LIGHTING FIXTURE SCHEDULE

DESIGNATION	DESCRIPTION			LAMPS OR TUBES			REMARKS
	TYPE	MFR.	CAT. NO.	NUMBER	WATTS	TYPE	
A	LED	HUBBELL	RL-6OL-U-4K-3-3-2-GR	1	79W	LED	① ④
B	LED	HUBBELL	RL-6OL-U-4K-3-3-2-GR	1	79W	LED	② ④
C	LED	LITHONIA	CSX1-LED-60C-700-40K-T3M-MVOLT-SPA-PER-DDBXD	1	134W	LED	③
D	LED	LITHONIA	FEM-L48-8000LM-LPPCL-MD-MVOLT-G210-40K-80CRI	1	50.5W	LED	
E	LED	HUBBELL	NRG4-30LU-5K-BZ	1	70W	LED	
F	LED	HUBBELL	CNY-LED-P2-40K-MVOLT-DDB	1	52W	LED	
G	LED	LITHONIA	TWH-LED-ALO-40K-T3M-MVOLT-PER-SF-DDBXD	1	78W	LED	
H	LED	LITHONIA	LV-S-W-1-R-120/277-ELN-UM	1	4.8W	LED	
I	LED	LITHONIA	IND618-H1206-SEL	2	12W	HALOGEN	

LIGHTING REMARKS:

① INSTALLED ON CONCRETE POLE AS PER DETAIL, INCLUDE POLE AND ALL ILLUSTRATED ACCESSORIES.

② INSTALLED ON EXISTING CONCRETE POLE, SEE DETAIL FOR REFERENCE.

③ INSTALLED ON FIBERGLASS 4" SQUARE STRAIGHT SHAFT POLE OF 14 FT. HEIGHT AND 8" BOLT CIRCLE BASE, EQUAL OR APPROVED EQUAL TO "LITHONIA SSF-14-4X".

④ INCLUDE "ON/OFF" PHOTOCONTROL EQUAL TO "HUBBELL WIH-OM-UNV".

DRY TYPE TRANSFORMER SCHEDULE

DESCRIPTION	CAPACITY	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PHASE	MOUNTING	WINDING	ENCLOSURE	MANUFACTURER
NDT-1	75 KVA	480 V	120/208 V	3	WALL	COPPER	115 D RISE NON VENT.	SQUARE D 75T8HNV-CU

FEEDERS SCHEDULE

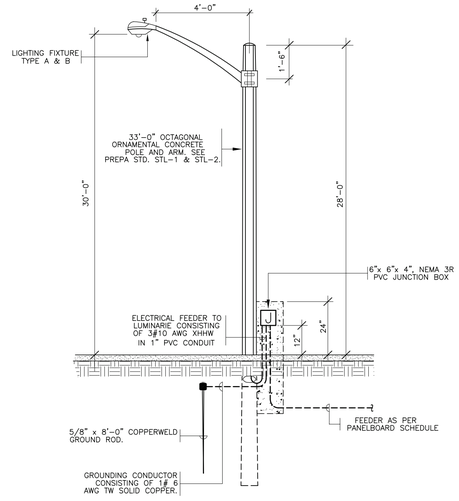
FEED NO.	FROM	TO	CONDUITS			CONDUCTORS			GROUND			REMARK
			QUANTITY	SIZE	TYPE	QUANTITY	SIZE	TYPE	QUANTITY	SIZE	TYPE	
⟨1⟩	SPC	SS-1	1	2"	PVC	3	2	XHHW	1	6	XHHW	1
⟨2⟩	SPC	SS-2	1	2"	PVC	3	2	XHHW	1	6	XHHW	1
⟨3⟩	BPC	SS-3	1	1.5"	PVC	3	6	XHHW	1	8	XHHW	1
⟨4⟩	BPC	SS-4	1	1.5"	PVC	3	6	XHHW	1	8	XHHW	1
⟨5⟩	BLC	SS-5	1	1"	PVC	3	10	XHHW	1	10	XHHW	1
⟨6⟩	BLC	SS-6	1	1"	PVC	3	10	XHHW	1	10	XHHW	1
⟨7⟩	SS-1	SER. PU #1	1	1.5"	SEAL-TIGHT	3	2	THHN	1	6	THHN	
⟨8⟩	SS-2	SER. PU #2	1	1.5"	SEAL-TIGHT	3	2	THHN	1	6	THHN	
⟨9⟩	SS-3	BACK PU #1	1	1.25"	SEAL-TIGHT	3	6	THHN	1	8	THHN	
⟨10⟩	SS-4	BACK PU #2	1	1.25"	SEAL-TIGHT	3	6	THHN	1	8	THHN	
⟨11⟩	SS-5	BLOWER #1	1	3/4"	SEAL-TIGHT	3	10	THHN	1	10	THHN	
⟨12⟩	SS-6	BLOWER #2	1	3/4"	SEAL-TIGHT	3	10	THHN	1	10	THHN	
⟨13⟩	VFD-1	SS-7	1	3/4"	RGS PVC COATED	3	10	THHN	1	10	THHN	
⟨14⟩	VFD-2	SS-8	1	3/4"	RGS PVC COATED	3	10	THHN	1	10	THHN	
⟨15⟩	VFD-3	SS-9	1	3/4"	RGS PVC COATED	3	10	THHN	1	10	THHN	
⟨16⟩	VFD-4	SS-10	1	3/4"	RGS PVC COATED	3	10	THHN	1	10	THHN	
⟨17⟩	VFD-5	SS-11	1	3/4"	RGS PVC COATED	3	10	THHN	1	10	THHN	
⟨18⟩	LP1	SS-12	1	1"	RGS PVC COATED	2	6	THHN	1	8	THHN	
⟨19⟩	LDP	SS-13	1	1"	RGS PVC COATED	2	6	THHN	1	8	THHN	

REMARKS:

① FOR EXPOSED SECTION USE RGS PVC COATED CONDUIT.

SAFETY SWITCH SCHEDULE

DESCRIPTION						FUSES			LOAD	SERVES	FROM	FEEDER	REMARKS
NO.	FRAME	POLES	VOLTS	NEMA	DUTY	TYPE	SIZE	KIND					
SS-1	100A	3	600V	4X	HD	--	--	--	50 HP	SERVICE PU #1	SPC	SEE FEEDER SCHEDULE	
SS-2	100A	3	600V	4X	HD	--	--	--	50 HP	SERVICE PU #2	SPC	SEE FEEDER SCHEDULE	
SS-3	60A	3	600V	4X	HD	--	--	--	15 HP	BACKWASH PU #1	BPC	SEE FEEDER SCHEDULE	
SS-4	60A	3	600V	4X	HD	--	--	--	15 HP	BACKWASH PU #2	BPC	SEE FEEDER SCHEDULE	
SS-5	30A	3	600V	4X	HD	--	--	--	3.5 HP	BLOWER #1	BLC	SEE FEEDER SCHEDULE	
SS-6	30A	3	600V	4X	HD	--	--	--	3.5 HP	BLOWER #2	BLC	SEE FEEDER SCHEDULE	
SS-7	30A	3	600V	4X	HD	--	--	--	1 HP	FLASH MIXER	VFD-1	SEE FEEDER SCHEDULE	
SS-8	30A	3	600V	4X	HD	--	--	--	1/4 HP	FLOCC. F1/2	VFD-2	SEE FEEDER SCHEDULE	
SS-9	30A	3	600V	4X	HD	--	--	--	1/4 HP	FLOCC. F3	VFD-3	SEE FEEDER SCHEDULE	
SS-10	30A	3	600V	4X	HD	--	--	--	1/4 HP	FLOCC. F4	VFD-4	SEE FEEDER SCHEDULE	
SS-11	30A	3	600V	4X	HD	--	--	--	2.5 HP	THICK. MOTOR	VFD-5	SEE FEEDER SCHEDULE	
SS-12	60A	2	240V	4X	HD	--	--	--	--	OPER. BL. A/C	LP1	SEE PANEL SCHEDULE	
SS-13	60A	2	240V	4X	HD	--	--	--	--	ELEC. R. A/C	LDP	SEE PANEL SCHEDULE	



TYPE A & B LUMINARIE DETAIL
NOT TO SCALE

RICARDO ORTIZ GARCIA INGENIERO LIC. #12448 PUERTO RICO

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NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY R.O.G.
CHECKED BY
APPR. BY

Ancalle ENGINEERS
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Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
SCHEDULES AND DETAILS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV. / 2026
SCALE: N.T.S.
SHEET NO. 79 OF .
DWG. NO. E-24
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

INTERIOR LEGEND:

