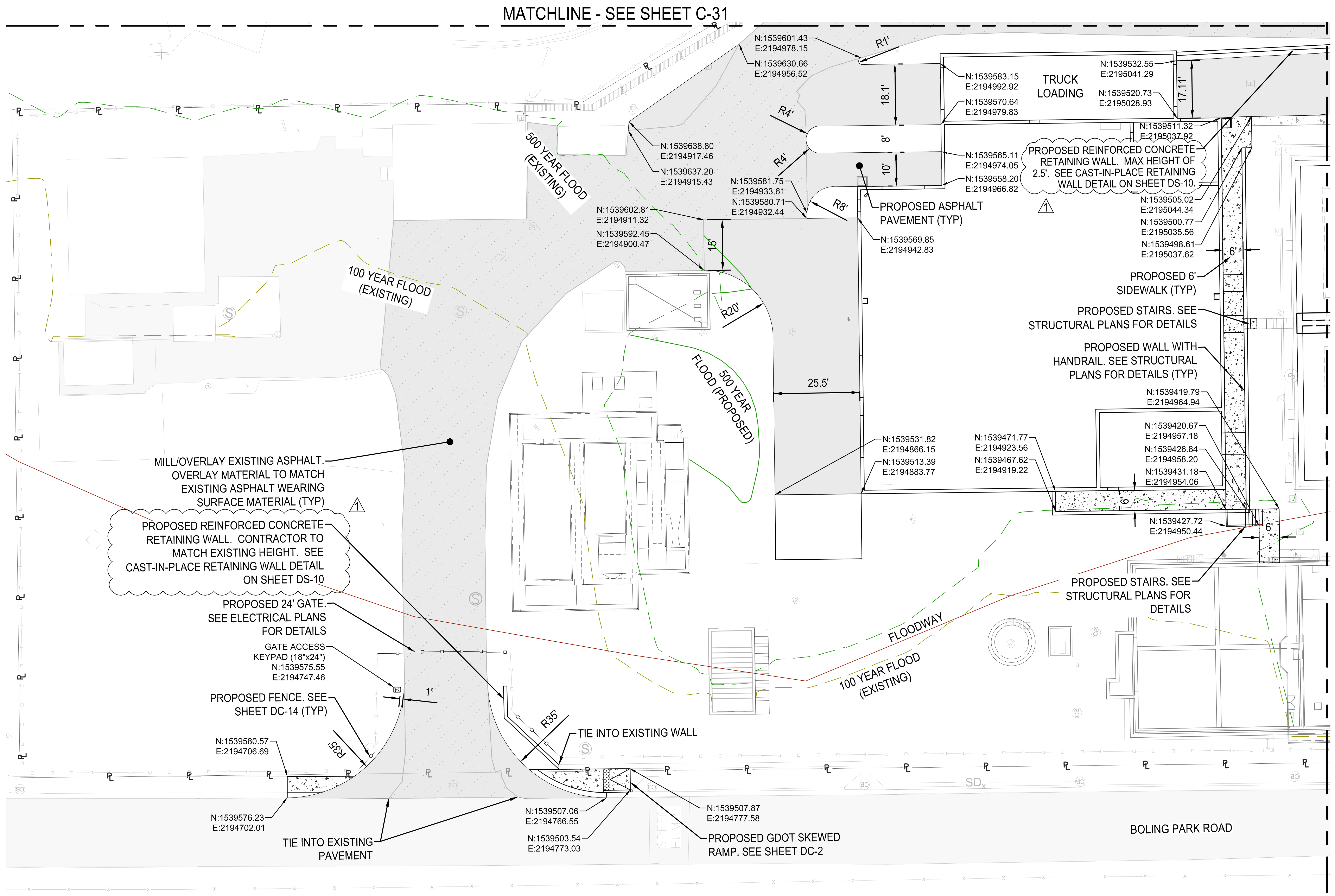
PROJ. NO.: 100061831
DESIGNED BY: YP
DRAWN BY: JN
CHECKED BY: HC
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED YARD PIPING PARTIAL PLAN

SHEET NO.
C-26

File Name: C:\PW_WORK\ATKNAGA01\NEWM7492\DMS35899\0200 – C–20, 21, 22, 23, 24, 25, 26.DWG|Tab: C–26|Plotted: November 12, 2020 4:06pm



PROPOSED CIVIL SITE PARTIAL PLAN

SCALE: 1"=20'

EXISTING SITE/SYMBOLS LEGEND

- ACCESS HATCH
- STORM DRAIN MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- JUNCTION BOX
- PIPE RISER
- YARD INLET
- DROP INLET
- CLEANOUT
- YARD HYDRANT
- LIGHT POLE
- POWER POLE
- BURIED ELECTRICAL
- ELECTRICAL
- ELECTRIC BOX/CONTROL BOX
- ELECTRIC METER
- WATER VALVE
- SPIGOT
- TEMPORARY SURVEY CONTROL POINT
- SIGN

PROPOSED SITE PLAN LEGEND

- PROPERTY LINE
- PROPOSED WALL
- PROPOSED CONSTRUCTION
- PROPOSED CURB
- PROPOSED ASPHALT PAVEMENT
- PROPOSED ASPHALT MILL/OVERLAY
- EXISTING AREA TO BE RESTORED W/ SOD
- PROPOSED CONCRETE PAVEMENT
- PROPOSED RIP RAP
- DETECTABLE WARNING
- PROPOSED PARKING COUNT
- ACCESSIBLE PARKING
- FLOODWAY
- 100 YEAR FLOOD (EXISTING)
- 500 YEAR FLOOD (EXISTING)
- 100 YEAR FLOOD (PROPOSED)
- 500 YEAR FLOOD (PROPOSED)
- PROPOSED ABOVEGROUND ELECTRICAL CONDUIT
- PROPOSED FENCE

GENERAL SITE PLAN NOTES:

1. ALL DIMENSIONS ARE THE THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. ALL RADII ARE 3 FOOT UNLESS NOTED OTHERWISE.
3. SEE STRUCTURAL PLANS FOR MORE DETAILED INFORMATION RELATED TO RETAINING WALLS, WALL WITH HANDRAILS AND STAIRS SHOWN ON THIS PLAN.
4. ALL DISTURBED AREAS NOT SHOWN AS PAVEMENT, LANDSCAPING, OR OTHER IMPROVEMENTS SHALL BE GRASSED. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED. NEW SOD SHALL MATCH THE SURROUNDING EXISTING SOD.
5. THE COLOR AND SIZE OF ALL PAVEMENT MARKINGS SHALL SHALL BE IN ACCORDANCE WITH GDOT STANDARDS, UNLESS NOTED OTHERWISE.
6. CAUTION SHOULD BE EXERCISED IN THE INSTALLATION OF POST MOUNTED SIGNS IN ORDER TO PREVENT POSSIBLE DAMAGE TO BURIED UTILITIES. GROUND PENETRATING RADAR (GPR) IS ACCEPTABLE AND RECOMMENDED.
7. EXISTING ASPHALT WHERE INDICATED TO BE MILLED WILL BE MILLED WITH A VARIABLE DEPTH OF 1.5" TO 2.5" AND OVERLAID WITH THE SAME ASPHALT MATERIAL AND THICKNESS REMOVED.
8. ALL ELECTRICAL CONDUITS, STAIRS AND BUILDINGS ARE SHOWN FOR REFERENCE ONLY. SEE SHEETS C-20 TO C-26 FOR MORE INFORMATION.

0 20 40 60

SCALE: 1" = 20'

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
4	ADDENDUM No. 4	11/13/20

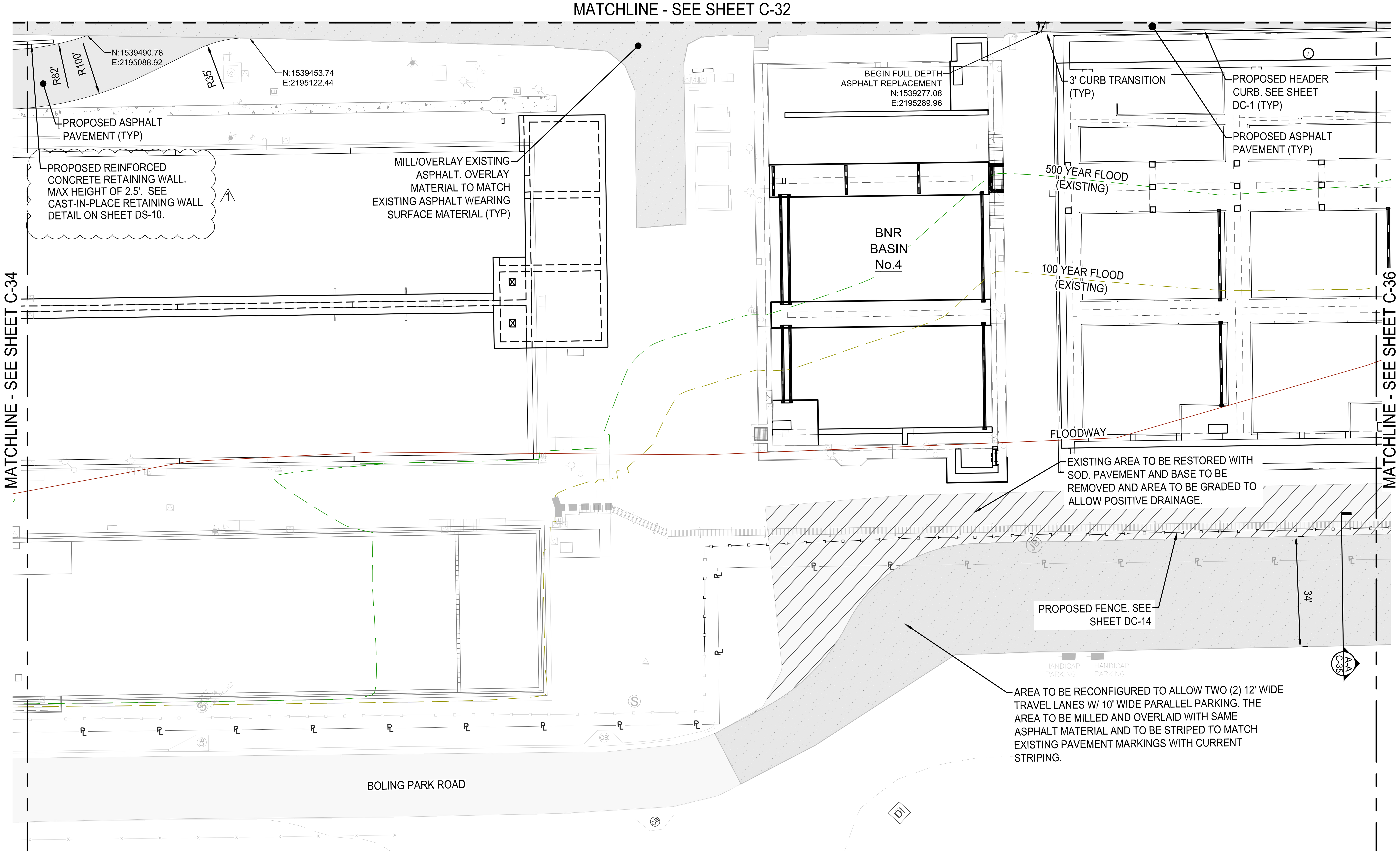
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: JWS
CHECKED BY: RM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED CIVIL SITE PARTIAL PLAN

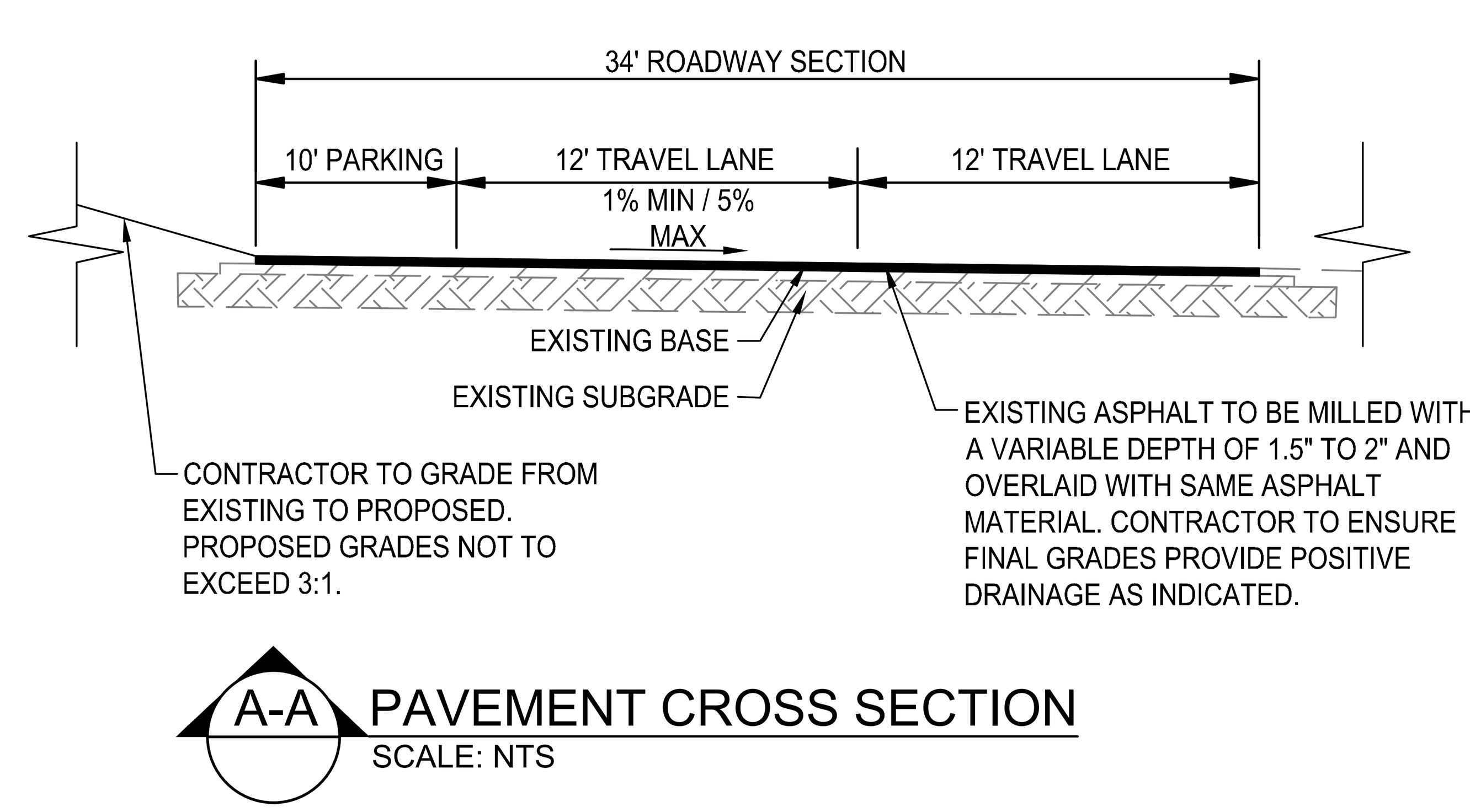
SHEET NO.
C-34

File Name: C:\USERS\SWEE8906\APPDATA\LOCAL\TEMP\ACPUBLISH_14568\0200 - C-30, 31, 32, 33, 34, 35, 36.DWG|Tab: C-34|Plotted: November 13, 2020 1:19pm



PROPOSED CIVIL SITE PARTIAL PLAN

SCALE: 1"=20'



A-A PAVEMENT CROSS SECTION

SCALE: NTS

EXISTING SITE/SYMBOLS LEGEND

- ACCESS HATCH
- STORM DRAIN MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- JUNCTION BOX
- PIPE RISER
- YARD INLET
- DROP INLET
- CLEANOUT
- YARD HYDRANT
- LIGHT POLE
- POWER POLE
- BURIED ELECTRICAL
- ELECTRICAL
- ELECTRIC BOX/CONTROL BOX
- ELECTRIC METER
- WATER VALVE
- SPIGOT
- TEMPORARY SURVEY CONTROL POINT
- SIGN

PROPOSED SITE PLAN LEGEND

- PROPERTY LINE
- PROPOSED WALL
- PROPOSED CONSTRUCTION
- PROPOSED CURB
- PROPOSED ASPHALT PAVEMENT
- PROPOSED ASPHALT MILL/OVERLAY
- EXISTING AREA TO BE RESTORED W/ SOD
- PROPOSED CONCRETE PAVEMENT
- PROPOSED RIP RAP
- DETECTABLE WARNING
- PROPOSED PARKING COUNT
- ACCESSIBLE PARKING
- FLOODWAY
- 100 YEAR FLOOD (EXISTING)
- 500 YEAR FLOOD (EXISTING)
- 100 YEAR FLOOD (PROPOSED)
- 500 YEAR FLOOD (PROPOSED)
- PROPOSED ABOVEGROUND ELECTRICAL CONDUIT
- PROPOSED FENCE

GENERAL SITE PLAN NOTES:

1. ALL DIMENSIONS ARE THE THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. ALL RADII ARE 3 FOOT UNLESS NOTED OTHERWISE.
3. SEE STRUCTURAL PLANS FOR MORE DETAILED INFORMATION RELATED TO RETAINING WALLS, WALL WITH HANDRAILS AND STAIRS SHOWN ON THIS PLAN.
4. ALL DISTURBED AREAS NOT SHOWN AS PAVEMENT, LANDSCAPING, OR OTHER IMPROVEMENTS SHALL BE GRASSED. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED. NEW SOD SHALL MATCH THE SURROUNDING EXISTING SOD.
5. THE COLOR AND SIZE OF ALL PAVEMENT MARKINGS SHALL SHALL BE IN ACCORDANCE WITH GDOT STANDARDS, UNLESS NOTED OTHERWISE.
6. CAUTION SHOULD BE EXERCISED IN THE INSTALLATION OF POST MOUNTED SIGNS IN ORDER TO PREVENT POSSIBLE DAMAGE TO BURIED UTILITIES. GROUND PENETRATING RADAR (GPR) IS ACCEPTABLE AND RECOMMENDED.
7. EXISTING ASPHALT WHERE INDICATED TO BE MILLED WILL BE MILLED WITH A VARIABLE DEPTH OF 1.5" TO 2.5" AND OVERLAID WITH THE SAME ASPHALT MATERIAL AND THICKNESS REMOVED.
8. ALL ELECTRICAL CONDUITS, STAIRS AND BUILDINGS ARE SHOWN FOR REFERENCE ONLY. SEE SHEETS C-20 TO C-26 FOR MORE INFORMATION.

0 20 40 60
SCALE: 1" = 20'

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
4	ADDENDUM No. 4	11/13/20

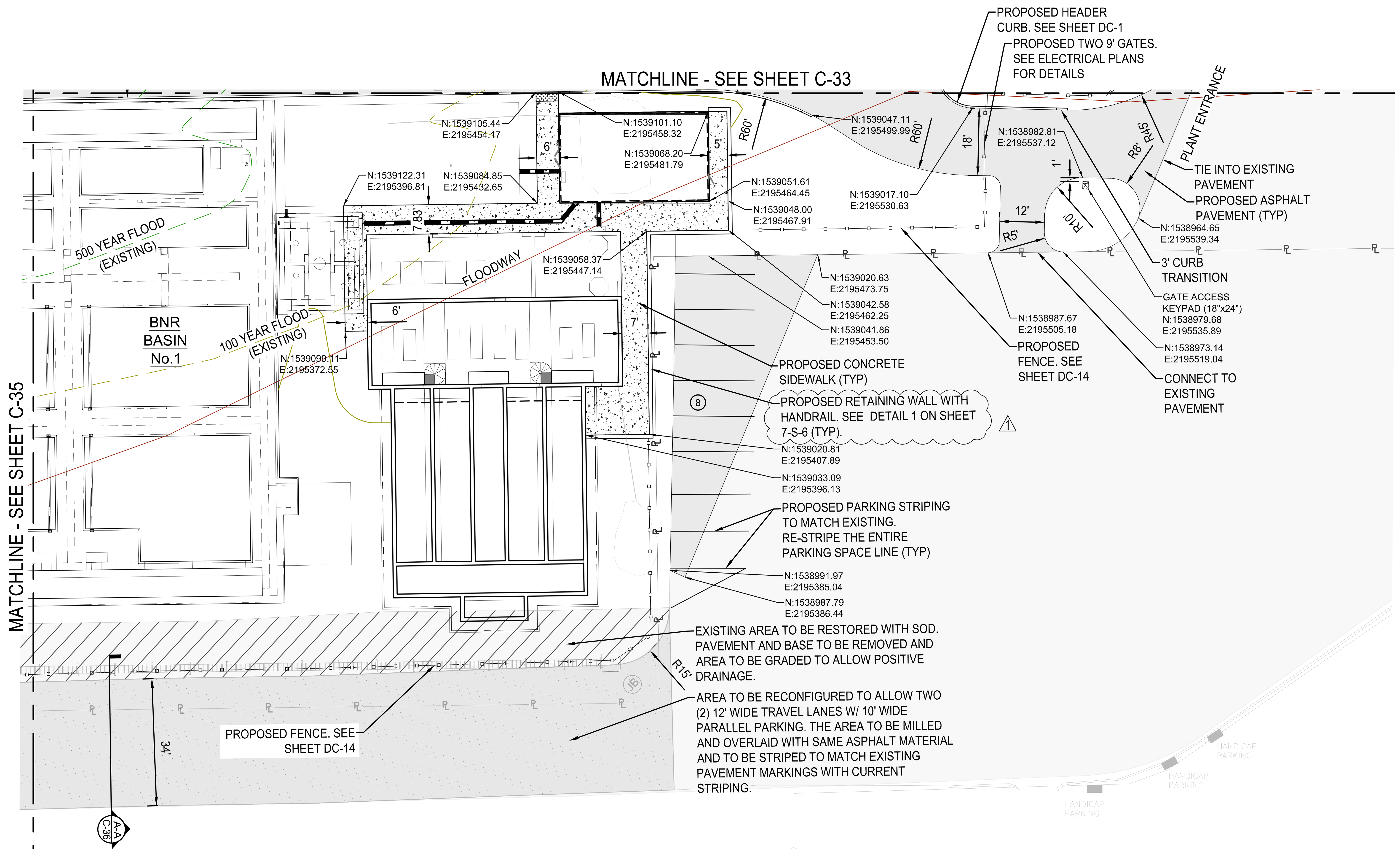
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: JWS
CHECKED BY: RM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED CIVIL SITE PARTIAL PLAN

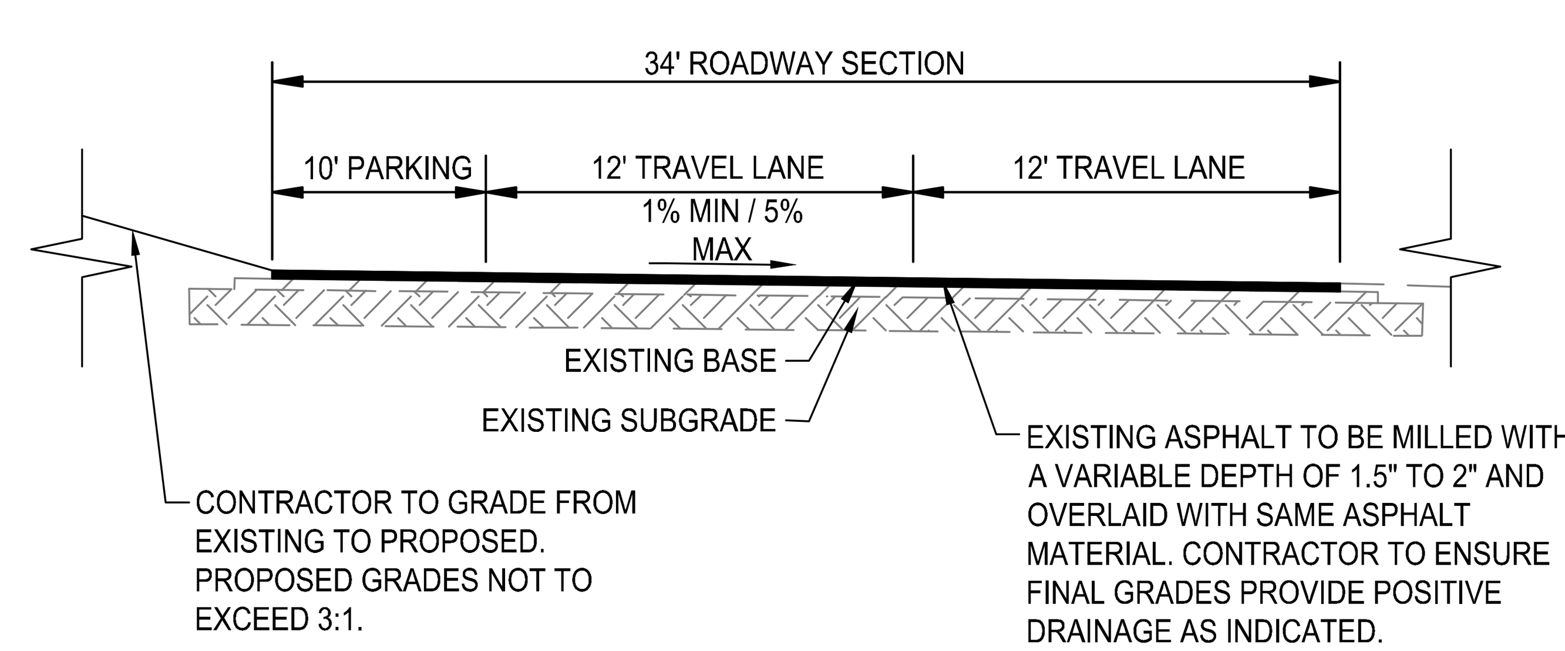
SHEET NO.
C-35

File Name: C:\USERS\SWEE8906\APPDATA\LOCAL\TEMP\ACPUBLISH_14568\0200 — C-30, 31, 32, 33, 34, 35, 36.DWG|Tab: C-35|Plotted: November 13, 2020 12:36pm



PROPOSED CIVIL SITE PARTIAL PLAN

SCALE: 1"=20'



A-A PAVEMENT CROSS SECTION

SCALE: NTS

EXISTING SITE/SYMBOLS LEGEND

- ACCESS HATCH
- STORM DRAIN MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- JUNCTION BOX
- PIPE RISER
- YARD INLET
- DROP INLET
- CLEANOUT
- YARD HYDRANT
- LIGHT POLE
- POWER POLE
- BURIED ELECTRICAL
- ELECTRICAL
- ELECTRIC BOX/CONTROL BOX
- ELECTRIC METER
- WATER VALVE
- SPIGOT
- TEMPORARY SURVEY CONTROL POINT
- SIGN

PROPOSED SITE PLAN LEGEND

- PROPERTY LINE
- PROPOSED WALL
- PROPOSED CONSTRUCTION
- PROPOSED CURB
- PROPOSED ASPHALT PAVEMENT
- PROPOSED ASPHALT MILL/OVERLAY
- EXISTING AREA TO BE RESTORED W/ SOD
- PROPOSED CONCRETE PAVEMENT
- PROPOSED RIP RAP
- DETECTABLE WARNING
- PROPOSED PARKING COUNT
- ACCESSIBLE PARKING
- FLOODWAY
- 100 YEAR FLOOD (EXISTING)
- 500 YEAR FLOOD (EXISTING)
- 100 YEAR FLOOD (PROPOSED)
- 500 YEAR FLOOD (PROPOSED)
- PROPOSED ABOVEGROUND ELECTRICAL CONDUIT
- PROPOSED FENCE

GENERAL SITE PLAN NOTES:

1. ALL DIMENSIONS ARE THE THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. ALL RADII ARE 3 FOOT UNLESS NOTED OTHERWISE.
3. SEE STRUCTURAL PLANS FOR MORE DETAILED INFORMATION RELATED TO RETAINING WALLS, WALL WITH HANDRAILS AND STAIRS SHOWN ON THIS PLAN.
4. ALL DISTURBED AREAS NOT SHOWN AS PAVEMENT, LANDSCAPING, OR OTHER IMPROVEMENTS SHALL BE GRASSED. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED. NEW SOD SHALL MATCH THE SURROUNDING EXISTING SOD.
5. THE COLOR AND SIZE OF ALL PAVEMENT MARKINGS SHALL SHALL BE IN ACCORDANCE WITH GDOT STANDARDS, UNLESS NOTED OTHERWISE.
6. CAUTION SHOULD BE EXERCISED IN THE INSTALLATION OF POST MOUNTED SIGNS IN ORDER TO PREVENT POSSIBLE DAMAGE TO BURIED UTILITIES. GROUND PENETRATING RADAR (GPR) IS ACCEPTABLE AND RECOMMENDED.
7. EXISTING ASPHALT WHERE INDICATED TO BE MILLED WILL BE MILLED WITH A VARIABLE DEPTH OF 1.5" TO 2.5" AND OVERLAID WITH THE SAME ASPHALT MATERIAL AND THICKNESS REMOVED.
8. ALL ELECTRICAL CONDUITS, STAIRS AND BUILDINGS ARE SHOWN FOR REFERENCE ONLY. SEE SHEETS C-20 TO C-26 FOR MORE INFORMATION.

0 20 40 60

SCALE: 1" = 20'

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

	REVISION	DATE
1	ADDENDUM No. 4	11/13/20

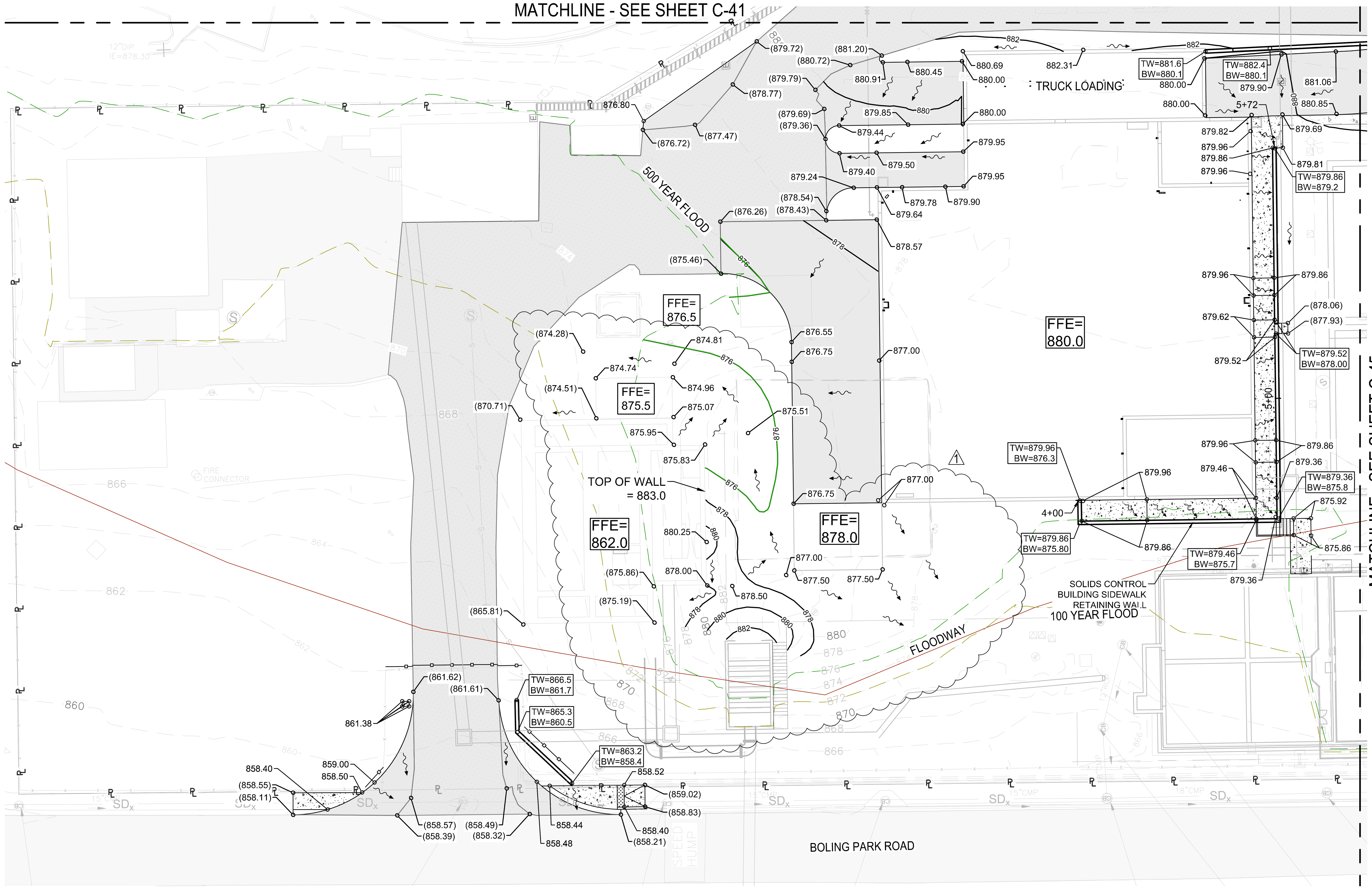
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: JWS
CHECKED BY: RM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED CIVIL SITE PARTIAL PLAN

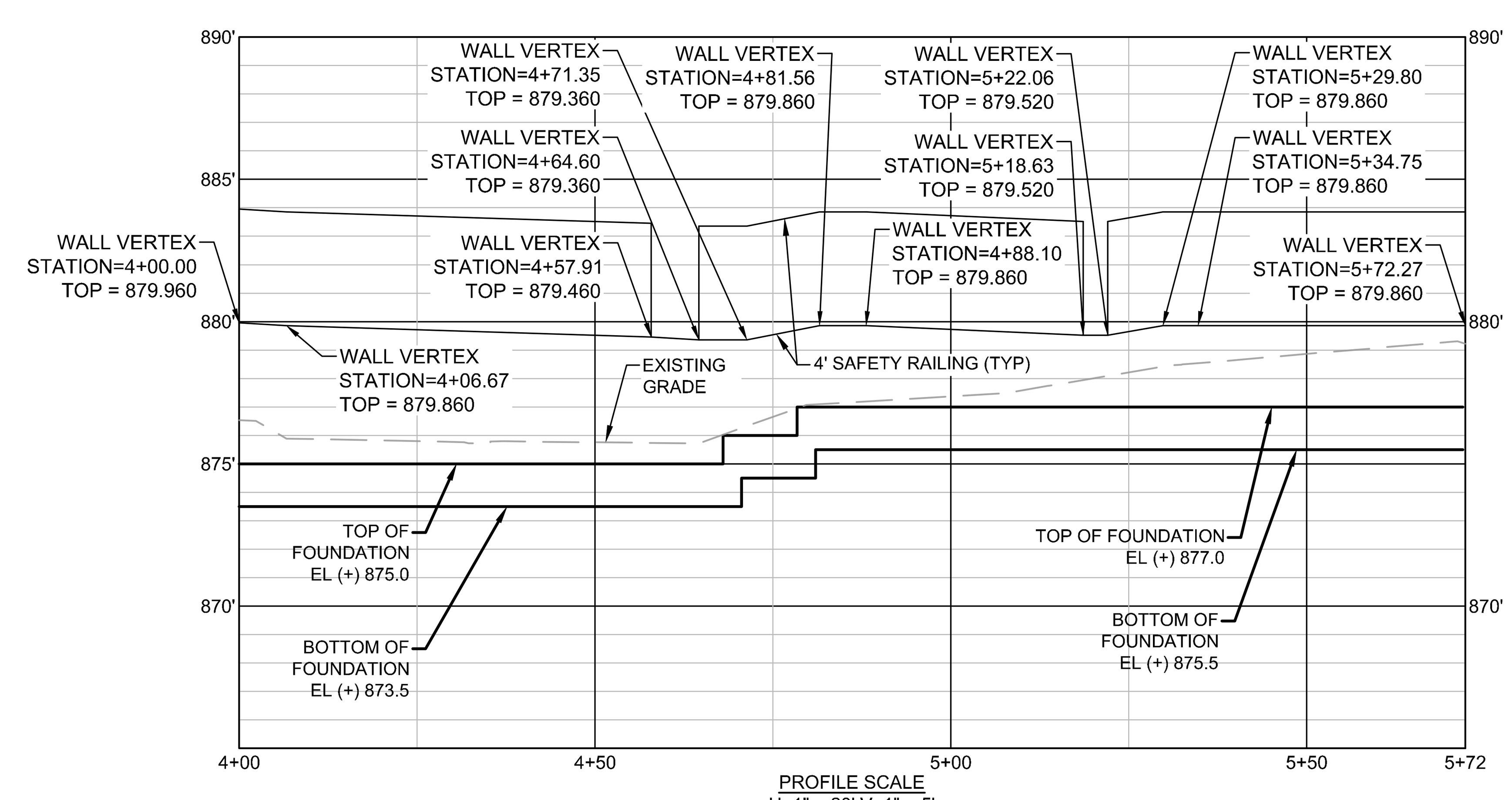
SHEET NO.
C-36

File Name: C:\USERS\SWEE8906\APPDATA\LOCAL\TEMP\ACPUBLISH_14568\0200 — C-30, 31, 32, 33, 34, 35, 36.DWG|Tab: C-36|Plotted: November 13, 2020 12:37pm



PROPOSED GRADING PARTIAL PLAN

SCALE: 1"=20'



WALL ENVELOPE PROFILE IS PROVIDED FOR INFORMATION ONLY, REFER TO STRUCTURAL PLANS FOR WALL CONSTRUCTION.

SOLIDS CONTROL BUILDING SIDEWALK RETAINING WALL

SCALE: 1"=20'"

EXISTING SITE/SYMBOLS LEGEND

- ACCESS HATCH
- STORM DRAIN MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- JUNCTION BOX
- PIPE RISER
- YARD INLET
- DROP INLET
- CLEANOUT
- YARD HYDRANT
- LIGHT POLE
- POWER POLE
- BURIED ELECTRICAL
- ELECTRICAL
- ELECTRIC BOX/CONTROL BOX
- ELECTRIC METER
- WATER VALVE
- SPIGOT
- TEMPORARY SURVEY CONTROL POINT
- SIGN

PROPOSED GRADING LEGEND

- PROPERTY LINE
- PROPOSED LINE WORK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED ASPHALT MILL/OVERLAY
- EXISTING AREA TO BE RESTORED W/ SOI
- PROPOSED CONCRETE PAVEMENT
- DETECTABLE WARNING
- DRAINAGE FLOW DIRECTION
- FFE=XX FINISHED FLOOR ELEVATION
- 000.00 PROPOSED SPOT SHOT
- (000.00) EXISTING SPOT SHOT
- FLOODWAY
- 100 YEAR FLOOD (EXISTING)
- 500 YEAR FLOOD (EXISTING)
- 100 YEAR FLOOD (PROPOSED)
- 500 YEAR FLOOD (PROPOSED)

PROPOSED GRADING NOTES

1. ALL SPOT SHOTS ARE BOTTOM OF CURB UNLESS OTHERWISE NOTED.

0 20 40 60
SCALE: 1" = 20'

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Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No. 4	11/13/20

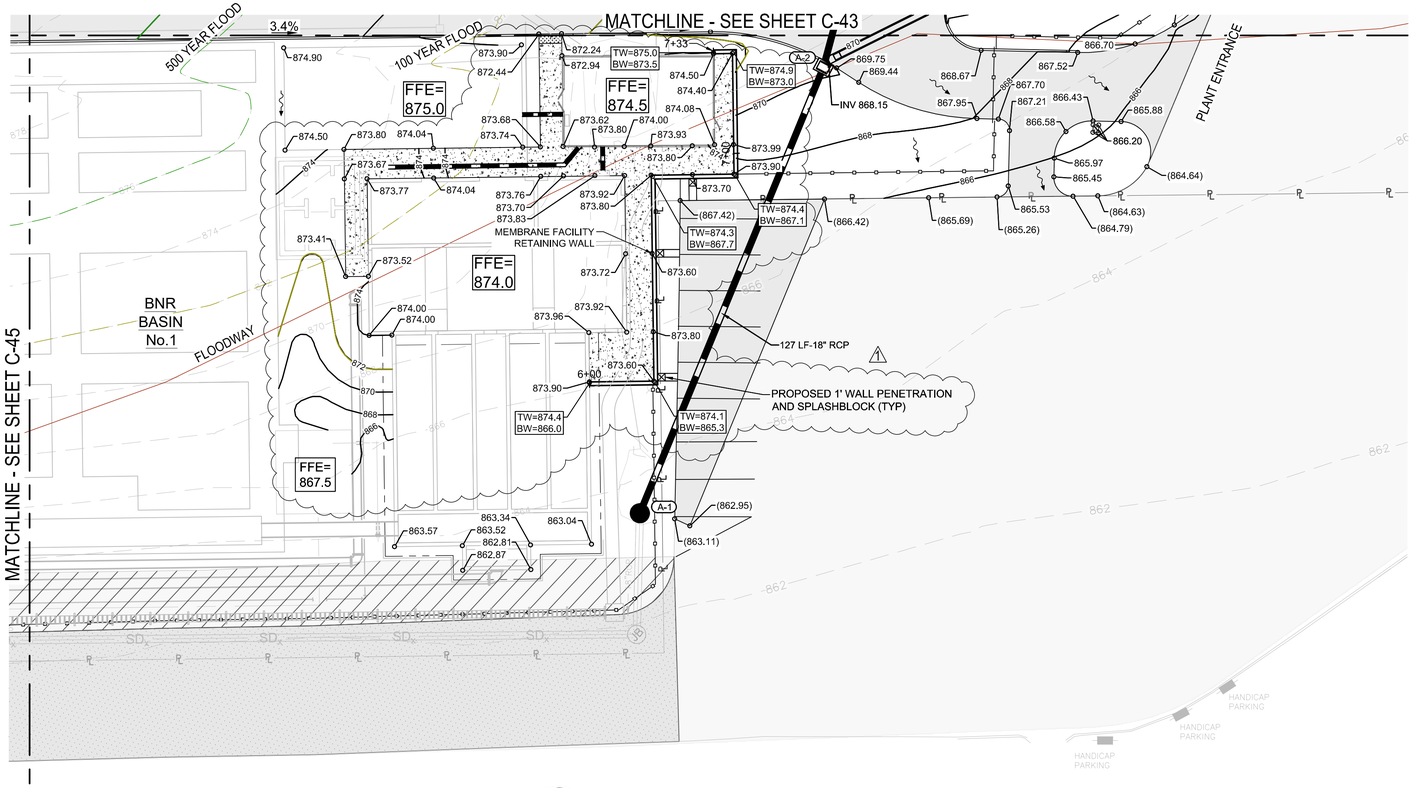
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: MJS
CHECKED BY: RM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED GRADING PARTIAL PLAN

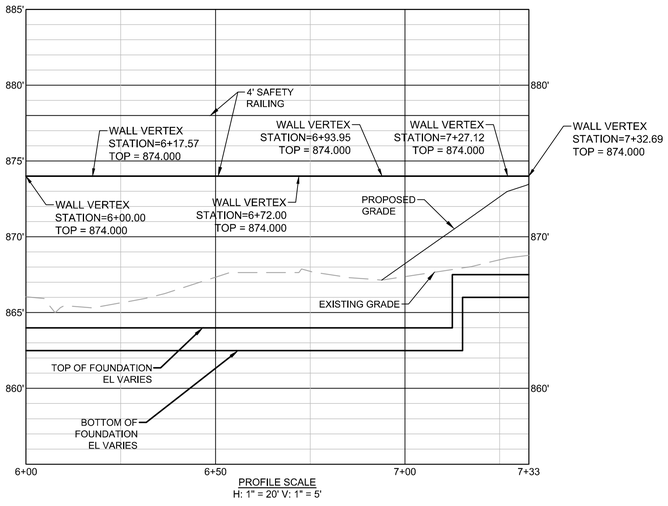
SHEET NO.
C-44

File Name: C:\USERS\SWEE8906\APPDATA\LOCAL\TEMP\ACPUBLISH_11460\0200 — C-40, 41, 42, 43, 44, 45, 46.DWG|Tab: C-44|Plotted: November 13, 2020 11:32am



PROPOSED GRADING PARTIAL PLAN

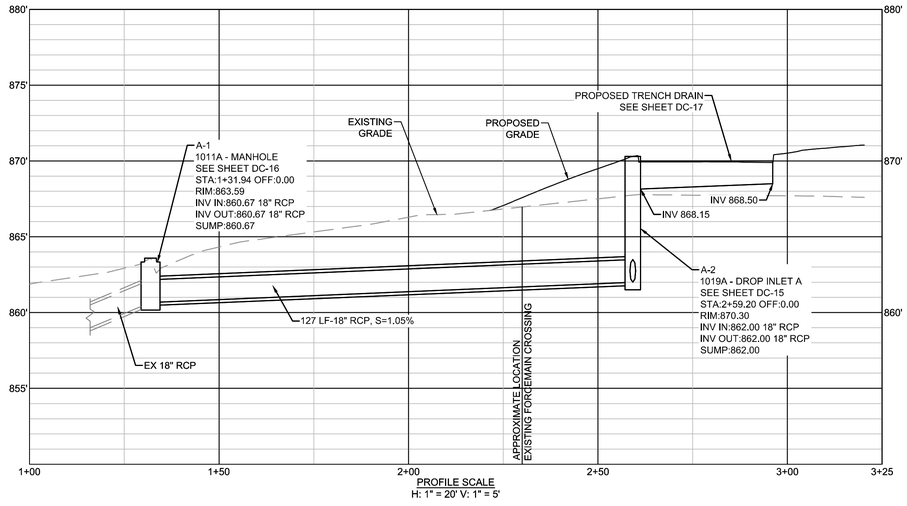
SCALE: 1"=20'



WALL ENVELOPE PROFILE IS PROVIDED FOR INFORMATION ONLY, REFER TO STRUCTURAL PLANS FOR WALL CONSTRUCTION.

MEMBRANE FACILITY RETAINING WALL

SCALE: 1"=20'



STORM DRAIN SEWER (A-1 TO A-2)

SCALE: 1"=20'

EXISTING SITE/SYMBOLS LEGEND

- ACCESS HATCH
- STORM DRAIN MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- JUNCTION BOX
- PIPE RISER
- YARD INLET
- DROP INLET
- CLEANOUT
- YARD HYDRANT
- LIGHT POLE
- POWER POLE
- BURIED ELECTRICAL
- ELECTRICAL
- ELECTRIC BOX/CONTROL BOX
- ELECTRIC METER
- WATER VALVE
- SPIGOT
- TEMPORARY SURVEY CONTROL POINT
- SIGN

PROPOSED GRADING LEGEND

- PROPERTY LINE
- PROPOSED LINE WORK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED ASPHALT MILL/OVERLAY
- EXISTING AREA TO BE RESTORED W/ SOI
- PROPOSED CONCRETE PAVEMENT
- DETECTABLE WARNING
- DRAINAGE FLOW DIRECTION
- FFE=XX FINISHED FLOOR ELEVATION
- 000.00 PROPOSED SPOT SHOT
- (000.00) EXISTING SPOT SHOT
- FLOODWAY
- 100 YEAR FLOOD (EXISTING)
- 500 YEAR FLOOD (EXISTING)
- 100 YEAR FLOOD (PROPOSED)
- 500 YEAR FLOOD (PROPOSED)

PROPOSED GRADING NOTES

1. ALL SPOT SHOTS ARE BOTTOM OF CURB UNLESS OTHERWISE NOTED.

0 20 40 60

SCALE: 1" = 20'

GEORGIA REGISTERED No. 21371 PROFESSIONAL ENGINEER — 11/12/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
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196 LOG CABIN CIRCLE
HARTWELL, GA 30643
(443) 249-3111

CERTIFICATE OF AUTHORIZATION: #PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No. 4	11/13/20

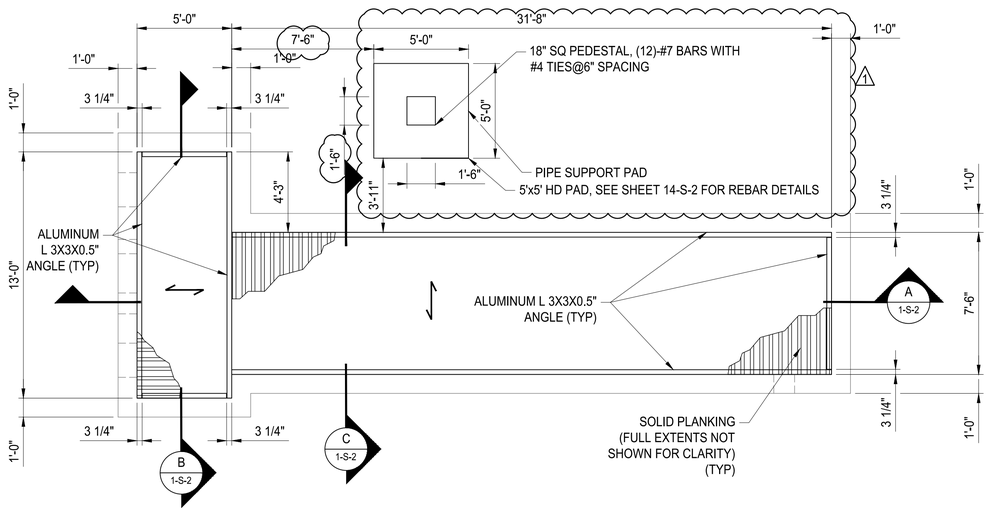
PROJ. NO.: 100061831
DESIGNED BY: JMR
DRAWN BY: MJS
CHECKED BY: RM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PROPOSED GRADING PARTIAL PLAN

SHEET NO.
C-46

File Name: C:\USERS\SWEE8906\APPDATA\LOCAL\TEMP\ACPUBLISH_11460\0200 - C-40, 41, 42, 43, 44, 45, 46.DWG|Tab: C-46|Plotted: November 13, 2020 11:33am



INFLUENT METERING FLUME UPPER PLAN

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

N

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. COORDINATE THE LOCATION OF THE PIPE SUPPORT PEDESTAL AND FOOTING WITH MECHANICAL.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/28/2020

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STEVENSVILLE, MD 21666
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CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

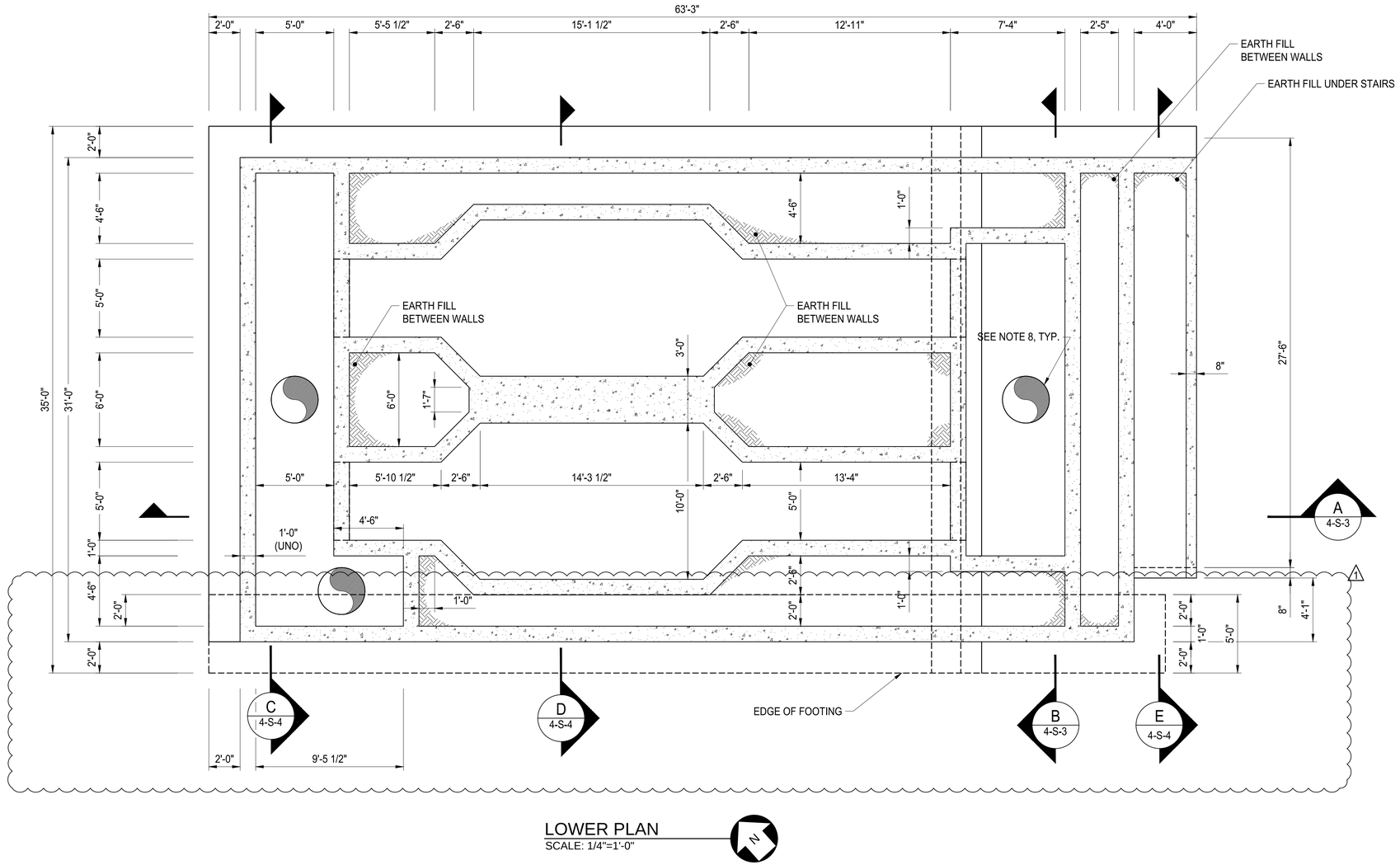
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MODIFICATIONS TO INFLUENT METERING FLUME UPPER PLAN

SHEET NO.

1-S-1

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0501.01 - 01-S-1.DWG|Tab:1-S-1|Plotted: November 13, 2020 3:25pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 OCT 2020

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HARTWELL ENGINEERING, INC.
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

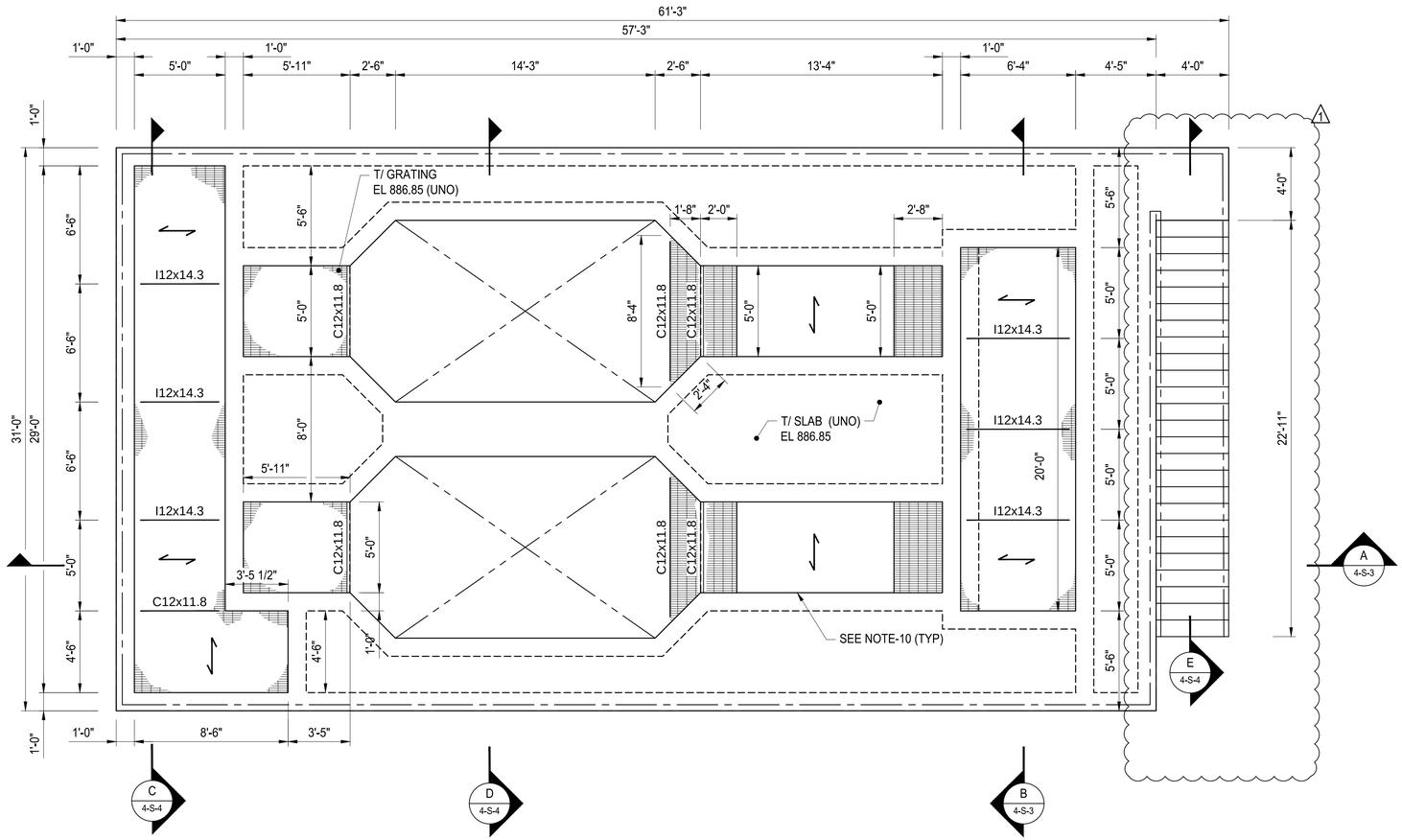
PROJ. NO.: 100061831
DESIGNED BY: DLG
DRAWN BY: - RTD
CHECKED BY: DMM/JLS
APPROVED BY: HG-
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

FINE SCREENINGS FACILITY PLAN LOWER PLAN

SHEET NO.
4-S-1

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0504.01 - 04-S-1.DWG|Tab: 4-S-1|Plotted: November 13, 2020 3:25pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. SEE DETAIL SHEET DS-2, DETAIL 309 FOR ALUMINUM SOLID PLANK SCHEDULE.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 OCT 2020

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CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

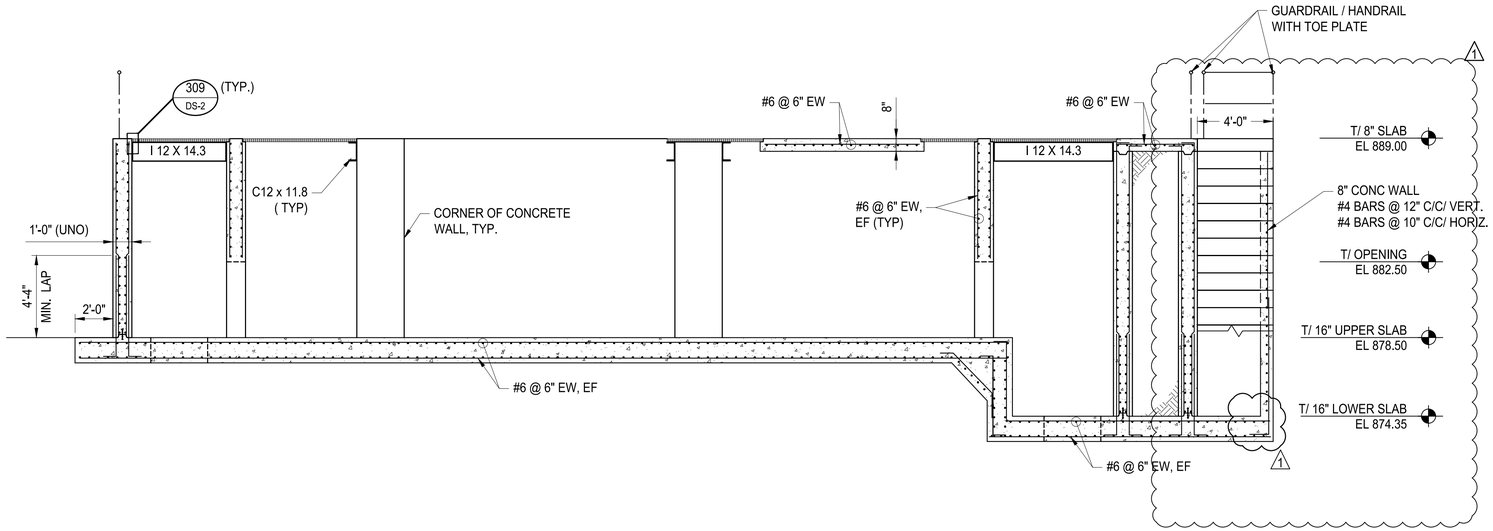
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

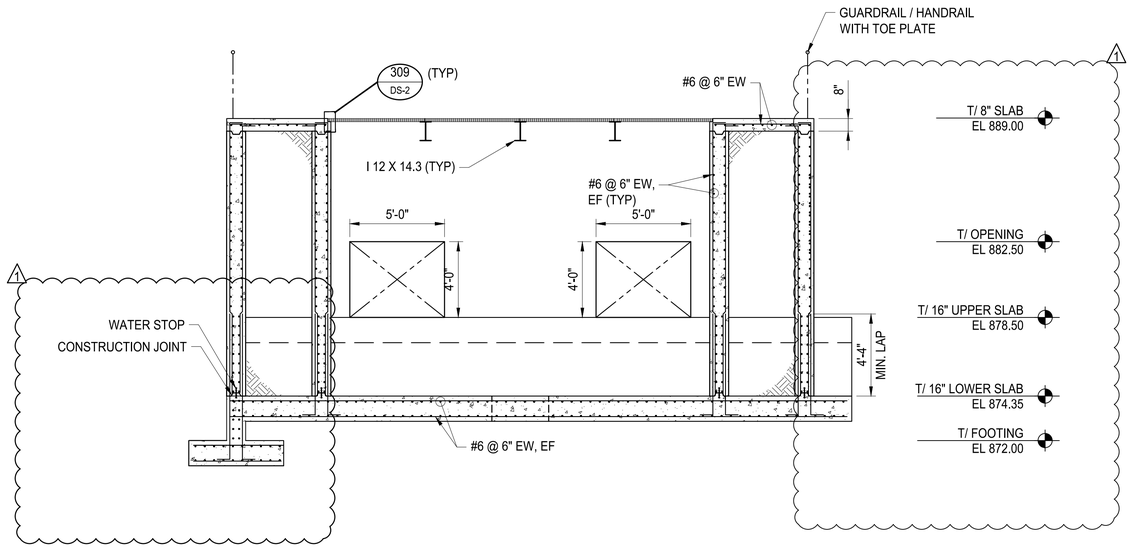
FINE SCREENINGS FACILITY PLAN
UPPER PLAN

SHEET NO.
4-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS335902\0504.02 - 04--S--2.DWG|Tab: 4--S--2|Plotted: November 13, 2020 3:26pm



SECTION
SCALE :
A
4-S-1



SECTION
SCALE :
B
4-S-1

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REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
11/13/2020

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195 LOG CANOE CIRCLE
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	REVISION	DATE
1	ADDENDUM No.4	11/13/20

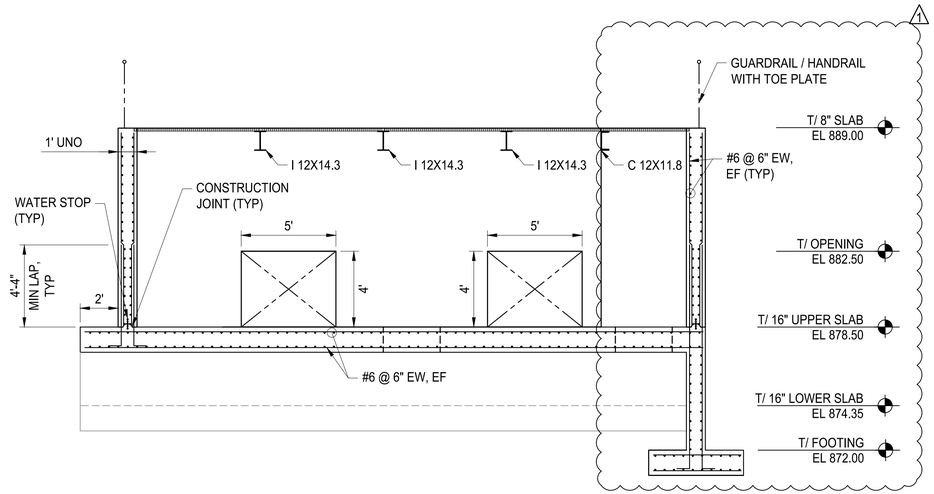
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

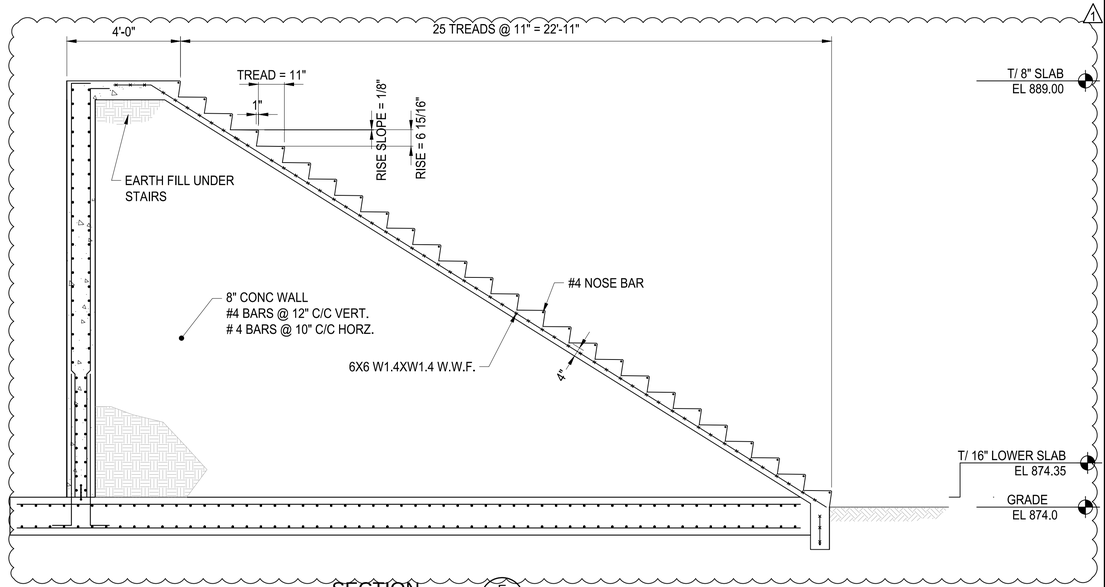
FINE SCREENINGS FACILITY PLAN SECTIONS

SHEET NO.
4-S-3

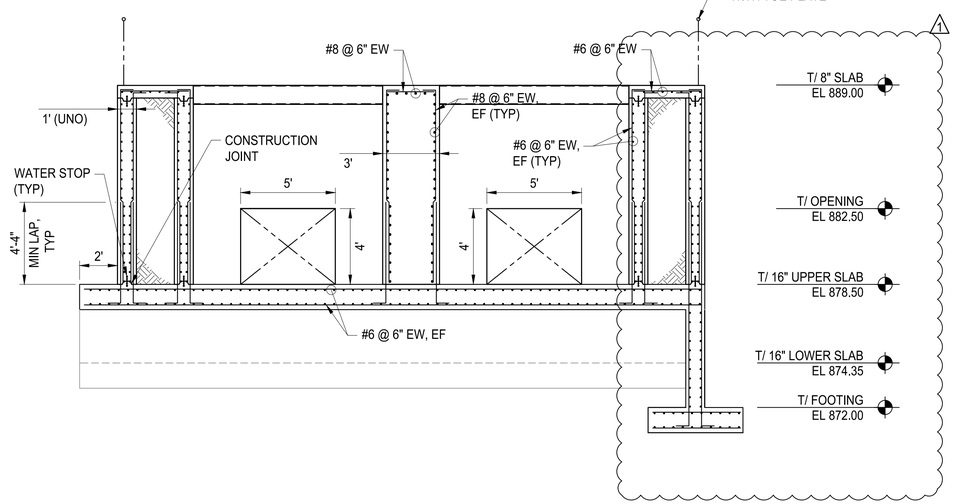
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0504.03 - 04--S--3.DWG|Tab: 4--S--3|Plotted: November 13, 2020 3:26pm



SECTION
SCALE :
C
4-S-1



SECTION
SCALE :
E
4-S-1



SECTION
SCALE :
D
4-S-1

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
11/13/20

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

DATE	REVISION
11/13/20	ADDENDUM No.4

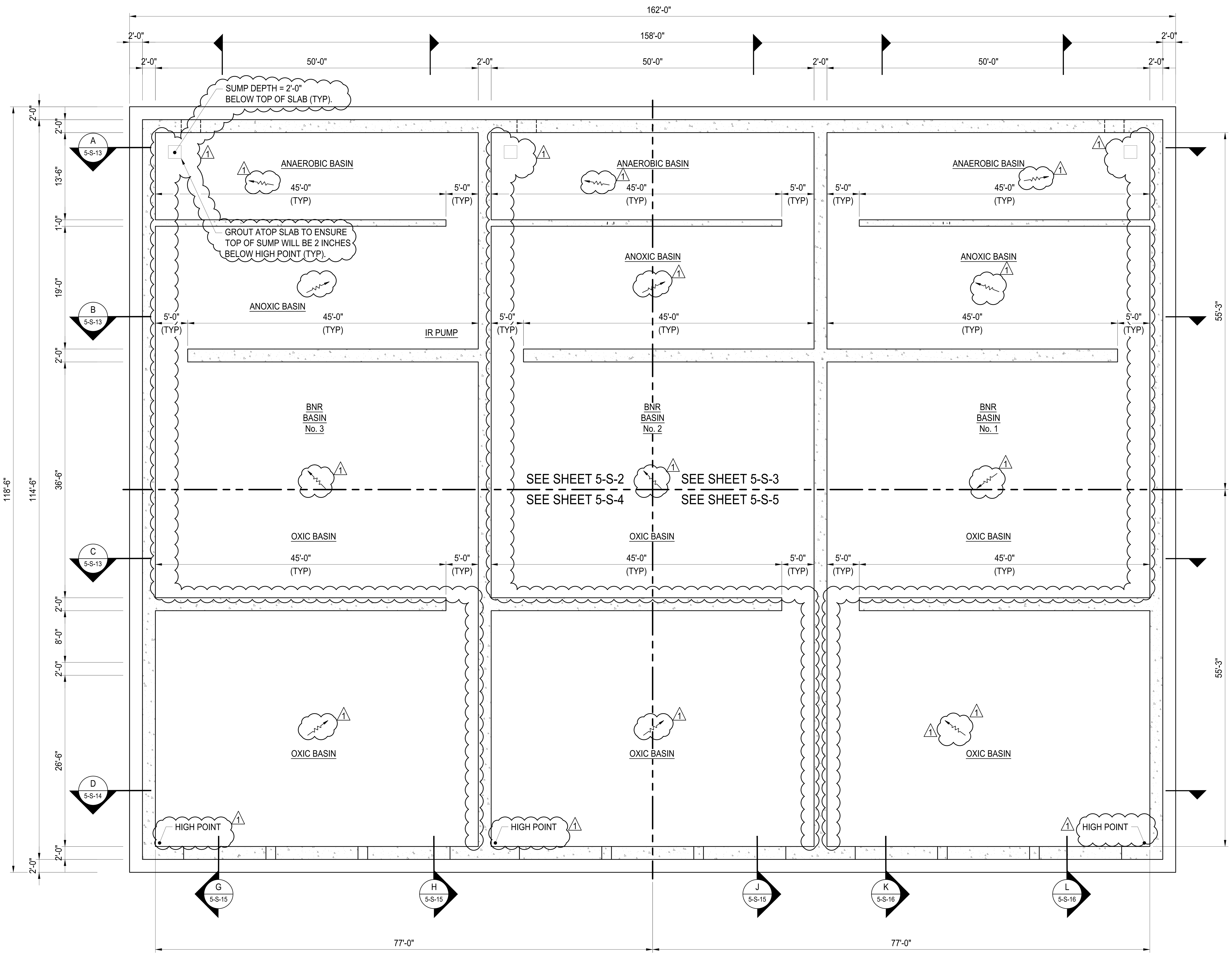
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

FINE SCREENINGS FACILITY PLAN SECTIONS

SHEET NO.
4-S-4

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0504.04 - 04-S-4.DWG|Tab: 4-S-4|Plotted: November 13, 2020 3:26pm



OVERALL LOWER PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. THIS TANK IS UPGRADED USING PRECAST PREFAB PANELS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

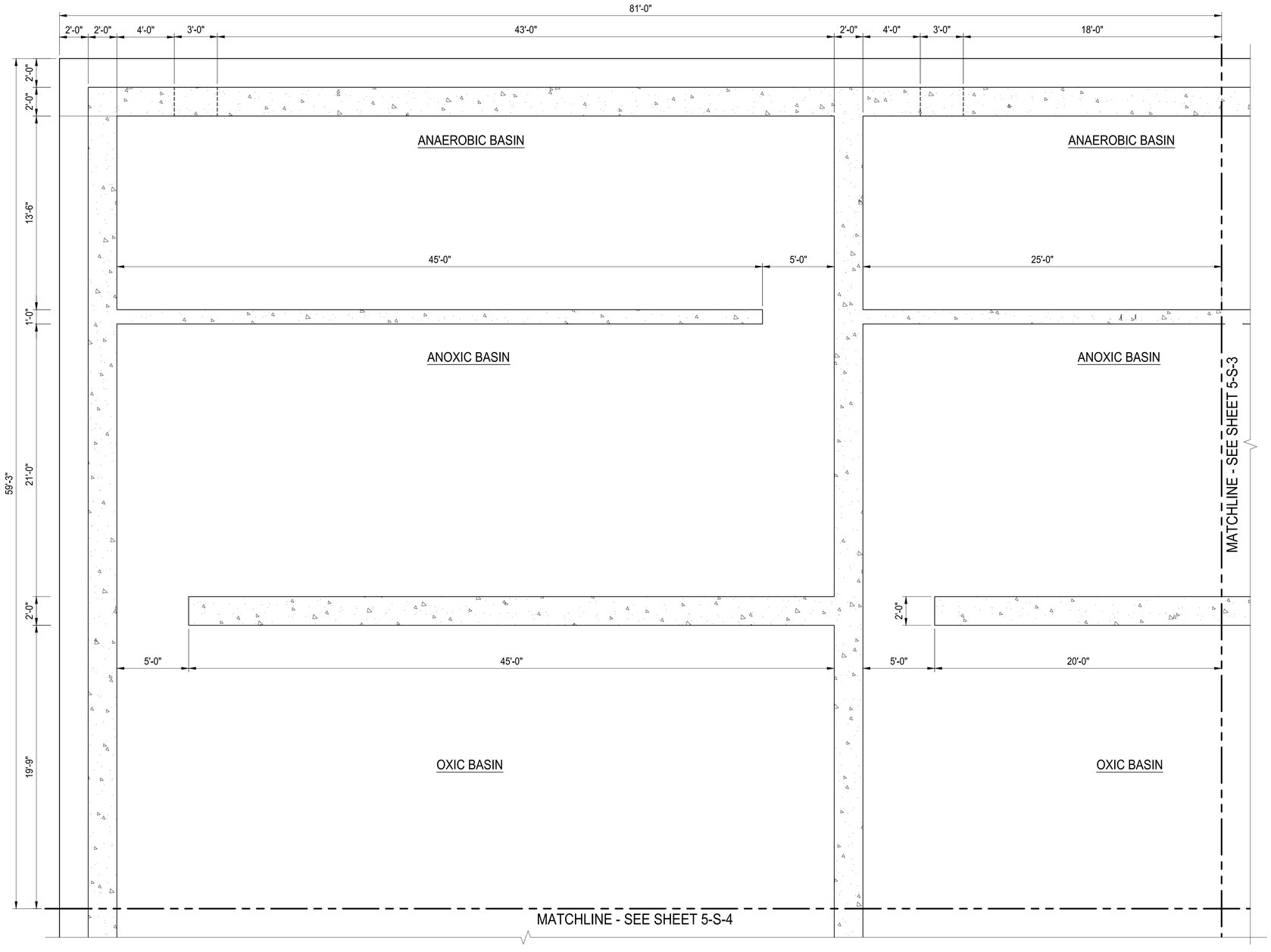
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BIOLOGICAL REACTOR
OVERALL LOWER PLAN

SHEET NO.
5-S-1

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.01 – 05-S-1.DWG|Tab: 5-S-1|Plotted: November 13, 2020 3:26pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. THIS TANK IS UPGRADED USING PRECAST PREFAB PANELS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
199 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

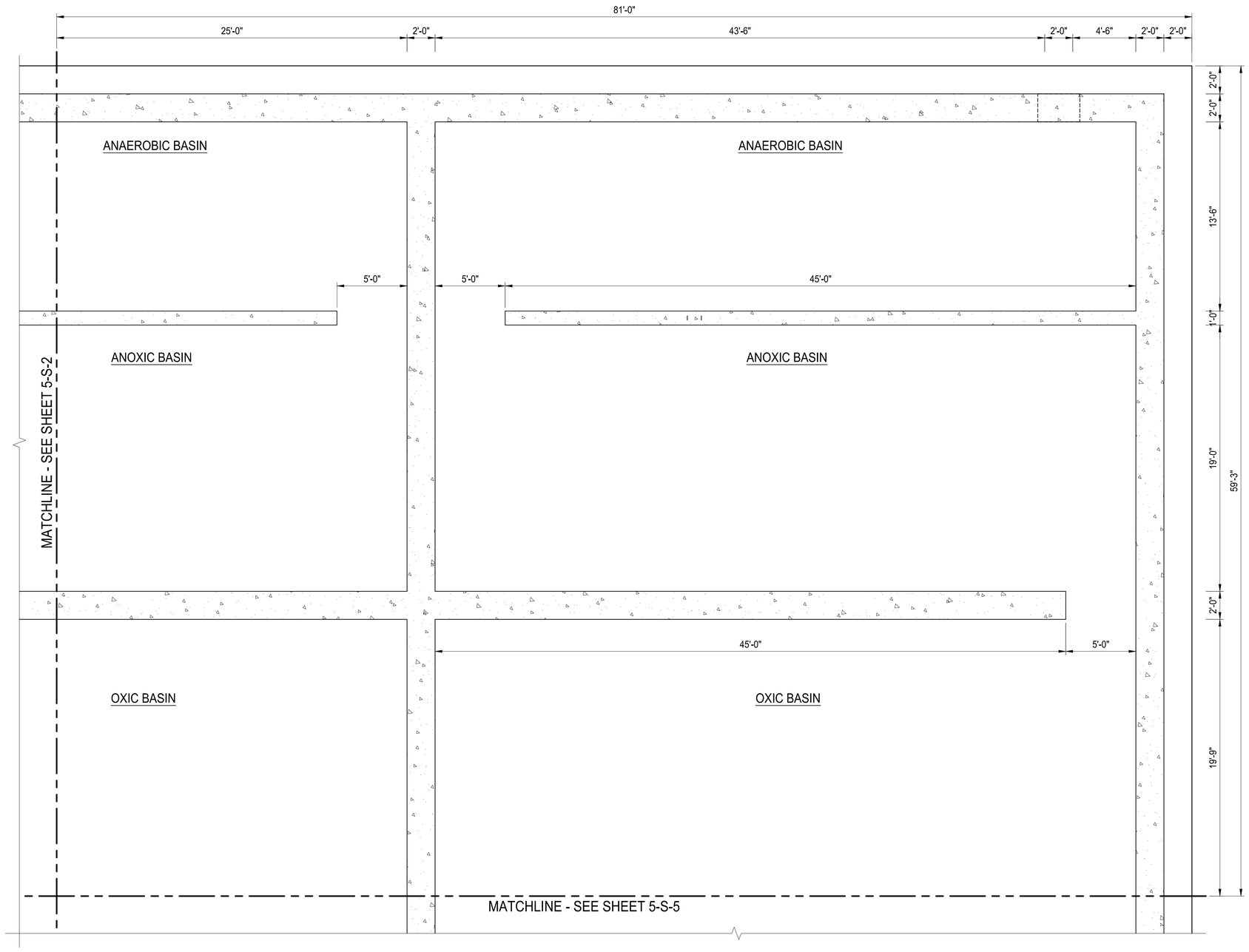
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BIOLOGICAL REACTOR PARTIAL LOWER PLAN

SHEET NO.
5-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.02 - 05-S-2.DWG|Tab: 5-S-2|Plotted: November 13, 2020 3:26pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
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9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. THIS TANK IS UPGRADED USING PRECAST PREFAB PANELS.

