

H:\PROJECT FILES\100339 - AUGUSTA UTILITIES DEPARTMENT\100339.11 AUD HIGHLAND AVENUE WTP FILTER MODIFICATIONS - ZE1-2102-00\300 DESIGN\355 PRELIMINARY DRAWINGS\00 GENERAL\G-0 COVER.DWG



TONY LEWIS
TINA SLENDAK
BRANDON GARRETT
FRANCINE SCOTT
WAYNE GUILFOYLE

ISSUED FOR BID

[illegible]

COVER SHEET

AUGUSTA UTILITIES DEPARTMENT

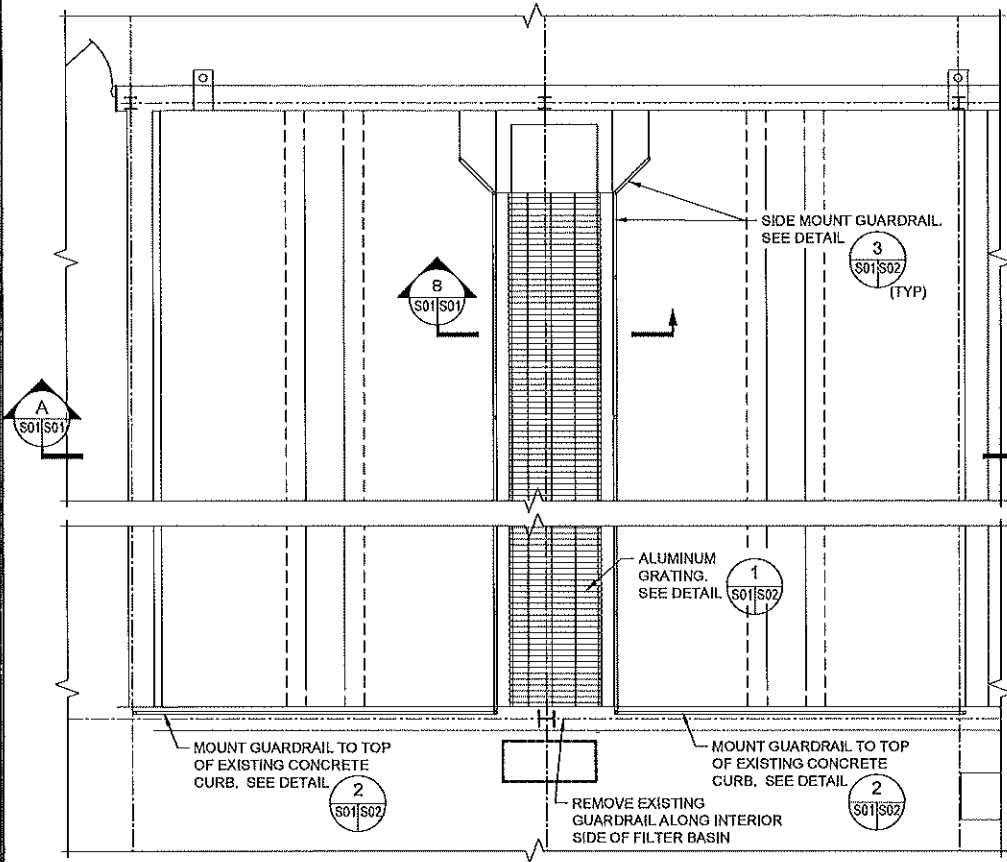
HIGHLAND AVE WATER TREATMENT PLANT

FILTER MODIFICATIONS - PHASE 2



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DATE MARCH 2025
PROJ. 100339.11
DWG. G0

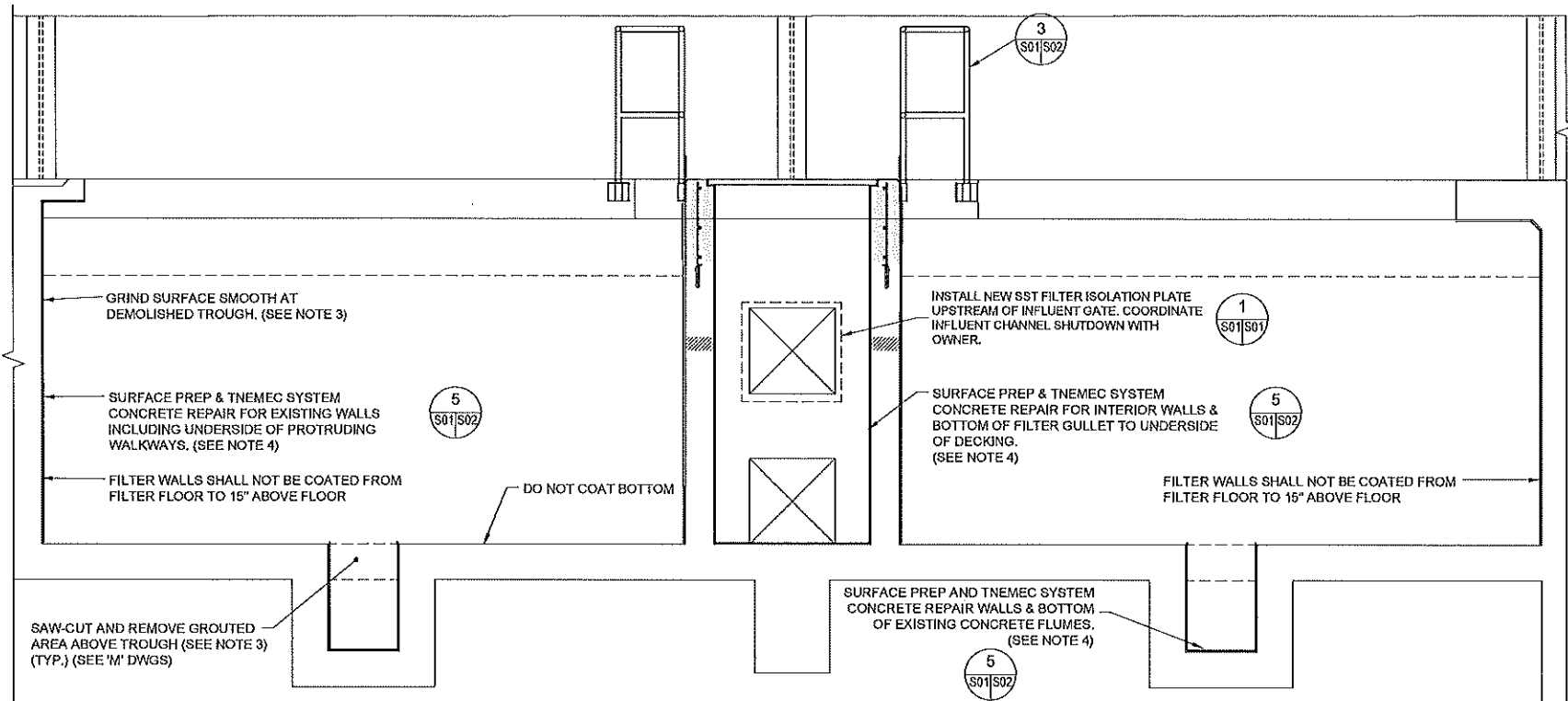
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FILTER NO. 2 & NO 8 REPAIR PLAN

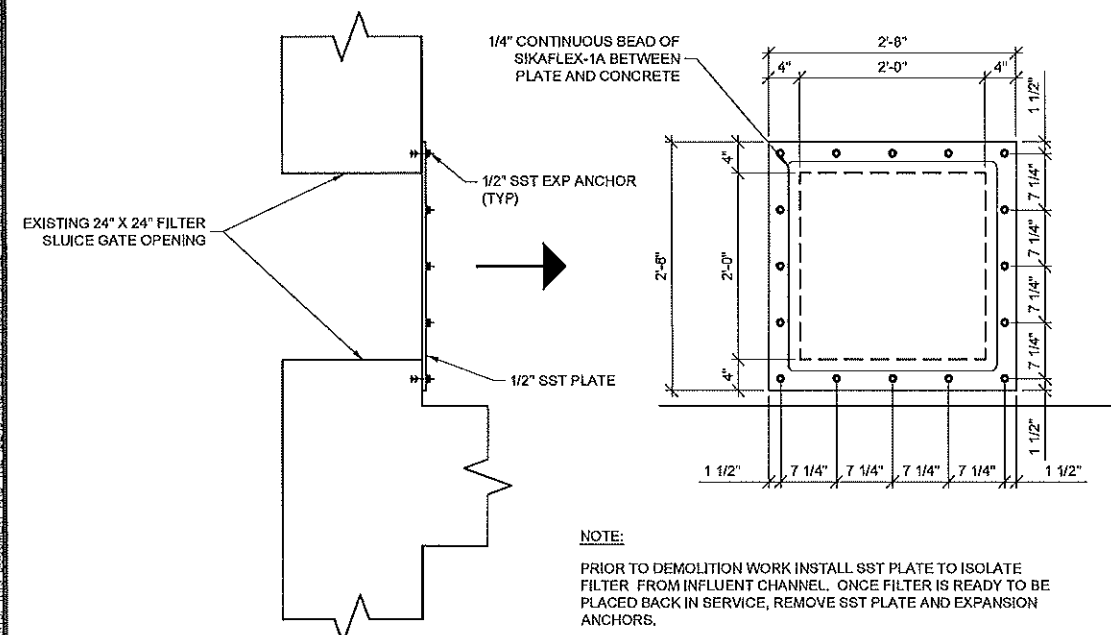
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(REPAIRS SHOWN ARE TYPICAL FOR FILTER NO. 2 & NO. 8)



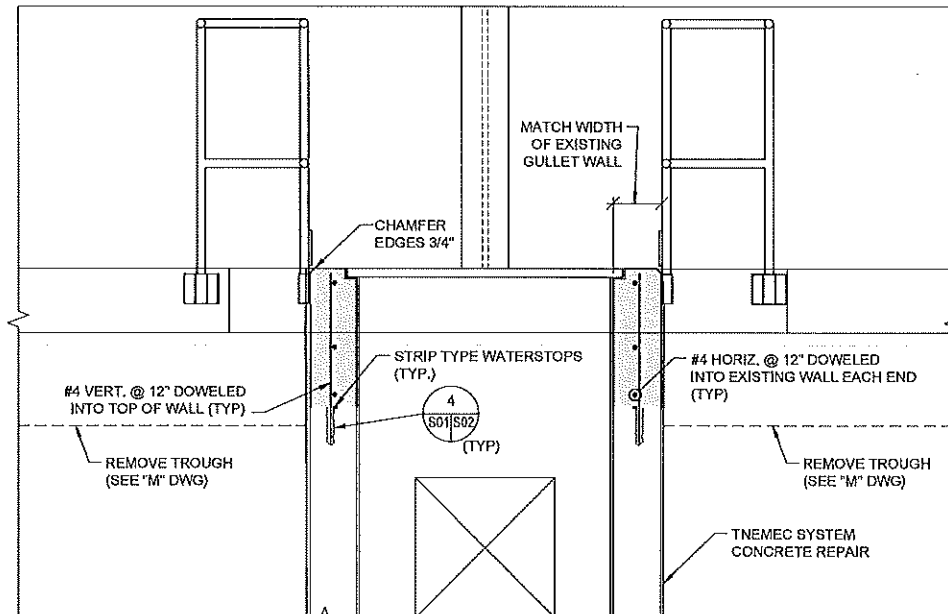
SECTION A

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



1 STAINLESS STEEL PLATE

SCALE: 1"=1'-0"



SECTION B

SCALE: 3/4"=1'-0"

NOTES:

1. SURFACE PREP EXISTING WALLS AS PROVIDED BY REPAIR PRODUCT MANUFACTURER.
2. CONTRACTOR SHALL PROVIDE TYPE 2 OR TYPE 3 CONCRETE REPAIRS WHERE DAMAGE FROM DEMOLITION ACTIVITIES OCCUR AT NO ADDITIONAL COST TO OWNER.
3. COAT ENDS OF EXPOSED REINFORCEMENT WITH SIKA ARMATEC-110 EPOCEM ANTI-CORROSION COATING OR APPROVED EQUAL PRIOR TO SPECIFIED SURFACE CONCRETE REPAIR.
4. FOR TYPE 1 CONCRETE REPAIRS UTILIZE TNEPEC 218/N140/141 COATINGS SYSTEM, OR ENGINEER APPROVED EQUIVALENT, PER THE REQUIREMENTS BELOW:

SURFACE PREPARATION:
REMOVE ALL POORLY ADHERED CONCRETE AND CHIP BACK TO SOUND SUBSTRATE. THE SURFACE SHALL BE CLEAN AND DRY. PRIME ALL EXPOSED REBAR OR OTHER METAL WITH TNEPEC SERIES 1 OMNITHANE PRIMER APPLIED AT 2.5 - 3.5 DRY MILS PRIOR TO THE APPLICATION OF THE CONCRETE REPAIR MORTAR LISTED BELOW.

PATCH & SKIM COAT:
TNEPEC SERIES 218 MORTARCLAD TO FILL AND SMOOTH THE SURFACE OF THE WALL. IF THE DETERIORATION IS GREATER THAN ONE INCH, USE TNEPEC SERIES 217 MORTARCRETE. THE GOAL IS TO SEAL AND PROVIDE A UNIFORM AND SMOOTH SURFACE.
2ND COAT: SERIES N140-1255 POTA-POX PLUS 4.0 - 8.0
3RD COAT: SERIES 21 EPOXOLINE 12.0 - 14.0

FILTERS NO 2 AND NO 8
STRUCTURAL REPAIRS
AUGUSTA UTILITIES DEPARTMENT PLANT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



FILE	SEE LEFT
VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING
DATE	MARCH 2025
PROJ.	100339.11
DWG.	S01

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2. CONTRACTOR TO REMOVE FILTER MEDIA FROM FILTER #7 (A & B CELLS). REMOVAL SHOULD NOT CONSIDER SAVING THE EXISTING MEDIA FOR REUSE.

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



INSTALL PRIVACY SCREEN ALONG
ENTIRE LENGTH OF SECURITY
FENCE TO SCREEN SUPERSACKS
FROM PUBLIC VIEW

[illegible]

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2

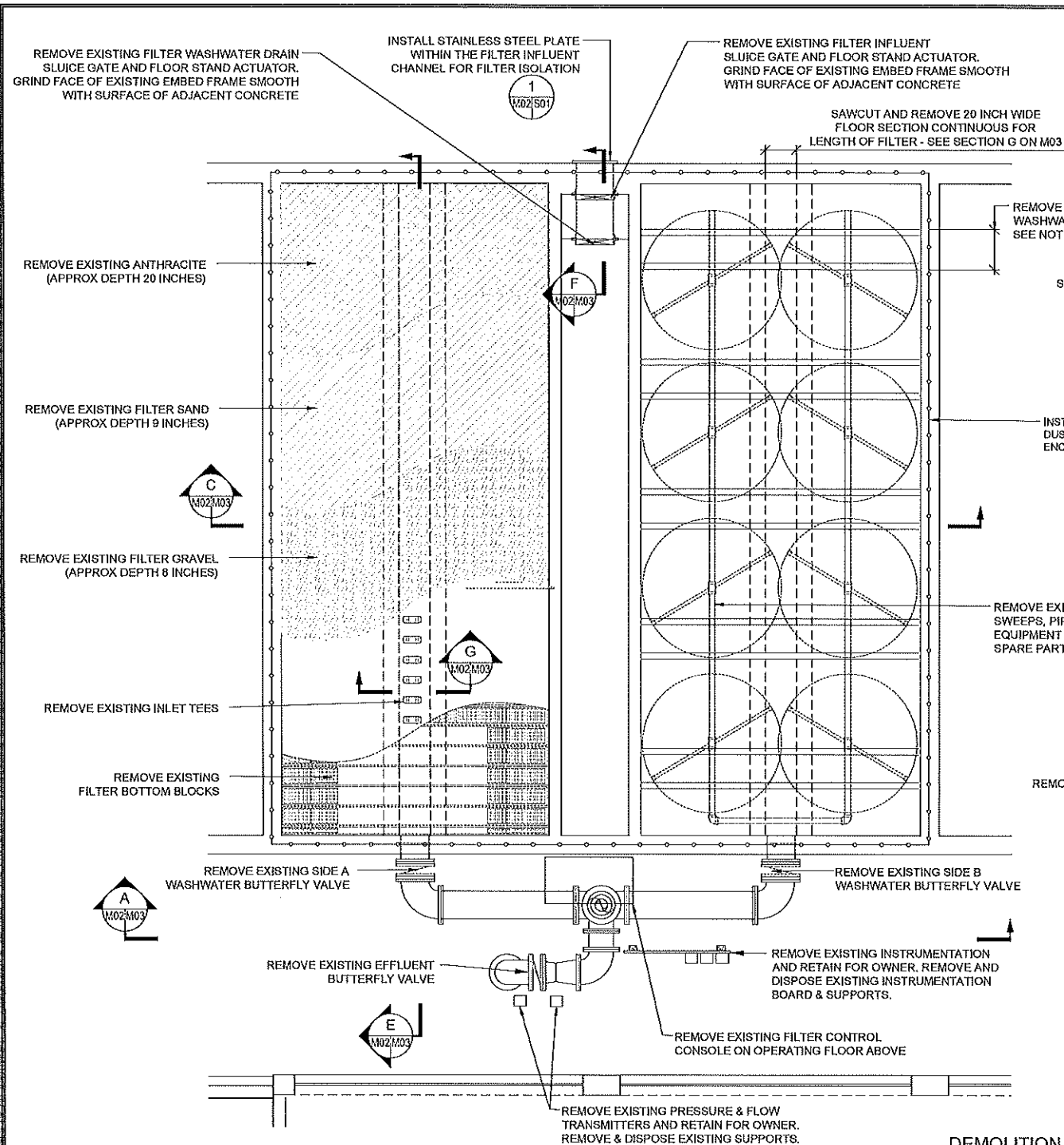


DWG. MD1

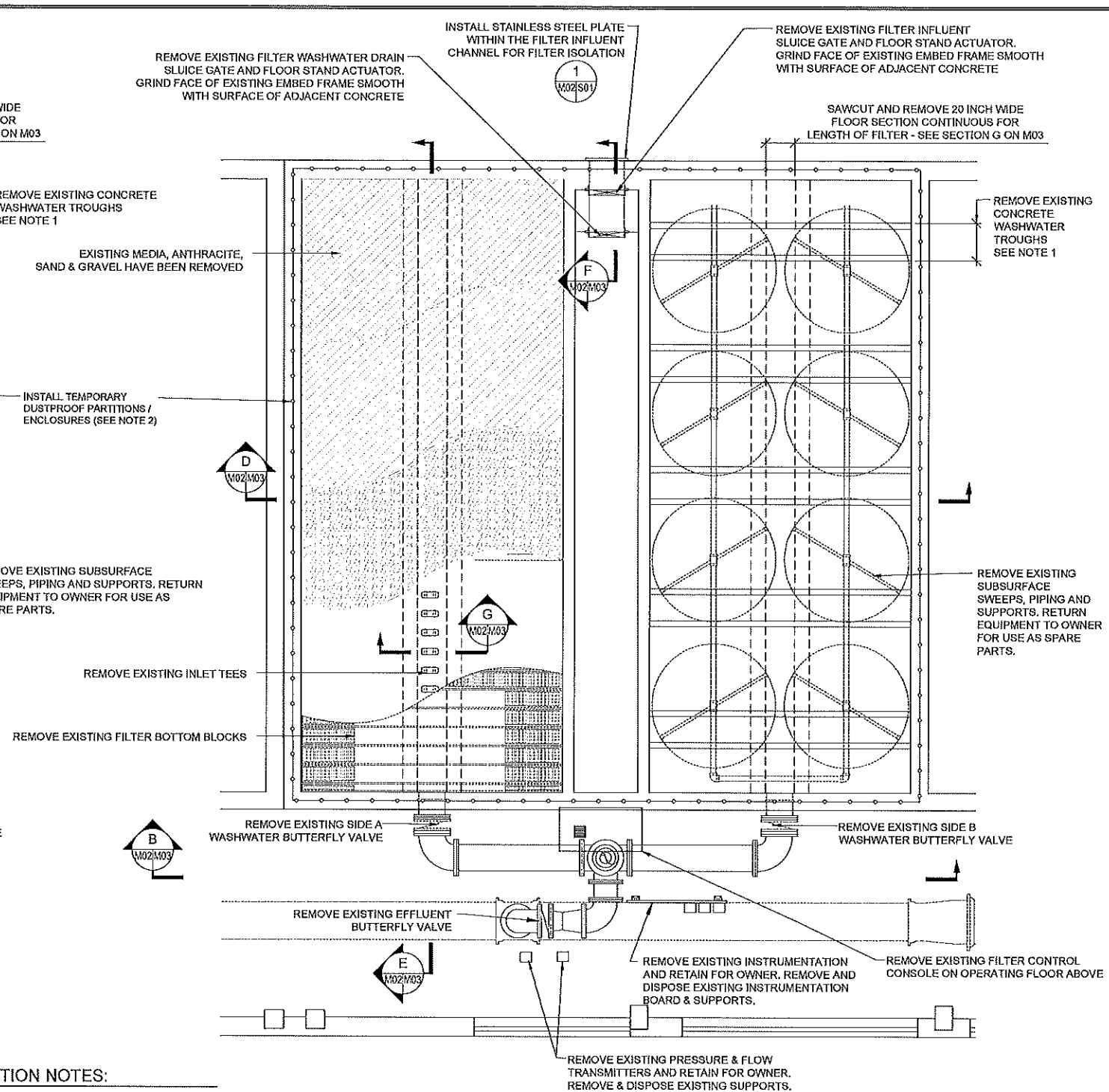
ISSUED FOR BID

M01

I:\PROJECT FILES\ AUGUSTA UTILITIES DEPARTMENT\100339.11 HIGHLAND AVENUE WTP FILTER MODIFICATIONS ... ZEL-2102-00\300 DESIGN\355 PRELIMINARY DRAWINGS\01 CIVIL & DEMO\WQ2 FILTER DEMO.DWG



FILTER NO. 2 DEMOLITION PLAN
SCALE: 1/4"=1'-0"



FILTER NO. 8 DEMOLITION PLAN

- ## DEMOLITION NOTES:
1. PROVIDE TEMPORARY SUPPORT FOR EXISTING TROUGH DURING DEMOLITION OPERATIONS OR OTHERWISE PROTECT EXISTING WALLS FROM DAMAGE DURING TROUGH DEMOLITION.
 2. PROTECT ADJACENT AREAS FROM DUST AND DEBRIS DURING DEMOLITION BY ERECTING AND MAINTAINING TEMPORARY DUST CONTAINMENT SYSTEM. SYSTEM TO INCLUDE AT A MINIMUM FLOOR TO CEILING PARTITIONS/ENCLOSURES AROUND EACH FILTER DURING DEMOLITION ACTIVITIES. PARTITION/ENCLOSURES TO BE FULLY FRAMED, WITH TAPED JOINTS AND WALLS CONSISTING OF A MINIMUM OF 6-MIL THICK WHITE POLYETHYLENE PLASTIC OR 6-MIL FIRE RETARDANT SEMI-TRANSPARENT PLASTIC FILM. PROVIDE A MINIMUM OF TWO ZIPPER ENTRY/EXIT POINTS PER ENCLOSURE AREA.
 3. REMOVE AND DISPOSE OF THE EXISTING FILTER MEDIA AND UNDERDRAIN SYSTEMS IN ACCORDANCE WITH ALL RULES AND REGULATIONS. ALL OTHER MATERIALS SPECIFIED FOR REMOVAL, INCLUDING FILTER SUBSURFACE SWEEPS AND HYDRAULIC ACTUATORS, SHALL BE SALVAGED, AND RETURNED TO THE OWNER. IF THE OWNER ELECTS NOT TO SAVE RETURNED MATERIALS AND EQUIPMENT THE CONTRACTOR SHALL DISPOSE OF THEM IN ACCORDANCE WITH LOCAL RULES AND REGULATIONS.
 4. FILTER NO. 1 AND NO. 3 WILL CEASE OPERATION DURING DEMOLITION OPERATIONS & STRUCTURAL REPAIR OF FILTER NO. 2.
 5. FILTERS NO. 7 AND NO. 9 WILL CEASE OPERATION DURING DEMOLITION OPERATIONS & STRUCTURAL REPAIR OF FILTER NO. 8.
 6. IF THE EXISTING VALVES DO NOT SEAT WELL ENOUGH TO ISOLATE EACH FILTER CELL TO FACILITATE THE PROPOSED WORK, A BLIND FLANGE SHOULD BE INSTALLED ON THE DOWNSTREAM SIDE OF EACH VALVE PROPOSED FOR REMOVAL TO FULLY ISOLATE EACH FILTER CELL FROM THE SYSTEM.
 7. ALL EXISTING SURFACES, PIPE, VALVES OR EQUIPMENT COATINGS AFFECTED BY DEMOLITION OR SUBSEQUENT CONSTRUCTION ACTIVITIES SHALL BE TOUCHED-UP IN ACCORDANCE WITH SPECIFICATION SECTION 09 90 00.