- LED LIGHTING FIXTURE CEILING MOUNTED, CAPITAL LETTER INDICATES FIXTURE TYPE AS PER LIGHTING FIXTURE SCHEDULE AND SMALL LETTER INDICATES SWITCHING.
- SQUARE 4" X 4" X 1 1/2" CAST IRON PVC COATED BOX, EXPOSED WITH CEILING MOUNTED LIGHTING FIXTURE, CAPITAL LETTER INDICATES FIXTURE AS PER LIGHTING FIXTURE SCHEDULE, SMALL LETTER INDICATES SWITCHING.
- SAME AS ABOVE BUT WALL MOUNTED AT 7'–0" A.F.F. OR AS INDICATED ON DRAWINGS.
- JUNCTION BOX 4" X 4" X 2 1/8" CAST IRON PVC COATED BOX MOUNTED SURFACE AT HEIGHT INDICATED ON DRAWINGS OR COORDINATE AT FIELD.
- HEAVY DUTY QUIET SWITCH, WALL TYPE 20A–125 VAC SINGLE POLE SURFACE MOUNTED IN 2–1/8" X 4" CAST IRON PVC COATED BOX OR GANGED TOGETHER AT 54" A.F.F. 3W INDICATES THREE WAY, 4W MEANS FOUR WAY, SUBLETTER INDICATES LIGHT CONTROLLED K INDICATES KEY OPERATED.
- POWER RECEPTACLE 250V. 2P–30A. AT 1' –6" A.F.F. APPLIANCE AS INDICATED.
- DUPLEX CONVENIENCE RECEPTACLE, GROUND TYPE, 20 AMP, 125V. AT 1'–6" A.F.F. UNLESS OTHERWISE INDICATED. W.P. MEANS WEATHER PROOF, G.F. MEANS GROUND FAULT CIRCUIT INTERRUPTER.
- DITTO BUT 6" ABOVE COUNTER OR AS INDICATED ON DRAWINGS.
- BRANCH CONDUIT IN CEILING SLAB OR WALLS OR EXPOSED NUMBER OF CROSSHATCHES INDICATES NUMBER OF CONDUCTORS INSIDE, NO CROSSHATCHES INDICATES THREE CONDUCTORS.
- BRANCH CONDUIT IN FLOOR SLAB OR WALLS, SAME NOTATIONS AS ABOVE.
- HOMERUN TO PANELBOARD NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS INSIDE.
- PANELBOARD AT 5' –0" A.F.F. AS PER PANELBOARD SCHEDULE, CONNECTED TO 480V ELECTRICAL DISTRIBUTION.
- PANELBOARD AT 5' –0" A.F.F. AS PER PANELBOARD SCHEDULE, CONNECTED TO 208V ELECTRICAL DISTRIBUTION.
- MINI POWE ZONE INCLUDING PANELBOARD INSTALLED AT 5' –0" A.F.F. AS PER PANELBOARD SCHEDULE AND ELECRICAL RISER DIAGRAM.
- VFD — VFD DRIVE FOR VARIABLE SPEED EQUIPMENTS AS PER VFD DESCRIPTION.
- SAFETY SWITCH AS PER SAFETY SWITCH SCHEDULE MOUNTED AT 5' –0" A.F.F.
- MOTOR CONNECTION WITH LIQUIDTIGHT CONDUIT, SIZE ACCORDING TO PANELBOARD SCHEDULE.
- D/T — DRY TYPE TRANSFORMER AS PER ELECTRICAL RISER DIAGRAM AND SCHEDULES.
- 480 — ELECTRICAL FEEDER AT 480 V FOR MAIN ELECTRICAL AND MECHANICAL EQUIPMENTS AS PER ELECTRICAL RISER DIAGRAM AND INSTALLED AS PER TRENCH DETAILS.
- 480 — SAME AS ABOVE BUT INSTALLED UNDERGROUND.
- 120 — BRANCH 120 V ELECTRIC FEEDER FOR ELECTRIC EQUIPMENTS OR 120 V ELECTRIC CONNECTION FOR INSTRUMENTATION EQUIPMENTS AS PER ELECTRICAL RISER DIAGRAM, PANELBOARD SCHEDULE AND INSTALLED AS PER TRENCH DETAILS.
- 120 — SAME AS ABOVE BUT INSTALLED UNDERGROUND.
- CD — CONTROL CONDUIT FOR CONTROL CONDUCTORS FOR DIGITAL CONTROL CONDUCTORS TO RUN UP TO MOTOR CONTROL CENTER OR CONTRL PANEL AS DETAILED ON DRAWINGS.
- CD — SAME AS ABOVE BUT INSTALLED UNDERGROUND.
- CA — CONTROL CONDUIT FOR CONTROL CONDUCTORS FOR ANALOG CONTROL CONDUCTORS TO RUN UP TO MOTOR CONTROL CENTER OR CONTRL PANEL AS DETAILED ON DRAWINGS.
- CA — SAME AS ABOVE BUT INSTALLED UNDERGROUND.
- CS — UNDERGROUND SPARE CONDUIT FOR CONTROL AND INSTRUMENTATION CONDUCTORS INSTALLED AS PER TRENCH DETAILS.
- TYPICAL MOTOR FOR PUMP OR MECHANICAL EQUIPMENT AS PER MECHANICAL DRAWINGS.
- CJ — JUNCTION BOX FOR CONNECTION OF CONTROL CONDUCTORS 12"X12"X4" NEMA 4X UNLESS OTHERWISE INDICATED.
- UNDERGROUND FEEDER FOR POLE MOUNTED LUMINARIES.
- ATS — AUTOMATIC TRANSFER SWICTH AS PER ELECTRICAL RISER DIAGRAMS.
- PJ — POWER JUNCTION BOX FOR CONNECTION OF POWER CONDUCTORS 12''x12''x4'' NEMA 4X UNLESS OTHERWISE INDICATED.
- G — UNDERGROUND GROUND CONDUCTOR CONSISTING OF 1 # 4/0 AWG THW IN 1 1/4" RGS PVC COATED CONDUIT. FOR GROUNDING MAT INSTALLATION USE 4/0 AWG SOFT DRAWN BARE COPPER CONDUCTOR INSTALLED AT 12" BELOW FINISHED GRADE WITH NO CONDUIT.
- G — SAME AS ABOVE BUT EXPOSED.
- COPPER CLAD GROUND ROD 3/4" X 8'–0".
- FM — FLOW METER AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- PS — PRESSURE SWITCH AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- SC — STREAMING CURRENT SENSOR AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- CL — CHLORINE SENSOR AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- Tb — TURBIDITY SENSOR AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- PH — PH AND TEMPERATURE SENSOR AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- SB — SLUDGE BLANQUET SENSOR AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- LS — LEVEL SWITCH AS PER INSTRUMENTATION DRAWINGS.
- LT — LEVEL TRANSMITTER AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- PT — PRESSURE TRANSMITTER AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- DP — DIFFERENTIAL PRESSURE TRANSMITTER AS PER MECHANICAL AND INSTRUMENTATION DRAWINGS.
- EXISTING POLE MOUNTED LUMINARY TO BE UP–GRADED AS PER LIGHTING FIXTURE SCHEDULE.
- POLE MOUNTED LUMINARY AS PER LIGHTING FIXTURE SCHEDULE.
- FLEXIBLE CONNECTION WITH SEALTIGHT CONDUCTOR.
- MAGNETIC COMBINATION STARTER AS PER SCHEDULE.
- EMERGENCY LIGHT AS PER LIGHTING FIXTURE SCHEDULE.
- EXIT LIGHT AS PER LIGHTING FIXTURE SCHEDULE.
- BCP — BLOWERS CONTROL PANEL AS PER ELECTRICAL RISER DIAGRAM AND CONTROL PANEL DESCRIPTION.
- SPC — SERVICE PUMPS CONTROL PANEL AS PER ELECTRICAL RISER DIAGRAM AND CONTROL PANEL DESCRIPTION.
- BPC — BACKWASH PUMPS CONTROL PANEL AS PER ELECTRICAL RISER DIAGRAM AND CONTROL PANEL DESCRIPTION.
- HPC — SLUDGE HOLDING TANK PUMPS CONTROL PANEL AS PER ELECTRICAL RISER DIAGRAM AND CONTROL PANEL DESCRIPTION.
- MS — MAIN SECONDARY FEEDER FROM SUBSTATION AS PER ELECTRICAL RISER DIAGRAM.
- SS — SECONDARY SPARE FOR MAIN FEEDER AS PER ELECTRICAL RISER DIAGRAM.
- POLE MOUNTED SUBSTATION AS PER ELECTRICAL RISER DIAGRAM AND DETAILS.
- NORMAL MAIN DISCONNECT AS PER ELECTRICAL RISER DIAGRAM.
- N.E.G. — EMERGENCY GENERATOR AS PER ELECTRICAL RISER DIAGRAM AND DETAILS.
- E — ELECTRICAL FEEDER FOR EMERGENCY GENERATOR AS PER ELECTRICAL RISER DIAGRAM.
- ES — SPARE CONDUIT FOR ELECTRICAL FEEDER FOR EMERGENCY GENERATOR.
- EC — CONTROL CONNECTION FOR EMERGENCY GENERATOR AS PER ELECTRICAL RISER DIAGRAM.
- ET — EXPOSED CONTROL CONDUIT FOR ETHERNET CONDUCTORS FOR AS DETAILED IN CONTROL ROUGH–IN DIAGRAM.
- ET — UNDERGROUND CONTROL CONDUIT FOR ETHERNET CONDUCTORS FOR AS DETAILED IN CONTROL ROUGH–IN DIAGRAM.
- OF — EXPOSED CONTROL CONDUIT FOR OPTIC FIBER CONDUCTORS FOR AS DETAILED IN CONTROL ROUGH–IN DIAGRAM.
- OF — UNDERGROUND CONTROL CONDUIT FOR OPTIC FIBER CONDUCTORS FOR AS DETAILED IN CONTROL ROUGH–IN DIAGRAM.
- MB — EXPOSED CONTROL CONDUIT FOR MOD–BUS CONDUCTORS FOR AS DETAILED IN CONTROL ROUGH–IN DIAGRAM.
- MB — UNDERGROUND CONTROL CONDUIT FOR MOD–BUS CONDUCTORS FOR AS DETAILED IN CONTROL ROUGH–IN DIAGRAM.
- CP–01 — MAIN CONTROL PANEL AS PER INSTRUMENTATION DRAWINGS.
- CP–F1/2 — FILTER CONTROL PANEL AS PER INSTRUMENTATION DRAWINGS.
- RIO — RIO CONTROL PANEL AS PER INSTRUMENTATION DRAWINGS.
- CS — CHEMICAL SKID AS PER MECHANICAL DRAWINGS.
- U — NEW UPS SYSTEM RATED FOR 40 KW, 120/208 V, 3 PHASES, WITH TOP CABLE ENTRY, INTEGRATED SLIM MAINTENANCE BYPASS, INTEGRATED BATTERY CABINET, COMMUNICATION CARD THAT ALLOWS REMOTE COMMUNICATION WITH MODBUS PROTOCOL, EQUAL TO "EATON 93PM 40KW".
- POWER RECEPTACLE FOR RANGE, GROUND TYPE, 50 AMP, 240V, 2 POLES PLUS NEUTRAL AND GROUND, INSTALLED IN 6" x 6" ELECTRICAL BOX AT 1'–6" A.F.F.
- V — TYPICAL NEW MOTORIZED VALVE AS MECHANICAL AND INSTRUMENTATION DRAWINGS.
- EV — TYPICAL EXISTING MOTORIZED VALVE AT FILTER 1 & 2 TO REMAIN AND TO BE INTEGRATED TO NEW ELECTRICAL AND INSTRUMENTATION DISTRIBUTION.