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CERTIFICATE OF AUTHORIZATION # PEFV00992 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

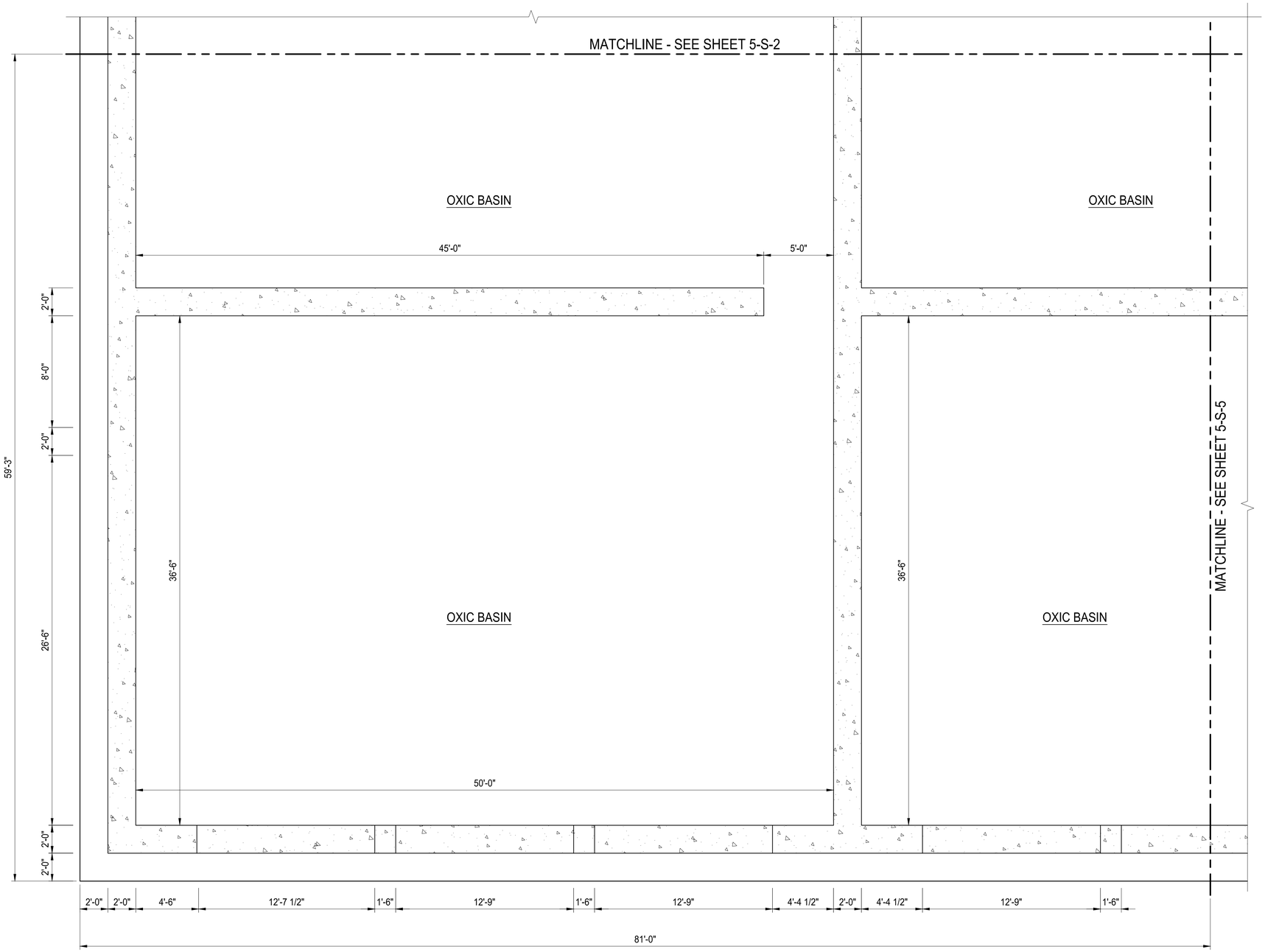
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BIOLOGICAL REACTOR PARTIAL LOWER PLAN

SHEET NO.
5-S-3

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.03 - 05-S-3.DWG[Tab: 5-S-3]Plotted: November 13, 2020 3:27pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
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9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. THIS TANK IS UPGRADED USING PRECAST PREFAB PANELS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

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1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

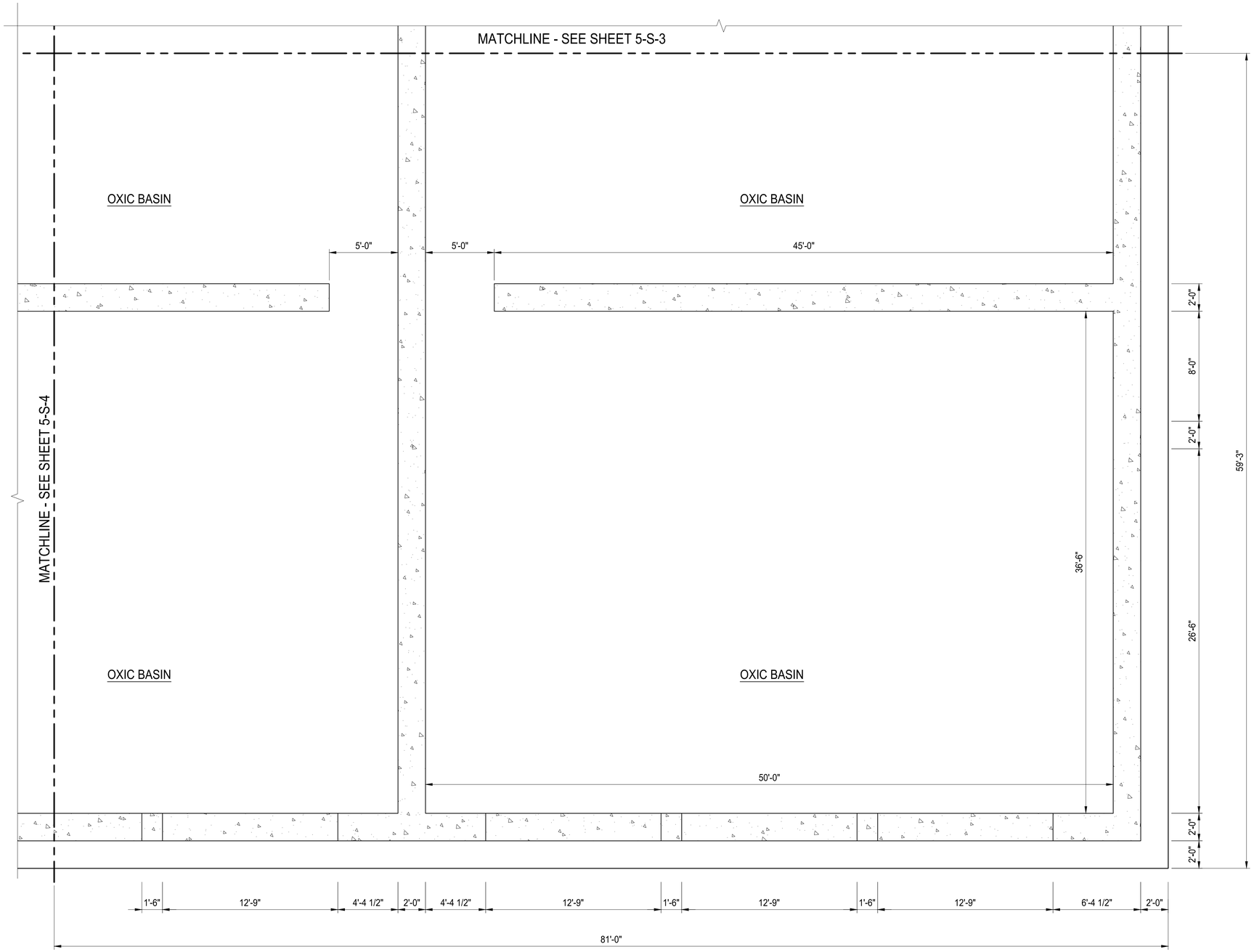
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BIOLOGICAL REACTOR PARTIAL LOWER PLAN

SHEET NO.
5-S-4

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.04 - 05-S-4.DWG|Tab:5-S-4|Plotted: November 13, 2020 3:27pm



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

GENERAL NOTES :

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2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
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GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

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1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

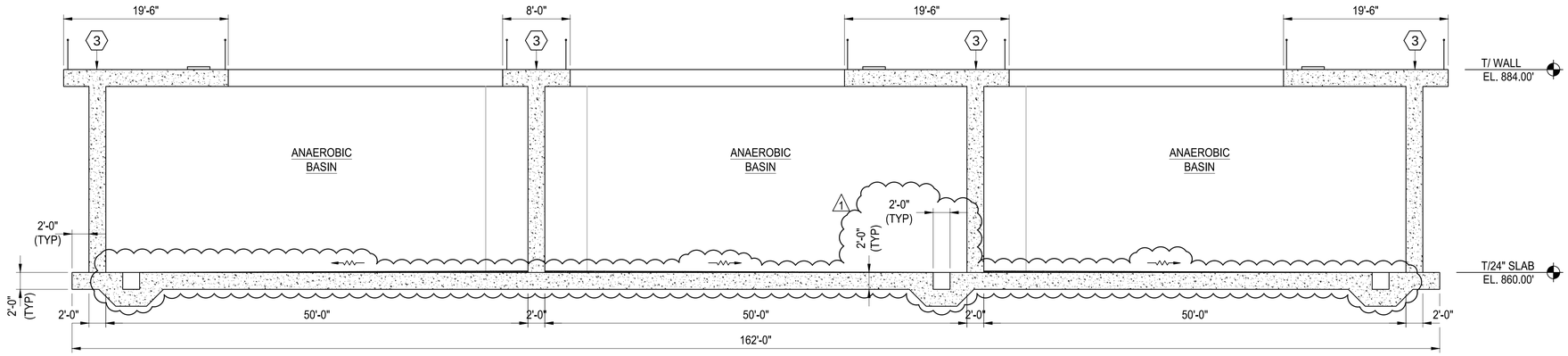
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

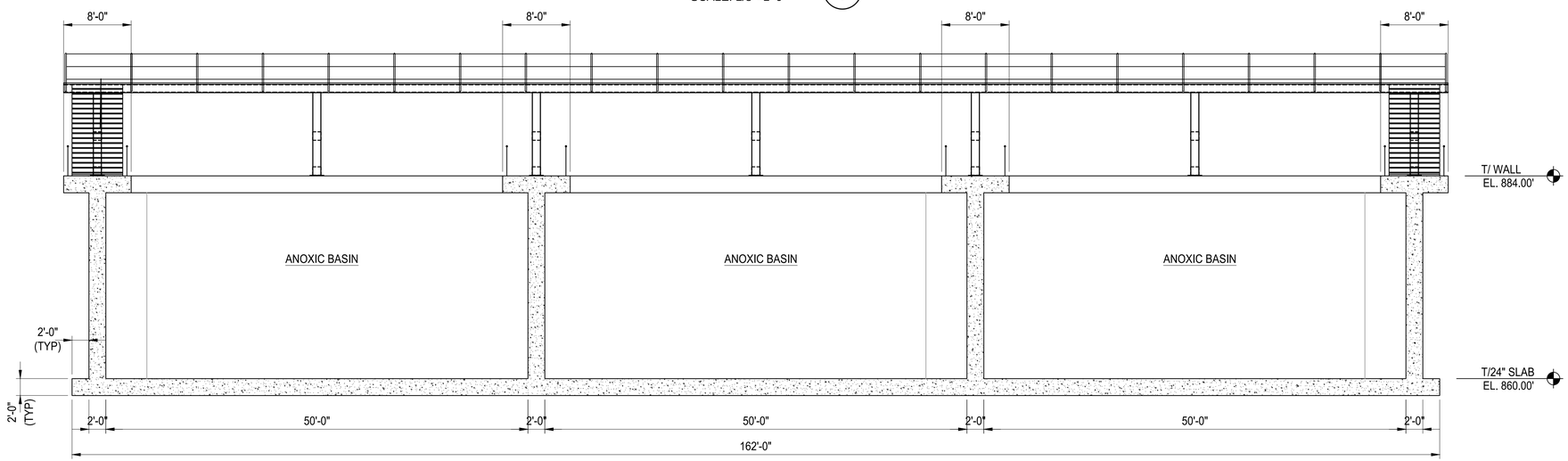
BIOLOGICAL REACTOR PARTIAL LOWER PLAN

SHEET NO.
5-S-5

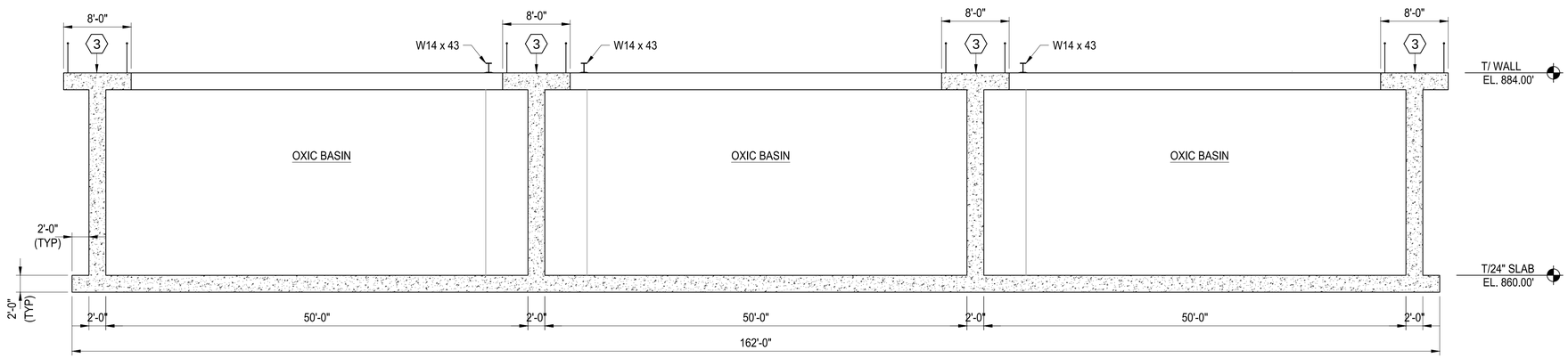
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.05 - 05-S-5.DWG|Tab:5-S-5|Plotted: November 13, 2020 3:27pm



SECTION A
SCALE: 1/8"=1'-0"



SECTION B
SCALE: 1/8"=1'-0"



SECTION C
SCALE: 1/8"=1'-0"

KEY NOTES

1. ALUMINUM HANDRAIL W/TOE PLATE
2. ALUMINUM GRATING
3. CONCRETE WALKWAY

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10 DEC 2020

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HARTWELL ENGINEERING, INC.
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

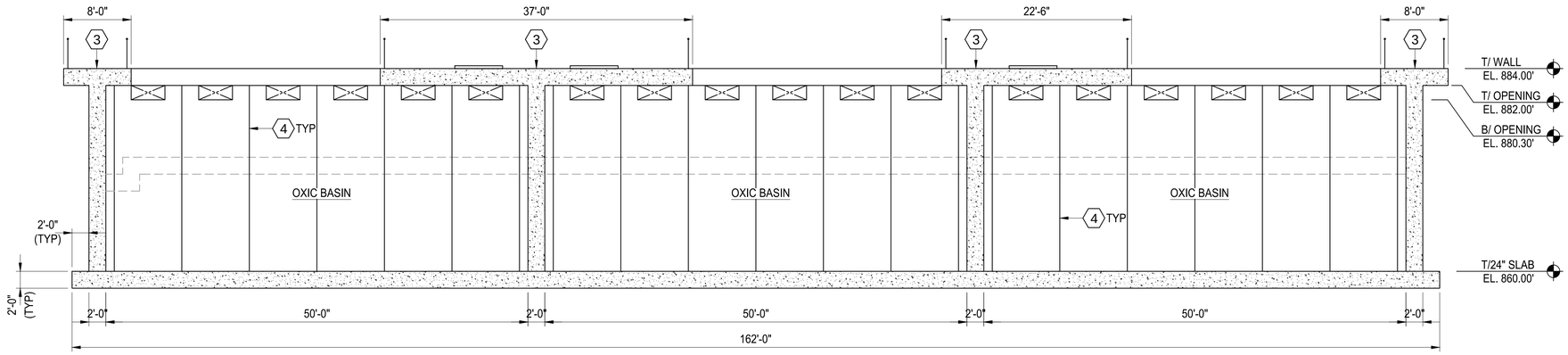
BIOLOGICAL REACTOR SECTIONS

SHEET NO.
5-S-13

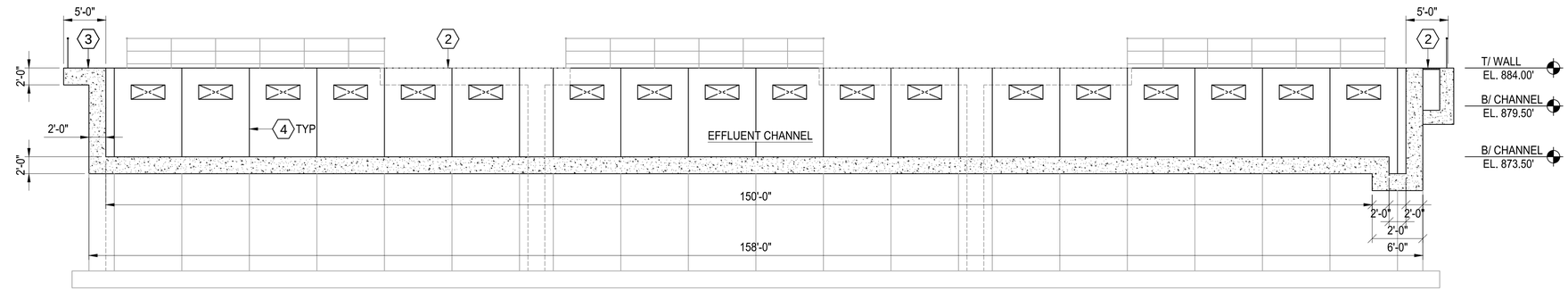
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.13 - 05-S-13.DWG|Tab:5-S-13|Plotted: November 13, 2020 3:27pm

KEY NOTES

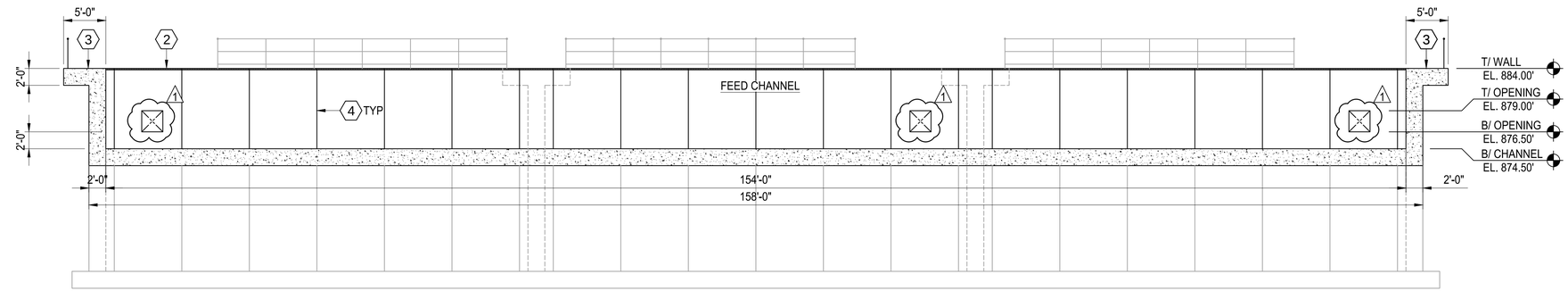
1. ALUMINUM HANDRAIL W/TOE PLATE
2. ALUMINUM GRATING
3. CONCRETE WALKWAY
4. PRECAST CONCRETE WALL



SECTION D
SCALE: 1/8"=1'-0"



SECTION E
SCALE: 1/8"=1'-0"



SECTION F
SCALE: 1/8"=1'-0"

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/20

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MD 21666
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

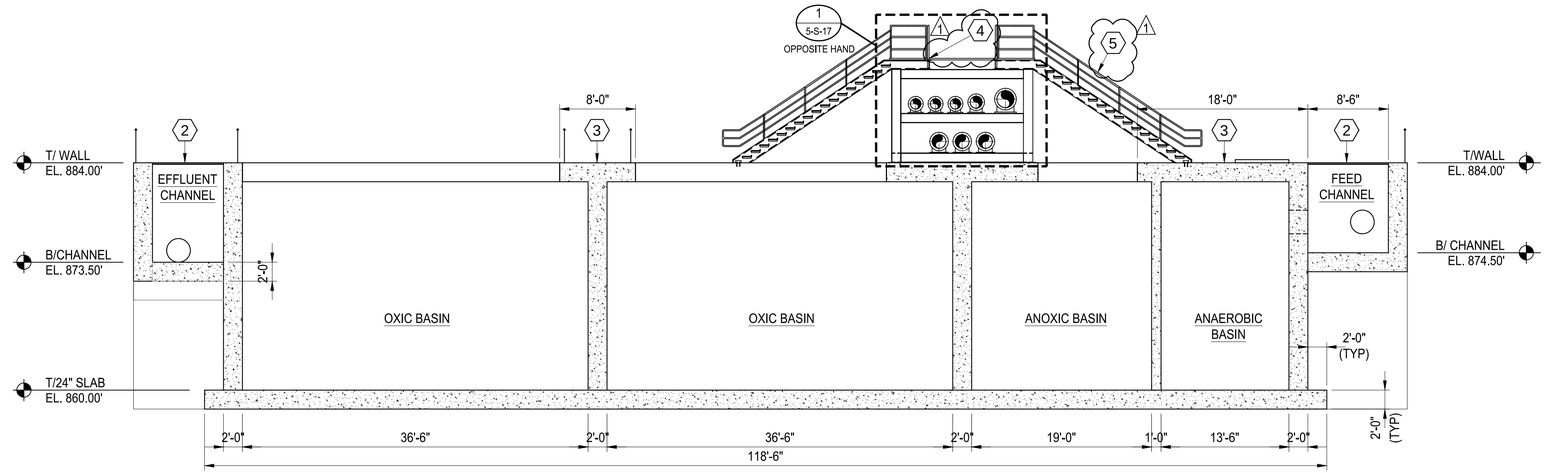
BIOLOGICAL REACTOR SECTIONS

SHEET NO.
5-S-14

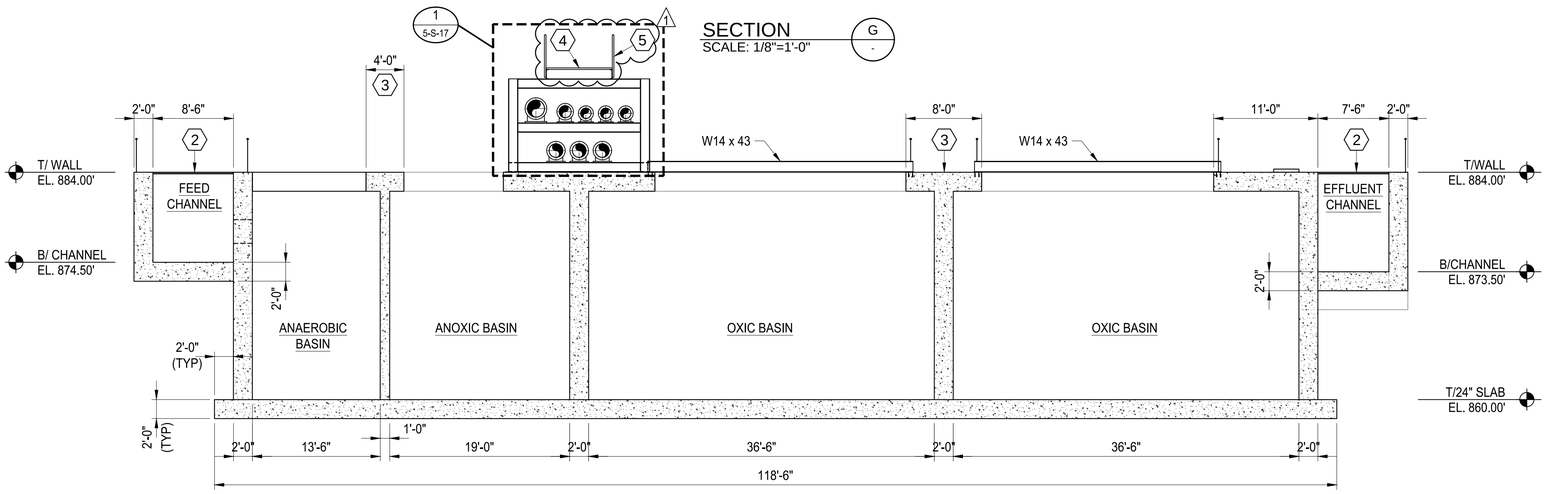
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.14 – 05-S-14.DWG|Tab:5-S-14|Plotted: November 13, 2020 3:27pm

KEY NOTES

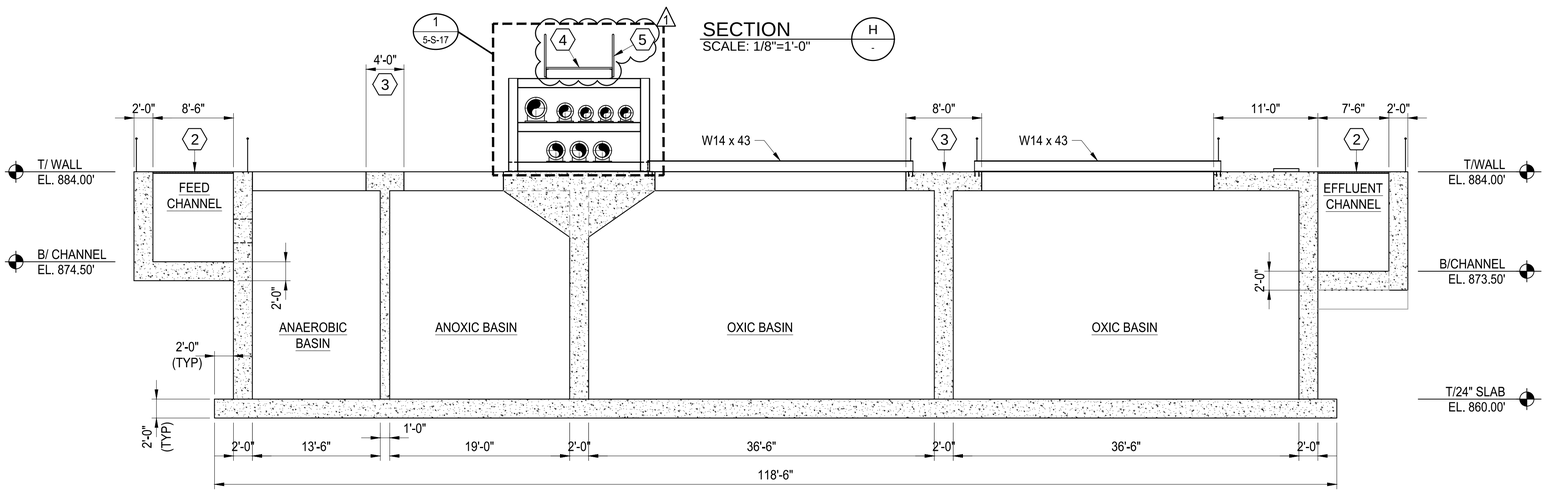
1. ALUMINUM HANDRAIL W/TOE PLATE
2. ALUMINUM GRATING
3. CONCRETE WALKWAY
4. STEEL GRATING
5. STEEL HANDRAIL W/TOE PLATE



SECTION
SCALE: 1/8"=1'-0"
G



SECTION
SCALE: 1/8"=1'-0"
H



SECTION
SCALE: 1/8"=1'-0"
J

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
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ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

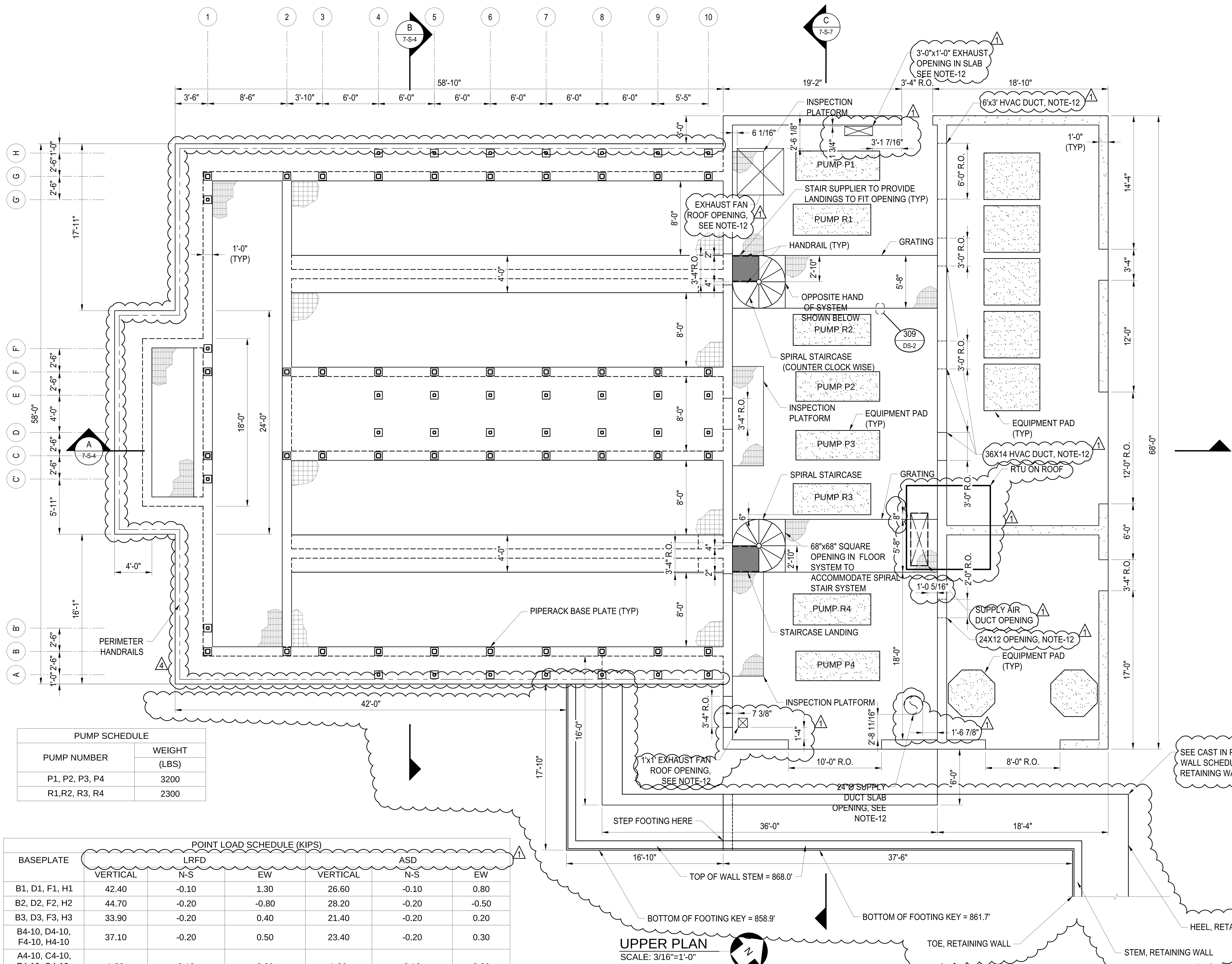
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BIOLOGICAL REACTOR SECTIONS

SHEET NO.
5-S-15

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0505.15 - 05-S-15.DWG|Tab:5-S-15|Plotted: November 13, 2020 3:27pm



UPPER PLAN
SCALE: 3/16"=1'-0"

PUMP SCHEDULE	
PUMP NUMBER	WEIGHT (LBS)
P1, P2, P3, P4	3200
R1,R2, R3, R4	2300

POINT LOAD SCHEDULE (KIPS)

BASEPLATE	LRFD			ASD		
	VERTICAL	N-S	EW	VERTICAL	N-S	EW
B1, D1, F1, H1	42.40	-0.10	1.30	26.60	-0.10	0.80
B2, D2, F2, H2	44.70	-0.20	-0.80	28.20	-0.20	-0.50
B3, D3, F3, H3	33.90	-0.20	0.40	21.40	-0.20	0.20
B4-10, D4-10, F4-10, H4-10	37.10	-0.20	0.50	23.40	-0.20	0.30
A4-10, C4-10, E4-10, G4-10, B'1,C'1,F'1,G'1	1.80	0.10	0.00	1.20	0.10	0.00

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
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7. EQUIPMENT PAD LOCATIONS AND SIZES TO BE COORDINATED WITH MECHANICAL.
8. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
9. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
10. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.
11. THE FACILITY HAS BEEN DESIGNED AROUND THE USE OF PRECAST TANK CONCEPTS. THE FACILITY CONFORMS TO THE GEOMETRY AND THE HYDRAULIC PROFILES REQUIRED FOR PERFORMANCE BUT THE FINAL DESIGN IS BY THE TANK SUPPLIER/INSTALLER.
12. HVAC VENT LOCATIONS AND SIZES ARE APPROXIMATE. COORDINATE WITH HVAC FOR OPENINGS.

LEGEND

- BASE PLATE OF HSS 6X6X0.5
- BASE PLATE OF HSS 4X4X0.375
- MBR CASSETTE COVER
- GRATING

ATKINS
1600 RiverEdge Parkway, NW, Suite 700, Atlanta, Ga 30328, P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	10/30/20

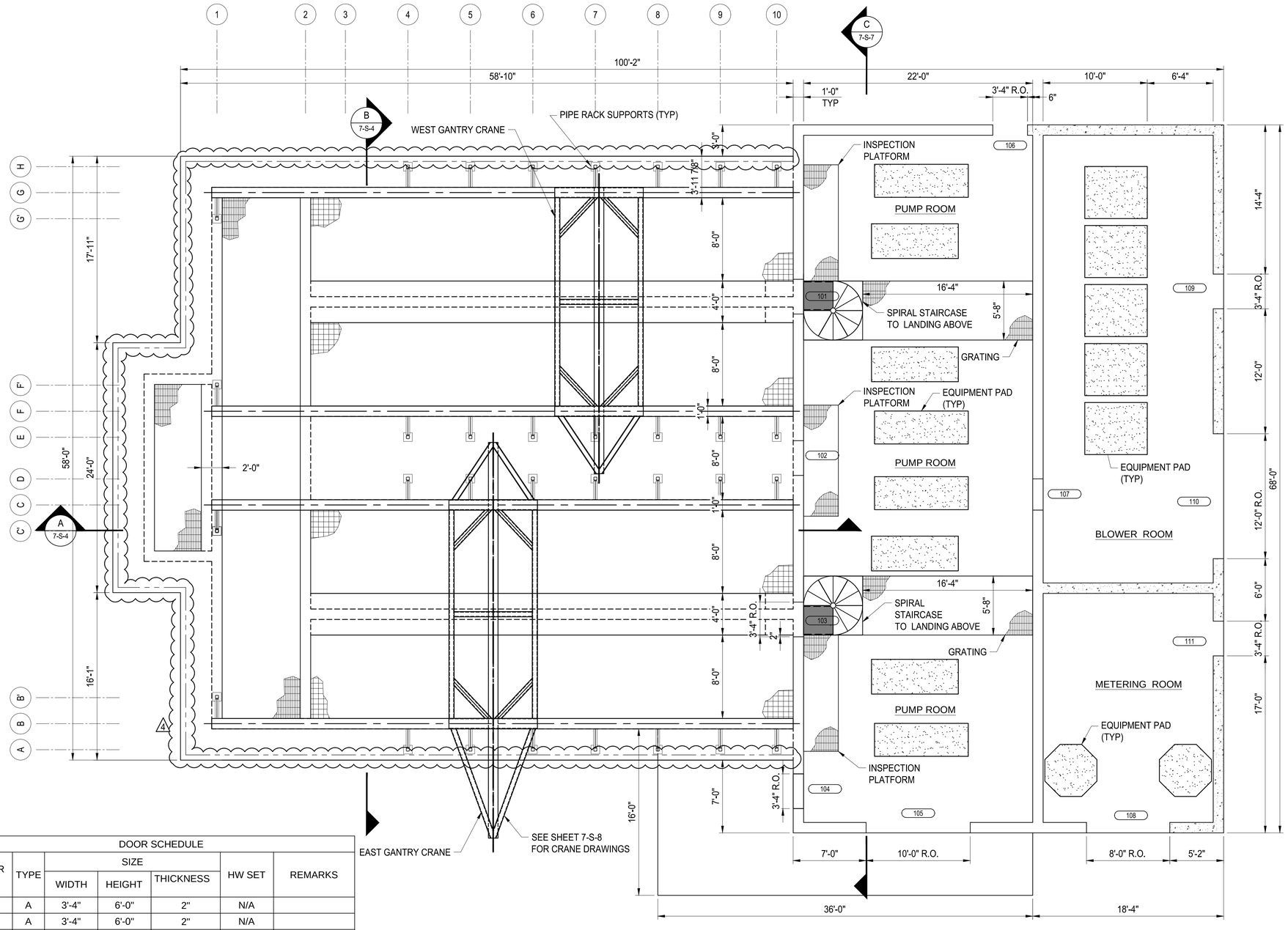
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MEMBRANE FACILITY
UPPER PLAN

SHEET NO.
7-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0507.02 – 07-S-2.DWG|Tab: 7-S-2|Plotted: November 13, 2020 3:28pm



DOOR SCHEDULE						
DOOR NO.	TYPE	SIZE			HW SET	REMARKS
		WIDTH	HEIGHT	THICKNESS		
101	A	3'-4"	6'-0"	2"	N/A	
102	A	3'-4"	6'-0"	2"	N/A	
103	A	3'-4"	6'-0"	2"	N/A	
104	A	3'-4"	7'-0"	2"	N/A	
105	C	10'-0"	14'-0"	2"	N/A	
106	A	3'-4"	7'-0"	2"	1	
107	A	3'-4"	7'-0"	2"	1	
108	C	8'-0"	14'-0"	2"	N/A	
109	A	3'-4"	7'-0"	2"	1	
110	C	12'-0"	14'-0"	2"	N/A	
111	C	3'-4"	7'-0"	2"	N/A	

DOOR TYPES -- REFER TO SPECIFICATIONS	
A	EXTERIOR ENTRY DOORS - SINGLE - FRP NONCORROSIVE
B	EXTERIOR ENTRY DOORS - DOUBLE - FRP NONCORROSIVE
C	ROLL UP DOOR, OVERHEAD DOOR CO. MODEL 620
D	NOT USED
E	NOT USED

UPPER PLAN
SCALE: 3/16"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
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8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 OCT 2020

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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 105 Dance Circle
Stevensville, MD 21666
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
1 ADDENDUM No.4	11/13/20

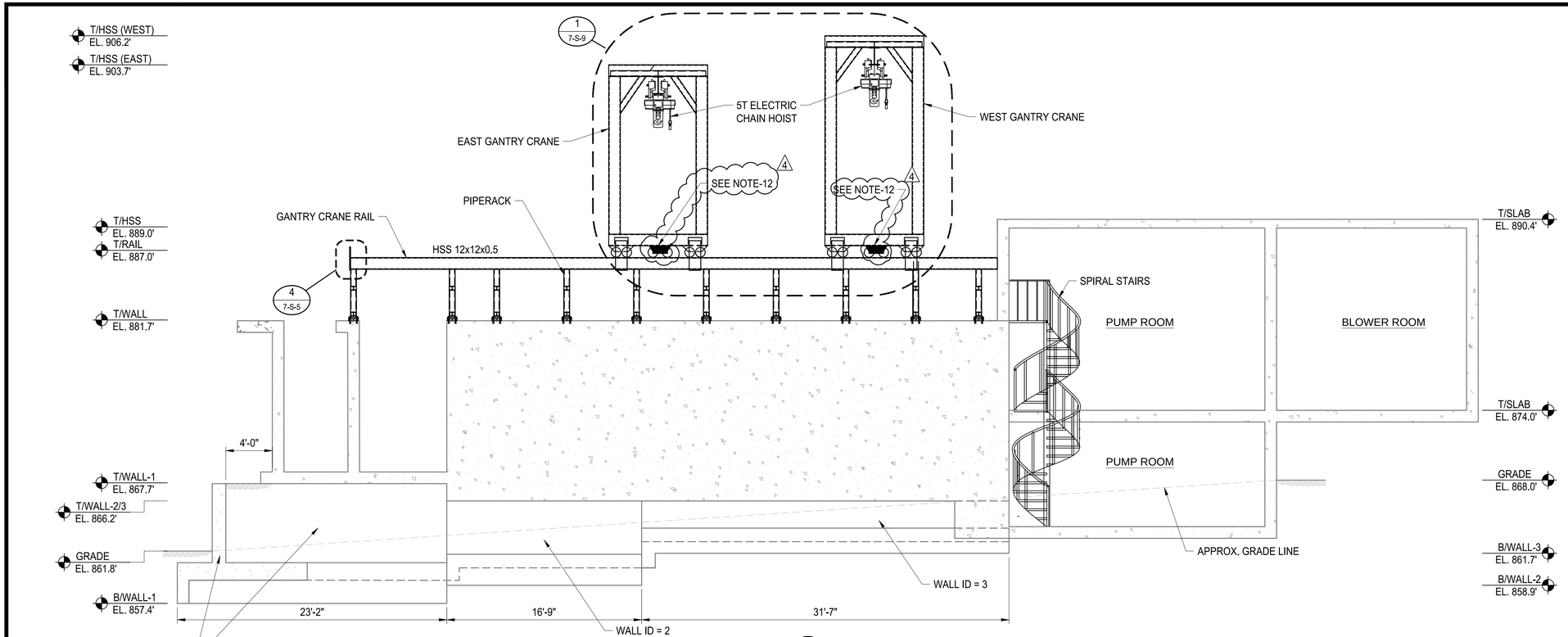
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

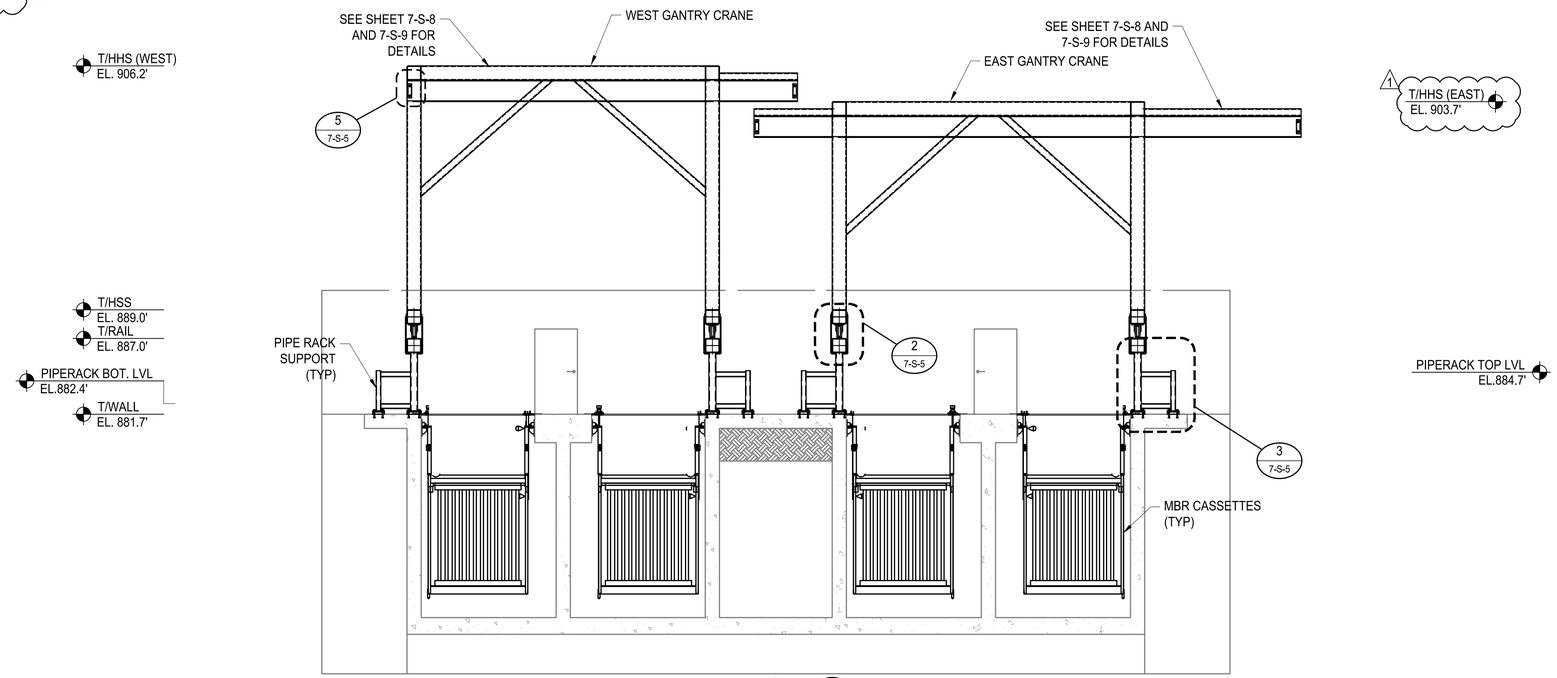
MEMBRANE FACILITY
UPPER TROLLEY FRAMING PLAN

SHEET NO.
7-S-3

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0507.03 - 07-S-3.DWG|Tab: 7-S-3|Plotted: November 13, 2020 3:28pm



SECTION
SCALE: 3/16" = 1'-0"
A
7-S-3



SECTION
SCALE: 3/16" = 1'-0"
B
7-S-3

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. EQUIPMENT PAD LOCATIONS TO BE COORDINATED WITH MECHANICAL.
8. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
9. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
10. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.
11. THE FACILITY HAS BEEN DESIGNED AROUND THE USE OF PRECAST TANK CONCEPTS. THE FACILITY CONFORMS TO THE GEOMETRY AND THE HYDRAULIC PROFILES REQUIRED FOR PERFORMANCE BUT THE FINAL DESIGN IS BY THE TANK SUPPLIER/INSTALLER.
12. THE CRANE SHALL BE DRIVEN USING 1/2 HP QUAD V WHEEL DRIVE SYSTEM OR EQUIVALENT. A TOTAL OF FOUR (4) MOTOR SYSTEMS WILL BE NECESSARY. A CONTROL PANEL TO DRIVE THE SAME SHALL BE MOUNTED ON EACH CRANE. THE QUAD RIGID 1/2 HP 8" V GROOVE DRIVE SYSTEM SHALL BE BATTERY DRIVEN WITH 120 VOLT INPUT CHARGING SYSTEM ON EACH BOX WITH 10' CABLE AND SHALL HAVE A SPEED OF 6 INCHES PER SEC. THE SYSTEM SHALL HAVE BE CASTER CONCEPT SHOX XD9 OR EQUIVALENT.

4

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/13/2020

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CERTIFICATE OF AUTHORIZATION # PEF010800 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM NO. 4	10/13/20

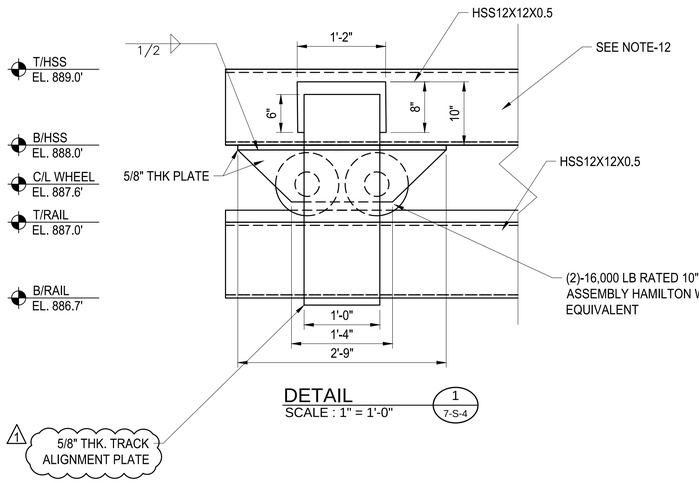
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

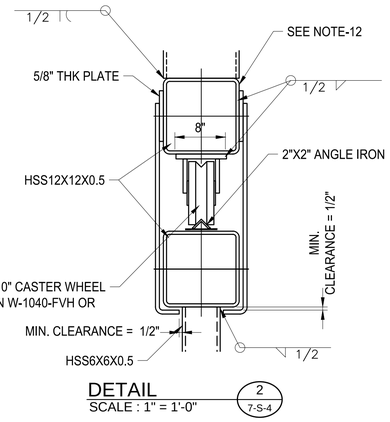
MEMBRANE FACILITY
UPPER TROLLEY SECTIONS

SHEET NO.
7-S-4

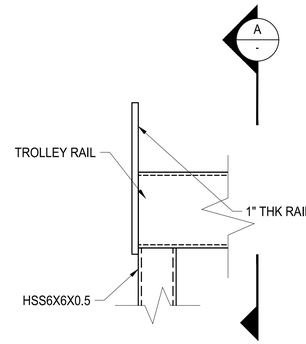
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0507.04 - 07-S-4, 5, 6.DWG|Tab:7-S-4|Plotted: November 13, 2020 3:28pm



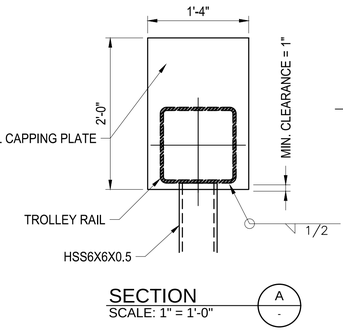
DETAIL
SCALE : 1" = 1'-0"
1
7-S-4



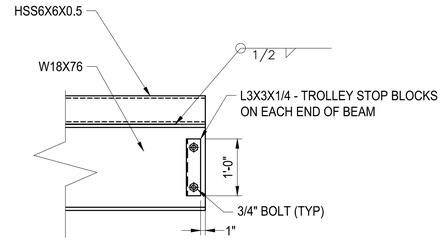
DETAIL
SCALE : 1" = 1'-0"
2
7-S-4



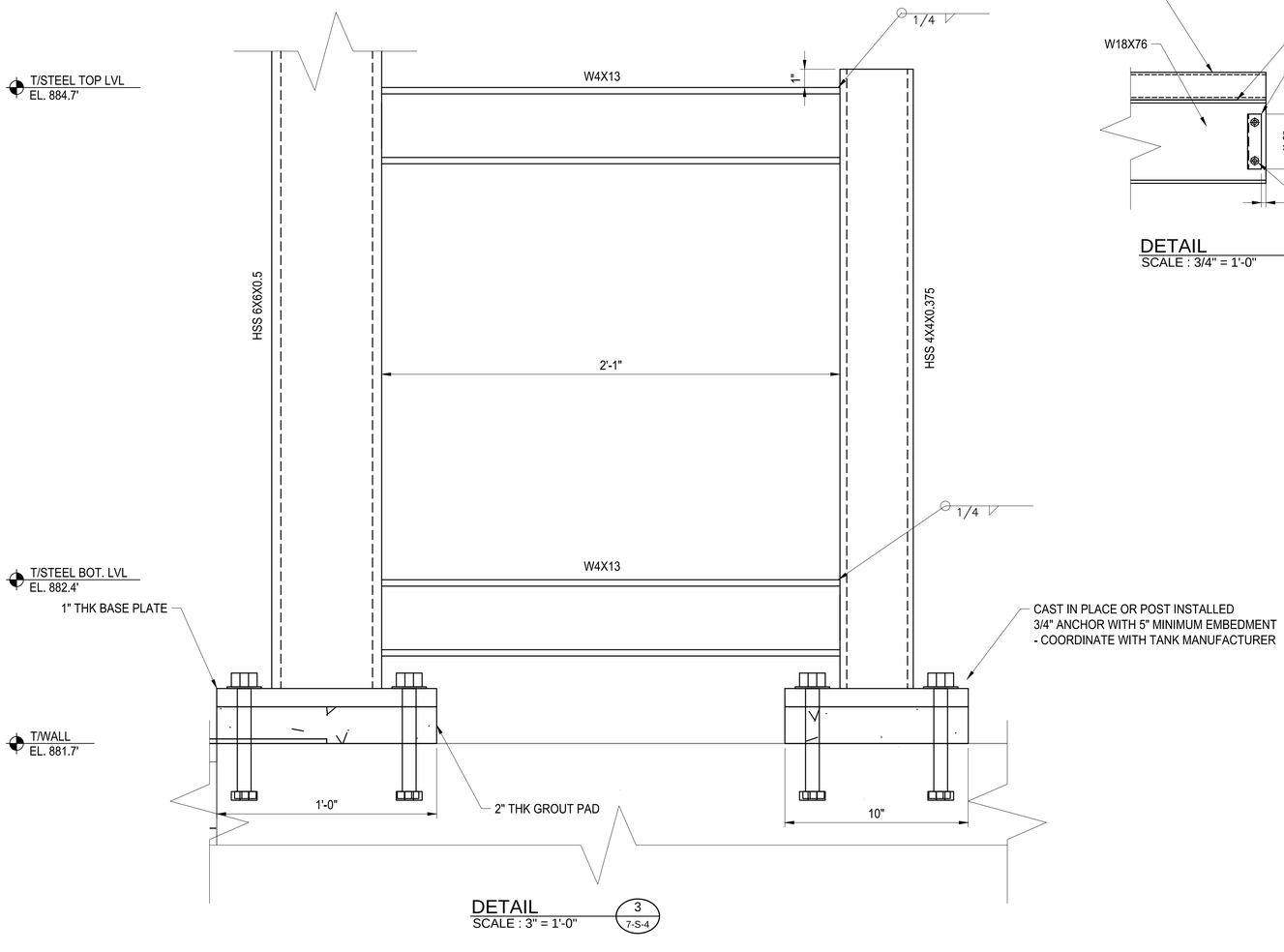
DETAIL
SCALE : 1" = 1'-0"
4
7-S-4



SECTION
SCALE: 1" = 1'-0"
A
-



DETAIL
SCALE : 3/4" = 1'-0"
4
7-S-4



DETAIL
SCALE : 3" = 1'-0"
3
7-S-4

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. EQUIPMENT PAD LOCATIONS TO BE COORDINATED WITH MECHANICAL.
8. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
9. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
10. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.
11. THE FACILITY HAS BEEN DESIGNED AROUND THE USE OF PRECAST TANK CONCEPTS. THE FACILITY CONFORMS TO THE GEOMETRY AND THE HYDRAULIC PROFILES REQUIRED FOR PERFORMANCE BUT THE FINAL DESIGN IS BY THE TANK SUPPLIER/INSTALLER.
12. ADD 1/2" WEEP HOLES, ONE ON EACH SIDE OF HORIZONTAL MEMBERS AND ONE FOR EACH HORIZONTAL MEMBER OF THE GANTRY CRANE. THE WEEP HOLES SHALL BE LOCATED WITHIN THE LOWER 2" OF THE BEAM/COLUMN
13. THE CRANE SHALL BE DRIVEN USING 1/2 HP QUAD V WHEEL DRIVE SYSTEM OR EQUIVALENT. A TOTAL OF FOUR (4) MOTOR SYSTEMS WILL BE NECESSARY. A CONTROL PANEL TO DRIVE THE SAME SHALL BE MOUNTED ON EACH CRANE. THE QUAD RIGID 1/2 HP 8" V GROOVE DRIVE SYSTEM SHALL BE BATTERY DRIVEN WITH 120 VOLT INPUT CHARGING SYSTEM ON EACH BOX WITH 10' CABLE AND SHALL HAVE A SPEED OF 6 INCHES PER SEC. THE SYSTEM SHALL HAVE BE CASTER CONCEPT SHOX XD9 OR EQUIVALENT.
14. THE CASTERS AND THE TRACK ALIGNMENT PLATES MAY BE RELOCATED SLIGHTLY TO ACCOMMODATE THE DRIVE CASTER SYSTEM.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/30/2020

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CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM NO. 4	10/30/20

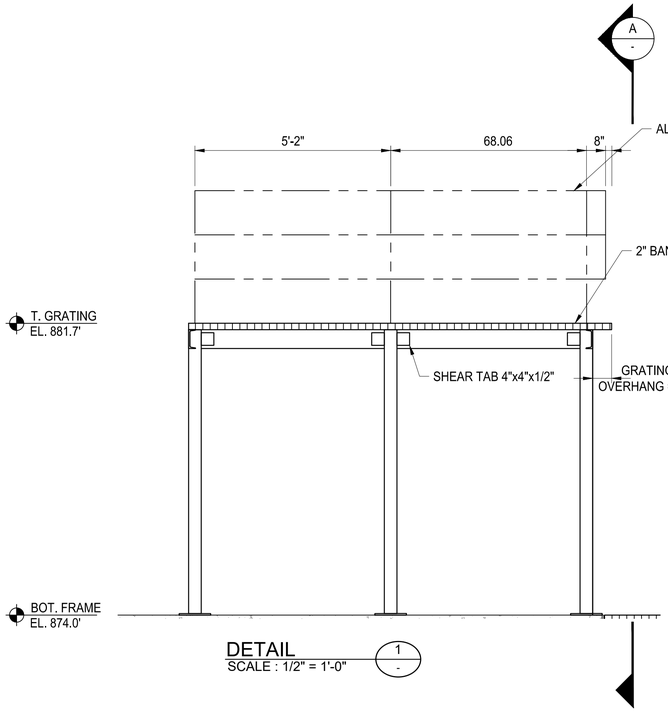
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

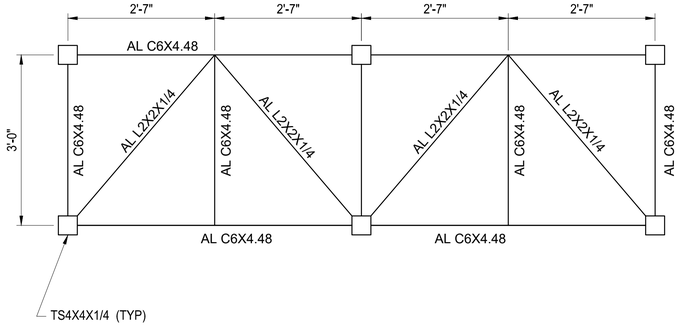
MEMBRANE FACILITY
UPPER TROLLEY SECTIONS

SHEET NO.
7-S-5

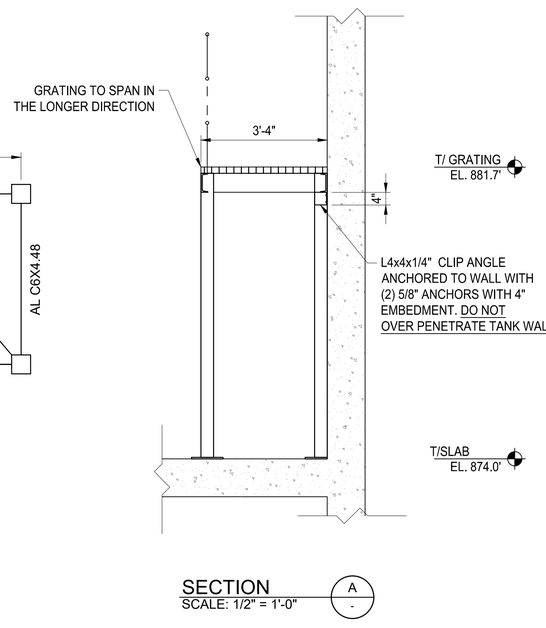
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0507.04 – 07–S–4, 5, 6.DWG|Tab:7–S–5|Plotted: November 13, 2020 3:29pm



DETAIL
SCALE : 1/2" = 1'-0"
1
-



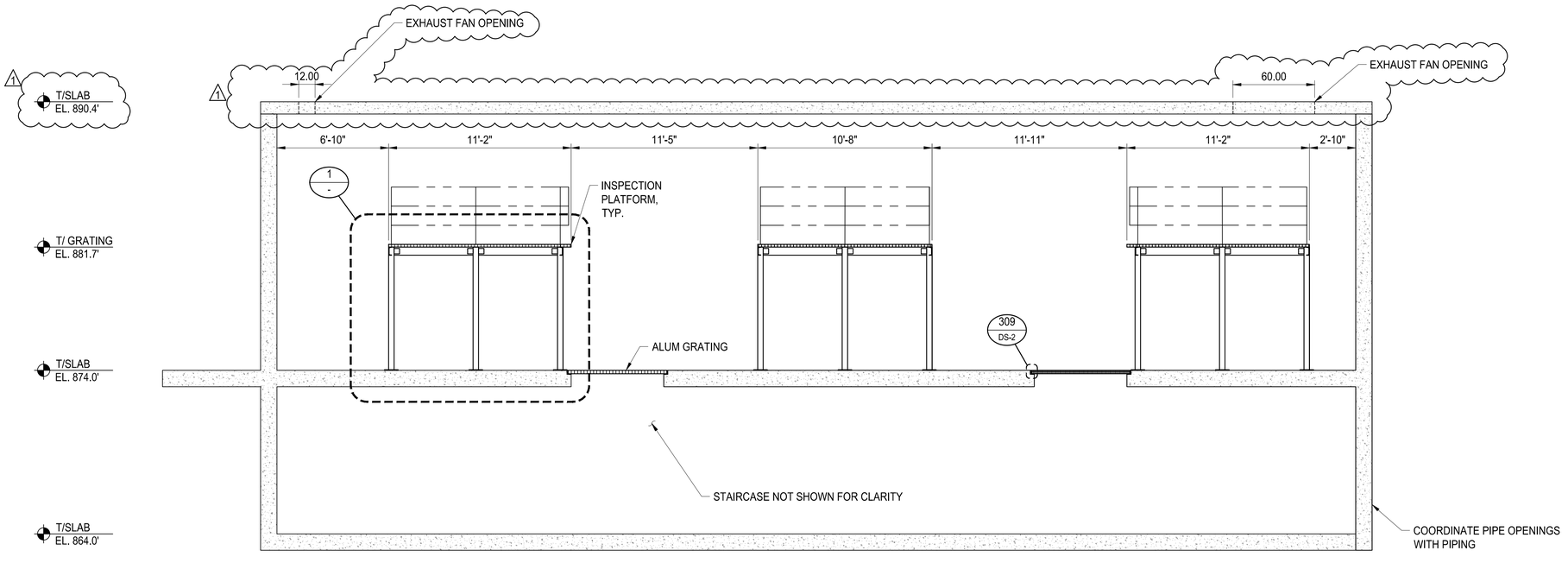
INSPECTION PLATFORM FRAMING PLAN
SCALE: 3/4"=1'-0"



SECTION
SCALE: 1/2" = 1'-0"
A
-

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.
10. HVAC VENT LOCATIONS AND SIZES ARE APPROXIMATE. COORDINATE WITH HVAC FOR OPENINGS.