ISSUED FOR BID

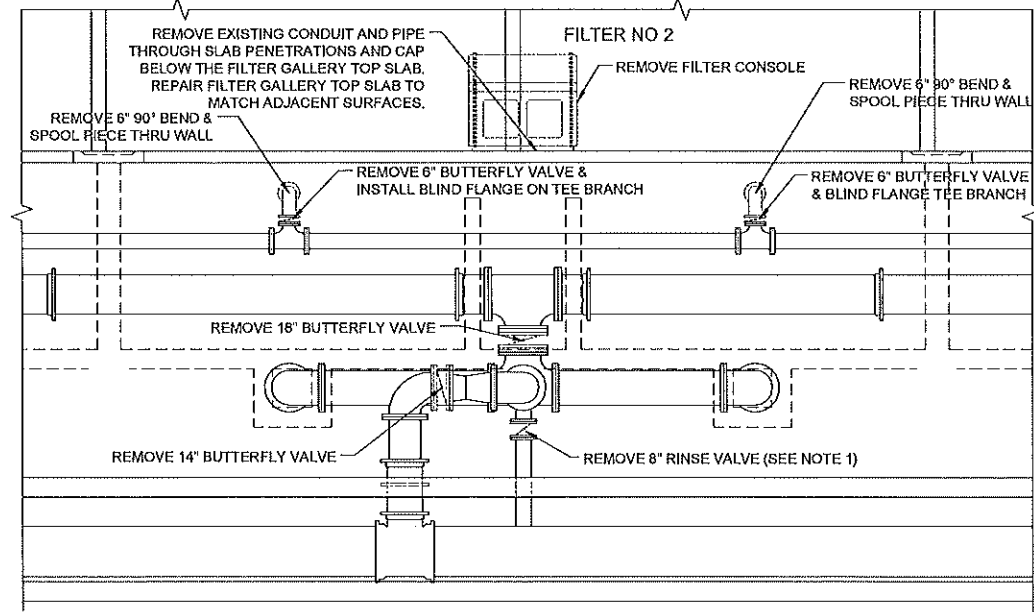
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FILTER DEMOLITION PLAN
AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2

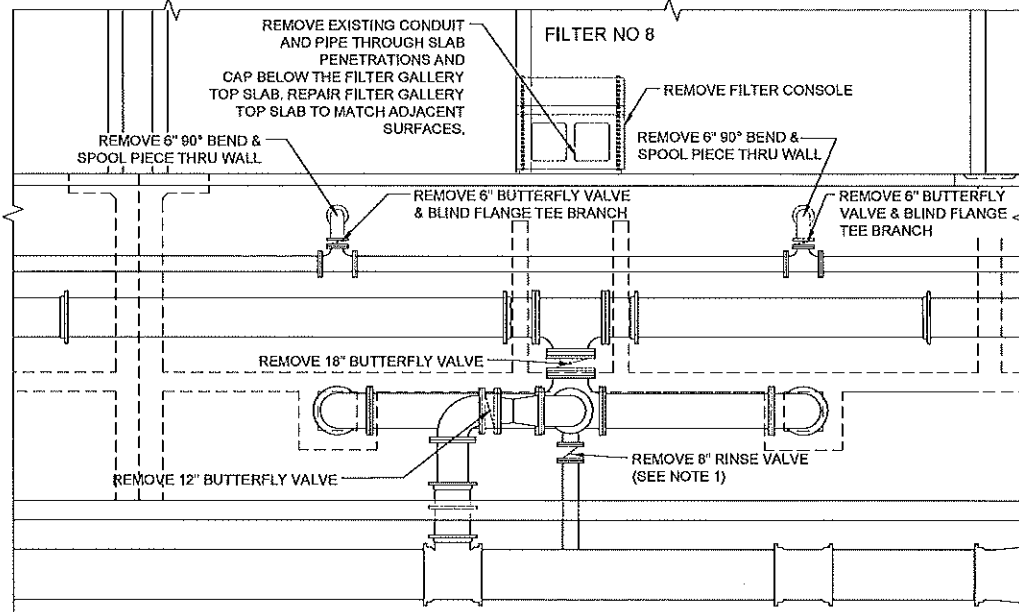


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DATE	MARCH 2025
PROJ.	100339.11
DWG.	M02

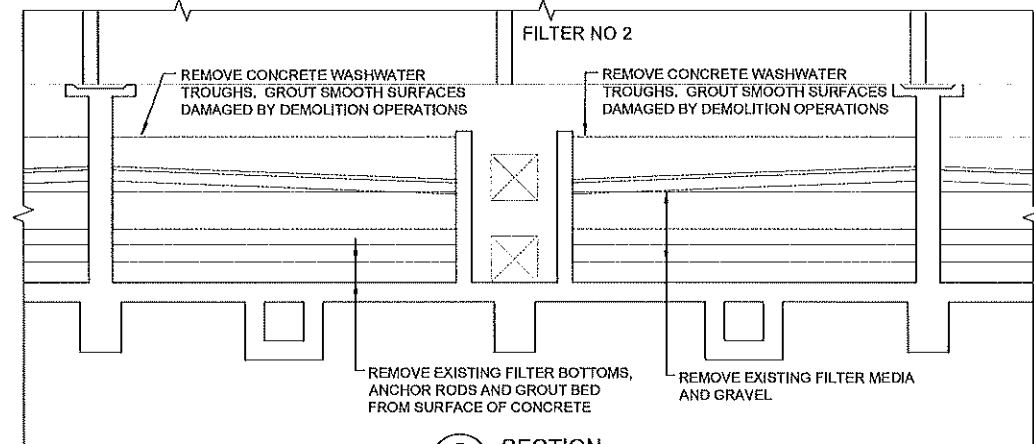
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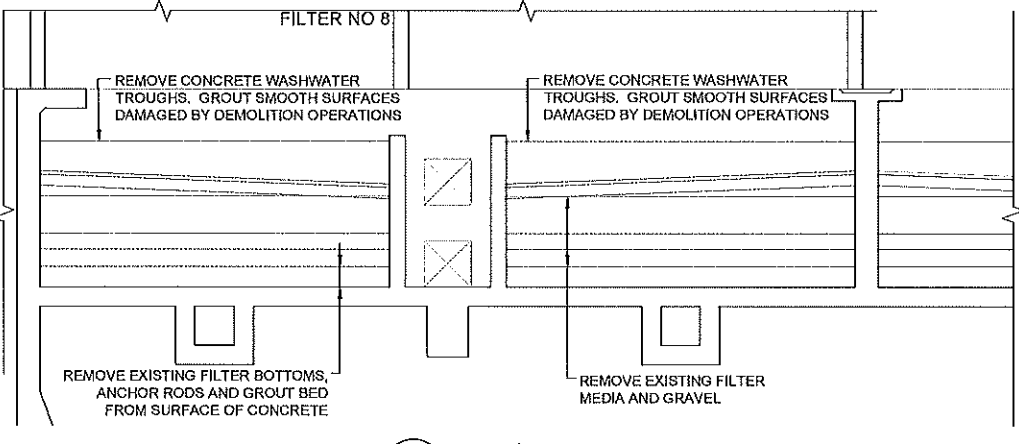
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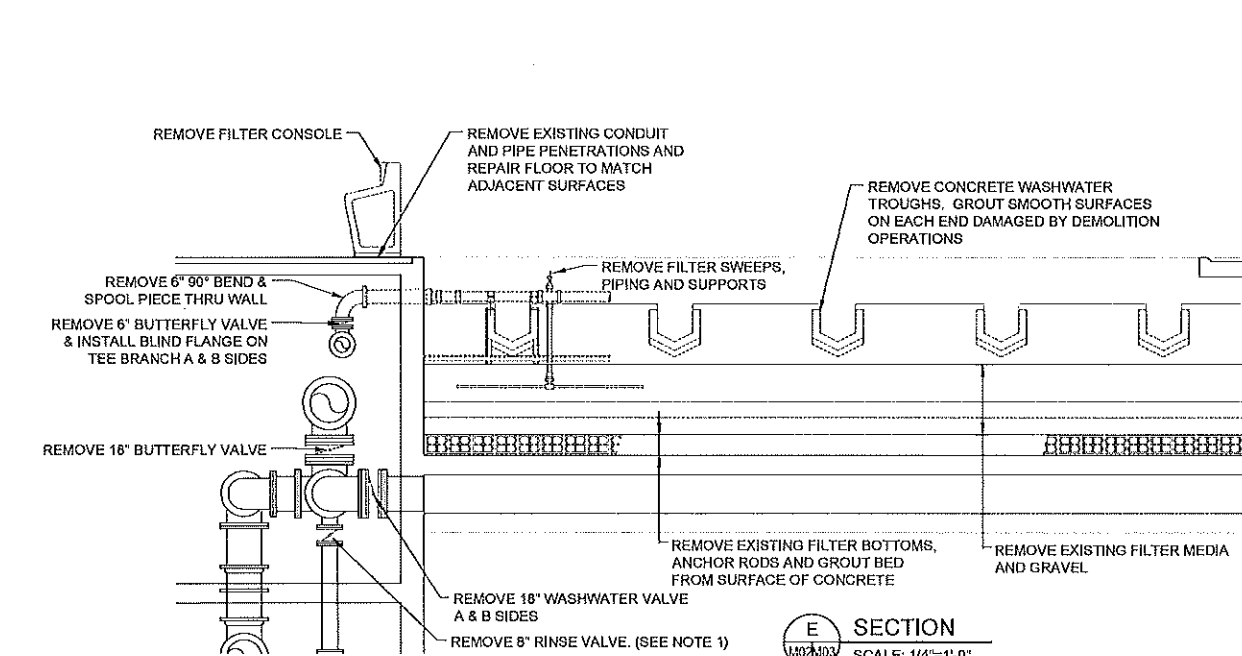
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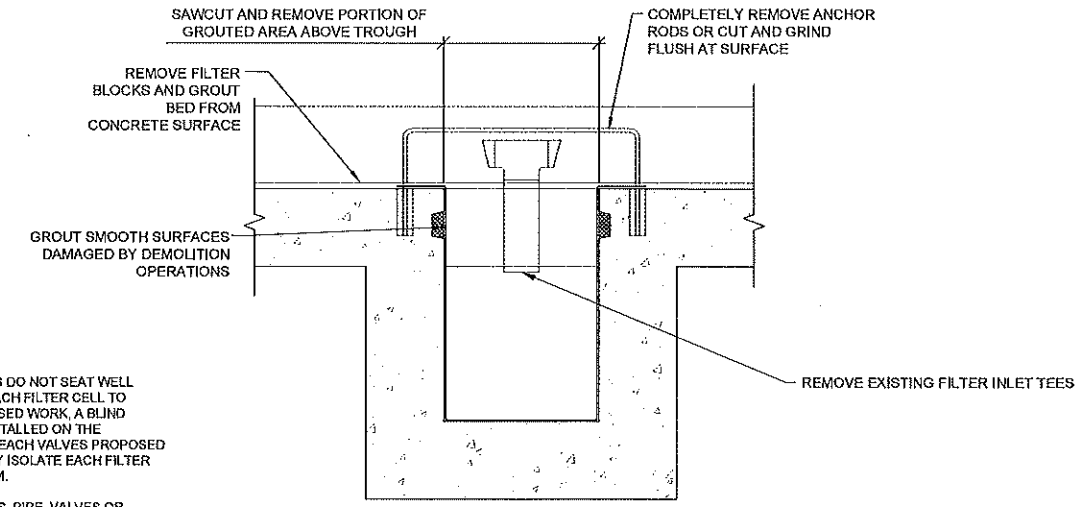
C SECTION
SCALE: 1/4"=1'-0"



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



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



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

- NOTES:**
1. IF THE EXISTING VALVES DO NOT SEAT WELL ENOUGH TO ISOLATE EACH FILTER CELL TO FACILITATE THE PROPOSED WORK, A BLIND FLANGE SHOULD BE INSTALLED ON THE DOWNSTREAM SIDE OF EACH VALVES PROPOSED FOR REMOVAL TO FULLY ISOLATE EACH FILTER CELL FROM THE SYSTEM.
 2. ALL EXISTING SURFACES, PIPE, VALVES OR EQUIPMENT COATINGS AFFECTED BY DEMOLITION OR SUBSEQUENT CONSTRUCTION ACTIVITIES SHALL BE TOUCHED-UP IN ACCORDANCE WITH SPECIFICATION SECTION 09 90 00



NO.	DATE	DESIGNED BY	DRAWN BY	REVISION	CHECKED BY	APPROVED BY	JD
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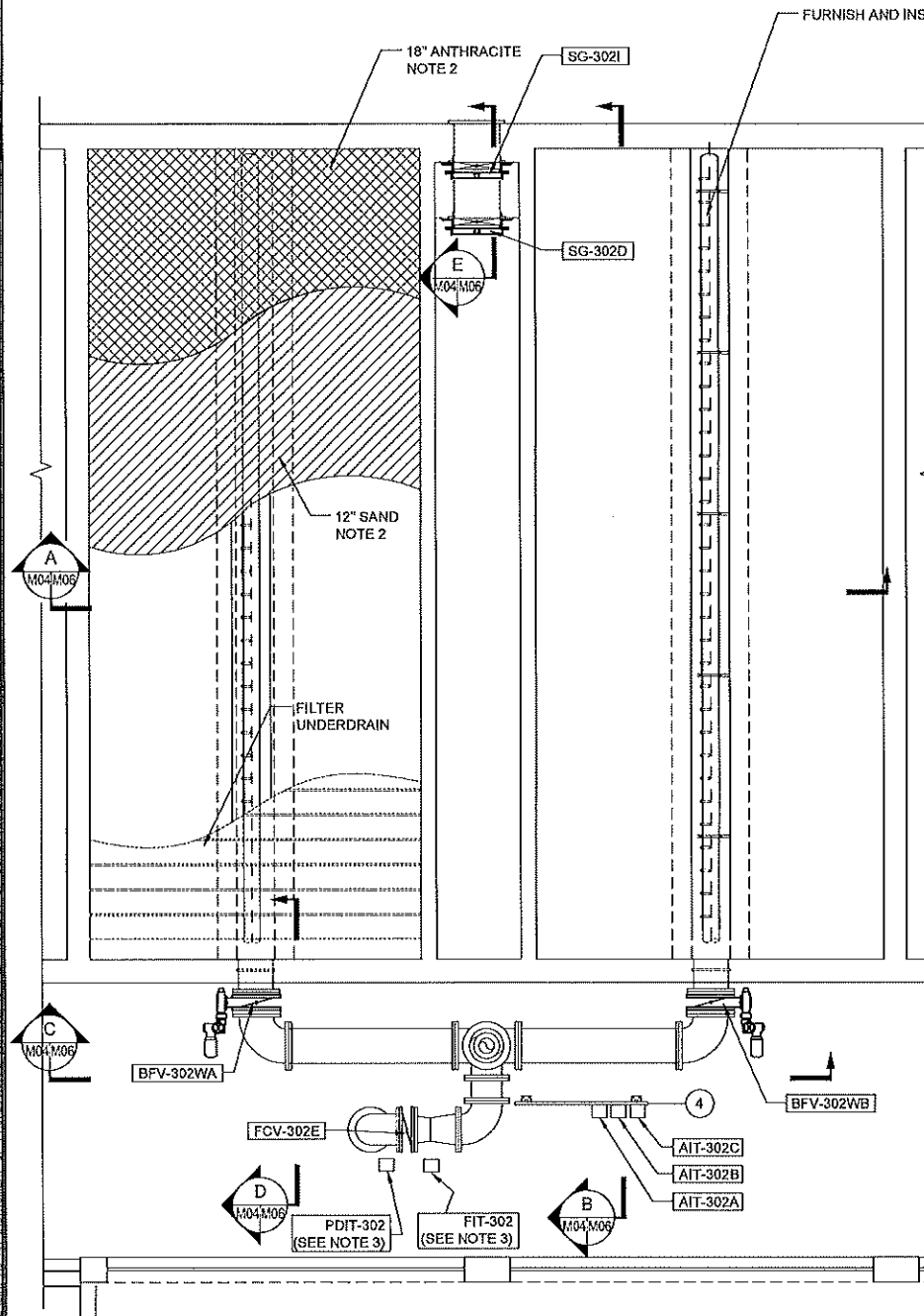
FILTERS NO 2 & NO 8
DEMOLITION SECTIONS
AUGUSTA UTILITIES DEPARTMENT PLANT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



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VERIFY SCALE	
DATE	MARCH 2025
PROJ.	100339.11
DWG.	MO3

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H:\PROJECT FILES\100339 - AUGUSTA UTILITIES DEPARTMENT\100339.11 AUGUST AVENUE WTP FILTER MODIFICATIONS - ZEL-2102-00\300 DESIGN\305 PRELIMINARY DRAWINGS\02 PROCESS MECH\W04 FILTER 2 MODS.DWG
REUSE OF DOCUMENT: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CONSULTING ENGINEERING. HOWEVER, THIS SHALL NOT PREVENT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.

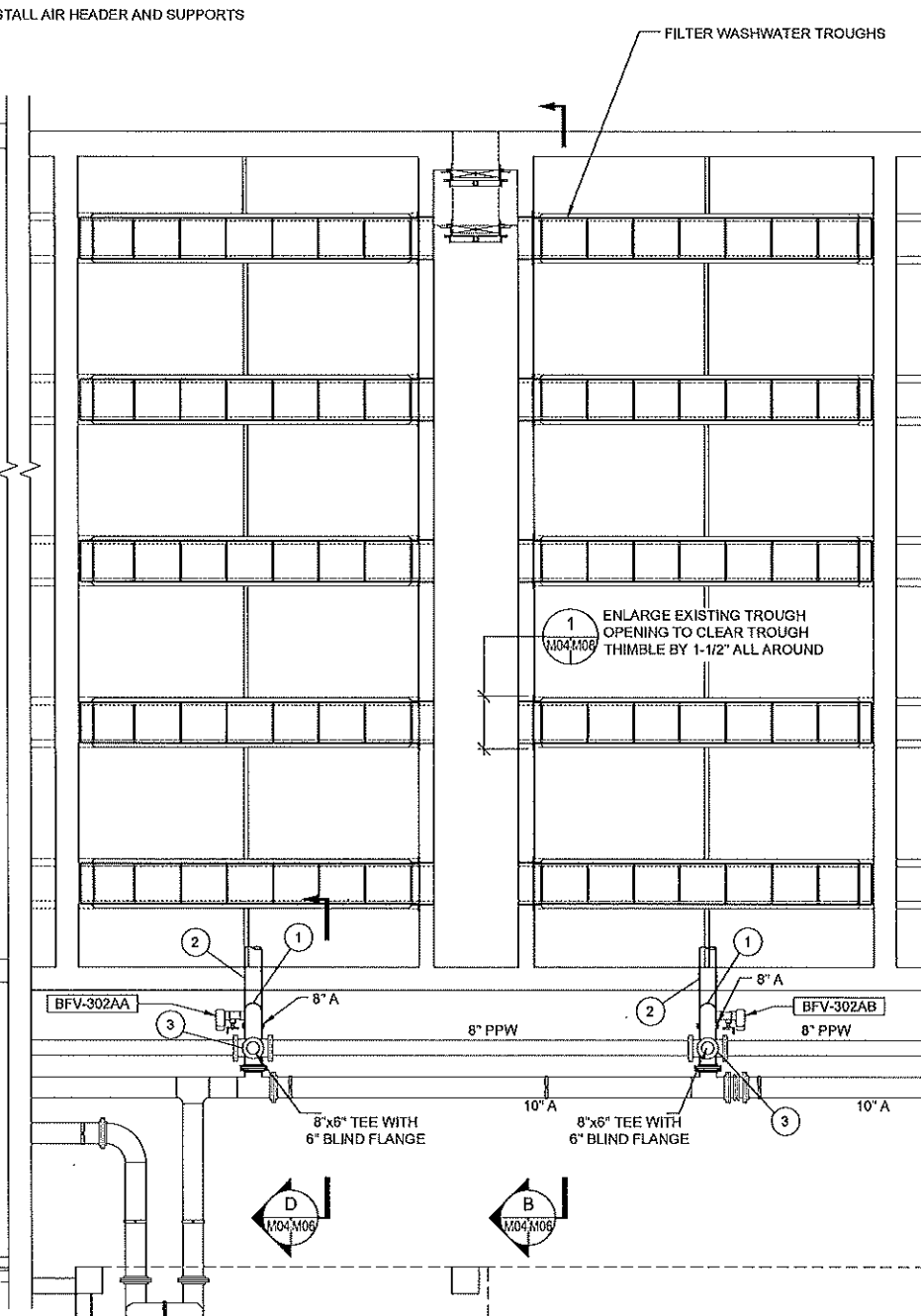


FILTER NO. 2 LOWER LEVEL PLAN
SCALE: 1/4"=1'-0"



GENERAL NOTES:

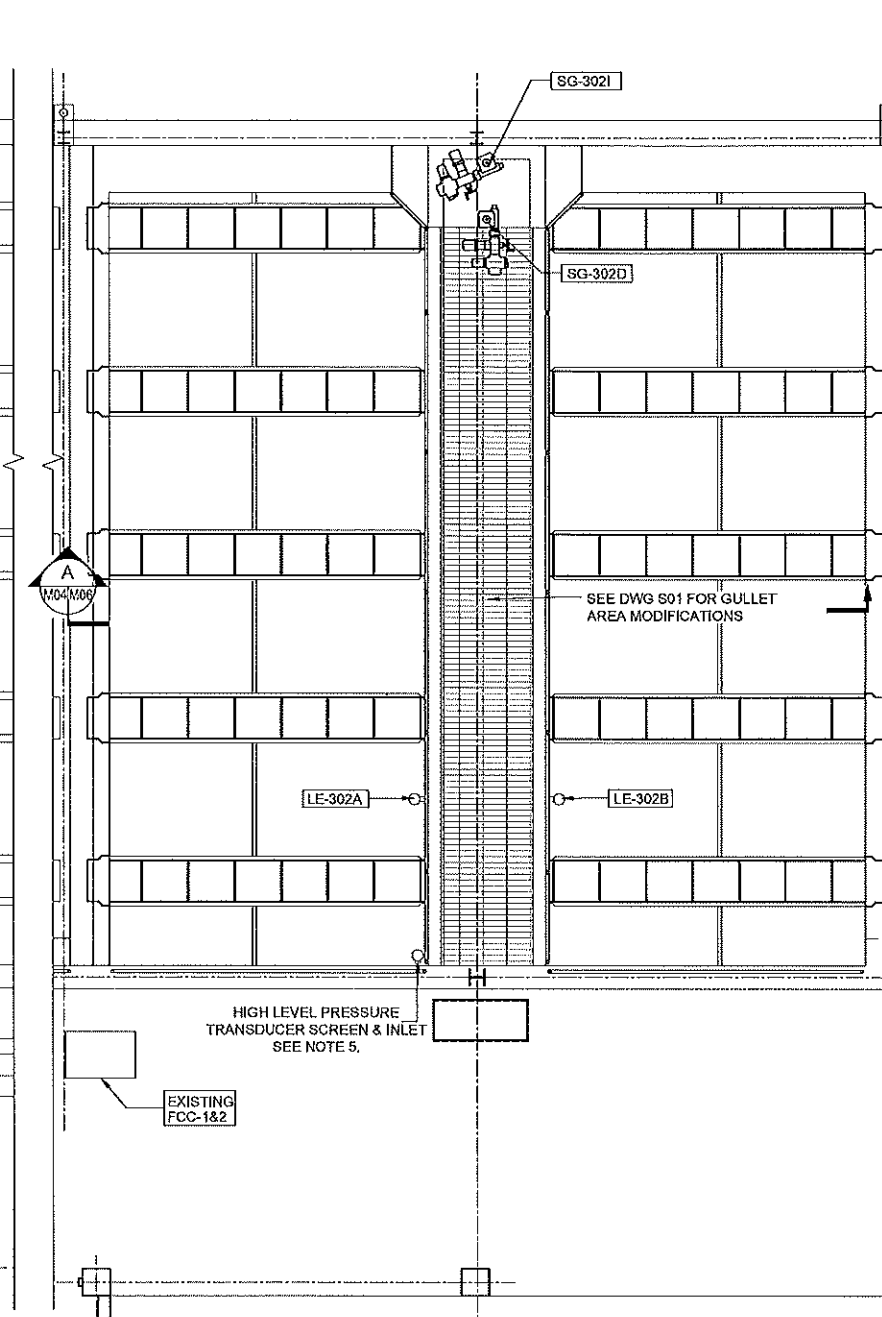
1. FIELD VERIFY MEASUREMENTS FOR NEW VALVES. PROVIDE FLANGE FILLERS AS REQUIRED FOR AVAILABLE CLEARANCES.
2. CONTRACTOR SHALL FURNISH AND INSTALL REPLACEMENT SAND AND ANTHRACITE MEDIA FOR THIS FILTER. SEE SPECIFICATION SECTION 46 61 13.
3. FLOW METER AND PRESSURE GAUGE SHALL BE MOUNTED ON A SINGLE SUPPORT COLUMN.
4. FILTER AREA VARIES SLIGHTLY FOR EACH FILTER CELL. CONTRACTOR TO FIELD CONFIRM EXACT DIMENSIONS.
5. CONTRACTOR TO PROVIDE NEW 316 SST INLET SCREEN FOR EACH IN FILTER HIGH-LEVEL PRESSURE TRANSDUCER SENSING LINE. SCREEN SHALL BE 60-MESH OR SMALLER.