GENERAL NOTES:

1. ENTIRE INSTALLATION SHALL CONFORM TO N.E.C., N.F.C. AND ALL LOCAL ORDINANCES HAVING JURISDICTION.
2. MINIMUN SIZE FOR ALL PULL BOXES SHALL BE 4" TRADE.
3. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
4. PROVIDE IDENTIFICATION OF ALL BRANCH CIRCUITS ON A TYPEWRITTEN DIRECTORY CARD IN THE PANEL DOOR.
5. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT ELECTRICAL REQUIREMENTS AND EXTENT OF WORK WITH P.R. COMMUNICATIONS AUTHORITY TELEPHONE SYSTEM INSTALLATION.
6. EXCEPT WHERE NOTED OTHERWISE ALL FIXTURES & LAMPS SHALL BE FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR.
7. FLUORESCENT FIXTURES SHALL HAVE HIGH POWER FACTOR BALLASTS.
8. ALL MATERIALS SHALL BE NEW EXCEPT WHERE OTHERWISE NOTED & SHALL BEAR UNDERWRITER & UNION LABELS, WHERE SUCH LABELING APPLIES.
9. ALL MATERIALS & INSTALLATION SHALL CONFORM TO OWNER'S GENERAL DESIGN SPECIFICATIONS & BUILDING STANDARDS.
10. CONDUIT SHALL BE GALVANIZED STEEL RIGID HEAVY WALL, PVC COATED OR PVC.
11. EXCEPT WHERE OTHERWISE INDICATED, WIRE SHALL BE COPPER WITH 600 VOLT INSULATION TYPE THHN FOR BRANCH CONDUIT WORK, TYPE THW FOR SIZES LARGER THAN #4. ALUM. WIRE NOT PERMITTED.
12. OUTLET BOXES SHALL BE CAST IRON PVC COATED.
13. ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT REQUIREMENTS WITH EQUIPMENT SUPPLIER.
14. TW COPPER PULL WIRES SHALL BE INSTALLED IN EMPTY CONDUITS (WHERE REQUIRED).
15. WIRING DEVICES SHALL BE AS FOLLOW: LIGHT SWITCHES – 20 AMP HUBBELL 1221, DUPLEX RECEPTACLES – 15 AMP HUBBELL 5252, DEVICE PLATE – STAINLESS STEEL UNILINE DESIGN.
16. MATERIALS AND EQUIPMENTS SHALL BE GUARANTEED FREE FROM DEFECTS FOR ONE YEAR FROM DATE OF OWNER ACCEPTANCE & REPLACED AT NO EXTRA COST.
17. ENTIRE INSTALLATION SHALL BE PERFOMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST–CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE.
18. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.
19. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
20. ALL REQUIRED INSURANCES SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY & PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
21. ALL CIRCUIT BREAKERS USED TO SWITCH FLUORESCENT LIGHT FIXTURES SHALL BE APPROVED FOR THE PURPOSE AND MARKED "SWD".
22. CONDUIT SHALL CONFORM TO THE FOLLOWING:
    - A. EXPOSED ON CEILING & PARTITIONS, RGS PVC COATED.
    - B. EXPOSED ON CONCRETE SLAB, RGS PVC COATED.
    - C. UNDERGROUND OR BELOW SLABS – PVC SCHEDULE 40.
23. MAXIMUM LOAD FOR ALL BRANCH CIRCUITS IS 80%.
24. ELECTRICAL CONTRACTOR SHALL VISIT THE PROJECT SITE, AND HE SHALL REVIEW STRUCTURAL , PLUMBING & H.V.A.C. PLANS AND HE SHALL ADJUST HIS WORK TO CONFORM TO ALL CONDITIONS FOUND AND/OR SHOWN ON PLANS AND AS MAY BE DIRECTED IN THE FIELD BY OWNER'S REPRESENTATIVE.
25. ALL WORK TO BE IN STRICT ACCORDANCE WITH OWNER'S REQUIREMENTS AND RECOMMENDATIONS. NO WORK IS TO BE STARTED WITHOUT WRITTEN APPROVAL FROM THE OWNERS.
26. COORDINATE WITH EQUIPMENT SUPPLIER MECHANICAL SUBCONTRACTOR AND GENERAL CONTRACTOR FOR ALL FINAL CONNECTION REQUIREMENTS BEFORE INSTALLATION OF CONDUIT WIRE AND STUB–UP LOCATION.
27. ELECTRICAL SUB–CONTRACTOR SHALL BE RESPONSIBLE FOR BALANCING THE LOADS ON ALL PANELS.
28. ALL LIGHTING FIXTURE SHALL BE WIRED AS PER ARTICLE 410 OF N.E.C..
29. BOND WIRE SHALL BE RUN IN ALL CONDUIT WHERE REQUIRED.
30. GROUND TYPE BUSHINGS SHALL BE USED AS REQUIRED.
31. TEMPERATURE CONTROL WIRING BY ELECTRICAL CONTRACTOR, H.V.A.C. CONTRACTOR WILL PROVIDE WIRING DIAGRAM. ALL DEVICES, CONTROL TRANSFORMERS ETC. FOR MOUNTING & WIRING BY ELECTRICAL CONTRACTOR.
32. FOR LOCATION OF H.V.A.C. AND MECHANICAL EQUIPMENT REFER TO MECHANICAL DRAWINGS.
33. FUSES SHALL BE FUSETRON TYPE.
34. GENERAL CONDITIONS AND SPECIAL CONDITIONS SHALL APPLY TO THIS CONTRACT . DRAWINGS ARE SCHEMATIC. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COST TO MAKE NECESSARY ADJUSTMENTS TO PROVIDE A COMPLETE INSTALLATION AS CONTEMPLATED BY THE DRAWINGS AND SPECIFICATIONS READY FOR USE, PRIOR TO SUBMITTING HIS BID. CONTRACTOR SHALL INSPECT THE SITE AND INCLUDE IN HIS BID ALL ADJUSTMENTS AND CHANGES REQUIRED DUE TO EXISTING CONDITIONS.
35. ALL PANELBOARDS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND THE GREEN WIRE IN ALL CONDUITS.
36. EXPANSION AND DEFLECTION FITTINGS SHALL BE USED ON ALL CONDUITS CROSSING BUILDING EXPANSION JOINTS, SEE STRUCTURAL AND OTHER DRAWINGS.
37. ALL CONDUITS IN CONTACT WITH GROUND SHALL BE ENCASED IN A 3" CONCRETE ENVELOPE.
38. NO "UF" TYPE CONDUCTOR ALLOWED. ALL DROPS TO FIXTURES AND EQUIPMENT SHALL BE DONE IN FLEXIBLE METALLIC CONDUIT EXCEPT AS NOTED. WORK INSIDE DRY WALL PARTITIONS AND HUNG CEILING IS TO BE RGS PVC COATED.
39. RUN ONE GREEN GROUND WIRE TO ALL MOTORS, AND RELATED EQUIPMENT, SIZE AS INDICATED ON DRAWINGS OR IN ACCORDANCE WITH N.E.C. TABLE 250–95.
40. INSTALL HANGERS AND UNISTRUT CHANNELS TO PROVIDE MECHANICAL SUPPORT TO ALL CONDUIT.
41. CIRCUIT BREAKERS SHALL BE BOLT–ON TYPE, NO PLUG–IN CIRCUIT BREAKERS ALLOWED.