SECTION
SCALE: 1/4" = 1'-0"
C
7-S-2

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/30/2020

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HARTWELL ENGINEERING, INC.
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198 LOG CANOE CIRCLE
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(443) 249-3111

	REVISION	DATE
1	ADDENDUM No. 4	10/30/20
1		

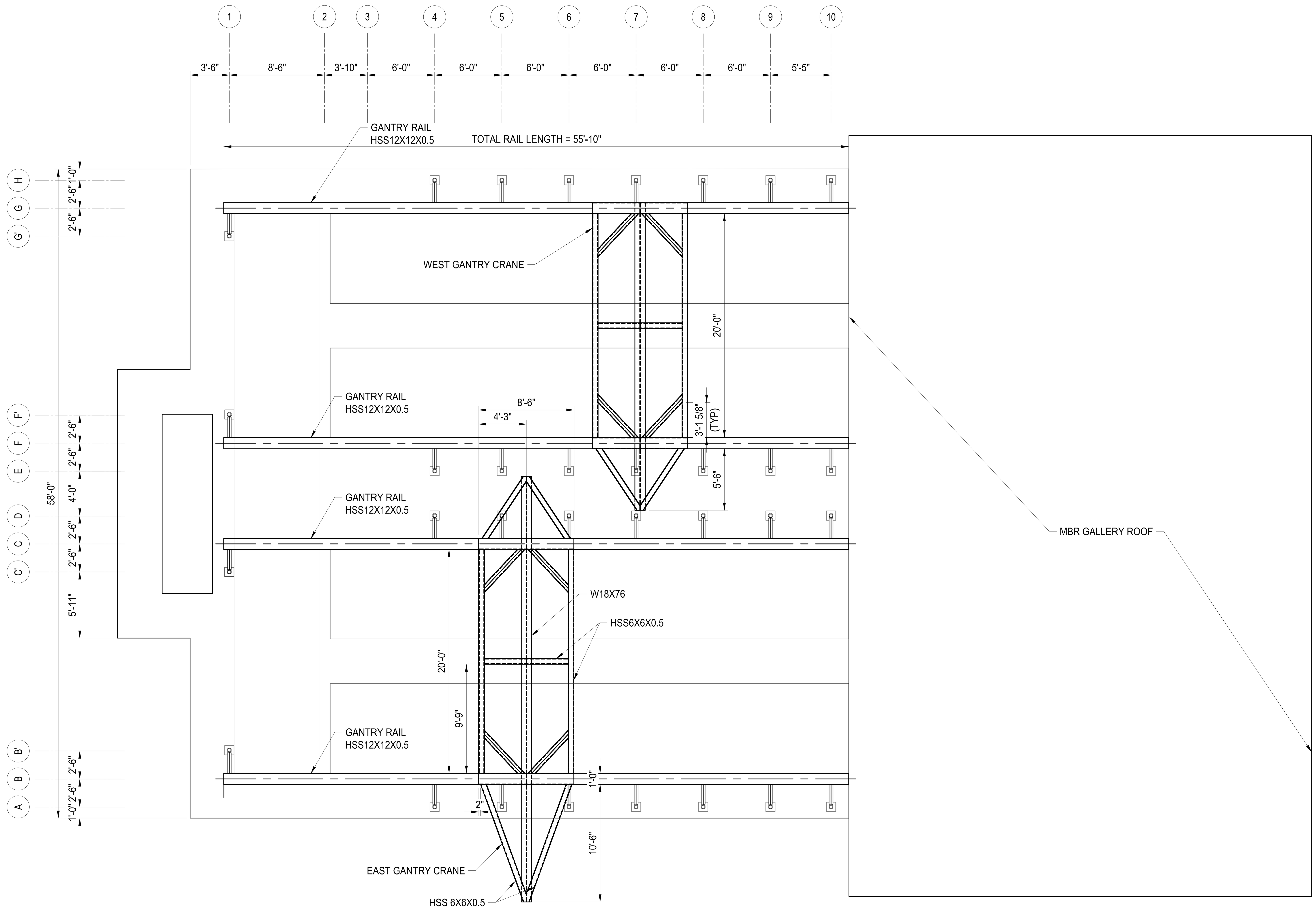
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MEMBRANE FACILITY
INSPECTION PLATFORM SECTIONS

SHEET NO.
7-S-7

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0507.07 - 07-S-7.DWG|Tab: 7-S-7|Plotted: November 13, 2020 3:58pm



GANTRY CRANE UPPER PLAN

SCALE: 3/16"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
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8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

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CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
4	ADDENDUM No.4	11/13/20

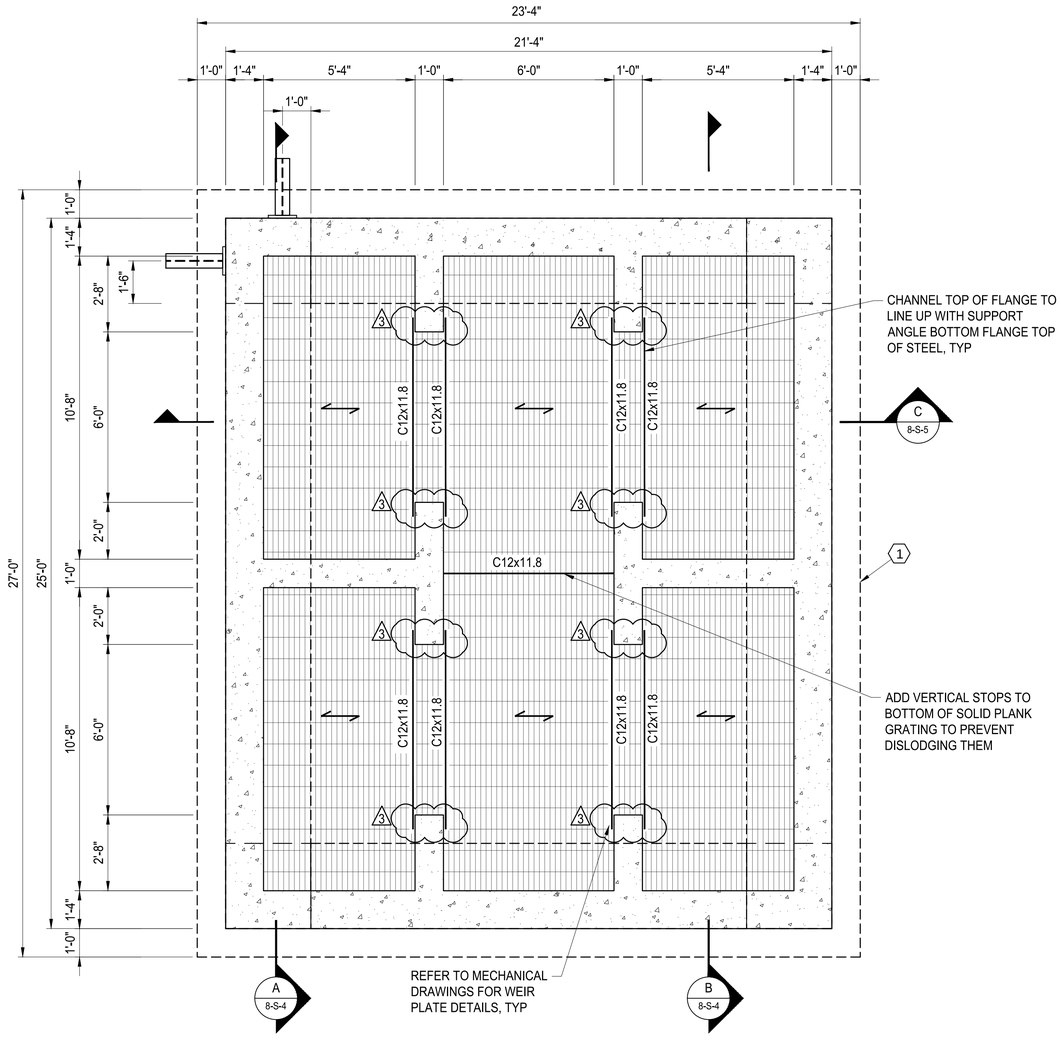
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MEMBRANE FACILITY
GANTY CRANE FRAMING PLAN

SHEET NO.
7-S-8

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0507.03 – 07-S-3.DWG|Tab: 7-S-8|Plotted: November 13, 2020 3:29pm



UPPER PLAN AT EL. 900.00'

SCALE: 3/8"=1'=0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.

KEY NOTES

1 EDGE OF FOOTER SLAB BELOW

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/30/2020

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CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

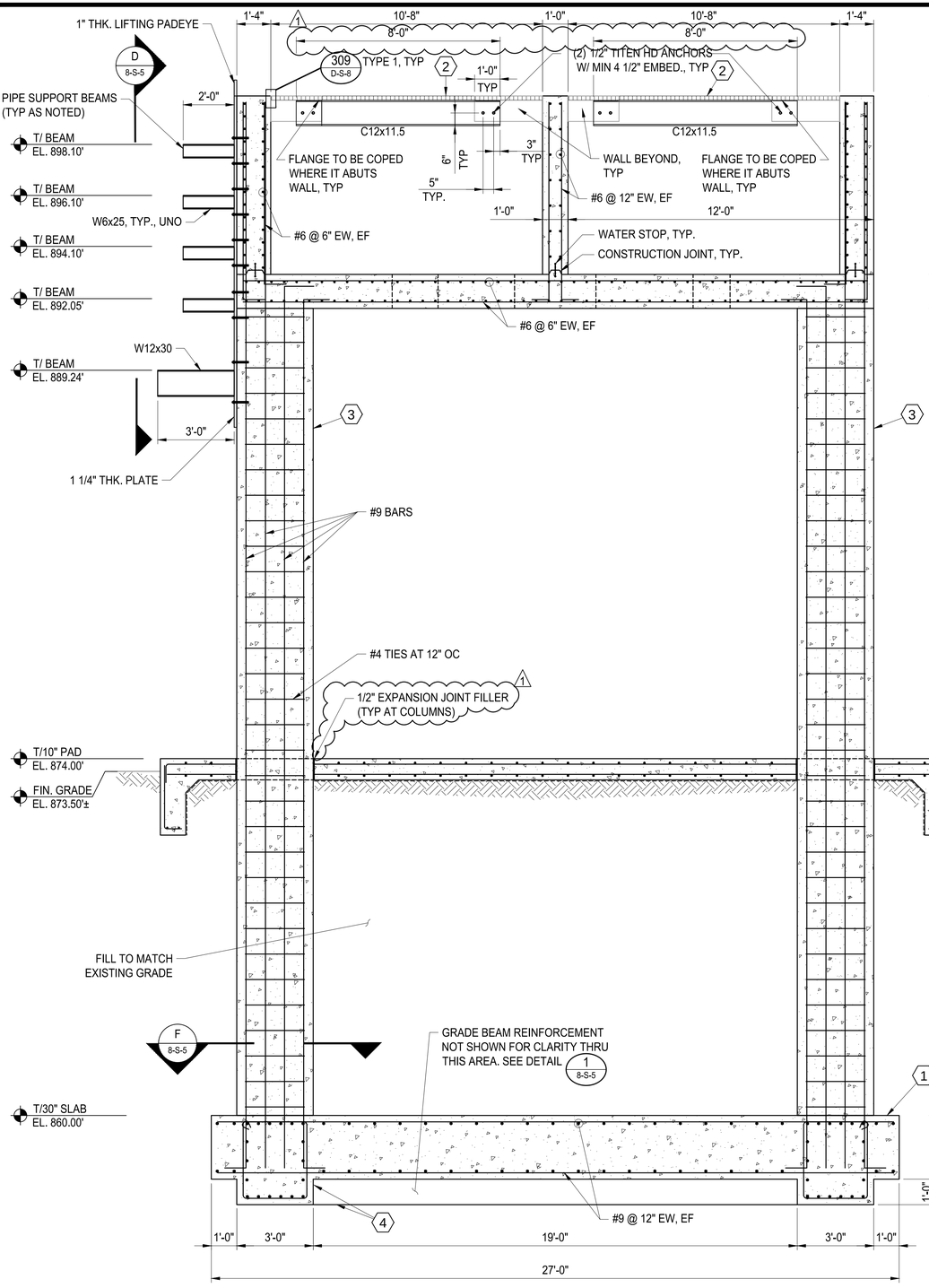
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

RAS SPLITTER BOX UPPER PLAN

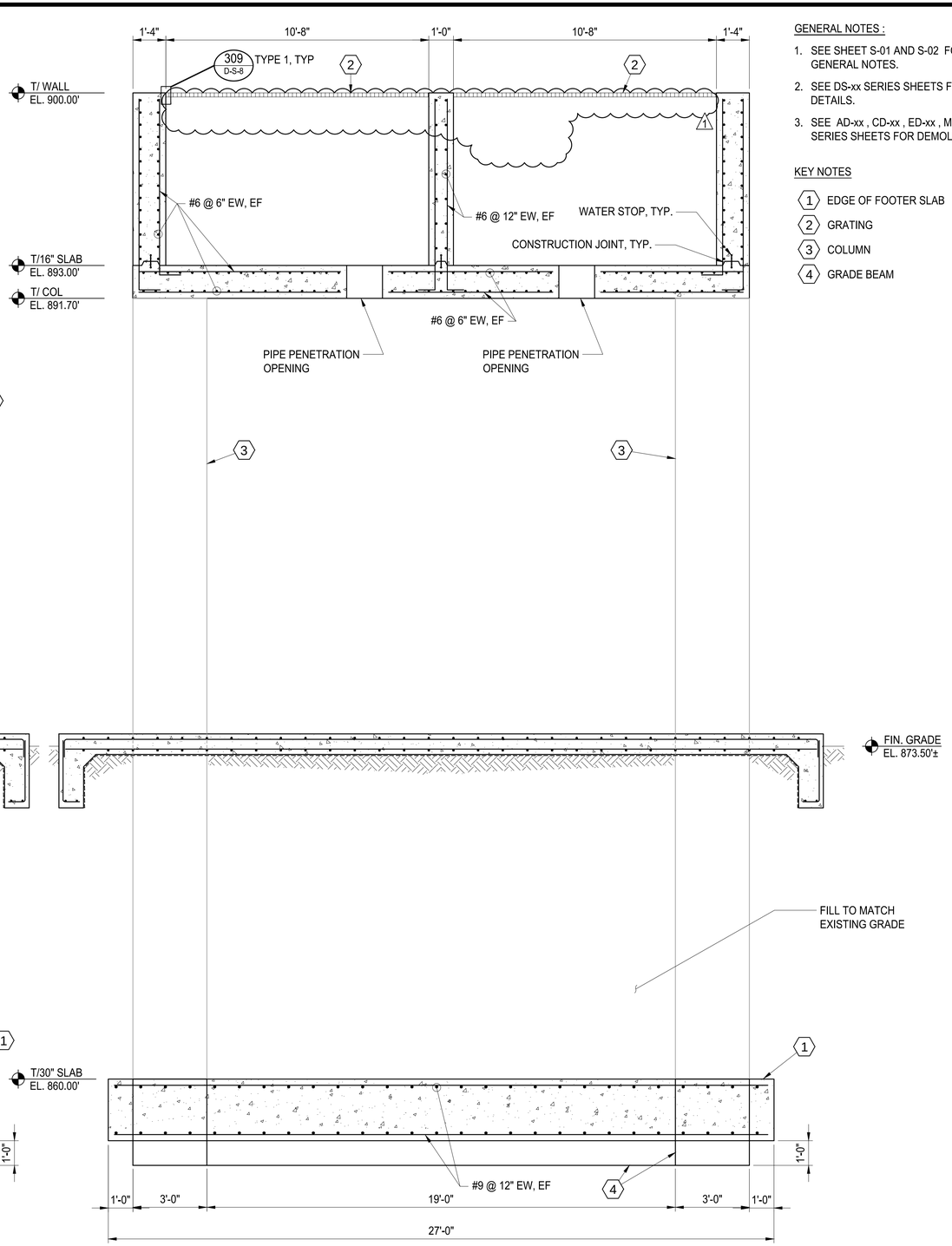
SHEET NO.

8-S-3

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0508.03 - 08-S--3.DWG|Tab:8-S--3|Plotted: November 13, 2020 3:29pm



SECTION A 8-S-2
SCALE: 3/8" = 1'-0"



SECTION B 8-S-2
SCALE: 3/8" = 1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE AD-xx , CD-xx , ED-xx , MD-xx , AND SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.

KEY NOTES

1. EDGE OF FOOTER SLAB
2. GRATING
3. COLUMN
4. GRADE BEAM

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/08/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.		
	REVISION	DATE
1	ADDENDUM No.4	11/13/20

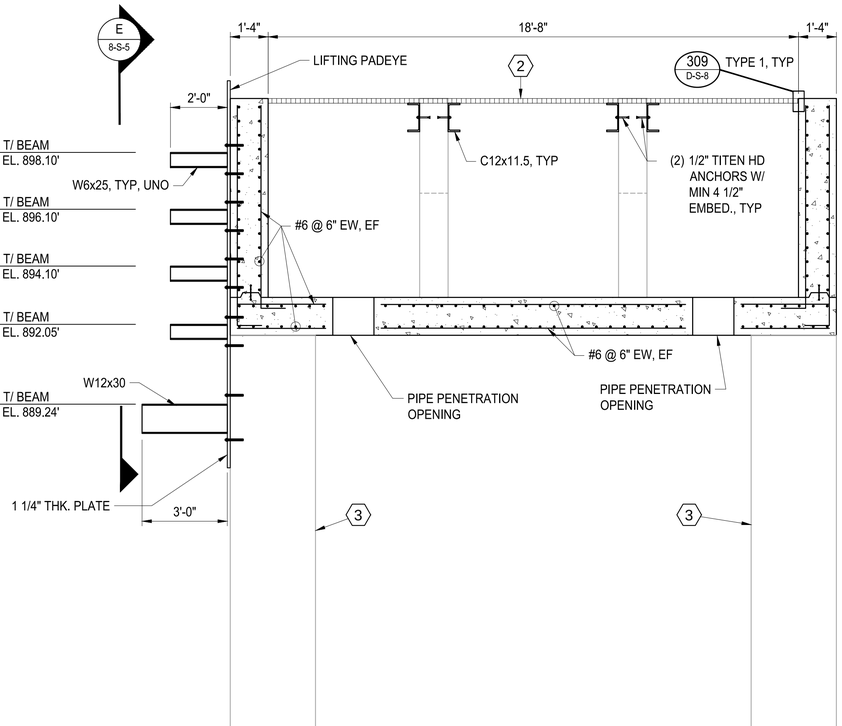
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

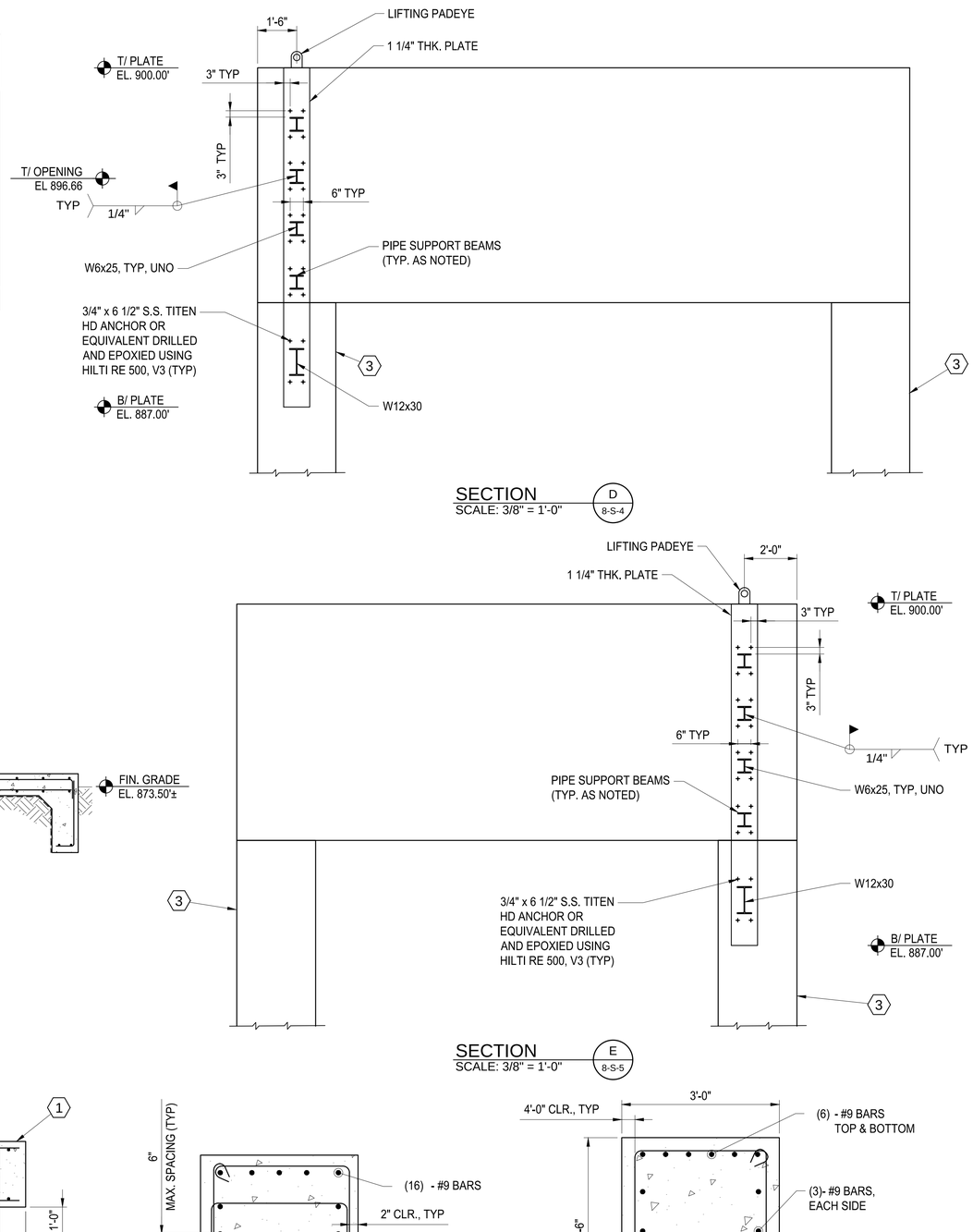
RAS SPLITTER BOX SECTIONS

SHEET NO.
8-S-4

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0508.04 - 08-S-4.DWG|Tab:8-S-4|Plotted: November 13, 2020 3:29pm



SECTION
SCALE: 3/8" = 1'-0"
C
8-S-2



SECTION
SCALE: 3/8" = 1'-0"
D
8-S-4

SECTION
SCALE: 3/8" = 1'-0"
E
8-S-5

SECTION
SCALE: 3/4" = 1'-0"
F
8-S-4

DETAIL
SCALE: 3/4"=1'-0"
1
8-S-4

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE AD-xx , CD-xx , ED-xx , MD-xx , AND SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.

KEY NOTES

1. EDGE OF FOOTER SLAB
2. GRATING
3. COLUMN
4. GRADE BEAM

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 OCT 2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
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CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

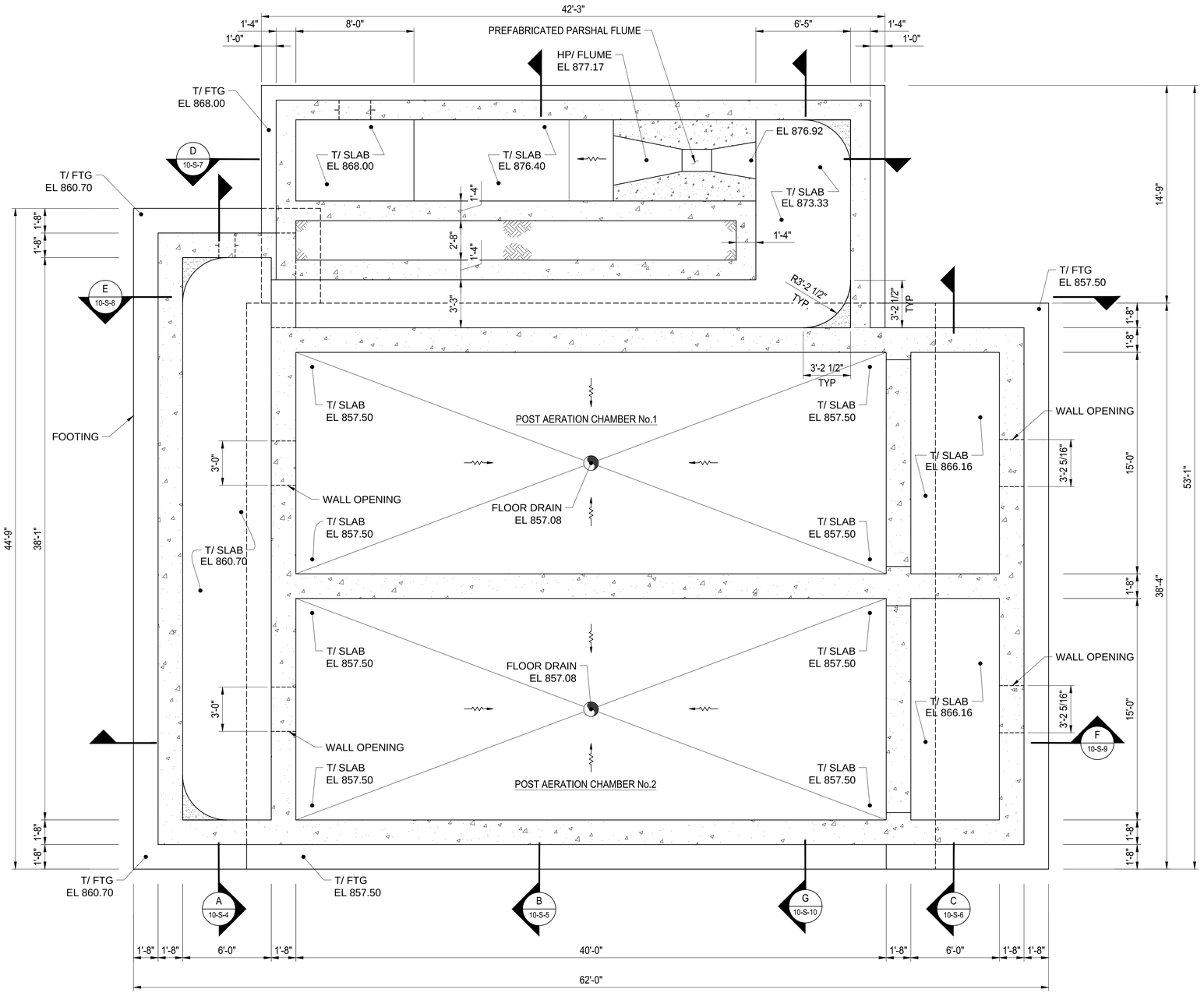
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

RAS SPLITTER BOX SECTIONS

SHEET NO.
8-S-5

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0508.05 – 08-S-5.DWG|Tab:8-S-5|Plotted: November 13, 2020 3:29pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. CONTRACTOR TO VERIFY WEIGHT OF BUILDING WITH EQUIPMENT. NOTIFY ENGINEER, BEFORE ORDERING MATERIALS FOR CONCRETE PAD AND BUILDING, IF TOTAL WEIGHT EXCEEDS 9,500 LBS. THE PRE-ENGINEERED CONTROL BUILDING SHALL SIT ON A PAD WHOSE DIMENSION SHALL BE COORDINATED WITH THE COORDINATOR.
11. THE DIMENSION OF THE UV CONTROL ROOM SHALL BE 10'X10'X10'.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/30/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 Lodo Circle, Circle
Stevensville, Maryland
(443) 249-3111

1	ADDENDUM No.4	11/13/20
	REVISION	DATE

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

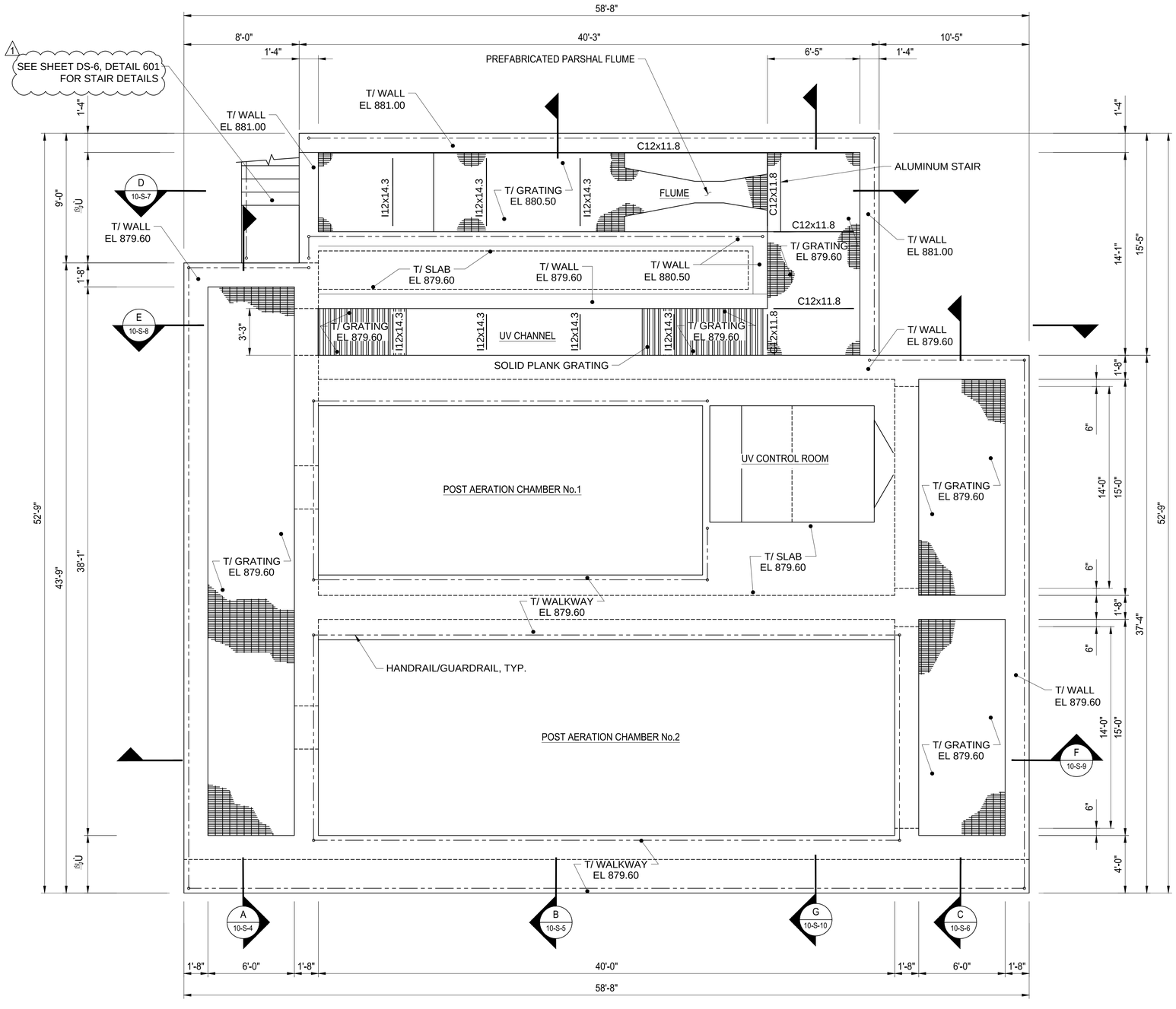
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

UVPA FACILITY
LOWER PLAN

SHEET NO.
10-S-1

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0510.01 - 10-S-1.DWG|Tab:10-S-1|Plotted: November 13, 2020 3:30pm



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

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
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8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. CONTRACTOR TO VERIFY WEIGHT OF BUILDING WITH EQUIPMENT. NOTIFY ENGINEER, BEFORE ORDERING MATERIALS FOR CONCRETE PAD AND BUILDING, IF TOTAL WEIGHT EXCEEDS 9,500 LBS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
199 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

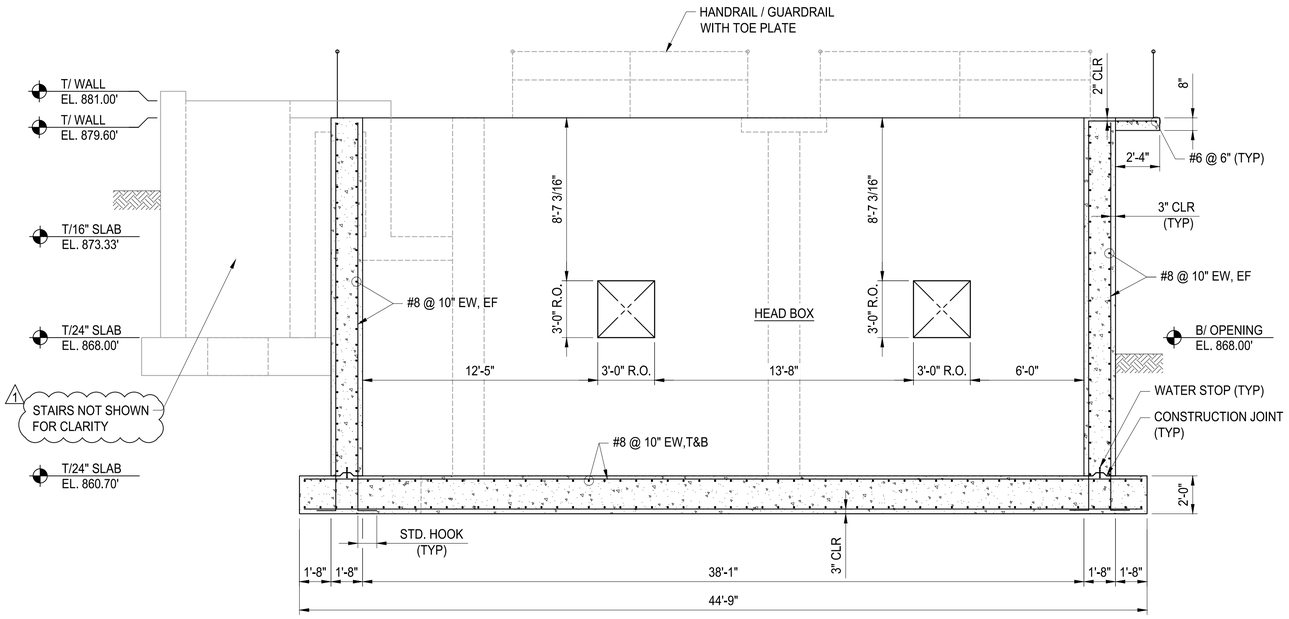
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

UVPA FACILITY
UPPER PLAN

SHEET NO.
10-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0510.02 – 10-S-2.DWG|Tab:10-S-2|Plotted: November 13, 2020 3:30pm



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

A
10-S-2

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
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9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
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GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
189 LOG CANOE CIRCLE
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

UVPA FACILITY SECTIONS

SHEET NO.
10-S-4

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0510.04 - 10-S-4.DWG|Tab:10-S-4|Plotted: November 13, 2020 3:30pm

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
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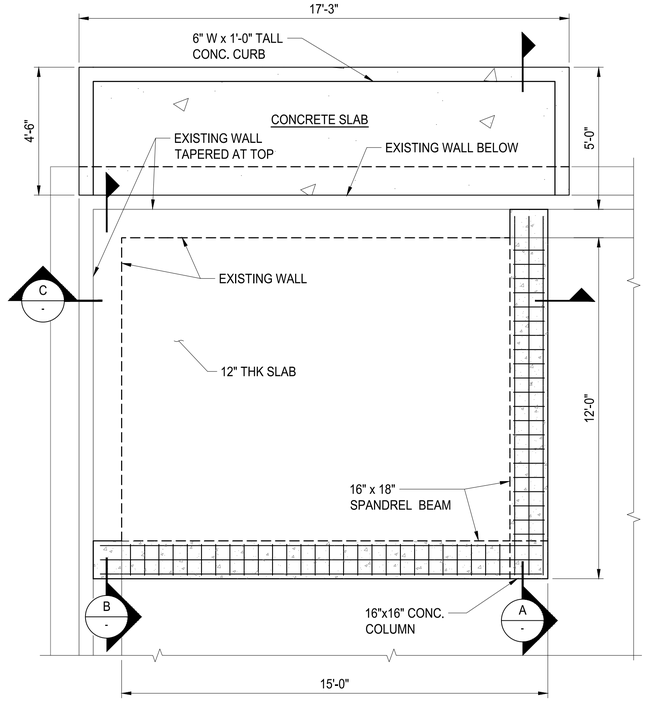
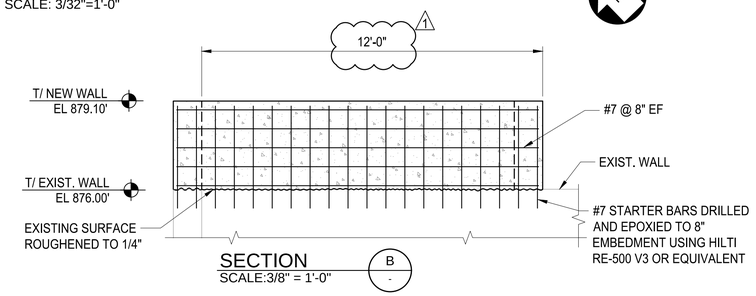
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECURAL ELEMENTS.

REUSE WATER WETWELL & WAS STORAGE UPPER PLAN

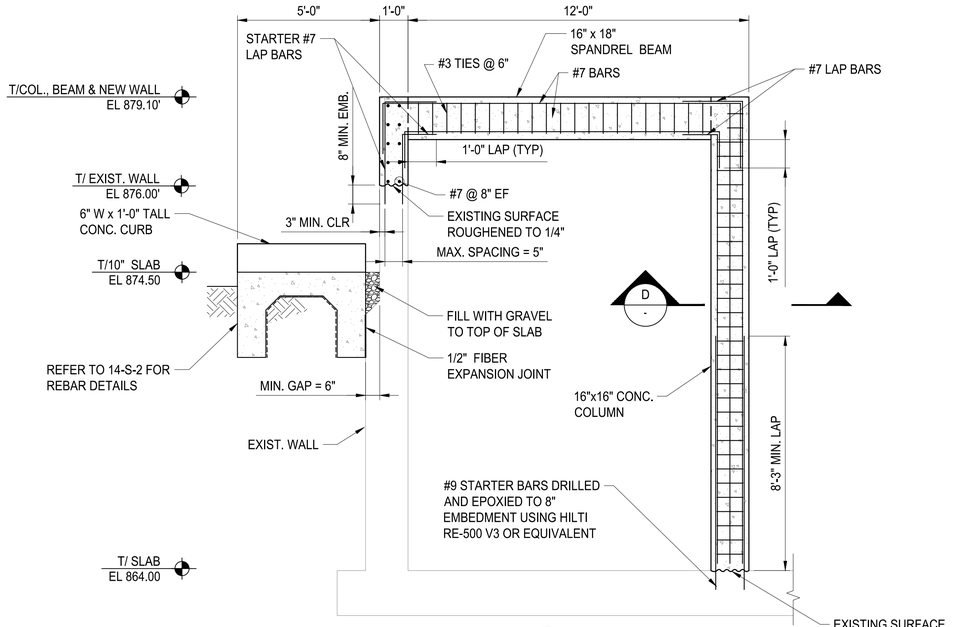
SCALE: 3/32"=1'-0"



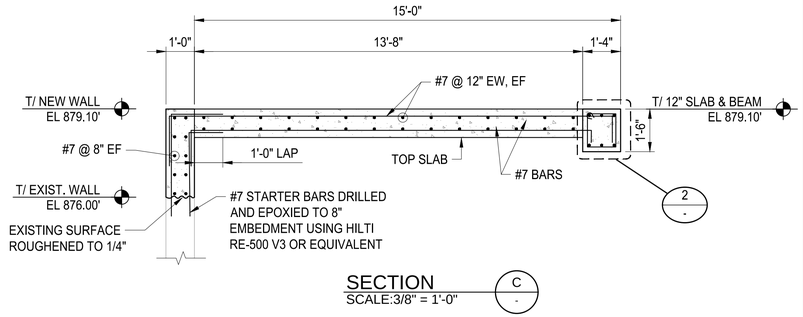
DETAIL 1 - SCALE : 3/8"= 1'-0"



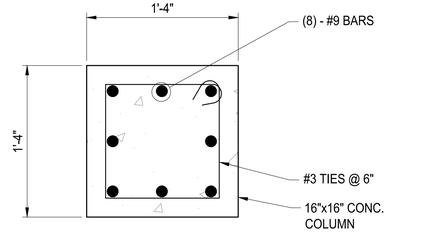
SECTION B - SCALE:3/8" = 1'-0"



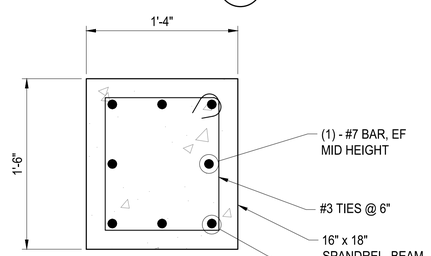
SECTION A - SCALE:3/8" = 1'-0"



SECTION C - SCALE:3/8" = 1'-0"



SECTION D - SCALE:1 1/2" = 1'-0"



DETAIL 2 - SCALE : 1 1/2"= 1'-0"

ATKINS
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOS CANOS CIRCLE
BERKELEY SPRINGS, WV 25411
(443) 249-3111

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/20

CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	DATE
ADDENDUM No.4	11/13/20

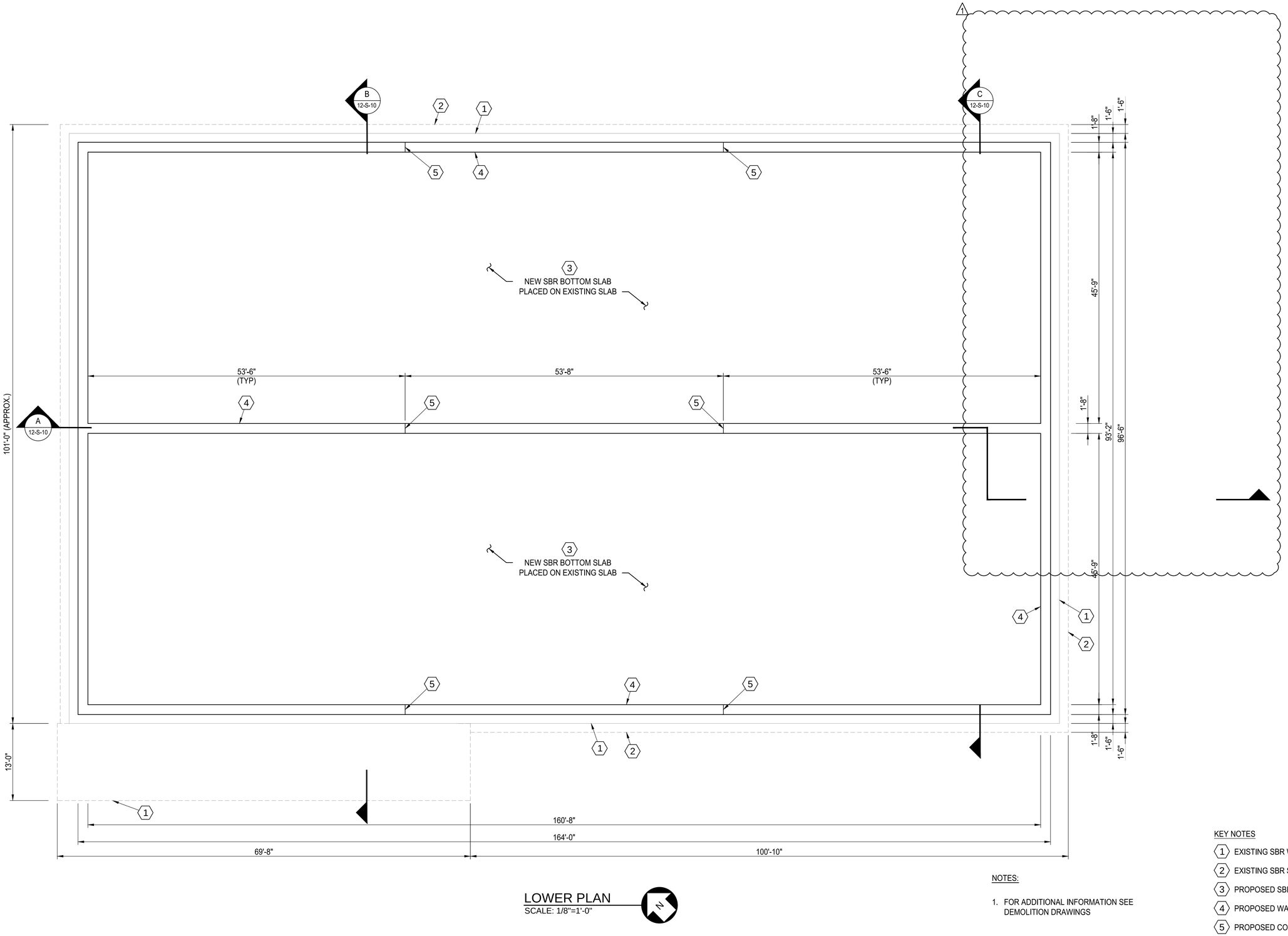
PROJ. NO.: 100061831
DESIGNED BY: DLG
DRAWN BY: - RTD
CHECKED BY: DMM/JLS
APPROVED BY: HG-
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

REUSE WATER WETWELL & WAS STORAGE UPPER PLAN AND SECTIONS

SHEET NO.
11-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0511.02 - 11-S-2.DWG|Tab:11-S-2|Plotted: November 13, 2020 3:30pm



LOWER PLAN
SCALE: 1/8"=1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION SEE DEMOLITION DRAWINGS

KEY NOTES

1. EXISTING SBR WALL
2. EXISTING SBR SLAB
3. PROPOSED SBR SLAB
4. PROPOSED WALL
5. PROPOSED CONTRACTION JOINT

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 OCT 2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MD 21666
(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF000920 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

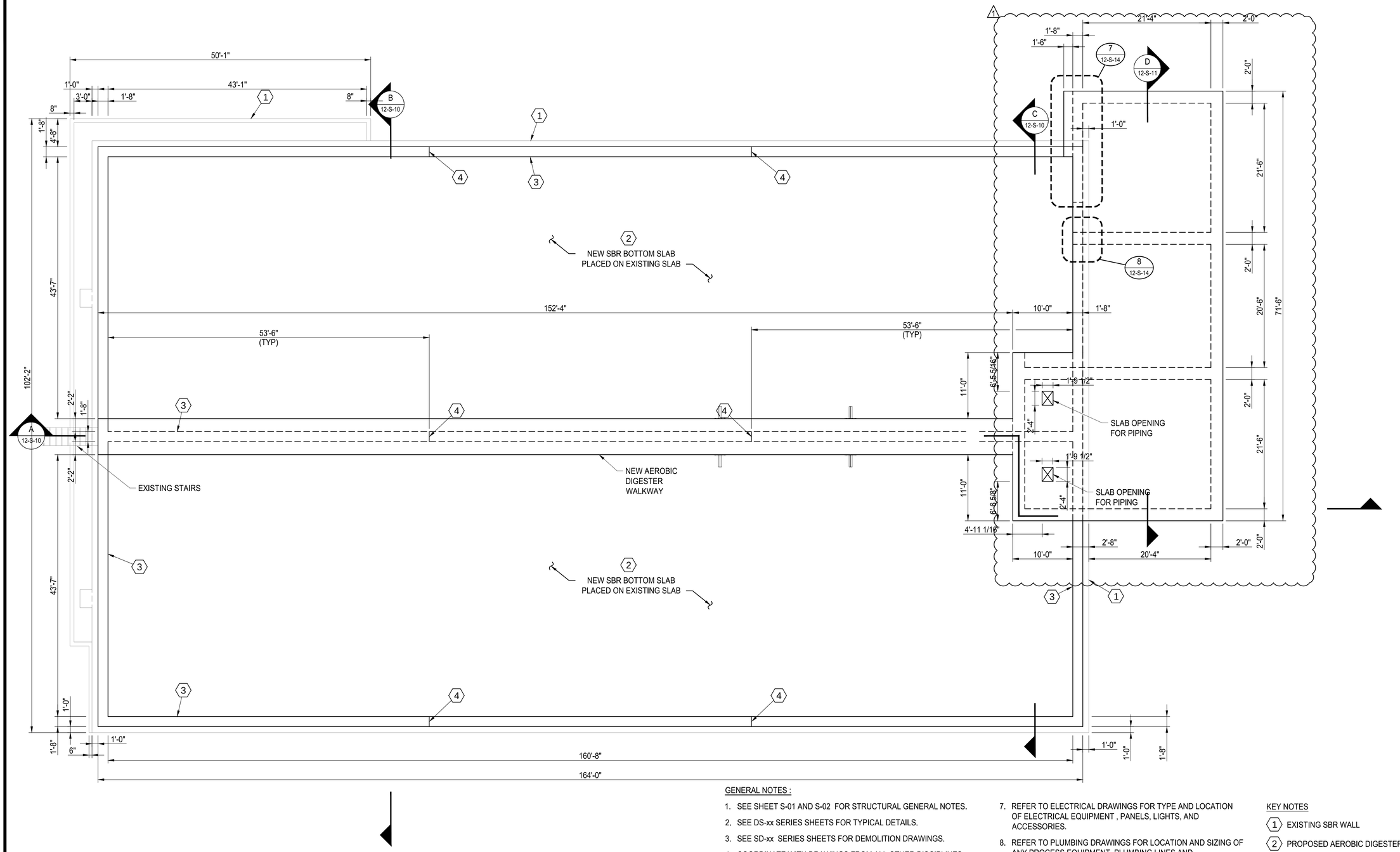
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER LOWER PLAN

SHEET NO.
12-S-1

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\05!2.01 - 12-S--1.DWG|Tab:12-S--1|Plotted: November 13, 2020 3:30pm



UPPER PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
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8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.

KEY NOTES

1. EXISTING SBR WALL
2. PROPOSED AEROBIC DIGESTER SLAB
3. PROPOSED AEROBIC DIGESTER WALL
4. PROPOSED CONTRACTION JOINT

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

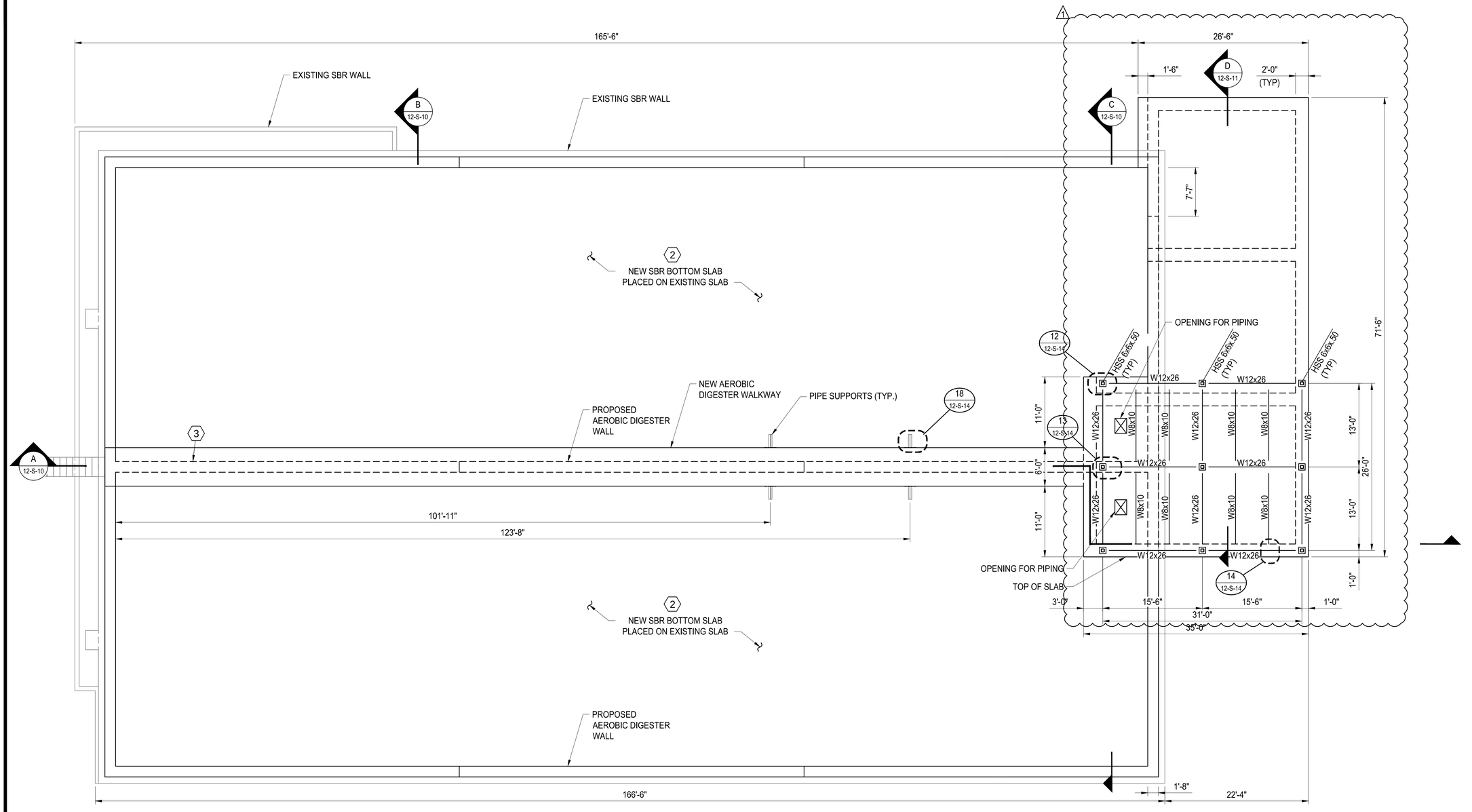
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER UPPER PLAN

SHEET NO.
12-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0512.02 - 12-S-2.DWG|Tab:12-S-2|Plotted: November 13, 2020 3:30pm



CANOPY FRAMING PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
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9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.

KEY NOTES

1. EXISTING SBR WALL
2. PROPOSED AEROBIC DIGESTER SLAB
3. PROPOSED AEROBIC DIGESTER WALL
4. PROPOSED CONTRACTION JOINT

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF003992 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
1 ADDENDUM No.4	11/13/20

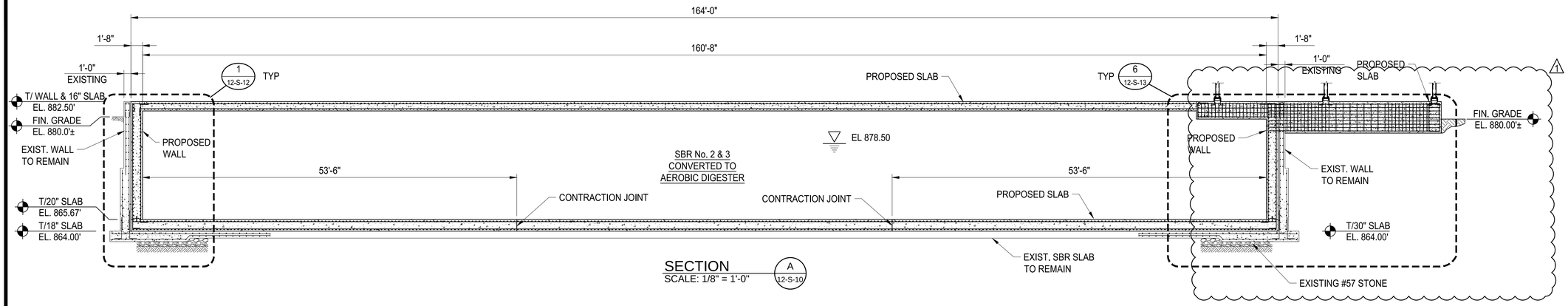
PROJ. NO.: 100061831
DESIGNED BY: DLG
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

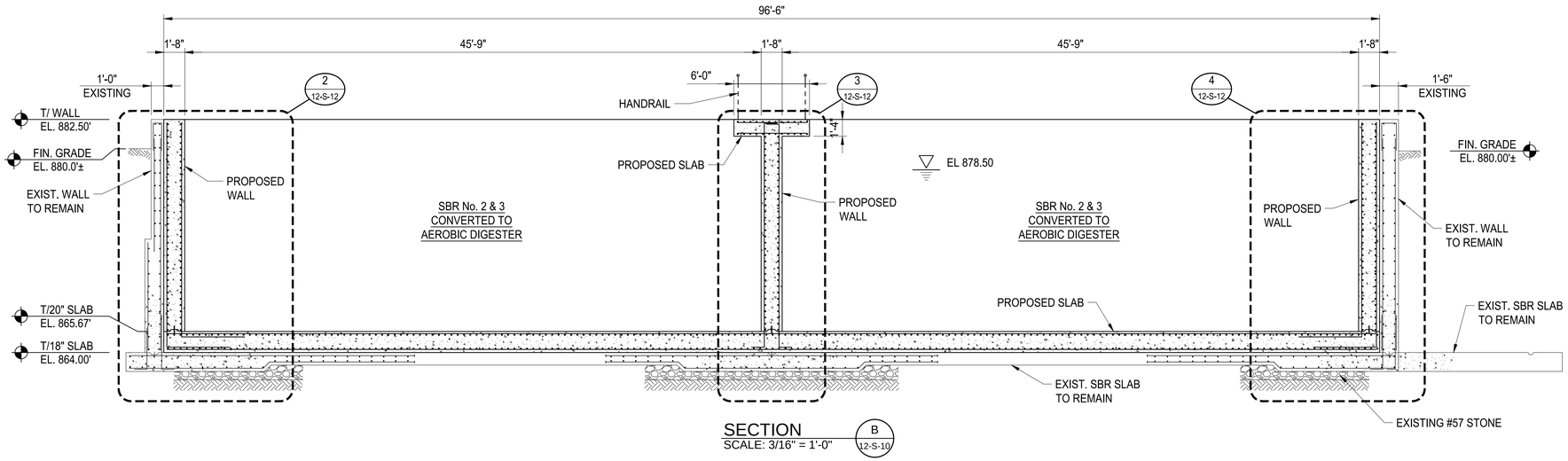
SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER CANOPY FRAMING PLAN

SHEET NO.
12-S-3

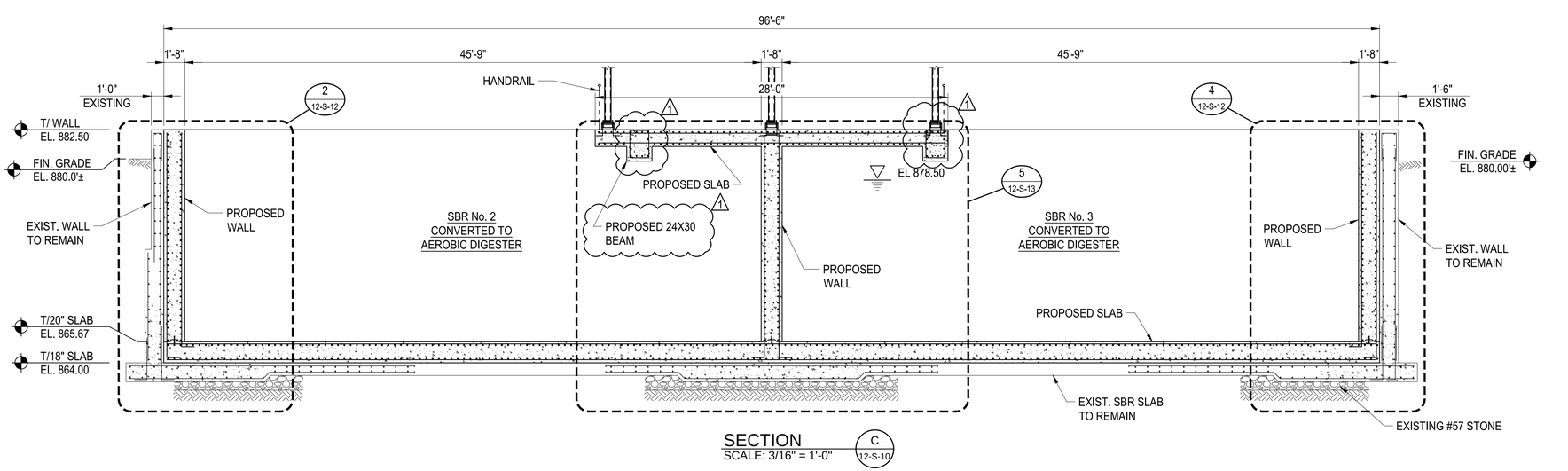
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0512.03 - 12-S-3.DWG|Tab:12-S-3|Plotted: November 13, 2020 3:30pm



SECTION A 12-S-10
SCALE: 1/8" = 1'-0"



SECTION B 12-S-10
SCALE: 3/16" = 1'-0"



SECTION C 12-S-10
SCALE: 3/16" = 1'-0"

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

DATE	REVISION
11/13/20	ADDENDUM No.4

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

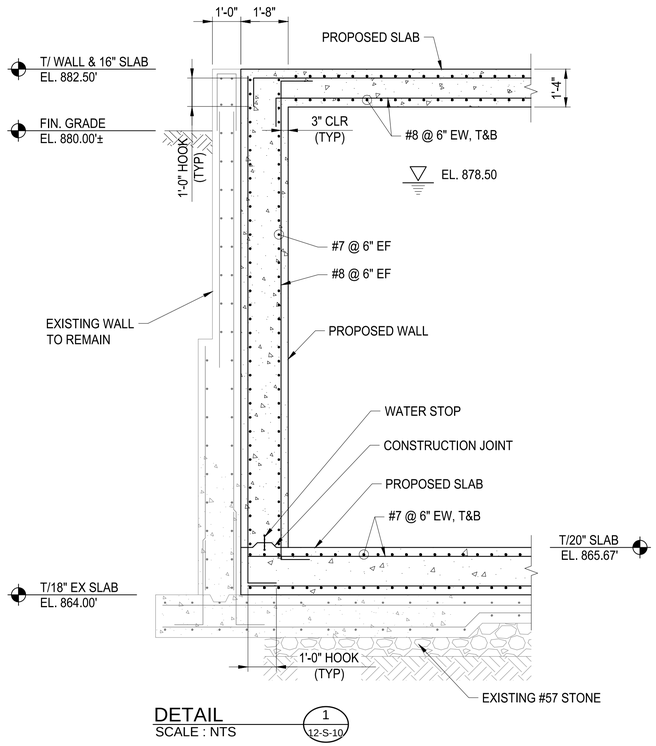
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: DN
CHECKED BY: DLS
APPROVED BY: HC AB
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

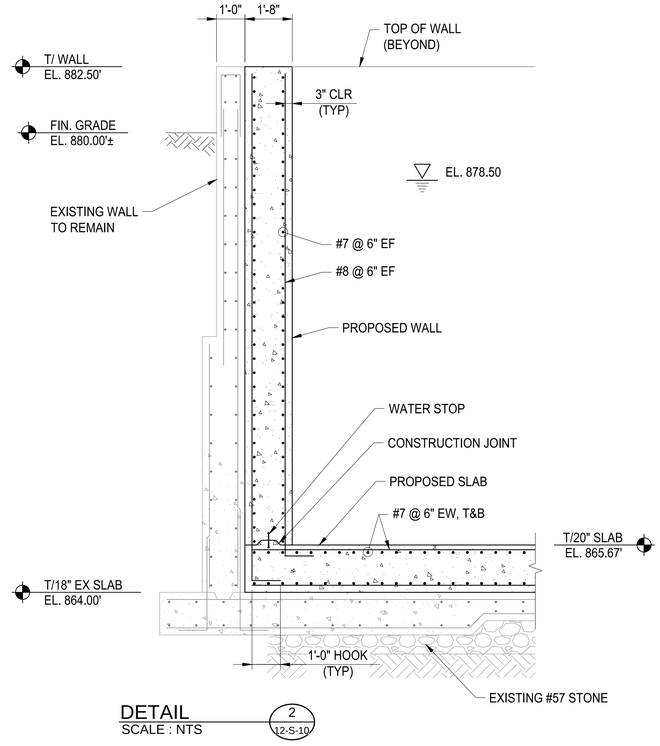
SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER SECTIONS

SHEET NO.
12-S-10

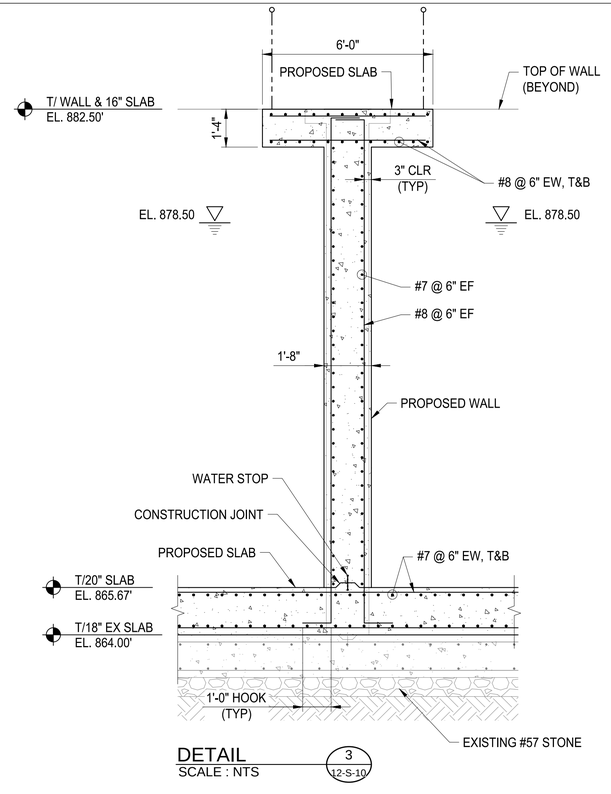
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0512.10 - 12-S-10.DWG|Tab:12-S-10|Plotted: November 13, 2020 3:31pm



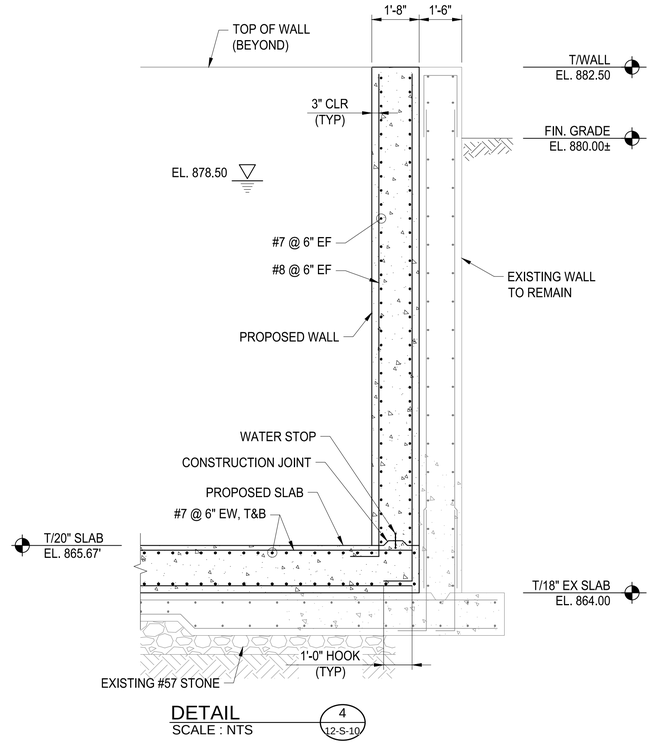
DETAIL 1 (12-S-10)
SCALE : NTS



DETAIL 2 (12-S-10)
SCALE : NTS



DETAIL 3 (12-S-10)
SCALE : NTS



DETAIL 4 (12-S-10)
SCALE : NTS

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
11/13/20

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MD 21666
(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	DATE
1 ADDENDUM No.4	11/13/20