FILTER NO. 2 TROUGH LEVEL PLAN
SCALE: 1/4"=1'-0"

EQUIPMENT SCHEDULE

- 1 8" 304 SST 90° BEND
- 2 USE LINK SEAL AT CORED HOLE AROUND AIR PIPE. LINK SEAL TO HAVE 316 STAINLESS STEEL HARDWARE. SEE DETAIL 4 ON M-08
- 3 6" DI BLIND FLANGE
- 4 STAINLESS STEEL INSTRUMENTATION BOARD. SEE SHEET M-09.

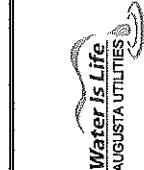


FILTER NO. 2 OPERATING LEVEL PLAN
SCALE: 1/4"=1'-0"



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FILTER NO 2 MODIFICATIONS PLAN
AUGUSTA UTILITIES DEPARTMENT PLANT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2

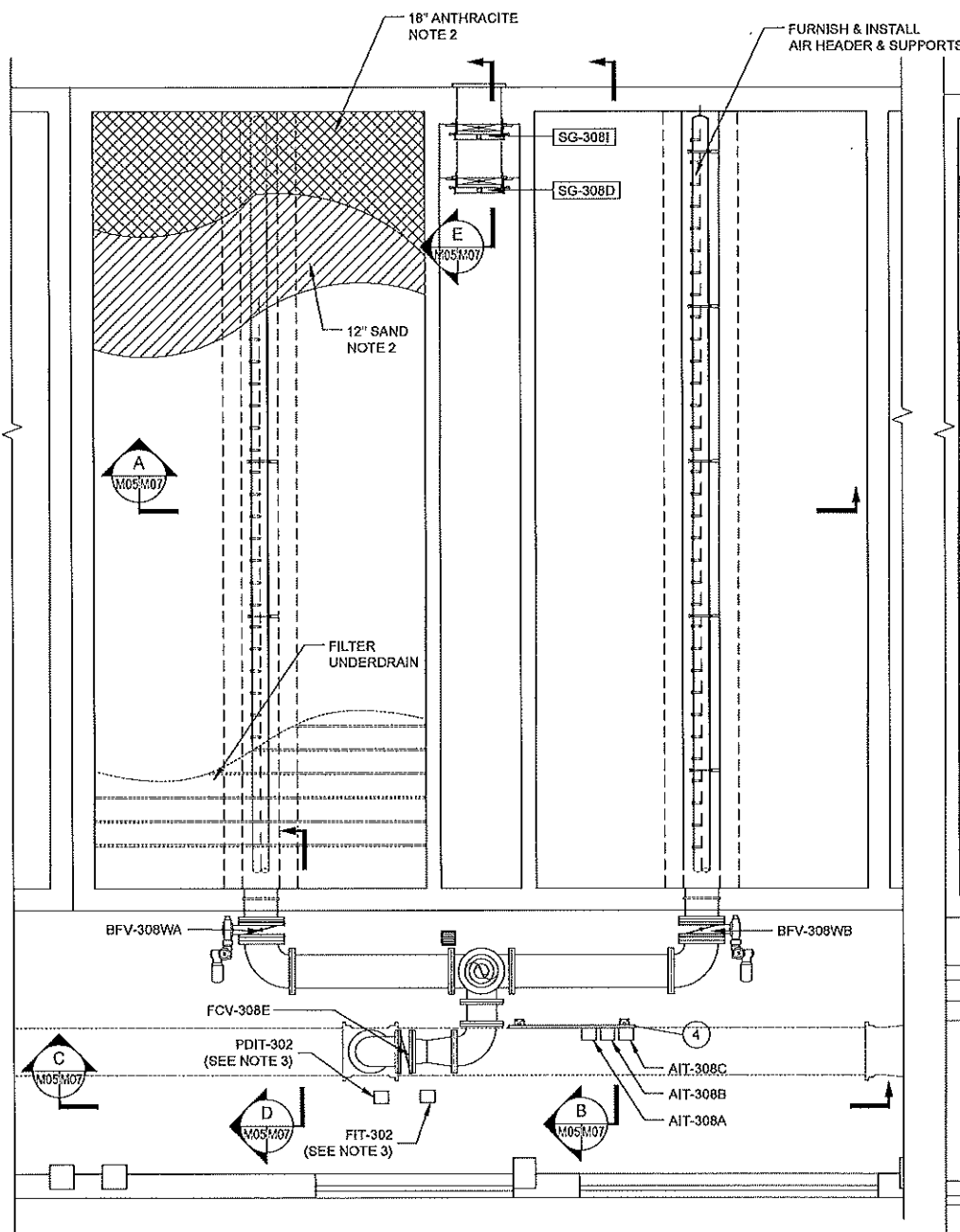


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DATE	MARCH 2025
PROJ.	100339.11
DWG.	M04

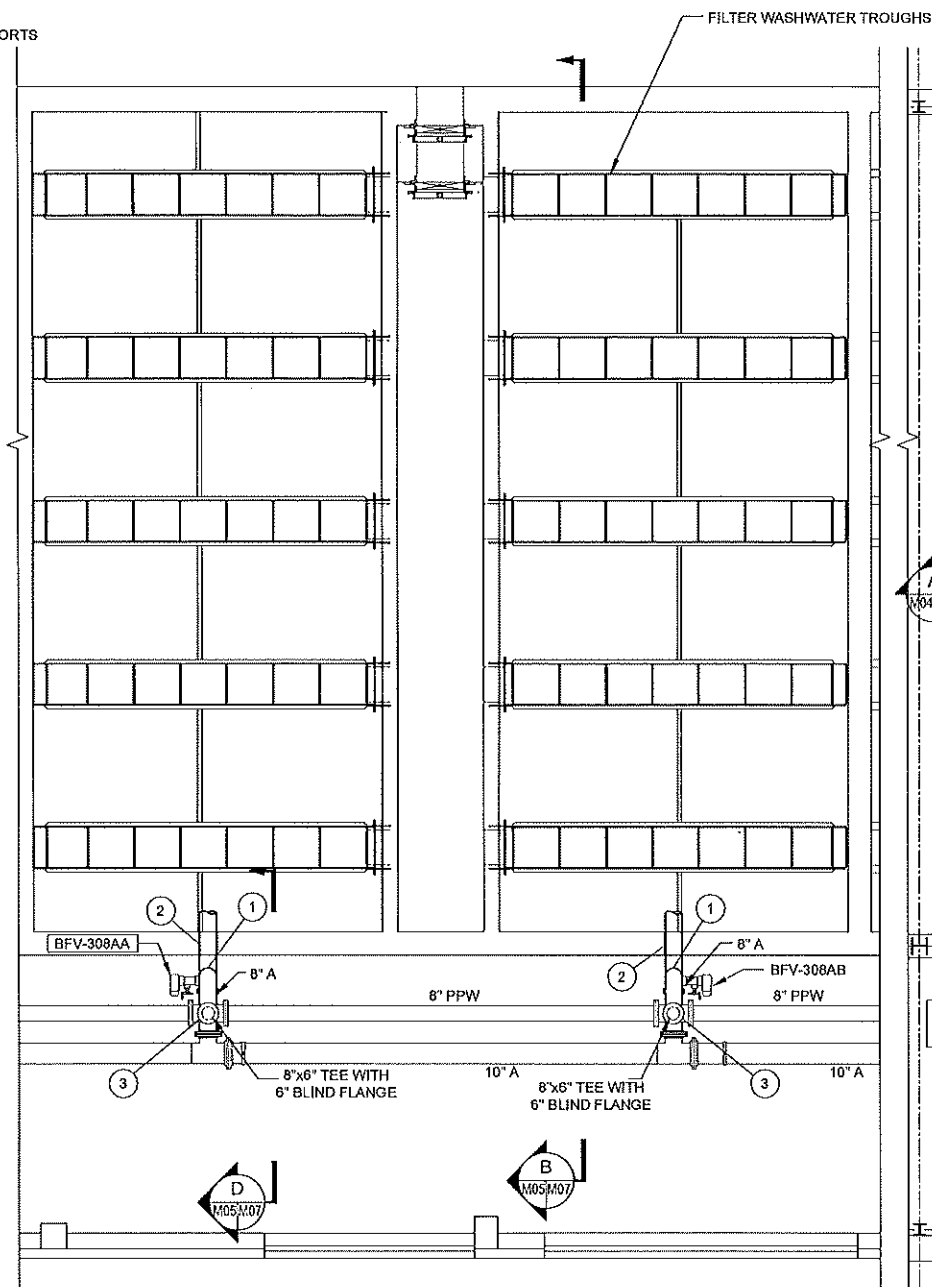
ISSUED FOR BID

003398 - AUGUSTA UTILITIES DEPARTMENT 1003398.11
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PRELIMINARY DRAWINGS COJ PROCESS MECH M05
FLUOR 8 MOJUS.DWG

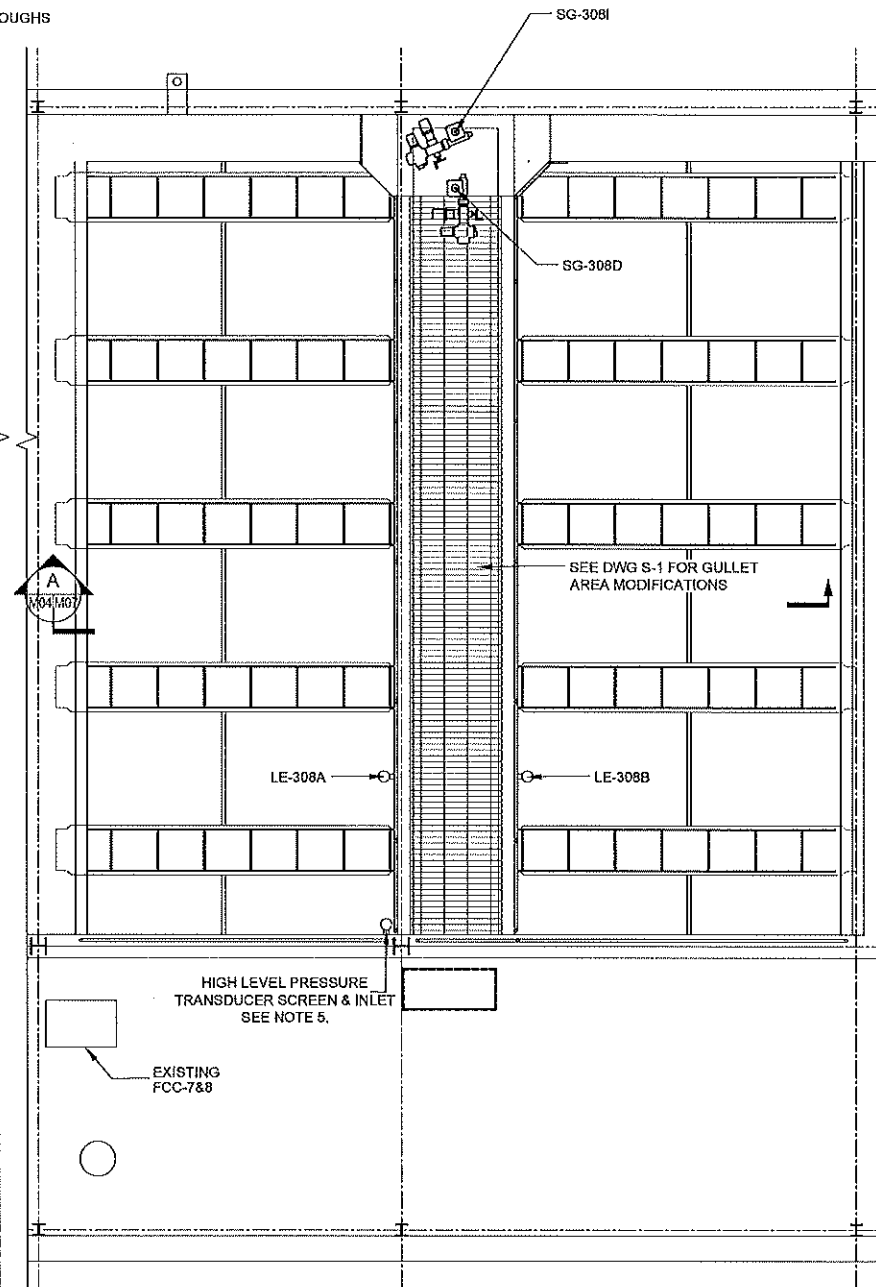
BY THE CONTRACT FOR THE CLIENT AS PROVIDED FOR THE CONTRACT.



FILTER NO. 8 LOWER LEVEL PLAN
SCALE: 1/4"=1'-0"



FILTER NO. 8 TROUGH LEVEL PLAN
SCALE: 1/4"=1'-0"



FILTER NO. 8 OPERATING LEVEL PLAN
SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. FIELD VERIFY MEASUREMENTS FOR NEW VALVES. PROVIDE FLANGE FILTERS AS REQUIRED FOR AVAILABLE CLEARANCES.
2. CONTRACTOR SHALL FURNISH AND INSTALL REPLACEMENT SAND AND ANTHRACITE MEDIA FOR THIS FILTER. SEE SPECIFICATION SECTION 46 61 13.
3. FLOW METER AND PRESSURE GAUGE SHALL BE MOUNTED ON A SINGLE SUPPORT COLUMN
4. FILTER AREA VARIES SLIGHTLY FOR EACH FILTER CELL. CONTRACTOR TO FIELD CONFIRM EXACT DIMENSIONS.
5. CONTRACTOR TO PROVIDE NEW 316 SST INLET SCREEN FOR EACH IN FILTER HIGH-LEVEL PRESSURE TRANSDUCER SENSING LINE. SCREEN SHALL BE 60-MESH OR SMALLER.

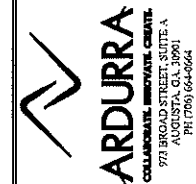
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- ① 8" 304 SST 90° BEND
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- ③ 6" DI BLIND FLANGE
- ④ STAINLESS STEEL INSTRUMENTATION BOARD. SEE SHEET M-09

[illegible]

FILTER NO 8 MODIFICATIONS PLAN

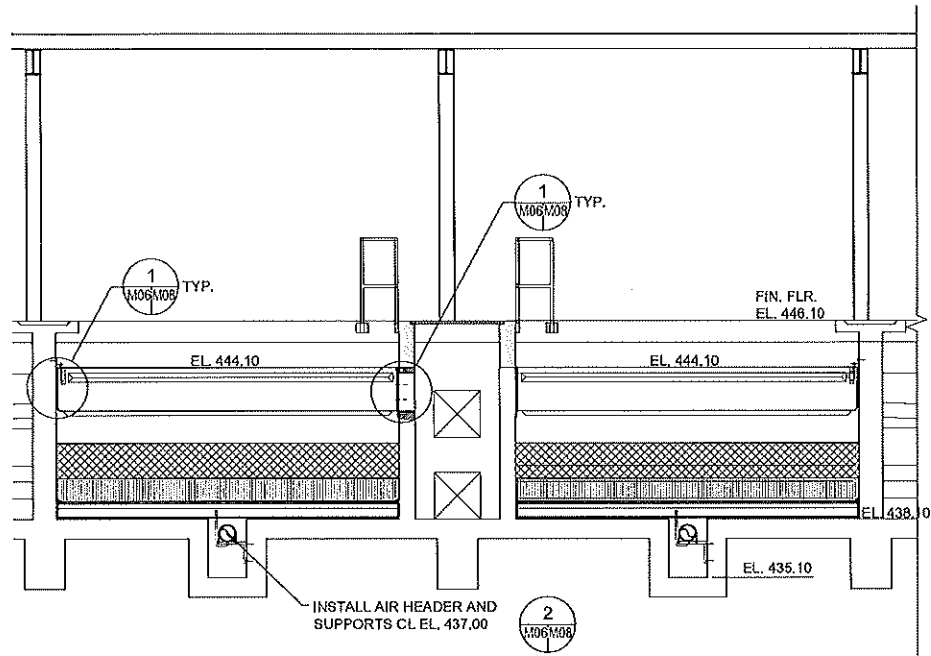
AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



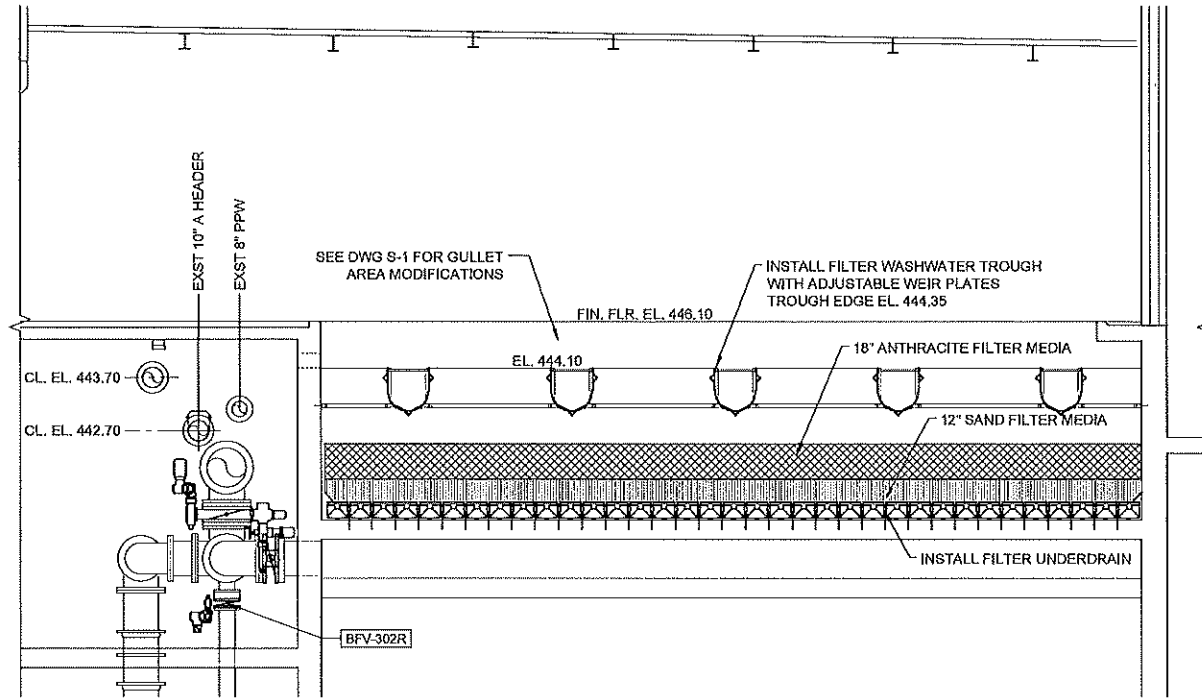
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DATE	MARCH 2025
PROJ.	100339.11
DWG.	M05

ISSUED FOR BID

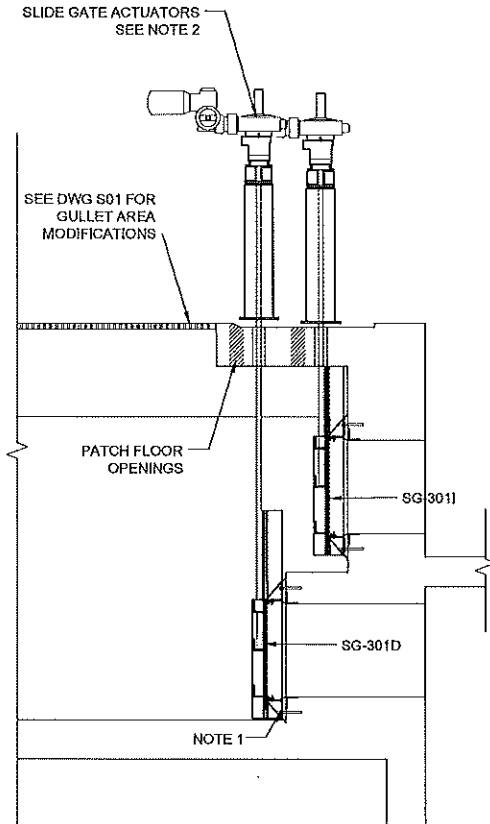
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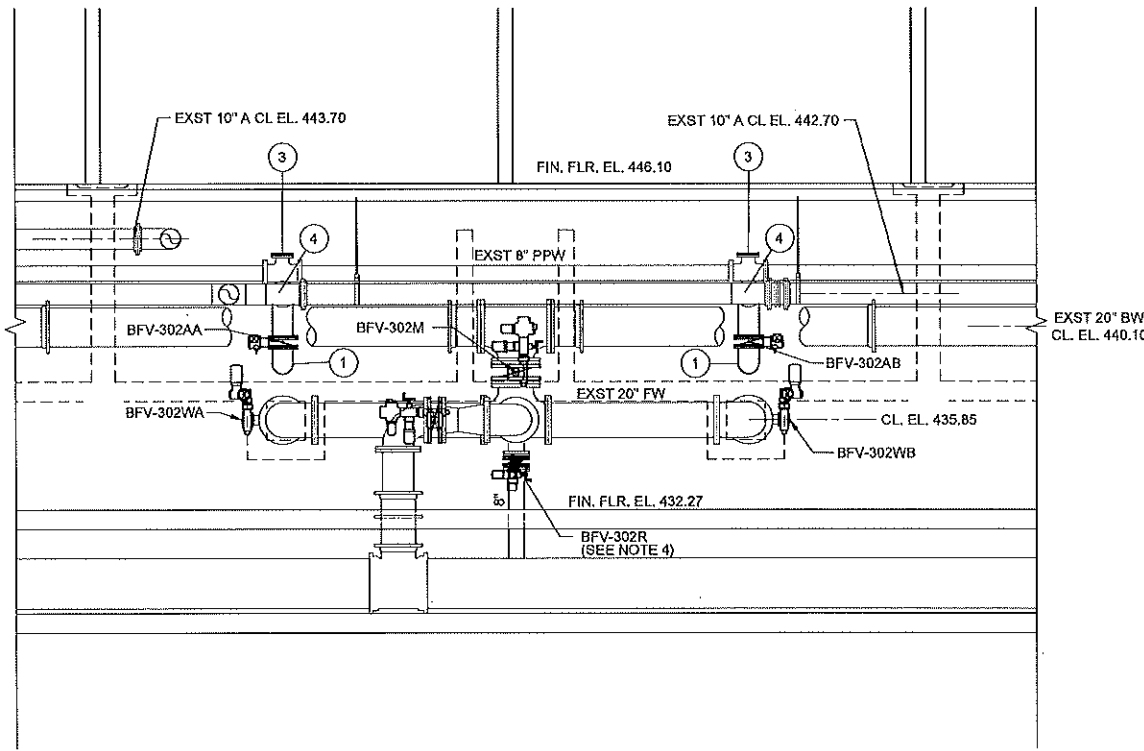
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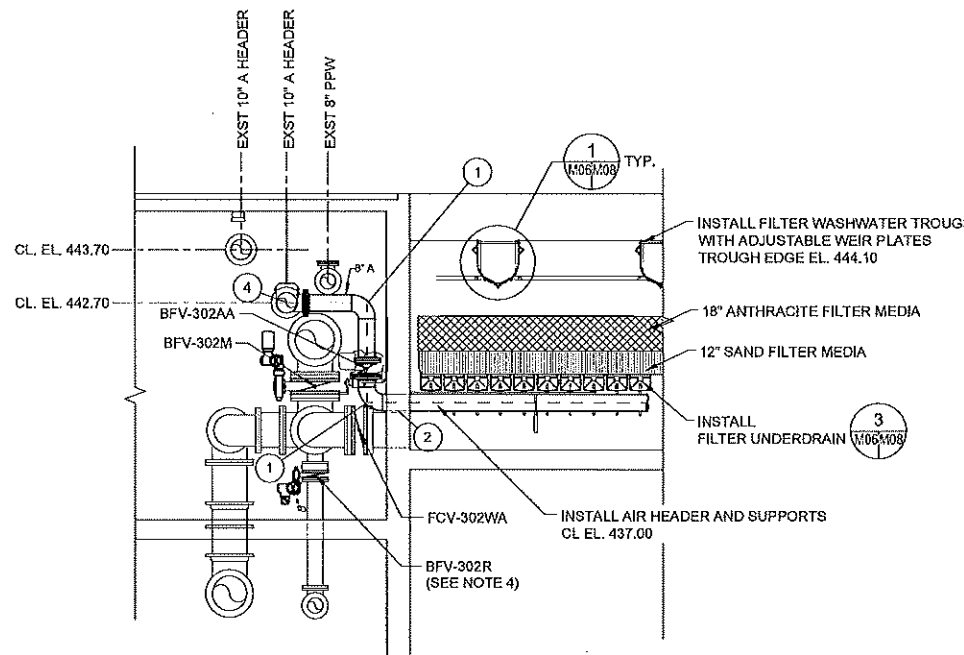
B SECTION
SCALE: 1/4"=1'-0"



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



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



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

EQUIPMENT SCHEDULE

- 1 8" 304 SST 90° BEND
- 2 USE LINK SEAL AT CORED HOLE AROUND AIR PIPE. LINK SEAL TO HAVE 316 STAINLESS STEEL HARDWARE
- 3 8"x6" DI TEE W/ 6" BLIND FLANGE.
- 4 EXISTING 10" X 8" 304 SST TEE

GENERAL NOTES:

1. INSTALL NEW SLIDE GATES WITH CHEMICAL ANCHORS INTO EXISTING CONCRETE PER GATE VENDOR INSTALLATION INSTRUCTIONS.
2. ORIENT ACTUATORS SO AS NOT TO INTERFERE WITH EACH OTHER OR ACCESS FOR MAINTENANCE
3. FIELD VERIFY MEASUREMENTS FOR NEW VALVES. PROVIDE FLANGE FILERS AS REQUIRED FOR AVAILABLE CLEARANCES.
4. INSTALL AN 8" FLANGED BY PLAIN END SPOOL PIECE W/ MEGA-LUG BELOW THE 8" RINSE BFV.
5. RE-ROUTE EXISTING 2" GALVANIZED WATER LINE AS REQUIRED TO AVOID NEW STAINLESS STEEL PIPING.