IMPORTANT NOTES:

1. WIRING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE REGULATION OF PREPA, ANSI, AND NEMA.
2. ALL UNDERGROUND PVC CONDUITS MUST BE SCHEDULE 40.
3. ALL SUPPORT, BOLTS, STRAP, SCREWS, ETC, SHALL BE OF CORROSION RESISTANCE MATERIAL OR PROTECTED AGAINST CORROSION.
4. NO WIRE SHALL BE SMALLER THAN NO. 12 AWG OF COPPER INSULATED 600 VOLTS TYPE INSULATION WITH HEAVY WALL NEOPRENE JACKET FOR 90C – THHN / THWN FOR #6 AWG AND SMALLER, XHHW FOR GREATER THAN #6.
5. NO CONDUIT SHALL BE SMALLER THAN 3/4" DIAMETER STANDARD PVC COATED HOT DIPPED GALVANIZED STEEL.
6. CONTROL PANEL SHALL BE FACTOR WIRED, DEAD FRONT.
7. ALL WIRING AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
8. NO CHANGE WILL BE MADE FROM THIS DESIGN DURING CONSTRUCTION UNLESS AUTHORIZED BY P.R.A.S.A.
9. MOTOR CONTROLLER DISCONNECTING MEANS MUST HAVE PADLOCKING PROVISIONS.
10. USE COLOR CODE WIRING FOR EACH IDENTIFICATION AND MAINTENANCE.
11. PROVIDE THREE SPARES FOR EACH FUSE CAPACITY IN THE CONTROL CENTER.
12. ALL EXPOSED CONDUITS MUST BE RIGID STEEL GALV, PVC COATED UNDERGROUND CONDUITS MUST BE PVC SCH. 40 .
13. EMT OR ENT FLEXIBLE CONDUITS ARE NOT PERMITTED.
14. ALL ELECTRICAL INSTALLATION SHALL BE EXPOSED WITH STAINLESS STEEL OR FS TYPE MALLEABLE IRON BOXES AND RIGID GALVANIZED PVC COATED CONDUITS.
15. ALL PANELBOARDS SHALL HAS COPPER LUGS AND COPPER BUS BARS.

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DRAWN BY: RICARDO ORTIZ GARCÍA LIC. NUM: 12448 P.E.

NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY R.O.G.
DESIGNED BY R.O.G.
CHECKED BY
APPR. BY

Ancalle ENGINEERS
Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

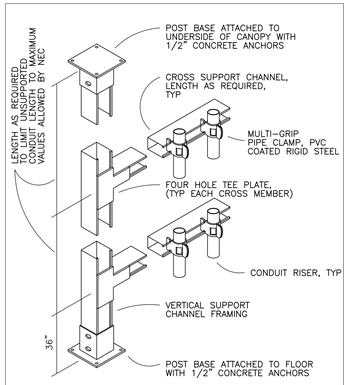
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
INTERIOR LEGEND, GENERAL NOTES AND IMPORTANT NOTES

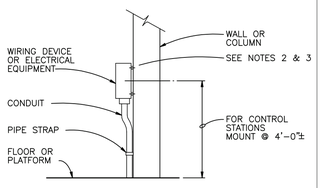
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV. / 2026
SCALE: N.T.S.
SHEET NO. 80 OF -
DWG. NO. E-25

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

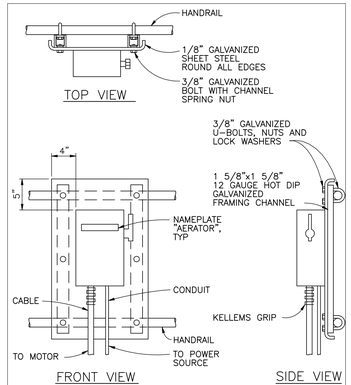


VERTICAL CONDUIT SUPPORT
N.T.S.

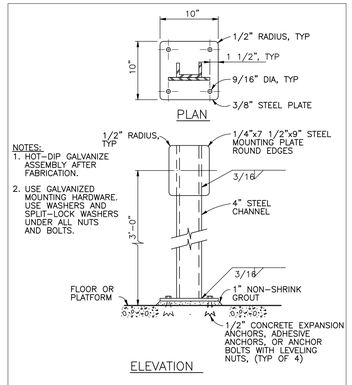


NOTES:
1. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL. USE WASHER AND SPLIT-LOCK WASHERS UNDER ALL NUTS.
2. ON CONCRETE WALLS USE STAINLESS STEEL INSERTS, MOUNT ENCLOSURE ON 1/2" SPACERS OF 1/2" SCHEDULE 80 PVC CONDUIT.
3. BOXES 6 INCHES SQUARE AND LESS SHALL BE SUPPORTED BY TWO INSERTS. LARGER BOXES SHALL BE SUPPORTED BY AT LEAST FOUR.

WALL OR COLUMN MOUNTED DEVICE
N.T.S.

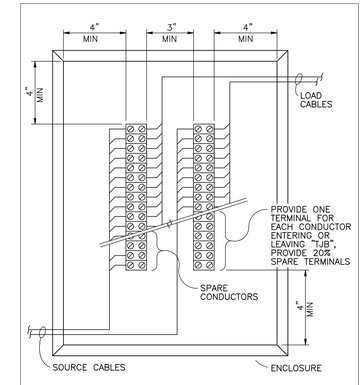


NONFUSED DISCONNECT SWITCH MOUNTING DETAILS
N.T.S.

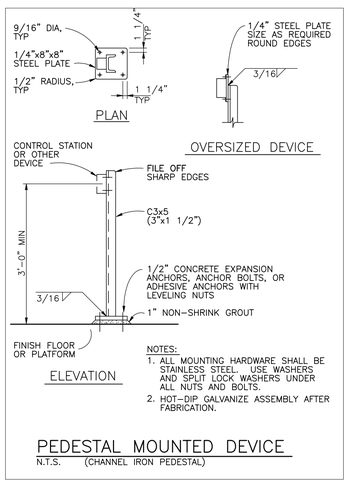


NOTES:
1. HOT-DIP GALVANIZE ASSEMBLY AFTER FABRICATION.
2. USE GALVANIZED MOUNTING HARDWARE. USE WASHERS AND SPLIT-LOCK WASHERS UNDER ALL NUTS AND BOLTS.

EQUIPMENT MOUNTING PEDESTAL DETAIL
N.T.S.

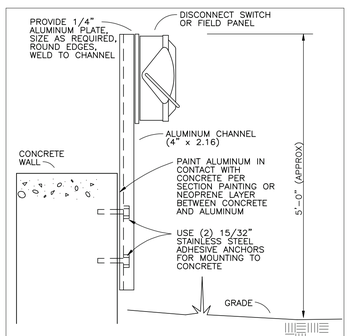


TERMINAL JUNCTION BOX (TJB) DETAIL
N.T.S.



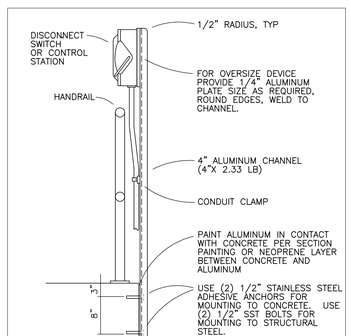
NOTES:
1. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL. USE WASHERS AND SPLIT LOCK WASHERS UNDER ALL NUTS AND BOLTS.
2. HOT-DIP GALVANIZE ASSEMBLY AFTER FABRICATION.