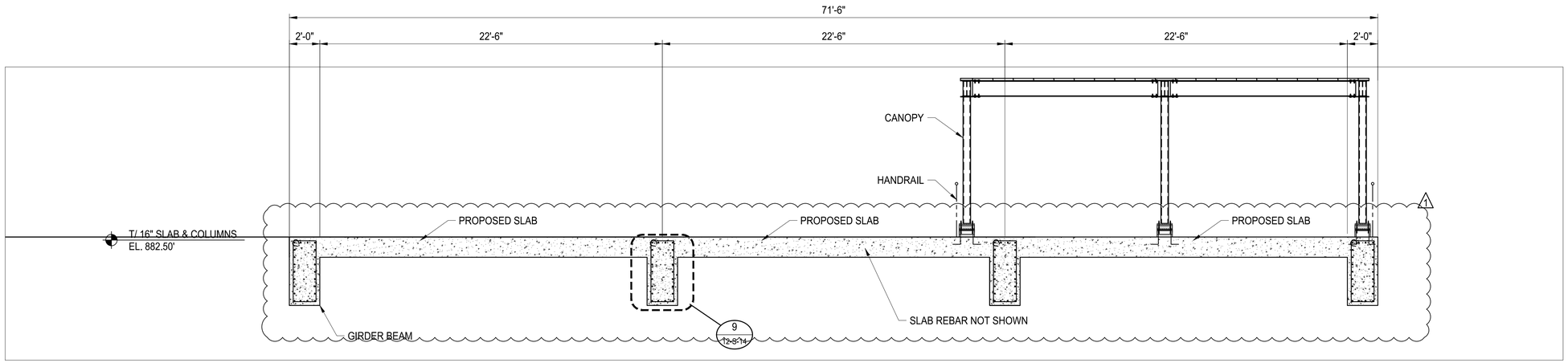
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: - DN
CHECKED BY: DMS
APPROVED BY: HC AB
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER DETAILS

SHEET NO.
12-S-12

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0512.12 - 12-S-12.DWG|Tab:12-S-12|Plotted: November 13, 2020 3:31pm



SECTION D
SCALE: 1/4" = 1'-0" 12-S-2

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
EXPIRES: 12/31/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
2	ADDENDUM No.4	11/13/20
1		

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: - DN
CHECKED BY: DLS
APPROVED BY: HC AB
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER SECTIONS

SHEET NO.
12-S-11

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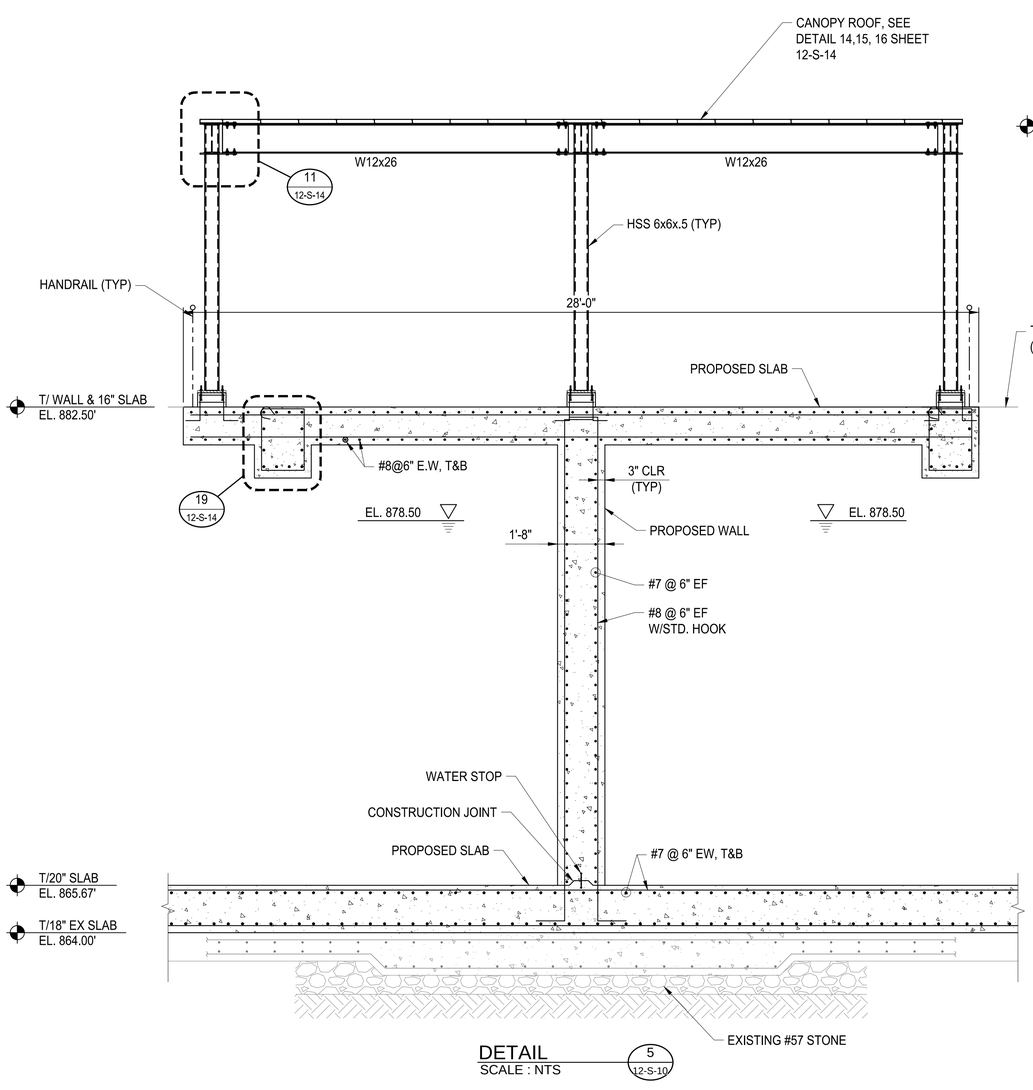
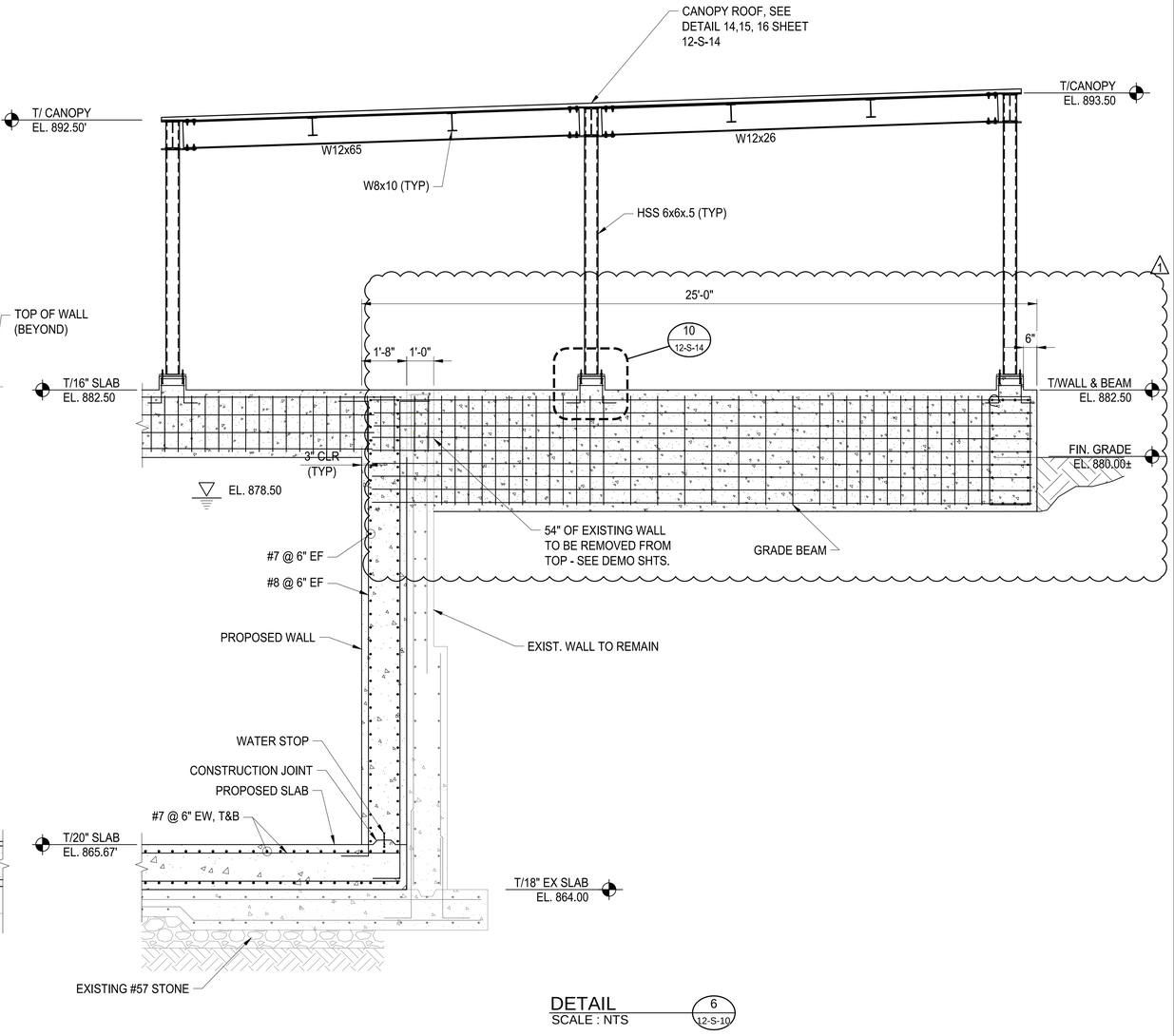


DETAIL 5 (12-S-10)
SCALE : NTS



DETAIL 6 (12-S-10)
SCALE : NTS

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
11/13/20

ATKINS
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CERTIFICATE OF AUTHORIZATION #PEF003802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

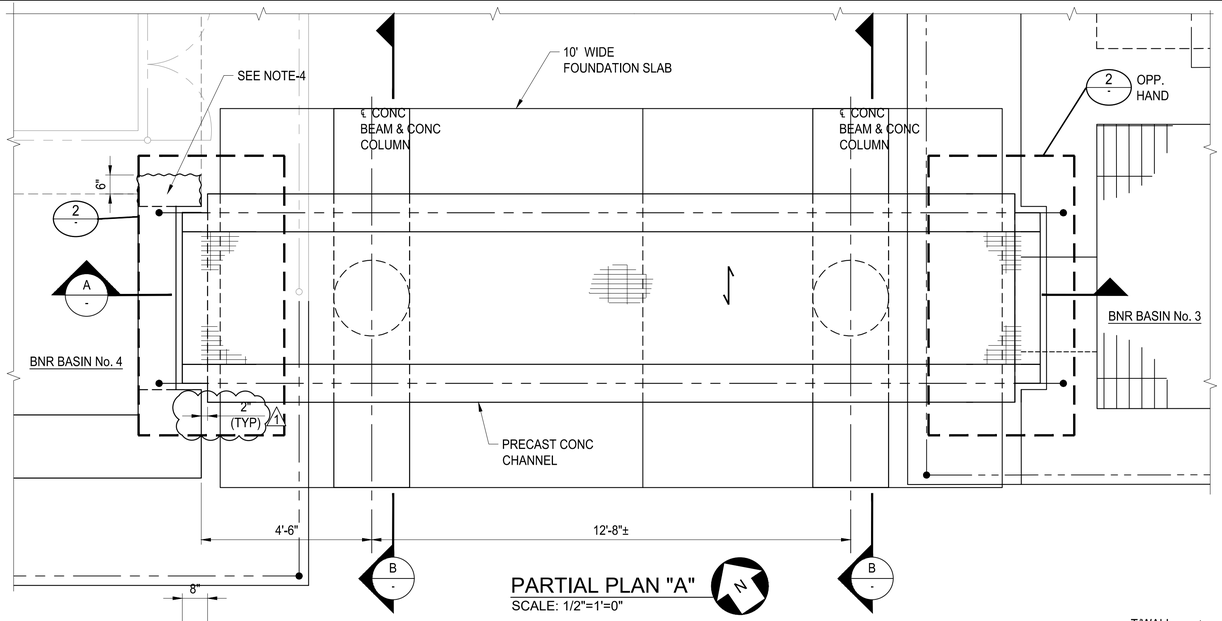
PROJ. NO.: 100061831
DESIGNED BY: DLC DLC
DRAWN BY: - DN
CHECKED BY: DMG DJLS
APPROVED BY: HC AB
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

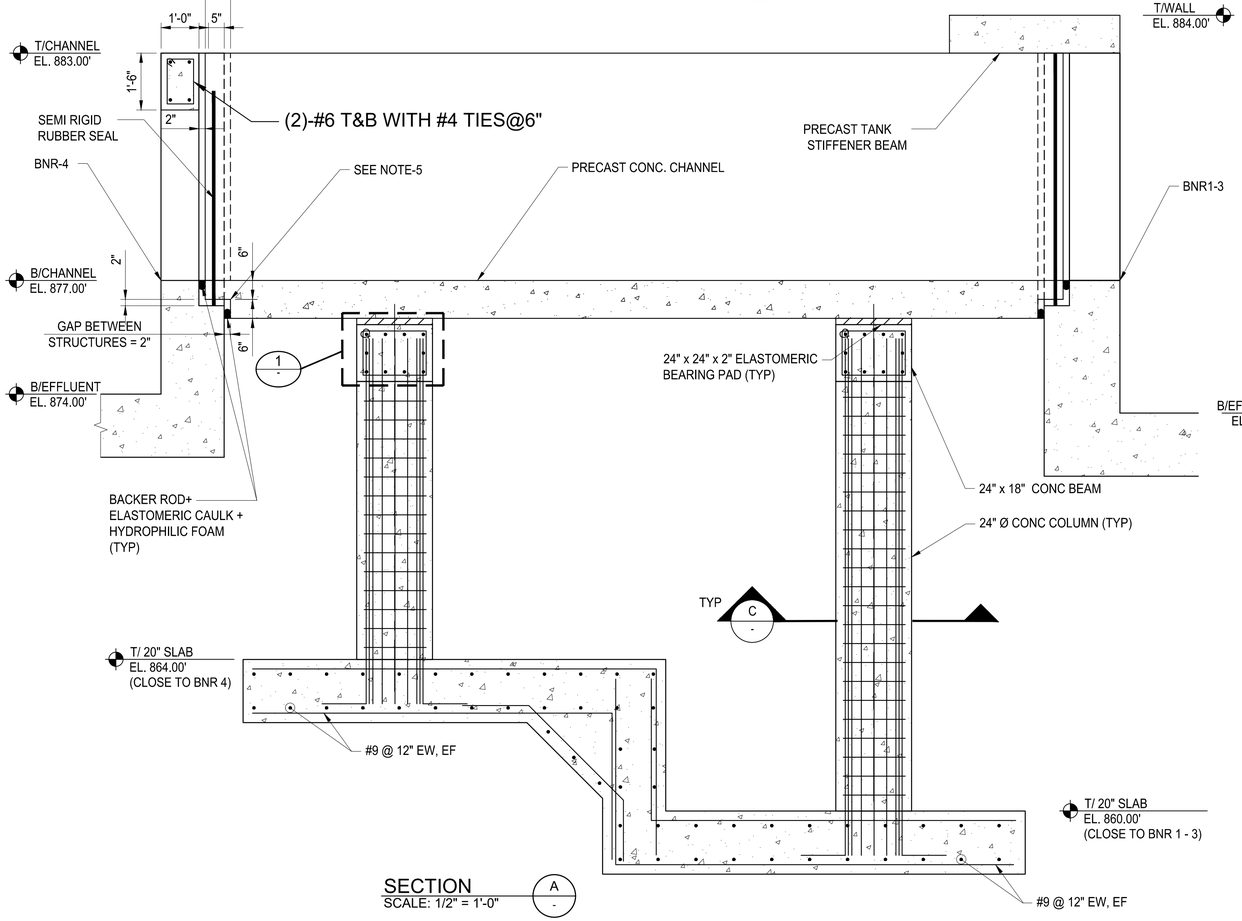
SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER DETAILS

SHEET NO.
12-S-13

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0512.12 - 12-S-13.DWG[Tab:12-S-13]Plotted: November 13, 2020 3:32pm



PARTIAL PLAN "A"
SCALE: 1/2"=1'=0"



SECTION
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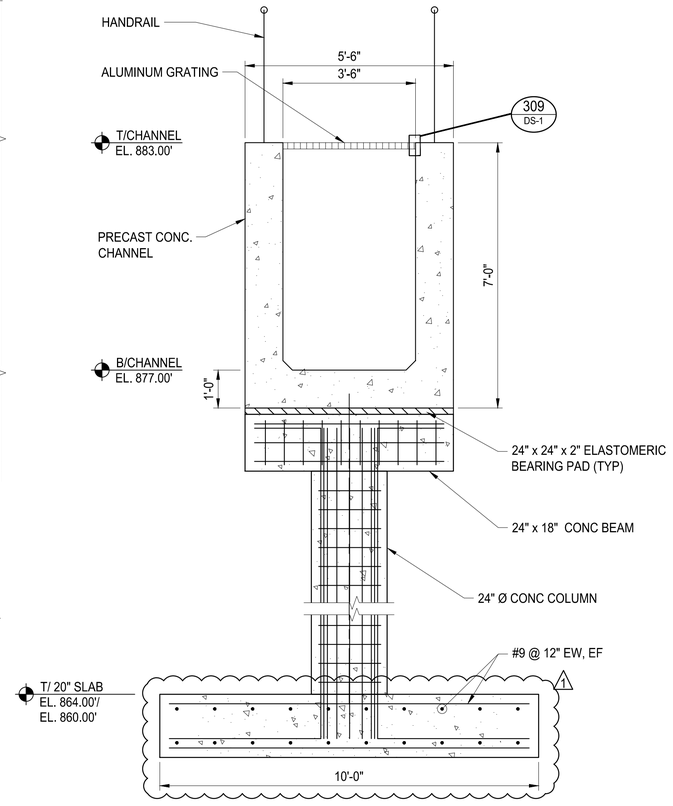
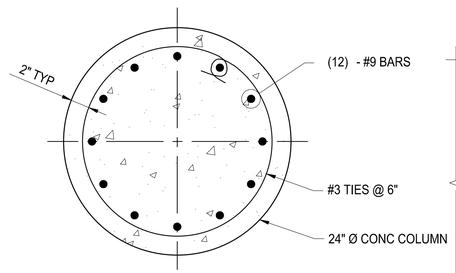
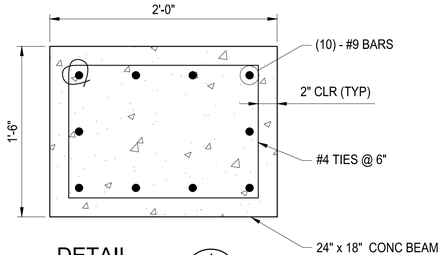
A



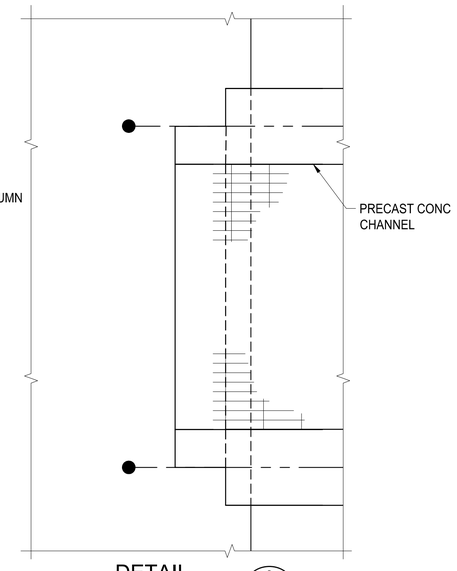
SECTION
SCALE:1/2" = 1'-0"
B



SECTION
SCALE:1 1/2" = 1'-0"
C



DETAIL
SCALE: 1 1/2"=1'=0"
1



DETAIL
SCALE: 1"=1'-0"
2

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE AD-xx , CD-xx , ED-xx , MD-xx , AND SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. SELECTIVELY DEMOLISH THE EXISTING CONCRETE DOWN TO 6 INCHES BELOW THE SURFACE AND 2 INCHES BELOW THE REBAR AND POUR BACK THE CONCRETE TO AVOID SPALLING OF THIN CONCRETE SHELL.
5. INSTALL AN ELASTOMERIC RUBBER PAD IN BETWEEN THE CHANNEL AND THE EFFLUENT STRUCTURES. FILL A HYDROPHILIC EXPANSION FILLER AND SEAL WITH A BACKER ROD AND CAULK WITH AN ELASTOMERIC SEALANT TO ENSURE WATER TIGHTNESS.
6. CONTRACTOR TO MANAGE AND COORDINATE THE CONSTRUCTION SEQUENCE FOR THE BNR BASINS AND THE EFFLUENT CHANNEL. THE CONSTRUCTION ORDER WILL REQUIRE THE BNR1-3 TANKS TO BE CONSTRUCTED IN CONCERT WITH THE CHANNEL. THE BNR-4 MODIFICATIONS MUST BE READY AS WELL TO ALLOW THE CHANNEL TO BE SET IN PLACE PRIOR TO THE TOP STIFFENING BEAM FOR THE BNR 1-3. ONCE THE BNR1-3 STIFFENER BEAMS ARE IN PLACE, THERE WILL BE NO ACCESS TO BE ABLE TO SET THE CHANNEL. THE CONSTRUCTION SEQUENCE IS CRITICAL.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/2020

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HARTWELL ENGINEERING, INC.
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STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

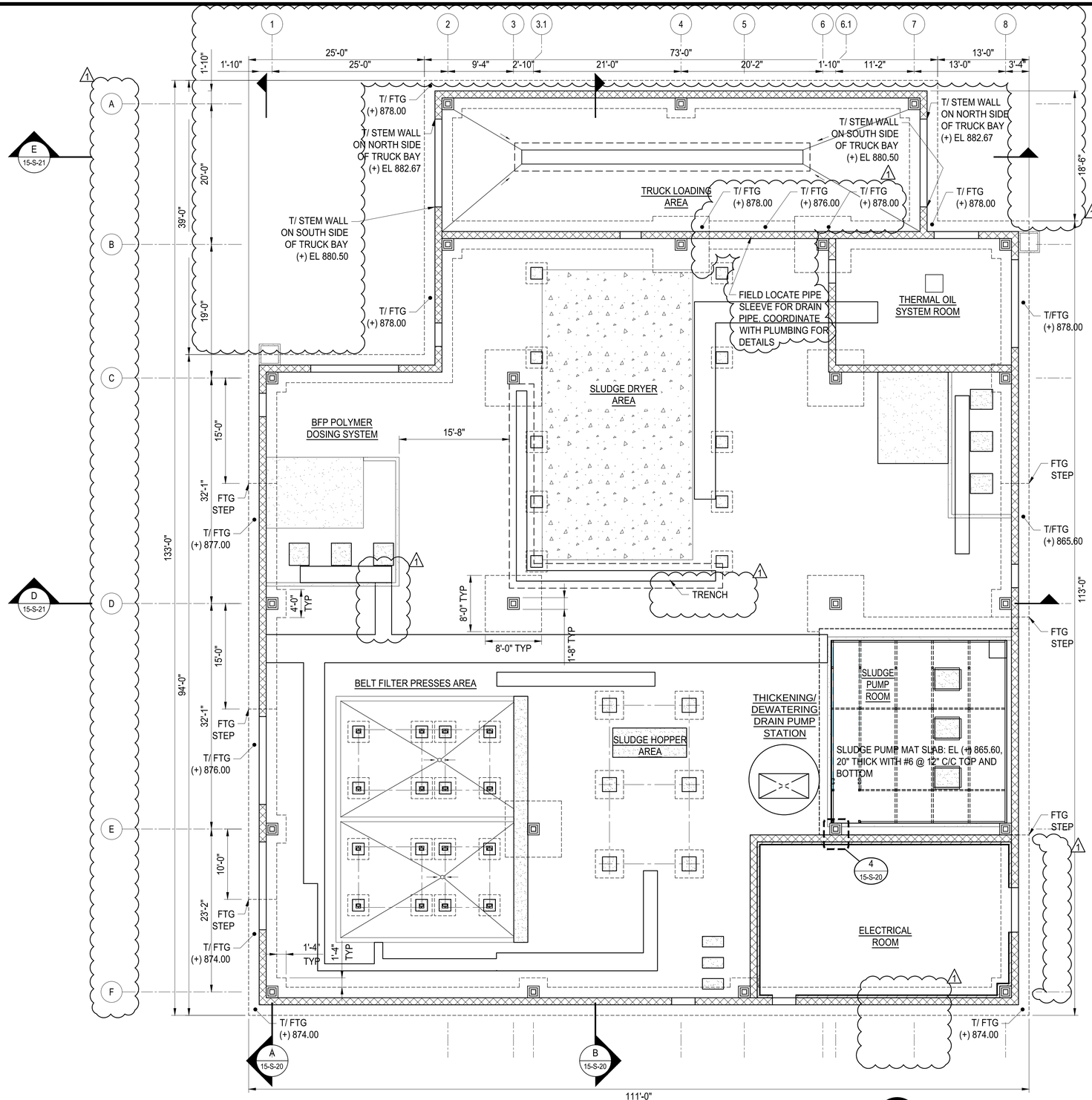
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BNR No.4 MODIFICATIONS EFFLUENT CHANNEL DETAILS

SHEET NO.
6-S-13

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\D0506.13 - 06-S-13.DWG|Tab: 6-S-13|Plotted: November 13, 2020 4:57pm



SOLIDS CONTROL BUILDING FOUNDATION PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES :

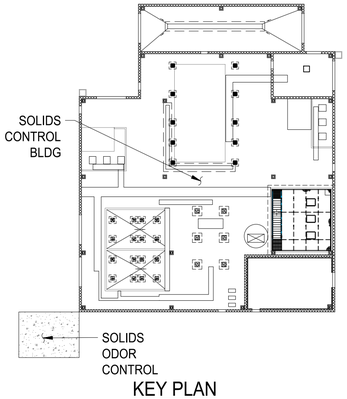
1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.

FOOTING SCHEDULE

MARK or COLUMN ID	SIZE	REINFORCING	TOP OF FOOTING	PEDESTAL/ STEM WALL	TOP OF PEDESTAL/ STEM WALL	REMARKS
PERIMETER FOOTING	4'-0" W X 16" H	(5) #6 BARS LONG DIR. & #5 @12" C/C SHORT DIR	VARIES	16" W	N/A	TOP OF FOOTING LOWEST OF 1'-6" BELOW GRADE AND 2'-0" BELOW FFE. SEE SHEET 15-S-20 DETAIL 1
BELT FILTER PRESS	3'-0" x 3'-0" x 16"	(4) #5 BARS EACH WAY - MIDHEIGHT	879.00	20" x 20"	880.50	
SLUDGE HOPPER	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	878.00	20" x 20"	880.50	
SLUDGE DRYER	3'-0" x 3'-0" x 16"	(4) #5 BARS EACH WAY - MIDHEIGHT	879.00	20" x 20"	880.50	
DEWATERING DRAIN PUMP STATION	N/A	N/A		N/A	N/A	12" GRANULAR FILLUNDER PUMP STATION
A2, A4, A7,	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	878.00	20" x 20"	882.50	
B2, B8	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	878.00	20" x 20"	880.50	
B4, B6	7'-0" x 7'-0" x 18"	(8) #6 BARS EACH WAY TOP & BOT	876.00	20" x 20"	880.50	
C1, C8	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	877.00	20" x 20"	880.50	
C3, C6.1	8'-0" x 8'-0" x 18"	(9) #6 BARS EACH WAY TOP & BOT	876.00	20" x 20"	880.50	
D1, D8	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	877.00	20" x 20"	880.50	
D3	8'-0" x 8'-0" x 18"	(9) #6 BARS EACH WAY TOP & BOT	876.00	20" x 20"	880.50	
D6.1	7'-0" x 7'-0" x 18"	(8) #6 BARS EACH WAY TOP & BOT	865.60	20" x 20"	880.50	
E1	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	876.00	20" x 20"	880.50	
E8	N/A	N/A	N/A	N/A	880.50	TO BE LOCATED ON TOP OF SLUDGE PUMP WALL
E3.1	7'-0" x 7'-0" x 18"	(8) #6 BARS EACH WAY TOP & BOT	876.00	20" x 20"	880.50	
E6.1	N/A	N/A	N/A			TO BE LOCATED ON TOP OF SLUDGE PUMP WALL
F1, F3.1, F5, F8	4'-0" x 4'-0" x 16"	(5) #6 BARS EACH WAY TOP & BOT	874.00	20" x 20"	880.50	

NOTES:

1. PERIMETER WALL FOOTING REINFORCEMENT TO CONTINUE THROUGH SPREAD FOOTINGS AT THE PERIMETER.
2. TOP OF PERIMETER FOOTINGS TO BE AT LEAST 1.5 FT BELOW GRADE.
3. SEE SHEET 15-S-25 FOR TYPICAL FOOTING DETAILS AND DETAIL SHEET 15-S-25 FOR PEDESTAL DETAILS.



KEY PLAN

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta,Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

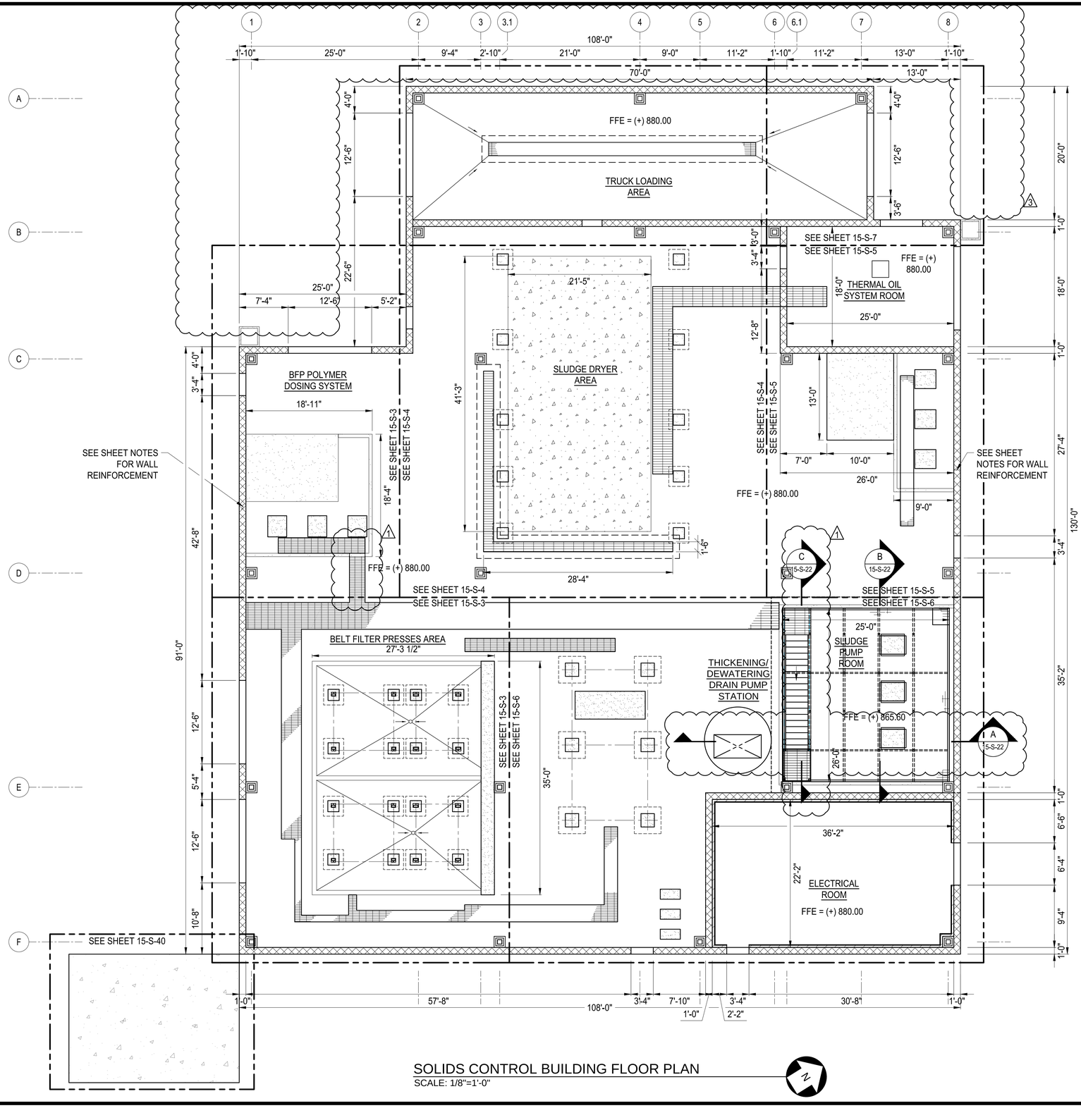
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS HANDLING BUILDING FOUNDATION PLAN

SHEET NO.
15-S-1

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.01 – 15-S-1.DWG|Tab:15-S-1|Plotted: November 13, 2020 5:13pm



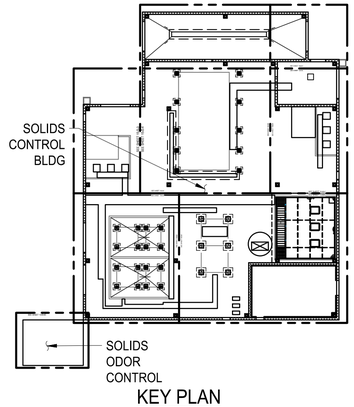
SOLIDS CONTROL BUILDING FLOOR PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. ALL CMU WALLS TO BE 12" WIDE SPLIT FACE BLOCK REINFORCED WITH #6 BAR @ 32" VERTICALLY AND @6 BARS @72" HORIZONTALLY. A BOND BEAM IS TO BE LOCATED AT THE TOP AND THE BOTTOM OF THE WALLS.
11. CMU WALL EXPANSION JOINTS ARE TO BE LOCATED AS NOTED IN THE STANDARD DETAILS.

SLAB ON GRADE SCHEDULE			
ROOM ID	THICKNESS	REINFORCEMENT	REMARKS
TRUCK LOADING AREA	12"	#6 @12" C/C EACH WAY TOP & BOT	
SLUDGE DRYER AREA	6"	#3 @12"C/C EACH WAY	
SLUDGE PUMP ROOM	20"	#8 @12" C/C EACH WAY TOP & BOT	
FLOOR SLAB	6"	#6 @12" C/C EACH WAY	



KEY PLAN

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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DATE	REVISION
11/13/20	ADDENDUM No.4

CERTIFICATE OF AUTHORIZATION # PE010092 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

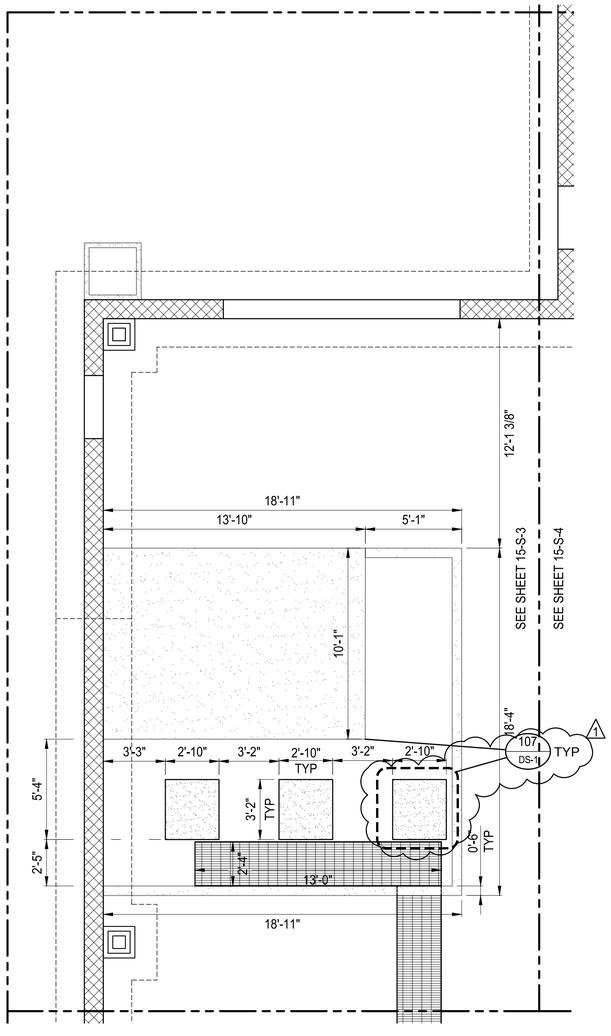
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING FLOOR PLAN

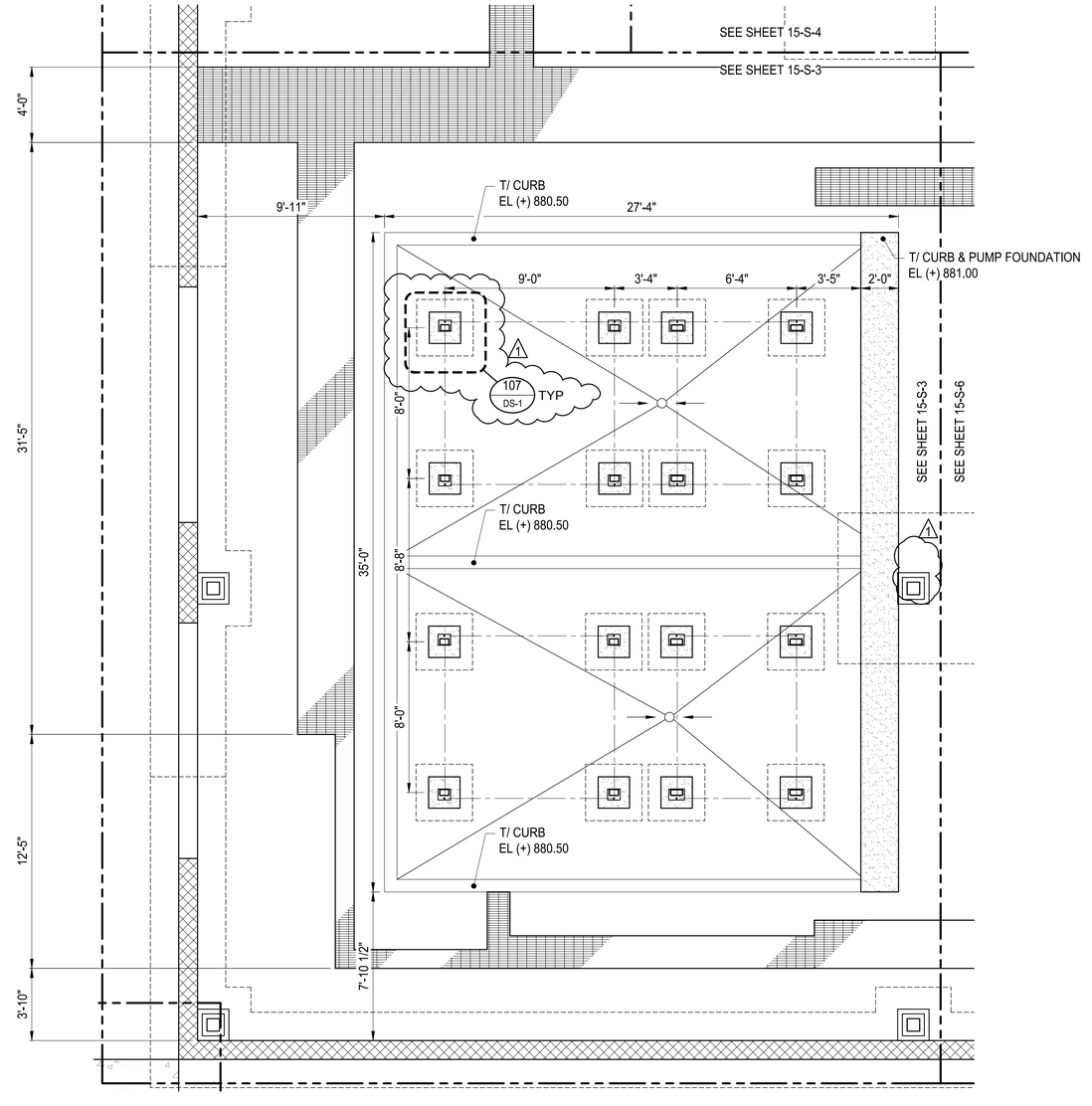
SHEET NO.
15-S-2

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.02 – 15–S–2, 3, 4, 5, 6, 7.DWG|Tab:15–S–2|Plotted: November 13, 2020 5:13pm



SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

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



SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

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

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
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CERTIFICATE OF AUTHORIZATION #PE000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.		
	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831	
DESIGNED BY: DLC	
DRAWN BY: -	
CHECKED BY: DMM/JLS	
APPROVED BY: HC	
DATE: SEPTEMBER 2020	
SCALE: AS SHOWN	

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

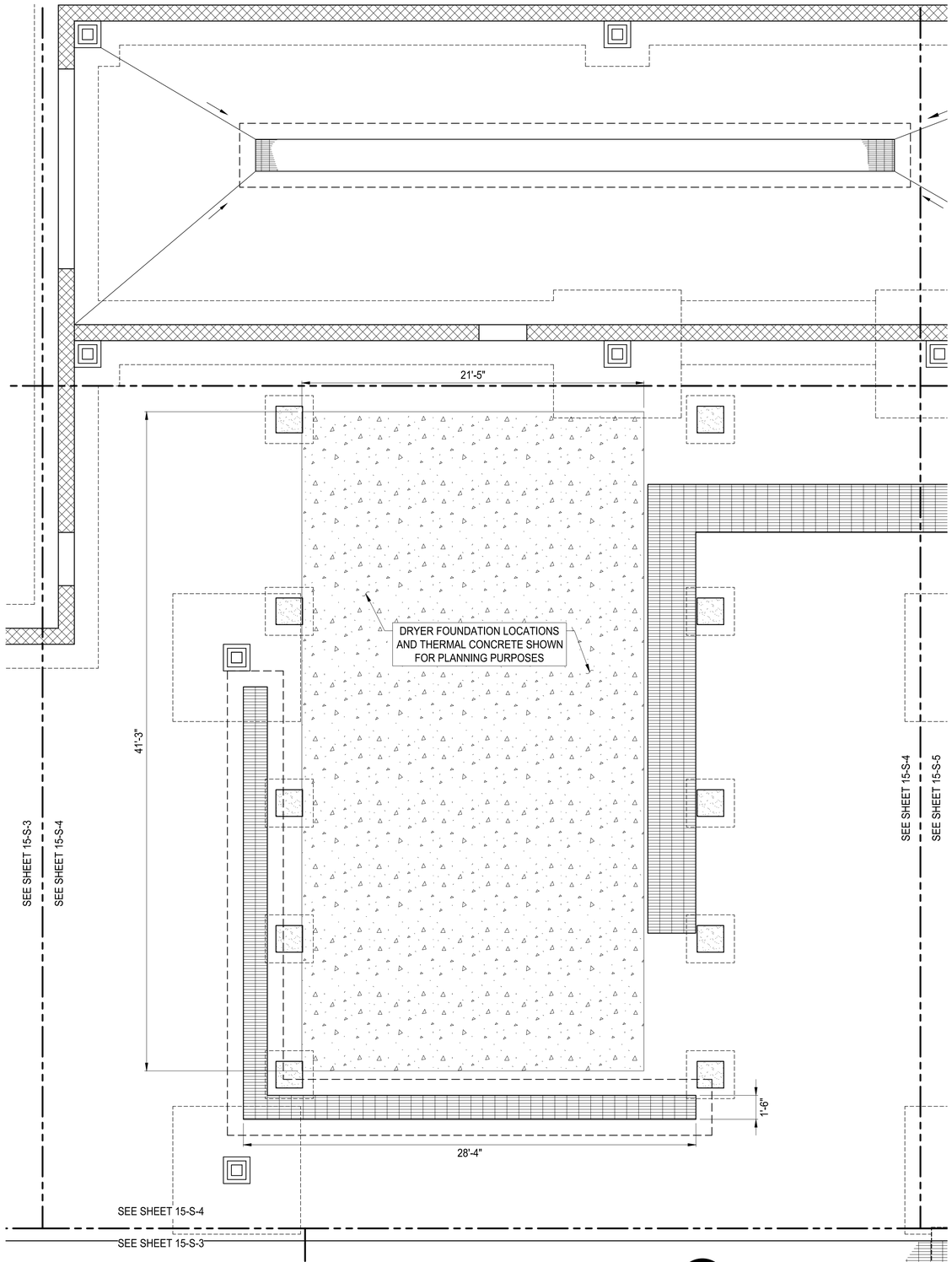
SHEET NO.

15-S-3

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.02 – 15–S–2, 3, 4, 5, 6, 7.DWG|Tab: 15–S–3|Plotted: November 13, 2020 5:13pm

NOTES :

DRYER FOUNDATION INFORMATION IS FOR PLANNING PURPOSES ONLY. FINAL LAYOUT AND ARRAIGNMENT TO BE ESTABLISHED AND COORDINATED FROM DRYER CONSTRUCTION DOCUMENTS ONCE FINALIZED.



SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
SCALE: 1/4"=1'-0"

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 SEP 2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

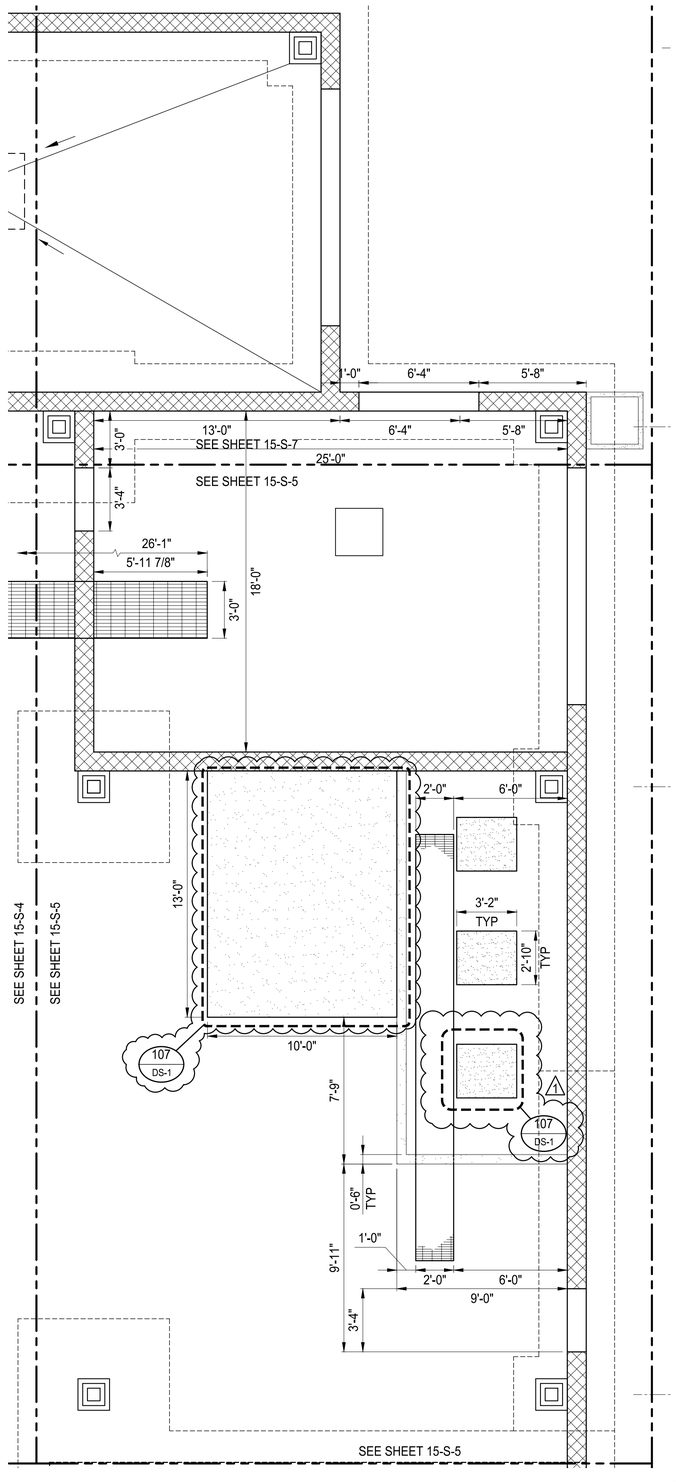
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

SHEET NO.
15-S-4

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.02 – 15–S–2, 3, 4, 5, 6, 7.DWG|Tab:15–S–4|Plotted: November 13, 2020 5:13pm



SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

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

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

10/28/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PE010992 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

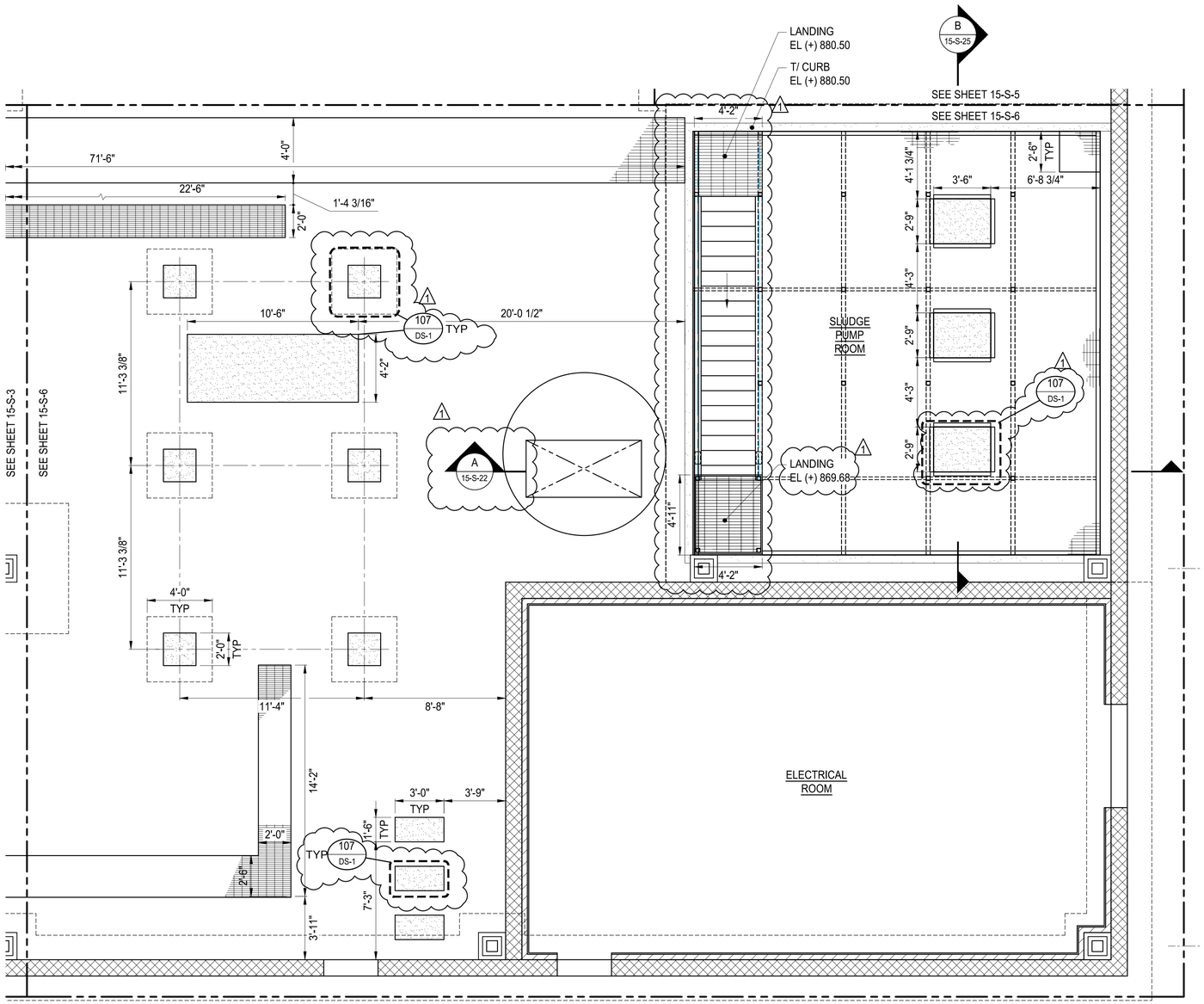
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

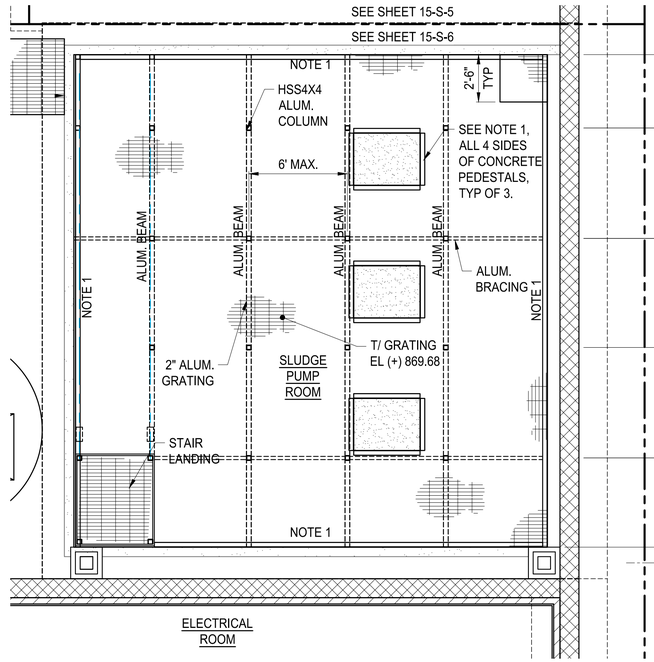
SHEET NO.

15-S-5

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DM535902\0515.02 – 15-S-2, 3, 4, 5, 6, 7.DWG|Tab:15-S-5|Plotted: November 13, 2020 5:13pm



SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN
SCALE: 1/4"=1'-0"



ENLARGED PIT FRAMING PLAN
SCALE: 1/4"=1'-0"

NOTES
1. L4X4X$\frac{1}{4}$" ANGLE ATTACHED TO WALL WITH $\frac{1}{2}$" Ø WEDGE ANCHORS @ 16" O.C. MAX.

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
FELIPE L. CONTRERAS
10 DEC 2020

ATKINS
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HARTWELL ENGINEERING, INC.
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DATE	REVISION
11/13/20	ADDENDUM No.4

CERTIFICATE OF AUTHORIZATION #PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

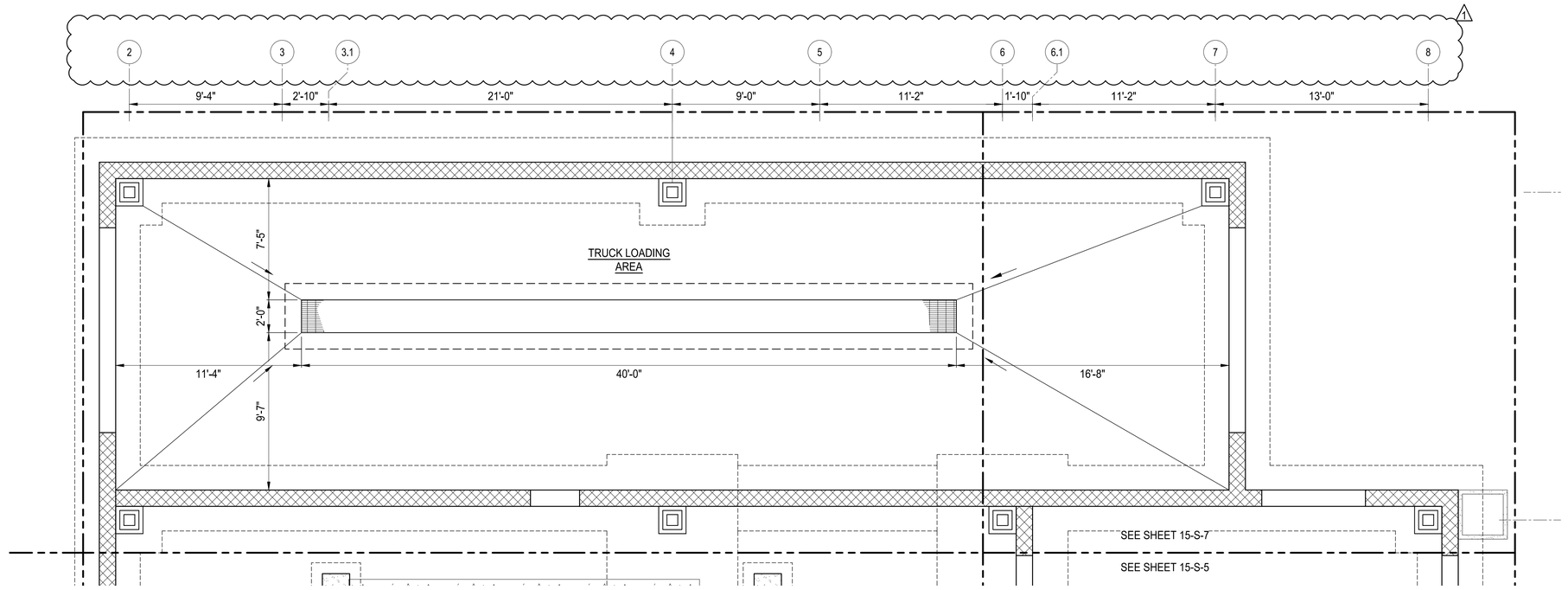
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

SHEET NO.
15-S-6

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.02 – 15-S-2, 3, 4, 5, 6, 7.DWG|Tab:15-S-6|Plotted: November 13, 2020 5:13pm



SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

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

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

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CERTIFICATE OF AUTHORIZATION # PE000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

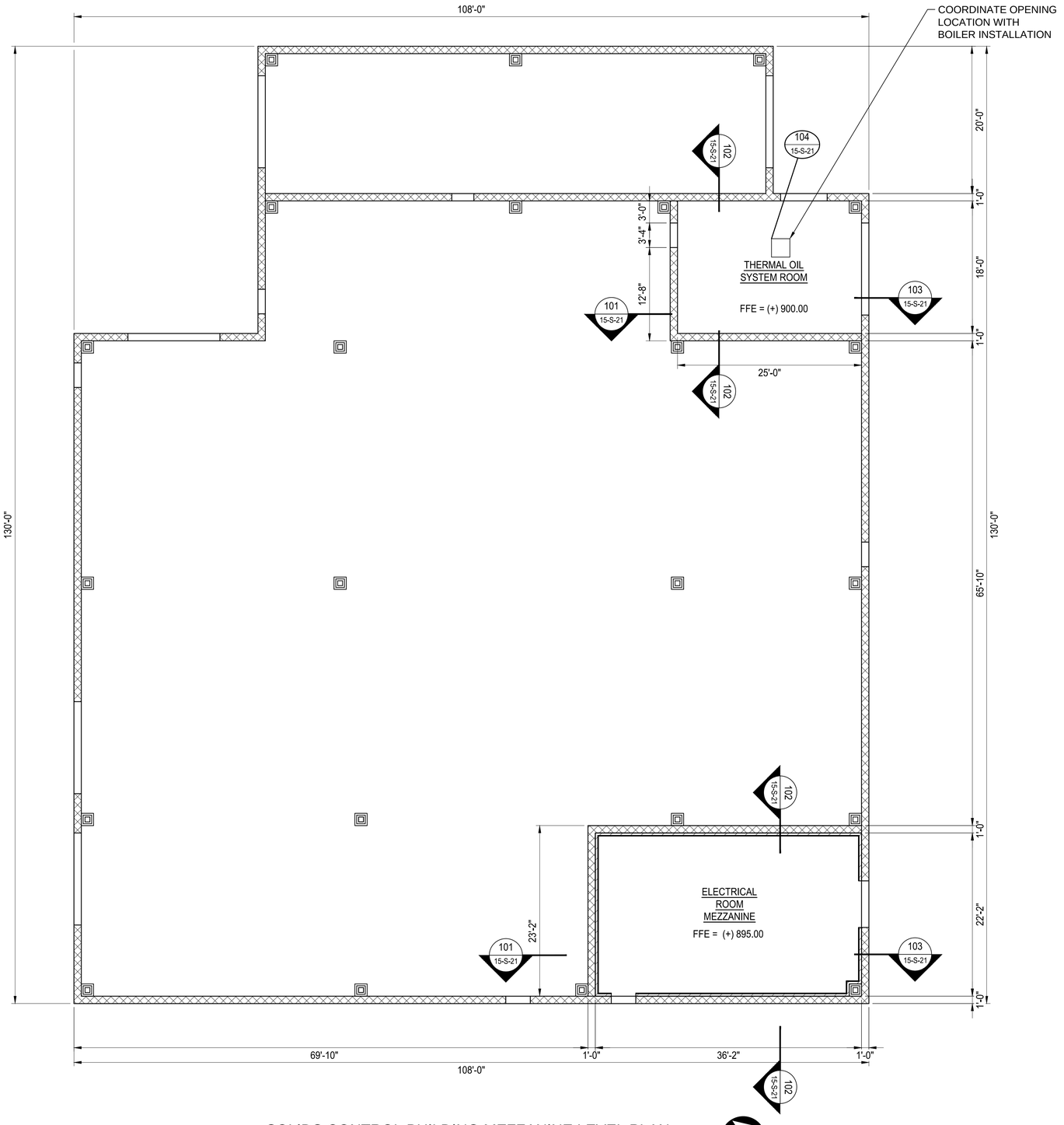
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING ENLARGED FLOOR PLAN

SHEET NO.
15-S-7

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.02 – 15-S-2, 3, 4, 5, 6, 7.DWG|Tab:15-S-7|Plotted: November 13, 2020 5:14pm

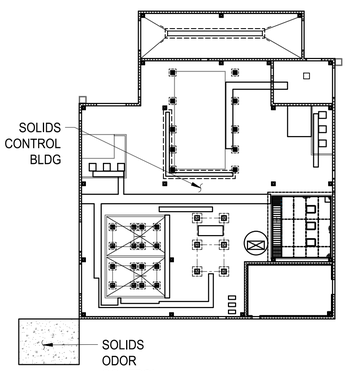


SOLIDS CONTROL BUILDING MEZZANINE LEVEL PLAN

SCALE: 3/16"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. MEZZANINE FLOORS ARE PCI STANDARD HOLLOW CORE PLANKS 4-0"X10" WITH 2" TOPPING SLAB - DESIGNATION 4HC10+2 WITH 68-S STRAND PATTERN.



KEY PLAN

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

ATKINS
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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING MEZZANINE LEVEL PLAN

1 SHEET NO.
15-S-9

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DM535902\0515.09 - 15--S--9.DWG|Tab:15--S--9|Plotted: November 13, 2020 5:14pm

NOTE:

1. EXHAUST FANS AND RTUS ARE SHOWN FOR PLANNING PURPOSES.

2. SCREW CONVEYOR IN TRUCK BAY TO BE SUPPORTED BY STAINLESS STEEL L4x4x1/4 SUSPENDED FROM 1/2" STAINLESS STEEL THREADED RODS. SUPPORT SPACING NOT TO EXCEED 5'-0". RODS ARE TO HAVE DOUBLE NUTTED CONNECTION ON EACH SIDE OF THE ANGLE AND THE THREADS PUNCHED TO PREVENT FASTENERS FROM BACKING OFF. THREADED RODS ARE TO BE CONNECTED TO BARS JOISTS BY USE OF STANDARD DETAILS.

3. BRIDGING IS REQUIRED TO STABILIZE THE JOISTS.

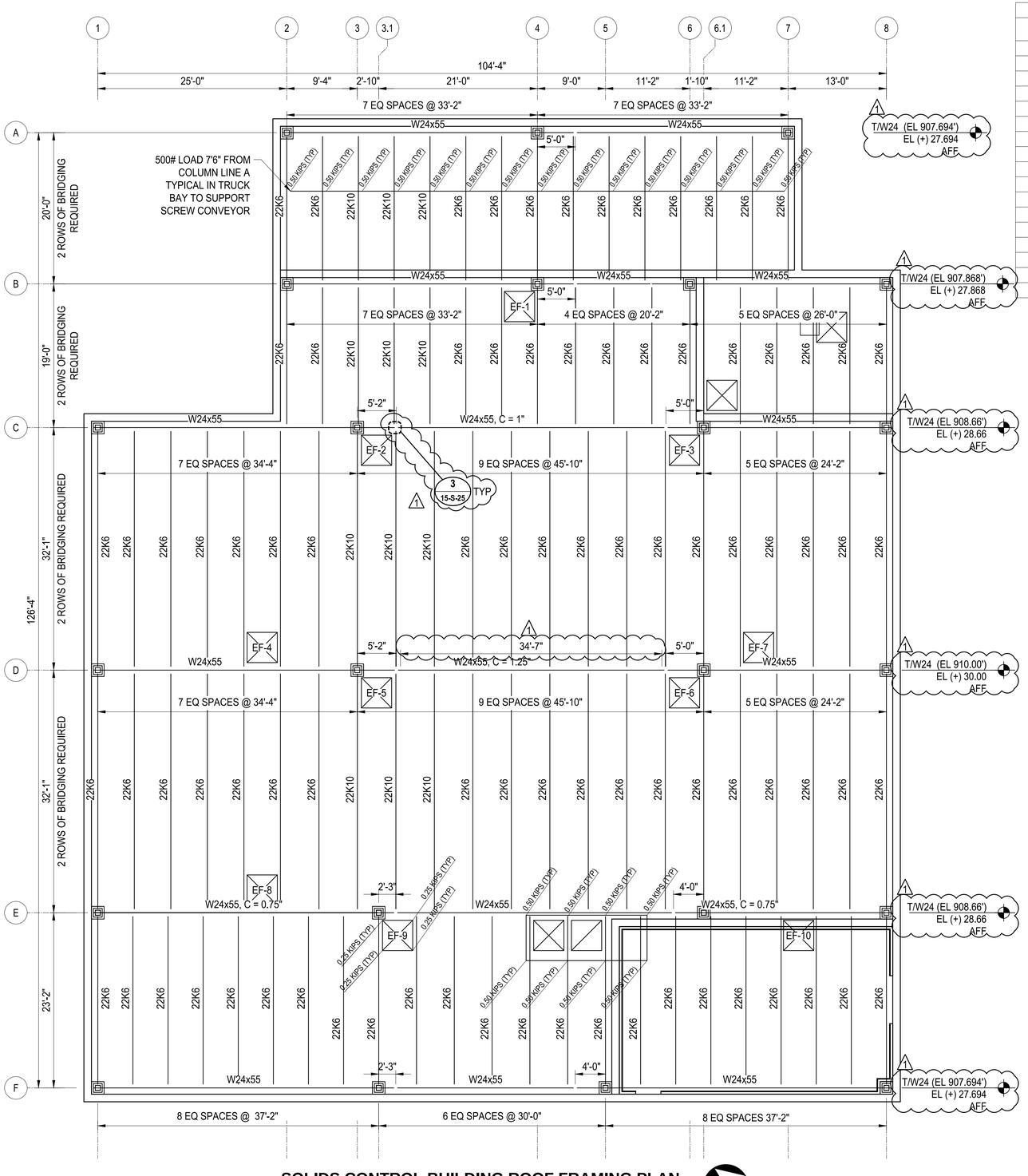
3.1 HORIZONTAL BRIDGING SHALL CONSIST OF TWO CONTINUOUS HORIZONTAL STEEL MEMBERS, ONE ATTACHED TO THE TOP CHORD AND ONE ATTACHED TO THE BOTTOM CHORD.

3.2 WIND UPLIFT BRIDGING IS ALSO REQUIRED AND CONSISTS AT A MINIMUM OF A LINE OF BOTTOM CHORD BRIDGING PROVIDED NEAR THE FIRST BOTTOM CHORD PANEL POINT.

4. JOIST ARE TO BE DESIGNED FOR THE ADDITIONAL LOADS NOTED ON THE FRAMING PLAN.

5. ROOF TO BE DESIGNED FOR NET UPLIFT OF 30 PSF FOR ROOF AREA

6. FASTEN METAL DECK TO JOISTS USING A 36/7 ATTACHMENT PATTERN USING $\frac{3}{4}$" PUDDLE WELDS WITH WELD WASHER WITH 2 SIDE LAP FASTENERS.