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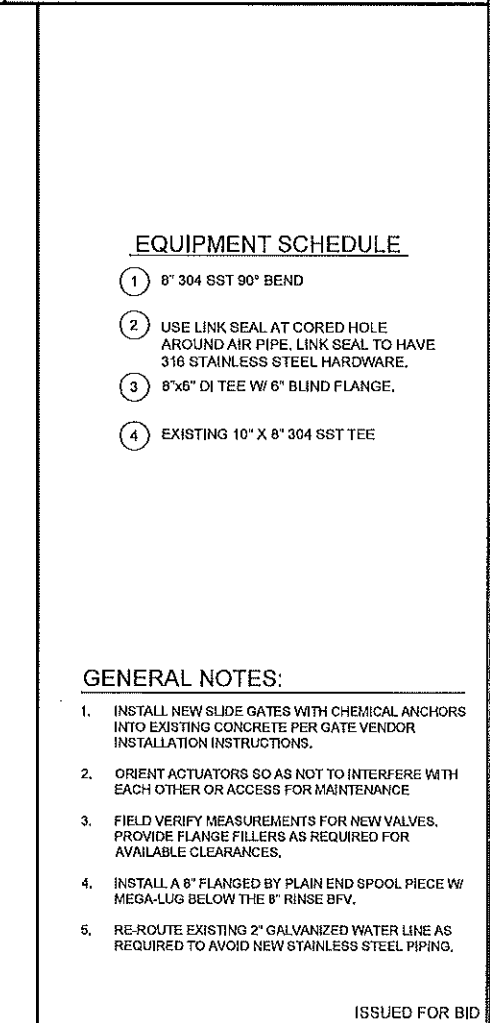
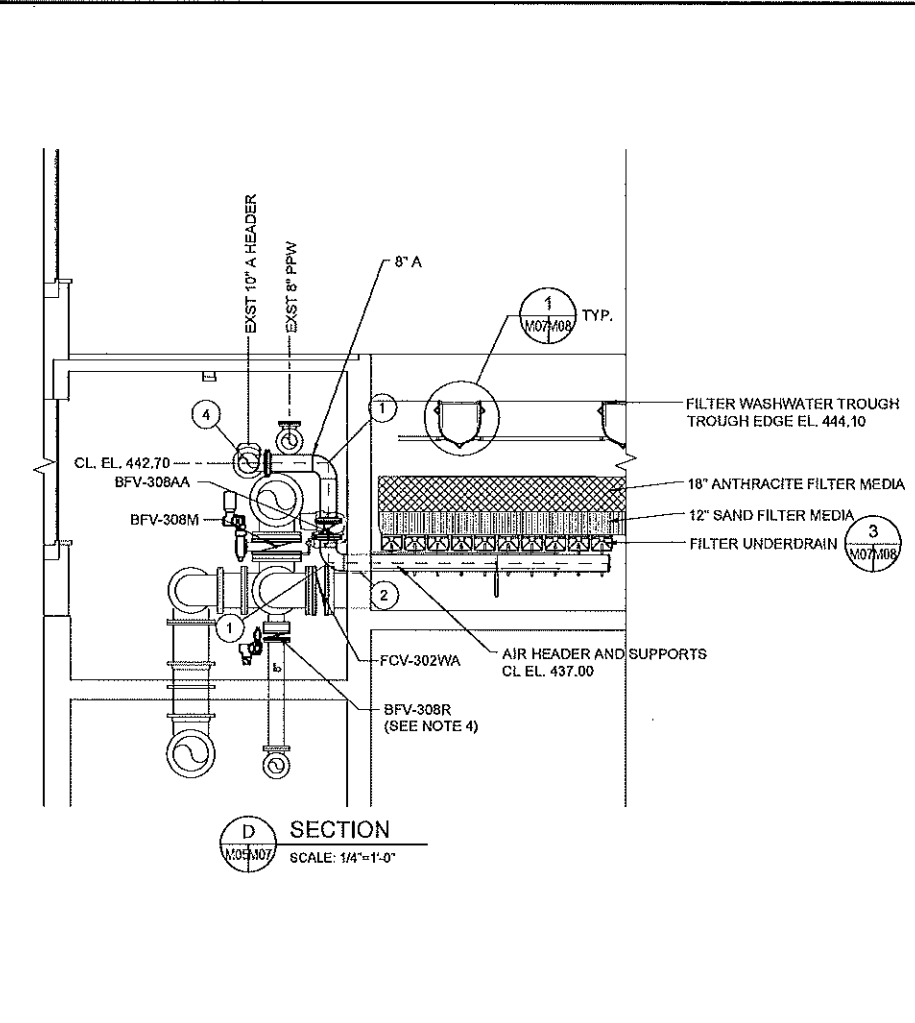
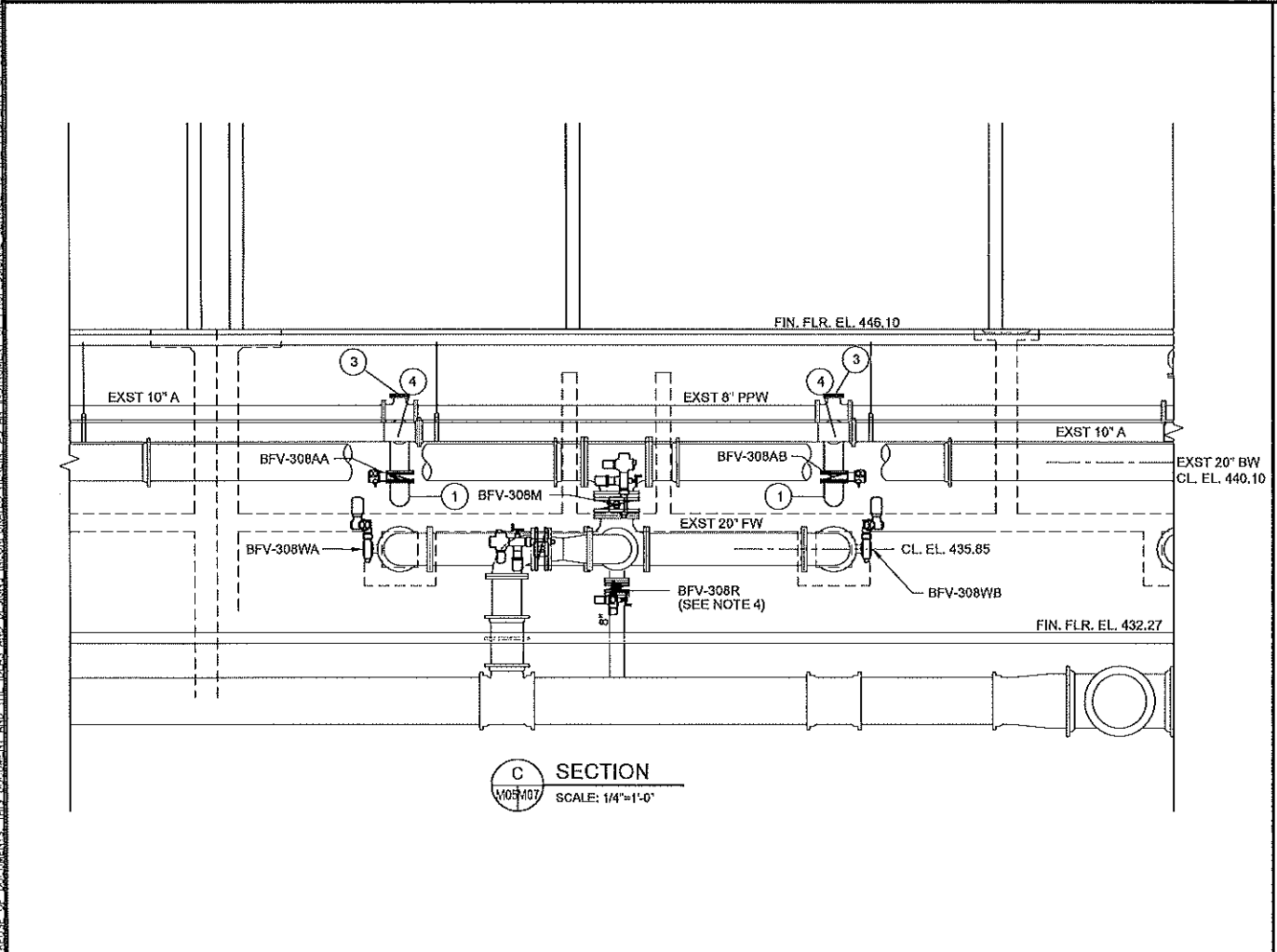
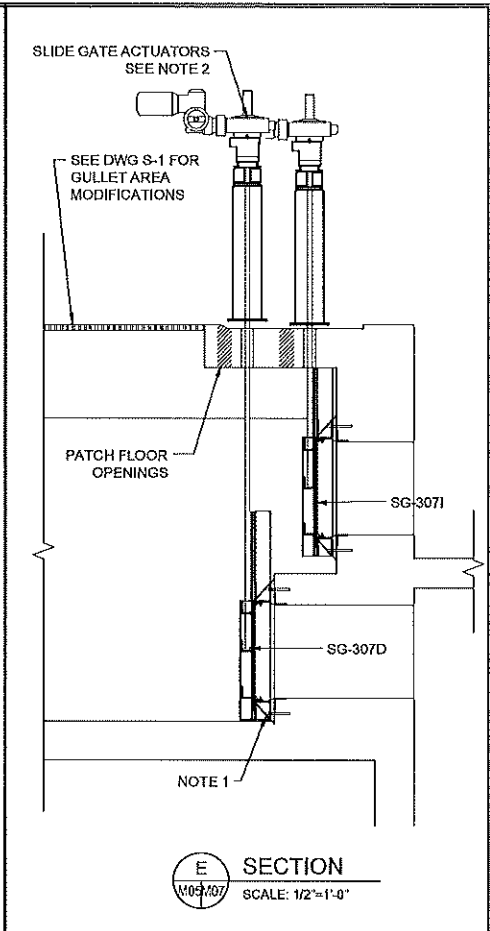
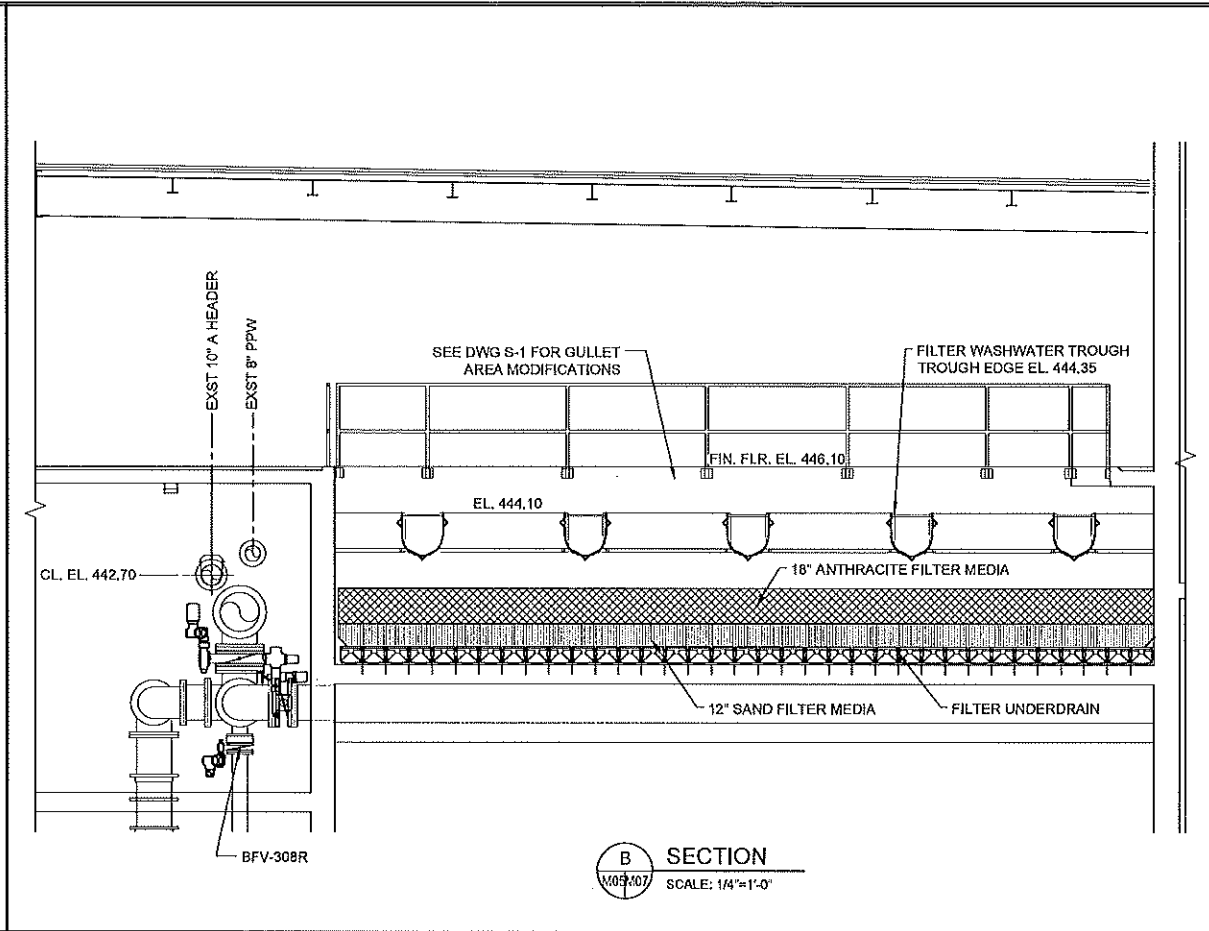
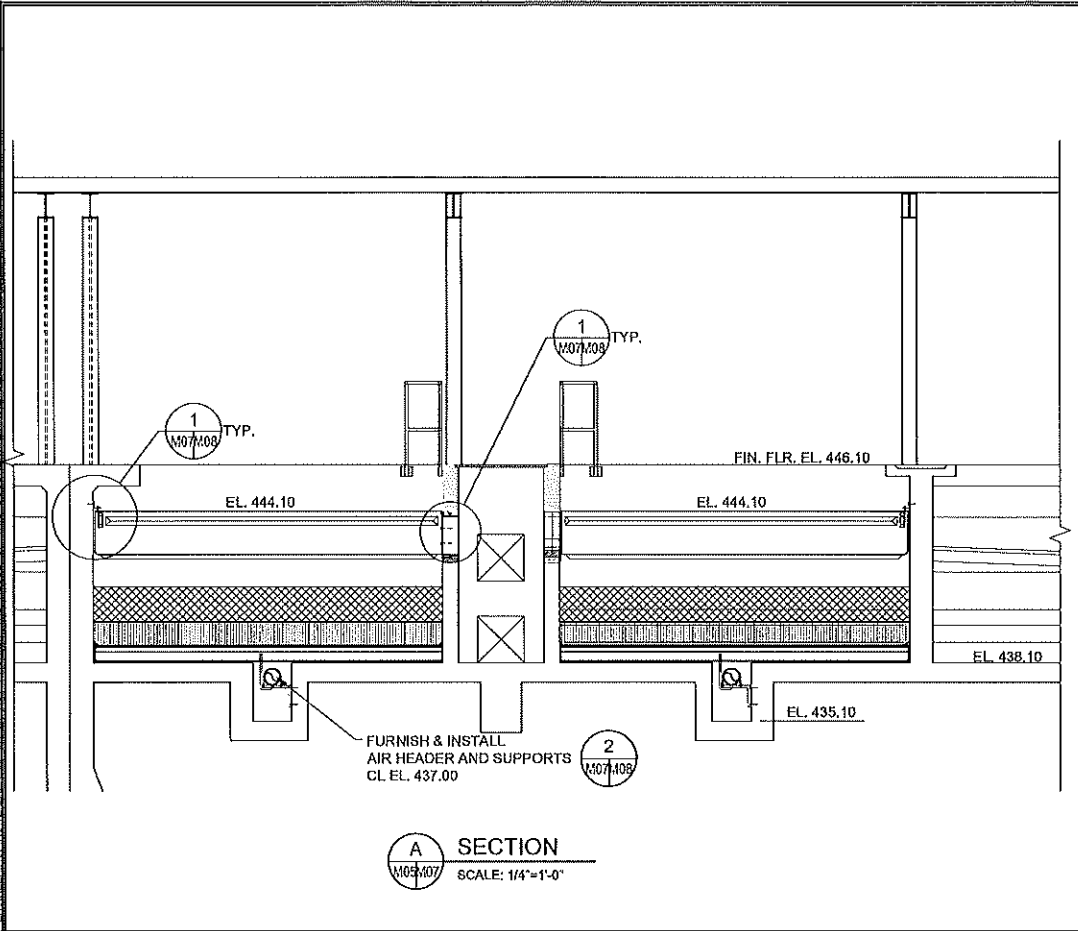
FILTER NO 2 SECTIONS
AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



FILE	SEE LEFT
VERIFY SCALE	
DATE	MARCH 2025
PROJ.	100339.11
DWG.	M06

ISSUED FOR BID

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EQUIPMENT SCHEDULE

- 1 8" 304 SST 90° BEND
- 2 USE LINK SEAL AT CORED HOLE AROUND AIR PIPE. LINK SEAL TO HAVE 316 STAINLESS STEEL HARDWARE.
- 3 8"x6" DI TEE W/ 6" BLIND FLANGE.
- 4 EXISTING 10" X 8" 304 SST TEE

GENERAL NOTES:

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4. INSTALL A 8" FLANGED BY PLAIN END SPOOL PIECE W/ MEGA-LUG BELOW THE 8" RINSE BFW.
5. RE-ROUTE EXISTING 2" GALVANIZED WATER LINE AS REQUIRED TO AVOID NEW STAINLESS STEEL PIPING.

ENGINEER SEAL

GEORGIA
REGISTERED
ENGINEER
ARON C. BARR
21020000000000000000

NO.	DATE	REVISION	CHECKED BY	APPROVED BY
1	03/20/25	1	RAM	JD

FILE SEE LEFT

VERIFY SCALE

BAR IS SQUEEZE ON ORIGINAL DRAWING

DATE MARCH 2025

PROJ. 100339.11

DWG. M07

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FILTER NO 8 SECTIONS

AUGUSTA UTILITIES DEPARTMENT

HIGHLAND AVE WATER TREATMENT PLANT

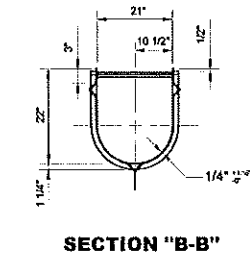
FILTER MODIFICATIONS - PHASE 2



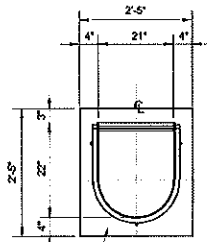
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NOTES:

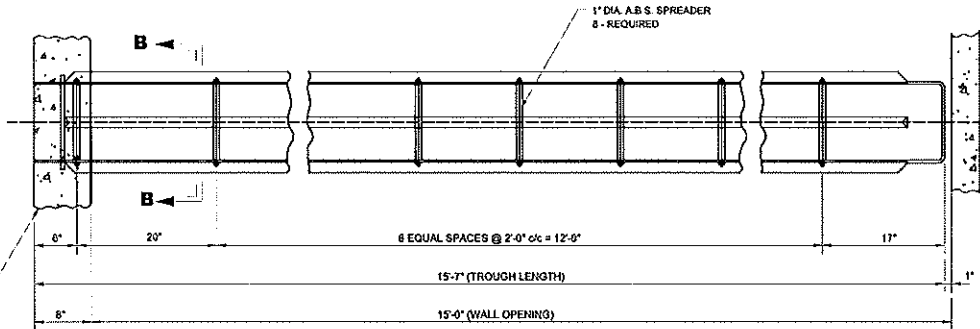
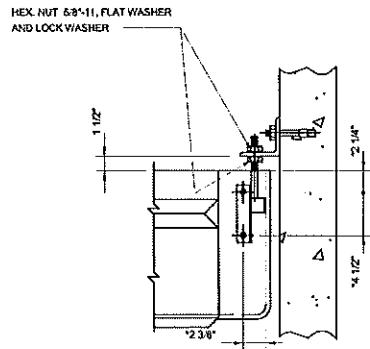
1. INSTALLING CONTRACTOR SHALL FURNISH HARDWARE FOR TROUGH INSTALLATION AS REQUIRED BY TROUGH MANUFACTURER.
2. INSTALLING CONTRACTOR SHALL FURNISH STABILIZER SUPPORTS & HARDWARE AS REQUIRED BY TROUGH MANUFACTURER.



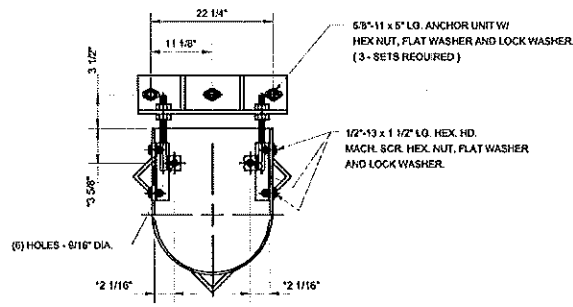
SECTION "B-B"



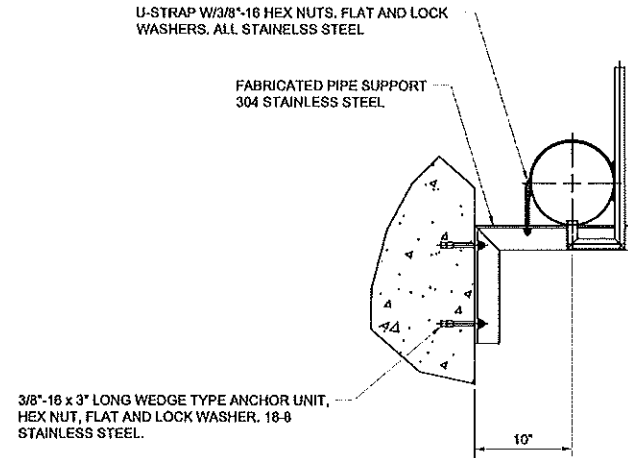
OPENING IN GULLET WALL TO BE FILLED WITH GROUT AFTER TROUGH IS POSITIONED & LEVELED. WALL MUST BE BRIDGED OVER TROUGH FOR PURPOSE OF HOLD DOWN.