PEDESTAL MOUNTED DEVICE
N.T.S. (CHANNEL IRON PEDESTAL)



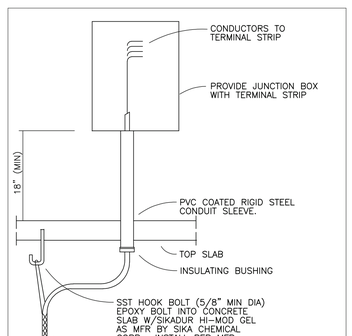
NOTES:
1. EQUIPMENT HAVING A FRONTAL AREA GREATER THAN 3 SQUARE FEET OR WIDER THAN 18 INCHES SHALL BE SUPPORTED BY 2 CHANNELS.
2. USE STAINLESS STEEL MOUNTING HARDWARE. USE WASHER AND SPLIT-LOCK WASHERS UNDER ALL NUTS AND BOLTS.

PEDESTAL MOUNTED DEVICE
N.T.S.



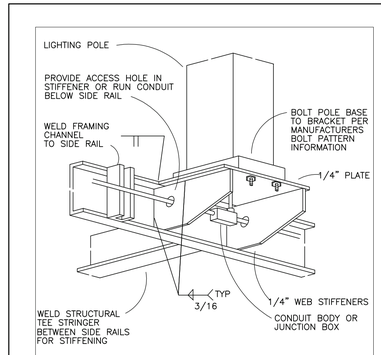
NOTE:
EQUIPMENT HAVING A FRONTAL AREA GREATER THAN 3 SQUARE FEET OR WIDER THEN 18 INCHES SHALL BE SUPPORTED BY TWO CHANNELS. USE SST MOUNTING HARDWARE. INSTALL RING AND SPLIT LOCK WASHERS UNDER ALL NUTS AND BOLTS.

PEDESTAL MOUNTED DEVICE AT HANDRAIL
N.T.S.



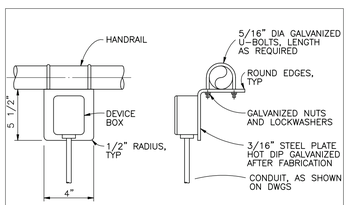
NOTES:
1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. THIS DETAIL SHALL BE USED FOR TERMINATION OF ALL MANUFACTURE SUPPLIED CABLES (MSC) EXITING A WET WELL IF NO OTHER DETAIL IS CALLED OUT ON THE DRAWINGS.
3. FILL CONDUIT SLEEVE WITH EXPANDABLE SEALING COMPOUND.

MSC CABLE TERMINATION
N.T.S.

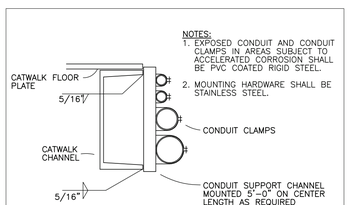


NOTE:
COMPLETE ALL WELDING PRIOR TO PAINTING

WALKWAY LIGHTING POLE MOUNTING
NTS

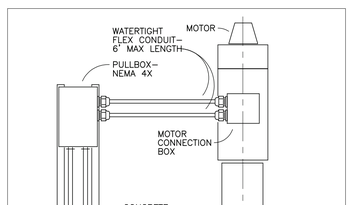


TYPICAL DEVICE MOUNTING AT HANDRAIL
N.T.S.

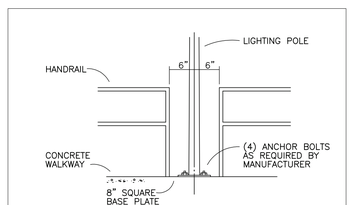


NOTES:
1. EXPOSED CONDUIT AND CONDUIT CLAMPS IN AREAS SUBJECT TO ACCELERATED CORROSION SHALL BE PVC COATED RIGID STEEL.
2. MOUNTING HARDWARE SHALL BE STAINLESS STEEL.

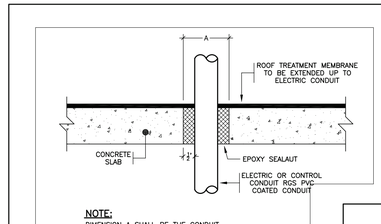
CONDUIT RACKING SYSTEM
N.T.S.



LARGE MOTOR CONNECTION
N.T.S.



LIGHTING STANDARD MOUNTING DETAIL
NTS



NOTE:
DIMENSION A SHALL BE THE CONDUIT EXTERNAL DIAMETER PLUS 1".

ROOF SLAB PERFORATION DETAIL FOR ELECTRICAL OR CONTROL CONDUITS
NOT TO SCALE

RICARDO ORTIZ GARCIA — INGENIERO — LIC. #12448 — PUERTO RICO

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
GENERAL ELECTRICAL DETAILS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV. / 2026
SCALE: 3/16"=1'-0"
SHEET NO. 81 OF -
DWG. NO. E-26

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

SYMBOLS

MECHANICAL EQUIPMENT

- MIXER-MIX
- DRIVER MOTOR FOR RAKE THICKNER
- BLOWER
- INLINE MIXER
- FLOCCULATION MIXER
- TUBE SETTLERS

PUMPS

- VERTICAL TURBINE PUMP
- VERTICAL PUMP
- DRY PIT SUBMERSIBLE PUMP
- SOLENOID PUMP
- PERISTALTIC PUMP
- SAMPLE SUMP PUMP
- CENTRIFUGAL PUMP
- JET MIXER PUMP

ACTUATORS

- ELECTRIC MOTOR
- MODULATION POSITIONER
- MANUAL

PRIMARY ELEMENTS

- MAGNETIC FLOWMETER
- ULTRASONIC LEVEL TRANSDUCER
- LEVEL FLOAT
- OPEN FLUME CHANNEL
- PRESSURE INDICATOR
- CALIBRATION COLUMN

VALVES

- CHECK VALVE
- FLOAT VALVE
- BALL VALVE
- STRAINER
- FLANGE
- PRESSURE RELIEF
- BACK PRESSURE RELIEF
- BUTTERFLY VALVE
- CONSTANT FLOW REGULATOR
- GATE VALVE
- DAMPENER

ANALYZERS

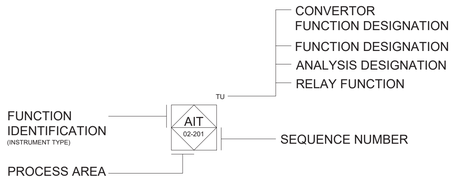
- TURBIDITY
- PH
- STREAM CURRENT
- CHLORINE

SYMBOLS

INSTRUMENTS SYMBOL

- FIELD MOUNTED
- PRIMARY PANEL MOUNTED, FRONT
- LOCAL PANEL FRONT
- PRIMARY PANEL MOUNTED, REAR
- INSTRUMENT SHARING COMMON HOUSING
- VENDOR SUPPLIED
- UNDEFINED INTERLOCK LOGIC

INSTRUMENT IDENTIFICATION



AIT 01-101

AIT - 01 - 101 xx

- AIT: INSTRUMENT TYPE
- 01: PROCESS AREA DESIGNATION
- 101: - INSTRUMENT CLASSIFICATION - SEQUENCE NUMBER
- xx: SUFFIX

	PRIMARY LOCATION		NOT NORMALLY ACCESSIBLE TO OPERATORS OR LOCALLY MOUNTED	AUXILIARY LOCATION	
	ACCESSIBLE TO OPERATOR	INACCESSIBLE OR BEHIND THE PANEL MOUNTED		ACCESSIBLE TO OPERATOR	INACCESSIBLE OR BEHIND THE PANEL MOUNTED
DISCRETE INSTRUMENTS					
PROGRAMMABLE LOGIC CONTROL/SHARED DISPLAY					
PILOT LIGHT					

I2 INTERLOCK DWG NO. (NEXT TO DIAMOND)

INSTRUMENTS LINE SYMBOL

- LEVEL SWITCH N.O.
- FLOW SWITCH N.O.
- PRESSURE SWITCH N.O.
- LIMIT SWITCH N.O.
- RELAY CONTACT N.O.
- CONTROL RELAY
- LEVEL SWITCH N.C.
- FLOW SWITCH N.C.
- PRESSURE SWITCH N.C.
- LIMIT SWITCH N.C.
- RELAY CONTACT N.C.
- SOLENOID VALVE
- MOMENTARY SWITCH
- EMERGENCY STOP SWITCH
- SELECTOR SWITCH
- PANEL WIRING
- FIELD WIRING
- PACKAGE SYSTEM
- FIBER OPTIC CABLE
- DIGITAL ETHERNET WIRING
- SHIELD CUT BACK
- SHIELD GROUND