SOLIDS CONTROL BUILDING ROOF FRAMING PLAN

SCALE: 1/8"=1'-0"

BEAM SCHEDULE

BEAM ID	COL LINE	BEAM SIZE	CAMBER	FFE	HEIGHT ABOVE FFE	TOP OF STEEL	REMARKS
A2-A4	A	W24x55		880.00	27.69	907.69	
A4-A7	A	W24x55		880.00	27.69	907.69	
B2-B4	B	W24x55		880.00	27.87	907.87	
B4-B6	B	W24x55		880.00	27.87	907.87	
B6-B8	B	W24x55		880.00	27.87	907.87	
C1-C3	C	W24x55		880.00	28.66	908.66	
C3-C6.1	C	W24x55	C = 1.00"	880.00	28.66	908.66	
C6.1-C8	C	W24x55		880.00	28.66	908.66	
D1-D3	D	W24x55		880.00	30.00	910.00	
D3-D6.1	D	W24x55	C = 1.25"	880.00	30.00	910.00	
D6.1-D8	D	W24x55		880.00	30.00	910.00	
E1-E3.1	E	W24x55	C = 0.75"	880.00	28.66	908.66	
E3.1-E6.1	E	W24x55	C = 1.00"	880.00	28.66	908.66	
E6.1-E8	E	W24x55		880.00	28.66	908.66	
F1-F3.1	F	W24x55		880.00	27.69	907.69	
F3.1-F5	F	W24x55		880.00	27.69	907.69	
F5-F8	F	W24x55		880.00	27.69	907.69	

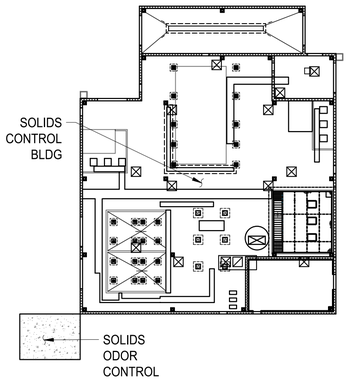
COLUMN SCHEDULE

COLUMN ID	SECTION	BOTTOM OF COLUMN	REMARKS
A2, A4, A7	HSS 8x8x0.25	882.67	
B2, B8	HSS 8x8x0.25	880.67	
B4, B6	HSS 8x8x0.375	880.67	
C1, C8	HSS 8x8x0.25	880.67	
C3, C6.1	HSS 8x8x0.375	880.67	
D1, D8	HSS 8x8x0.25	880.67	
D3, D6.1	HSS 8x8x0.375	880.67	
E1, E8	HSS 8x8x0.25	880.67	
E3.1, E6.1	HSS 8x8x0.375	880.67	
F1, F8	HSS 8x8x0.25	880.67	
F3.1, F5	HSS 8x8x0.25	880.67	

LEGEND

ROOF TOP EXHAUST FAN (EF-X) SUPPORT FRAME AND CURB 4'0" X 4'-0" (TYP) ASSUMED WEIGHT 1,000 LBS

14.0 TON HVAC UNIT 8'-0" X 16'-0" ASSUMED WEIGHT 4,000 LBS



KEY PLAN

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
1 ADDENDUM No.4	11/13/20

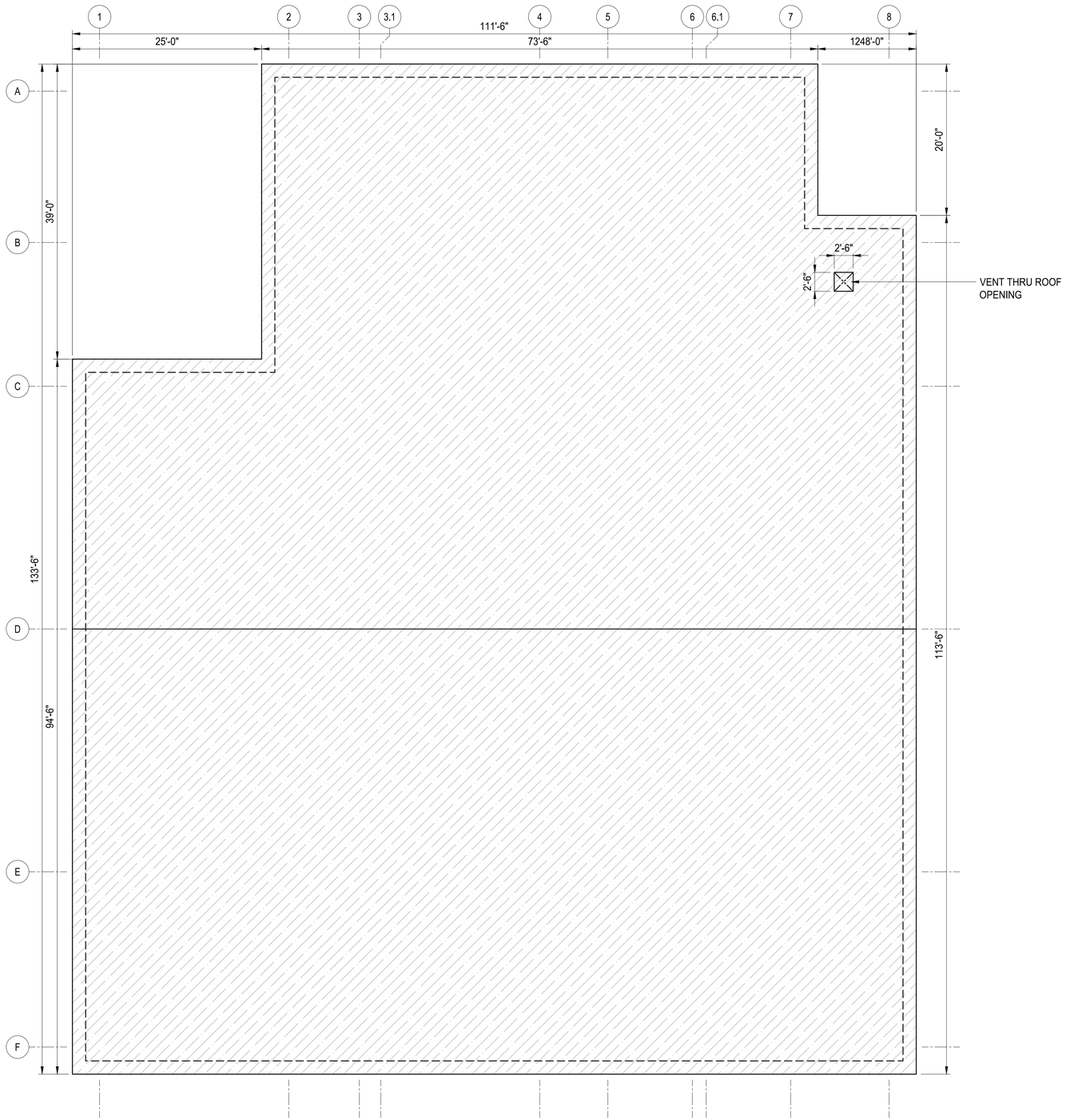
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

SOLIDS CONTROL BUILDING ROOF FRAMING PLAN

SHEET NO.
15-S-10

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.10 – 15-S-10.DWG|Tab:15-S-10|Plotted: November 13, 2020 5:14pm



SOLIDS CONTROL BUILDING ROOF PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
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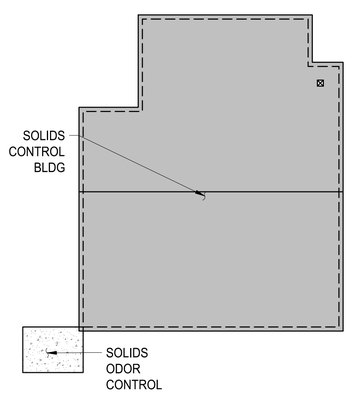
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.
10. ROOF TO BE DESIGNED FOR NET UPLIFT OF 30 PSF FOR ROOF AREA.
11. ROOF DECK IS 1.5B20.
12. FASTEN METAL DECK TO JOISTS USING A 36/7 ATTACHMENT PATTERN USING 3/4" PUDDLE WELDS WITH WELD WASHER WITH (2) #10 TEL SCREW SIDE LAP FASTENERS.

LEGEND

ROOF DECK FASTNER HATCH



KEY PLAN

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
ELLIOTT L. JONES
10 DEC 2020

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CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

NO.	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

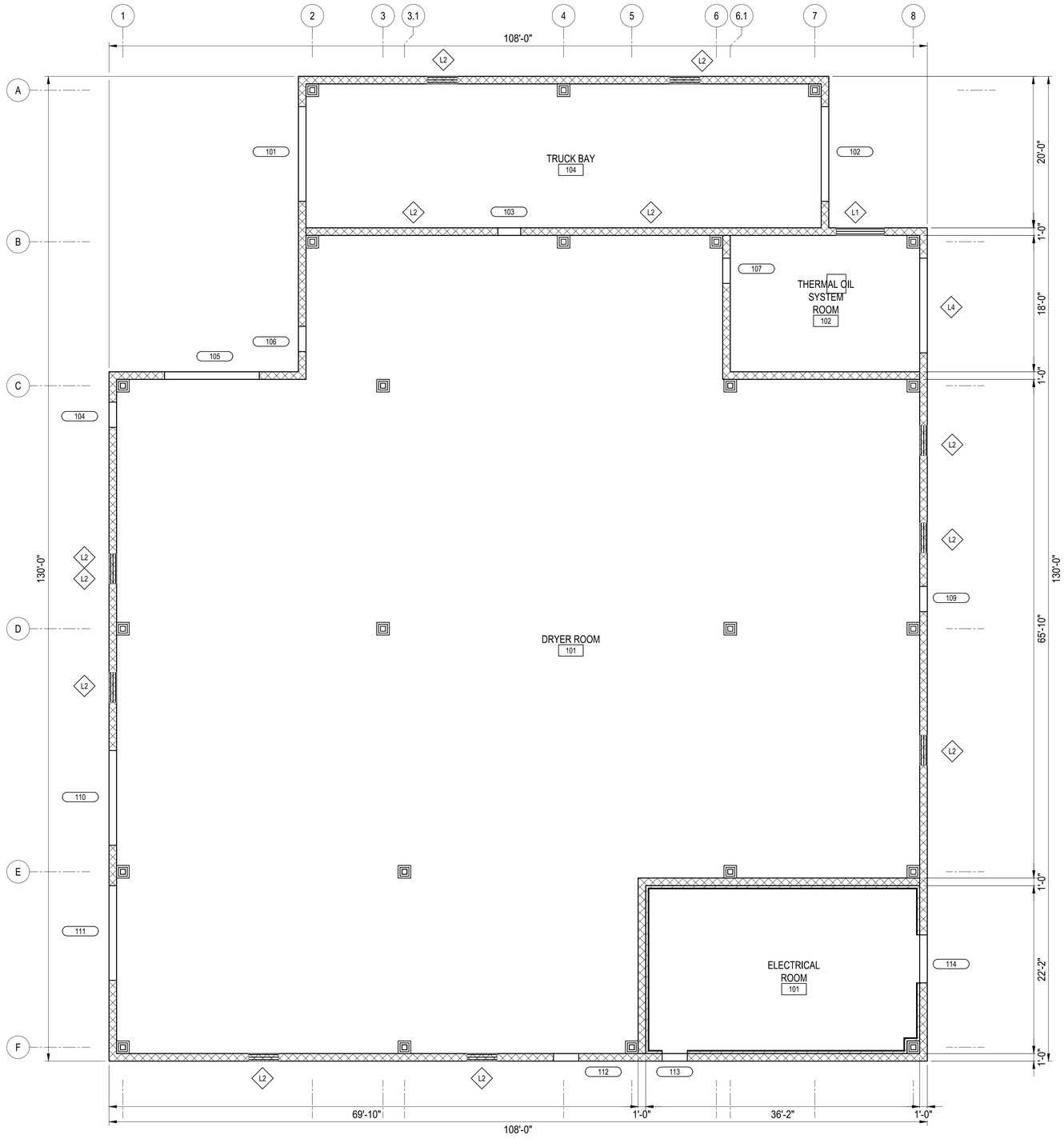
SOLIDS CONTROL BUILDING ROOF PLAN

SHEET NO.
15-S-11

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.11 - 15-S-11.DWG|Tab:15-S-11|Plotted: November 13, 2020 5:14pm

LEGEND

ROOM NAME 101	ROOM ID
W1	WINDOW ID
L3	LOUVER ID
101	DOOR ID



1 SOLIDS CONTROL BUILDING FENESTRATIONS PLAN
SCALE: 1/8"=1'-0"

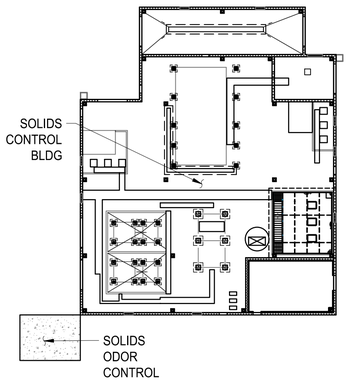
DOOR SCHEDULE						
DOOR NO.	TYPE	SIZE			HW SET	REMARKS
		WIDTH	HEIGHT	THICKNESS		
101	C	12'-6"	14'-0"	2"	N/A	
102	C	12'-6"	14'-0"	2"	N/A	
103	A	3'-0"	7'-0"	1 3/4"	1	
104	A	3'-0"	7'-0"	1 3/4"	1	
105	C	12'-6"	14'-0"	2"	N/A	
106	A	3'-0"	7'-0"	1 3/4"	1	
107	A	3'-0"	7'-0"	1 3/4"	1	
109	A	3'-0"	7'-0"	1 3/4"	1	
110	C	12'-6"	14'-0"	2"	N/A	
111	C	12'-6"	14'-0"	2"	N/A	
112	A	3'-0"	7'-0"	1 3/4"	1	
113	A	3'-0"	7'-0"	1 3/4"	1	
114	B	6'-0"	7'-0"	1 3/4"	2	

DOOR TYPES -- REFER TO SPECIFICATIONS	
A	EXTERIOR ENTRY DOORS - SINGLE - FRP Noncorrosive
B	EXTERIOR ENTRY DOORS - DOUBLE - FRP Noncorrosive
C	ROLL UP DOOR - TRUCK BAY & EQUIPMENT ACCESS
D	NOT USED
E	NOT USED

WINDOW AND LOUVER OPENING SCHEDULE					
TYPE	MANUFACTURER	MODEL NUMBER	SIZE		REMARKS
			HEIGHT	WIDTH	
L1	RUSKIN	EME520DDE	6'-0"	6'-0"	THERMAL OIL ROOM
L2	INDUSTRIAL LOUVER.COM	SP737	4'-0"	4'-0"	BUILDING VENTING
L3	INDUSTRIAL LOUVER.COM	SP737	4'-0"	4'-0"	BUILDING PERIMETER
L4	RUSKIN	EME520DDE	14'-0"	12'-6"	THERMAL OIL ROOM

ROOM FINISH SCHEDULE					
ROOM ID	DESCRIPTION	FLOOR	WALLS	CEILING	REMARKS
101	DRYER ROOM	CONC	CMU		
102	THERMALOIL ROOM	CONC	CMU	CONC	
103	ELECTRICAL ROOM	CONC	GWB	CONC	4" 18 GAGE STUD WALL WITH FOAM BOARD INSULATION, 1/2" PLYWOOD ATTACHED WITH 1/2" DRYWALL ON TOP FIRE TAPED
104	TRUCK BAY	CONC	CMU		

FINISH LEGEND	
CONC.	CONCRETE
GWB	GYPSUM WALL BOARD
INSUL	FOAM BOARD INSULATION



KEY PLAN

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
2 DEC 2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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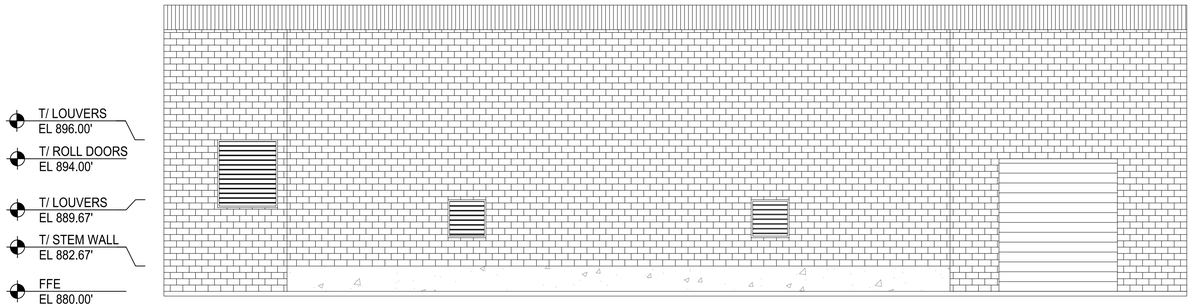
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

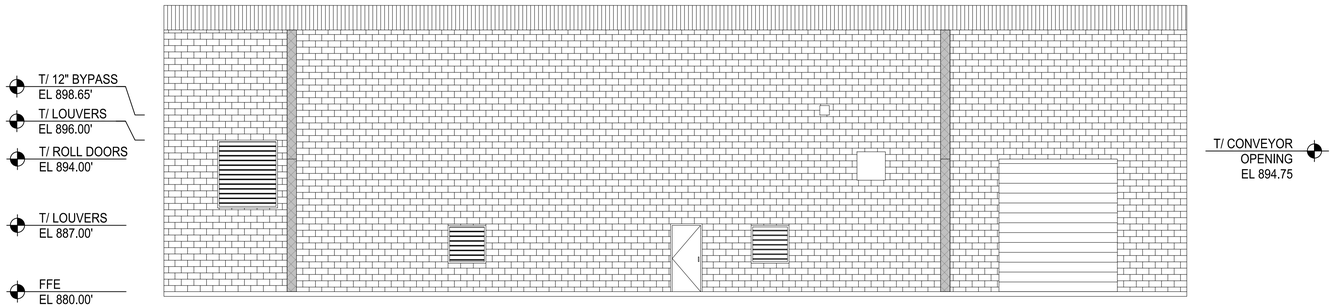
SOLIDS CONTROL BUILDING FENESTRATIONS PLAN

SHEET NO.
15-S-12

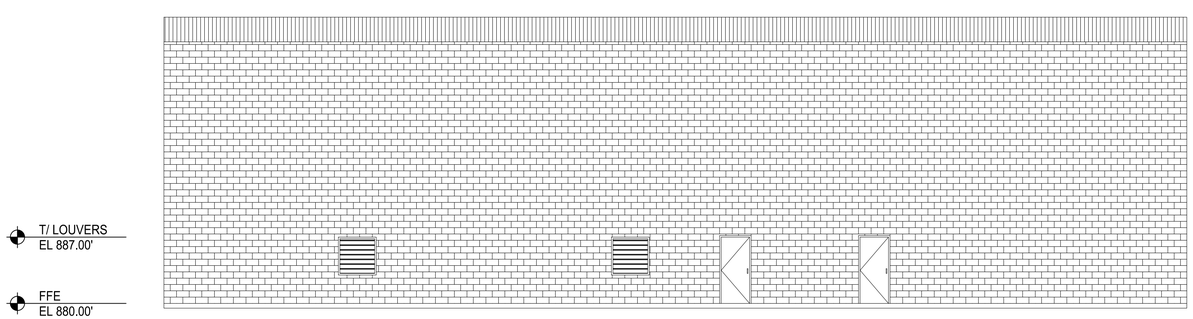
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.12 - 15-S-12.DWG|Tab: 15-S-12|Plotted: November 13, 2020 5:14pm



NORTH ELEVATION AT COLUMN LINE A
SCALE: 3/16"=1'-0"



NORTH ELEVATION AT COLUMN LINE B
SCALE: 3/16"=1'-0"



SOUTH ELEVATION AT COLUMN LINE F
SCALE: 3/16"=1'-0"

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

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1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
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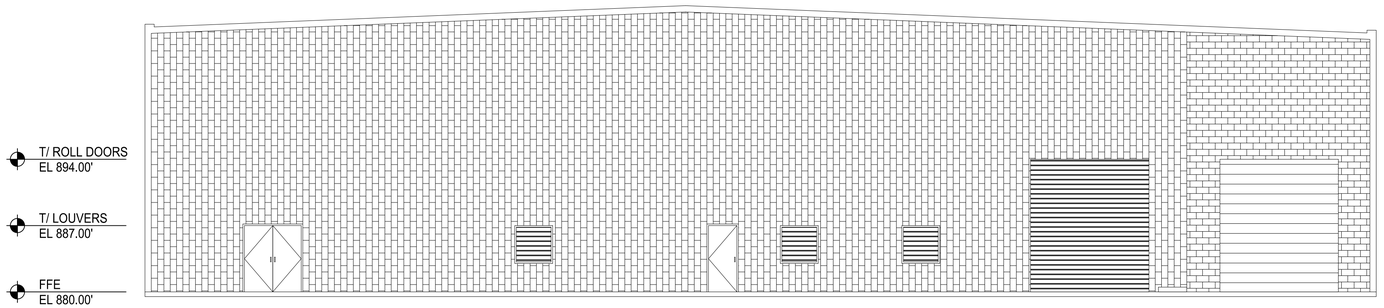
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

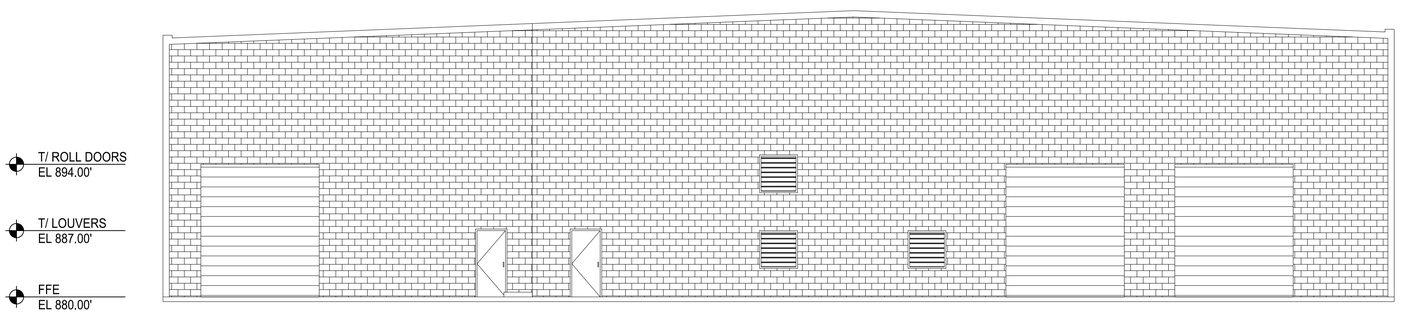
SOLIDS CONTROL BUILDING ELEVATIONS

SHEET NO.
15-S-13

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.13 – 15-S-13, 14.DWG|Tab:15-S-13|Plotted: November 13, 2020 5:14pm



EAST ELEVATION
SCALE: 3/16"=1'=0"



WEST ELEVATION
SCALE: 3/16"=1'=0"

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

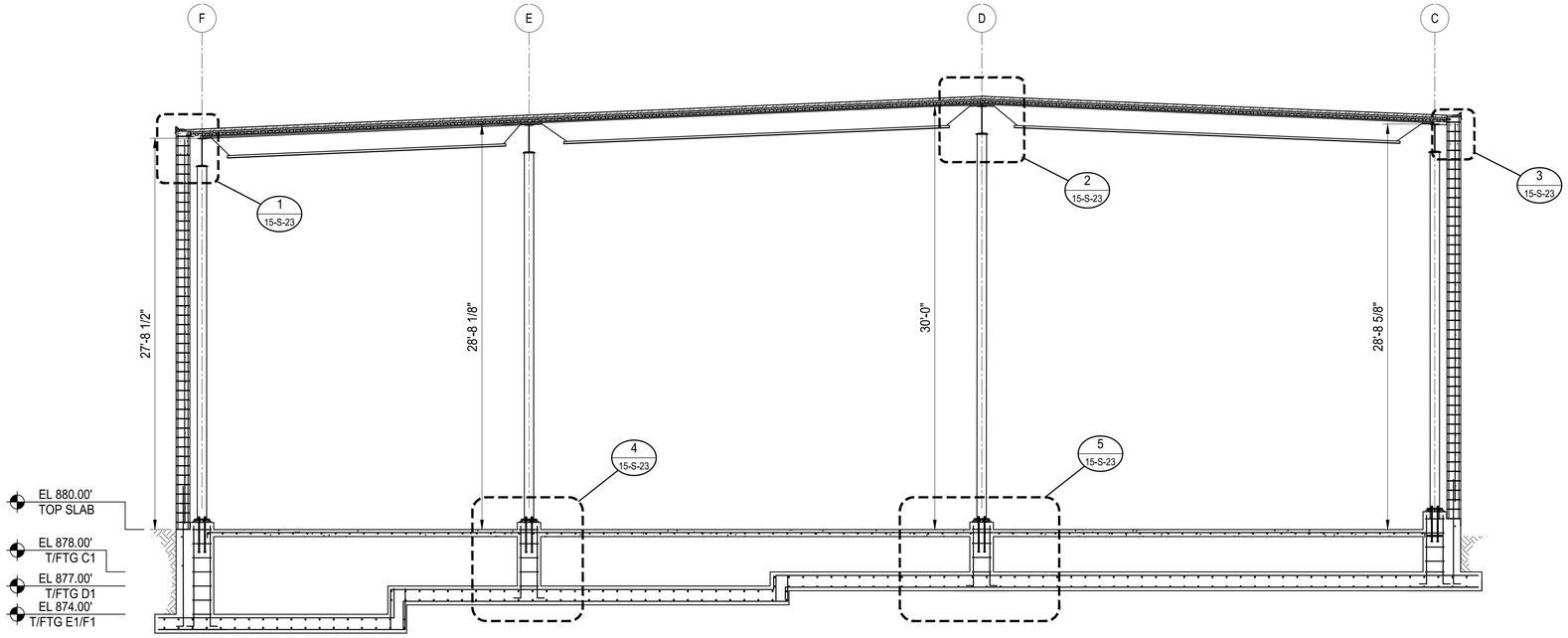
PROJ. NO.: 100061831
DESIGNED BY: DLCXX
DRAWN BY: - XX
CHECKED BY: DMXXJLS
APPROVED BY: HC XX
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

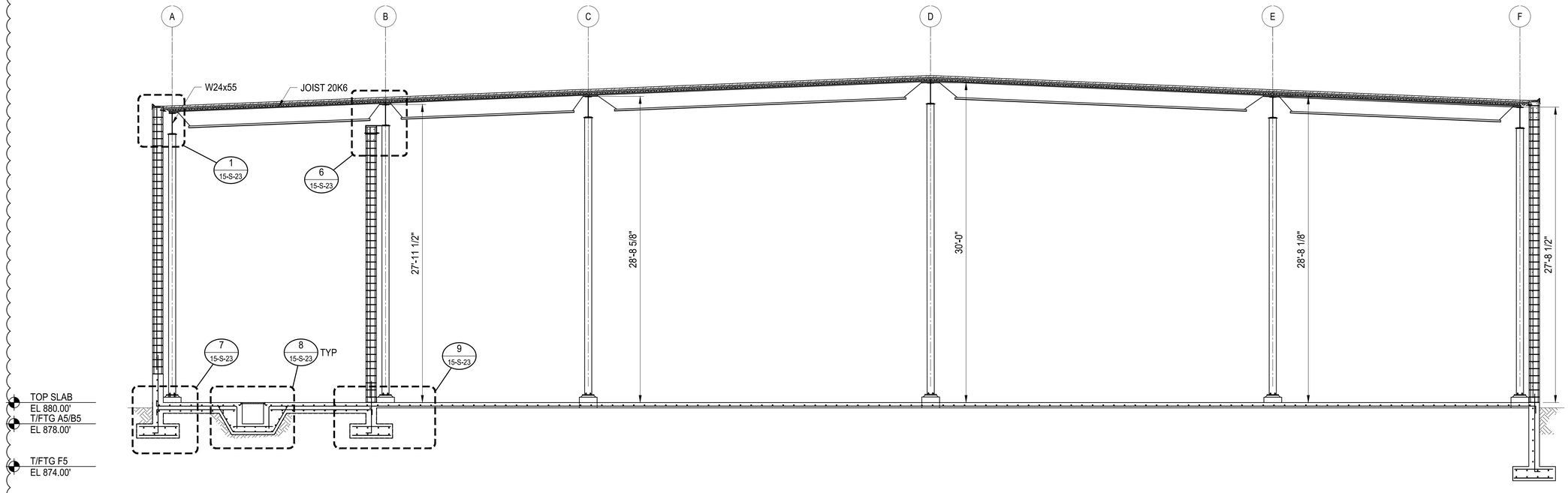
SOLIDS CONTROL BUILDING ELEVATIONS

SHEET NO.
15-S-14

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS359902\0515.13 – 15-S-13, 14.DWG|Tab:15-S-14|Plotted: November 13, 2020 5:14pm



SECTION
SCALE :
A
15-S-1



SECTION
SCALE :
B
15-S-1

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER

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CERTIFICATE OF AUTHORIZATION #PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

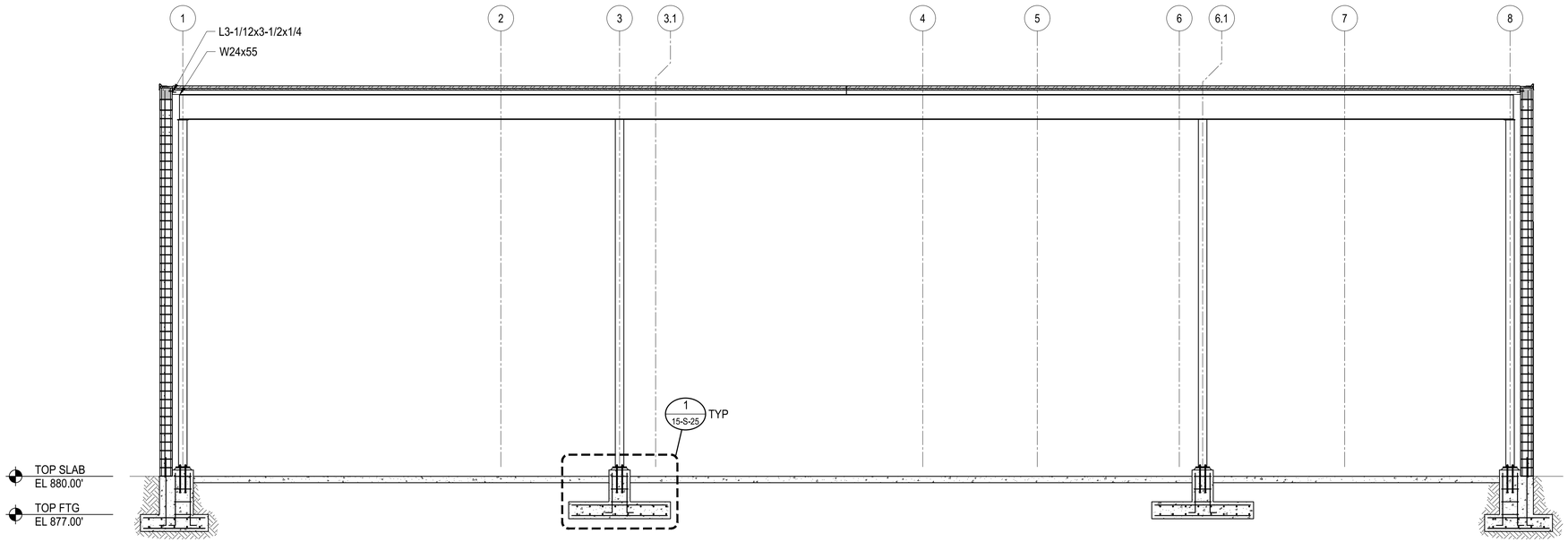
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

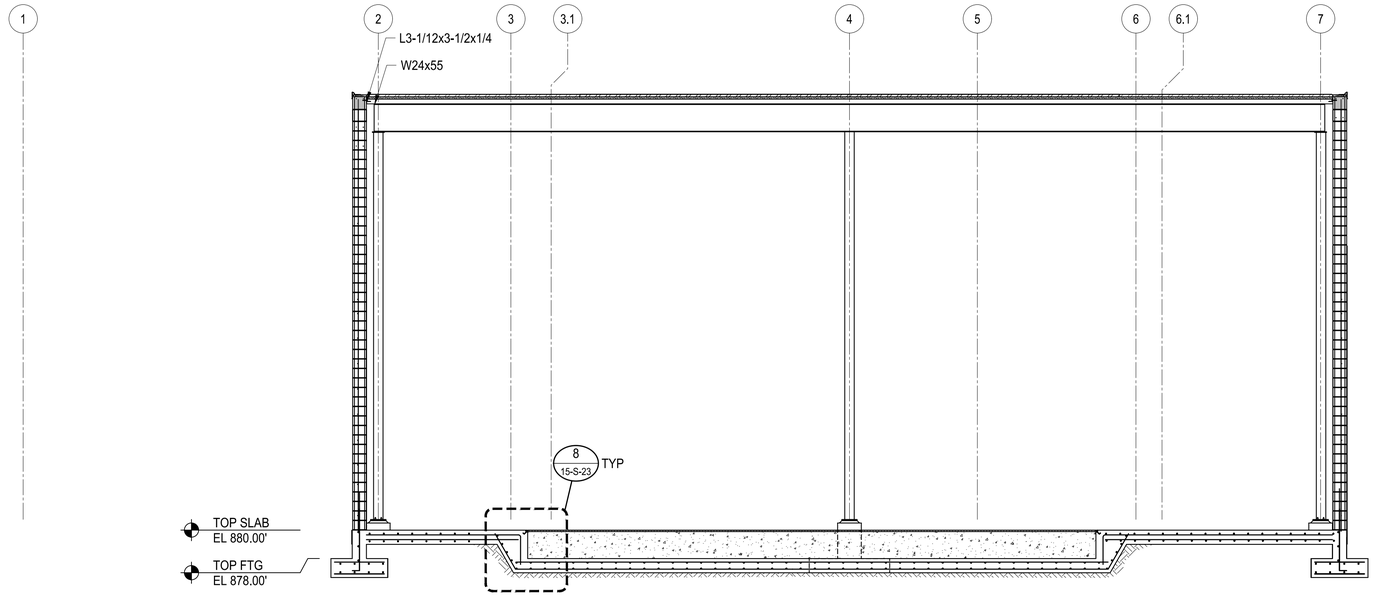
SOLIDS CONTROL BUILDING SECTIONS

SHEET NO.
15-S-20

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.20 - 15-S-20.DWG|Tab:15-S-20|Plotted: November 13, 2020 5:14pm



SECTION
SCALE :
D
15-S-1



SECTION
SCALE :
E
15-S-1

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
11/13/20

ATKINS
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195 LOG CANOE CIRCLE
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION #PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

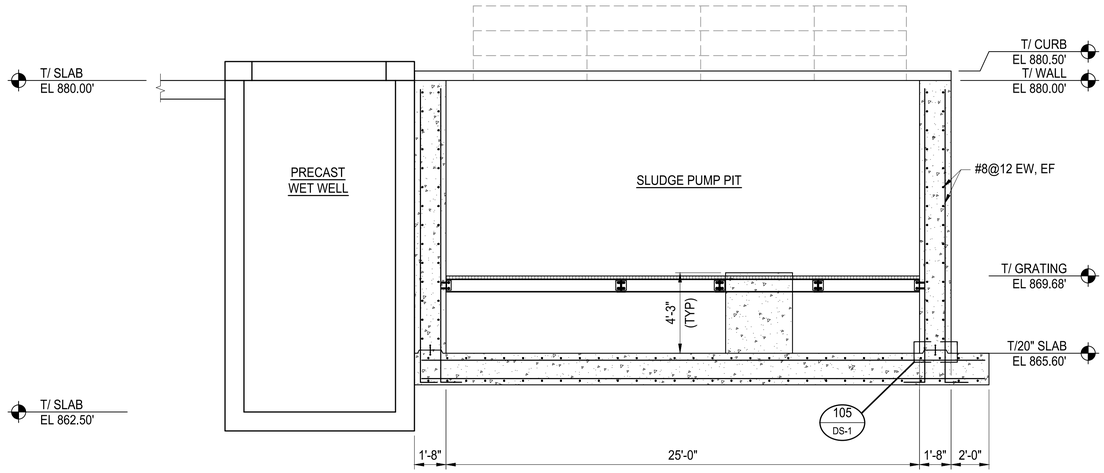
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

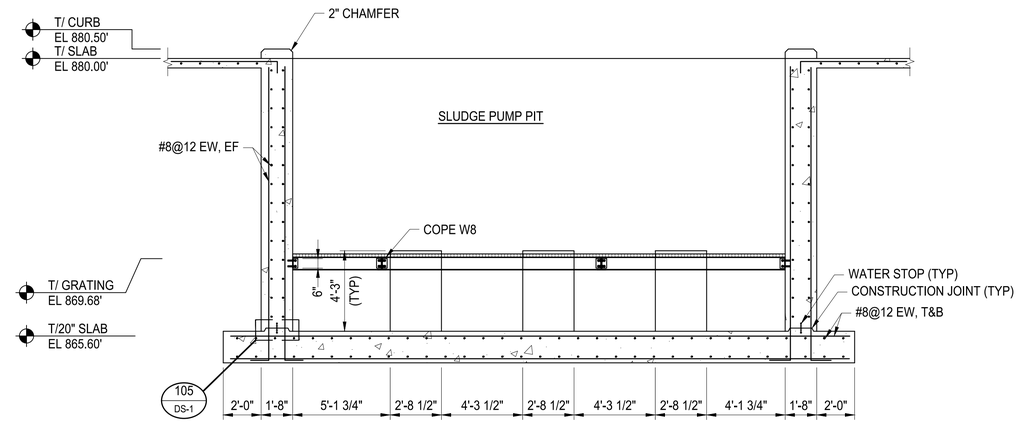
SOLIDS CONTROL BUILDING SECTIONS

SHEET NO.
15-S-21

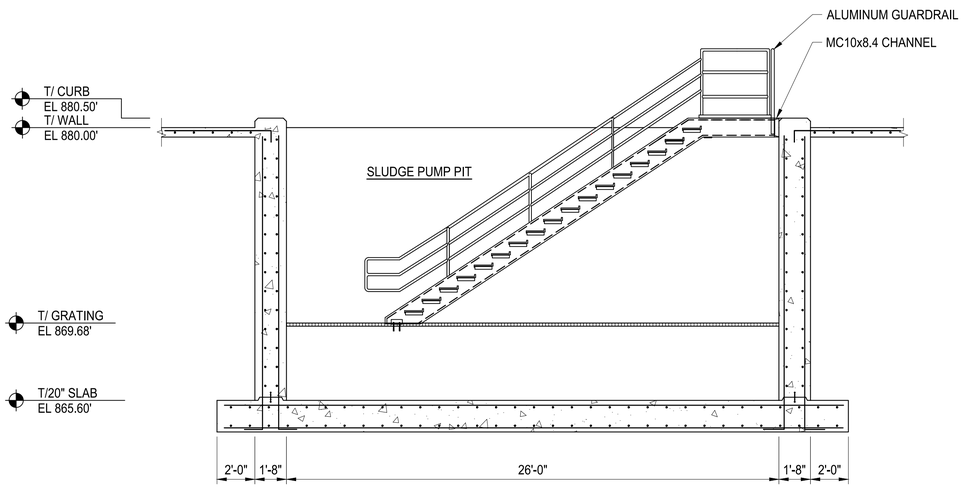
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS359902\0515.21 - 15-S-21.DWG|Tab:15-S-21|Plotted: November 13, 2020 5:14pm



SECTION
SCALE: 1/4" = 1'-0"
A
15-S-2
15-S-6



SECTION
SCALE: 1/4" = 1'-0"
B
15-S-2
15-S-6



SECTION
SCALE: 1/4" = 1'-0"
C
15-S-2
15-S-6

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
CIVIL
11/13/2020

ATKINS
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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

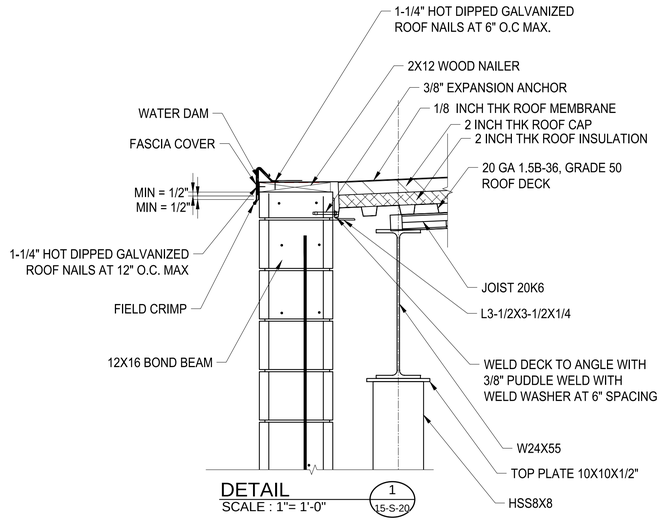
PROJ. NO.:	100061831
DESIGNED BY:	DLC
DRAWN BY:	-
CHECKED BY:	DMM/JLS
APPROVED BY:	HC
DATE:	SEPTEMBER 2020
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

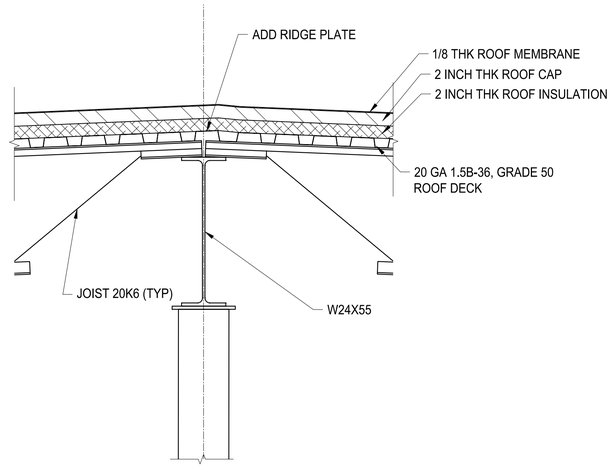
SOLIDS CONTROL BUILDING SECTIONS

SHEET NO.
15-S-22

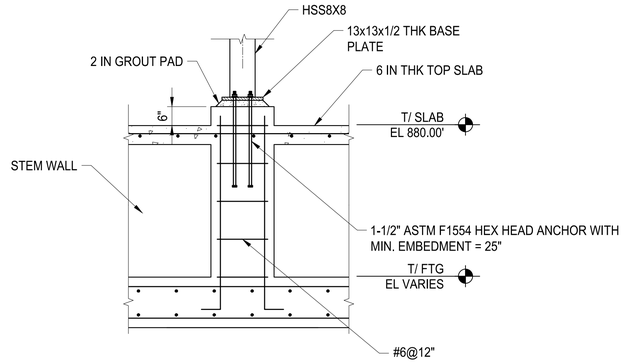
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.22 - 15-S-22.DWG|Tab:15-S-22|Plotted: November 13, 2020 5:14pm



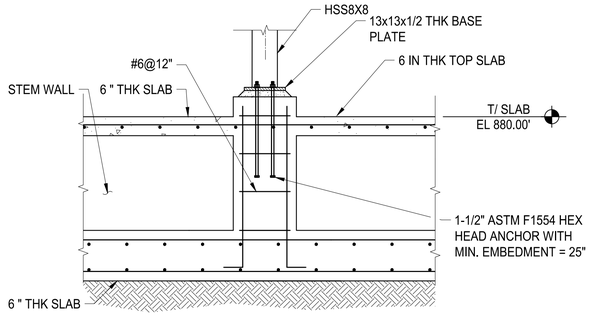
DETAIL
SCALE : 1"= 1'-0" (1 / 15-S-20)



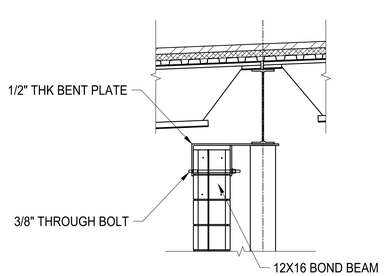
DETAIL
SCALE : 1"= 1'-0" (2 / 15-S-20)



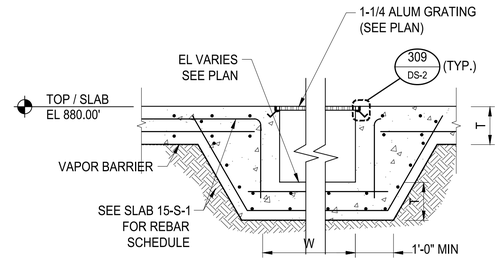
DETAIL
SCALE : 1/2"= 1'-0" (4 / 15-S-20)



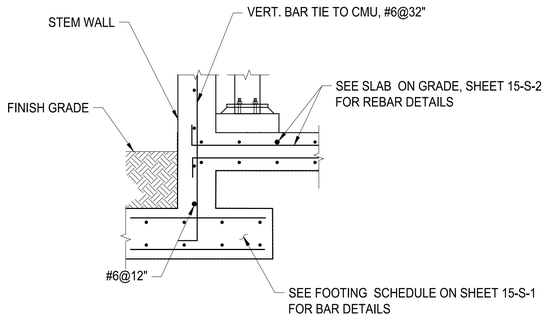
DETAIL
SCALE : 1/2"= 1'-0" (5 / 15-S-20)



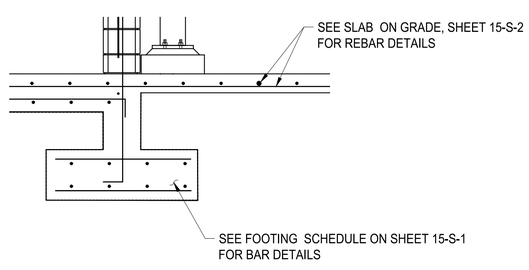
DETAIL
SCALE : 1/2"= 1'-0" (6 / 15-S-20)



DETAIL
SCALE : 1/2"= 1'-0" (8 / 15-S-20)



DETAIL
SCALE : 1/2"= 1'-0" (7 / 15-S-20)



DETAIL
SCALE : 1/2"= 1'-0" (9 / 15-S-20)

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
EXPIRATION DATE: 12/31/2020

ATKINS
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HARTWELL ENGINEERING, INC.
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(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

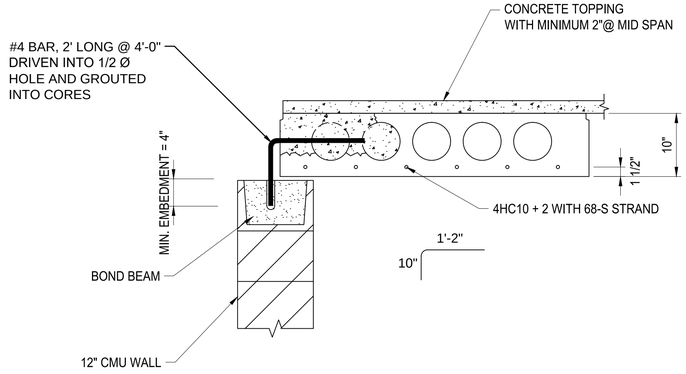
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

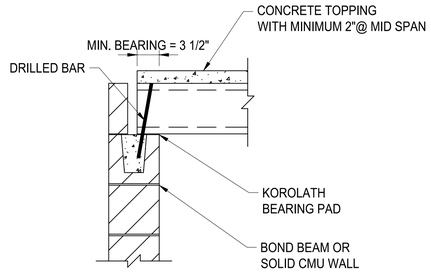
SOLIDS CONTROL BUILDING DETAILS

SHEET NO.
15-S-23

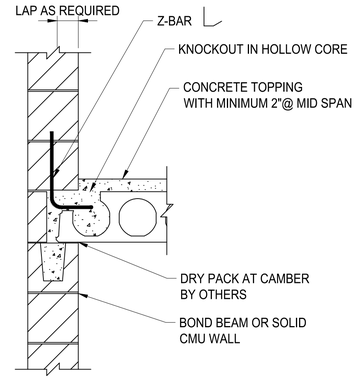
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.23 – 15-S-23.DWG|Tab:15-S-23|Plotted: November 13, 2020 5:15pm



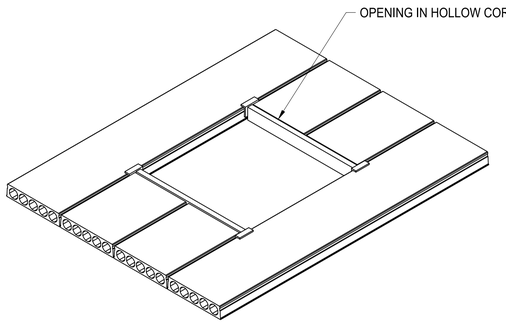
HOLLOW CORE BEARING ON CMU - END (101)
SCALE : NTS



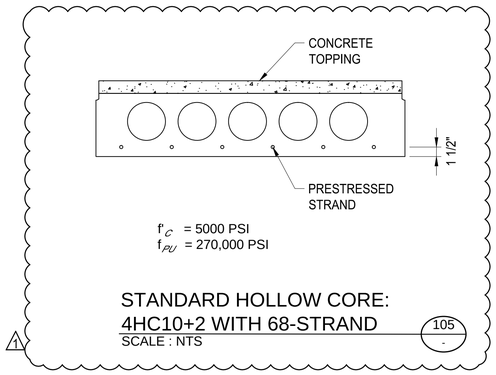
HOLLOW CORE BEARING ON CMU - SIDE (102)
SCALE : NTS



HOLLOW CORE LAPPING CMU (103)
SCALE : NTS



HANGERED OPENINGS THROUGH
HOLLOW CORE (104)
SCALE : NTS



1 STANDARD HOLLOW CORE:
4HC10+2 WITH 68-STRAND (105)
SCALE : NTS

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
EXPIRATION DATE: 12/31/2020

ATKINS
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CERTIFICATE OF AUTHORIZATION #PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

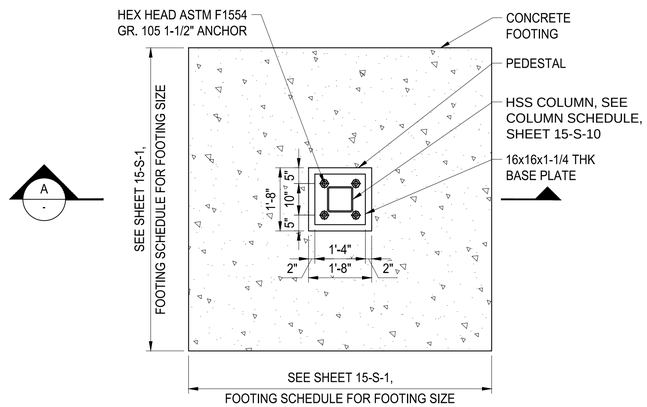
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

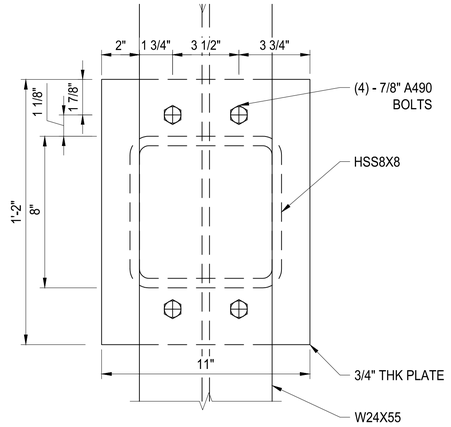
SOLIDS CONTROL BUILDING
DETAILS

SHEET NO.
15-S-24

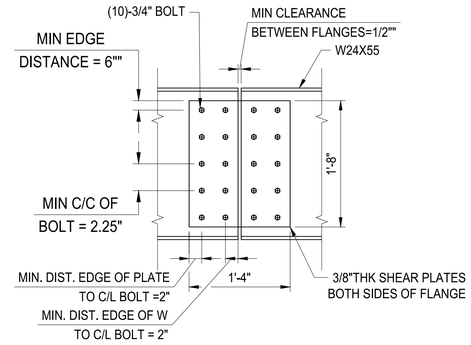
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.24 – 15-S-24.DWG|Tab:15-S-24|Plotted: November 13, 2020 5:15pm



TYPICAL FOOTING DEATIL 1
SCALE : 1/2"=1-0"



COLUMN CAP PLATE 2
SCALE : 1"= 1'-0"

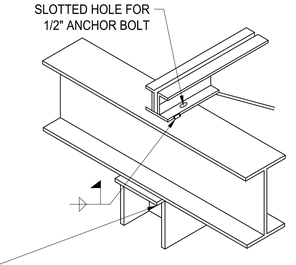


DECK DETAIL 3
SCALE : 1"= 1'-0"

SECTION A
SCALE : 1/2"=1-0"

ROOF DETAILS		
ITEM	PARTICULARS	VALUE
1	ROOF DECK TYPE	1.5-36, 20 GA, GRADE 50
2	DECK TO SUPPORT CONNECTION	3/4" PUDDLE WELD WITH WELDING WASHER WITH BOTH END BUTTED, CONNECTION PATTERN 36/7 AT END AND INTERIOR
3	SIDE LAP	#12 SCREW, 4 SIDELAPS PER SPAN

ROOF DECK DETAIL 4
SCALE : NTS



TYPICAL BOLTED
CONNECTION AT COLUMN 5
SCALE : NTS

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/30/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS
195 105 Clarke Circle
Stockbridge, Georgia
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CERTIFICATE OF AUTHORIZATION # PEF003992 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

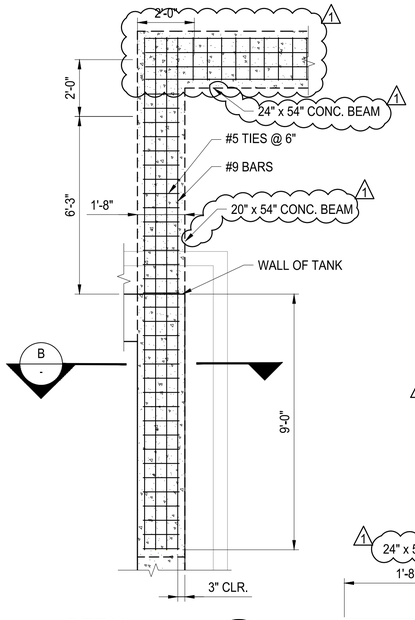
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

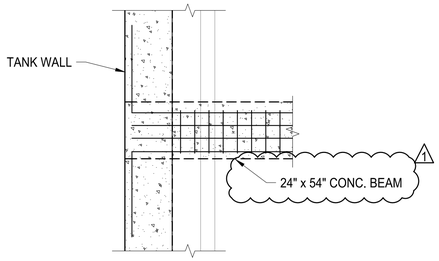
SOLIDS CONTROL BUILDING DETAILS

SHEET NO.
15-S-25

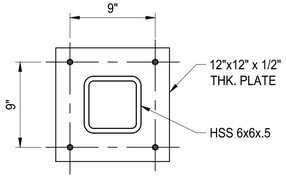
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35902\0515.25 – 15-S-25.DWG|Tab:15-S-25|Plotted: November 13, 2020 5:15pm



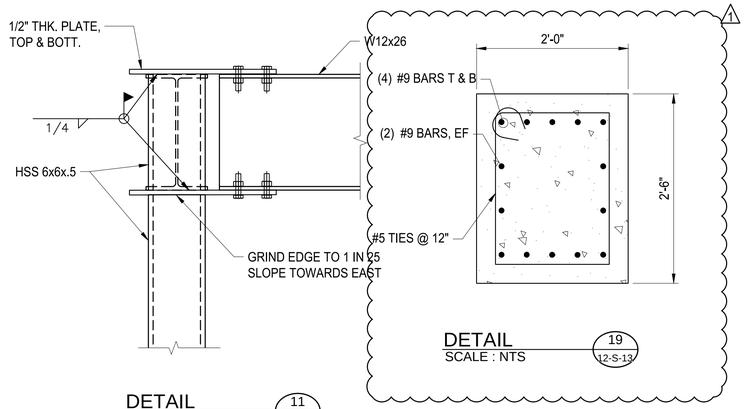
DETAIL
SCALE : NTS
7
12-S-2



DETAIL
SCALE : NTS
8
12-S-2

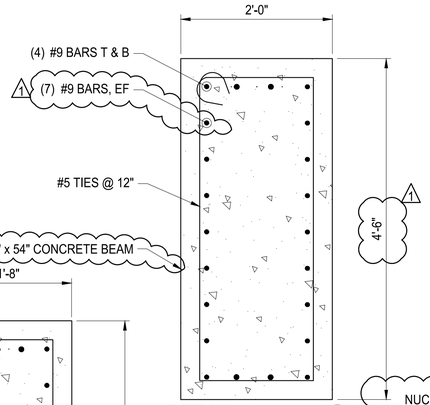


SECTION
SCALE: NTS
A
-

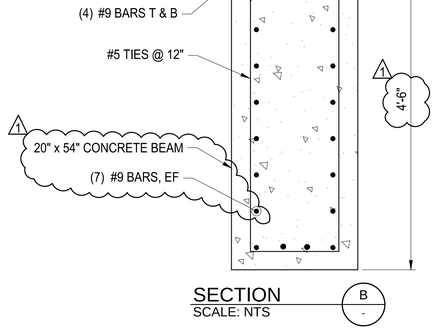


DETAIL
SCALE : NTS
11
12-S-13

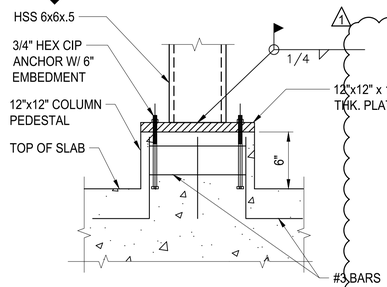
DETAIL
SCALE : NTS
19
12-S-13



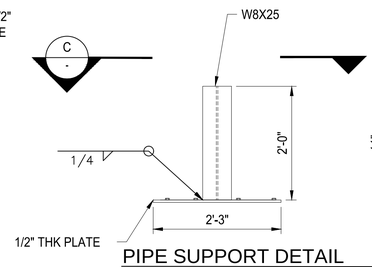
DETAIL
SCALE : NTS
9
12-S-11



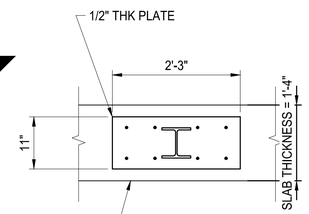
SECTION
SCALE: NTS
B
-



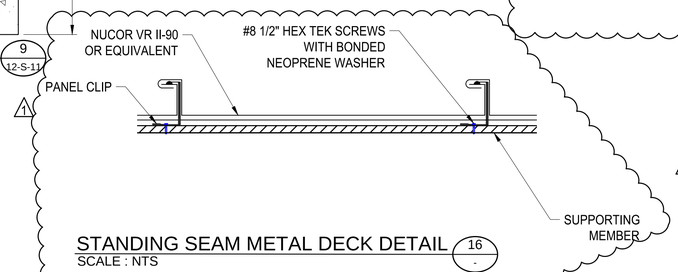
DETAIL
SCALE : NTS
10
12-S-13



PIPE SUPPORT DETAIL
SCALE : NTS
18
12-S-3



SECTION
SCALE: NTS
C
-



STANDING SEAM METAL DECK DETAIL
SCALE : NTS
16
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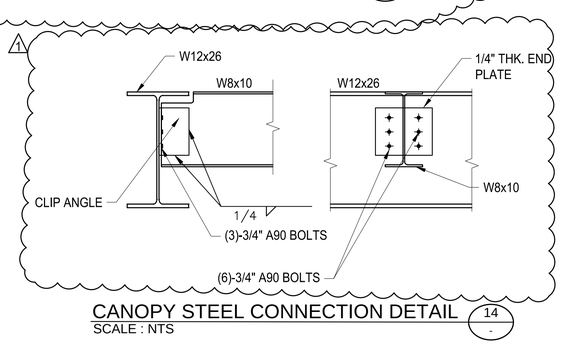

CANOPY STEEL CONNECTION DETAIL
SCALE : NTS
14
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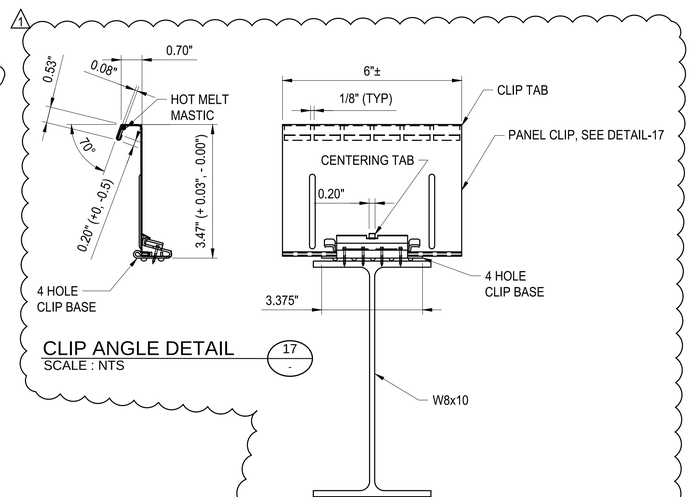
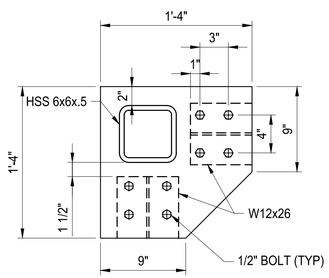
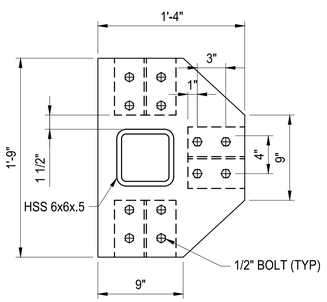


CLIP ANGLE DETAIL
SCALE : NTS
17
-

CANOPY ROOF
CONNECTION DETAIL
SCALE : NTS
15
-



DETAIL
SCALE : NTS
12
12-S-3



DETAIL
SCALE : NTS
13
12-S-3

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
10/06/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta, Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF003892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

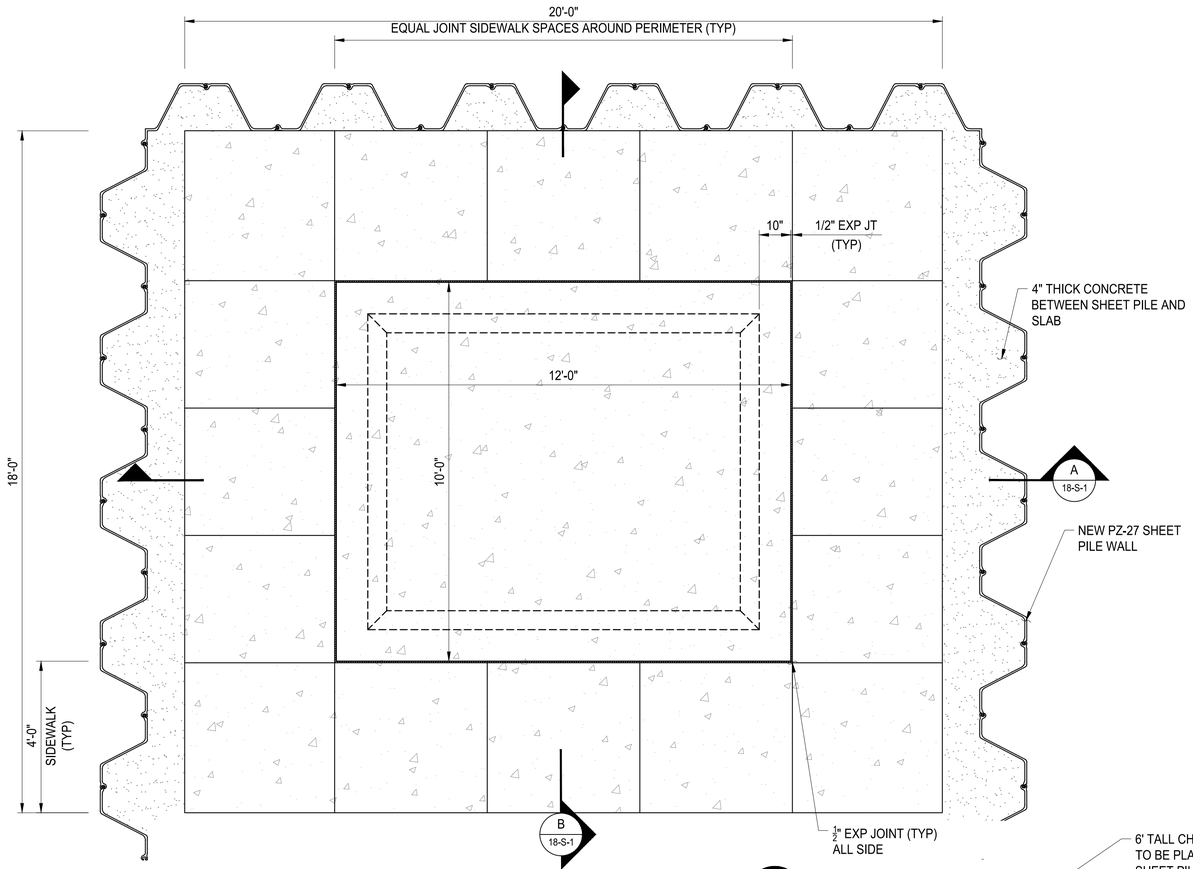
PROJ. NO.: 100061831
DESIGNED BY: DL/DLC
DRAWN BY: - DN
CHECKED BY: DM/BJLS
APPROVED BY: HC AB
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

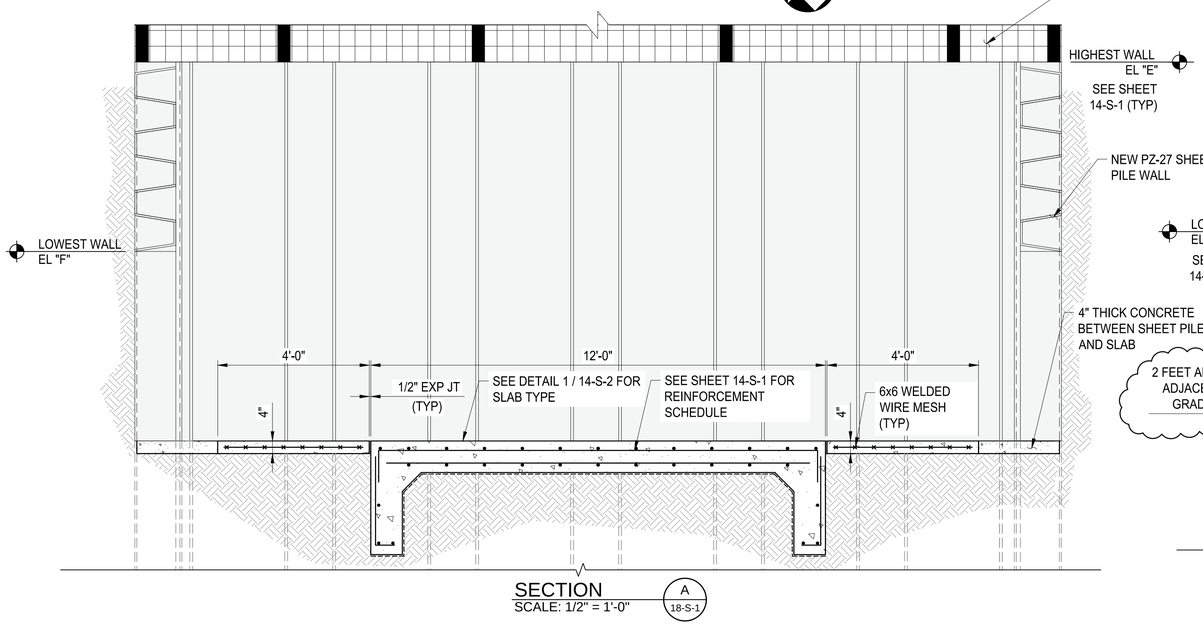
SBR No.2 & 3 CONVERTED TO AEROBIC DIGESTER DETAILS

SHEET NO.
12-S-14

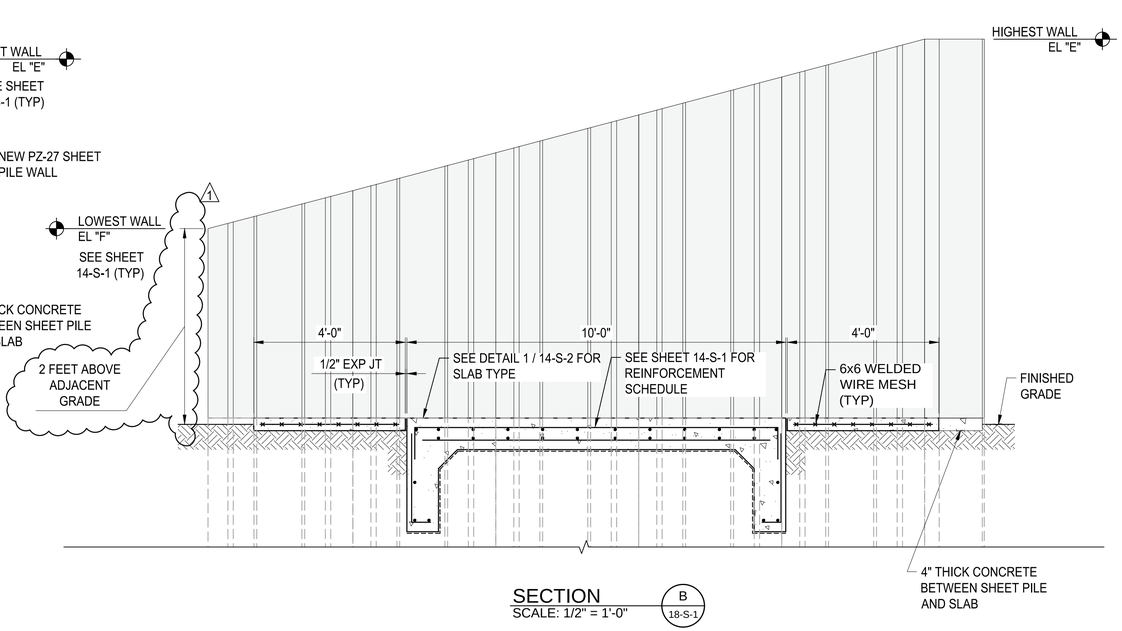
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DM535902\0512.12 – 12-S-14.DWG|Tab:12-S-14|Plotted: November 13, 2020 3:32pm



ODOR CONTROL FACILITY PLAN
SCALE: 1/2"=1'-0"



SECTION
SCALE: 1/2" = 1'-0"
A
18-S-1



SECTION
SCALE: 1/2" = 1'-0"
B
18-S-1

GENERAL NOTES :

1. SEE SHEET S-01 AND S-02 FOR STRUCTURAL GENERAL NOTES.
2. SEE DS-xx SERIES SHEETS FOR TYPICAL DETAILS.
3. SEE SD-xx SERIES SHEETS FOR DEMOLITION DRAWINGS.
4. COORDINATE WITH DRAWINGS FROM ALL OTHER DISCIPLINES FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON STRUCTURAL SHEETS.
5. REFER TO CIVIL SHEETS FOR BUILDING ELEVATION , LOCATION AND SITE LAYOUT INFORMATION.
6. REFER TO MECHANICAL DRAWINGS FOR SIZING AND LOCATIONS OF ANY HVAC EQUIPMENT, PROCESS EQUIPMENT, LOUVERS, ACCESSORIES, ALL WALL PIPE PENETRATIONS AND SLAB PENETRATIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR TYPE AND LOCATION OF ELECTRICAL EQUIPMENT , PANELS, LIGHTS, AND ACCESSORIES.
8. REFER TO PLUMBING DRAWINGS FOR LOCATION AND SIZING OF ANY PROCESS EQUIPMENT, PLUMBING LINES AND ACCESSORIES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ARCHITECTURAL ELEMENTS.