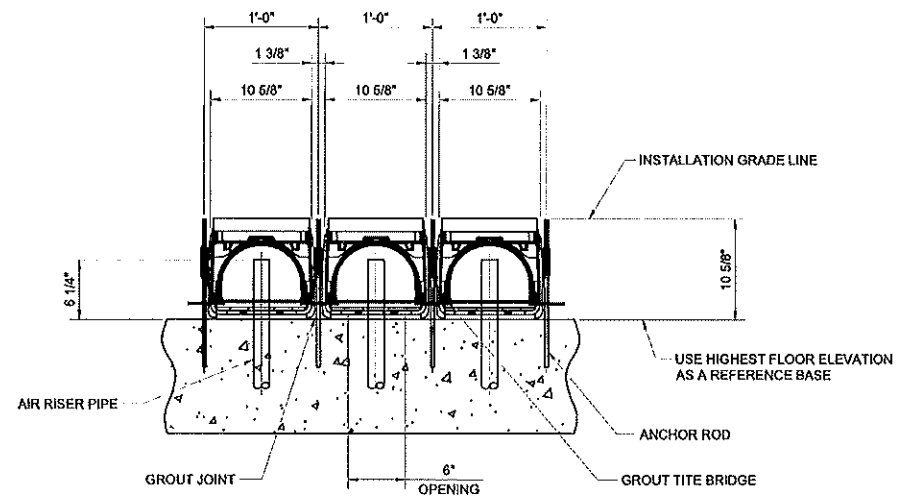
WASH TROUGH
10 - TOTAL REQ'D.
SCALE: NONE



1 TROUGH DETAIL
SCALE: NONE

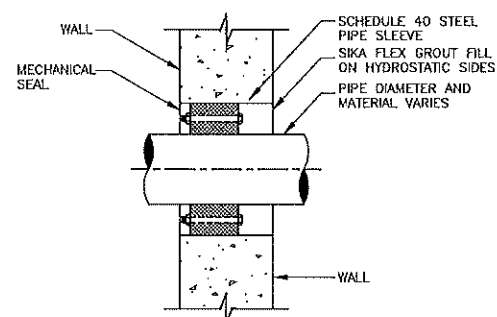


2 AIR SCOUR HEADER DETAIL
SCALE: NONE



3 FILTER UNDERDRAIN DETAIL
SCALE: NONE

- NOTES:
1. INSULATED PIPING:
 2. INTERRUPT INSULATION AT BOTH SIDES OF WALL. INSTALL INSULATION FLUSH WITH WALL AFTER WATER TIGHT INSTALLATION OF MECHANICAL SEAL.
 3. SEALS FOR PROCESS AIR SHALL BE HEAT RESISTANT.
 4. WALL OPENING DIAMETER AS REQUIRED FOR PASSING PIPE AND THE MECHANICAL SEAL MANUFACTURER REQUIREMENTS.
 5. DOUBLE LINK SEAL FOR WALLS 24" THICK AND GREATER



4 WALL PENETRATION SEAL DETAIL
SCALE: NONE



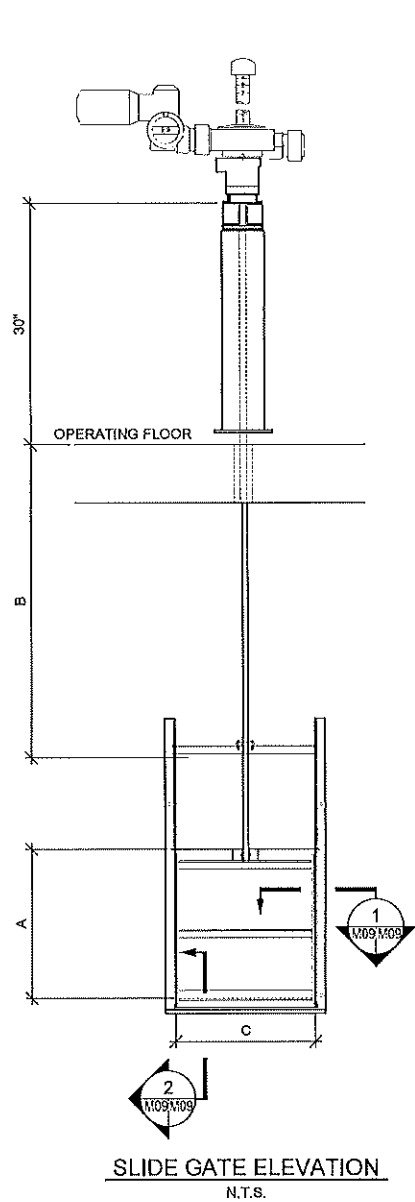
MISCELLANEOUS
DETAILS 1
AUGUSTA UTILITIES DEPARTMENT PLANT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



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VERIFY SCALE	
DATE	MARCH 2025
PROJ.	100339.11
DWG.	M08

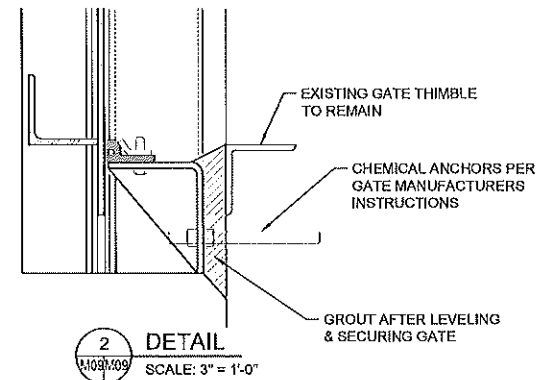
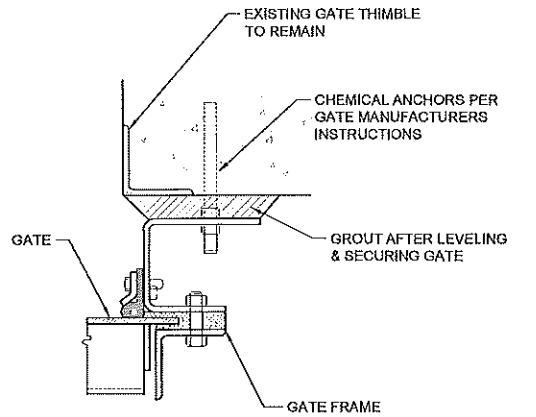
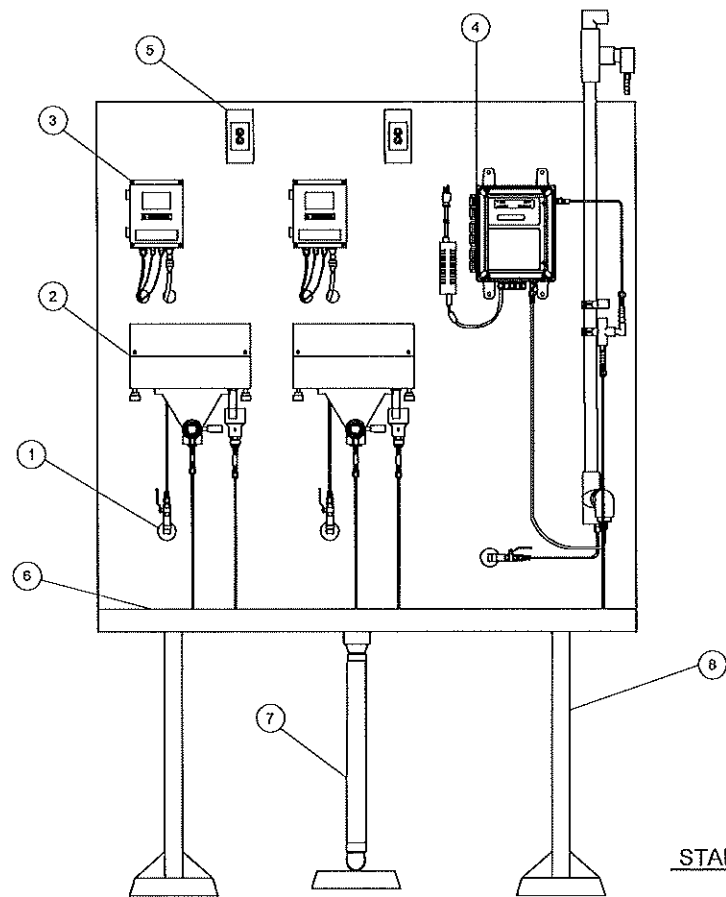
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INSTRUMENTATION BOARD EQUIPMENT SCHEDULE

- 1 INLET PIPE PENETRATION (TYP 3)
- 2 TURBIDITY METER (TYP 2)
- 3 TURBIDITY METER DIGITAL READOUT (TYP 2)
- 4 PARTICLE COUNTER
- 5 RECEPTACLE (TYP 2)
- 6 STAINLESS STEEL DRAIN TROUGH
- 7 PVC DRAIN PIPING ROUTED TO FLOOR DRAIN ADJACENT TO FILTER WALL
- 8 STAINLESS STEEL INSTRUMENTATION BOARD SUPPORTS



SLIDE GATE SCHEDULE

GATE ID	TYPE	SERVICE	MOUNT	OPERATION	HEIGHT A (INCHES)	B (INCHES)	WIDTH C (INCHES)	MAXIMUM HEAD SEATING (FEET)	UNSEATING (FEET)	VOLTAGE	REMARKS
SG-302I	UPWARD OPENING SLIDE GATE	FILTER NO 2 - INFLUENT	FLUSH MOUNT CONCRETE WALL	OHC	24	30	24	4	4	480	SEE NOTE 1
SG-302D	UPWARD OPENING SLIDE GATE	FILTER NO 2 - DRAIN	FLUSH MOUNT CONCRETE WALL	OHC	24	72	24	9	9	480	SEE NOTE 1
SG-308I	UPWARD OPENING SLIDE GATE	FILTER NO 8 - INFLUENT	FLUSH MOUNT CONCRETE WALL	OHC	24	30	24	4	4	480	SEE NOTE 1
SG-308D	UPWARD OPENING SLIDE GATE	FILTER NO 8 - DRAIN	FLUSH MOUNT CONCRETE WALL	OHC	24	72	24	9	9	480	SEE NOTE 1

CONTROL VALVE SCHEDULE

VALVE ID	TYPE	SERVICE	SIZE (INCHES)	MAX FLOW	MAX PRESS (PSI)	OPERATION	VOLTAGE	REMARKS
BFV-302AA	BFV	FILTER NO 2 - SIDE A AIR SCOUR	8	1590 SCFM	15	OC	120	SEE NOTE 1
BFV-302WA	BFV	FILTER NO 2 - SIDE A WASHWATER	18	19 MGD	70	OC	120	SEE NOTE 1
BFV-302M	BFV	FILTER NO 2 - BACKWASH MANIFOLD	18	19 MGD	15	OC	120	SEE NOTE 1
FCV-302E	BFV	FILTER NO 2 - EFFLUENT	14	2.3 MGD	15	MOD	120	SEE NOTE 1
BFV-302R	BFV	FILTER NO 2 - RINSE	8	2.3 MGD	5	MOD	120	SEE NOTES 1, 4
BFV-302AB	BFV	FILTER NO 2 - SIDE B AIR SCOUR	8	1590 SCFM	15	OC	120	SEE NOTE 1
BFV-302WB	BFV	FILTER NO 2 - SIDE B WASHWATER	18	19 MGD	70	OC	120	SEE NOTE 1
BFV-308AA	BFV	FILTER NO 8 - SIDE A AIR SCOUR	8	1590 SCFM	15	OC	120	SEE NOTE 1
BFV-308WA	BFV	FILTER NO 8 - SIDE A WASHWATER	18	19 MGD	70	OC	120	SEE NOTE 1
BFV-308M	BFV	FILTER NO 8 - BACKWASH MANIFOLD	18	19 MGD	15	OC	120	SEE NOTE 1
FCV-308E	BFV	FILTER NO 8 - EFFLUENT	12	2.3 MGD	15	MOD	120	SEE NOTE 1
BFV-308R	BFV	FILTER NO 8 - RINSE	8	2.3 MGD	5	MOD	120	SEE NOTE 1, 4
BFV-308AB	BFV	FILTER NO 8 - SIDE B AIR SCOUR	8	1590 SCFM	15	OC	120	SEE NOTE 1
BFV-308WB	BFV	FILTER NO 8 - SIDE B WASHWATER	18	1590 SCFM	70	OC	120	SEE NOTE 1
FCV-310E	BFV	FILTER NO 10 - EFFLUENT	12	2.3 MGD	15	MOD	120	SEE NOTE 1, 2

OPERATION LEGEND

O = OPEN
C = CLOSED
H = HOLD
MOD = MODULATING

PIPELINE SCHEDULE

MEDIA	DESCRIPTION	MATERIAL	SPEC SECTION	INSTALLATION	TEMP DEG F	TEST PRESSURE psig	TEST TYPE (H OR P)	REMARKS
A	AIR SCOUR	SCH 10S, 304L STAINLESS STEEL	40 05 23	EXPOSED	40 - 250	25	P	
IT	INSTRUMENTATION TUBING	COPPER	40 05 00	EXPOSED	40 - 160	125	H	

ABBREVIATION LEGEND

H = HYDRAULIC (WATER) PRESSURE TESTING PROCEDURES
P = PNEUMATIC (AIR) PRESSURE TESTING PROCEDURES

NOTES:

1. ALL CONTROL VALVES, GATES, AND ACTUATORS ARE TO BE OWNER PROVIDED EQUIPMENT.
2. CONTRACTOR TO REPLACE FILTER 10 EFFLUENT VALVE UNDER THIS CONTRACT. COORDINATE ISOLATION AND REPLACEMENT WITH THE OWNER.
3. TAPS TO BE USED FOR TURBIDITY ARE LOCATED BETWEEN THE FILTER WALL AND THE WASHWATER BFV. PARTICLE COUNTER AND PRESSURE AND FLOW TRANSMITTER TAPS TO BE USED ARE LOCATED ON THE FINISHED WATER PIPE. AT EACH EXISTING TAP TO BE REUSED, INSTALL A STAINLESS STEEL THREADED NIPPLE FOLLOWED BY A BALL VALVE AND COPPER TUBING TO THE NEW INSTRUMENTS AND/OR GAUGES.
4. CONTRACTOR TO PURCHASE AND INSTALL APT CARDS FOR FILTER RINSE VALVES TO CONVERT FROM O/C OPERATION TO MODULATING. IF APT CARD REPLACEMENT CANNOT BE ACCOMMODATED, CONTRACTOR TO PURCHASE AND INSTALL NEW MODULATING ACTUATORS. CONTACT LEE JONES WITH CHARLES FINCH (SOUTHERN VALVE & METALS).

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MISCELLANEOUS DETAILS 2

AUGUSTA UTILITIES DEPARTMENT PLANT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



FILE SEE LEFT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

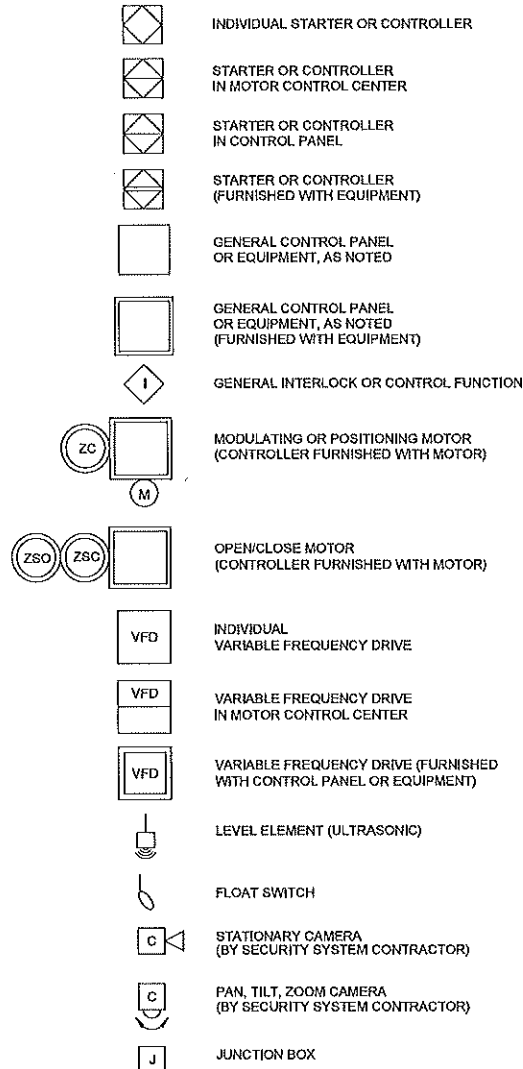
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DATE MARCH 2025

PROJ. 100339.11

DWG. M09

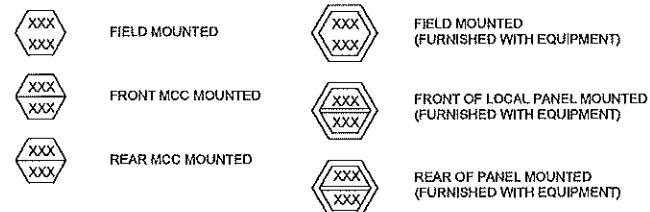
ELECTRICAL AND CONTROL SYMBOLS



ABBREVIATIONS

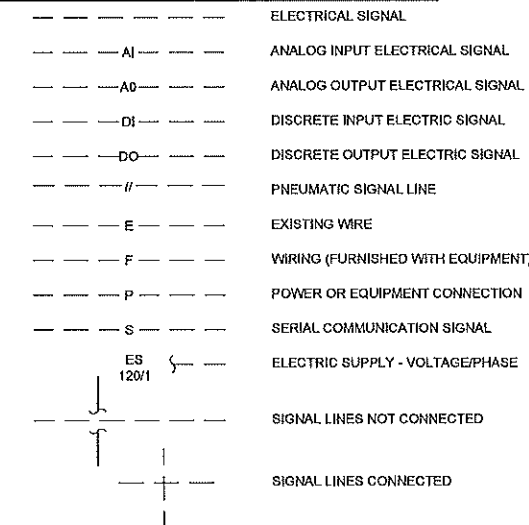
COND	CONDUCTIVITY
CP	CONTROL PANEL
DIP	DUCTILE IRON PIPE
DO	DISSOLVED OXYGEN
FCP	FACTORY CONTROL PANEL (FURNISHED BY EQUIPMENT MANUFACTURER)
FWE	FURNISHED WITH EQUIPMENT
HMI	HUMAN MACHINE INTERFACE
LCP	LOCAL CONTROL PANEL (FURNISHED BY SYSTEMS INTEGRATOR)
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
ORP	OXIDATION REDUCTION POTENTIAL
PC	PARTICLE COUNT
pH	HYDROGEN ION CONCENTRATION
RW	RAW WATER
SC	STREAMING CURRENT
SLBL	SLUDGE BLANKET LEVEL
TOR	TORQUE
TURB	TURBIDITY
VHC	VOLATILE HYDROCARBONS
VIB	VIBRATION

HAND SWITCH SYMBOLS AND LEGEND

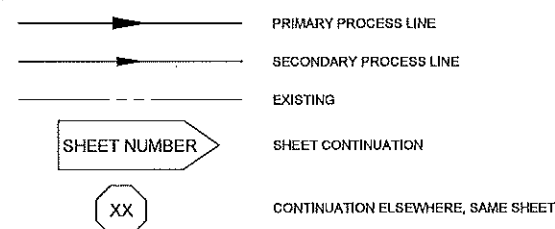


AB	FUNCTION SELECTOR
EO	EMERGENCY OFF
ES	EMERGENCY STOP
FOR	FORWARD/OFF/REVERSE (MAINTAINED)
FSR	FORWARD/STOP/REVERSE (MAINTAINED)
HOA	HAND/OFF/AUTO
LOR	LOCAL/OFF/REMOTE
LR	LOCAL/REMOTE
MA	MANUAL/AUTO
OC	OPEN/CLOSE
OCA	OPEN/CLOSE/AUTO
OCR	OPEN/CLOSE/REMOTE
DO	ON/OFF
OS	OPERATION SWITCH
R	RESET
RS	RUN/STOP (AUTO RESET/RUN @ POWER INTERRUPTION)
RSJ	RUN/STOP/JOG
S	SILENCE
SR	SAFER/RUN
SS	START/STOP (MANUAL RESET @ POWER INTERRUPTION)
T	TEST
UD	UP/DOWN

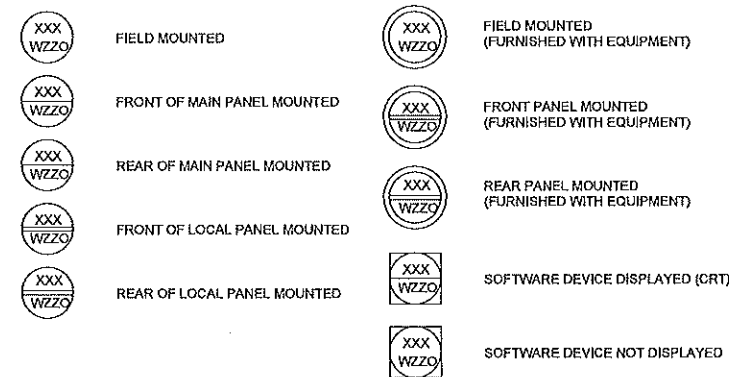
INSTRUMENTATION LINE SYMBOLS



PROCESS LINE SYMBOLS

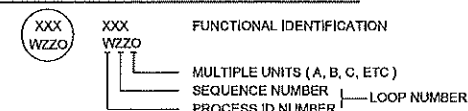


INSTRUMENT SYMBOLS AND LEGEND

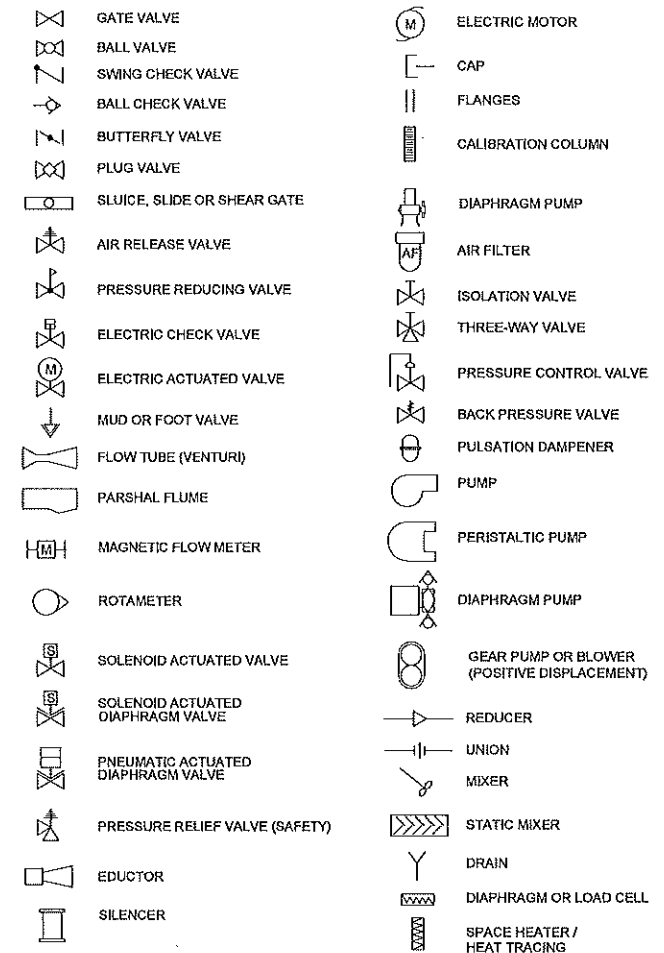


	FIRST LETTER	SUCCEEDING LETTERS			
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME				
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSE
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL	DELAY		
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTERMEDIATE
N	UNCLASSIFIED				
O	UNCLASSIFIED		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT OR TRANSMITTER	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED			UNCLASSIFIED	
Y	UNCLASSIFIED			RELAY, COMPUTE OR CONVERT	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT IDENTIFICATION



FLOW, PIPING AND VALVE SYMBOLS



PROCESS PIPING ABBREVIATIONS

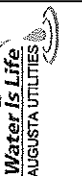
A	AIR
BW	BACKWASH
CA	COMPRESSED AIR
D	DRAIN
FE	FILTER EFFLUENT
FR	FILTER RINSE
FW	FINISHED WATER
PAC	POWDERED ACTIVATED CARBON
PACS	POWDERED ACTIVATED CARBON-SLURRY
PSW	PLANT SERVICE WATER

NOTES:

1. ALL DETAIL WIRING AND ELECTRICAL COMPONENTS ARE NOT SHOWN ON THE PROCESS AND INSTRUMENTATION DIAGRAM DRAWINGS. THE ELECTRICAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE PROCESS AND INSTRUMENTATION DIAGRAMS, THE PROCESS AND INSTRUMENTATION DIAGRAMS ARE PRESENTED AS A COORDINATING TOOL THAT INDICATES THE MAIN CONTROL LOGIC FOR THE PROJECT PROCESS SYSTEMS AND COMPONENTS. ACTUAL DETAIL LOGIC AND CONTROL COMPONENTS MAY DIFFER DEPENDING ON THE MANUFACTURER THAT IS AWARDED THE CONTRACT.
2. SEE CIVIL AND PROCESS DRAWINGS FOR PIPING DETAILS.
3. SOME SYMBOLS AND INFORMATION ON THIS LEGEND MAY NOT BE USED ON THIS PROJECT.