	First letters		Succeeding letters		
	Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*
	Measured/Initiaing Variable	Variable Modifier (10)	Readout/Passive Function	Output/Active Function	Function Modifier
A	Analysis (2)(3)(4)		Alarm		
B	Burner, Combustion (2)		User's Choice (5)	User's Choice (5)	User's Choice (5)
C	User's Choice (3a)(5)			Control (23a)(23e)	Close (27b)
D	User's Choice (3a)(5)	Difference, Differential, (11a)(12a)			Deviation (28)
E	Voltage (2)		Sensor, Primary Element		
F	Flow, Flow Rate (2)	Ratio (12b)			
G	User's Choice		Glass, Gauge, Viewing Device (16)		
H	Hand (2)				High (27a)(28a)(29)
I	Current (2)		Indicate (17)		
J	Power (2)		Scan (18)		
K	Time, Schedule (2)	Time Rate of Change (12c)(13)		Control Station (24)	
L	Level (2)		Light (19)		Low (27b) (28)(29)
M	User's Choice (3a) (5)				Middle, Intermediate (27c)(28)(29)
N	User's Choice (5)		User's Choice (5)	User's Choice (5)	User's Choice (5)
O	User's Choice (5)		Orifice, Restriction		Open (27a)
P	Pressure (2)		Point (Test Connection)		
Q	Quantity (2)	Integrate, Totalize (11b)	Integrate, Totalize		
R	Radiation (2)		Record (20)		Run
S	Speed, Frequency (2)	Safety(14)		Switch (23b)	Stop
T	Temperature (2)			Transmit	
U	Multivariable (2)(6)		Multifunction	Multifunction (21)	
V	Vibration, Mechanical Analysis (2)(4)(7)			Valve, Damper, Louver (23c)(23e)	
W	Weight, Force (2)		Well, Probe		
X	Unclassified (8)	X-axis (11c)	Accessory Devices (22), Unclassified (8)	Unclassified (8)	Unclassified (8)
Y	Event, State, Presence (2)(9)	Y-axis (11c)		Auxiliary Devices (23d)(25)(26)	
Z	Position, Dimension (2)	Z-axis (11c)			
		Safety Instrumented		Driver, Actuator, Unclassified	
		System (30)		final control element	

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE	FB	FLOCCULATION BASIN	NC	NORMALLY CLOSED	RSSP	RS-485 SURGE PROTECTOR
BL	BLOWER	FL	FILTERS	NO	NORMALLY OPEN	SB	SEDIMENTATION BASIN
BW	BACKWASH	FTW	FILTER TO WASTE	NS	NETWORK SWITCH	SB1	SPLITTER BOX CHAMBER 1
CB	CIRCUIT BREAKER	FV	MODULATING VALVE	MSD	MICROPROCESSOR SOLENOID DRIVEN	SB2	SPLITTER BOX CHAMBER 2
CF	COOLING FAN	FU	FUSE	MX	MIXER	SBS	SLUDGE BLANKET SENSOR
CL2	CHLORINE INJECTION	G	GROUND	PH	PH SENSOR	SC	STREAMING CURRENT MONITOR
CHL-2	RESIDUAL CHLORINE	GB	GROUND BAR	PLC	PROGRAMMABLE LOGIC CONTROLLER	SS	SOFT START
CP	CONTROL PANEL	HMI	HUMAN MACHINE INTERFACE	PS	POWER SUPPLY	TK	TANK
CV	CHECK VALVE	HV	MANUAL VALVE	PU	PUMP	TU	TURBIDIMETER
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	INF	INFLUENT	RCP	RECEPTACLE	VFD	VARIABLE FREQUENCY DRIVE
EA	ETHERNET ADAPTER	IPP	INDUSTRIAL PATCH PANEL	RIO	REMOTE I/O	VS	VOLTAGE SUPRESSOR
EFF	EFFLUENT	LF	LIGHT FIXTURE	RM	REDUNDANCY MODULE	XV	ACTUATED VALVE (OPEN-CLOSED)

PROCESS AREA DESIGNATION

CODE		PROCESS AREA	CODE		PROCESS AREA
00		SUPPLY	30		CHEMICAL FEED
	01	RAW WATER INTAKE		31	CHLORINE
10		TREATMENT		32	COAGULANT
	11	DRAIN		33	PLYMER
	12	PRECHLORINATION	40		OTHER TREATMENT
	13	FLOCCULATION		41	DECHLORINATION
	14	SEDIMENTATION	50		EFFLUENT PUMPS
	15	CLARIFIERS		51	DISTRIBUTION PUMPS
	16	EQUALIZATION		52	BACKWASH TANK PUMPS
	17	SLUDGE			
	18	THICKNERS			
	19	SLUDGE DRYING BED			
20		FILTRATION			
	21	FILTERS			
	22	BLOWERS			
	23	BACKWASH			
	24	CLEARWELL			
	25	FILTER TO WASTE			
	26	CHLORINE CONTACT CHAMBER			

NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY CAE
DESIGNED BY CAE
CHECKED BY
APPR. BY

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
PROCESS & INSTRUMENTATION DIAGRAM (01)