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
11/13/20

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CERTIFICATE OF AUTHORIZATION # PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

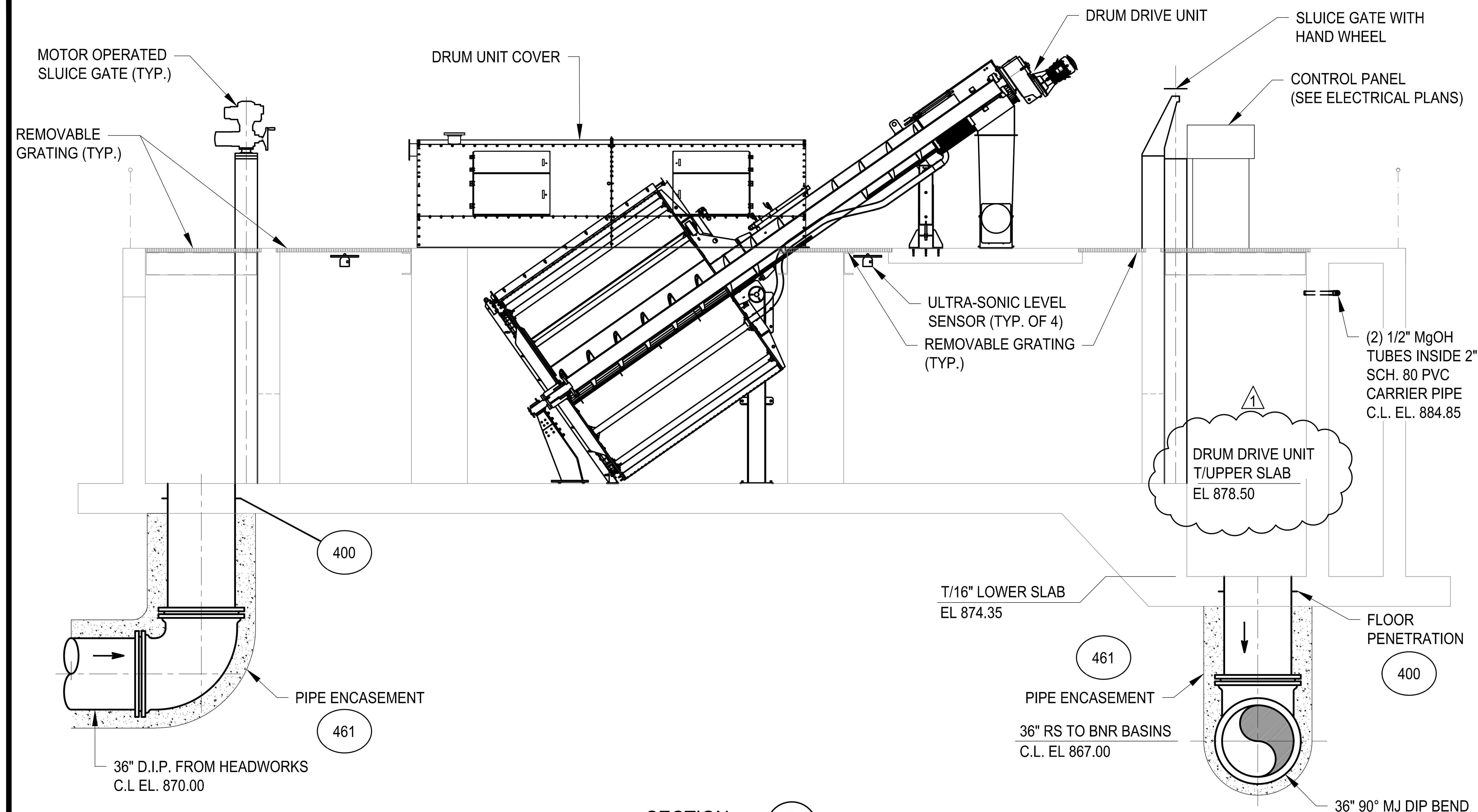
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

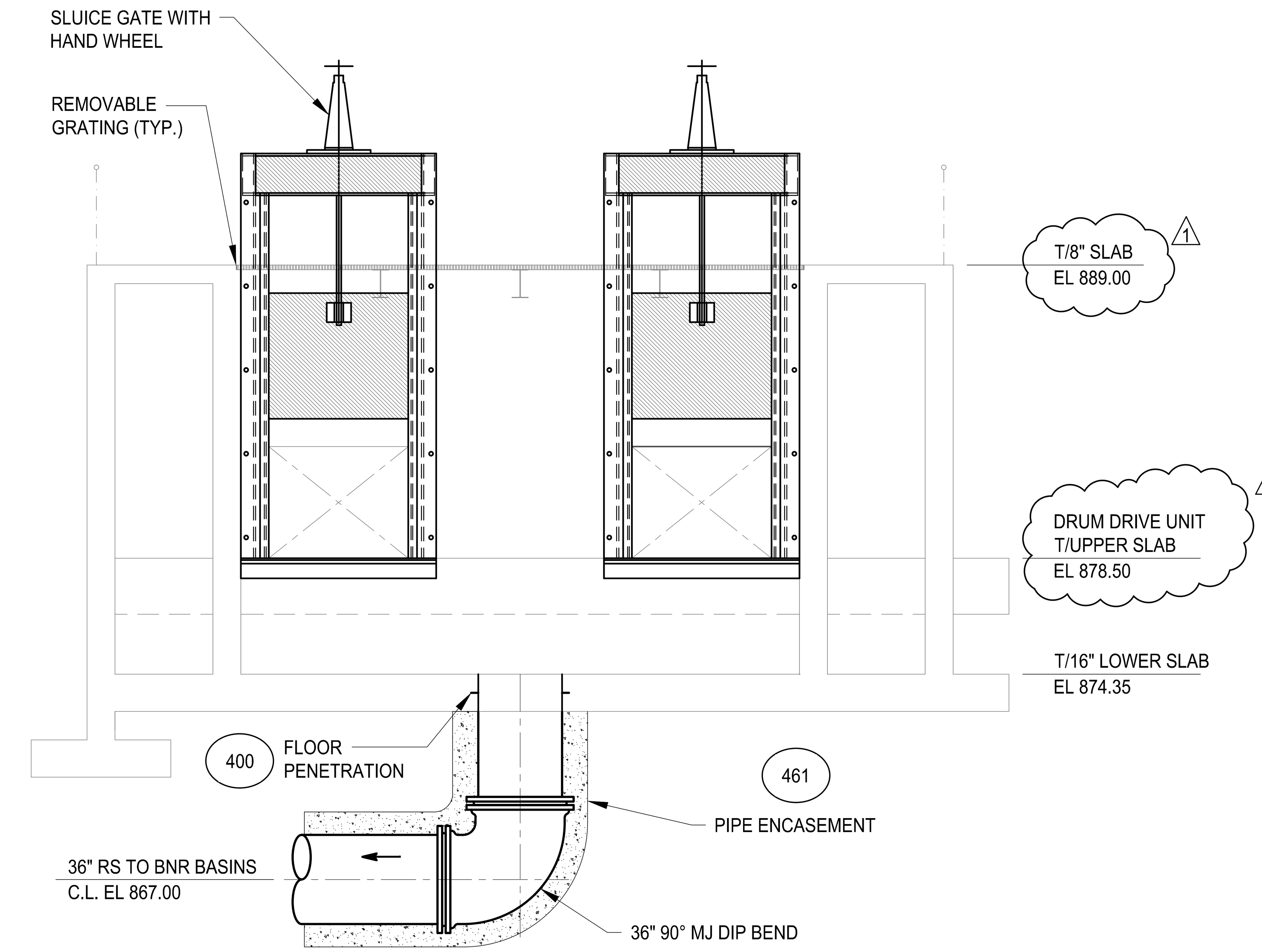
ODOR CONTROL FACILITY PLAN & SECTIONS

SHEET NO.
18-S-1

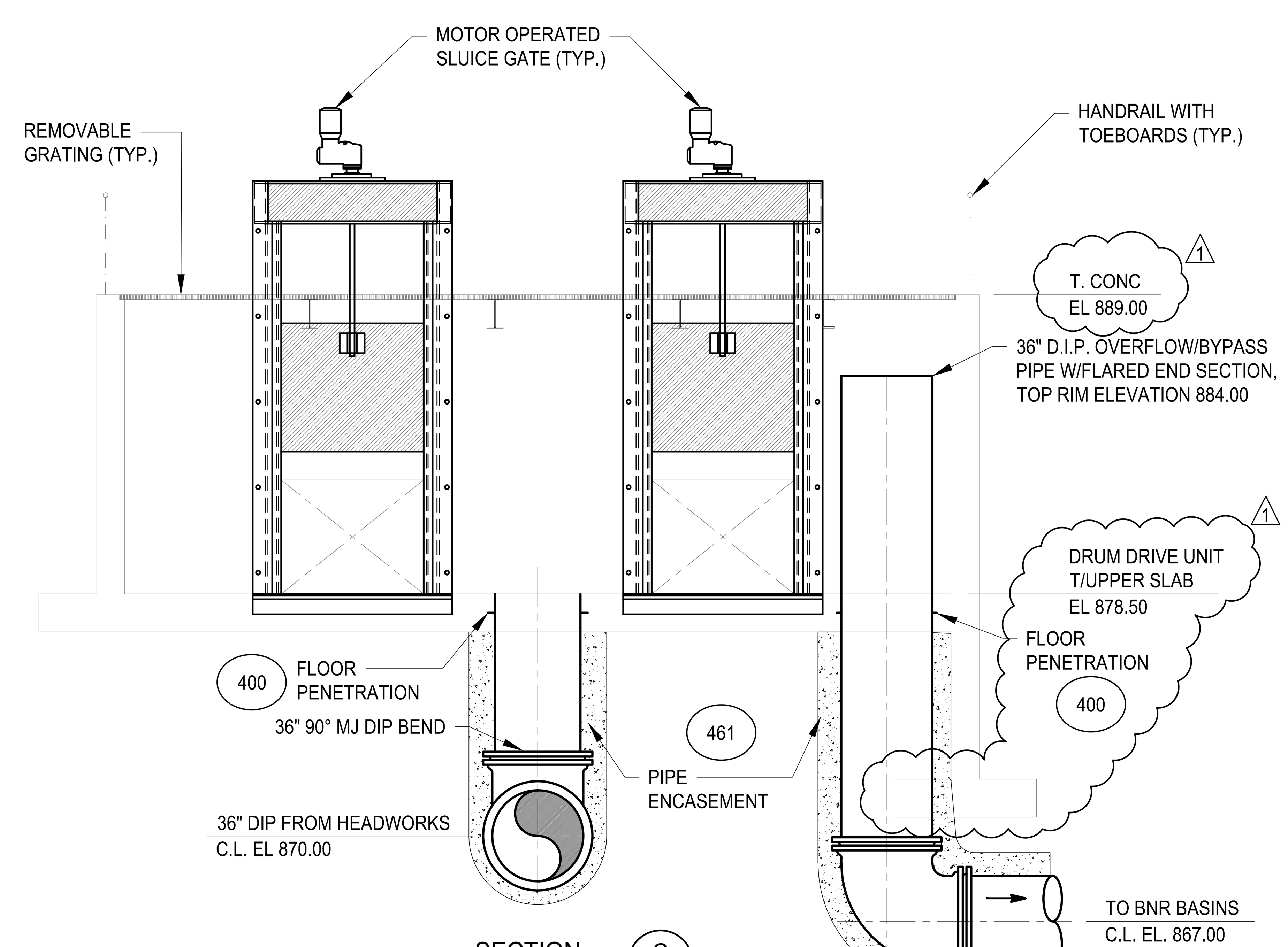
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DM535902\D518.01 - 18-S-1.DWG[Tab:18-S-1]Plotted: November 13, 2020 3:32pm



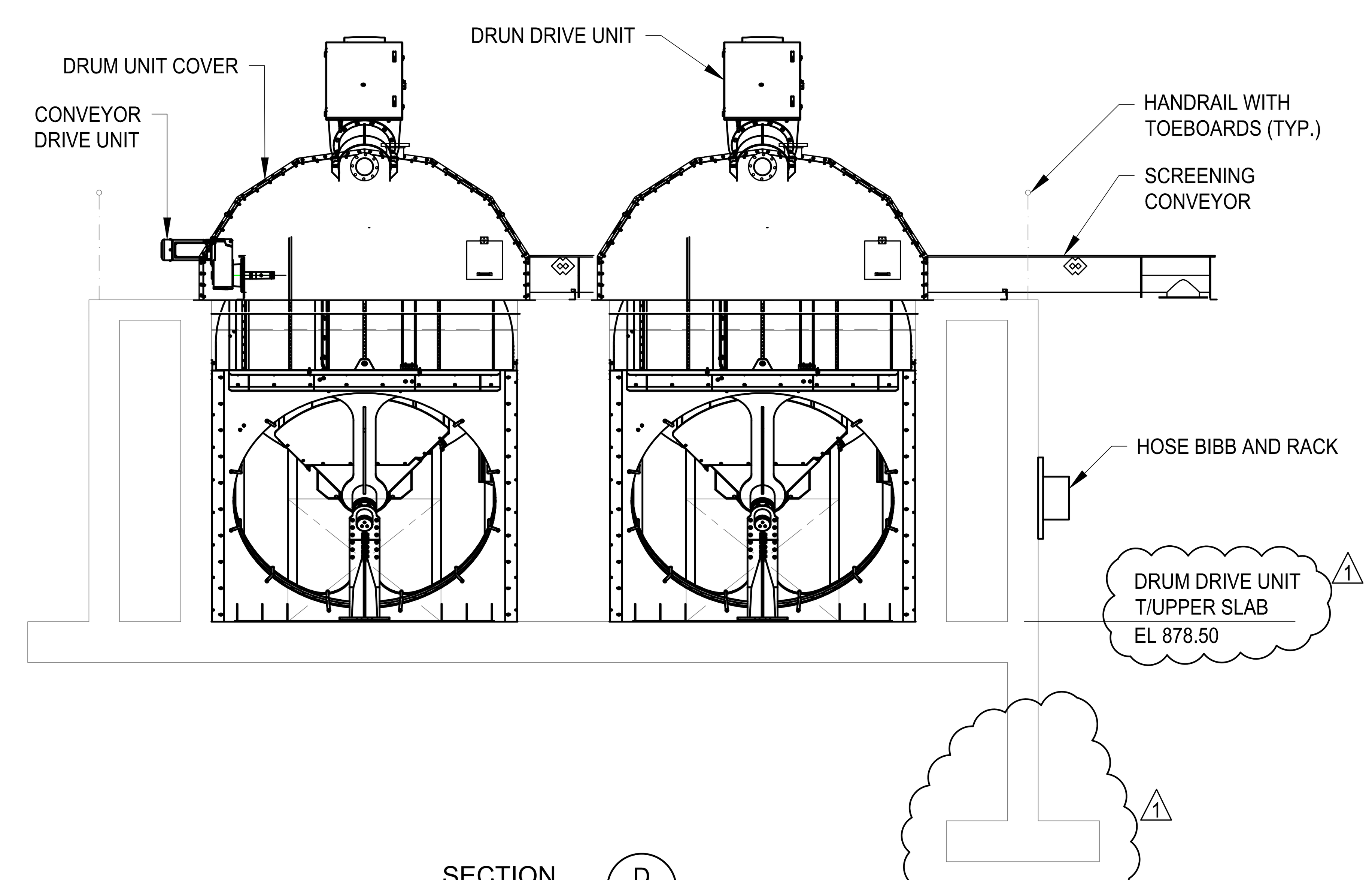
SECTION A 4-M-1
SCALE: 1/4"=1'-0"



SECTION B 4-M-1
SCALE: 1/4"=1'-0"



SECTION C 4-M-1
SCALE: 1/4"=1'-0"



SECTION D 4-M-1
SCALE: 1/4"=1'-0"

GEORGIA REGISTERED No. 042364 PROFESSIONAL ENGINEER HECTOR A. CASABLANCA
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

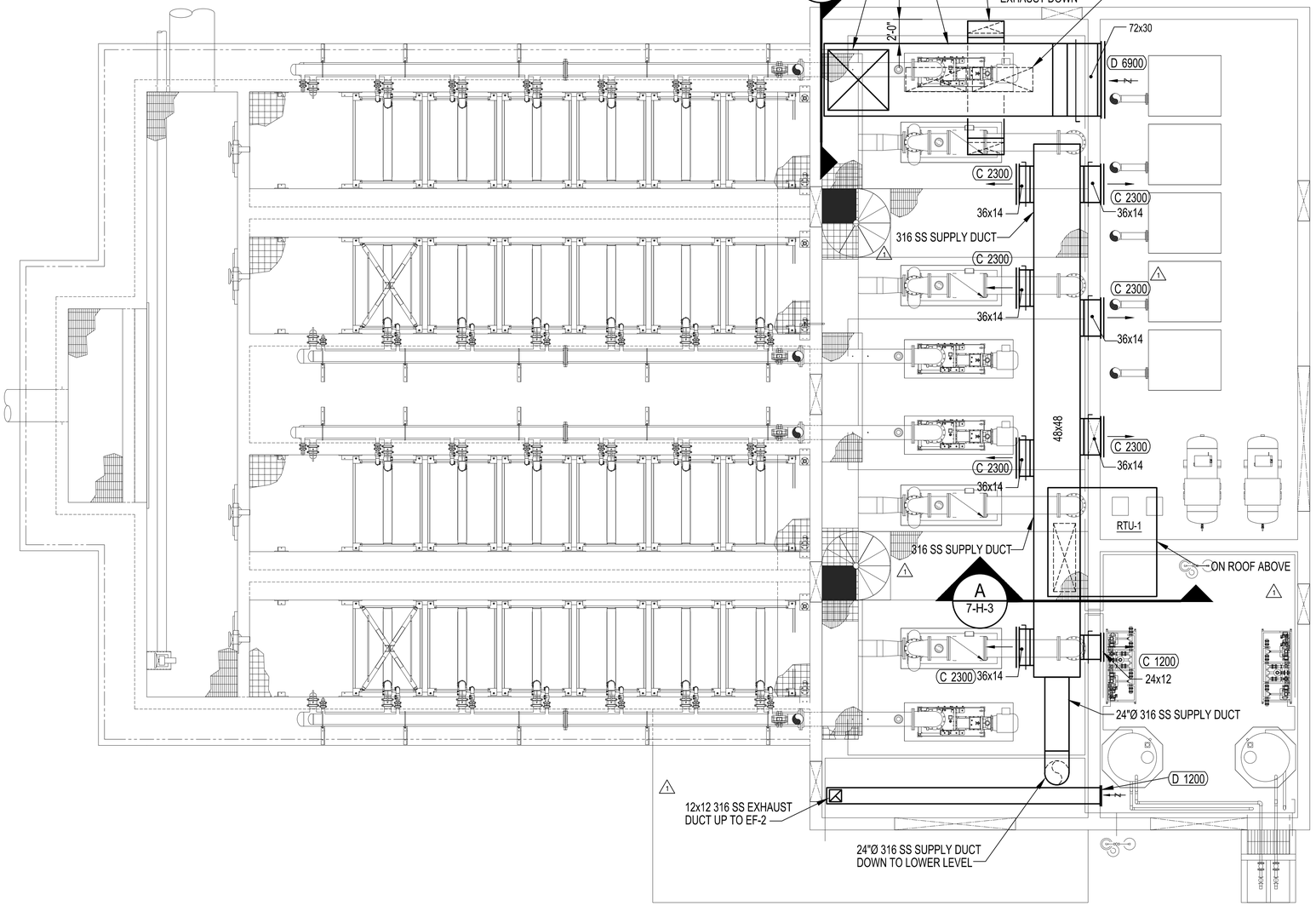
PROJ. NO.: 100061831
DESIGNED BY: DLG
DRAWN BY: JN
CHECKED BY: ---
APPROVED BY: ---
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

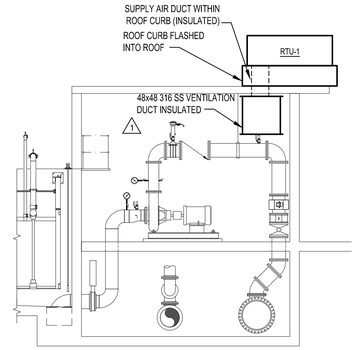
FINE SCREENINGS FACILITY SECTIONS

SHEET NO.
4-M-2

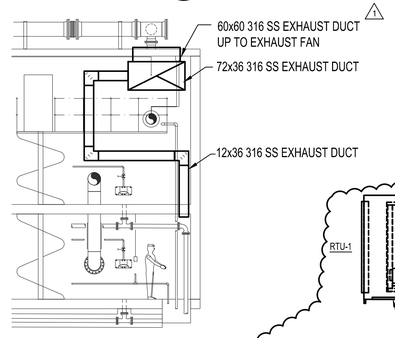
File Name: C:\PW_WORK\ATKNAGA01\NEWM7492\DMS35903\0604 - 04-M-1, 2.DWG|Tab: 4-M-2|Plotted: November 12, 2020 8:55pm



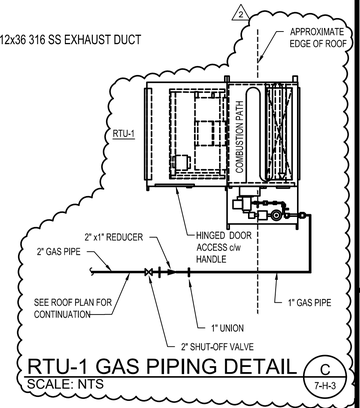
UPPER HVAC PLAN
SCALE: 3/16"=1'-0"



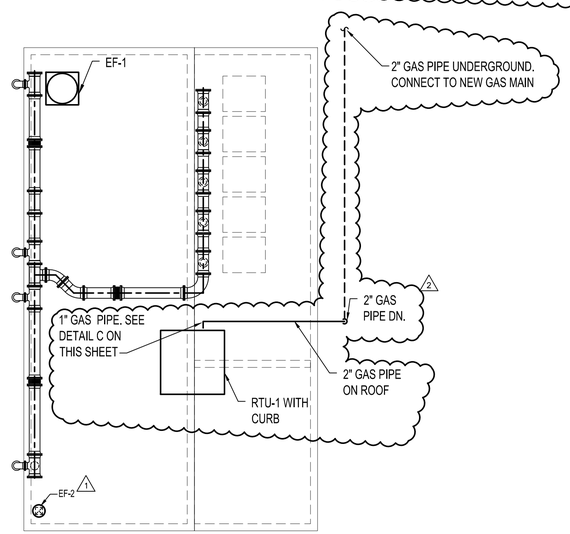
SECTION
SCALE: 1/8"=1'-0"
A
7-H-3



SECTION
SCALE: 1/8"=1'-0"
B
7-H-3



RTU-1 GAS PIPING DETAIL
SCALE: NTS
C
7-H-3



ROOF PLAN AT MBR GALLERY
SCALE: 3/32"=1'-0"

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 27598 THOMAS J. PARKER
11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
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195 LOG CANOE CIRCLE
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(443) 249-3111

REVISION	DATE
ADDENDUM No. 3	10/30/2020
ADDENDUM No. 4	11/13/2020

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

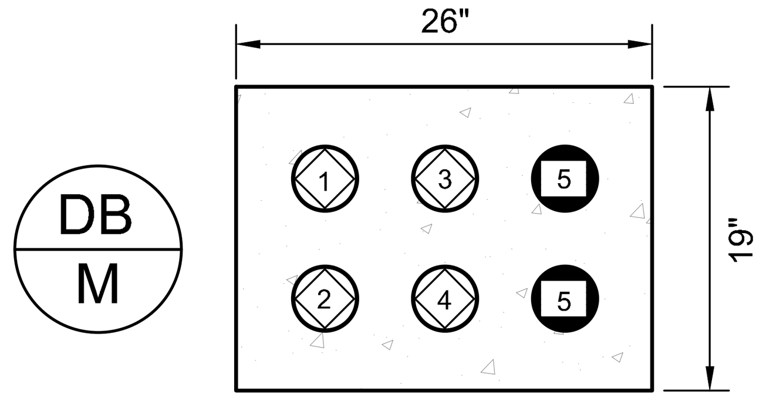
PROJ. NO.:	100061831
DESIGNED BY:	DLH
DRAWN BY:	REP
CHECKED BY:	---
APPROVED BY:	---
DATE:	SEPTEMBER 2020
SCALE:	AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

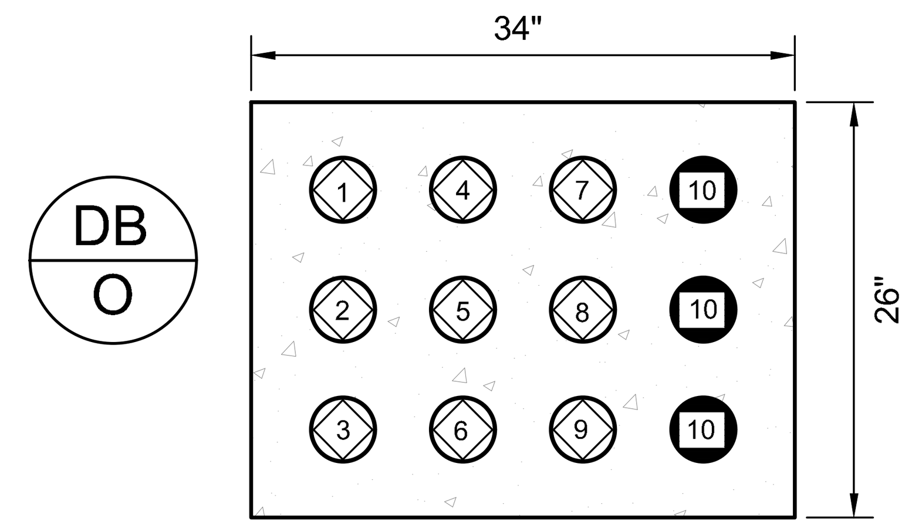
MEMBRANE FACILITY
UPPER HVAC PLAN

SHEET NO.
7-H-3

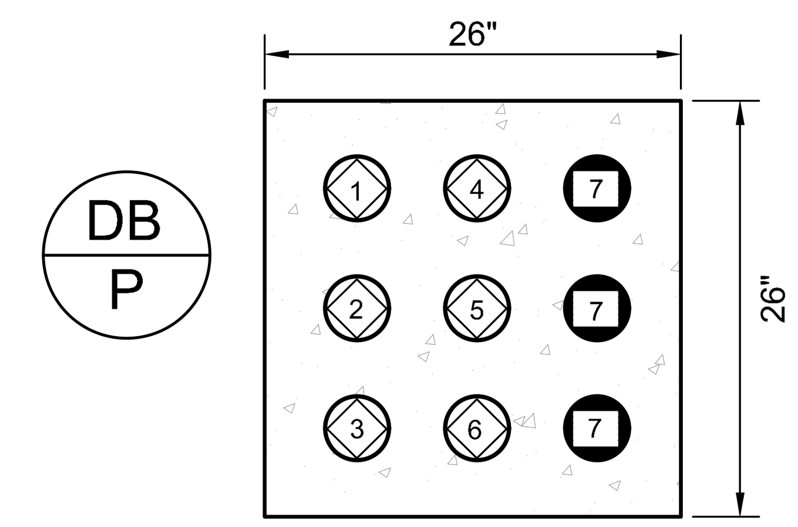
File Name: C:\PW_WORK\ATKNAGA01\PATR3381\DMS35906\07-H-3.DWG|Tab:7-H-3|Plotted: November 12, 2020 4:28pm



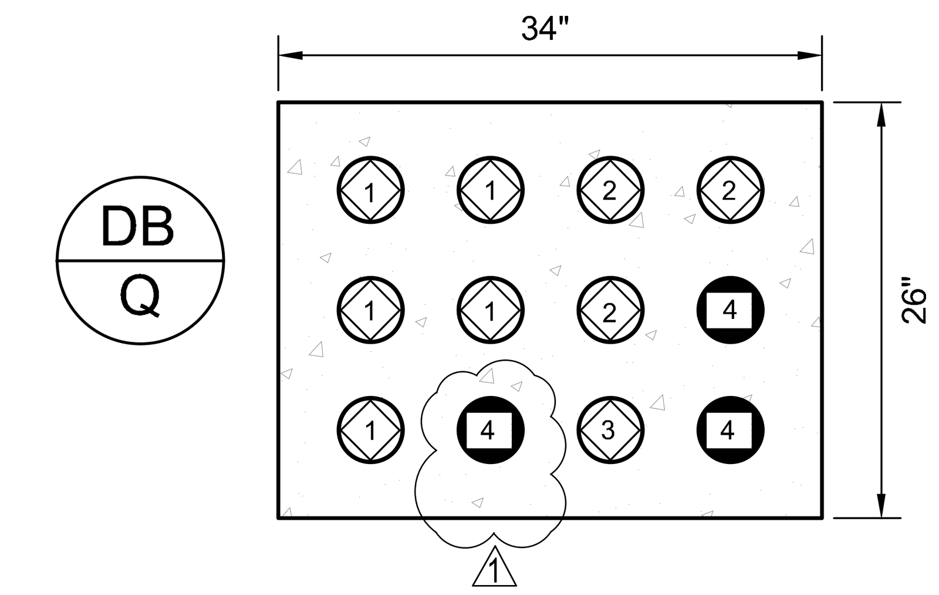
1. 23P-C030
2. 23P-C031
3. 23C-C001, 23C-C004, 23C-C005
4. 23P-C001
5. SPARE



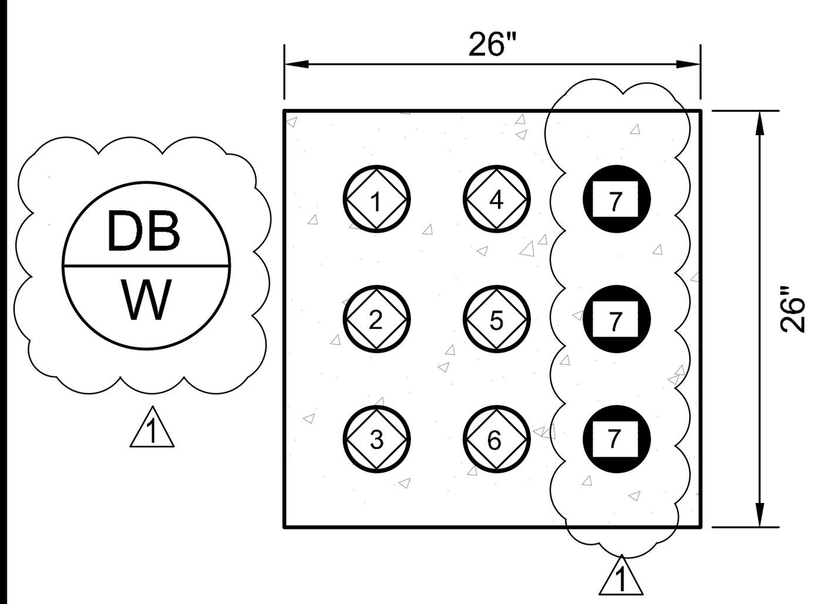
1. 5P-C030
2. 5P-C031
3. 5P-C032
4. 11C-C005, 11C-C007, 11C-C009, 11C-C022
5. 5C-C009, 5C-C011
6. 5C-C010, 5C-C012
7. 5P-C019
8. 5P-C020
9. 11C-C001, 12C-C001
10. SPARE



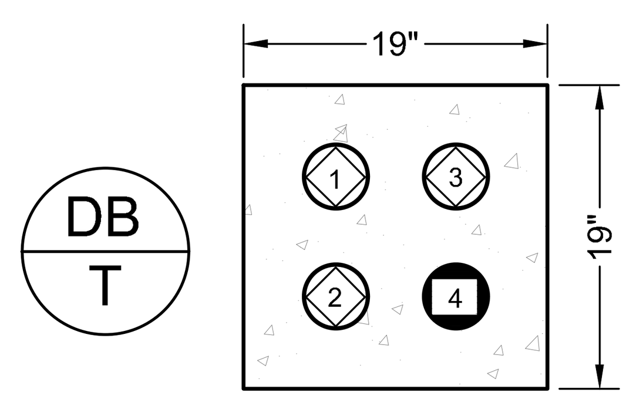
1. 11C-C022
2. 5C-C009, 5C-C011, 5C-C013, 5C-C015
3. 5C-C010, 5C-C012, 5C-C014, 5C-C016
4. 5P-C019
5. 5P-C020
6. 11C-C001, 12C-C001
7. SPARE



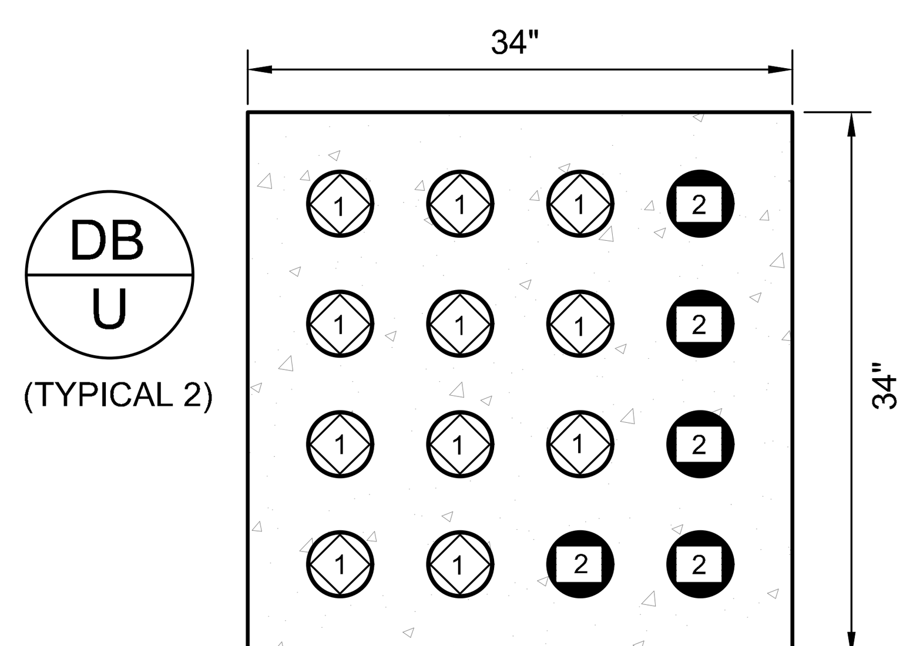
1. 14P-C105 (SG-MAIN TO MCC-BNR)
2. 14P-C104 (SG-MAIN TO MCC-MBR)
3. 5C-C001 (PLC-MSG TO PLC-BNR)
4. SPARE



1. 5P-C001 (MCC-BNR TO FS1)
2. 5P-C004 (MCC-BNR TO FS2)
3. 5P-C007 (MCC-BNR TO FS CONV)
4. 5P-C057, 5P-C058 (HP-BNR TO INF SENS)
5. 5P-C069 (LP-BNR TO RIO-BNR2)
6. 4C-C001 (PLC-BNR TO RIO-BNR2)
7. SPARE

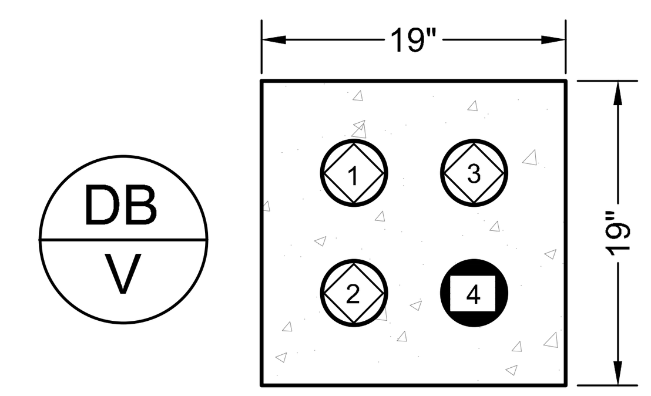


1. 14P-C106 (SG-MAIN TO MDP PANEL)
2. 14C-C001 (SG-MAIN TO PCS RACK)
3. KEY NOTE 3, DWG E-29 (SG-MAIN TO GRINDER PS) (NOTE 4)
4. SPARE

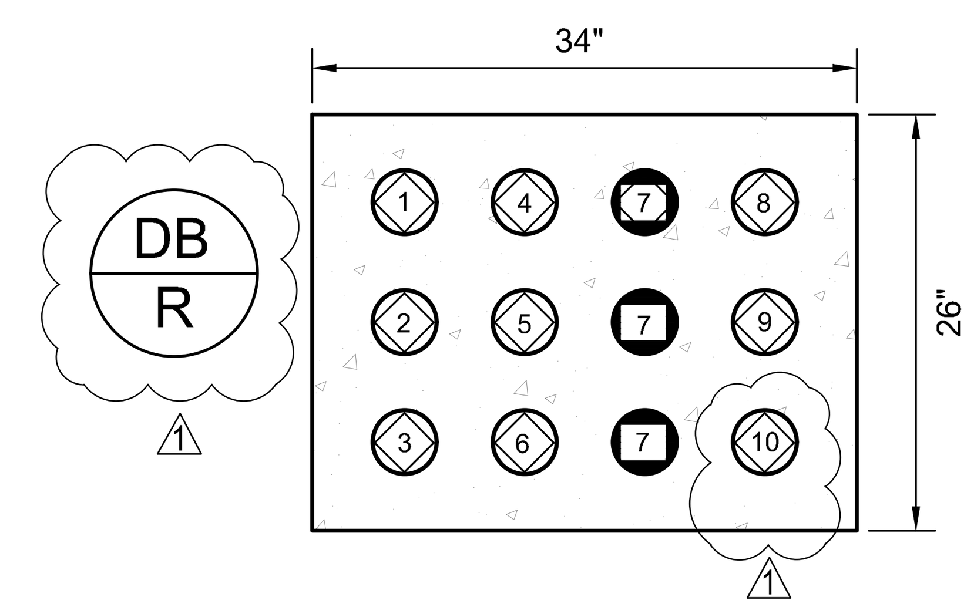


(TYPICAL 2)

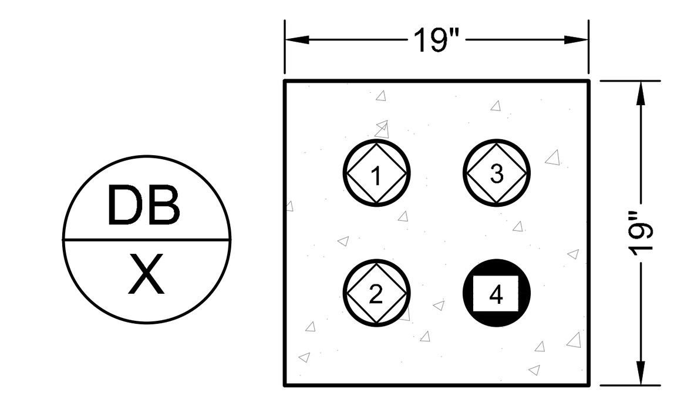
1. 14P-C101 (UTIL XFMR TO SG-MAIN)
2. SPARE



1. 5C-C013, 5C-C015
2. 5C-C014, 5C-C016
3. 12C-C001 (PLC-H TO PLC-BNR)
4. SPARE



1. 5P-C001 (MCC-BNR TO FS1)
2. 5P-C004 (MCC-BNR TO FS2)
3. 5P-C007, 5P-C008
4. 5P-C057, 5P-C058 (HP-BNR TO INF SENS)
5. 5P-C069 (LP-BNR TO RIO-MSG1)
6. 4C-C001 (PLC-BNR TO RIO-BNR2)
7. SPARE
8. 17C-C001, 17C-C003, 17C-C005, 17C-C007, 17C-C009, 17C-C011 17C-C013, 17C-C015
9. 17C-C006, 17C-C008, 17C-C010, 17C-C012, 17C-C014, 17C-C016
10. 5P-C029 (MCC-BNR TO HP-AL)



1. 17C-C001, 17C-C003, 17C-C005, 17C-C007, 17C-C009, 17C-C011 17C-C013, 17C-C015
2. 17C-C006, 17C-C008, 17C-C010, 17C-C012, 17C-C014, 17C-C016
3. 5P-C029
4. SPARE

NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. PROVIDE CONDUIT CHAIRS WITH MIN. 3$\frac{1}{2}$" SPACING BETWEEN CONDUITS.
2. ALL CONDUITS SHALL BE 4" IN DUCTBANKS.
3. ALL BENDS AND ELBOWS 45 DEGREES AND ABOVE IN DUCTBANKS SHALL BE PVC COATED GALVANIZED STEEL.
4. DUCT SHALL BE DIRECTED TO PUMP STATION. DIRECT BURY FROM DUCT BANK TO PUMP STATION.

GEORGIA No. PE028093 PROFESSIONAL 11/13/2020

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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

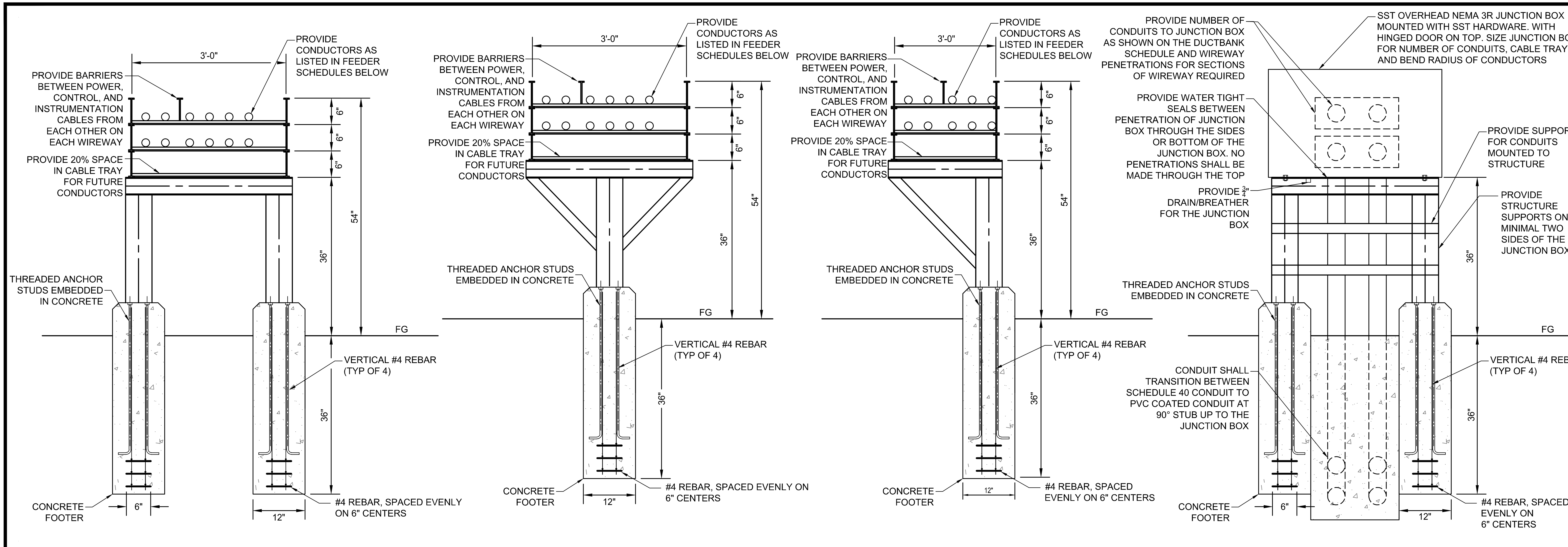
PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

ELECTRICAL DUCTBANK 2

SHEET NO.
E-11

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 — E-11.DWG|Tab:E-11|Plotted: November 13, 2020 6:58am



1 OVERHEAD CABLE TRAY SUPPORTS
SCALE:NTS

OHW A

1. 14P-C103 (MAIN-SG - SG-OC)
2. 1C-C001 (SG-OC TO SG-MAIN)
3. SPARE

OHW B

1. 14P-C103
2. 1C-C001, 1C-C002, 1C-C010
3. 14P-C057 (SG-OC TO OC-MCP)
4. 14P-CO51 (SG-OC TO GR-MCP)
5. SPARE

OHW C

1. 1C-C002, 1C-C010
2. SPARE
3. 14P-C057 (SG-OC TO OC-MCP)
4. 14P-CO51 (SG-OC TO GR-MCP)

OHW E

1. 14P-C056 (SG-OC TO EX-MCC-A)
2. 23C-C001, 15C-C001
3. 14P-C058 (SG-OC TO MCC-DW)
4. 14P-C052 (SG-OC TO REUSE PS)
5. SPARE

OHW F

1. 14P-C056 (SG-OC TO EX-MCC-A)
2. 23C-C001 (PLC-A TO PLC-IH) ⚠1
3. SPARE

OHW O

1. 5P-C030
2. 5P-C031
3. 5P-C032
4. 11C-C005, 11C-C007, 11C-C009 ⚠1
5. 5C-C009, 5C-C011
6. 5C-C010, 5C-C012
7. 5P-C019
8. 5P-C020
9. 11C-C001, 12C-C001
10. SPARE

NOTES:

1. TYPICAL OH MOUNTING STRUCTURE SHOWN. CONTRACTOR SHALL UTILIZE BASED ON APPLICATION AND SPACING REQUIREMENTS. SUBMIT LOADING AND DESIGN CALCULATION.
2. DIMENSIONS SHOWN ARE APPROXIMATIONS. DESIGN SUPPORTS AS REQUIRED FOR TERRAIN AND OBSTRUCTIONS. SUPPORTS SHALL BE MAXIMUM 10' APART.
3. FABRICATE STRUCTURE WITH ALUM 6 x 4.03 FOR DUAL SUPPORTS AND 8 x 5.79 FOR SINGLE SUPPORTS MINIMUM, WITH 12" x 12" x 5/8" BASE PLATES . ALL SUPPORTS SHALL BE WELDED SEPARATE WIREWAY WITH 1-5/8" SST UNI-STRUT.
4. COAT ALL ALUMINUM COMPONENTS THAT ARE IN CONTACT WITH CONCRETE.
5. REFER TO SECTION 16/14 FOR CABLE TRAY. ALL CONDUCTORS INSTALLED OVERHEAD SHALL BE IN CONDUIT OR CABLE TRAY.
6. SECTIONS INDICATE THREE LEVELS OF CABLE TRAY.PROVIDE AS REQUIRED, INCLUDE 20% SPARE SPACE.

GEORGIA No. PE028093 PROFESSIONAL TIMOTHY L. HARTWELL 11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
⚠1	ADDENDUM No.4	11/13/20

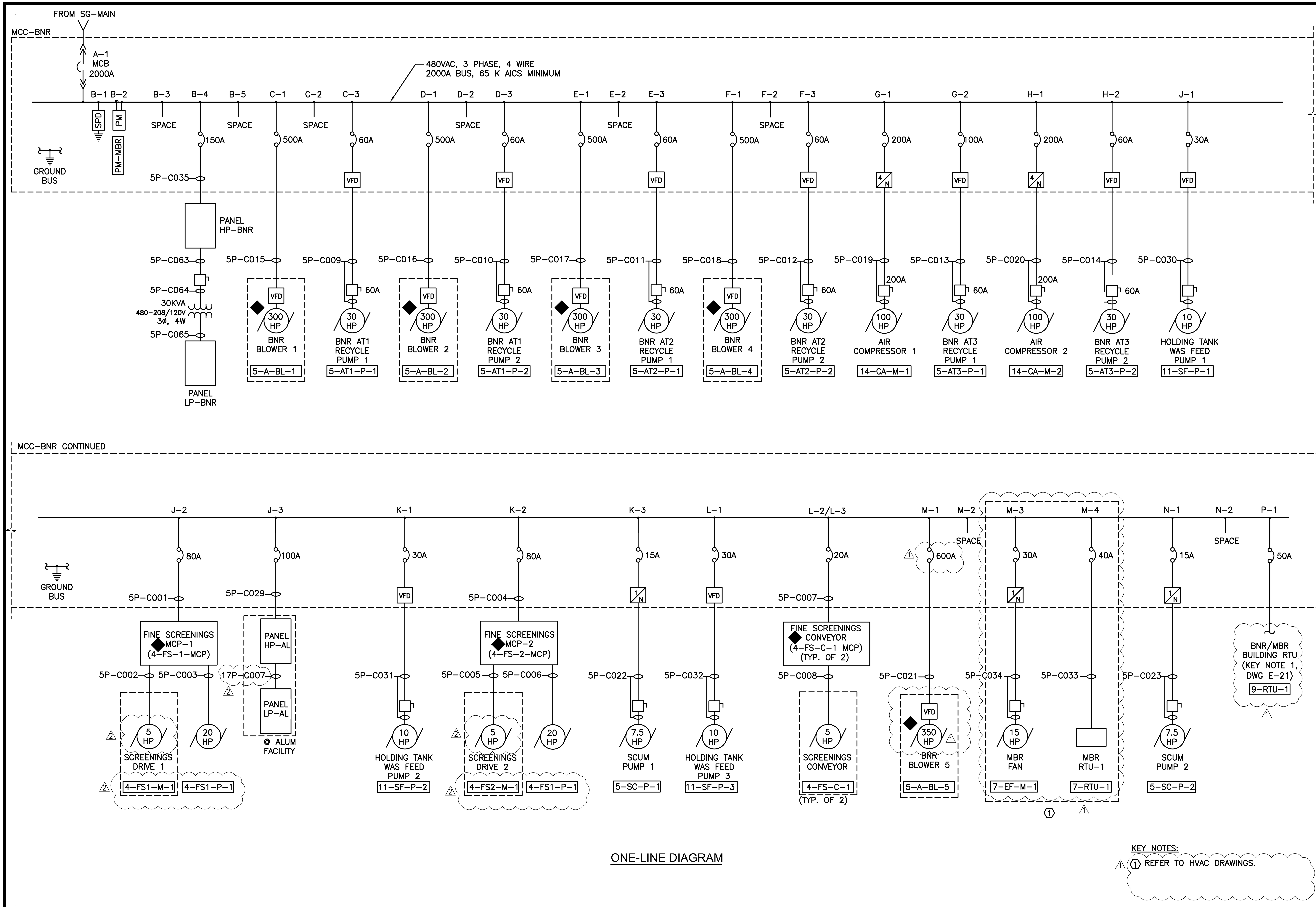
PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

ELECTRICAL
OVERHEAD RACEWAY

SHEET NO.
E-12

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 — E-12.DWG Tab: E-12 Plotted: November 13, 2020 6:30am



ONE-LINE DIAGRAM

KEY NOTES:
1 REFER TO HVAC DRAWINGS.

GEORGIA
No. PE028093
PROFESSIONAL
TIMOTHY L. HARTWELL
11/13/2020

ATKINS
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

	REVISION	DATE
1	ADDENDUM No.3	10/30/20
2	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MCC-BNR
ONE-LINE DIAGRAM

SHEET NO.
E-20

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 — E-20.DWG|Tab: E-20|Plotted: November 13, 2020 6:17am

PANEL HP-BNR1

480/277V, 3 PHASE, 4 WIRES, 42 CKTS
150A MAIN CIRCUIT BREAKER
SECTION 1 OF 2

FEED FROM: MCC-BNR — LOCATION: BNR ELECTRICAL ROOM

CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	3	100	15	AT1 OX-1 AIR VALVE 1	5-AT1-V-1
2	3	100	50	PANEL LP-BNR (30 KVA XFMR)	
3	-	-	-	AT1 OX-1 AIR VALVE 1	
4	-	-	-	PANEL LP-BNR (30 KVA XFMR)	
5	-	-	-	AT1 OX-1 AIR VALVE 1	
6	-	-	-	PANEL LP-BNR (30 KVA XFMR)	
7	3	100	15	AT1 OX-1 AIR VALVE 2	5-AT1-V-2
8	3	100	15	AT1 OX-2 AIR VALVE 3	5-AT1-V-3
9	-	-	-	AT1 OX-1 AIR VALVE 2	
10	-	-	-	AT1 OX-2 AIR VALVE 3	
11	-	-	-	AT1 OX-1 AIR VALVE 2	
12	-	-	-	AT1 OX-2 AIR VALVE 3	
13	3	100	15	AT1 OX-2 AIR VALVE 4	5-AT1-V-4
14	3	100	15	SPARE	
15	-	-	-	AT1 OX-2 AIR VALVE 4	
16	-	-	-	SPARE	
17	-	-	-	AT1 OX-2 AIR VALVE 4	
18	-	-	-	SPARE	
19	3	100	15	SPARE	
20	3	100	15	SPARE	
21	-	-	-	SPARE	
22	-	-	-	SPARE	
23	-	-	-	SPARE	
24	-	-	-	SPARE	
25	3	100	15	AT2 OX-1 AIR VALVE 1	5-AT2-V-1
26	3	100	15	AT2 OX-1 AIR VALVE 2	5-AT2-V-2
27	-	-	-	AT2 OX-1 AIR VALVE 1	
28	-	-	-	AT2 OX-1 AIR VALVE 2	
29	-	-	-	AT2 OX-1 AIR VALVE 1	
30	-	-	-	AT2 OX-1 AIR VALVE 2	
31	3	100	15	AT2 OX-2 AIR VALVE 3	5-AT2-V-3
32	3	100	15	AT2 OX-2 AIR VALVE 4	5-AT2-V-4
33	-	-	-	AT2 OX-2 AIR VALVE 3	
34	-	-	-	AT2 OX-2 AIR VALVE 4	
35	-	-	-	AT2 OX-2 AIR VALVE 3	
36	-	-	-	AT2 OX-2 AIR VALVE 4	
37	3	100	20	SPARE	
38	3	100	20	SPARE	
39	-	-	-	SPARE	
40	-	-	-	SPARE	
41	-	-	-	SPARE	
42	-	-	-	SPARE	

PANEL HP-BNR2

480/277V, 3 PHASE, 4 WIRES, 42 CKTS
150A MAIN CIRCUIT BREAKER
SECTION 2 OF 2

FEED FROM: MCC-BNR — LOCATION: BNR ELECTRICAL ROOM

CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	SITE LIGHTS	
2	3	100	15	AT3 OX-1 AIR VALVE 1	5-AT3-V-1
3	1	-	20	SITE LIGHTS	
4	-	-	-	AT3 OX-1 AIR VALVE 1	
5	1	-	20	SITE LIGHTS	
6	-	-	-	AT3 OX-1 AIR VALVE 1	
7	3	100	15	AT3 OX-1 AIR VALVE 2	5-AT3-V-2
8	3	100	15	AT3 OX-2 AIR VALVE 3	5-AT3-V-3
9	-	-	-	AT3 OX-1 AIR VALVE 2	
10	-	-	-	AT3 OX-2 AIR VALVE 3	
11	-	-	-	AT3 OX-1 AIR VALVE 2	
12	-	-	-	AT3 OX-2 AIR VALVE 3	
13	3	100	15	AT3 OX-2 AIR VALVE 4	5-AT3-V-4
14	3	100	15	SPARE	
15	-	-	-	AT3 OX-2 AIR VALVE 4	
16	-	-	-	SPARE	
17	-	-	-	AT3 OX-2 AIR VALVE 4	
18	-	-	-	SPARE	
19	3	100	15	SPARE	
20	3	100	20	GATE OPERATOR	
21	-	-	-	SPARE	
22	-	-	-	GATE OPERATOR	
23	-	-	-	SPARE	
24	-	-	-	GATE OPERATOR	
25	3	100	15	SCUM PW VALVE	5-PW-V-1
26	3	100	15	SPARE	
27	-	-	-	SCUM PW VALVE	
28	-	-	-	SPARE	
29	-	-	-	SCUM PW VALVE	
30	-	-	-	SPARE	
31	3	100	15	FINE INF. SCREEN SLUICE GATE 1	4-IFS-SG-1
32	3	100	15	FINE INF. SCREEN SLUICE GATE 2	4-IFS-SG-2
33	-	-	-	FINE INF. SCREEN SLUICE GATE 1	
34	-	-	-	FINE INF. SCREEN SLUICE GATE 2	
35	-	-	-	FINE INF. SCREEN SLUICE GATE 1	
36	-	-	-	FINE INF. SCREEN SLUICE GATE 2	
37	3	100	15	EFF. CHANNEL SLUICE GATE 1	5-EAT-SG-1
38	3	100	15	INF. CHANNEL SLUICE GATE 1	5-IAT-SG-1
39	-	-	-	EFF. CHANNEL SLUICE GATE 1	
40	-	-	-	INF. CHANNEL SLUICE GATE 1	
41	-	-	-	EFF. CHANNEL SLUICE GATE 1	
42	-	-	-	INF. CHANNEL SLUICE GATE 1	

PANEL LP-BNR

208/120V, 3 PHASE, 4 WIRES, 42 CKTS
100A MAIN CIRCUIT BREAKER

FEED FROM: HP-DW 30KVA XFMR — LOCATION: BNR ELECTRICAL ROOM

CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	LIGHTING INTERIOR	
2	1	100	20	RECEPTACLE INTERIOR	
3	1	100	15	AT1 DO-1 & 2 XMTR	5-AT1-DO-1&2
4	1	100	15	AT1 ORP 1 XMTR	5-AT1-ORP-1
5	1	100	15	AT1 DO 3 & 4 XMTR	5-AT1-DO-3&4
6	1	100	20	MBR MCP	7-MBR-MCP
7	1	100	20	BASIN 1 LIGHTING	
8	1	100	20	BASIN 2 LIGHTING	
9	1	100	20	BASIN 3 LIGHTING	
10	1	100	15	AT1 RECYCLE FLOW METER 5	5-AT1-F-5
11	1	100	15	AT1 RECYCLE FLOW METER 6	5-AT1-F-6
12	1	100	20	AT1, AT2, & AT3 MIXING VALVE 1	14-CA-VM-1
13	1	100	15	AT2 DO-1 & 2 XMTR	5-AT2-DO-1&2
14	1	100	15	AT2 ORP 1 XMTR	5-AT2-ORP-1
15	1	100	15	AT2 DO 3 & 4 XMTR	5-AT2-DO-3&4
16	1	100	20	FINE SCREENINGS LIGHTING	
17	1	100	20	FINE SCREENINGS RECEPTACLES	
18	1	100	20	BASIN RECEPTACLES	
19	1	100	20	BASIN RECEPTACLES	
20	1	100	15	AT2 RECYCLE FLOW METER 5	5-AT2-F-5
21	1	100	15	AT2 RECYCLE FLOW METER 6	5-AT2-F-6
22	1	100	15	SPARE	
23	1	100	15	AT3 DO-1 & 2	5-AT3-DO-1&2
24	1	100	15	AT3 ORP 1 XMTR	5-AT3-ORP-1
25	1	100	15	AT3 DO 3 & 4 XMTR	5-AT3-DO-3&4
26	1	100	20	HEAT TRACE	
27	1	100	20	HEAT TRACE	
28	1	100	20	HEAT TRACE	
29	1	100	20	14-CA-VM-1	
30	1	100	15	AT3 RECYCLE FLOW METER 5	5-AT3-F-5
31	1	100	15	AT3 RECYCLE FLOW METER 6	5-AT3-F-6
32	1	100	20	PLC-BNR	
33	1	100	30	PLC-BNR1	
34	1	100	30	RIO-BNR2	
35-42	1	100	20	SPARE	

PANEL HP-MBR

(1) 480/277V, 3 PHASE, 4 WIRES, 42 CKTS
150A MAIN CIRCUIT BREAKER

FEED FROM: MCC-MBR — LOCATION: MBR FACILITY

CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	3	100	60	MBR CIP SYSTEM	7-CIP-S-1
2	3	100	50	PANEL LP-MBR (30 KVA XFMR)	MBR-XFMR
3	-	-	-	MBR CIP SYSTEM	
4	-	-	-	PANEL LP-MBR (30 KVA XFMR)	
5	-	-	-	MBR CIP SYSTEM	
6	-	-	-	PANEL LP-MBR (30 KVA XFMR)	
7	3	100	20	SPARE	
8	3	100	15	MBR COMPRESSOR MCP	
9	-	-	-	SPARE	
10	-	-	-	MBR COMPRESSOR	
11	-	-	-	SPARE	
12	-	-	-	MBR COMPRESSOR	
13	3	100	15	MBR DYER	7-DRYER
14	3	100	20	SPARE	
15	-	-	-	MBR DYER	
16	-	-	-	SPARE	
17	-	-	-	MBR DYER	
18	-	-	-	SPARE	
19	3	100	20	SPARE	
20	3	100	20	SPARE	
21	-	-	-	SPARE	
22	-	-	-	SPARE	
23	-	-	-	SPARE	
24	-	-	-	SPARE	
25					
26					
27					
28					
29-42					

PANEL LP-MBR

(1) 208/120V, 3 PHASE, 4 WIRES, 30 CKTS
50A MAIN CIRCUIT BREAKER

FEED FROM: HP-MBR 30KVA XFMR — LOCATION: MBR FACILITY

CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	BLOWER ROOM LIGHTING	
2	1	100	20	BLOWER ROOM RECEPTACLES	
3	1	100	20	MBR SYSTEM CONTROLS	
4	1	100	20	7-MBR-RIO-1	
5	1	100	20	7-MBR-RIO-2	
6	1	100	15	7-MBR-RIO-3	
7	1	100	15	7-MBR-RIO-4	
8	1	100	20	MBR MAIN CONTROL PANEL	MBR MCP
9	1	100	20	HEAT TRACE	
10	1	100	20	SUMP PUMP	
11	1	100	20	PIPE GALLERY LIGHTING	
12	1	100	20	PIPE GALLERY RECEPTACLES	
13	1	100	20	PUMP ROOM LIGHTING	
14	1	100	20	PUMP ROOM RECEPTACLES	
15	1	100	20	CHEMICAL ROOM LIGHTING	
16	1	100	20	CHEMICAL ROOM RECEPTACLES	
17	1	100	20	OUTDOOR LIGHTING	
18	1	100	20	HEAT TRACE	
19	1	100	20	HEAT TRACE	
20	1	100	20	MBR BUILDING EXHAUST FAN EF-2	7-EF-M-2
21	1	100	20	SPARE	
22	1	100	20	SPARE	
23	1	100	20	SPARE	
24	1	100	20	SPARE	
25	1	100	20	SPARE	
26	-	-	-		
27	-	-	-		
28	-	-	-		
29	-	-	-		
30	-	-	-		

PANEL LP-OC

208/120V, 3 PHASE, 4 WIRES, 12 CKTS (POWER ZONE)
100A MAIN CIRCUIT BREAKER

FEED FROM: SG-OC — LOCATION: SG-OC

CKT #	POLE	FRAME	TRIP	NAMEPLATE	EQUIPMENT ID
1	1	100	20	LIGHTING	
2	1	100	20	RECEPTACLE	
3	1	100	20	SG-OC CONTROLS	
4	1	100	20	PLC-OC (WITH SWITCHBOARD)	
5	1	100	20	PLC-IH	
6	1	100	20	HEAT TRACE	22-SB-HT-1
7	1	100	20	HEAT TRACE	22-SB-HT-2
8	1	100	20	SPARE	
9	1	100	20	SPARE	
10	1	100	20	SPARE	
11	1	100	20	SPARE	
12	1	100	20	SPARE	

KEY NOTES:

(1) PANELS SHALL BE INSTALLED IN NEMA 4X SST ENCLOSURES. FOR EXTERIOR, WET, OR CORROSIVE LOCATIONS.

(2) LP–MSG PROVIDED WITH SWITCHGEAR PROVIDE CIRCUITS SHOWN FOR EXTERIOR OF GEAR. ALL EQUIPMENT PROVIDED WITH GEAR TO BE POWERED.

(3) GRINDER PUMP STATION IS ADJACENT TO ADMINISTRATION BUILDING. PROVIDE 1"/(3)–#8+#10GND TO PUMP STATION.

(4) PROVIDE 1"/(3)–#12+#12GND TO GATE OPERATOR AT SOUTH AND EAST FENCE GATES. REFER TO RISER DIAGRAM DWG I–9.

NOTES:

1. LIGHTING WIRES/CONDUITS ARE NOT SHOWN ON WIRE/CONDUIT SCHEDULE. AS A MINIMUM PROVIDE (2)–#10+#10GND FOR LIGHTING CIRCUITS. LIGHTING WIRE SIZE AND CONDUIT SHALL BE SET BY NEC WITH VOLTAGE DROP AND POWER CONSUMPTION.
2. PROVIDE ¾c/(3)–#12+#12GND FOR EACH 20AMP (OR LESS) 3 PHASE CIRCUIT FROM PANELBOARDS TO EQUIPMENT. PROVIDE ¾c/(2)–#12+#12GND FOR EACH 20 AMP (OR LESS) 1 PHASE CIRCUIT FROM PANELBOARD TO EQUIPMENT, UNLESS DEFINED OTHERWISE IN CONDUIT AND WIRE SCHEDULE.
3. FOR OUTDOOR POLE LIGHTS PROVIDE RECEPTACLES AT THE POLE LIGHTS ON SEPARATE CIRCUIT FROM THE LIGHTS. PROVIDE ¾" CONDUIT WITH (4)#12+#12EGC FOR OUTDOOR POLE LIGHT AND RECEPTACLE CIRCUITS.
4. ALL CIRCUIT BREAKERS FEEDING HEAT TRACE SHALL BE GFCI.
5. FOR NEMA 4X EXTERIOR MOUNTED RIO OR PLC CABINETS PROVIDE 30 AMP CIRCUIT BREAKER WITH ¾"(2)–#10+#10EGC.

GEORGIA No. PE028093 PROFESSIONAL TIMOTHY L HARTWELL 11/13/2020

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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION #PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

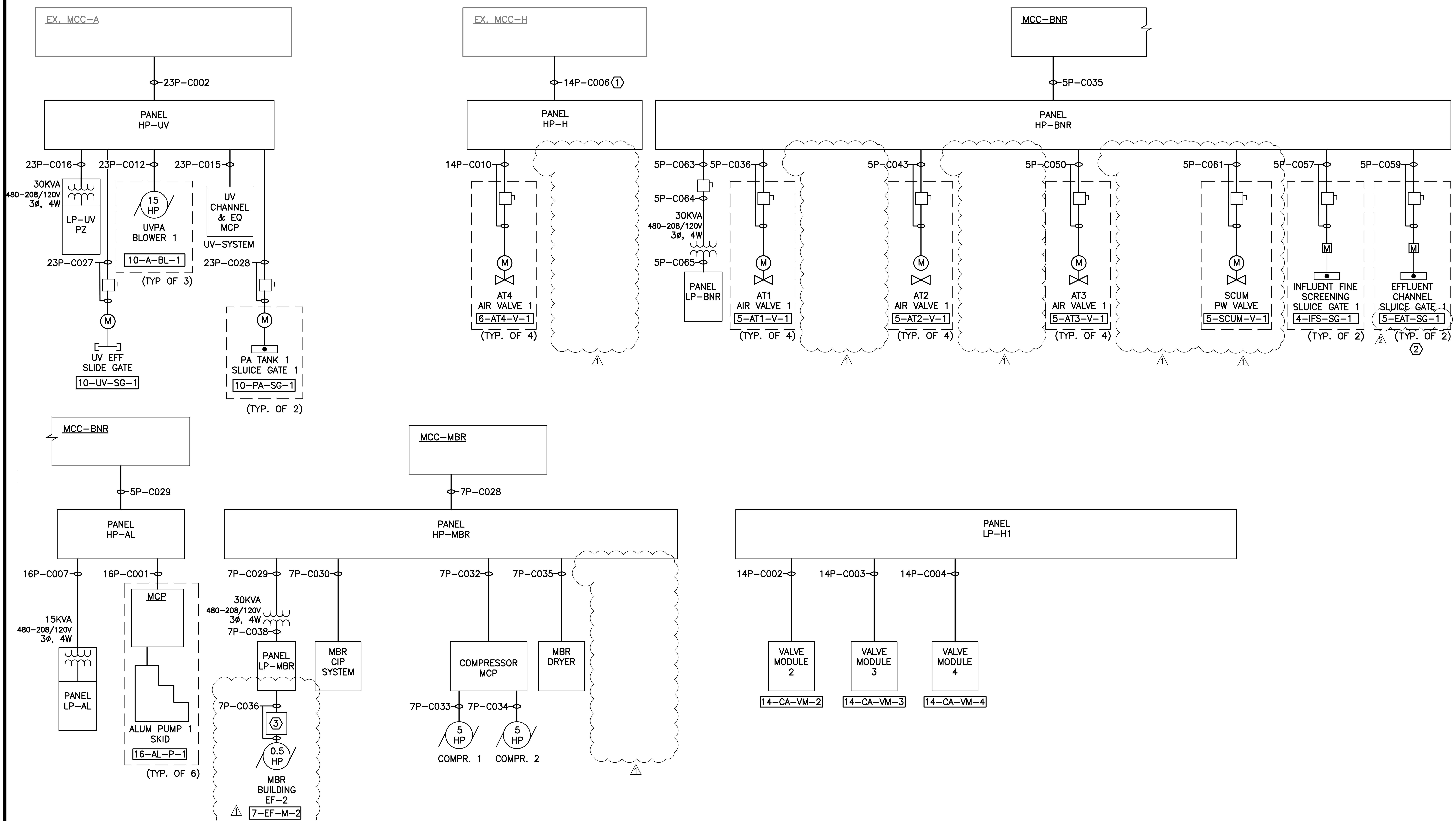
	REVISION	DATE
3	ADDENDUM No.3	10/30/20
4	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PANELBOARD SCHEDULE 2

SHEET NO.
E-29



KEY NOTES:

1. WIRE OR CONNECT TO MCC-H BUS AS REQUIRED.
2. TYPICAL FOR INFLUENT CHANNEL SLUICE GATE 1 5-IAT-SG-1.
3. PROVIDE INLINE THERMOSTAT FOR THE FAN.

NOTES:

1. FOR TYPICAL FEEDERS SHOWN, REFER TO CONDUIT/WIRE SCHEDULE FOR NUMBERING. NOT ALL CIRCUITS SHOWN, REFER TO CONDUIT AND WIRE SCHEDULES.