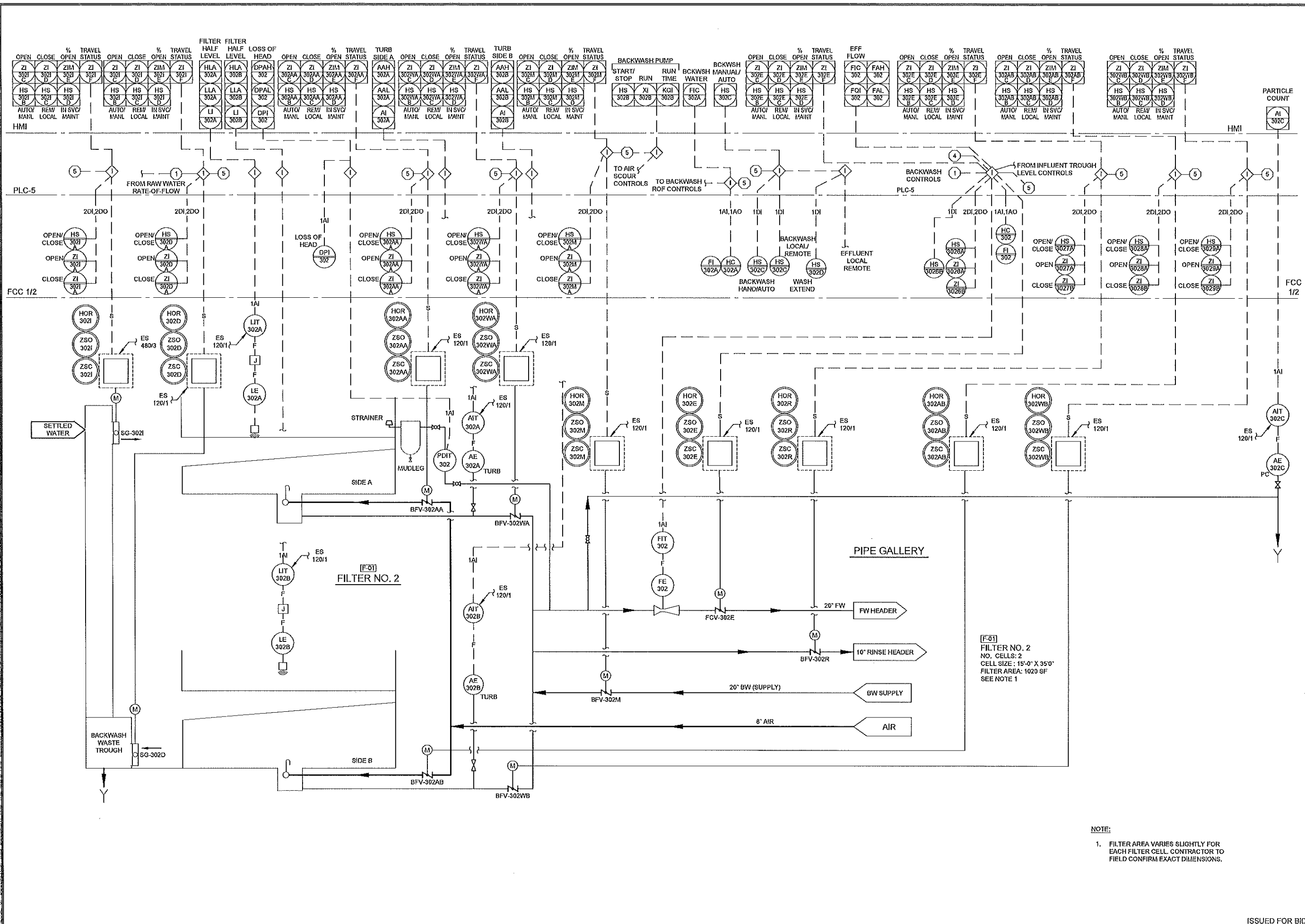
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P&ID LEGEND

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2

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DATE	MARCH 2025
PROJ.	100339.11
DWG.	100339.11

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GEORGIA
REGISTERED
AS 5044
PROFESSIONAL
ENGINEER
DAVID C. STEVENSON

2025.03.20 22:30:25-05'00'

NO.	DATE	DESIGNED BY	DRAWN BY	REVISION	CHECKED BY	APPROVED BY

P & ID FILTER NO 2

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2

AUGUSTA UTILITIES

ARDURRA
COLLABORATE. INNOVATE. CREATE.
973 BROAD STREET, SUITE A
ALBANY, GA 31706
404.266.0464
FAX: 404.266.0465

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ABBREVIATIONS

A OR AMP	AMPERES	UG	UNDERGROUND
AFF	ABOVE FINISH FLOOR	UL	UNDERWRITER'S LABORATORIES
AHU	AIR HANDLING UNIT	UNO	UNLESS NOTED OTHERWISE
AIC	AMPERE INTERRUPTING CAPACITY	V	VOLTS
AM	AMMETER	VFD	VARIABLE FREQUENCY DRIVE
AS	AMMETER SELECTION SWITCH	VM	VOLTMETER
ASYM	ASYMMETRICAL	VMS	VOLTMETER SELECTOR SWITCH
ATS	AUTOMATIC TRANSFER SWITCH	W	WIDTH
AT	AUTOMATIC TRANSFORMER	W/	WITH
BCP	BACKUP CONTROL PANEL	WHDM	WATT HOUR DEMAND METER
C	CONDUIT	WM	WATTMETER
CB	CIRCUIT BREAKER	WP	WEATHER PROOF
CKT	CIRCUIT	XFMR	TRANSFORMER
CLF	CURRENT LIMITING FUSE	Y	WYE CONNECTION
CNTL	CONTROL		
CT	CURRENT TRANSFORMER		
Δ	DELTA CONNECTION		
D	DEPTH		
DP	DISTRIBUTION PANELBOARD		
DS OR DISC	DISCONNECT SWITCH		
DTC	DATA TERMINAL CABINET		
EF	EXHAUST FAN		
EG	EQUIPMENT GROUND		
EMCP	ENERGY MANAGEMENT CONTROL PANEL		
EGC	EQUIPMENT GROUNDING CONDUCTOR		
EMT	ELECTRICAL METALLIC TUBING		
ESTOP	EMERGENCY STOP		
ETR	EXISTING TO REMAIN		
EX OR EXIST.	EXISTING		
EXP	EXPLOSION PROOF		
F	FUSE		
FA	FIRE ALARM		
FCR	FLOAT CONTROL RELAY		
FLR	FLOOR		
FACP	FIRE ALARM CONTROL PANEL		
FMPX	FIRE ALARM MULTIPLEX PANEL		
G OR GND	GROUND		
GEC	GROUNDING ELECTRODE CONDUCTOR		
GF	GROUND FAULT		
GFI	GROUND FAULT INTERRUPTING		
H	HEIGHT		
HP	HORSEPOWER		
HV	HIGH VOLTAGE, 600VAC		
HVAC	HEATING, VENTILATION AND AIR		
IMC	INTERMEDIATE METAL CONDUIT		
JB OR J	JUNCTION BOX		
KVA	KILOVOLT - AMPS		
KW	KILOWATTS		
KWH	KILOWATT-HOUR		
L	LENGTH		
LA	LIGHTING ARRESTOR		
LCP	LIGHTING CONTROL PANEL		
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT		
LP	LIGHTING PANELBOARD		
LV	LOW VOLTAGE, 240VAC		
MCB OR MB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MFR	MANUFACTURER		
MH OR MTG	MOUNTING HEIGHT		
MLO	MAIN LUG ONLY		
MMS	MICROPROCESSOR-BASED METERING SYSTEM		
MT OR MTD	MOUNT OR MOUNTED		
N	NEUTRAL		
NC	NORMALLY CLOSED		
NEC	NATIONAL ELECTRICAL CODE		
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION		
NF	NON-FUSIBLE		
NFPA	NATIONAL FIRE PROTECTION ASSOCIATES		
NO	NORMALLY OPEN		
NTS	NOT TO SCALE		
P	POLE		
PFC	POWER FACTOR CAPACITOR		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PMT	PAD MOUNT TRANSFORMER		
PNL	PANEL		
PVC	POLYVINYLCHLORIDE CONDUIT		
RC	REMOTE CONTROL SWITCH		
REC OR RECPT	RECEPTACLE		
RGC	RIGID GALVANIZED COUDUIT		
RMS	ROOT MEAN SQUARE		
RTU	REMOTE TERMINAL UNIT		
SS	STAINLESS STEEL, SOFT START		
SW	SWITCH		
SWBD	SWITCHBOARD		
SYM	SYMMETRICAL		
TBB	TELEPHONE BACKBOARD		
TCP	TEMPERATURE CONTROL PANEL		
TTC	TELEPHONE TERMINAL CABINET		
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR		
TYP	TYPICAL		

GENERAL NOTES

- ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
 - NFPA 70, NATIONAL ELECTRICAL CODE.
 - NFPA 101 LIFE SAFETY CODE.
 - NFPA 820 STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES.
- ALL ELECTRICAL CIRCUITS SHALL INCLUDE A GREEN GROUNDING CONDUCTOR SIZED PER NEC.
- CONDUIT AND DEVICE LOCATIONS ARE SHOWN DIAGRAMMATICALLY ONLY, CONTRACTOR SHALL FIELD LOCATE OR ROUTE AS REQUIRED.
- ALL CONDUIT SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
- ALL PANEL LEGENDS SHALL BE RETYPED TO REFLECT UP TO DATE CONDITIONS. ALL PANEL LEGENDS SHALL INDICATE THE PANEL'S FEEDER CKT, SOURCE PANEL (OR SUBSTATION) AND ITS LOCATION.
- ELECTRICAL EQUIPMENT AND DEVICES SHALL BE PROVIDED WITH PHENOLIC NAMEPLATES. ALL NAMEPLATES SHALL BE MECHANICALLY FASTENED WITH S.S. SCREWS OR RIVETS. THE USE OF ADHESIVE NAMEPLATES SHALL NOT BE ALLOWED.
- CONTRACTOR SHALL MAINTAIN A SET OF PRINTS AND MARK-UP DURING CONSTRUCTION TO REFLECT "AS-BUILT" CONDITIONS. PRINTS SHALL BE DELIVERED TO THE ENGINEER UPON COMPLETION OF THE PROJECT AS A COMPLETE SET OF RECORD DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE ELECTRONIC COPIES OF ALL UPDATES "AS-BUILT" DRAWINGS IN AUTOCAD 2007 FORMAT.
- THE CONTRACTOR SHALL PROVIDE PULL BOXES IN POWER CIRCUIT CONDUIT AS REQUIRED, SO AS TO LIMIT THE NUMBER OF BENDS TO A MAXIMUM OF 360 DEGREES OR FOUR 90 DEGREE TURNS.
- PROVIDE CONDUIT EXPANSION FITTINGS AS CONDUIT CROSSES BUILDING EXPANSION JOINTS.
- ALL EXTERIOR ELECTRICAL ENCLOSURES SHALL BE NEMA 4X STAINLESS STEEL UNLESS OTHERWISE NOTED.
- ALL SUPPORTING AND FASTENING DEVICES SHALL BE STAINLESS STEEL.
- CONTRACTOR MAY COMBINE HOMERUNS TO ALL PANEL BOARDS PER NEC.
- ALL RECEPTACLE BRANCH CIRCUITS OVER 75' IN LENGTH SHALL USE #10 AWG CONDUCTOR (FOR VOLTAGE DROP).
- CONTRACTOR TO PROVIDE ALL REQUIRED POWER AND STARTERS FOR PROCESS EQUIPMENT (COORDINATE WITH PROCESS EQUIPMENT SUPPLIER).
- CONTRACTOR SHALL PROVIDE 2 SPARE FUSES FOR EACH FUSE INSTALLED INCLUDING ALL EQUIPMENT AND CONTROLS.
- CONTROL AND POWER CONDUITS SHALL BE SEPARATED BY 12" MIN. AND SHALL BE IN SEPARATE JUNCTION BOXES AND DUCT BANKS. MAINTAIN 12" SEPARATION BETWEEN DUCT BANKS.
- CONTRACTOR SHALL MAINTAIN OPERATION OF THE ELECTRICAL SERVICE DURING THE UPGRADE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING ALL PROJECT SPECIFICATIONS AND WILL BE RESPONSIBLE FOR MEETING ALL REQUIREMENTS OUTLINED IN THE SPECIFICATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DETAILED ELECTRICAL EQUIPMENT LAYOUT DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.



NO.	DATE	DESIGNED BY:	JB
REVISION		DRAWN BY:	RAM
CHECKED BY:	AB	APPROVED BY:	JD

ELECTRICAL NOTES

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



FILE	SEE LEFT
VERIFY SCALE	
DATE	MARCH 2025
PROJ.	100339.11
DWG.	E01

H:\PROJECT FILES\100339 - AUGUSTA UTILITIES DEPARTMENT\100339.11 AUD HIGHLAND AVENUE WTP FILTER MODIFICATIONS - ZEL-2102-00\300 DESIGN\355 PRELIMINARY DRAWINGS\07 ELECTRICAL\SYMBOLS AND NOTES.DWG
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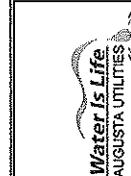
SYMBOL	DESCRIPTION
	CONTACT, NORMALLY OPEN
	CONTACT, NORMALLY CLOSED
	OPERATING COIL * DESIGNATION: C - CONTACTOR R - CONTROL RELAY M - MAGNETIC MOTOR STARTER - NON REVERSING MF - MAGNETIC MOTOR STARTER - FORWARD MR - MAGNETIC MOTOR STARTER - REVERSE MO - MAGNETIC MOTOR STARTER - OPEN MC - MAGNETIC MOTOR STARTER - CLOSE MH - MAGNETIC MOTOR STARTER - HIGH SPEED ML - MAGNETIC MOTOR STARTER - LOW SPEED SOV - SOLENOID OPERATED VALVE TD - TIME DELAY RELAY T - PROGRAMMABLE TIMER
	METER, ELAPSED TIME
	INDICATING LIGHT - FULL VOLTAGE TRANSFORMER OR LED * DESIGNATION: A - AMBER R - RED B - BLUE W - WHITE G - GREEN Y - YELLOW
	INDICATING LIGHT, PUSH -TO-TEST * DESIGNATION: A - AMBER R - RED B - BLUE W - WHITE G - GREEN Y - YELLOW
	SWITCH, PUSHBUTTON, NORMALLY OPEN CIRCUIT
	SWITCH, PUSHBUTTON, NORMALLY CLOSED CIRCUIT
	SWITCH, PUSHBUTTON, TAG LINE, NORMALLY CLOSED CIRCUIT WITH MAINTAINED CONTACT
	SWITCH, PUSHBUTTON, TWO CIRCUIT, NORMALLY OPEN AND NORMALLY CLOSED
	SWITCH, EMERGENCY SHUTDOWN, MUSHROOM-HEAD PUSHBUTTON, NORMALLY CLOSED CIRCUIT WITH MAINTAINED CONTACT
	SWITCH, MASTER OR CONTROL X - INDICATES CONTACT CLOSED
	MOMENTARY-CONTACT SWITCH
	SWITCH PRESSURE/VACUUM OPERATED, NORMALLY OPEN, CLOSING ON RISING PRESSURE
	SWITCH PRESSURE/VACUUM OPERATED, NORMALLY CLOSED, CLOSING ON RISING PRESSURE
	SWITCH, FLOW ACTUATED, NORMALLY OPEN, CLOSING ON INCREASE IN FLOW
	SWITCH, FLOW ACTUATED, NORMALLY CLOSED, OPENING ON INCREASE IN FLOW
	SWITCH, TEMPERATURE ACTUATED, NORMALLY CLOSED, OPENING ON RISING TEMPERATURE
	SWITCH, TEMPERATURE ACTUATED, NORMALLY OPEN, CLOSING ON RISING TEMPERATURE
	CONTACT, TIME DELAY, NORMALLY OPEN WITH TIME DELAY CLOSING
	CONTACT, TIME DELAY, NORMALLY OPEN WITH TIME DELAY OPENING
	CONTACT, TIME DELAY, NORMALLY CLOSED WITH TIME DELAY OPENING
	CONTACT, TIME DELAY, NORMALLY CLOSED WITH TIME DELAY CLOSING
	SWITCH, LIMIT
	SWITCH, TORQUE
	SWITCH, LIQUID LEVEL ACTUATED, CLOSING ON RISING LEVEL
	SWITCH, LIQUID LEVEL ACTUATED, OPENING ON RISING LEVEL

SYMBOL	DESCRIPTION
	FUSE (AMPERE RATING SHOWN)
	FUSED DISCONNECT SWITCH, 3 POLE * DESIGNATION: LS - LOAD BREAK SWITCH DS - DISCONNECT SWITCH
	POWER CIRCUIT BREAKER, MEDIUM-VOLTAGE, DRAWOUT TYPE (AMPERE RATING SHOWN)
	CIRCUIT BREAKER, DRAWOUT TYPE, 600VAC OR LESS, 3P (TRIP AND FRAME AMPERE RATING SHOWN)
	CIRCUIT BREAKER, THERMOMAGNETIC, 600 VAC OR LESS, 3P (AMPERE RATING SHOWN)
	CIRCUIT BREAKER, THERMOMAGNETIC, 600 VAC OR LESS, 3P ADJUSTIBLE TRIP (TRIP & FRAME AMPERE RATING SHOWN)
	MOTOR CIRCUIT PROTECTOR, 600V AC OR LESS, 3P UON (CONTINUOUS AMPERE RATING SHOWN)
	CONTACTOR (NUMBER OF POLES AND AMPERE RATING SHOWN)
	MAGNETIC MOTOR STARTER * NEMA SIZE ** DESIGNATION: NONE - FULL VOLTAGE, NON-REVERSING FVR - FULL VOLTAGE, REVERSING RVNR - REDUCED VOLTAGE, NON-REVERSING RVR - REDUCED VOLTAGE, REVERSING MANUAL MOTOR STARTER
	VARIABLE FREQUENCY DRIVE / INVERTER
	POWER TRANSFORMER (KVA RATING, VOLTAGES AND WINDINGS CONNECTIONS SHOWN)
	SERIES REACTOR (LINE OR LOAD RATING SHOWN)
	VOLTAGE TRANSFORMER (QUANTITY AND VOLTAGE RATIO SHOWN)
	CURRENT TRANSFORMER (QUANTITY AND CURRENT RATIO SHOWN)
	MULTI-RATIO CURRENT TRANSFORMER (QUANTITY, MAXIMUM CURRENT RATIO AND SETTING SHOWN)
	ZERO SEQUENCE CURRENT TRANSFORMER (CURRENT RATIO SHOWN)
	CAPACITOR
	GROUND CONNECTION
	SURGE ARRESTER (QUANTITY SHOWN)
	TRANSFER SWITCH (NUMBER OF POLES AND AMPERE RATING SHOWN)
	BATTERY (RATING SHOWN)
	MOTOR, INDUCTION (HORSEPOWER SHOWN)

SYMBOL	DESCRIPTION
	GENERATOR (KW RATINGS, VOLTAGE AND PHASE SHOWN)
	THERMISTOR
	DIODE, SEMICONDUCTOR
	RESISTANCE TEMPERATURE DETECTOR
	RESISTOR
	SPACE HEATER
	CONTROL POWER TRANSFORMER, (VA RATING VOLTAGES)
	AMMETER SWITCH
	VOLTMETER SWITCH
	CONTROL SWITCH
	METER * DESIGNATION: AM - AMMETER VM - VOLTMETER PFM - POWER FACTOR WM - WATTMETER FMM - FREQUENCY METER WHM - WATTHOUR METER PM - POWER MONITORING DEVICE
	PROTECTIVE RELAY OR DEVICE * DESIGNATION: 11 - MULTIFUNCTION PROTECTIVE RELAY 25 - SYNCHRONIZING OR SYNCHRONISM-CHECK RELAY 26 - APPARATUS THERMAL DEVICE 27 - UNDERVOLTAGE RELAY 32 - DIRECTIONAL POWER RELAY 37 - UNDERCURRENT OR UNDERPOWER RELAY 40 - FIELD RELAY 46 - REVERSE-PHASE OR PHASE-BALANCE CURRENT RELAY 49 - MACHINE OR TRANSFORMER THERMAL RELAY 50 - INSTANTANEOUS OVERCURRENT RELAY 50GS - INSTANTANEOUS GROUND FAULT RELAY 51 - AC TIME OVERCURRENT RELAY 51GS - AC TIME GROUND FAULT RELAY 51V - AC TIME OVERCURRENT RELAY (VOLTAGE RESTRAINT) 55 - POWER FACTOR RELAY 59 - OVERVOLTAGE RELAY 60 - VOLTAGE OR CURRENT BALANCE RELAY 63 - PRESSURE SWITCH 64 - GROUND DETECTOR RELAY 67 - AC DIRECTIONAL OVERCURRENT RELAY 81 - FREQUENCY RELAY 86 - LOCKOUT RELAY 87 - DIFFERENTIAL PROTECTIVE RELAY 87G - GENERATOR DIFFERENTIAL GROUND FAULT RELAY

ELECTRICAL SYMBOLS

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



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DATE MARCH 2025

PROJ. 100339.11

DWG. E02

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WIRING	
	JUNCTION BOX
	PULL BOX
	HANDHOLE
 	CONDUIT CONDUCTOR WIRE TAG. P--DENOTES POWER C--DENOTES CONTROL CIRCUIT
COMMUNICATION	
	DATA COMMUNICATION OUTLET
	CABLE TELEVISION OUTLET
	DATA COMMUNICATION FLOOR OUTLET
	TELEPHONE FLOOR RECEPTACLE
	WALL MOUNTED TELEPHONE
	WALL MOUNTED DATA
	CEILING MOUNTED SPEAKER
LIGHTING	
	EXIT SIGN WALL MOUNTED LIGHT
	ELECTRIC RESISTANCE HEATER
	FLUORESCENT EMERGENCY LIGHT FIXTURE
	SINGLE POLE SWITCH
	THREE-WAY SWITCH
	TIMER OPERATED SWITCH
	FUSED SWITCH
	SWITCH WITH PILOT LIGHT
	CEILING MOUNTED PULL SWITCH
	DOUBLE POLE SWITCH
	FOUR-WAY SWITCH
	KEY OPERATED SWITCH
	LAMP HOLDER POLE SWITCH

LIGHTING (CONT)	
	LOW VOLTAGE MASTER SWITCH
	WEATHER PROOF SWITCH
	INCANDESCENT CEILING MOUNTED LIGHT
	RECESSED FLUORESCENT 2X4 LIGHT FIXTURE
	RECESSED FLUORESCENT 1X4 LIGHT FIXTURE
	RECESSED FLUORESCENT 1X8 LIGHT FIXTURE
	SURFACE MOUNTED FLUORESCENT 2X4 LIGHT FIXTURE
	SURFACE MOUNTED FLUORESCENT 1X4 LIGHT FIXTURE
	SURFACE MOUNTED FLUORESCENT 1X8 LIGHT FIXTURE
	STREET LIGHT WITH BRACKET
	EXTERIOR BUILDING LIGHT
	EMERGENCY BATTERY POWERED LIGHTS
	2' X 2' LIGHT FIXTURE
	INDUSTRIAL OR STRIP FIXTURE
	HIGHMAST LIGHTING ASSEMBLY
	AREA LIGHTING ASSEMBLY

POWER	
	CLOCK HANGER RECEPTACLE
	DUPLEX RECEPTACLE
	DUPLEX ON EMERGENCY POWER RECEPTACLE
	DUPLEX WITH GFI RECEPTACLE
	QUADRAPLEX RECEPTACLE
	SINGLE RECEPTACLE
	SINGLE RECEPTACLE WITH SWITCH
	SPECIAL PURPOSE RECEPTACLE
	DUPLEX RECEPTACLE WITH SWITCH
	FLUSH MOUNTED PANELBOARD CABINET
	SURFACE MOUNTED PANELBOARD CABINET
	TRANSFORMER

SINGLE LINE (CONT)	
	EARTH GROUND
	FUSED DISCONNECT SWITCH
	UNFUSED DISCONNECT SWITCH
	METER
	DISTRIBUTION PANEL
	LIGHTING PANEL
	POWER PANEL



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ELECTRICAL SYMBOLS 2

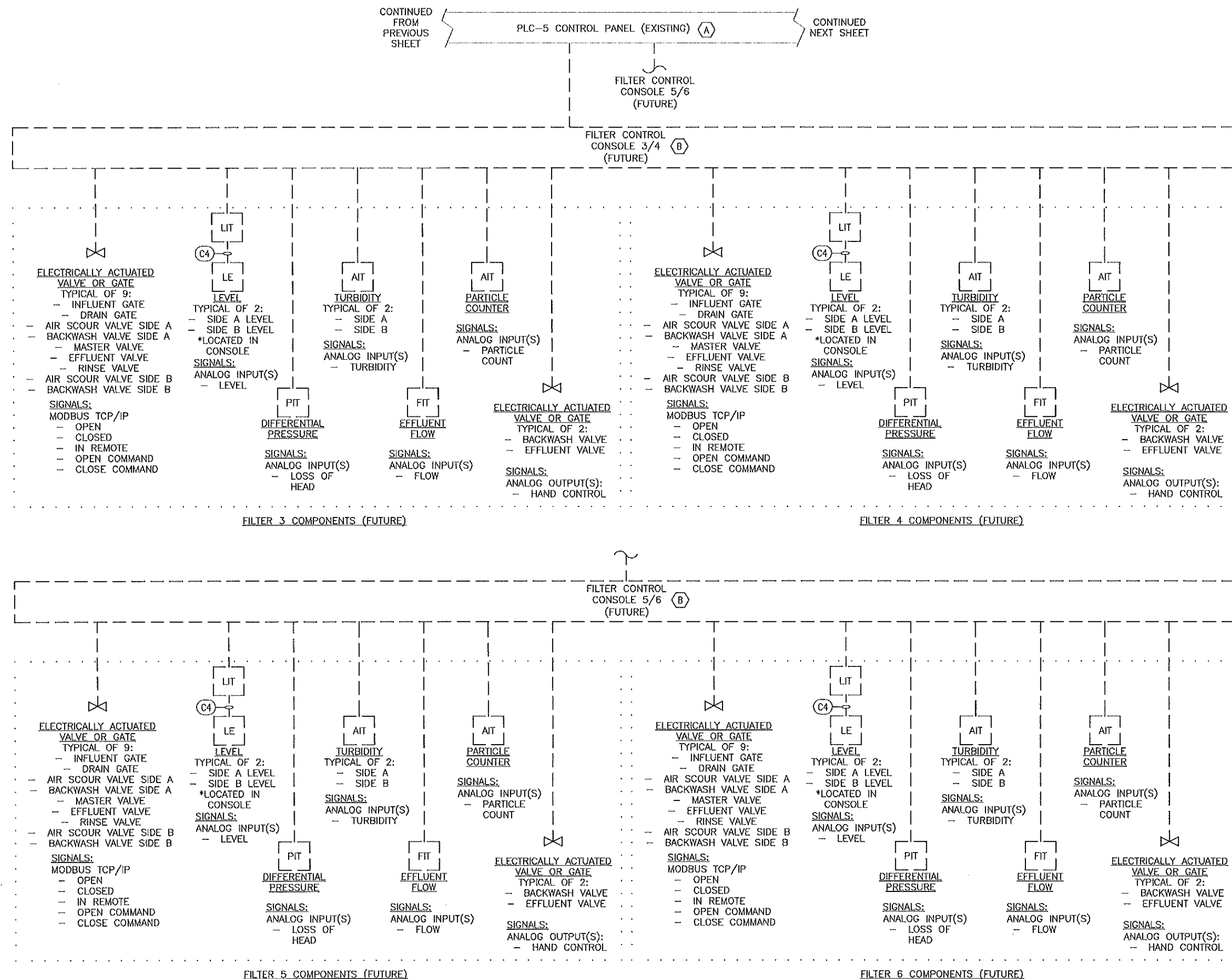
AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



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AUGUSTA, GA 30601
PH: 706.726.4646
COA: PE006470
ECP: 100339.11

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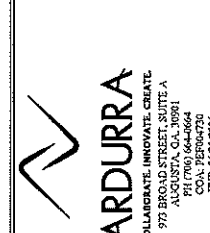
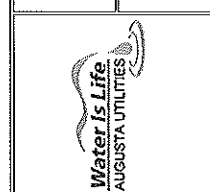
○ FILTER CONTROL CONSOLES 3/4 & 5/6 CONTROL SINGLE LINE DIAGRAM
SCALE: NONE

KEY NOTES:

- A) PLC-5 CONTROL PANEL (EXISTING). THE CONTRACTOR SHALL PROVIDE ALL PLC PROGRAMMING NECESSARY TO INCORPORATE THE NEW FILTERS INTO THE OVERALL PLANT OPERATIONAL LOGIC. PROGRAMMING FOR THE NEW FILTERS SHALL MATCH WHAT WAS UTILIZED FOR THE PREVIOUS PROJECT FOR FILTERS 1 & 7.
- B) FILTER CONTROL CONSOLE (FUTURE). WORK ASSOCIATED WITH THIS FILTER CONSOLE IS NOT INCLUDED IN THE SCOPE OF THIS PROJECT. IT HAS BEEN SHOWN TO DETAIL THE COMPLETE BUILD OUT FOR FILTER REHABILITATION.