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

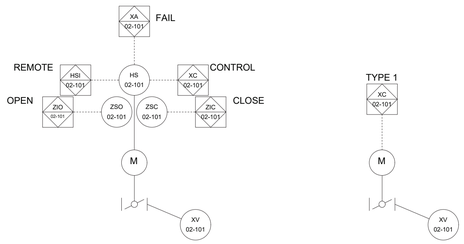
SHEET NO. 82 OF
DWG. NO. P&ID-01

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

TYPES DETAILS DEFINITION

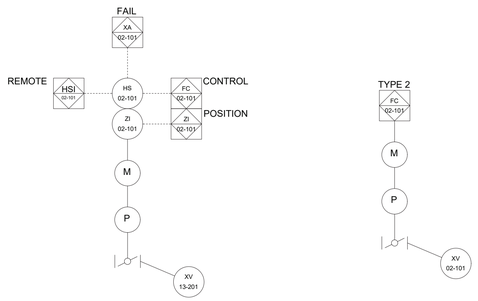
VALVES

TYPE 1



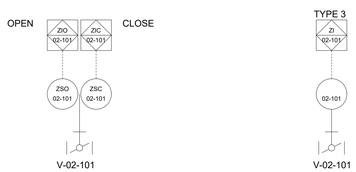
MOTORIZED VALVE WITH NON MODULATING ACTUATOR

Type 2



MOTORIZED VALVE WITH MODULATING ACTUATOR

TYPE 3

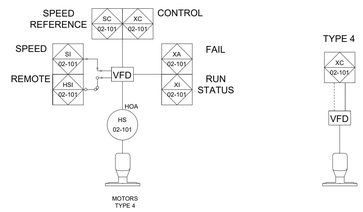


HAND VALVE WITH LIMIT SWITCH

TYPES DETAILS DEFINITION

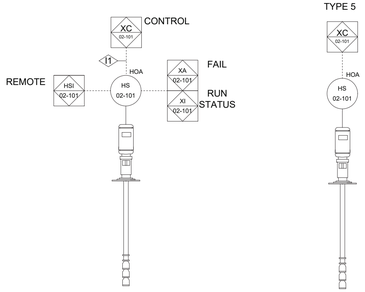
MOTORS

TYPE 4



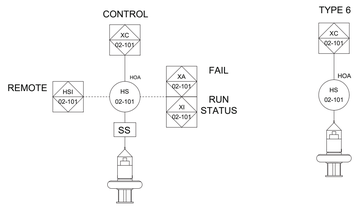
MOTORS WITH VFD

TYPE 5



MOTOR WITH STARTER

TYPE 6

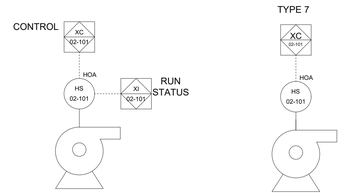


MOTOR WITH SOFT START

TYPES DETAILS DEFINITION

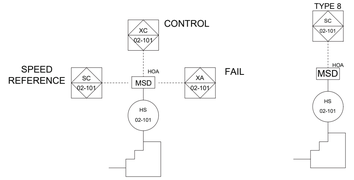
MOTORS

TYPE 7



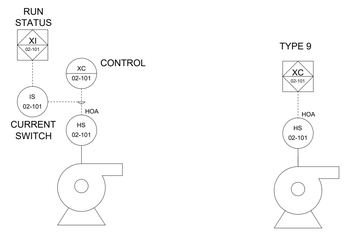
MOTOR WITH LOCAL STARTER

TYPE 8



SOLENOID PUMP WITH LOCAL CONTROL

TYPE 9

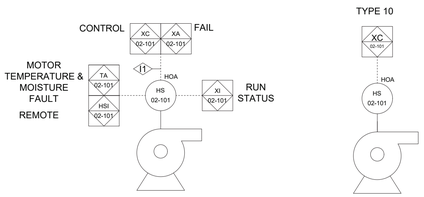


MOTOR WITH LOCAL STARTER AND LOCAL CONTROL MOTOR STATUS WITH CURRENT SWITCH

TYPES DETAILS DEFINITION

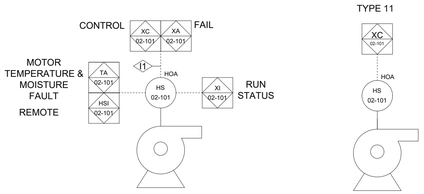
MOTORS

TYPE 10



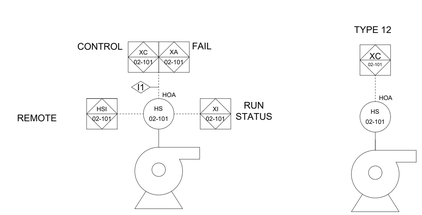
MOTOR WITH STARTER AND THERMAL & MOISTURE PROTECTION

TYPE 11



MOTOR MIXER WITH STARTER AND THERMAL & MOISTURE PROTECTION

TYPE 12



MOTOR MIXER WITH STARTER AND THERMAL & MOISTURE PROTECTION

NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

Ancalle ENGINEERS
Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

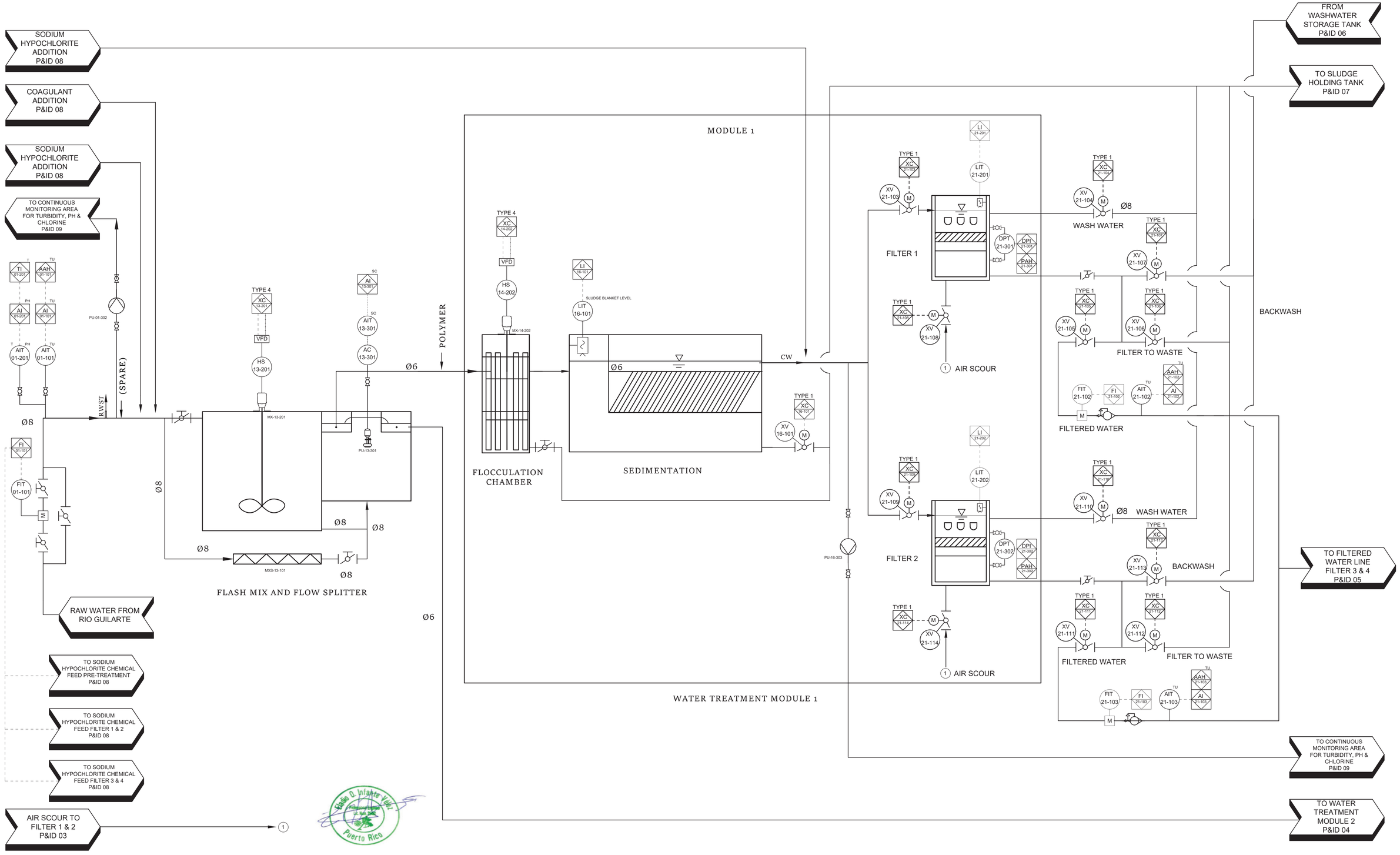
PROCESS & INSTRUMENTATION DIAGRAM (02)

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 83 OF
DWG. NO. P&ID-02

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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APPR. BY

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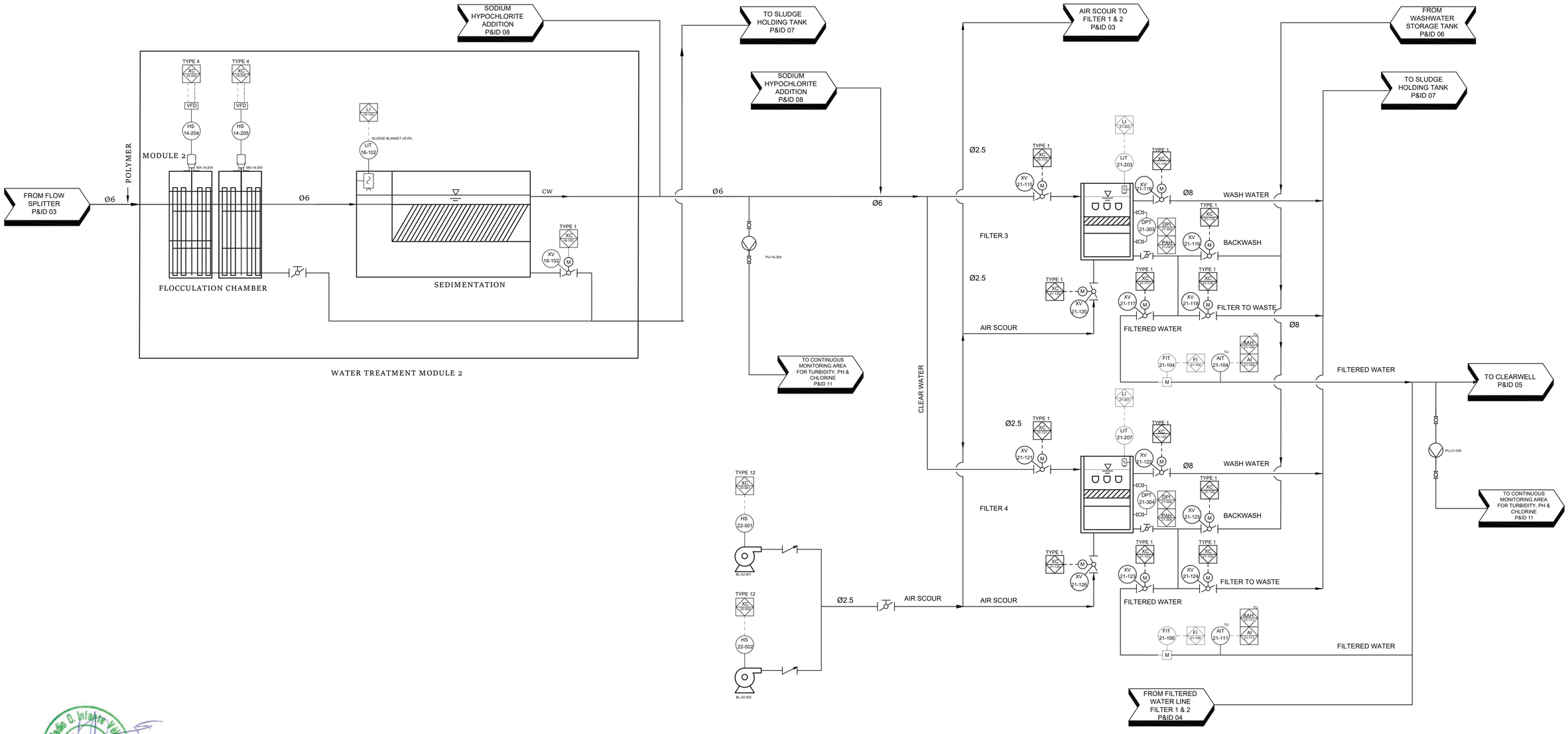
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
PROCESS & INSTRUMENTATION
RAW WATER SUPPLY, COAGULATION,FLOCCULATION AND SEDIMENTATION

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 84 OF
DWG. NO. P&ID-03
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