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DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

POWER RISER DIAGRAMS 1

SHEET NO.
E-31

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 – E-31.DWGTab:E-31Plotted: November 13, 2020 6:47am

FEEDER SCHEDULE - POWER

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
SG-OC (GRIT REMOVAL SYSTEM)				
1P-C001	1-GR MCP	EX 1-GR-1 TB	1"	(6) #12 + (2) #12 EGC (1)
1P-C002	EX 1-GR-1 TB	1-GR1-M-1	3/4"	(3) #12 + (1) #12 EGC
1P-C003	EX 1-GR-1 TB	1-GR1-M-2	3/4"	(3) #12 + (1) #12 EGC
1P-C004	1-GR MCP	1-GR2-M-1	3/4"	(3) #12 + (1) #12 EGC
1P-C005	1-GR MCP	1-GR2-M-2	3/4"	(3) #12 + (1) #12 EGC
1P-C006	1-GR MCP	EX 1-GR-1 TB	3/4"	(4) #10 + (2) #10 EGC (2)
1P-C007	EX 1-GR-1 TB	EX 1-GR-C-1 LCP	3/4"	(2) #10 + (1) #10 EGC
1P-C008	EX 1-GR-1 TB	EX 1-GR1-VP-1 PNL	3/4"	(2) #10 + (1) #10 EGC
1P-C009	1-GR MCP	1-GR2-VP-1 PNL	3/4"	(2) #10 + (1) #10 EGC
MCC-BNR (BNR FACILITY)				
5P-C001	MCC-BNR	4-FS-1 MCP	1-1/4"	(4) #4 + (1) #3 EGC
5P-C002	4-FS-1 MCP	4-FS1-M-1	3/4"	(3) #12 + (1) #12 EGC
5P-C003	4-FS-1 MCP	4-FS1-P-1	1"	(3) #8 + (1) #10 EGC
5P-C004	MCC-BNR	4-FS-2 MCP	1-1/4"	(4) #4 + (1) #3 EGC
5P-C005	4-FS-2 MCP	4-FS2-M-1	3/4"	(3) #12 + (1) #12 EGC
5P-C006	4-FS-2 MCP	4-FS2-P-1	1"	(3) #8 + (1) #10 EGC
5P-C007	MCC-BNR	4-FS-C-MCP	3/4"	(4) #12 + (1) #12 EGC (TYP. OF 2)
5P-C008	4-FS-C-MCP	4-FS-C-1	3/4"	(3) #12 + (1) #12 EGC (TYP. OF 2)
5P-C009	MCC-BNR	5-AT1-P-1	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C010	MCC-BNR	5-AT1-P-2	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C011	MCC-BNR	5-AT2-P-1	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C012	MCC-BNR	5-AT2-P-2	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C013	MCC-BNR	5-AT3-P-1	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C014	MCC-BNR	5-AT3-P-2	1"	(3) #8 + (1) #10 EGC+(2)#14
5P-C015	MCC-BNR	5-A-BL-1	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C016	MCC-BNR	5-A-BL-2	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C017	MCC-BNR	5-A-BL-3	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C018	MCC-BNR	5-A-BL-4	4"	(3) 600 KCMIL + (1) #2 EGC
5P-C019	MCC-BNR	14-CA-M-1	1-1/4"	(3) #1/0 + (1) #3 EGC
5P-C020	MCC-BNR	14-CA-M-2	1-1/4"	(3) #1/0 + (1) #3 EGC
5P-C021	MCC-BNR	5-A-BL-5	2 SETS OF 3"	(3) 300 KCMIL + (1) #1 EGC
5P-C022	NOT USED	-	-	-
5P-C023	NOT USED	-	-	-
5P-C024	NOT USED	-	-	-
5P-C025	NOT USED	-	-	-
5P-C026	NOT USED	-	-	-
5P-C027	NOT USED	-	-	-
5P-C028	NOT USED	-	-	-
5P-C029	MCC-BNR	PANEL HP-AL	1-1/4"	(4) #3 + (1) #8 EGC
5P-C030	MCC-BNR	11-WAS-P-1	1"	(3) #8 + (1) #10 EGC
5P-C031	MCC-BNR	11-WAS-P-2	1"	(3) #8 + (1) #10 EGC
5P-C032	MCC-BNR	11-WAS-P-3	1"	(3) #8 + (1) #10 EGC
5P-C033	MCC-BNR	7-RTU-1	1-1/2"	(3) #6 + (1) #8 EGC
5P-C034	MCC-BNR	7-EF-M-1	1"	(3) #10 + (1) #10 EGC
5P-C035	MCC-BNR	HP-BNR	1-1/4"	(4) 1/0 + (1) #6 EGC
5P-C036	HP-BNR	5-AT1-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C037	HP-BNR	5-AT1-V-2	3/4"	(3) #12 + (1) #12 EGC
5P-C038	HP-BNR	5-AT1-V-3	3/4"	(3) #12 + (1) #12 EGC
5P-C039	HP-BNR	5-AT1-V-4	3/4"	(3) #12 + (1) #12 EGC
5P-C040	HP-BNR	5-AT1-V-5	3/4"	(3) #12 + (1) #12 EGC
5P-C041	HP-BNR	5-AT1-V-6	3/4"	(3) #12 + (1) #12 EGC
5P-C042	NOT USED	-	-	-
5P-C043	HP-BNR	5-AT2-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C044	HP-BNR	5-AT2-V-2	3/4"	(3) #12 + (1) #12 EGC
5P-C045	HP-BNR	5-AT2-V-3	3/4"	(3) #12 + (1) #12 EGC
5P-C046	HP-BNR	5-AT2-V-4	3/4"	(3) #12 + (1) #12 EGC
5P-C047	HP-BNR	5-AT2-V-5	3/4"	(3) #12 + (1) #12 EGC
5P-C048	HP-BNR	5-AT2-V-6	3/4"	(3) #12 + (1) #12 EGC

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
MCC-BNR (BNR FACILITY) CONTINUED				
5P-C049	NOT USED	-	-	-
5P-C050	HP-BNR	5-AT3-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C051	HP-BNR	5-AT3-V-2	3/4"	(3) #12 + (1) #12 EGC
5P-C052	HP-BNR	5-AT3-V-3	3/4"	(3) #12 + (1) #12 EGC
5P-C053	HP-BNR	5-AT3-V-4	3/4"	(3) #12 + (1) #12 EGC
5P-C054	HP-BNR	5-AT3-V-5	3/4"	(3) #12 + (1) #12 EGC
5P-C055	HP-BNR	5-AT3-V-6	3/4"	(3) #12 + (1) #12 EGC
5P-C056	NOT USED	-	-	-
5P-C057	HP-BNR	4-IFS-SG-1	3/4"	(3) #12 + (1) #12 EGC
5P-C058	HP-BNR	4-IFS-SG-2	3/4"	(3) #12 + (1) #12 EGC
5P-C059	HP-BNR	5-EAT-SG-1	3/4"	(3) #12 + (1) #12 EGC
5P-C060	HP-BNR	5-IAT-SG-1	3/4"	(3) #12 + (1) #12 EGC
5P-C061	HP-BNR	5-PW-V-1	3/4"	(3) #12 + (1) #12 EGC
5P-C062	NOT USED	-	-	-
5P-C063	HP-BNR	XFMR DS	1"	(3) #8 + (1) #10 EGC
5P-C064	XFMR DS	LP-BNR via 30 KVA XFMR	1"	(3) #8 + (1) #10 EGC
5P-C065	LP-BNR - 30 KVA XFMR	LP-BNR	1-1/4"	(4) #3 + (1) #8 EBJ
5P-C066	LP-BNR	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
5P-C067	LP-BNR	RECEPTACLES	3/4"	(2) #12 + (1) #12 EGC
5P-C068	LP-BNR	PLC-BNR	3/4"	(2) #12 + (1) #12 EGC
5P-C069	LP-BNR	RIO-BNR2	3/4"	(2) #10 + (1) #12 EGC
5P-C070	LP-BNR	5-AT1-DO/ORP-1	3/4"	(2) #12 + (1) #12 EGC
5P-C071	LP-BNR	5-AT1-ORP-2	3/4"	(2) #12 + (1) #12 EGC
5P-C072	LP-BNR	5-AT1-DO-2&3	3/4"	(2) #12 + (1) #12 EGC
5P-C073	LP-BNR	PLC-BNR	-	-
5P-C074	LP-BNR	7-MBR-MCP	-	-
5P-C075	LP-BNR	RIO-BNR2	-	-
5P-C076	NOT USED	-	-	-
5P-C077	LP-BNR	5-AT1-F-5	3/4"	(2) #12 + (1) #12 EGC
5P-C078	LP-BNR	5-AT1-F-6	3/4"	(2) #12 + (1) #12 EGC
5P-C079	NOT USED	-	-	-
5P-C080	LP-BNR	5-AT2-DO/ORP-1	3/4"	(2) #12 + (1) #12 EGC
5P-C081	LP-BNR	5-AT2-ORP-2	3/4"	(2) #12 + (1) #12 EGC
5P-C082	LP-BNR	5-AT2-DO-2&3	3/4"	(2) #12 + (1) #12 EGC
5P-C083	NOT USED	-	-	-
5P-C084	NOT USED	-	-	-
5P-C085	NOT USED	-	-	-
5P-C086	NOT USED	-	-	-
5P-C087	LP-BNR	5-AT2-F-5	3/4"	(2) #12 + (1) #12 EGC
5P-C088	LP-BNR	5-AT2-F-6	3/4"	(2) #12 + (1) #12 EGC
5P-C089	NOT USED	-	-	-
5P-C090	LP-BNR	5-AT3-DO/ORP-1	3/4"	(2) #12 + (1) #12 EGC
5P-C091	LP-BNR	5-AT3-ORP-2	3/4"	(2) #12 + (1) #12 EGC
5P-C092	LP-BNR	5-AT3-DO-2&3	3/4"	(2) #12 + (1) #12 EGC
5P-C093	NOT USED	-	-	-
5P-C094	NOT USED	-	-	-
5P-C095	NOT USED	-	-	-
5P-C096	NOT USED	-	-	-
5P-C097	LP-BNR	5-AT3-F-5	3/4"	(2) #12 + (1) #12 EGC
5P-C098	LP-BNR	5-AT3-F-6	3/4"	(2) #12 + (1) #12 EGC
5P-C099	NOT USED	-	-	-
5P-C100	LP-BNR	14-CA-VM-1	3/4"	(2) #10 + (1) #10 EGC
MCC-MBR (MEMBRANE BUILDING)				
7P-C001	MCC-MBR	7-TK-BL-1	1"	(3) #4 + (1) #8 EGC
7P-C002	MCC-MBR	7-TK-BL-2	1"	(3) #4 + (1) #8 EGC
7P-C003	MCC-MBR	7-TK-BL-3	1"	(3) #4 + (1) #8 EGC
7P-C004	MCC-MBR	7-TK-BL-4	1"	(3) #4 + (1) #8 EGC
7P-C005	MCC-MBR	7-TK-BL-5	1"	(3) #4 + (1) #8 EGC

KEY NOTES:

(1) INCLUDE CONDUIT WIRES IP-C002 & IP-C003.

(2) INCLUDE CONDUIT WIRES IP-C007 & IP-C008.

GEORGIA No. PE028093 PROFESSIONAL TIMOTHY L. HARTWELL 11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
3	ADDENDUM No.3	10/30/20
4	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CONDUIT AND WIRE SCHEDULE
POWER 1

SHEET NO.
E-33

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 – E-33.DWG Tab: E-33 Plotted: November 13, 2020 6:47am

FEEDER SCHEDULE - POWER

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
MCC-MBR (MEMBRANE BUILDING) CONTINUED				
7P-C006	MCC-MBR	7-RAS-P-1	3/4"	(3) #8 + (1) #10 EGC
7P-C007	MCC-MBR	7-RAS-P-2	3/4"	(3) #8 + (1) #10 EGC
7P-C008	MCC-MBR	7-RAS-P-3	3/4"	(3) #8 + (1) #10 EGC
7P-C009	MCC-MBR	7-RAS-P-4	3/4"	(3) #8 + (1) #10 EGC
7P-C010	MCC-MBR	7-PR-P-1	1"	(3) #6 + (1) #8 EGC
7P-C011	MCC-MBR	7-PR-P-2	1"	(3) #6 + (1) #8 EGC
7P-C012	MCC-MBR	7-PR-P-3	1"	(3) #6 + (1) #8 EGC
7P-C013	MCC-MBR	7-PR-P-4	1"	(3) #6 + (1) #8 EGC
7P-C014	MCC-MBR	7-CA-P-1	3/4"	(3) #12 + (1) #12 EGC
7P-C015	MCC-MBR	7-CA-P-2	3/4"	(3) #12 + (1) #12 EGC
7P-C016	MCC-MBR	7-SHC-P-1	3/4"	(3) #12 + (1) #12 EGC
7P-C017	MCC-MBR	7-SHC-P-2	3/4"	(3) #12 + (1) #12 EGC
7P-C018	MCC-MBR	7-EF-M-1	3/4"	(3) #12 + (1) #12 EGC
7P-C019	MCC-MBR	7-SF-M-1	3/4"	(3) #12 + (1) #12 EGC
7P-C020	MCC-BNR	7-AC-M-1	3/4"	(3) #12 + (1) #12 EGC
7P-C021	MCC-BNR	7-AC-M-2	3/4"	(3) #12 + (1) #12 EGC
7P-C022	MCC-BNR	7-TK-V-1	3/4"	(3) #12 + (1) #12 EGC
7P-C023	MCC-BNR	7-TK-V-2	3/4"	(3) #12 + (1) #12 EGC
7P-C024	MCC-BNR	7-TK-V-3	3/4"	(3) #12 + (1) #12 EGC
7P-C025	MCC-BNR	7-TK-V-4	3/4"	(3) #12 + (1) #12 EGC
7P-C026	MCC-BNR	7-TK-V-5	3/4"	(3) #12 + (1) #12 EGC
7P-C027	MCC-BNR	7-TK-V-6	3/4"	(3) #12 + (1) #12 EGC
7P-C028	MCC-MBR	HP-MBR	1-1/2"	(4) 1/0 + (1) #6 EGC
7P-C029	HP-MBR	30 KVA TRANSFORMER 1	1"	(3) #8 + (1) #10 EGC
7P-C030	HP-MBR	CIP SYSTEM	3/4"	(3) #12 + (1) #12 EGC
7P-C031	LP-MBR	MBR MAIN CONTROL PANEL	3/4"	(2) #12 + (1) #12 EGC
7P-C032	HP-MBR	COMPRESSOR MCP	1"	(3) #4 + (1) #8 EGC
7P-C033	COMPRESSOR MCP	COMPRESSOR 1	3/4"	(3) #12 + (1) #12 EGC
7P-C034	COMPRESSOR MCP	COMPRESSOR 2	3/4"	(3) #12 + (1) #12 EGC
7P-C035	HP-MBR	DRYER	3/4"	(3) #12 + (1) #12 EGC
7P-C036	LP-MBR	7-EF-M-2	3/4"	(2) #12 + (1) #12 EGC 1
7P-C037	NOT USED	-	-	-
7P-C038	30 KVA TRANSFORMER	LP-MBR	1-1/4"	(4) #3 + (1) #8 EBJ
7P-C039	LP-MBR	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
7P-C040	LP-MBR	RECEPTACLES	3/4"	(2) #12 + (1) #12 EGC
7P-C041	LP-MBR	CONTROLS	3/4"	(2) #12 + (1) #12 EGC
WAS HOLDING AND REUSE PUMPS				
11P-C001	Ex REUSE PUMP CTR PNL	EX 11-RP-P-1	2 1/2"	(3) 4/0 + (1) #2 EGC
11P-C002	Ex REUSE PUMP CTR PNL	EX 11-RP-P-2	2 1/2"	(3) 4/0 + (1) #2 EGC
11P-C003	Ex REUSE PUMP CTR PNL	EX 11-RP-HP-1	3/4"	(3) #12 + (1) #12 EGC
11P-C004	Ex REUSE PUMP CTR PNL	EX 11-RP-RV-1	3/4"	(3) #12 + (1) #12 EGC
11P-C005	Ex LP-RP	EX 11-RP-F-1	3/4"	(2) #12 + (1) #12 EGC
11P-C006	Ex LP-RP	EX 11-RP-RV-1 (HEATER)	3/4"	(2) #10 + (1) #10 EGC
11P-C007	Ex LP-RP	EX RECEPTACLES	3/4"	(2) #12 + (1) #10 EGC
11P-C008	Ex LP-RP	EX LIGHTS	3/4"	(2) #12 + (1) #10 EGC
EX. MCC-H				
14P-C001	LP-H1	14-CA-VM-2	3/4"	(2) #10 + (1) #10 EGC
14P-C002	LP-H1	14-CA-VM-3	3/4"	(2) #10 + (1) #10 EGC
14P-C003	LP-H1	14-CA-VM-4	3/4"	(2) #10 + (1) #10 EGC
14P-C004	MCC-H	6-AT4-P-1	3/4"	(3) #8 + (1) #10 EGC
14P-C005	MCC-H	6-AT4-P-2	3/4"	(3) #8 + (1) #10 EGC
14P-C006	MCC-H	PANEL HP-H	1-1/2"	(4) 1/0 + (1) #6 EGC
14P-C007	MCC-H	11-WAS-BL-1	2"	(3) 250 KCMIL + (1) #4 EGC
14P-C008	MCC-H	11-WAS-BL-2	2"	(3) 250 KCMIL + (1) #4 EGC
14P-C009	MCC-H	11-WAS-BL-3	2"	(3) 250 KCMIL + (1) #4 EGC
14P-C010	PANEL HP-H	6-AT4-V-1	3/4"	(3) #12 + (1) #12 EGC
14P-C011	PANEL HP-H	6-AT4-V-2	3/4"	(3) #12 + (1) #12 EGC
14P-C012	PANEL HP-H	6-AT4-V-3	3/4"	(3) #12 + (1) #12 EGC
14P-C013	PANEL HP-H	6-AT4-V-4	3/4"	(3) #12 + (1) #12 EGC

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
EX. MCC-H CONTINUED				
14P-C014	NOT USED	-	-	- 1
14P-C015	NOT USED	-	-	-
14P-C016	LP-H1	PLC-H	3/4"	(4) #10 + (1) #10 EGC
14P-C017	PANEL HP-H	12-AD-V-6	3/4"	(3) #12 + (1) #12 EGC
14P-C018	PANEL HP-H	12-AD-V-7	3/4"	(3) #12 + (1) #12 EGC
14P-C019	PANEL HP-H	12-AD-V-8	3/4"	(3) #12 + (1) #12 EGC
14P-C020	PANEL HP-H	12-AD-V-9	3/4"	(3) #12 + (1) #12 EGC
14P-C021	EX. LP-H	6-AT4-DO-1/2	3/4"	(2) #12 + (1) #12 EGC
14P-C022	EX. LP-H	6-AT4-DO-3/4	3/4"	(2) #12+ (1) #12 EGC
14P-C021	PANEL HP-H	LP-H1	1-1/2"	(4) #3 + (1) #8 EBJ
14P-C022	LP-H1	RIO-BNR1	3/4"	(4) #10+ (1) #10 EGC
14P-C023	LP-H1	14-CA MCP	3/4"	(2) #10 + (1) #10 EGC
14P-C024	LP-H1	6-AT4-ORP-1	3/4"	(2) #12 + (1) #12 EGC
14P-C025	LP-H1	6-AT4-DO-1&2	3/4"	(2) #12 + (1) #12 EGC
14P-C026	LP-H1	6-AT4-DO-3&4	3/4"	(2) #12 + (1) #12 EGC
14P-C027	LP-H1	6-AT4-F-5	3/4"	(2) #12 + (1) #12 EGC
14P-C028	LP-H1	6-AT4-F-6	3/4"	(2) #12 + (1) #12 EGC
14P-C030	LP-H1	11-WT-L-1	3/4"	(2) #12 + (1) #12 EGC
14P-C031	EX LP-H	12-AD-L-1	3/4"	(2) #12 + (1) #12 EGC
14P-C032	EX LP-H	12-AD-L-2	3/4"	(2) #12 + (1) #12 EGC
14P-C033	LP-H1	12-AD-DO-1A & B	3/4"	(2) #12 + (1) #12 EGC
14P-C034	LP-H1	12-AD-DO-2A & B	3/4"	(2) #12 + (1) #12 EGC
14P-C035	LP-H1	11-WAS-SP-1	3/4"	(2) #12 + (1) #12 EGC
SG-OC (AT ODOR CONTROL AREA)				
14P-C051	SG-OC	NEW GRIT CONTROL PANEL	1"	(4) #6 + (1) #10 EGC
14P-C052	SG-OC	REUSE PS CONTROL PANEL	4"	(3) 600kcmil + (1) #3 EGC
14P-C053	NOT USED	-	-	-
14P-C054	NOT USED	-	-	-
14P-C055	NOT USED	-	-	-
14P-C056	SG-OC	EX MCC-A	5 SETS of 4"	(4) 600kcmil + (1) 250 kcmil
14P-C057	SG-OC	18-OC-1 MCP	1-1/4"	(3) #3 + (1) #8 EGC
14P-C058	SG-OC	MCC-DW	4 SETS of 4"	(4) 600kcmil + (1) 250 kcmil
14P-C059	SG-OC	Panel LP-OC 30kva XFMR (PWR ZONE)	1"	(3) #3 + (1) #8 EGC
14P-C060	Panel LP-OC POWER ZONE	PLC-OC (1-OC-MCP)	3/4"	(2) #12 + (1) #12 EGC
14P-C061	Panel LP-OC POWER ZONE	PLC-IH	3/4"	(4) #10 + (1) #10 EGC
14P-C062	Panel LP-OC POWER ZONE	SG-OC CONTROLS	3/4"	(2) #12 + (1) #12 EGC
14P-C063	Panel LP-OC POWER ZONE	LIGHTING	3/4"	(2) #12 + (1) #12 EGC
14P-C064	Panel LP-OC POWER ZONE	RECEPTACLE	3/4"	(2) #12 + (1) #12 EGC
14P-C065	Panel LP-OC POWER ZONE	HEAT TRACE	3/4"	(2) #12 + (1) #12 EGC
14P-C066	Panel LP-OC POWER ZONE	HEAT TRACE	3/4"	(2) #12 + (1) #12 EGC
SG-MAIN (AT PLANT ENTRANCE)				
14P-C101	GA POWER TRANSFORMER 1	MAIN SWITCH GEAR (SG-MAIN)	11 SETS of 4"	(4) 600 kcmil + 500 kcmil EGC
14P-C102	GA POWER TRANSFORMER 2	MAIN SWITCH GEAR (SG-MAIN)	11 SETS of 4"	(4) 600 kcmil + 500 kcmil EGC
14P-C103	MAIN SWITCH GEAR (SG-MAIN)	SG-OC	11 SETS of 4"	(4) 600 kcmil + (1) 500 kcmil EGC
14P-C104	MAIN SWITCH GEAR (SG-MAIN)	MCC-MBR	3 SETS of 4"	(4) 600 kcmil + (1) 250 kcmil EGC
14P-C105	MAIN SWITCH GEAR (SG-MAIN)	MCC-BNR	5 SETS of 4"	(4) 600 kcmil + (1) 250 kcmil EGC
14P-C106	MAIN SWITCH GEAR	CONTROL BUILDING	4"	(4) 500 kcmil + (1) #3 EGC
14P-C107	LP-MSG	PLC-MSG	3/4"	(2) #12 + (1) #12 EGC
14P-C108	LP-MSG	PLC-MMSG	3/4"	(2) #12 + (1) #12 EGC
MCC-DW (DEWATERING BUILDING)				
15P-C001	MCC-DW	12-AD-BL-1	2"	(3) 250 KCMIL + (1) #4 EGC
15P-C002	MCC-DW	12-AD-BL-2	2"	(3) 250 KCMIL + (1) #4 EGC
15P-C003	MCC-DW	15-RDT-1-MCP	3/4"	(3) #10 + (1) #10 EGC
15P-C004	15-RDT-1-MCP	15-RDT1-MX-1	3/4"	(3) #12 + (1) #12 EGC
15P-C005	15-RDT-1-MCP	15-RDT1-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C006	15-RDT-1-MCP	15-RDT1-D-1	3/4"	(3) #12 + (1) #12 EGC
15P-C007	MCC-DW	15-RDT-2-MCP	3/4"	(3) #10 + (1) #10 EGC
15P-C008	15-RDT-2-MCP	15-RDT2-MX-1	3/4"	(3) #12 + (1) #12 EGC
15P-C009	15-RDT-2-MCP	15-RDT2-P-1	3/4"	(3) #12 + (1) #12 EGC
15P-C010	15-RDT-2-MCP	15-RDT2-D-1	3/4"	(3) #12 + (1) #12 EGC
15P-C011	MCC-DW	12-AD-BL-3	2"	(3) 250 KCMIL + (1) #4 EGC
15P-C012	NOT USED	-	-	- 2

GEORGIA
No. PE028093
PROFESSIONAL
TIMOTHY ... HARTWELL
11/13/2020

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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
1	ADDENDUM No.3	10/30/20
2	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CONDUIT AND WIRE SCHEDULE
POWER 2

SHEET NO.
E-34

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 — E-34.DWGTab: E-34Plotted: November 13, 2020 6:28am

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE	
PLC-IH (GRIT REMOVAL SYSTEM)					
1C-C001	PLC-IH	PLC-MSG	2"	(2)-(6) PAIR-FO CABLE	
1C-C002	PLC-IH	1-GR MCP	2"	(6) PAIR-FO CABLE	
1C-C003	1-GR MCP	EX 1-GR-1 TB	1 1/2"	(20) #14 + (1) #14 EGC	1
1C-C004	EX 1-GR-1 TB	EX 1-GR1-M-2 (START)	3/4"	(4) #14 + (1) #14 EGC	2
1C-C005	EX 1-GR-1 TB	EX 1-GR1-VP-1 LCP	1"	(4) #14 + (1) #14 EGC	3
1C-C006	EX 1-GR-1 TB	EX 1-GR-C-1 LCP	1"	(12) #14 + (1) #14 EGC	
1C-C007	1-GR MCP	1-GR2-VP-1 LCP	3/4"	(4) #14 + (1) #14 EGC	
1C-C008	1-GR2-VP-1 PNL	1-GR2-SV-1	3/4"	(2) #14 + (1) #14 EGC	
1C-C009	1-GR MCP	1-GR2-M-2 (START)	3/4"	(4) #14 + (1) #14 EGC	
1C-C010	PLC-IH (2)	OC-MCP	2"	(6) PAIR-FO CABLE	
RIO-MSG-1 - FINE SCREEN SYSTEM					
4C-C001	PLC-BNR	RIO-BNR2	2"	(6) PAIR-FO CABLE	
4C-C002	RIO-BNR2	4-IFS-SG-1	1"	(12) #14 + (1) #14 EGC	
4C-C003	RIO-BNR2	4-IFS-SG-2	1"	(12) #14 + (1) #14 EGC	
4C-C004	RIO-BNR2	4-FS-1 MCP	1"	(2)-CAT6E CABLE	
4C-C005	4-FS-1 MCP	4-FS-1 LCP	1 1/2"	(26) #14 + (1) #14 EGC	
4C-C006	4-FS-1 MCP	4-FS1-WV-1	3/4"	(6) #14 + (1) #14 EGC	
4C-C007	4-FS-1 MCP	4-FS1-SV-1	3/4"	(4) #14 + (1) #14 EGC	
4C-C008	4-FS-1 MCP	4-FS1-L-1	3/4"	(2)-18TSP	
4C-C009	4-FS1-L-1 (LIT)	4-FS1-L-1 (LE-A)	3/4"	(1) MFR CABLE	
4C-C010	4-FS1-L-1 (LIT)	4-FS1-L-1 (LE-B)	3/4"	(1) MFR CABLE	
4C-C011	4-FS-1-MCP	4-FS-C-1-MCP	3/4"	(4) #14 + (1) #14 EGC	
4C-C012	RIO-BNR2	4-FS-2 MCP	1"	(2)-CAT6E CABLE	
4C-C013	4-FS-2 MCP	4-FS-2 LCP	1 1/2"	(26) #14 + (1) #14 EGC	
4C-C014	4-FS-2 MCP	4-FS2-WV-1	3/4"	(6) #14 + (1) #14 EGC	
4C-C015	4-FS-2 MCP	4-FS2-SV-1	3/4"	(4) #14 + (1) #14 EGC	
4C-C016	4-FS-2 MCP	4-FS2-L-1 (LIT)	3/4"	(2)-18TSP	
4C-C017	4-FS2-L-1 (LIT)	4-FS2-L-1 (LE-A)	3/4"	(1) MFR CABLE	
4C-C018	4-FS2-L-1 (LIT)	4-FS2-L-1 (LE-A)	3/4"	(1) MFR CABLE	
4C-C019	4-FS-2 MCP	4-FS-C-2 MCP	3/4"	(4) #14 + (1) #14 EGC	
4C-C020	NOT USED	-	-	-	
4C-C021	NOT USED	-	-	-	
4C-C022	RIO-BNR2	4-FS-C-1-MCP	3/4"	(6) #14 + (1) #14 EGC	
4C-C023	4-FS-C-1-MCP	4-FS-C-1-LCP	1"	(12) #14 + (1) #14 EGC	4
4C-C024	4-FS-C-1-MCP	4-FS-C-A (E-STOP)	3/4"	(4) #14 + (1) #14 EGC	4
4C-C025	NOT USED	-	-	-	
PLC-BNR					
5C-C001	PLC-MSG	PLC-BNR	2"	2-(6) PAIR - FO CABLE	
5C-C002	RIO-BNR1	14-CA-MCP	2"	(2)-CAT6E CABLE	
5C-C003	14-CA MCP	14-CA-M-1	1"	(10) #14 + (1) #14 EGC	
5C-C004	14-CA MCP	14-CA-M-1	3/4"	(1) - #18 TSP	
5C-C005	14-CA MCP	14-CA-M-2	1"	(10) #14 + (1) #14 EGC	
5C-C006	14-CA MCP	14-CA-M-2	3/4"	(1) - #18 TSP	
5C-C007	14-CA MCP	14-CA-RT-1	3/4"	(2) - #18 TSP	
5C-C008	14-CA MCP	14-CA-DV-1	3/4"	(6) #14 + (1) #14 EGC	
5C-C009	14-CA MCP	14-CA-VM-1	1"	(10) #14 + (1) #14 EGC	
5C-C010	14-CA MCP	14-CA-VM-1	3/4"	(2) - #18 TSP	
5C-C011	14-CA MCP	14-CA-VM-2	3/4"	(8) #14 + (1) #14 EGC	
5C-C012	14-CA MCP	14-CA-VM-2	3/4"	(2) - #18 TSP	
5C-C013	14-CA MCP	14-CA-VM-3	1"	(16) #14 + (1) #14 EGC	
5C-C014	14-CA MCP	14-CA-VM-3	1"	(2) - #18 TSP	
5C-C015	14-CA MCP	14-CA-VM-4	1"	(16) #14 + (1) #14 EGC	
5C-C016	14-CA MCP	14-CA-VM-4	1"	(2) - #18 TSP	
5C-C017	PLC-BNR	5-AT1-SG-1	3/4"	(4) #14 + (1) #14 EGC	
5C-C018	MCC-BNR	5-AT1-P-1 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC	
5C-C019	5-AT1-P-1 (LCP)	5-AT1-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC	
5C-C020	PLC-BNR	AT1 JB1	1"	(3)-#18 TSP	

PLC-BNR CONTINUED

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE	
5C-C021	AT1 JB1	5-AT1-F-6 (FIT)	3/4"	(1)-#18 TSP	
5C-C022	5-AT1-F-6 (FIT)	5-AT1-F-6 (FE)	1"	(1) MFR CABLE	
5C-C023	NOT USED	-	-	-	1
5C-C024	NOT USED	-	-	-	
5C-C025	PLC-BNR	AT1- JB2	1 1/2"	(6)-#18TSP	
5C-C026	PLC-BNR	5-IAT-SG-1	3/4"	(4) #14 + (1) #14 EGC	
5C-C027	AT1- JB2	5-AT1-V-1	3/4"	(2)-#18TSP	
5C-C028	PLC-BNR	8-RAS-L-1	3/4"	(2)-#18TSP	
5C-C029	AT1- JB2	5-AT1-V-2	3/4"	(2)-#18TSP	
5C-C030	AT1- JB2	5-AT1-AIT-1	3/4"	(2)-#18TSP	
5C-C031	5-AT1-AIT-1 (DO1)	5-AT1-DO-1	1"	(1) MFR CABLE	
5C-C032	5-AT1-AIT-1 (DO2)	5-AT1-DO-2	1"	(1) MFR CABLE	
5C-C033	PLC-BNR	AT1 JB3	1"	(12) #14 + (1) #14 EGC	
5C-C034	AT1 JB3	5-AT1-V-1	3/4"	(6) #14 + (1) #14 EGC	
5C-C035	AT1 JB3	5-AT1-V-2	3/4"	(6) #14 + (1) #14 EGC	
5C-C036	MCC-BNR	5-AT1-P-2 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC	
5C-C037	5-AT1-P-2 (LCP)	5-AT1-P-2 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC	
5C-C038	PLC-BNR	AT1 JB4	1"	(3)-#18TSP	
5C-C039	AT1 JB4	5-AT1-F-5 (FIT)	3/4"	(1)-#18TSP	
5C-C040	5-AT1-F-5 (FIT)	5-AT1-F-5 (FE)	1"	(1) MFR CABLE	
5C-C041	NOT USED	-	-	-	1
5C-C042	NOT USED	-	-	-	
5C-C043	PLC-BNR	AT1 JB5	1 1/2"	(4)-#18TSP	
5C-C044	NOT USED	-	-	-	
5C-C045	AT1 JB5	5-AT1-V-3	3/4"	(2)-#18TSP	2
5C-C046	PLC-BNR	5-PW-V-1	1"	(12) #14 + (1) #14 EGC	1
5C-C047	AT1 JB5	5-AT1-V-4	3/4"	(2)-#18TSP	
5C-C048	PLC-BNR	AT1 JB6	1"	(12) #14 + (1) #14 EGC	
5C-C049	AT1 JB6	5-AT1-V-3	3/4"	(6) #14 + (1) #14 EGC	
5C-C050	AT1 JB6	5-AT1-V-4	3/4"	(6) #14 + (1) #14 EGC	
5C-C051	PLC-BNR	AT1 JB7	1"	(3)-#18TSP	
5C-C052	AT1 JB7	5-AT1-ORP-1 (AIT)	3/4"	(1)-#18TSP	
5C-C053	5- AT1-ORP-1 (AIT)	5-AT1-ORP-1 (AE)	1"	(1) MFR CABLE	
5C-C054	AT1 JB7	5-AT1-AIT-2	3/4"	(2)-#18TSP	
5C-C055	5-AT1-AIT-2	5-AT1-DO-3	1"	(1) MFR CABLE	
5C-C056	5-AT1-AIT-2	5-AT1-DO-4	1"	(1) MFR CABLE	
5C-C057	PLC-BNR (1)	5-BNR-TS-1	3/4"	(2) #14 + (1) #14 EGC	
5C-C058	PLC-BNR	5-BNR-TS-2	3/4"	(2) #14 + (1) #14 EGC	
5C-C059	PLC-BNR	5-PW-FS-1	3/4"	(2) #14 + (1) #14 EGC	
5C-C060	MCC BNR	5-SC-PS-1	3/4"	(2) #14 + (1) #14 EGC	
5C-C061	PLC BNR	5-SC-LS-1	3/4"	(2) #14 + (1) #14 EGC	
5C-C062	PLC-BNR	5-AT2-SG-1	3/4"	(4) #14 + (1) #14 EGC	
5C-C063	MCC-BNR	5-AT2-P-1 (LCP)	1 1/2"	(26) #14 + (1) #14 EGC	
5C-C064	5-AT2-P-1 (LCP)	5-AT2-P-1 (CONTROLS)	3/4"	(6) #14 + (1) #14 EGC	
5C-C065	PLC-BNR	AT2 JB1	1"	(3)-#18 TSP	
5C-C066	AT2 JB1	5-AT2-F-6 (FIT)	3/4"	(1)-#18 TSP	
5C-C067	5-AT2-F-6 (FIT)	5-AT2-F-6 (FE)	1"	(1) MFR CABLE	
5C-C068	NOT USED	-	-	-	1
5C-C069	NOT USED	-	-	-	
5C-C070	PLC-BNR	AT2- JB2	1 1/2"	(6)-#18TSP	
5C-C071	PLC BNR	A-RAS-LS-1	3/4"	(2) #14 + (1) #14 EGC	
5C-C072	AT2- JB2	5-AT2-V-1	3/4"	(2)-#18TSP	
5C-C073	MCC BNR	5-SC-PS-2	3/4"	(2) #14 + (1) #14 EGC	1
5C-C074	AT2- JB2	5-AT2-V-2	3/4"	(2)-#18TSP	
5C-C075	AT2- JB2	5-AT2-AIT-1	3/4"	(2)-#18TSP	
5C-C076	5-AT2-AIT-1 (DO1)	5-AT2-DO-1	1"	(1) MFR CABLE	
5C-C077	5-AT2-AIT-1 (DO2)	5-AT2-DO-2	1"	(1) MFR CABLE	

KEY NOTES:

1. INCLUDE CONDUIT WIRES IC-C004, IC-C005, & IC-C006.
2. TO EXISTING SONIC START RELAY AT I-GR1-M-2.
3. TO EXISTING VACUUM PUMP START CIRCUIT.
4. TYPICAL FOR CONVEYOR 2.

GEORGIA No. PE028093 PROFESSIONAL TIMOTHY L HARTWELL 11/13/2020

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
1	ADDENDUM No.3	10/30/20
2	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CONDUIT AND WIRE SCHEDULE
CONTROL 1

SHEET NO.
E-48

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 — E-48.DWGTab: E-48Plotted: November 13, 2020 6:27am

FEEDER SCHEDULE - CONTROL

FEEDER	FROM	TO	CONDUIT SIZE	WIRE SIZE
PLC-DW (DEWATERING BUILDING) CONTINUED				
15C-C201	15-DES-TE-3 (TIT)	15-DES-TE-3 (TE)	3/4"	(1)-#18 TSP
15C-C202	15-DRYER-MCP	15-DES-TE-3 (TE)	3/4"	(1)-#18 TSP
15C-C203	15-DRYER-MCP	15-DES-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C204	15-DRYER-MCP	15-DES-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C205	15-DRYER-MCP	15-DES-TS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C206	15-DRYER-MCP	15-DES-TS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C207	15-DRYER-MCP	15-DES-V-1	3/4"	(10) #14 + (1) #14 EGC
15C-C208	MCC-DW	15-DRYER-MCP	3"	(65) #14 + (1) #14 EGC
15C-C209	MCC-DW	15-DRYER-MCP	3"	(20)-#18 TSP
15C-C210	15-DRYER-MCP	15-AC-T-1	3/4"	(1)-#18 TSP
15C-C211	15-DRYER-MCP	15-NPW-V-5	3/4"	(1)-#18 TSP
15C-C212	15-NPW-F-1 (FIT)	15-NPW-F-1 (FE)	1"	(1) MFR CABLE
15C-C213	15-DRYER-MCP	15-NPW-F-1 (FIT)	3/4"	(1)-#18 TSP
15C-C214	15-DRYER-MCP	15-NPW-T-1	3/4"	(1)-#18 TSP
15C-C215	15-DRYER-MCP	15-NPW-V-6	3/4"	(2) #14 + (1) #14 EGC
15C-C216	15-DRYER-MCP	15-CC-DP-1	3/4"	(1)-#18 TSP
15C-C217	15-DRYER-MCP	15-CC-DP-2	3/4"	(1)-#18 TSP
15C-C218	15-DRYER-MCP	15-CC-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C219	15-DRYER-MCP	15-CC-T-1	3/4"	(1)-#18 TSP
15C-C220	15-DRYER-MCP	15-CC-T-2	3/4"	(1)-#18 TSP
15C-C221	MCC-DW	15-DA-F-1	3/4"	(20) #14 + (1) #14 EGC
15C-C222	MCC-DW	15-V-F-1	3/4"	(20) #14 + (1) #14 EGC
15C-C223	15-DRYER-MCP	15-HE-T-1	3/4"	(1)-#18 TSP
15C-C224	15-DRYER-MCP	15-HE-T-2	3/4"	(1)-#18 TSP
15C-C225	15-DRYER-MCP	15-HE-DP-1	3/4"	(1)-#18 TSP
15C-C226	15-DRYER-MCP	15-HE-DP-2	3/4"	(1)-#18 TSP
15C-C227	15-DRYER-MCP	15-HE-T-4	3/4"	(1)-#18 TSP
15C-C228	15-DRYER-MCP	15-NPW-V-3	3/4"	(2) #14 + (1) #14 EGC
15C-C229	15-DRYER-MCP	15-NPW-PS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C230	15-DRYER-MCP	15-NPW-V-4	3/4"	(2) #14 + (1) #14 EGC
15C-C231	PLC-DW	15-DW-OC-1	1"	(1) - CAT 6E CABLE
15C-C232	15-DW-GM-MCP	15-DW-GT-4 (COMB)	3/4"	(2)-18TSP
15C-C233	15-DW-GM-MCP	15-DW-GT-5 (O2)	3/4"	(2)-18TSP
15C-C234	15-DW-GM-MCP	15-DW-GT-6 (H25)	3/4"	(2)-18TSP
15C-C235	PLC-DW	15-DW-TS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C236	PLC-DW	15-DW-TS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C237	15-DW-GM MCP	15-DW-GT-7 (CO)	3/4"	(2)-#18 TSP
15C-C238	PLC-DW	15-DW-FS-4	3/4"	(2) #14 + (1) #14 EGC
15C-C239	PLC-DW	15-DW-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C240	15-DW-GT MCP	15-DW-GT-7 (CO)	3/4"	(2)-#18 TSP
15C-C241	15-DTB-D-1 (LCP)	15-DTB-D-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C242	15-RDS-M-1 (LCP)	15-RDS-M-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C243	15-DBB-D-1 (LCP)	15-DBB-D-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C244	15-DWZ-F-1 (LCP)	15-DWZ-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C245	15-DWZ-F-2 (LCP)	15-DWZ-F-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C246	15-DEZ-F-1 (LCP)	15-DEZ-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C247	15-DEZ-F-2 (LCP)	15-DEZ-F-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C248	15-DES-M-1 (LCP)	15-DES-M-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C249	15-DA-F-1 (LCP)	15-DA-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C250	15-V-F-1 (LCP)	15-V-F-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C251	MCC-DW	15-DS-P-1 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C252	15-DS-P-1 (LCP)	15-DS-P-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C253	PLC-DW	15-DS-P-1 (TE)	3/4"	(2)-#18 TST
15C-C254	PLC-DW	15-DS-PT-3	3/4"	(2)-#18 TSP
15C-C255	MCC-DW	15-DS-P-2 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C256	15-DS-P-2 (LCP)	15-DS-P-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C257	PLC-DW	15-DS-P-2 (TE)	3/4"	(2)-#18 TST
15C-C258	PLC-DW	15-DS-PT-4	3/4"	(2)-#18 TSP
15C-C259	MCC-DW	15-BBS-M-1 (LCP)	3/4"	(22) #14 + (1) #14 EGC
15C-C260	15-BBS-M-1 (LCP)	15-BBS-M-1 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C261	15-BBS-M-1 (LCP)	15-BBS-M-1 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C262	MCC-DW	15-BBS-M-2 (LCP)	3/4"	(22) #14 + (1) #14 EGC
15C-C263	15-BBS-M-2 (LCP)	15-BBS-M-2 DS	3/4"	(2) #14 + (1) #14 EGC
15C-C264	15-BBS-M-2 (LCP)	15-BBS-M-2 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C265	MCC-DW	15-BLS-M-1 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C266	15-BLS-M-1 (LCP)	15-BLS-M-1 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C267	MCC-DW	15-BLS-M-2 (LCP)	3/4"	(20) #14 + (1) #14 EGC
15C-C268	15-BLS-M-2 (LCP)	15-BLS-M-2 E-STOP	3/4"	(2) #14 + (1) #14 EGC
15C-C269	MCC-DW	15-TO-P-1 (LCP)	3/4"	(18) #14 + (1) #14 EGC
15C-C270	MCC-DW	15-TO-P-2 (LCP)	3/4"	(18) #14 + (1) #14 EGC
15C-C271	MCC-DW	15-TO-F-1 (LCP)	3/4"	(18) #14 + (1) #14 EGC
15C-C272	15-HOPPER-MCP	15-WCB-W-1	3/4"	(2)-#18 TSP
15C-C273	15-HOPPER-MCP	15-WCB-LS-1	3/4"	(2) #14 + (1) #14 EGC
15C-C274	15-HOPPER-MCP	15-WCB-LS-2	3/4"	(2) #14 + (1) #14 EGC
15C-C275	15-HOPPER-MCP	15-WCB-LS-3	3/4"	(2) #14 + (1) #14 EGC
15C-C276	15-HOPPER-MCP	15-WCB-LS-4	3/4"	(2) #14 + (1) #14 EGC
15C-C277	15-HOPPER-MCP	MCC-DW	2"	(64) #14 + (1) #14 EGC
15C-C278	15-HOPPER-MCP	MCC-DW	1-1/2"	(6)-#18 TSP
15C-C279	15-WCB-W-1	15-WCB-W-1 (WE01)	1"	(1)-MFR CABLE
15C-C280	15-WCB-W-1	15-WCB-W-1 (WE02)	1"	(1)-MFR CABLE
15C-C281	15-WCB-W-1	15-WCB-W-1 (WE03)	1"	(1)-MFR CABLE
15C-C282	15-WCB-W-1	15-WCB-W-1 (WE04)	1"	(1)-MFR CABLE
15C-C283	15-WCB-W-1	15-WCB-W-1 (WE05)	1"	(1)-MFR CABLE
15C-C284	15-WCB-W-1	15-WCB-W-1 (WE06)	1"	(1)-MFR CABLE
15C-C285	PLC-DW	15-HOPPER-MCP	1"	(2)-CAT6e CABLE
15C-C286	PLC-DW	MCC-DW	1-1/2"	(28) #14 + (1) #14 EGC
15C-C287	PLC-DW	MCC-DW	1"	(4)-#18 TSP
15C-C288	15-HSOC-MCP	15-OC-NP-1	3/4"	(10) #14 + (1) #14 EGC
15C-C289	15-HSOC-MCP	15-OC-NP-1	3/4"	(2)-#18 TSP
15C-C290	15-HSOC-MCP	15-OC-OF-1	3/4"	(1)-#18 TSP
15C-C291	15-HSOC-MCP	15-OC-OF-2	3/4"	(1)-#18 TSP
15C-C292	15-HSOC-MCP	15-OC-SV-1	3/4"	(4) #14 + (1) #14 EGC
15C-C293	15-DRYER-MCP	15-NPW-SV-1	3/4"	(4) #14 + (1) #14 EGC
15C-C294	PLC-DW	15-CA-M-1	3/4"	(6) #14 + (1) #14 EGC
15C-C295	PLC-DW	15-CA-M-2	3/4"	(6) #14 + (1) #14 EGC
RIO-BNR2 (ALUM PUMP FACILITY)				
17C-C001	RIO-BNR2	17-AL-LCP-1	3/4"	(1)-18TSP
17C-C002	17-AL-LCP-1	17-AL-L-1 (LIT)	1"	(1)-18TSP
17C-C003	RIO-BNR2	17-AL-LCP-2	3/4"	(1)-18TSP
17C-C004	17-AL-LCP-2	17-AL-L-2 (LIT)	1"	(1)-18TSP
17C-C005	RIO-BNR2	17-AL-P-1	3/4"	(2)-18TSP
17C-C006	RIO-BNR2	17-AL-P-1	3/4"	(10) #14 + (1) #14 EGC
17C-C007	RIO-BNR2	17-AL-P-2	3/4"	(2)-18TSP
17C-C008	RIO-BNR2	17-AL-P-2	3/4"	(10) #14 + (1) #14 EGC
17C-C009	RIO-BNR2	17-AL-P-3	3/4"	(2)-18TSP
17C-C010	RIO-BNR2	17-AL-P-3	3/4"	(10) #14 + (1) #14 EGC
17C-C011	RIO-BNR2	17-AL-P-4	3/4"	(2)-18TSP
17C-C012	RIO-BNR2	17-AL-P-4	3/4"	(10) #14 + (1) #14 EGC
17C-C013	RIO-BNR2	17-AL-P-5	3/4"	(2)-18TSP
17C-C014	RIO-BNR2	17-AL-P-5	3/4"	(10) #14 + (1) #14 EGC
17C-C015	RIO-BNR2	17-AL-P-6	3/4"	(2)-18TSP
17C-C016	RIO-BNR2	17-AL-P-6	3/4"	(10) #14 + (1) #14 EGC
17C-C017	RIO-BNR2	17-AL-LS-1	3/4"	(2) #14 + (1) #14 EGC
17C-C018	RIO-BNR2	17-AL-L-1 (LCP)	3/4"	(2) #14 + (1) #14 EGC
17C-C019	RIO-BNR2	17-AL-L-2 (LCP)	3/4"	(2) #14 + (1) #14 EGC
PLC-IH (HEADWORKS) 1				
23C-C001	PLC-A	PLC-IH 1	1-½"	(2)-(6) PAIR - FO CABLE
23C-C002	PLC-A	23-DPS1-CP	1"	(30) #14 + (1) #14 EGC
23C-C003	PLC-A	23-DPS1-CP	1"	(1)-18TSP
23C-C004	23-PS1-P-1-VFD	23-DPS1-CP	1"	(8) #14 + (1) #14 EGC
23C-C005	23-PS1-P-2-VFD	23-DPS1-CP	1"	(8) #14 + (1) #14 EGC
23C-C006	PLC-A	23-PS1-P-1-VFD	1"	(2)-18TSP
23C-C007	PLC-A	23-PS1-P-2-VFD	1"	(2)-18TSP

GEORGIA
No. PE028093
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11/13/2020

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CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

CONDUIT AND WIRE SCHEDULE
CONTROL 7

SHEET NO.
E-54

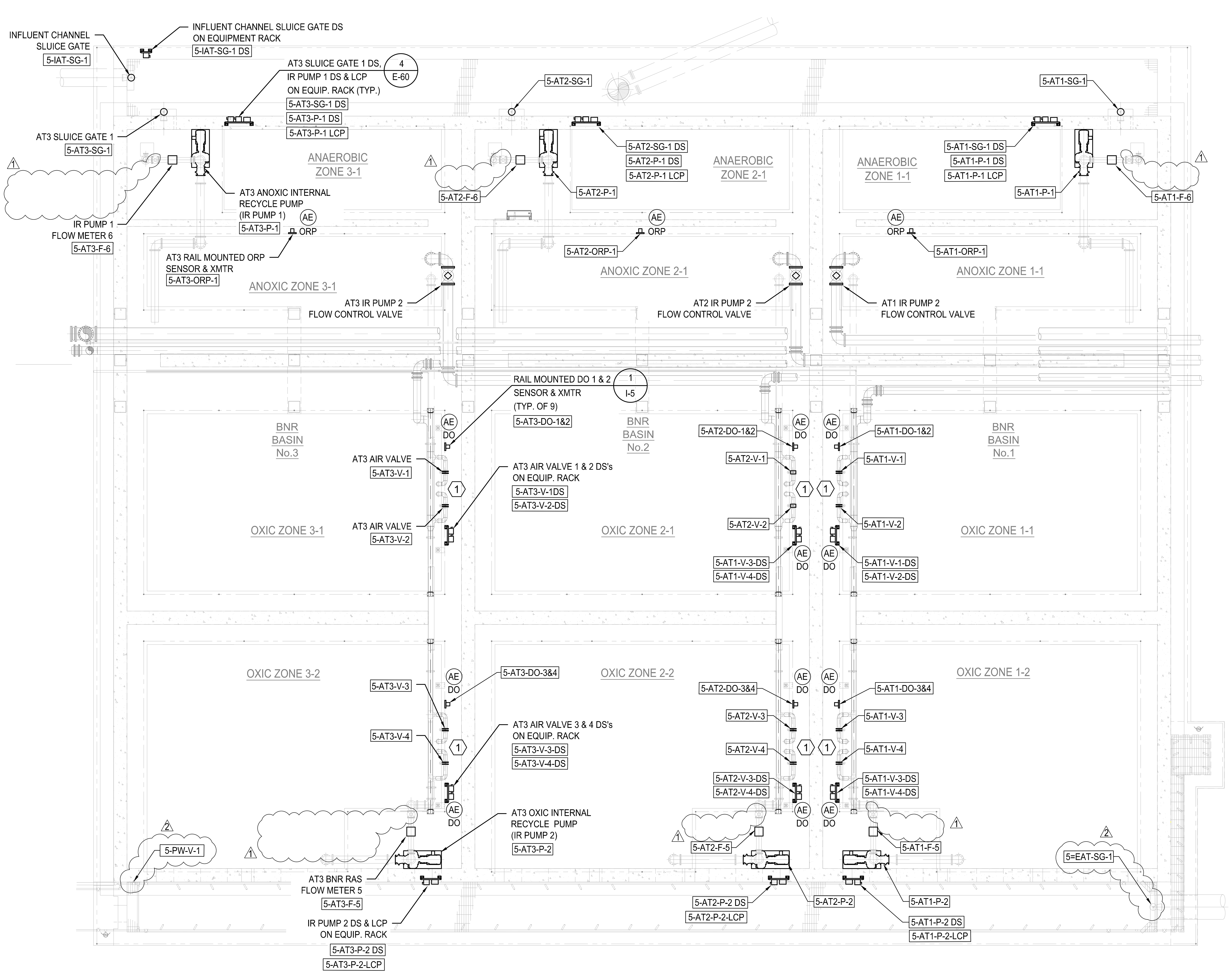
File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1000 — E-54.DWG|Tab: E-54|Plotted: November 13, 2020 6:20am

NOTES:

1. REFER TO DETAILS FOR HANDRAIL MOUNTING.
2. CONDUIT ROUTING SHALL BE ON STRUCTURAL SUPPORTS FOR PIPING. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO MEET NEC REQUIREMENTS.
3. STRUCTURE IS PRECAST, CONDUIT AND SUPPORTS ARE EXPOSED. MOUNT ALL CONDUIT ON WALL AND MOUNT SUPPORTS MINIMUM 18" ABOVE HIGH WATER LEVEL. IF SUPPORTS ARE ABOVE WALKWAYS. MOUNT MIN 96" ABOVE WALKWAY. ANCHORS PENETRATIONS IN STRUCTURES ARE ONLY ALLOWED BY APPROVAL OF PRE-CAST MANUFACTURER.
4. REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
5. PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

KEY NOTES

(1) AIR VALVES LOCATED ON AIR PIPE. REFER TO MECHANICAL DRAWING 5-M-11 FOR LOCATION.



OVERALL UPPER PLAN
SCALE: 1/8"=1'-0"

0 8 16 24
SCALE: 1/8" = 1'-0"

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CERTIFICATE OF AUTHORIZATION #PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
3	ADDENDUM No.3	10/30/20
4	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

BNR BASINS 1-3 ELECTRICAL PLAN

SHEET NO.
5-E-1

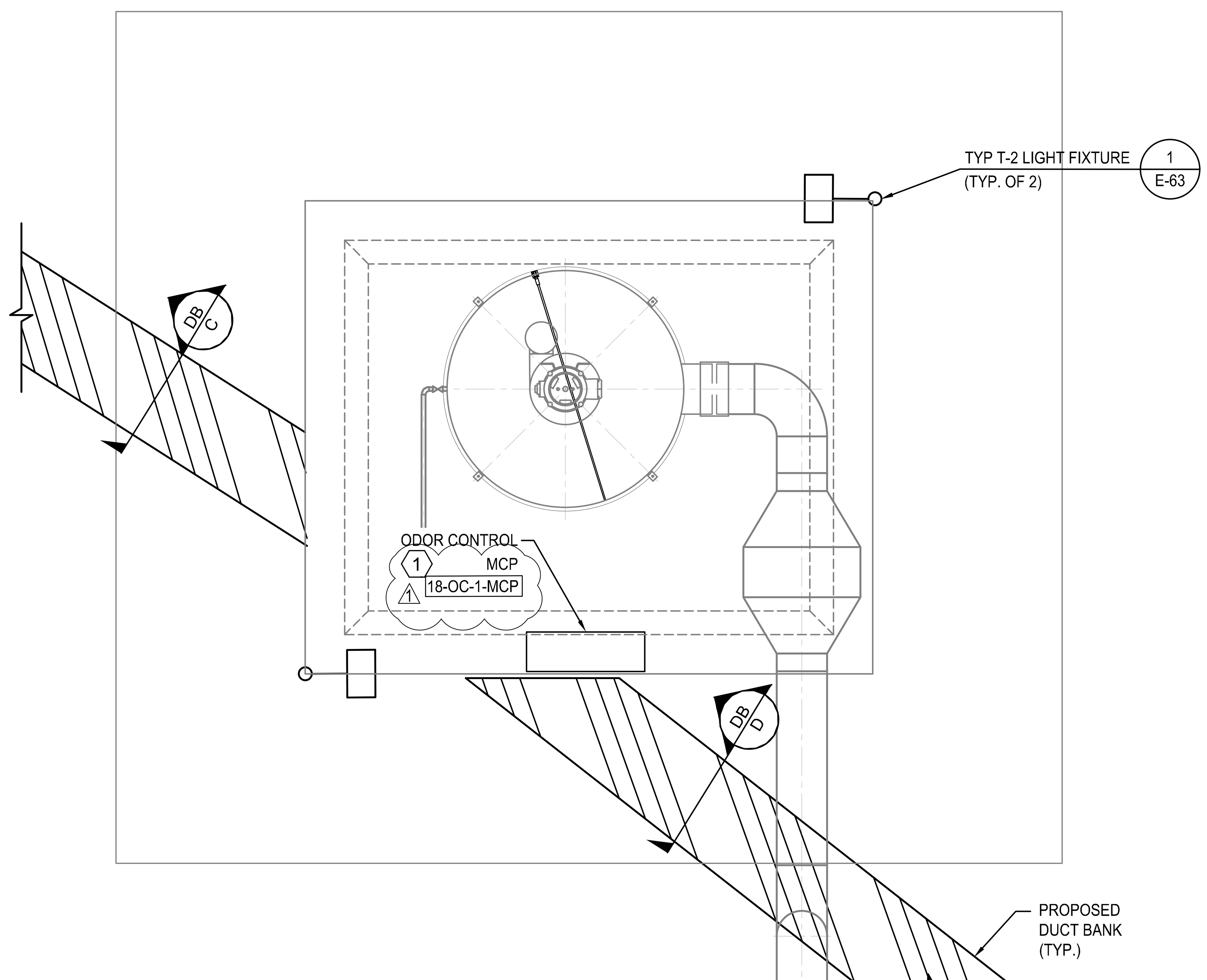
File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1005.01 – 5-E-1.DWG|Tab: 5-E-1|Plotted: November 13, 2020 8:33am

NOTES:

1. REFER TO MECHANICAL DRAWINGS AND SPECIFICATION 15250 - PIPING INSULATION FOR LOCATION AND QUANTITY OF HEAT TRACING REQUIRED.
2. PROVIDE TOGGLE SWITCH FOR TYPE T-2 FIXTURE OPERATION.
3. PROVIDE GROUND LOOP PER DETAIL 4, DRAWING E-59.

KEY NOTES

(1) PROVIDE CONNECTIONS TO ALL ODOR CONTROL EQUIPMENT AS REQUIRED BY THE MANUFACTURER. PROVIDE ALL WIRING AND CONDUIT FOR A COMPLETE SYSTEM.



PLAN
SCALE: 1/2"=1'-0"

0 2 4 6
SCALE: 1/2" = 1'-0"

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CERTIFICATE OF AUTHORIZATION #PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
4	ADDENDUM No.4	11/13/20

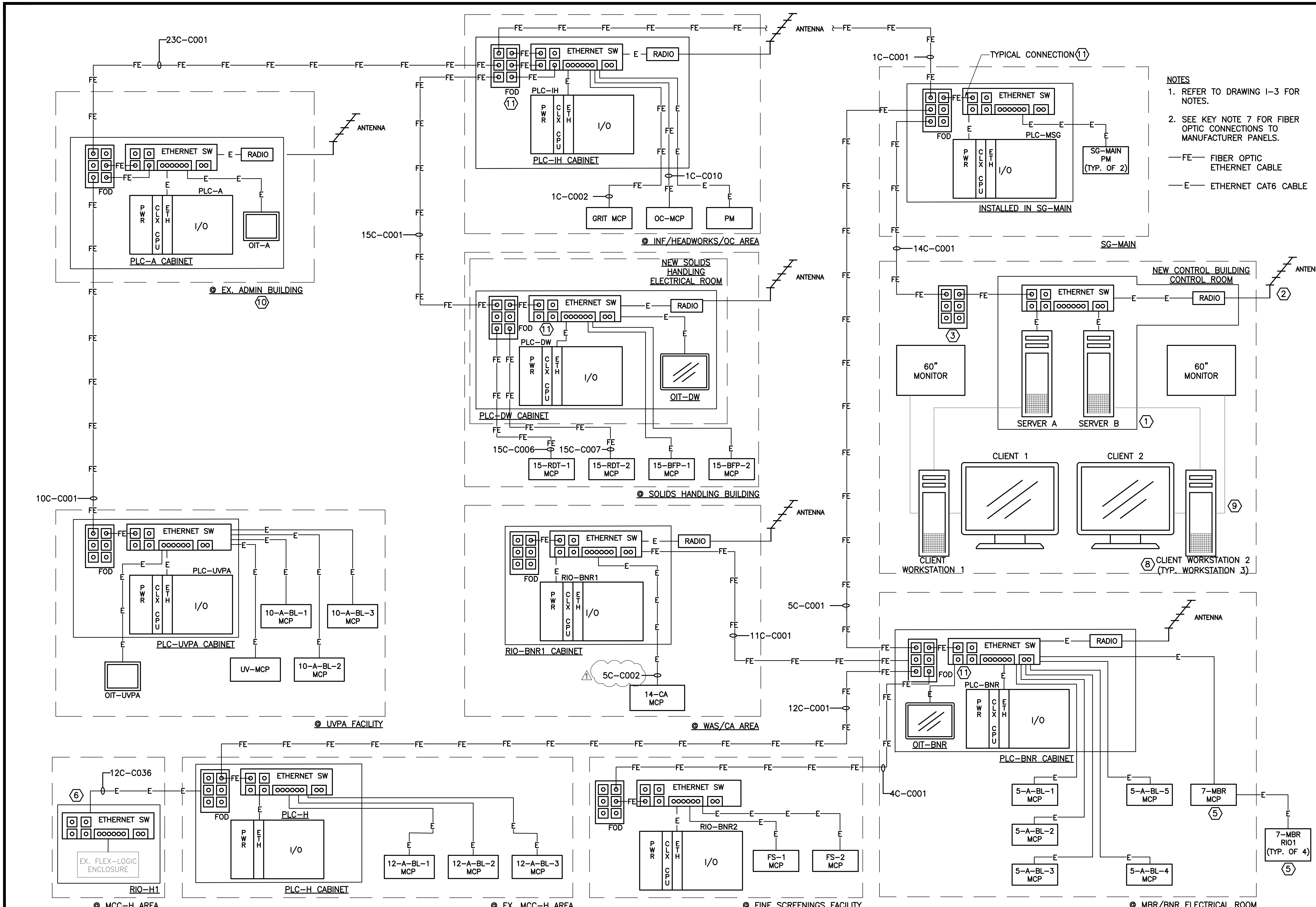
PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

ODOR CONTROL FACILITY ELECTRICAL PLAN

SHEET NO.
18-E-1

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35907\1018.01 – 18-E-1.DWG|Tab: 18-E-1|Plotted: November 13, 2020 6:15am



NOTES

1. REFER TO DRAWING I-3 FOR NOTES.
2. SEE KEY NOTE 7 FOR FIBER OPTIC CONNECTIONS TO MANUFACTURER PANELS.

—FE— FIBER OPTIC ETHERNET CABLE

—E— ETHERNET CAT6 CABLE

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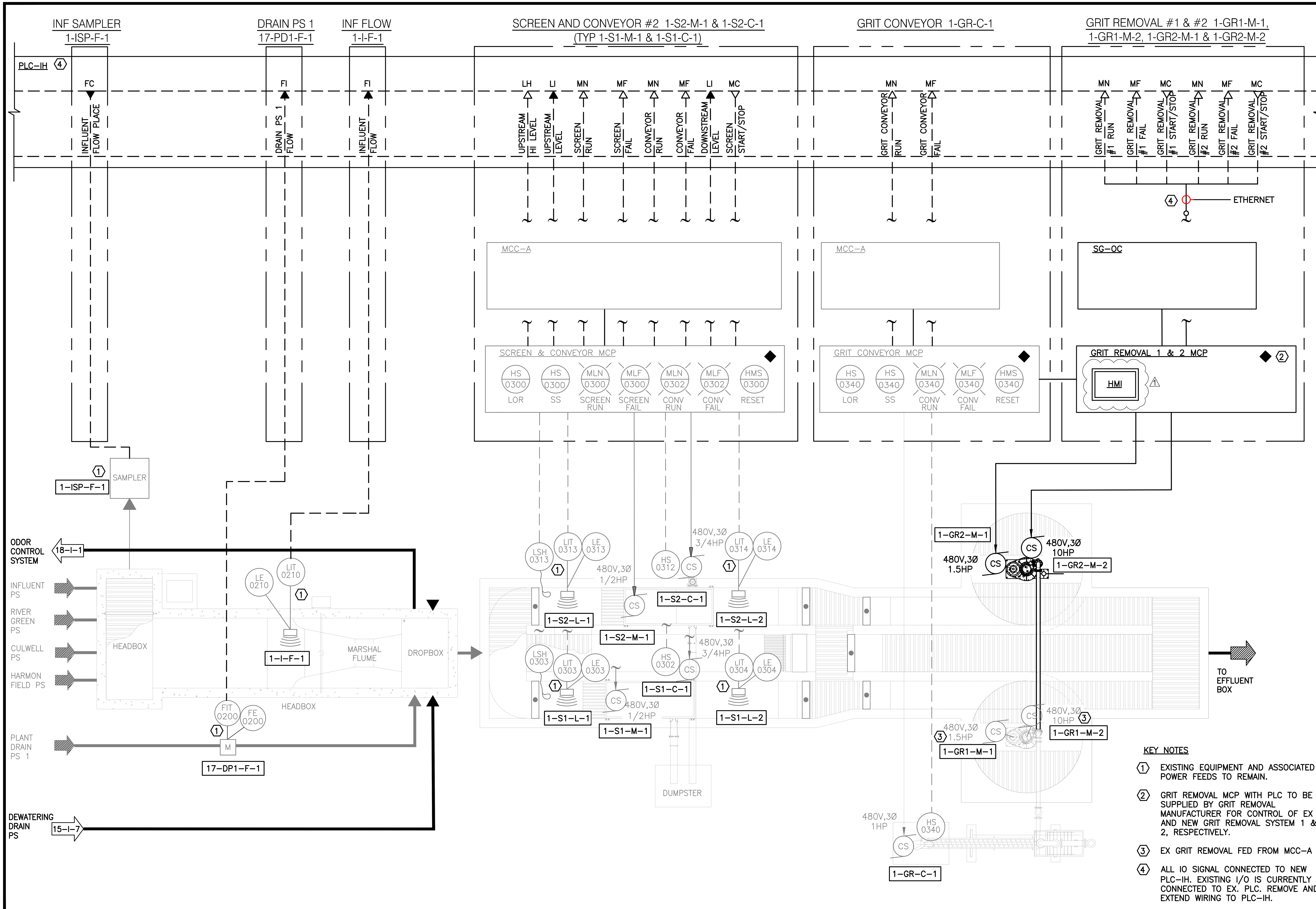
	REVISION	DATE
4	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

PLANT CONTROL SYSTEM (PCS) BLOCK DIAGRAM

SHEET NO.
I-2



INF SAMPLER
1-ISP-F-1
DRAIN PS 1
17-PD1-F-1
INF FLOW
1-I-F-1
SCREEN AND CONVEYOR #2 1-S2-M-1 & 1-S2-C-1
(TYP 1-S1-M-1 & 1-S1-C-1)
GRIT CONVEYOR 1-GR-C-1
GRIT REMOVAL #1 & #2 1-GR1-M-1,
1-GR1-M-2, 1-GR2-M-1 & 1-GR2-M-2
PLC-IH 4
FC
INFLUENT FLOW PLACE
FI
DRAIN PS 1 FLOW
FI
INFLUENT FLOW
LH
UPSTREAM Hi LEVEL
LI
UPSTREAM LEVEL
MN
SCREEN RUN
MF
SCREEN FAIL
MN
CONVEYOR RUN
MF
CONVEYOR FAIL
LI
DOWNSTREAM LEVEL
MC
SCREEN START/STOP
MN
GRIT CONVEYOR RUN
MF
GRIT CONVEYOR FAIL
MN
GRIT REMOVAL #1 RUN
MF
GRIT REMOVAL #1 FAIL
MC
GRIT REMOVAL #1 START/STOP
MN
GRIT REMOVAL #2 RUN
MF
GRIT REMOVAL #2 FAIL
MC
GRIT REMOVAL #2 START/STOP
4 ETHERNET
MCC-A
MCC-A
SG-OC
SCREEN & CONVEYOR MCP
HS 0300 LOR
HS 0300 SS
MLN 0300 SCREEN RUN
MLF 0300 SCREEN FAIL
MLN 0302 CONV RUN
MLF 0302 CONV FAIL
HMS 0300 RESET
GRIT CONVEYOR MCP
HS 0340 LOR
HS 0340 SS
MLN 0340 CONV RUN
MLF 0340 CONV FAIL
HMS 0340 RESET
GRIT REMOVAL 1 & 2 MCP 2
HMI
1
SAMPLER
1-ISP-F-1
ODOR CONTROL SYSTEM
18-I-1
INFLUENT PS
RIVER GREEN PS
CULWELL PS
HARMON FIELD PS
HEADBOX
LE 0210
LIT 0210
1
1-I-F-1
MARSHAL FLUME
DROPBOX
HEADBOX
FIT 0200
FE 0200
1
M
17-DP1-F-1
PLANT DRAIN PS 1
DEWATERING DRAIN PS
15-I-7
LSH 0313
LIT 0313
LE 0313
1
480V,3Ø 1/2HP
1-S2-L-1
CS
1-S2-M-1
HS 0312
CS
480V,3Ø 3/4HP
1-S2-C-1
LIT 0314
LE 0314
1
1-S2-L-2
LSH 0303
LIT 0303
LE 0303
1
1-S1-L-1
CS
480V,3Ø 1/2HP
1-S1-M-1
HS 0302
CS
480V,3Ø 3/4HP
1-S1-C-1
LIT 0304
LE 0304
1
1-S1-L-2
DUMPSTER
1-GR2-M-1
480V,3Ø 1.5HP
CS
CS
480V,3Ø 10HP
1-GR2-M-2
480V,3Ø 10HP 3
CS
1-GR1-M-2
3 480V,3Ø 1.5HP
CS
1-GR1-M-1
480V,3Ø 1HP
HS 0340
CS
1-GR-C-1
TO EFFLUENT BOX

KEY NOTES

1. EXISTING EQUIPMENT AND ASSOCIATED POWER FEEDS TO REMAIN.
2. GRIT REMOVAL MCP WITH PLC TO BE SUPPLIED BY GRIT REMOVAL MANUFACTURER FOR CONTROL OF EX AND NEW GRIT REMOVAL SYSTEM 1 & 2, RESPECTIVELY.
3. EX GRIT REMOVAL FED FROM MCC-A
4. ALL IO SIGNAL CONNECTED TO NEW PLC-IH. EXISTING I/O IS CURRENTLY CONNECTED TO EX. PLC. REMOVE AND EXTEND WIRING TO PLC-IH.