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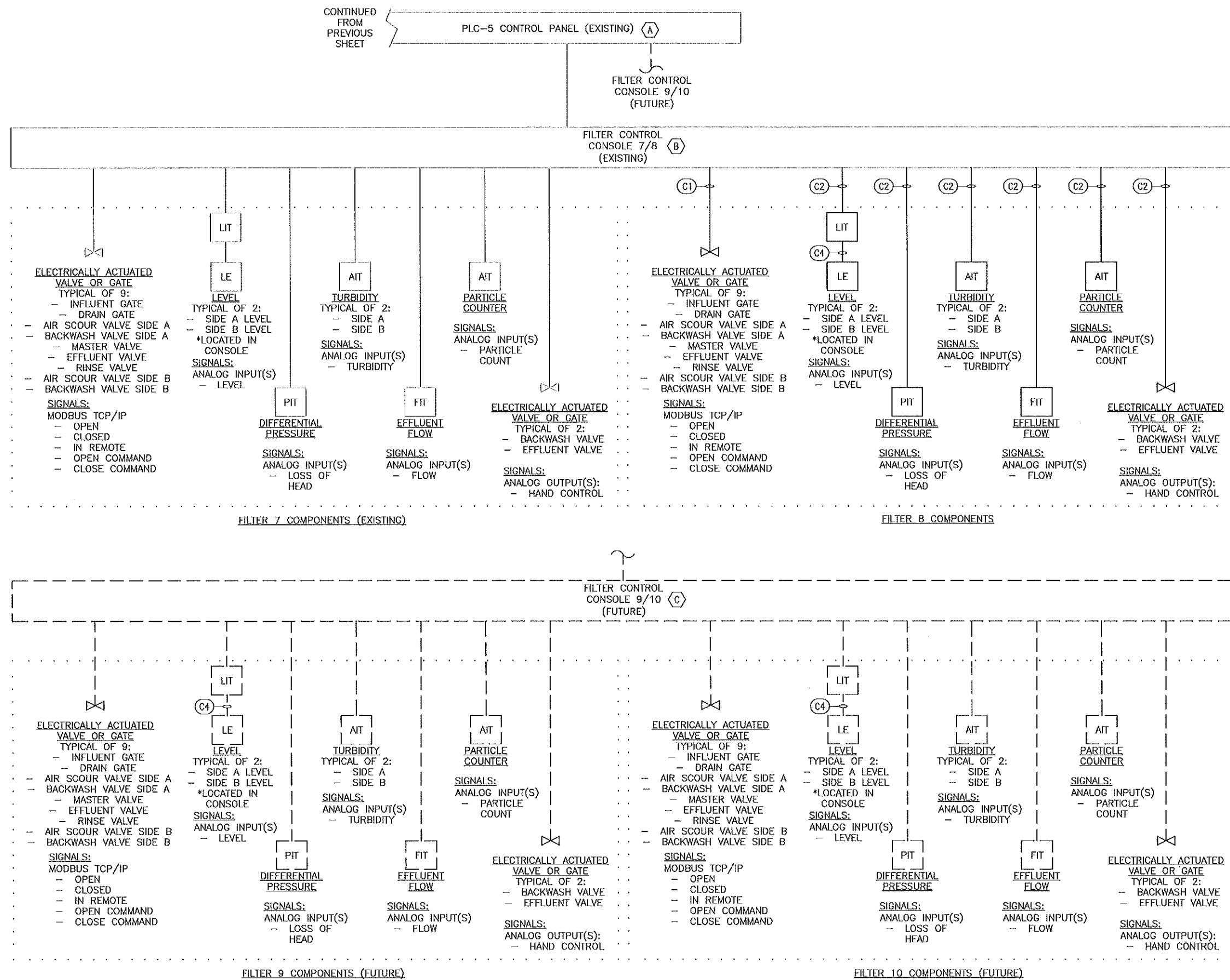
FCC 3-4 & FCC 5-6 CONTROL
SINGLELINE
AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



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○ FILTER CONTROL CONSOLES 7/8 & 9/10 CONTROL SINGLE LINE DIAGRAM
SCALE: NONE

KEY NOTES:

A PLC-5 CONTROL PANEL (EXISTING). THE CONTRACTOR SHALL PROVIDE ALL PLC PROGRAMMING NECESSARY TO INCORPORATE THE NEW FILTERS INTO THE OVERALL PLANT OPERATIONAL LOGIC. PROGRAMMING FOR THE NEW FILTERS SHALL MATCH WHAT WAS UTILIZED FOR THE PREVIOUS PROJECT FOR FILTERS 1 & 7.

B FILTER CONTROL CONSOLE 7/8 (EXISTING). THE EXISTING FILTER CONTROL CONSOLE SHALL BE MODIFIED BY THE CONTRACTOR TO INCORPORATE ALL OF THE VALVES, INSTRUMENTS, AND DEVICES AS SHOWN TO MONITOR AND CONTROL THE ADDITIONAL FILTER. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MODIFICATIONS; PLC PROGRAMMING, AND LOCAL HMI PROGRAMMING TO FULLY INCORPORATE ADDITIONAL FILTER COMPONENTS INTO THE CONTROL CONSOLE. WITHIN THE CONSOLE, AT A MINIMUM, THE CONTRACTOR SHALL ADD A NETWORK SWITCH TO FACILITATE INTERCONNECTION OF THE ADDITIONAL VALVES, PROVIDE POWER FOR THE LEVEL CONTROLLERS, AND PHYSICAL INSTALLATION OF THE LEVEL CONTROLLERS IN THE CONSOLE. ALL CONFIGURATION AND PROGRAMMING SHALL MATCH WHAT WAS USED IN THE PREVIOUS PROJECT FOR EXISTING FILTERS 1 & 7.

C FILTER CONTROL CONSOLE 9/10 (FUTURE).
 WORK ASSOCIATED WITH THIS FILTER
 CONSOLE IS NOT INCLUDED IN THE SCOPE
 OF THIS PROJECT. IT HAS BEEN SHOWN TO
 DETAIL THE COMPLETE BUILD OUT FOR FILTER
 REHABILITATION.

[illegible]

FCC 7-8 & FCC 9-10 CONTROL
SINGLELINE



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PANEL: HF1 (EXISTING)												
3	PH	4	WIRE	VOLTAGE	L-L: 480	L-N: 277	MAIN:	125A MLO				
LOCATION: FILTER GALLERY					PHASE	PHASE	PHASE		MOUNTING: SURFACE			
CKT#	BKR.	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	20	3	FILTER 1 SLUICE GATE SG-301I	305	610			305	FILTER 4 SLUICE GATE SG-304I (FUTURE)	3	20	2
3	-	-		305		610		305		-	-	4
5	-	-		305			610	305		-	-	6
7	20	3	FILTER 1 SLUICE GATE SG-301D	305	610			305	FILTER 4 SLUICE GATE SG-304D (FUTURE)	3	20	8
9	-	-		305		610		305		-	-	10
11	-	-		305			610	305		-	-	12
13	20	3	FILTER 2 SLUICE GATE SG-302I	305	305			0	SPARE	3	50	14
15	-	-		305		305		0		-	-	16
17	-	-		305			305	0		-	-	18
19	20	3	FILTER 2 SLUICE GATE SG-302D	305	305			0	SPARE	3	20	20
21	-	-		305		305		0		-	-	22
23	-	-		305			305	0		-	-	24
25	20	3	FILTER 3 SLUICE GATE SG-303I (FUTURE)	305	8785			8480	TRANSFORMER TF1	3	50	26
27	-	-		305		5601		5296		-	-	28
29	-	-		305			5601	5296		-	-	30
31	20	3	FILTER 3 SLUICE GATE SG-303D (FUTURE)	305	305			0	SPACE	-	-	32
33	-	-		305		305		0	SPACE	-	-	34
35	-	-		305			305	0	SPACE	-	-	36
37	-	-	SPACE	0	0			0	SPACE	-	-	38
39	-	-	SPACE	0		0		0	SPACE	-	-	40
41	-	-	SPACE	0			0	0	SPACE	-	-	42
TOTAL LOAD(VA)/PHASE THIS PANEL:					10920	7736	7736					
TOTAL CONNECTED LOAD(VA) THIS PANEL:					26392	TOTAL CONNECTED LOAD (AMPS):			32			
TOTAL DEMAND LOAD (VA) THIS PANEL:					21113.6	TOTAL DEMAND LOADS (AMPS):			25			
NOTES:												
1.												

 PANEL HF1 (EXISTING)
SCALE: NONE

PANEL: HF2 (EXISTING)												
3	PH	4	WIRE	VOLTAGE	L-L: 480	L-N: 277	MAIN:	125A MLO				
LOCATION: FILTER GALLERY					PHASE	PHASE	PHASE		MOUNTING: SURFACE			
CKT#	BKR.	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	20	3	FILTER 7 SLUICE GATE SG-301I	305	610			305	FILTER 10 SLUICE GATE SG-310D (FUTURE)	3	20	2
3	-	-		305		610		305		-	-	4
5	-	-		305			610	305		-	-	6
7	20	3	FILTER 7 SLUICE GATE SG-301D	305	610			305	FILTER 5 SLUICE GATE SG-305D (FUTURE)	3	20	8
9	-	-		305		610		305		-	-	10
11	-	-		305			610	305		-	-	12
13	20	3	FILTER 8 SLUICE GATE SG-308I	305	610			305	FILTER 5 SLUICE GATE SG-305I (FUTURE)	3	50	14
15	-	-		305		610		305		-	-	16
17	-	-		305			610	305		-	-	18
19	20	3	FILTER 8 SLUICE GATE SG-308D	305	610			305	SPARE	3	20	20
21	-	-		305		610		305		-	-	22
23	-	-		305			610	305		-	-	24
25	20	3	FILTER 9 SLUICE GATE SG-309I (FUTURE)	305	8785			8480	TRANSFORMER TF2	3	40	26
27	-	-		305		5601		5296		-	-	28
29	-	-		305			5601	5296		-	-	30
31	20	3	FILTER 9 SLUICE GATE SG-309D (FUTURE)	305	610			305	FILTER 6 SLUICE GATE SG-306D (FUTURE)	3	20	32
33	-	-		305		610		305		-	-	34
35	-	-		305			610	305		-	-	36
37	20	3	FILTER 10 SLUICE GATE SG-310I (FUTURE)	305	610			305	FILTER 6 SLUICE GATE SG-306I (FUTURE)	3	50	38
39	-	-		305		610		305		-	-	40
41	-	-		305			610	305		-	-	42
TOTAL LOAD(VA)/PHASE THIS PANEL:					12445	9261	9261					
TOTAL CONNECTED LOAD(VA) THIS PANEL:					30967	TOTAL CONNECTED LOAD (AMPS):			37			
TOTAL DEMAND LOAD (VA) THIS PANEL:					24773.6	TOTAL DEMAND LOADS (AMPS):			30			
NOTES:												
1.												

 PANEL HF2 (EXISTING)
SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL UTILIZE THE EXISTING SPARE BREAKERS LOCATED IN PANELS HF1 & HF2 TO PROVIDE POWER FOR THE LOADS ASSOCIATED WITH FILTERS 2 & 8. FUTURE LOADS FOR FILTERS 3, 4, 5, 6, 9 & 10 HAVE BEEN SHOWN FOR THE SUBSEQUENT PROJECT PHASES.

ENGINEER SEAL



2025.03.20
22:33:20-05'00'

NO.

DATE

DESIGNED BY:

DRAWN BY:

REVISION

CHECKED BY:

APPROVED BY:

JD

AB

RAM

JB

HF PANEL SCHEDULES

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2





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973 BROAD STREET, SUITE A
AUGUSTA, GA 30901
COA: FEP004730
REV: 06/01/2025

FILE: SEE LEFT

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PANEL: LF1 (EXISTING)														
3 PH			4 WIRE		VOLTAGE		L-L: 208		L-N: 120		MAIN:		125A MCB	
LOCATION: FILTER GALLERY					PHASE		PHASE		PHASE		MOUNTING: SURFACE			
CKT#	BKR.	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#		
1	20	1	FILTER 2 VALVE ACTUATOR - BFV-302AA	528	1056			528	FILTER 1 VALVE ACTUATOR - BFV-301AA	1	20	2		
3	20	1	FILTER 2 VALVE ACTUATOR - BFV-302WA	696		1392		696	FILTER 1 VALVE ACTUATOR - BFV-301WA	1	20	4		
5	20	1	FILTER 2 VALVE ACTUATOR - BFV-302M	696			1392	696	FILTER 1 VALVE ACTUATOR - BFV-301M	1	20	6		
7	20	1	FILTER 2 VALVE ACTUATOR - FCV-302E	696	1392			696	FILTER 1 VALVE ACTUATOR - FCV-301E	1	20	8		
9	20	1	FILTER 2 VALVE ACTUATOR - BFV-302R	528		1056		528	FILTER 1 VALVE ACTUATOR - BFV-301R	1	20	10		
11	20	1	FILTER 2 VALVE ACTUATOR - BFV-302AB	528			1056	528	FILTER 1 VALVE ACTUATOR - BFV-301AB	1	20	12		
13	20	1	FILTER 2 VALVE ACTUATOR - BFV-302WB	696	1392			696	FILTER 1 VALVE ACTUATOR - BFV-301WB	1	20	14		
15	20	1	FILTER 2 SIDE A TURBIDITY - AIT-302A	100		200		100	FILTER 1 SIDE A TURBIDITY - AIT-301A	1	20	16		
17	20	1	FILTER 2 SIDE B TURBIDITY - AIT-302B	100			200	100	FILTER 1 SIDE B TURBIDITY - AIT-301B	1	20	18		
19	20	1	FILTER 2 PARTICLE COUNTER - AIT-302C	200	400			200	FILTER 1 PARTICLE COUNTER - AIT-301C	1	20	20		
21	20	1	SPARE	0		0		0	SPARE	1	20	22		
23	20	1	SPARE	0			0	0	SPARE	1	20	24		
25	20	1	SPARE	0	0			0	SPARE	1	20	26		
27	20	1	SPARE	0		0		0	SPARE	1	20	28		
29	20	1	SPARE	0			0	0	SPARE	1	20	30		
TOTAL LOAD(VA)PHASE THIS PANEL:					4240	2648	2648							
TOTAL CONNECTED LOAD(VA) THIS PANEL:					9536	TOTAL CONNECTED LOAD (AMPS):					26			
TOTAL DEMAND LOAD (VA) THIS PANEL:					7628.8	TOTAL DEMAND LOADS (AMPS):					21			
NOTES:														
1.														

PANEL LF1 (EXISTING)
SCALE: NONE

PANEL: LF2 (FUTURE)												
3 PH			4 WIRE		VOLTAGE	L-L: 208	L-N: 120	MAIN:	125A MCB			
LOCATION: FILTER GALLERY					PHASE	PHASE	PHASE		MOUNTING: SURFACE			
CKT#	BKR.	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	20	1	FILTER 4 VALVE ACTUATOR - BFV-304AA	528	1056			528	FILTER 3 VALVE ACTUATOR - BFV-303AA	1	20	2
3	20	1	FILTER 4 VALVE ACTUATOR - BFV-304WA	696		1392		696	FILTER 3 VALVE ACTUATOR - BFV-303WA	1	20	4
5	20	1	FILTER 4 VALVE ACTUATOR - BFV-304M	696			1392	696	FILTER 3 VALVE ACTUATOR - BFV-303M	1	20	6
7	20	1	FILTER 4 VALVE ACTUATOR - FCV-304E	696	1392			696	FILTER 3 VALVE ACTUATOR - FCV-303E	1	20	8
9	20	1	FILTER 4 VALVE ACTUATOR - BFV-304R	528		1056		528	FILTER 3 VALVE ACTUATOR - BFV-303R	1	20	10
11	20	1	FILTER 4 VALVE ACTUATOR - BFV-304AB	528			1056	528	FILTER 3 VALVE ACTUATOR - BFV-303AB	1	20	12
13	20	1	FILTER 4 VALVE ACTUATOR - BFV-304WB	696	1392			696	FILTER 3 VALVE ACTUATOR - BFV-303WB	1	20	14
15	20	1	FILTER 4 SIDE A TURBIDITY - AIT-304A	100		200		100	FILTER 3 SIDE A TURBIDITY - AIT-303A	1	20	16
17	20	1	FILTER 4 SIDE B TURBIDITY - AIT-304B	100			200	100	FILTER 3 SIDE B TURBIDITY - AIT-303B	1	20	18
19	20	1	FILTER 4 PARTICLE COUNTER - AIT-304C	200	400			200	FILTER 3 PARTICLE COUNTER - AIT-303C	1	20	20
21	20	1	SPARE	0		0		0	SPARE	1	20	22
23	20	1	SPARE	0			0	0	SPARE	1	20	24
25	20	1	SPARE	0	0			0	SPARE	1	20	26
27	20	1	SPARE	0		0		0	SPARE	1	20	28
29	20	1	SPARE	0			0	0	SPARE	1	20	30
TOTAL LOAD(VA)/PHASE THIS PANEL:					4240	2648	2648					
TOTAL CONNECTED LOAD(VA) THIS PANEL:					9536	TOTAL CONNECTED LOAD (AMPS):			26			
TOTAL DEMAND LOAD (VA) THIS PANEL:					7628.8	TOTAL DEMAND LOADS (AMPS):			21			
NOTES:												
1.												

PANEL LF2 (FUTURE)
SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL UTILIZE EXISTING SPARE BREAKERS LOCATED IN PANEL LF1 TO PROVIDE POWER FOR THE LOADS ASSOCIATED WITH FILTER 2.
2. PANEL LF2, WHICH WILL PROVIDE POWER FOR LOADS ASSOCIATED WITH FILTERS 3 & 4 IN A SUBSEQUENT PROJECT PHASE, WILL NOT BE PROVIDED AS PART OF THIS PROJECT.

[illegible]

LF1 & LF2 PANEL SCHEDULES



FILE	SEE LEFT
	VERIFY SCALE
	BAR IS ONE INCH ON ORIGINAL DRAWING
	0  1"
DATE	MARCH 2025
PROJ.	100339.11
DWG.	EQO

H:\PROJECT FILES\100339 - AUGUSTA UTILITIES DEPARTMENT\100339.11 AUD HIGHLAND AVENUE WTP FILTER MODIFICATIONS - ZEL-2102-00\300 DESIGN 355 PRELIMINARY DRAWINGS\07 ELECTRICAL\SCHEDULES.DWG
REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CONSTANTINE ENGINEERING. HOWEVER, THIS SHALL NOT PROHIBIT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.

PANEL: LF3 (FUTURE)												
3 PH			4 WIRE	VOLTAGE	L-L: 208		L-N: 120	MAIN:	125A MCB			
LOCATION: FILTER GALLERY					PHASE	PHASE	PHASE		MOUNTING: SURFACE			
CKT#	BKR.	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	20	1	FILTER 6 VALVE ACTUATOR - BFV-306AA	528	1056			528	FILTER 5 VALVE ACTUATOR - BFV-305AA	1	20	2
3	20	1	FILTER 6 VALVE ACTUATOR - BFV-306WA	696		1392		696	FILTER 5 VALVE ACTUATOR - BFV-305WA	1	20	4
5	20	1	FILTER 6 VALVE ACTUATOR - BFV-306M	696			1392	696	FILTER 5 VALVE ACTUATOR - BFV-305M	1	20	6
7	20	1	FILTER 6 VALVE ACTUATOR - FCV-306E	696	1392			696	FILTER 5 VALVE ACTUATOR - FCV-305E	1	20	8
9	20	1	FILTER 6 VALVE ACTUATOR - BFV-306R	528		1056		528	FILTER 5 VALVE ACTUATOR - BFV-305R	1	20	10
11	20	1	FILTER 6 VALVE ACTUATOR - BFV-306AB	528			1056	528	FILTER 5 VALVE ACTUATOR - BFV-305AB	1	20	12
13	20	1	FILTER 6 VALVE ACTUATOR - BFV-306WB	696	1392			696	FILTER 5 VALVE ACTUATOR - BFV-305WB	1	20	14
15	20	1	FILTER 6 SIDE A TURBIDITY - AIT-306A	100		200		100	FILTER 5 SIDE A TURBIDITY - AIT-305A	1	20	16
17	20	1	FILTER 6 SIDE B TURBIDITY - AIT-306B	100			200	100	FILTER 5 SIDE B TURBIDITY - AIT-305B	1	20	18
19	20	1	FILTER 6 PARTICLE COUNTER - AIT-306C	200	400			200	FILTER 5 PARTICLE COUNTER - AIT-305C	1	20	20
21	20	1	SPARE	0		0		0	SPARE	1	20	22
23	20	1	SPARE	0			0	0	SPARE	1	20	24
25	20	1	SPARE	0	0			0	SPARE	1	20	26
27	20	1	SPARE	0		0		0	SPARE	1	20	28
29	20	1	SPARE	0			0	0	SPARE	1	20	30
TOTAL LOAD(VA)/PHASE THIS PANEL:					4240	2648	2648					
TOTAL CONNECTED LOAD(VA) THIS PANEL:					9536			TOTAL CONNECTED LOAD (AMPS):		26		
TOTAL DEMAND LOAD (VA) THIS PANEL:					7628.8			TOTAL DEMAND LOADS (AMPS):		21		
NOTES:												
1.												

 PANEL LF3 (FUTURE)
SCALE: NONE

PANEL: LF4 (EXISTING)												
3 PH			4 WIRE	VOLTAGE	L-L: 208		L-N: 120	MAIN:	80A MCB			
LOCATION: FILTER GALLERY					PHASE	PHASE	PHASE		MOUNTING: SURFACE			
CKT#	BKR.	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	40	1	PANEL LF5	0	528			528	FILTER 7 VALVE ACTUATOR - BFV-307AA	1	20	2
3	-	-		0		696		696	FILTER 7 VALVE ACTUATOR - BFV-307WA	1	20	4
5	-	-		0			696	696	FILTER 7 VALVE ACTUATOR - BFV-307M	1	20	6
7	20	1	FILTER 8 VALVE ACTUATOR - BFV-308AA	528	1224			696	FILTER 7 VALVE ACTUATOR - BFV-307E	1	20	8
9	20	1	FILTER 8 VALVE ACTUATOR - BFV-308WA	696		1224		528	FILTER 7 VALVE ACTUATOR - BFV-307R	1	20	10
11	20	1	FILTER 8 VALVE ACTUATOR - BFV-308M	696			1224	528	FILTER 7 VALVE ACTUATOR - BFV-307AB	1	20	12
13	20	1	FILTER 8 VALVE ACTUATOR - BFV-308E	696	1392			696	FILTER 7 VALVE ACTUATOR - BFV-307WB	1	20	14
15	20	1	FILTER 8 VALVE ACTUATOR - BFV-308R	528		628		100	FILTER 7 SIDE A TURBIDITY - AIT-307A	1	20	16
17	20	1	FILTER 8 VALVE ACTUATOR - BFV-308AB	528			628	100	FILTER 7 SIDE B TURBIDITY - AIT-307B	1	20	18
19	20	1	FILTER 8 VALVE ACTUATOR - BFV-308WB	696	896			200	FILTER 7 PARTICLE COUNTER - AIT-307C	1	20	20
21	20	1	FILTER 8 SIDE A TURBIDITY - AIT-308A	100		100		0	SPARE	1	20	22
23	20	1	FILTER 8 SIDE B TURBIDITY - AIT-308B	100			100	0	SPARE	1	20	24
25	20	1	FILTER 8 PARTICLE COUNTER - AIT-308C	200	200			0	SPARE	1	20	26
27	20	1	SPARE	0		0		0	SPARE	1	20	28
29	20	1	SPARE	0			0	0	SPARE	1	20	30
TOTAL LOAD(VA)/PHASE THIS PANEL:					4240	2648	2648					
TOTAL CONNECTED LOAD(VA) THIS PANEL:					9536			TOTAL CONNECTED LOAD (AMPS):		26		
TOTAL DEMAND LOAD (VA) THIS PANEL:					7628.8			TOTAL DEMAND LOADS (AMPS):		21		
NOTES:												
1.												

 PANEL LF4 (EXISTING)
SCALE: NONE

GENERAL NOTES:

1. THE CONTRACTOR SHALL UTILIZE EXISTING SPARE BREAKERS LOCATED IN PANEL LF4 TO PROVIDE POWER FOR THE LOADS ASSOCIATED WITH FILTER 8.
2. PANEL LF3, WHICH WILL PROVIDE POWER FOR LOADS ASSOCIATED WITH FILTERS 5 & 6 IN A SUBSEQUENT PROJECT PHASE, WILL NOT BE PROVIDED AS PART OF THIS PROJECT.

ENGINEER SEAL



2025.03.20
22:36:19-0500

BY: JF

DATE: 03/20/25

NO. 1

DESIGNED BY: JF

REVISION

DRAWN BY: JF

CHECKED BY: JF

APPROVED BY: JF

LF3 & LF4 PANEL SCHEDULES

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2


AUGUSTA UTILITIES


ARDURRA
COLLABORATE. INNOVATE. CREATE.
973 BROAD STREET, SUITE A
AUGUSTA, GA 30901
PH: 706.664.0444
COX: 706.664.0444
FAX: 706.664.0444

FILE: SEE LEFT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE: MARCH 2025

PROJ: 100339.11

DWG: E10

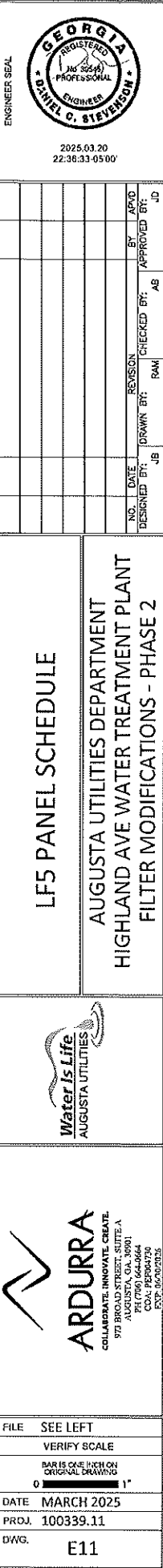
100.339 - AUGUSTA UTILITIES DEPARTMENT\100.339.11 AUD HIGHLAND AVENUE WTP FILTER MODIFICATIONS ~ ZEL-2102-00\300 PRELIMINARY DRAWINGS\07 ELECTRICAL SCHEDULES.DWG

PANEL: LF5 (EXISTING)												
3 PH			4 WIRE	VOLTAGE	L-L: 208	L-N: 120	MAIN:	60A MCB				
LOCATION: FILTER GALLERY					VOLT-AMP	PHASE	PHASE	PHASE	VOLT-AMP	MOUNTING: SURFACE		
CKT#	BKR.	POLE	DESCRIPTION	A		B	C	DESCRIPTION		POLE	BKR.	CKT#
1	20	1	FILTER 10 VALVE ACTUATOR - BFV-310AA	528	1056			528	FILTER 9 VALVE ACTUATOR - BFV-309AA	1	20	2
3	20	1	FILTER 10 VALVE ACTUATOR - BFV-310WA	696			1392	696	FILTER 9 VALVE ACTUATOR - BFV-309WA	1	20	4
5	20	1	FILTER 10 VALVE ACTUATOR - BFV-310M	696			1392	696	FILTER 9 VALVE ACTUATOR - BFV-309M	1	20	6
7	20	1	FILTER 10 VALVE ACTUATOR - BFV-310E	696	1392			696	FILTER 9 VALVE ACTUATOR - BFV-309E	1	20	8
9	20	1	FILTER 10 VALVE ACTUATOR - BFV-310R	528			1056	528	FILTER 9 VALVE ACTUATOR - BFV-309R	1	20	10
11	20	1	FILTER 10 VALVE ACTUATOR - BFV-310AB	528			1056	528	FILTER 9 VALVE ACTUATOR - BFV-309AB	1	20	12
13	20	1	FILTER 10 VALVE ACTUATOR - BFV-310WB	696	1392			696	FILTER 9 VALVE ACTUATOR - BFV-309WB	1	20	14
15	20	1	FILTER 10 SIDE A TURBIDITY - AIT-310A	100			200	100	FILTER 9 SIDE A TURBIDITY - AIT-309A	1	20	16
17	20	1	FILTER 10 SIDE B TURBIDITY - AIT-310B	100			200	100	FILTER 9 SIDE B TURBIDITY - AIT-309B	1	20	18
19	20	1	FILTER 10 PARTICLE COUNTER - AIT-310C	200	400			200	FILTER 9 PARTICLE COUNTER - AIT-309C	1	20	20
21	20	1	SPARE	0			0	0	SPARE	1	20	22
23	20	1	SPARE	0			0	0	SPARE	1	20	24
25	20	1	SPARE	0	0			0	SPARE	1	20	26
27	20	2	GATE MOTOR	1920			1920	0	SPARE	1	20	28
29	-	-		1920			1920	0	SPARE	1	20	30
TOTAL LOAD(VA)/PHASE THIS PANEL:						4240	4568	4568				
TOTAL CONNECTED LOAD(VA) THIS PANEL:						13376	TOTAL CONNECTED LOAD (AMPS):			37		
TOTAL DEMAND LOAD (VA) THIS PANEL:						10700.8	TOTAL DEMAND LOADS (AMPS):			30		
NOTES:												
1.												

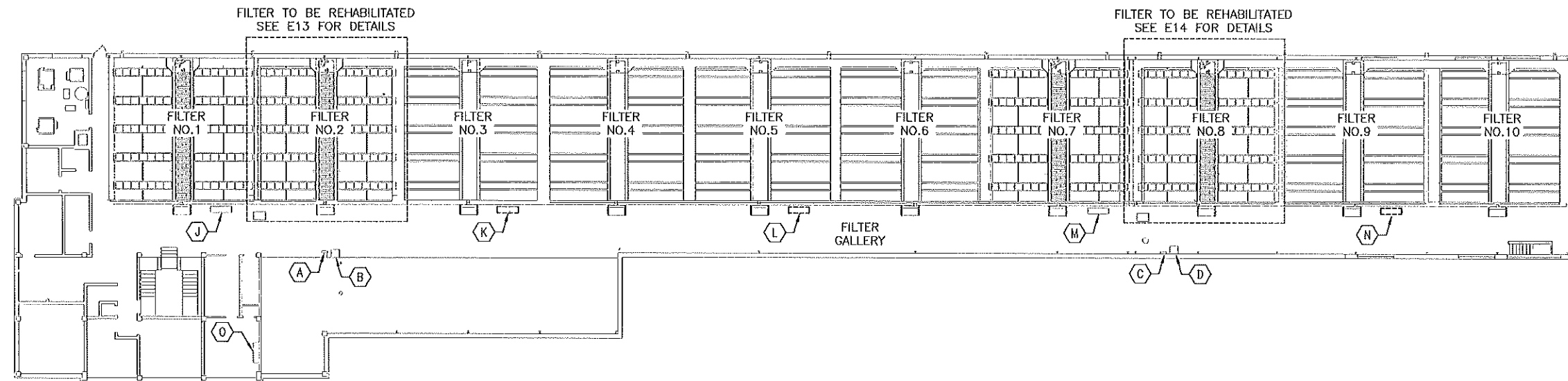
PANEL LF5 (EXISTING)
SCALE: NONE

GENERAL NOTES:

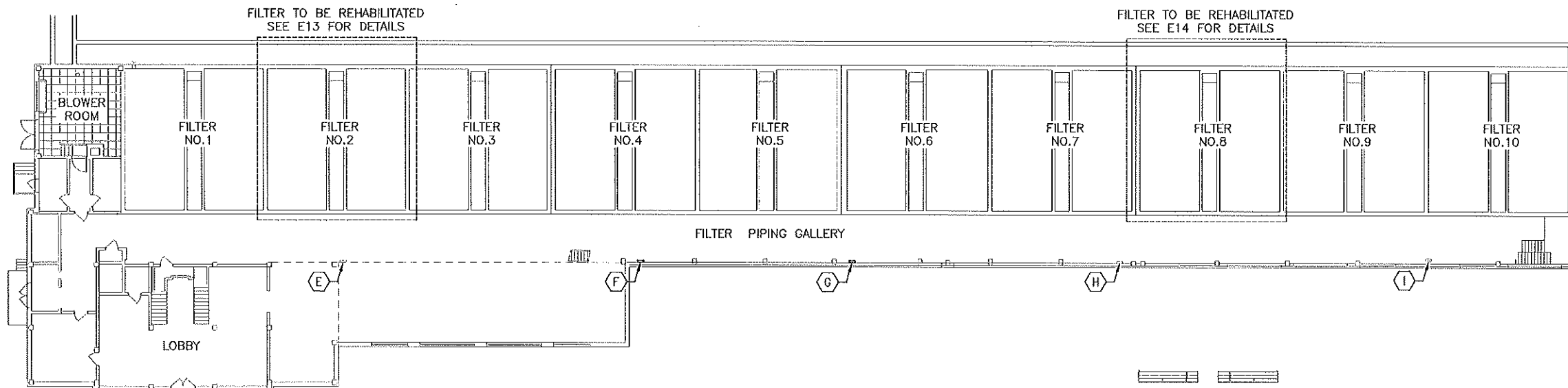
11. EXISTING PANEL LF5 WILL PROVIDE POWER FOR LOADS ASSOCIATED WITH FILTERS 9 & 10 IN A SUBSEQUENT PROJECT PHASE. INTERCONNECTION WITH THIS PANEL IS NOT REQUIRED FOR THIS PROJECT.



H:\PROJECT FILES\100339 - AUGUSTA UTILITIES DEPARTMENT\100339.11 AUG HIGHLAND AVENUE WTP FILTER MODIFICATIONS - ZEL-2102-00\300 DESIGN\305 PRELIMINARY DRAWINGS OF ELECTRICAL EAST FILTER ELECTRICAL FLOOR PLAN.DWG
REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN ARE THE PROPERTY OF PROFESSIONAL ENGINEER. HOWEVER, THIS SHALL NOT PREVENT THE REUSE OF THIS DOCUMENT BY THE CLIENT AS PROVIDED FOR BY THE CONTRACT.



 EAST FILTER BUILDING OPERATING FLOOR ELECTRICAL PLAN
SCALE: 1/16" = 1'-0"



 EAST FILTER BUILDING FIRST FLOOR ELECTRICAL PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR REQUIRED FOR THE INSTALLATION OF FILTERS 2 & 8 AS DETAILED ON THE PROJECT PLANS. FILTERS 1 & 7 WERE COMPLETED ON A PREVIOUS PROJECT. FILTERS 3, 4, 5, 6, 9, & 10 ARE NOT INCLUDED IN THIS PROJECT AND HAVE BEEN SHOWN FOR CLARITY. THE MATERIAL TYPES, INSTALLATION METHODS, AND QUALITY OF WORK PERFORMED FOR FILTERS 1 & 7 SHALL BE IMPLEMENTED FOR FILTERS 2 & 8.

KEY NOTES:

- A PANEL HF1 (EXISTING)
- B TRANSFORMER TF1 (EXISTING)
- C PANEL HF2 (EXISTING)
- D TRANSFORMER TF2 (EXISTING)
- E PANEL LF1 (EXISTING)
- F PANEL LF2 (FUTURE)
- G PANEL LF3 (FUTURE)
- H PANEL LF4 (EXISTING)
- I PANEL LF5 (EXISTING)
- J FILTER CONTROL CONSOLE 1/2 (FCC 1/2) (EXISTING)
- K FILTER CONTROL CONSOLE 3/4 (FCC 3/4) (FUTURE)
- L FILTER CONTROL CONSOLE 5/6 (FCC 5/6) (FUTURE)
- M FILTER CONTROL CONSOLE 7/8 (FCC 7/8) (EXISTING)
- N FILTER CONTROL CONSOLE 9/10 (FCC 9/10) (FUTURE)
- O PLC-5 CONTROL PANEL (EXISTING)



NO.	DATE	DESIGNED BY	JO	DRAWN BY	REVISION	CHECKED BY	APPROVED BY	JD

ELECTRICAL FILTER FLOOR PLAN

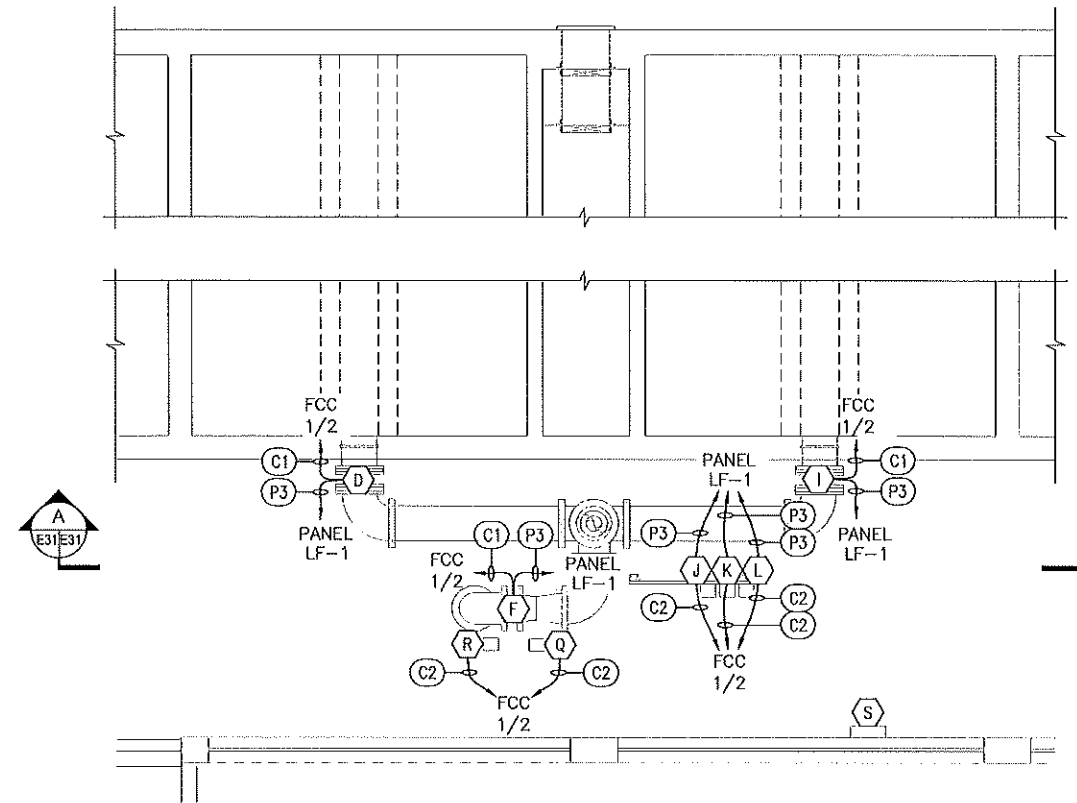
AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



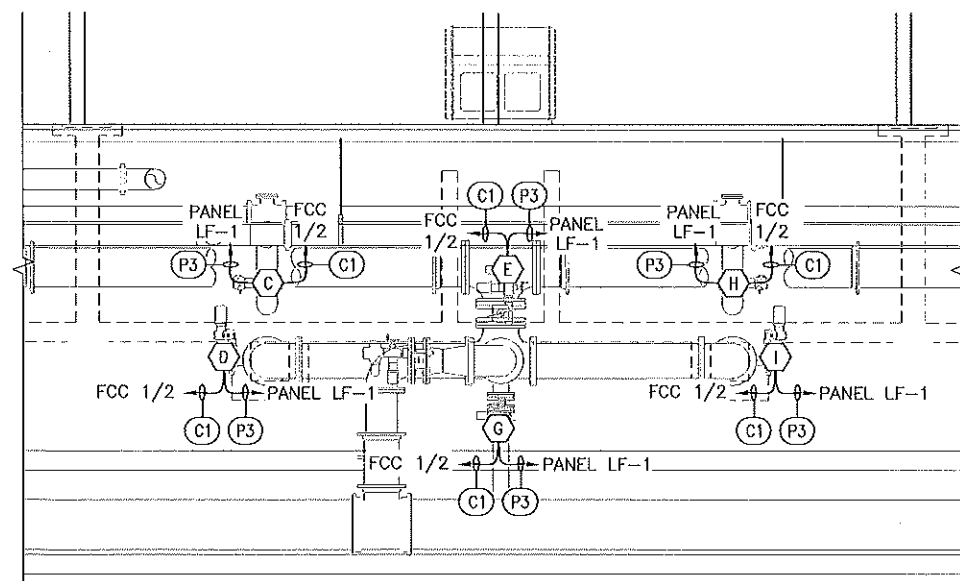
FILE	SEE LEFT
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING	
DATE	
PROJ.	100339.11
DWG.	E12

ISSUED FOR BID

H:\PROJECT FILES\DEPARTMENT\100339.11 AUD HIGHLAND AVENUE WTP FILTER MODIFICATIONS - TEL-2102-00\300 DESIGN\355 PRELIMINARY DRAWINGS\07 ELECTRICAL\FILTER 2 ELECTRICAL PLAN.DWG

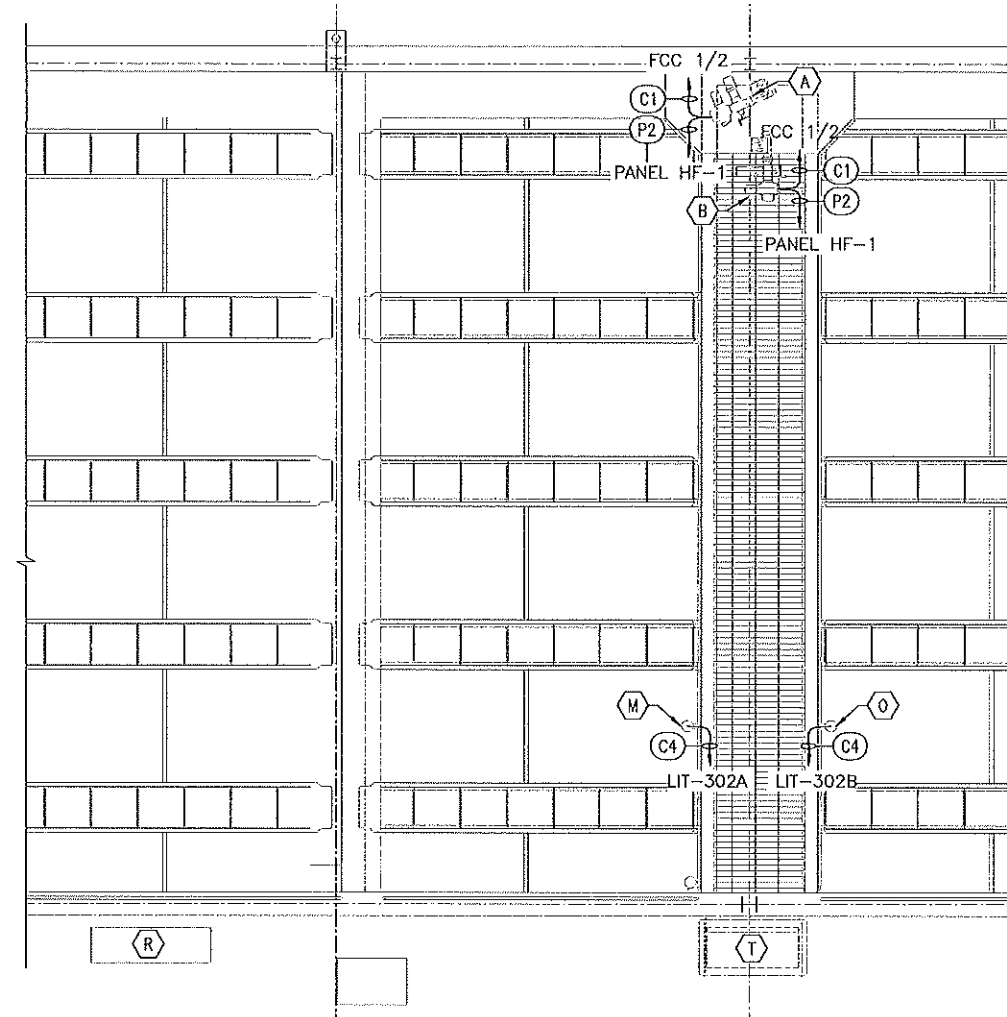


○ FILTER NO.2 LOWER LEVEL ELECTRICAL PLAN ○
SCALE: 1/4" = 1'-0"






FILTER NO.2 SECTION ELECTRICAL PLAN
 SCALE: 1/4" = 1'-0"



FILTER NO.2 UPPER LEVEL ELECTRICAL PLAN

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR REQUIRED FOR THE INSTALLATION OF FILTER 2 AS DETAILED ON THE PROJECT PLANS.
2. USE STAINLESS STEEL UNISTRUT MOUNTED TO HANDRAILS TO SUPPORT INSTRUMENTATION.
3. THE CONTRACTOR SHALL REMOVE THE EXISTING FILTER 2 CONSOLE AND OLD INSTRUMENTATION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER REGARDING DISPOSAL OF ALL MATERIALS ALL MATERIALS.
4. PVC COATED CONDUIT SHALL BE UTILIZED IN THE FILTER GALLERY TO MATCH EXISTING.
5. RIGID INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED IN IN THE FILTER PIPE GALLERY TO MATCH EXISTING.
6. SEE DRAWING M09 FOR TURBIDITY AND PARTICLE COUNTER INSTRUMENTATION RACK DETAIL.

KEY NOTES:

- (A) INFLUENT SLUICE GATE SG-302I
- (B) DRAIN SLUICE GATE SG-302D
- (C) AIR SCOUR VALVE SIDE A BFV-302AA
- (D) BACKWASH VALVE SIDE A BFV-302WA
- (E) MASTER VALVE BFV-302M
- (F) EFFLUENT VALVE FCV-302E
- (G) RINSE VALVE BFV-302R
- (H) AIR SCOUR VALVE SIDE B BFV-302AB
- (I) BACKWASH VALVE SIDE B BFV-302WB
- (J) TURBIDITY METER, SIDE A AIT-302A
- (K) TURBIDITY METER, SIDE B AIT-302B
- (L) PARTICLE COUNTER AIT-302C
- (M) SIDE A LEVEL TRANSDUCER LE-302A
- (N) SIDE A LEVEL CONTROLLER LIT-302A
- (O) SIDE B LEVEL TRANSDUCER LE-302B
- (P) SIDE B LEVEL CONTROLLER LIT-302B
- (Q) EFFLUENT FLOW FIT-302
- (R) DIFFERENTIAL PRESSURE (HEAD LOSS) PDIT-302
- (R) FILTER CONTROL CONSOLE 1/2 (FCC 1/2) (EXISTING)
- (S) PANEL LF-1 (EXISTING)
- (T) EXISTING FILTER CONTROL CONSOLE. TO BE REMOVED.

[illegible]

FILTER 2 ELECTRICAL PLAN

AUGUSTA UTILITIES DEPARTMENT
HIGHLAND AVE WATER TREATMENT PLANT
FILTER MODIFICATIONS - PHASE 2



FILE	SEE LEFT
	VERIFY SCALE
	BAR IS ONE INCH ON ORIGINAL DRAWING
	0  1"
DATE	MARCH 2025
PROJ.	100339.11
DWG.	512

ISSUED FOR BID

E13

E14