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CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

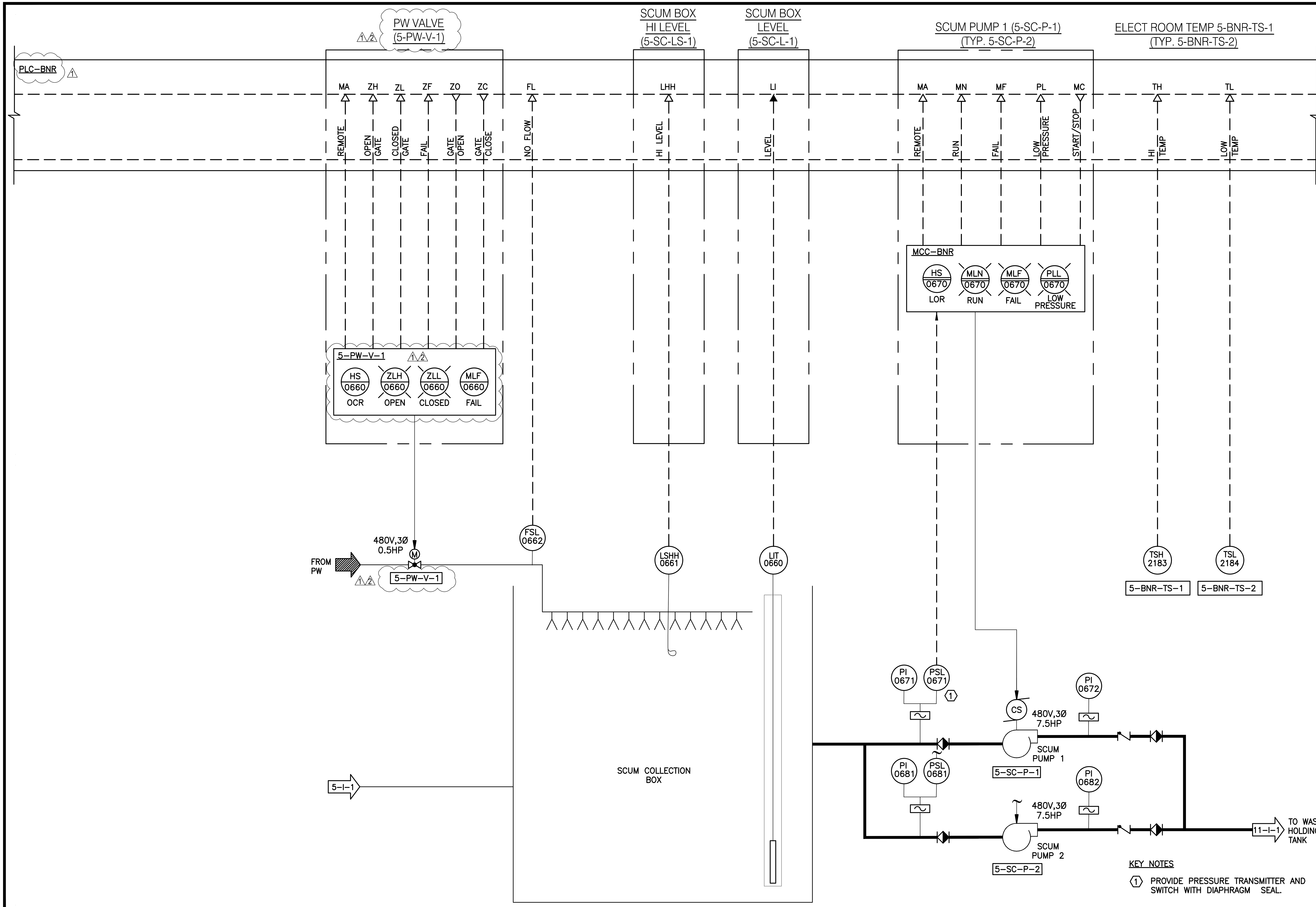
PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: NTS

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

P&ID HEADWORKS

SHEET NO.
1-I-1

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35909\3001.01 — 1-I-1.DWG|Tab:1-I-1|Plotted: November 13, 2020 6:54am



KEY NOTES

1. PROVIDE PRESSURE TRANSMITTER AND SWITCH WITH DIAPHRAGM SEAL.

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CERTIFICATE OF AUTHORIZATION # PEF007823 EXPIRATION DATE: 06/30/2022 HARTWELL ENGINEERING, INC.

	REVISION	DATE
1	ADDENDUM No.3	10/30/20
2	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
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CHECKED BY: TLH
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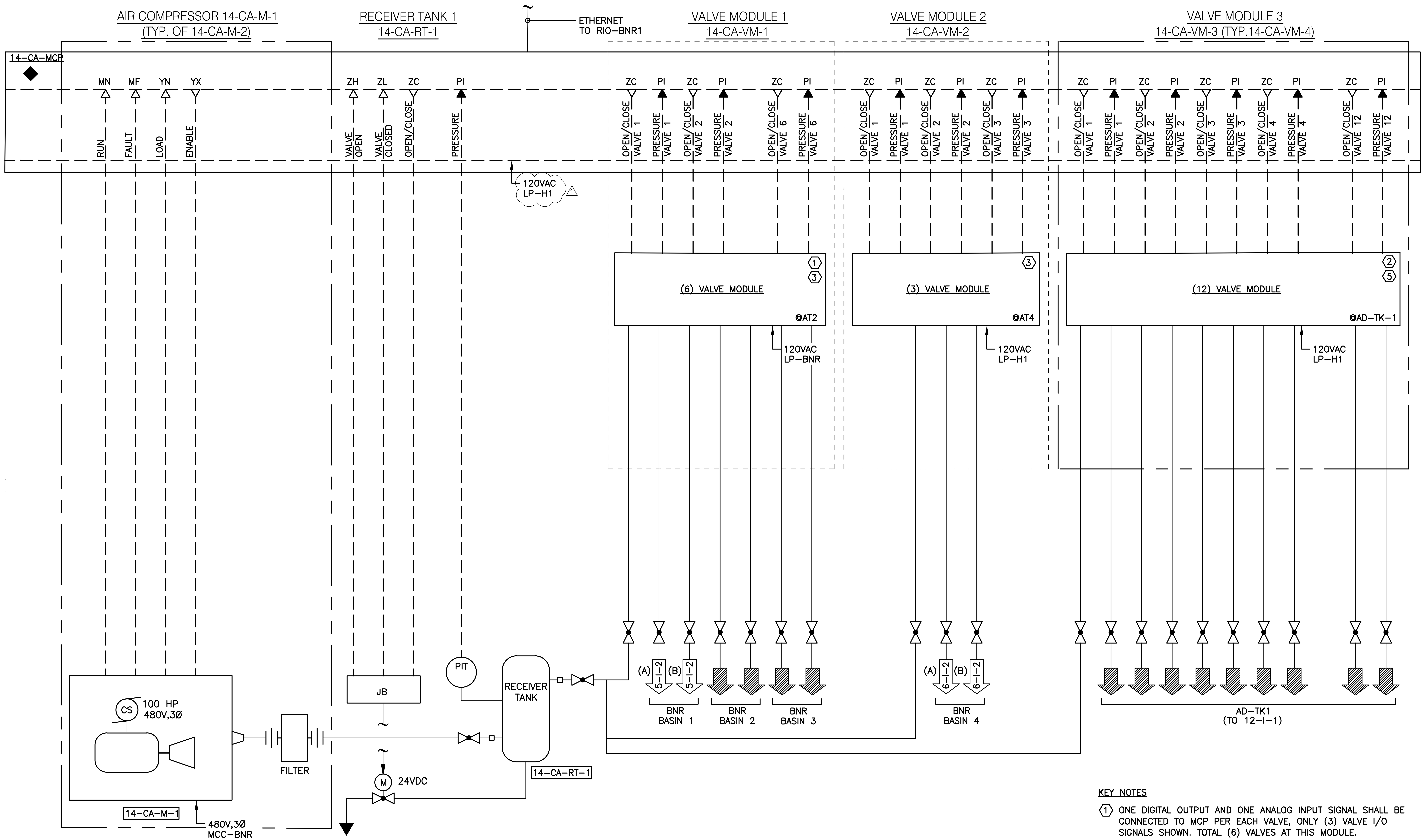
DATE: SEPTEMBER 2020
SCALE: NTS

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

P&ID
SCUM COLLECTION SYSTEM

SHEET NO.
5-I-4



KEY NOTES

1. ONE DIGITAL OUTPUT AND ONE ANALOG INPUT SIGNAL SHALL BE CONNECTED TO MCP PER EACH VALVE, ONLY (3) VALVE I/O SIGNALS SHOWN. TOTAL (6) VALVES AT THIS MODULE.
2. ONE DIGITAL OUTPUT AND ONE ANALOG INPUT SIGNAL SHALL BE CONNECTED TO MCP PER EACH VALVE, ONLY (5) VALVE I/O SIGNALS SHOWN. TOTAL (12) VALVES AT THIS MODULE.
3. COMPRESSED AIR MIXING SYSTEM VALVE MODULE IS LOCATED AT BNR BASINS 1-3.
4. COMPRESSED AIR MIXING SYSTEM VALVE MODULE IS LOCATED AT BNR BASIN 4.
5. COMPRESSED AIR MIXING SYSTEM VALVE MODULE IS LOCATED AT AEROBIC DIGESTERS 1 & 2.

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	REVISION	DATE
1	ADDENDUM No.4	11/13/20

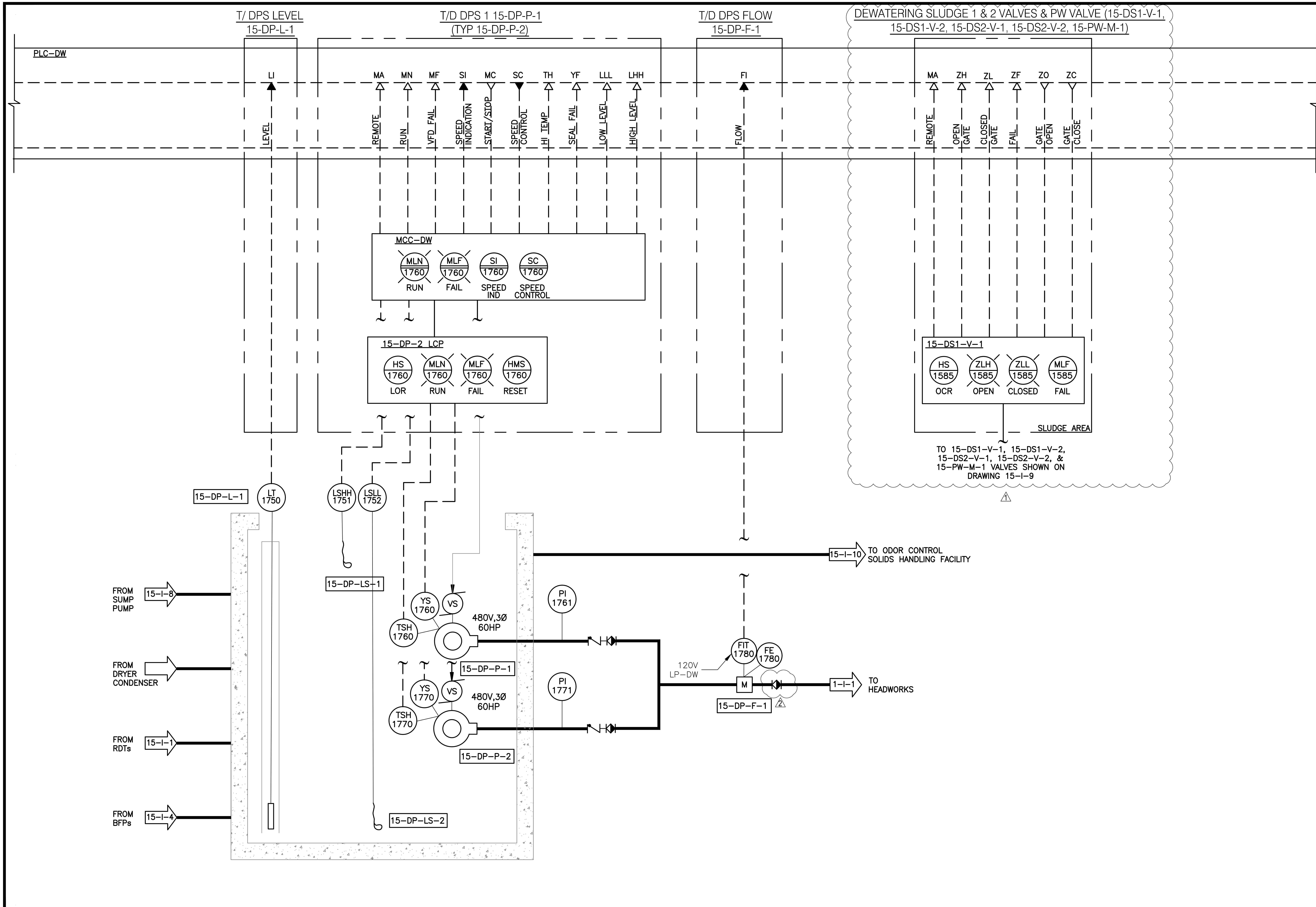
PROJ. NO.: 100061831
DESIGNED BY: RDW/NJZ
DRAWN BY: NCT/NJZ
CHECKED BY: TLH
APPROVED BY: TLH
DATE: SEPTEMBER 2020
SCALE: NTS

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

P&ID
COMPRESSED AIR

SHEET NO.
14-I-1

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35909\3014.01 - 14-I-1.DWG|Tab:14-I-1|Plotted: November 13, 2020 6:53am



GEORGIA
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PROJ. NO.: 100061831
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CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

P&ID
THICKENING/DEWATERING DRAIN PUMP STATION

SHEET NO.
15-I-7

File Name: C:\PW_WORK\ATKNAGA01\NICKY.TODD\DMS35909\3015.07 – 15–I–7.DWGTab: 15–I–7Plotted: November 13, 2020 6:52am

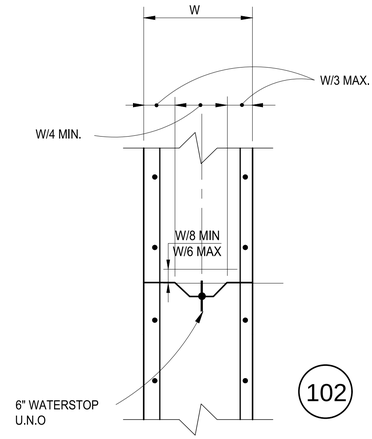
BAR SIZE	CLASS "A" CONCRETE f' c = 4,500 PSI
3	2'-3"
4	2'-11"
5	3'-8"
6	4'-5"
7	6'-5"
8	7'-4"
9	8'-3"
10	9'-3"
11	10'-3"

1. ALL SPLICES SHALL BE ACI 318, CLASS "B" LAP SPLICES UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

TABLE OF LAP SPLICES

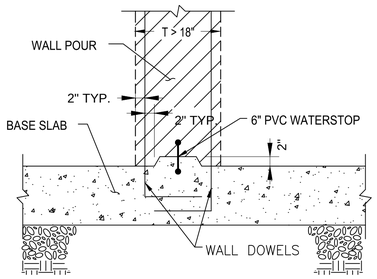
NTS

100

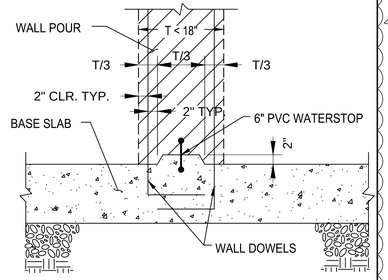


TYPICAL HORIZONAL & VERTICAL CONSTRUCTION JOINT DETAIL

102



STARTER WALL DETAIL FOR WALLS 18" AND THICKER

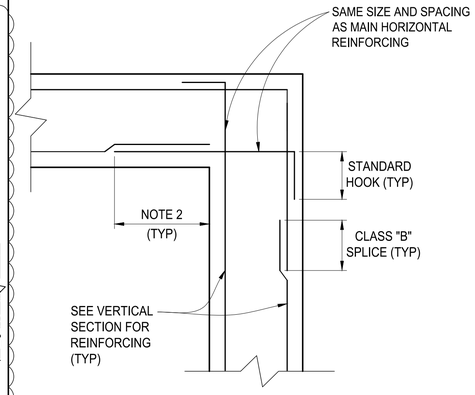


STARTER WALL DETAIL FOR WALLS LESS THAN 18"

TYPICAL CONSTRUCTION JOINT DETAIL

NTS

105



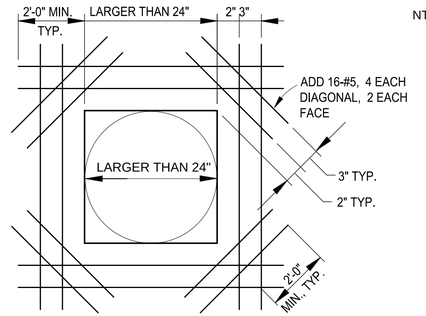
1. PROVIDE ALL CLASS "B" SPLICES
2. DISTANCE EQUAL TO CLASS "B" SPLICE

TYPICAL WALL CORNER

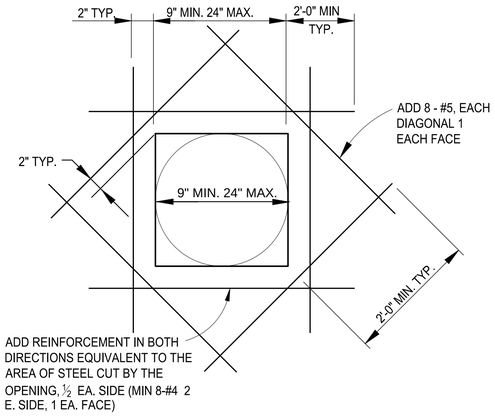
NTS

106

NTS



ADD REINFORCEMENT IN BOTH DIRECTIONS EQUIVALENT TO THE AREA OF STEEL CUT BY THE OPENING, 1/2 EA. SIDE (MIN. OF 16-#5, 4 EACH SIDE, 2 EACH FACE)

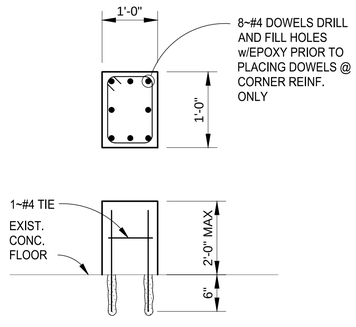


ADD REINFORCEMENT IN BOTH DIRECTIONS EQUIVALENT TO THE AREA OF STEEL CUT BY THE OPENING, ½ EA. SIDE (MIN 8-#4 2 E. SIDE, 1 EA. FACE)

TYP. REINFORCEMENT AT OPENINGS

N.T.S.

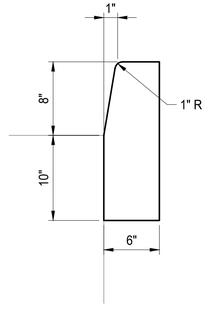
101



TYP. PIER DETAIL

N.T.S.

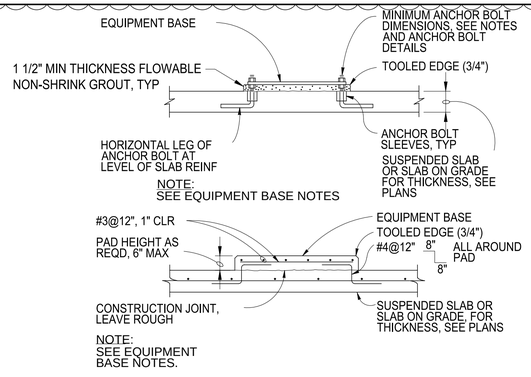
103

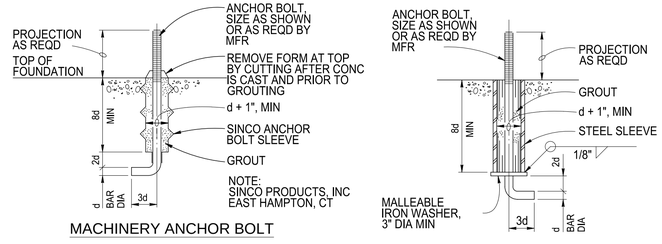


CONCRETE HEADER CURB

N.T.S.

104





MACHINERY ANCHOR BOLT

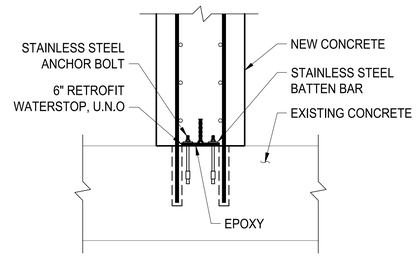
EQUIPMENT BASE NOTES

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD.
2. PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE PAD IS BEING POURED. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE THE.
3. ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS

EQUIPMENT PADS

NTS

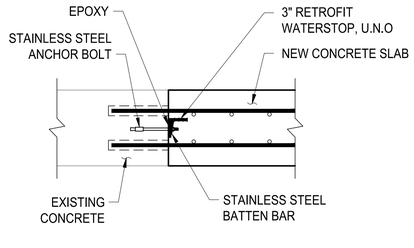
107



TYPICAL CONSTRUCTION JOINT DETAIL - NEW TO EXISTING WALL CONCRETE

N.T.S.

108



TYPICAL CONSTRUCTION JOINT DETAIL - NEW TO EXISTING SLAB CONCRETE

N.T.S.

109

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
10/13/2020

ATKINS
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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
195 LOG CANOE CIRCLE
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CERTIFICATE OF AUTHORIZATION #PEF003902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

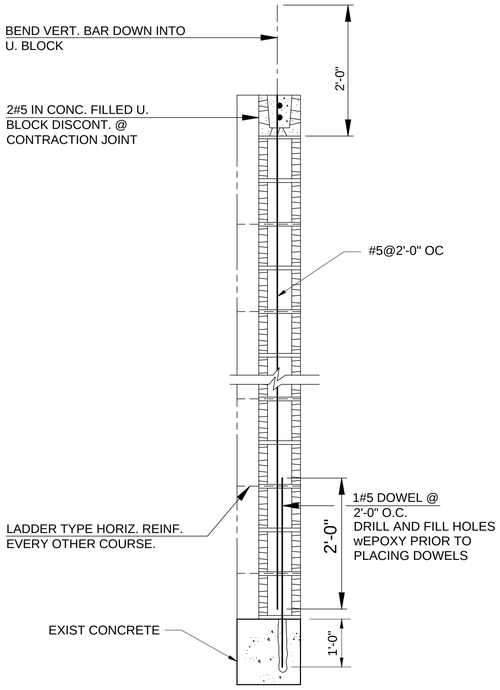
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-1

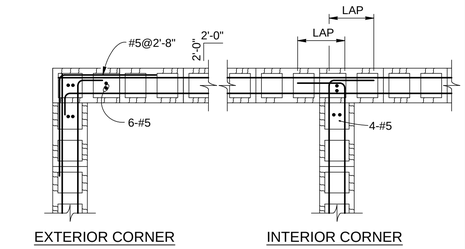
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35916\4005.01 - DS-1.DWG[Tab:DS-1]Plotted: November 13, 2020 3:33pm



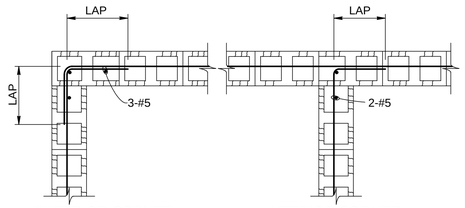
HORIZONTAL REINFORCING

TYPICAL MASONRY WALL DETAIL 313

NTS



DOUBLE MAT



SINGLE MAT

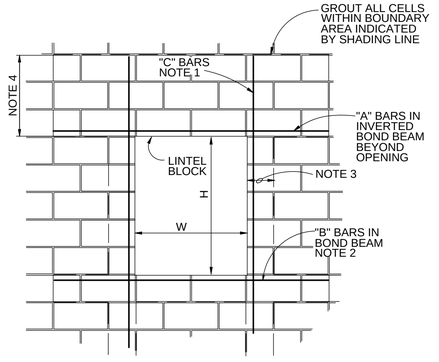
NOTE:
LAP=48 BAR DIAMETERS OR 2'-0" MIN UNLESS OTHERWISE NOTED.

CMU WALL CORNERS 315

NTS

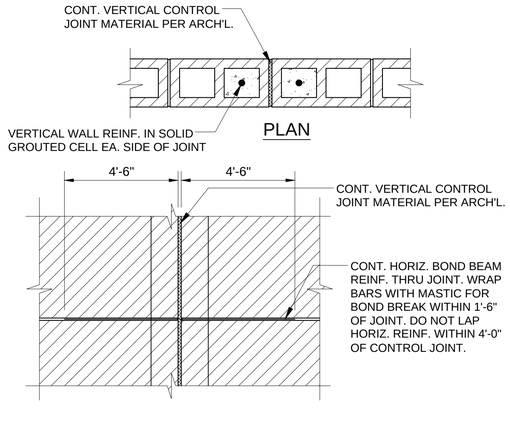
CMU OPENING REINF SCHEDULE								
W	"A" BARS		"B" BARS		"C" BARS		# CELLS TO GROUT NOTE 3	
	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU	8" CMU	12" CMU
≤2'-0"	1-#5	2-#5	1-#5	2-#5	1-#5	2-#5	ONE	ONE
>2'-0" ≤6'-0"	2-#5	2-#5	1-#5	2-#5	1-#5	2-#5	ONE	ONE
>6'-0" ≤8'-0"	2-#6	2-#6	2-#5	2-#6	2-#5	2-#5	TWO	TWO
>8'-0" ≤10'-0"	2-#7	2-#8	2-#6	2-#6	2-#5	2-#6	THREE	THREE
>10'-0"	SEE DRAWINGS							
>10'-0" ≤12'-6"	-	2-#8	-	2-#6	-	2-#6	-	FOUR

NOTES:
1. EXTEND "C" BARS 2'-0" MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", "C" BARS SHALL EXTEND FULL HEIGHT.
2. "A" AND "B" BARS SHALL EXTEND 2'-0" EACH SIDE OF THE OPENING. GROUT TO END OF BARS.
3. SEE SCHEDULE FOR NUMBER OF CELLS TO GROUT ON EACH SIDE OF THE OPENING.
4. GROUT ALL CELLS OVER OPENING TO W/2 OR 2'-0" WHICH EVER IS GREATER UNLESS TOP OF WALL IS REACHED FIRST.



CMU OPENING REINFORCING 317

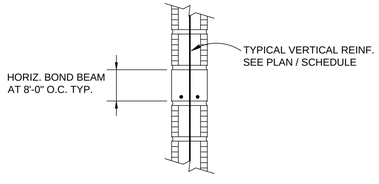
NTS



NOTES:
1. MASONARY CONTROL JOINTS TO BE COORDINATED WITH ARCH'L. ELEVATIONS, PLANS AND SPECIFICATIONS.
2. WALL CONTROL JOINTS SHOULD MATCH LOCATION OF SLAB CONSTRUCTION JOINTS, BUT NOT NECESSARILY THE SAW CUT JOINT LOCATIONS.
3. CONTROL JOINTS @ MASONRY WALLS SHOULD BE PLACED @ SPACINGS NOT EXCEEDING 24'-0" OR 3 TIMES THE WALL HEIGHT WHICHEVER IS LESS. MORE SPECIFICALLY WHEN SELECTING A LOCATION IT SHOULD INCLUDE:
   A- CHANGES IN WALL HT. OR THICKNESS.
   B- OVER OPENINGS @ ONE SIDE PAST THE LINTEL,
   C- AT INTERSECTING WALL.
   D- AT CONSTRUCTION JOINTS IN SLAB.
   E- NOT LESS THAN 2'-0" FROM A BEARING PLATE.
4. G.C. TO PROVIDE SHP DWG. W/ LOCATIONS OF CONTROL JOINTS & ALL VERTICAL REINF. FOR REVIEW BY A/E.

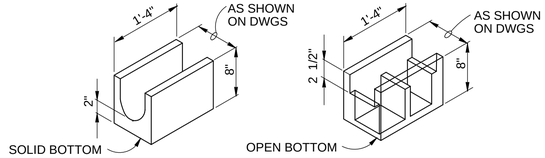
CONTROL JOINTS 314

NTS



TYP. HORIZ. BOND BEAM DETAIL 316

NTS



NOTES:
1. IF BOND BEAM BLOCK IS NOT LOCALLY AVAILABLE, STANDARD BLOCK SHALL BE SAW CUT TO THE CONFIGURATION SHOWN.
2. NOMINAL DIMENSIONS SHOWN.

SPECIAL BLOCK SHAPES 318

NTS

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
ELECTRONIC SIGNATURE
10/13/2020

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HARTWELL ENGINEERING, INC.
ENGINEERS ● INTEGRATORS
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(443) 249-3111

REVISION	DATE
ADDENDUM No.4	11/13/20

CERTIFICATE OF AUTHORIZATION #PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

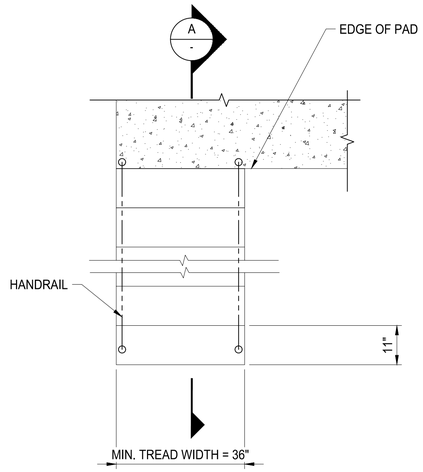
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

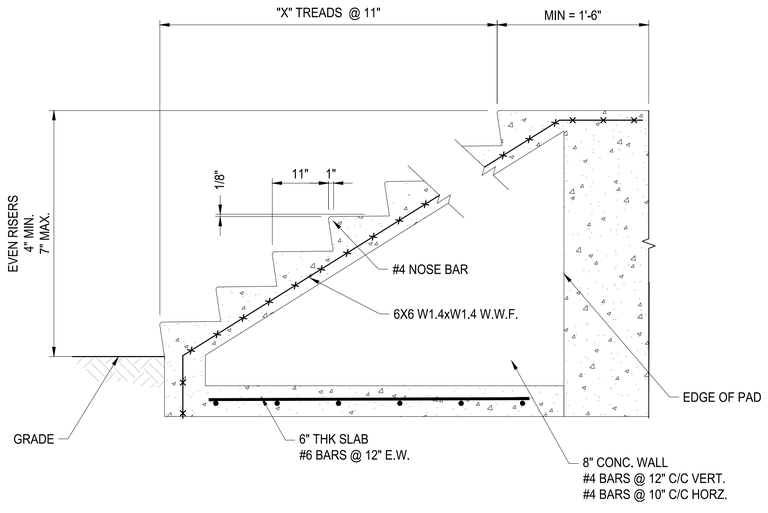
STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-3

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35916\4005.03 - DS-3.DWG|Tab:DS-3|Plotted: November 13, 2020 3:33pm



TYPICAL STAIR DETAIL
SCALE:

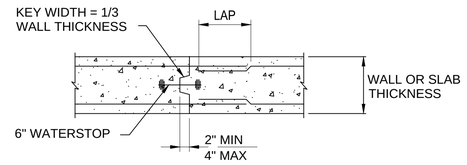


SECTION
SCALE :
A
-

NOTES:

1. THESE DETAILS SHOULD USED BE ONLY FOR STAIRS WITH LESS THAN 8 FEET OF TOTAL FLIGHT

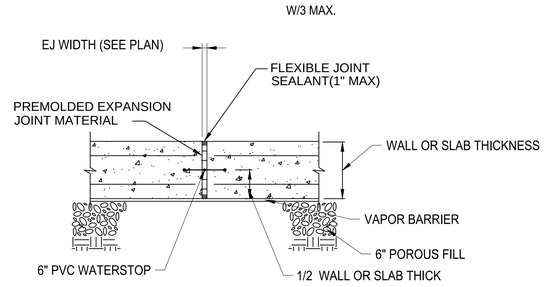
601



1

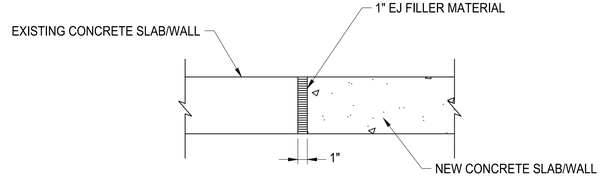
CONSTRUCTION JOINT IN WALLS & SLABS
NTS

602



TYPICAL WALL OR SLAB
EXPANSION JOINT
NTS

603



TYPICAL ISOLATION JOINT FILLER DETAIL
NTS

604

GEORGIA
REGISTERED
No. PE27030
PROFESSIONAL
ENGINEER
10 DEC 2020

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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION # PEF000802 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

REVISION	DATE
ADDENDUM No.4	11/13/20

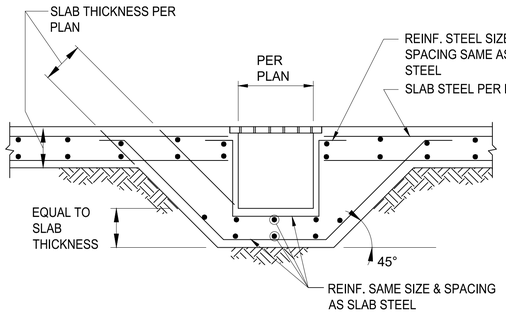
PROJ. NO.: 100061831	
DESIGNED BY: DLC	
DRAWN BY: -	
CHECKED BY: DMM/JLS	
APPROVED BY: HC	
DATE: SEPTEMBER 2020	
SCALE: AS SHOWN	

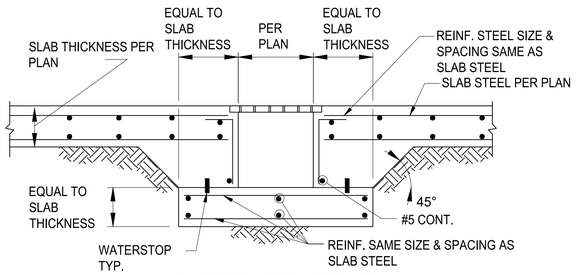
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-6

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35916\4005.05 - DS-6.DWG|Tab:DS-6|Plotted: November 13, 2020 3:33pm

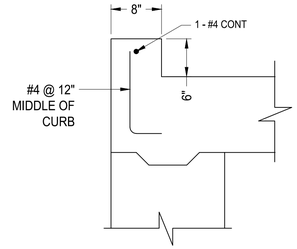




ALTERNATE LAYOUT

SECTION THRU SLAB TRENCH
SCALE : NTS

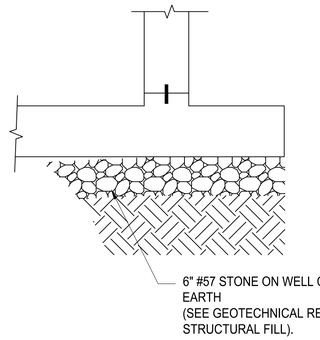
500



NOTES:
1. SEE PLANS, SECTIONS AND SCHEDULES FOR SLAB AND WALL REINFORCING.

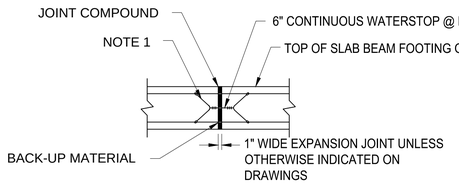
TYPICAL 6" HIGH x 8" WIDE CURB
SCALE : NTS

501



STONE FILL
SCALE : NTS

503



NOTES:

1. SECURE ALL WATERSTOP EDGES BY TIE WIRE FROM LOOPS TO ADJACENT REINFORCEMENT EVERY 12" ALONG EACH EDGE BOTH SIDES.

2. JOINT COMPOUND W X 1/2-INCH DEEP WITH BOND BREAKER BETWEEN BACK-UP MATERIAL AND JOINT COMPOUND.

3. JOINT COMPOUND TO BE CARRIED ONE-FOOT MINIMUN BELOW FINISH GRADE ON EARTH SIDE OF SLABS, BEAMS, FOOTINGS, AND MATS.

4. JOINT COMPOUND TO BE CARRIED VERITCALLY DOWN SIDES TO BOTTOM OF ELEVATED SLABS AND BEAMS WHICH ARE EXPOSED TO VIEW.

SECTION - EXPANSION JOINT WITH WATERSTOP FOR SLABS, FOOTINGS, AND FOUNDATIONS
SCALE : NTS

502

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
2020

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CERTIFICATE OF AUTHORIZATION # PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

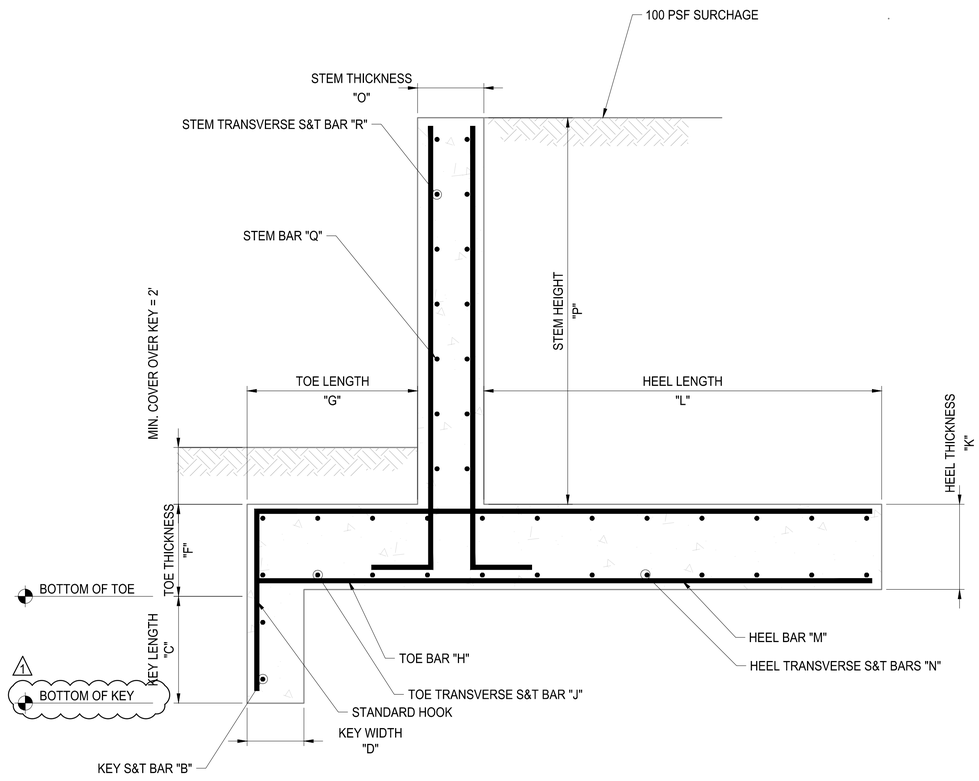
PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

STRUCTURAL STANDARD DETAILS

SHEET NO.
DS-9

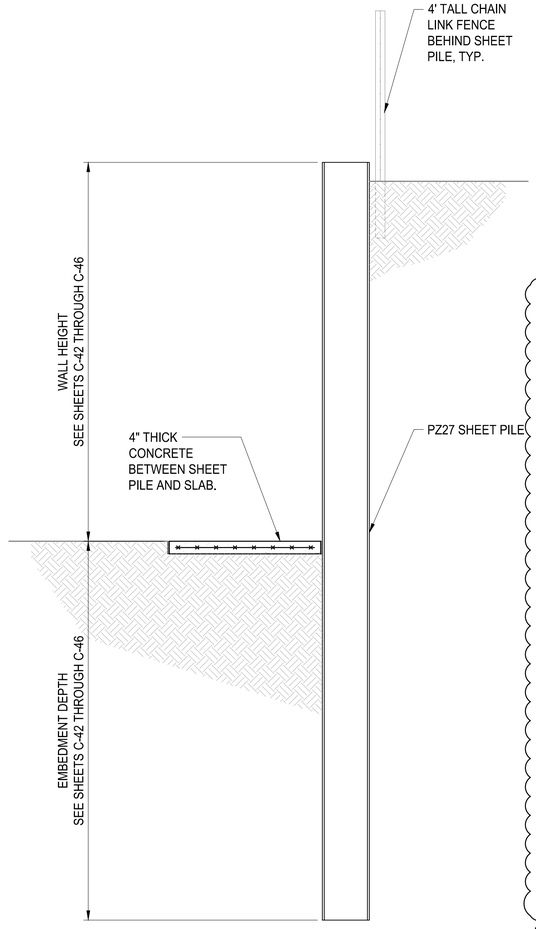
File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35916\4005.09 - DS-9.DWG|Tab:DS-9|Plotted: November 13, 2020 3:33pm



CAST IN PLACE RETAINING WALL SECTION

SCALE : NTS

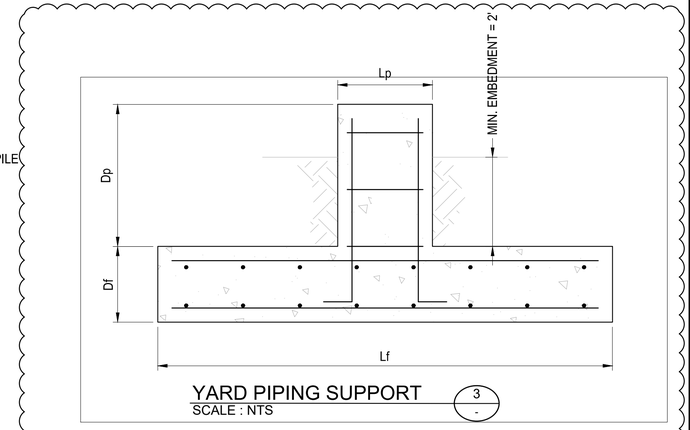
1 / -



SHEET PILE RETAINING WALL SECTION

SCALE : NTS

2 / -



YARD PIPING SUPPORT

SCALE : NTS

3 / -

YARD PIPING SUPPORT DETAILS

IDENTIFICATION	PEDESTAL SIZE (LpXLp)	PEDESTAL HEIGHT (Dp)	FOOTING SIZE (LfXLf)	FOOTING DEPTH (Df)	PEDESTAL REBAR	FOOTING REBAR
YARD PIPING SUPPORT WITH PIPE BEND	30"X30"	UP TO 12'	15'X15'	24"	(12)-#8 WITH #4 TIES@12"	#9@12" EW, T&B
YARD PIPING SUPPORT WITH STRAIGHT PIPE RUN	24"X24"	UP TO 12'	8'X8'	12"	(12)-#8 WITH #4 TIES@12"	#9@12" EW, T&B

1

CAST IN PLACE RETAINING WALL SCHEDULE

LOCATION	WALL HEIGHT	KEY			TOE				HEEL				STEM			
		BARS	LENGTH	WIDTH	THICKNESS	LENGTH	BARS	TRANSVERSE BARS S&T	THICKNESS	LENGTH	BARS	TRANSVERSE BARS S&T	THICKNESS	HEIGHT	BARS	TRANSVERSE BARS S&T
		B	C(IN)	D (IN)	F (IN)	G (FT-IN)	H	J	K (IN)	L (FT-IN)	M	N	O (IN)	P (FT-IN)	Q	R
ELSWHERE	P < 8 FT	#5@12 HORZ.	24	12	12	2'-0"	#5@12 T&B	#5@12 T&B	12	5'-0"	#5@12 T&B	#5@12 T&B	12	LESS THAN OR EQUAL TO 8'-0"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE
ELSWHERE	P < 6 FT	#5@12 HORZ.	18	12	12	2'-0"	#5@12 T&B	#5@12 T&B	12	3'-0"	#5@12 T&B	#5@12 T&B	10	LESS THAN OR EQUAL TO 6'-0"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE
ELSWHERE	P < 4 FT	#5@9 HORZ.	12	12	12	2'-0"	#5@12 T&B	#5@12 T&B	12	2'-0"	#5@12 T&B	#5@12 T&B	8	LESS THAN OR EQUAL TO 4'-0"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE
RET. WALL ADJ TO MBR*	P ≤ 8'-4"	#5@12 HORZ.	12	12	12	0'-2"	#5@12 T&B	#5@12 T&B	12	5'-0"	#5@12 T&B	#5@12 T&B	10	LESS THAN OR EQUAL TO 8'-4"	#5@12 VERT. EACH FACE	#5@12 HORZ. EACH FACE

1

NOTE:
* THE STEM REBARS SHOULD BE HOOKED INTO THE HEEL

GEORGIA REGISTERED No. PE27030 PROFESSIONAL ENGINEER
28 DEC 2020

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HARTWELL ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION #PEF000892 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: DLC
DRAWN BY: -
CHECKED BY: DMM/JLS
APPROVED BY: HC
DATE: SEPTEMBER 2020
SCALE: AS SHOWN

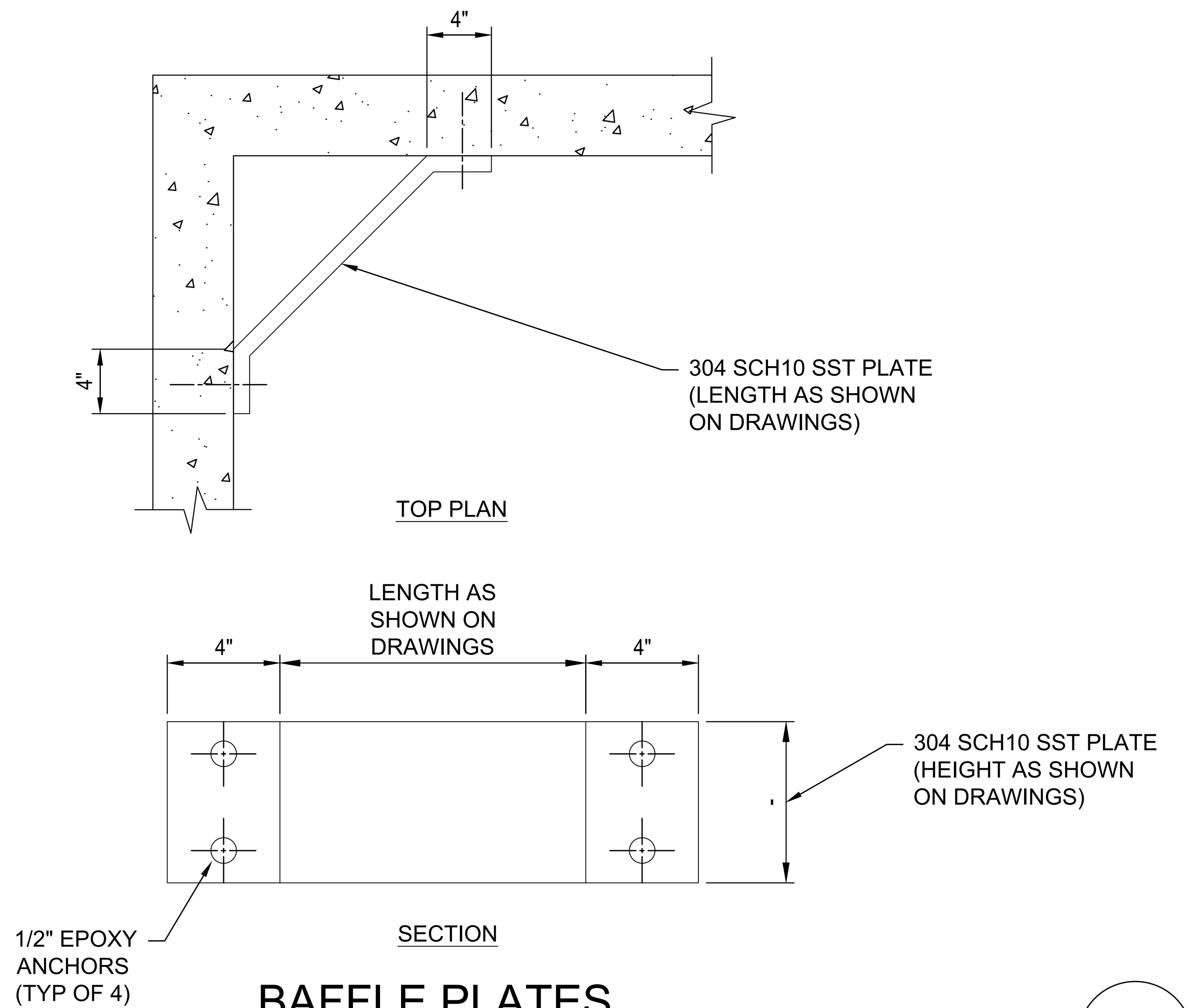
CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

STRUCTURAL STANDARD DETAILS SITE CIVIL

SHEET NO.

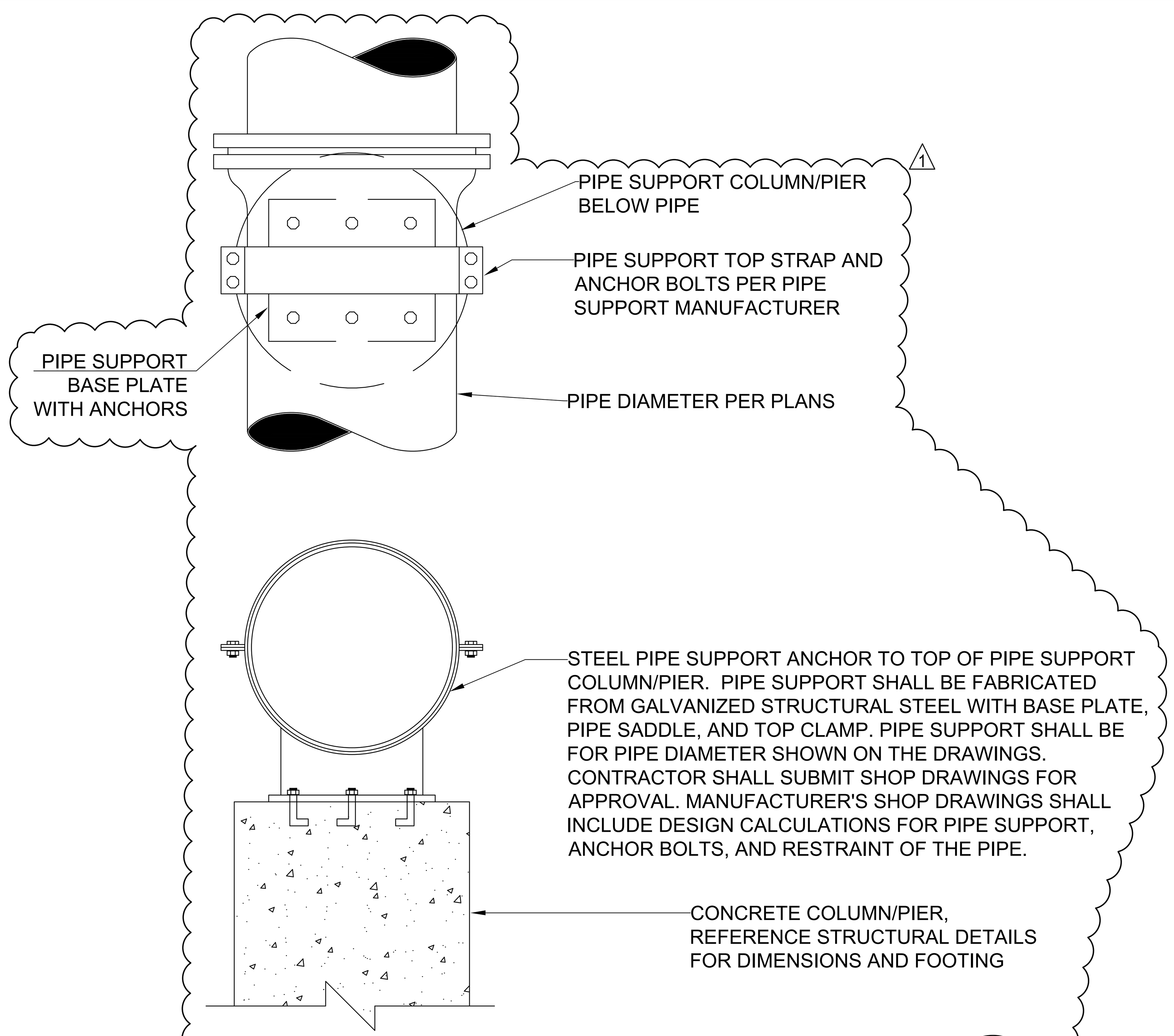
DS-10

File Name: C:\PW_WORK\ATKNAGA01\STEW2100\DMS35916\4005.10 - DS-10.DWG|Tab:DS-10|Plotted: November 13, 2020 3:53pm



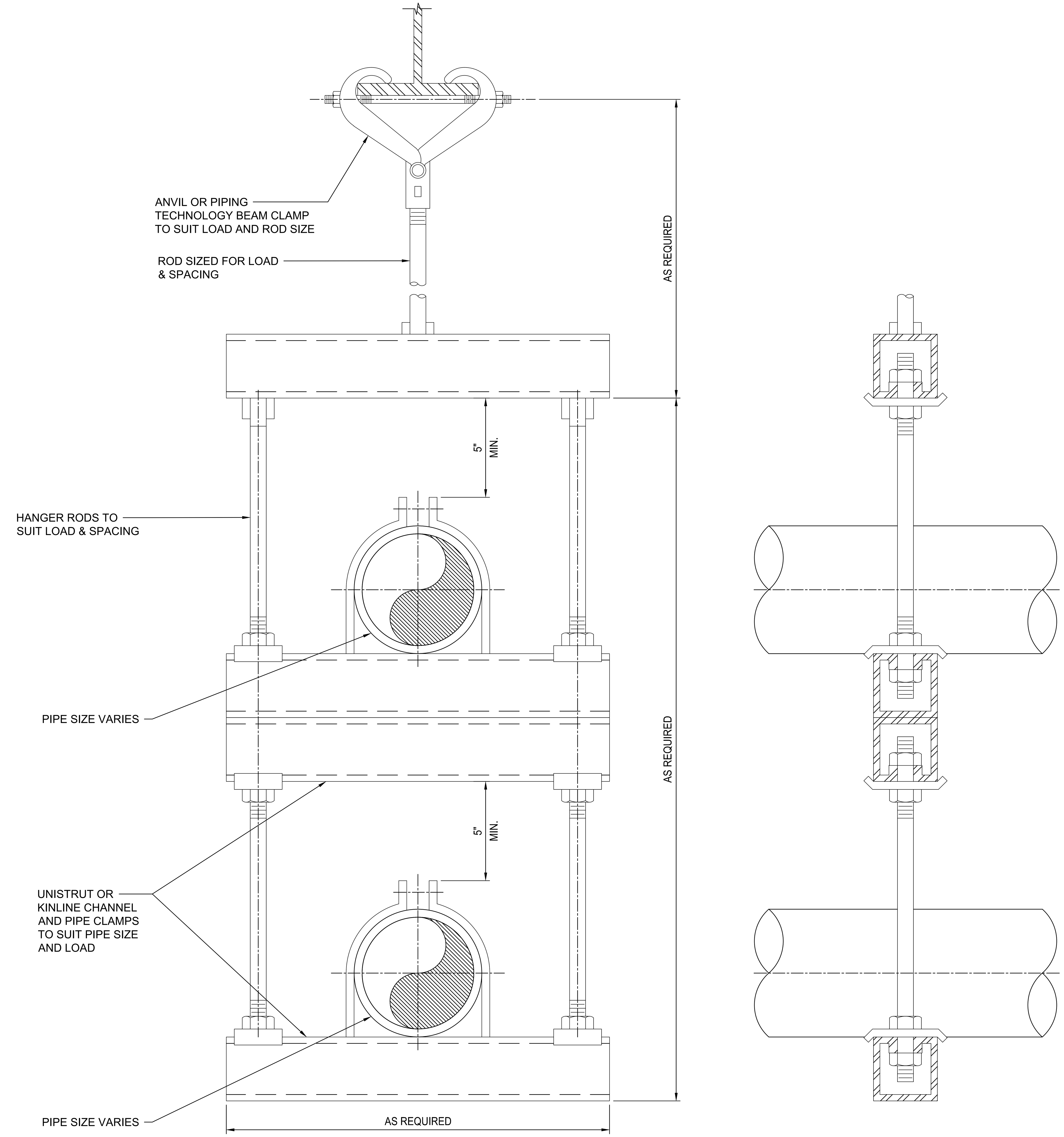
BAFFLE PLATES
NTS

496



PIPE SUPPORT
NTS

498



NOTES:

TOTAL LOADING OF EACH BEAM CLAMP SHALL NOT EXCEED MFR'S RECOMMENDED LOADINGS.

STACKED TRAPEZE PIPE HANGER WITH BEAM CLAMP
NTS

497

GEORGIA REGISTERED No. 042364 PROFESSIONAL ENGINEER HECTOR R. CASABLANCA 11/13/2020

ATKINS
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HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

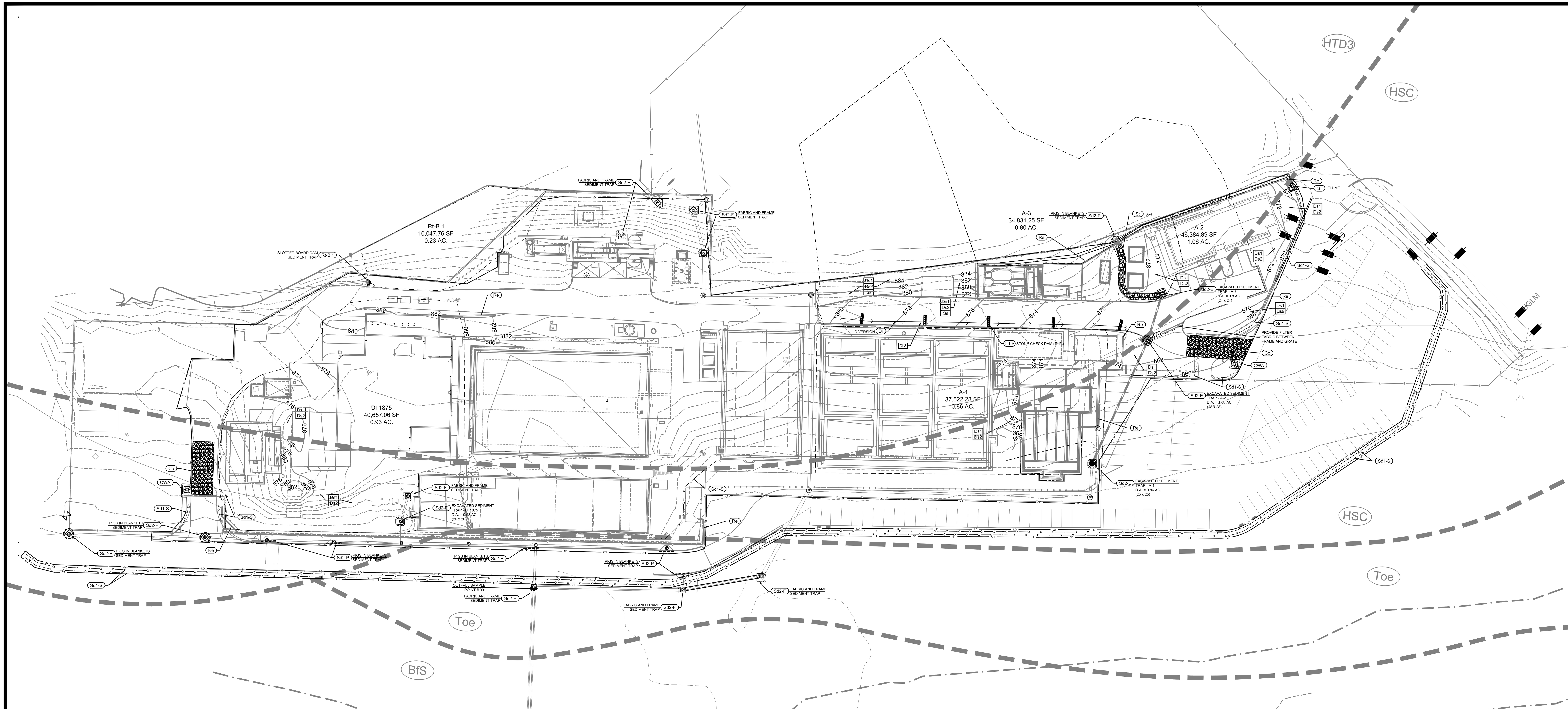
	REVISION	DATE
1	ADDENDUM No.4	11/13/20

PROJ. NO.: 100061831
DESIGNED BY: SB
DRAWN BY: SB
CHECKED BY: NC
APPROVED BY: HIR
DATE: SEPTEMBER 2020
SCALE: NTS

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

MECHANICAL
STANDARD DETAILS

SHEET NO.
DM-11



ES&PC - PLAN INTERMEDIATE PHASE
SCALE: 1"=50'

EROSION & SEDIMENT CONTROL PLAN LEGEND

Symbol	Description
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING / VEGETATION)
Ss	SLOPE STABILIZATION
Du	DUST CONTROL ON DISTURBED AREAS
Re	RETAINING WALL
Di	DIVERSION
Cd-S	STONE CHECK DAM
Co	CONSTRUCTION EXIT
St	OUTLET PROTECTION
CWA	CONCRETE WASHDOWN AREA
Sd1-S	SEDIMENT BARRIER - SILT FENCE ("TYPE-C")
Sd2-E	INLET SEDIMENT TRAP - EXCAVATED
Sd2-F	INLET SEDIMENT TRAP - FILTER AND FRAME
Sd2-P	INLET SEDIMENT TRAP - CURB INLET FILTER ("PIGS-IN-A-BLANKET")
Rt-B	INLET SEDIMENT TRAP - SLOTTED BOARD DAM
— LD —	LIMITS OF DISTURBANCE
	SOIL SERIES DELINEATION BOUNDARY
	DRAINAGE AREA DIVIDE
	SAMPLE POINT

ESTIMATED EARTHWORK QUANTITIES:

EXCAVATION (CUT) = 9,678 CU. YD.

EMBANKMENT (FILL) = 5,575 CU. YD.

NOTE:
CONTRACTOR MUST COORDINATE AND OBTAIN APPROVAL FROM CHEROKEE COUNTY EROSION CONTROL INSPECTOR FOR ANY SOIL STOCKPILE.

GENERAL EROSION CONTROL NOTES:

1. FOR EROSION AND SEDIMENT CONTROL NOTES, REFER TO SHEET NO's. EC-04 THRU EC-07.
2. FOR EROSION AND SEDIMENT CONTROL DETAILS, REFER TO SHEET NO's. EC-08 THRU EC-11.
3. FOR SOIL SERIES INFORMATION AND CHART, REFER TO SHEET EC-07.

24-HR. EMERGENCY CONTACT:
TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD
CONTACT PHONE NO.: TBD

24-HOUR LOCAL EROSION, SEDIMENTATION, AND POLLUTION CONTROL CONTACT:
TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD

LEVEL 1A CERTIFICATION NO.: (TBD AT A LATER DATE)
LEVEL 1A CERTIFICATION EXP. DATE: (TBD AT A LATER DATE)

GEORGIA REGISTERED No. 21371 PROFESSIONAL ENGINEER GEORGE N. KAKUNES
11/12/2020

GEORGE N. KAKUNES
GSWCC LEVEL II DESIGN PROFESSIONAL

GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE

0000016834
GSWCC LEVEL II CERTIFICATION NUMBER GSWCC

11/09/2021
GSWCC LEVEL II CERTIFICATION EXPIRATION DATE

811
IF YOU DIG GEORGIA... CALL US FIRST!
Know what's **below**. **Call** before you dig.
UTILITIES PROTECTION CENTER

ATKINS
1600 RiverEdge Parkway, NW, Suite 700
Atlanta Ga 30328
P: 770-933-0280

HARTWELL ENGINEERING, INC.
ENGINEERS • INTEGRATORS

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE

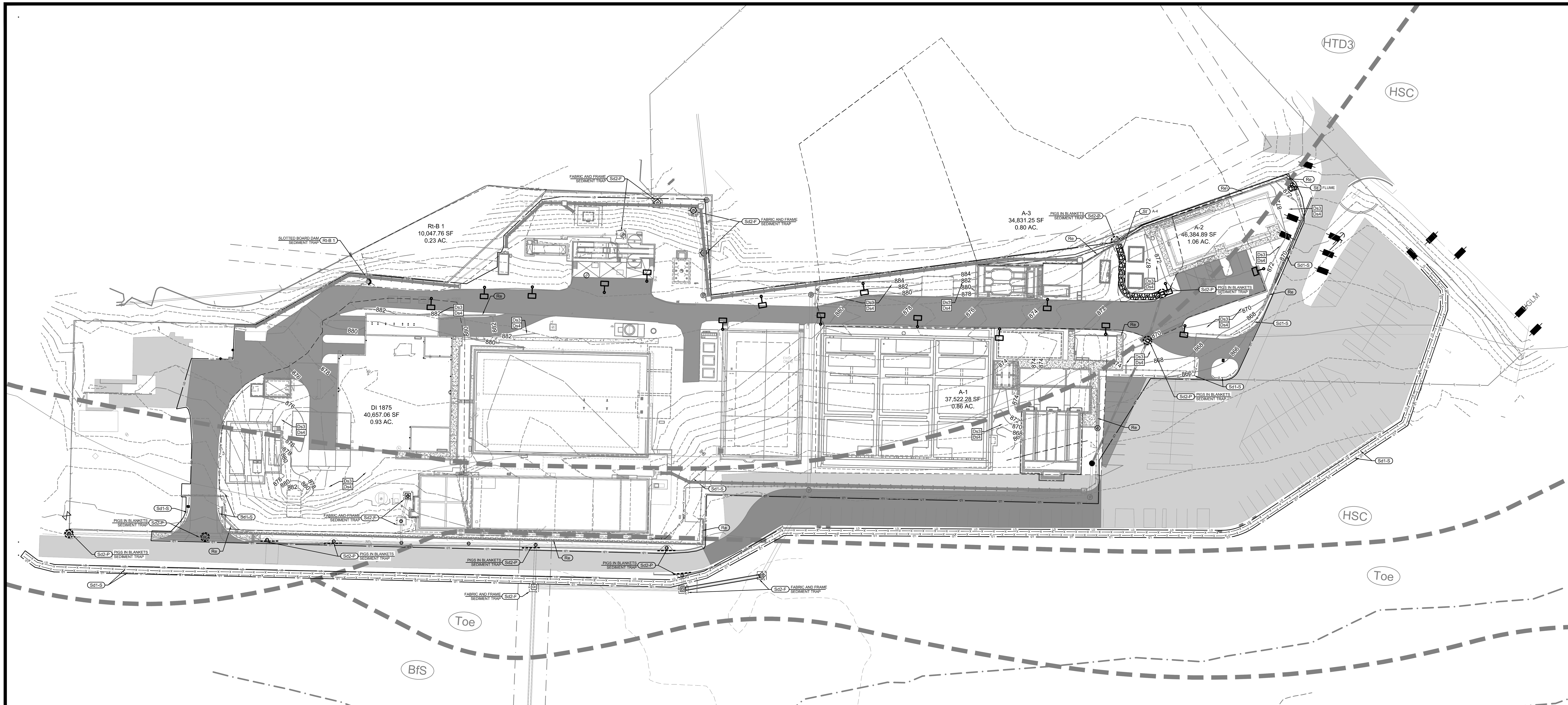
PROJ. NO.: 100061831
DESIGNED BY: KRJ
DRAWN BY: KRJ
CHECKED BY: MRM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: NO SCALE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

EROSION AND SEDIMENT CONTROL PLAN - INTERMEDIATE PHASE

SHEET NO.
EC-02

File Name: C:\PW_WORK\ATKNAGA01\JENK6917\DMS35911\EC-01, 02, 03.DWG|Tab: EC-02|Plotted: November 13, 2020 7:48am



ES&PC - PLAN FINAL PHASE

SCALE: 1"=50'

EROSION & SEDIMENT CONTROL PLAN LEGEND

Symbol	Description
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING / VEGETATION)
Ss	SLOPE STABILIZATION
Du	DUST CONTROL ON DISTURBED AREAS
Re	RETAINING WALL
Di	DIVERSION
Cd-S	STONE CHECK DAM
Co	CONSTRUCTION EXIT
St	OUTLET PROTECTION
CWA	CONCRETE WASHDOWN AREA
Sd1-S	SEDIMENT BARRIER - SILT FENCE ("TYPE-C")
Sd2-E	INLET SEDIMENT TRAP - EXCAVATED
Sd2-F	INLET SEDIMENT TRAP - FILTER AND FRAME
Sd2-P	INLET SEDIMENT TRAP - CURB INLET FILTER ("PIGS-IN-A-BLANKET")
Rt-B	INLET SEDIMENT TRAP - SLOTTED BOARD DAM
— LD —	LIMITS OF DISTURBANCE
	SOIL SERIES DELINEATION BOUNDARY
------	DRAINAGE AREA DIVIDE
	SAMPLE POINT

ESTIMATED EARTHWORK QUANTITIES:

EXCAVATION (CUT) = 9,678 CU. YD.

EMBANKMENT (FILL) = 5,575 CU. YD.

NOTE:
CONTRACTOR MUST COORDINATE AND OBTAIN APPROVAL FROM CHEROKEE COUNTY EROSION CONTROL INSPECTOR FOR ANY SOIL STOCKPILE.

GENERAL EROSION CONTROL NOTES:

1. FOR EROSION AND SEDIMENT CONTROL NOTES, REFER TO SHEET NO's. EC-04 THRU EC-07.
2. FOR EROSION AND SEDIMENT CONTROL DETAILS, REFER TO SHEET NO's. EC-08 THRU EC-11.
3. FOR SOIL SERIES INFORMATION AND CHART, REFER TO SHEET EC-07.

24-HR. EMERGENCY CONTACT:

TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD
CONTACT PHONE NO.: TBD

24-HOUR LOCAL EROSION, SEDIMENTATION, AND POLLUTION CONTROL CONTACT:

TBD. INFORMATION WILL BE PROVIDED UPON PROJECT AWARD

LEVEL 1A CERTIFICATION NO.: (TBD AT A LATER DATE)
LEVEL 1A CERTIFICATION EXP. DATE: (TBD AT A LATER DATE)

GEORGIA REGISTERED No. 21371 PROFESSIONAL ENGINEER GEORGE N. KAKUNES
11/12/2020

GEORGE N. KAKUNES
GSWCC LEVEL II DESIGN PROFESSIONAL

GSWCC LEVEL II DESIGN PROFESSIONAL SIGNATURE

0000016834
GSWCC LEVEL II CERTIFICATION NUMBER GSWCC

11/09/2021
GSWCC LEVEL II CERTIFICATION EXPIRATION DATE

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ENGINEERS • INTEGRATORS
196 LOG CANOE CIRCLE
STEVENSVILLE, MARYLAND
(443) 249-3111

CERTIFICATE OF AUTHORIZATION # PEF000902 EXPIRATION DATE: 06/30/2022 ATKINS NORTH AMERICA INC.

	REVISION	DATE
△		

PROJ. NO.: 100061831
DESIGNED BY: KRJ
DRAWN BY: KRJ
CHECKED BY: MRM
APPROVED BY: GNK
DATE: SEPTEMBER 2020
SCALE: NO SCALE

CITY OF CANTON, GEORGIA
WATER POLLUTION CONTROL PLANT EXPANSION TO 6 MGD

EROSION AND SEDIMENT CONTROL PLAN - FINAL PHASE

SHEET NO.
EC-03

File Name: C:\PW_WORK\ATKNAGA01\JENK6917\DMS35911\EC-01, 02, 03.DWG|Tab:EC-03|Plotted: November 13, 2020 7:50am