Eladio O. Infante Vélez
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

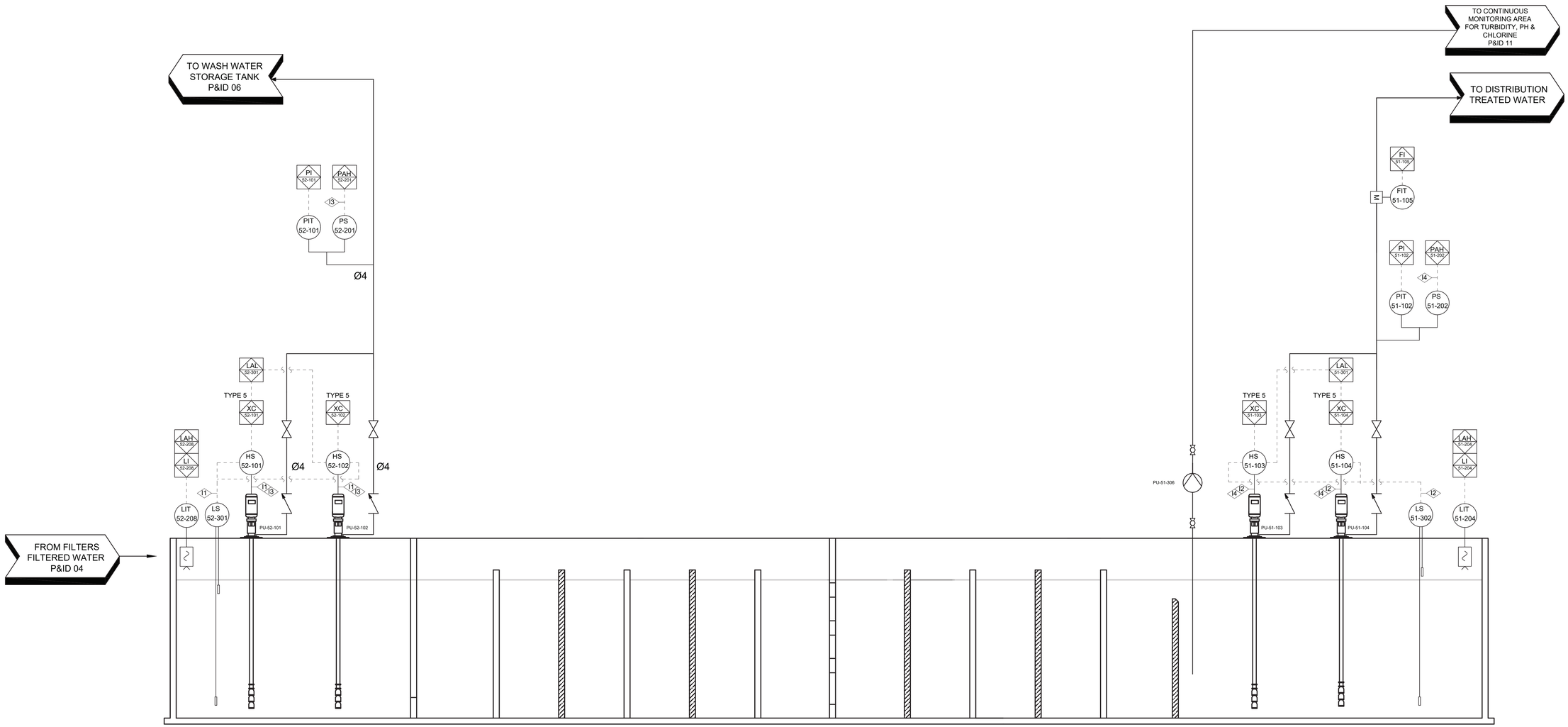
SHEET TITLE
PROCESS & INSTRUMENTATION FILTRATION
BASIN 1 TO 3

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 85 OF
DWG. NO. P&ID-04

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



CEARWELL/DISTRIBUTION TANK

NOTES:

I1 PU-52-101 AND PU-52-102 WILL SHUT DOWN IF LS-52-301 CLOSED.

I2 PU-51-103 AND PU-51-104 WILL SHUT DOWN IF LS-52-302 CLOSED.

I3 PU-52-101 AND PU-52-102 WILL SHUT DOWN IF PS-52-201 CLOSED.

I4 PU-51-103 AND PU-51-104 WILL SHUT DOWN IF PS-51-202 CLOSED.

Eladio O. Infante Vélez
Professional Engineer
Lic. Núm. 24,xxx
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

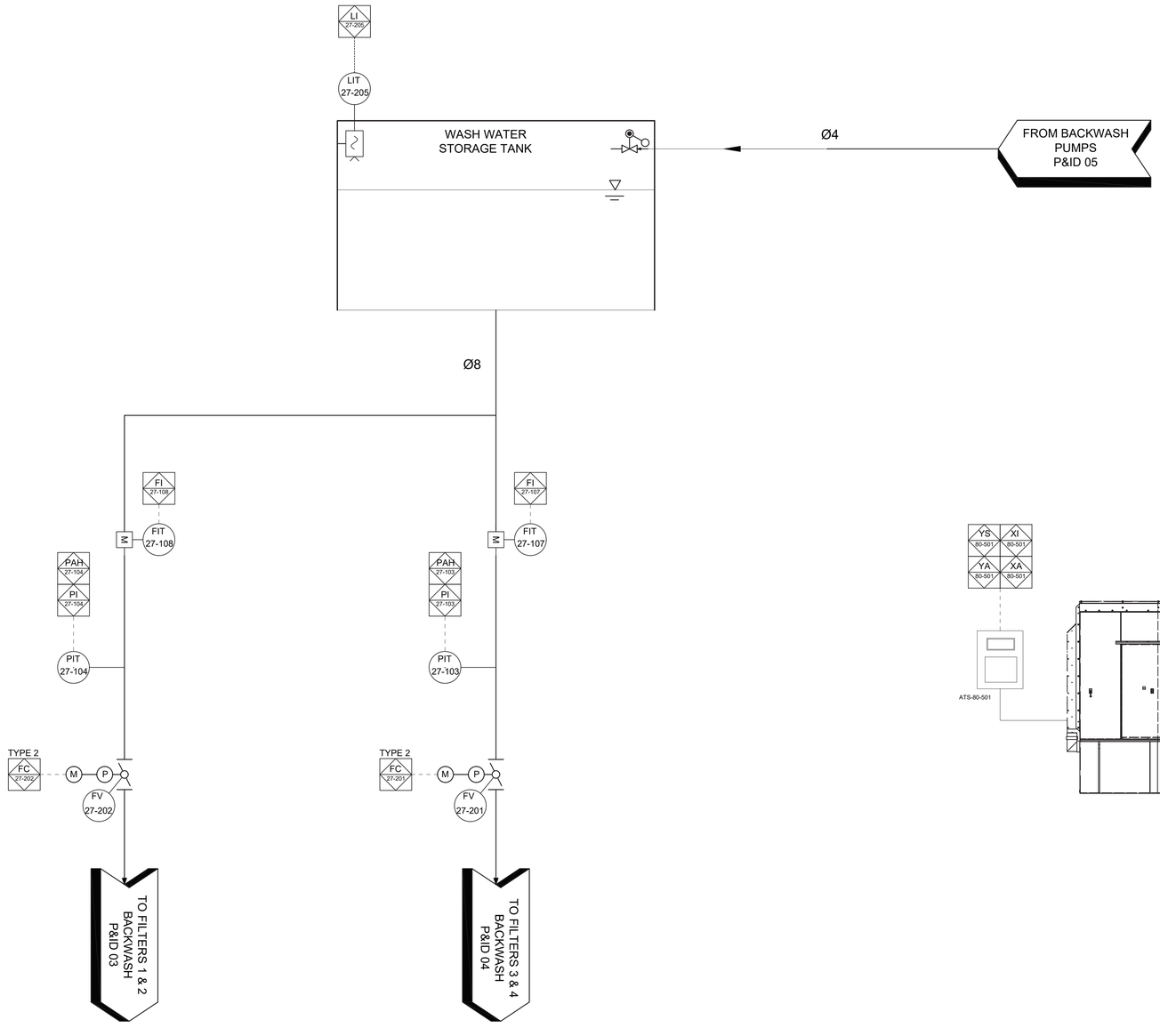
SHEET TITLE
PROCESS & INSTRUMENTATION CLEARWELL/BACKWASH BASIN

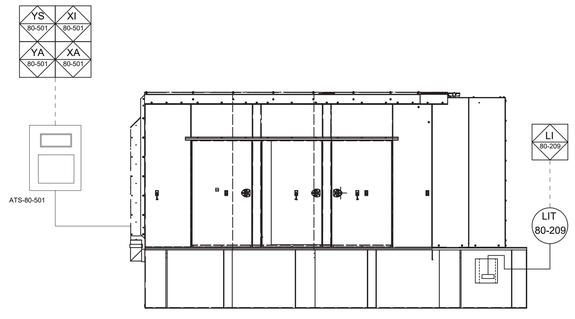
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 86 OF
DWG. NO. P&ID-05

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





EMERGENCY GENERATOR
EG-80-501

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

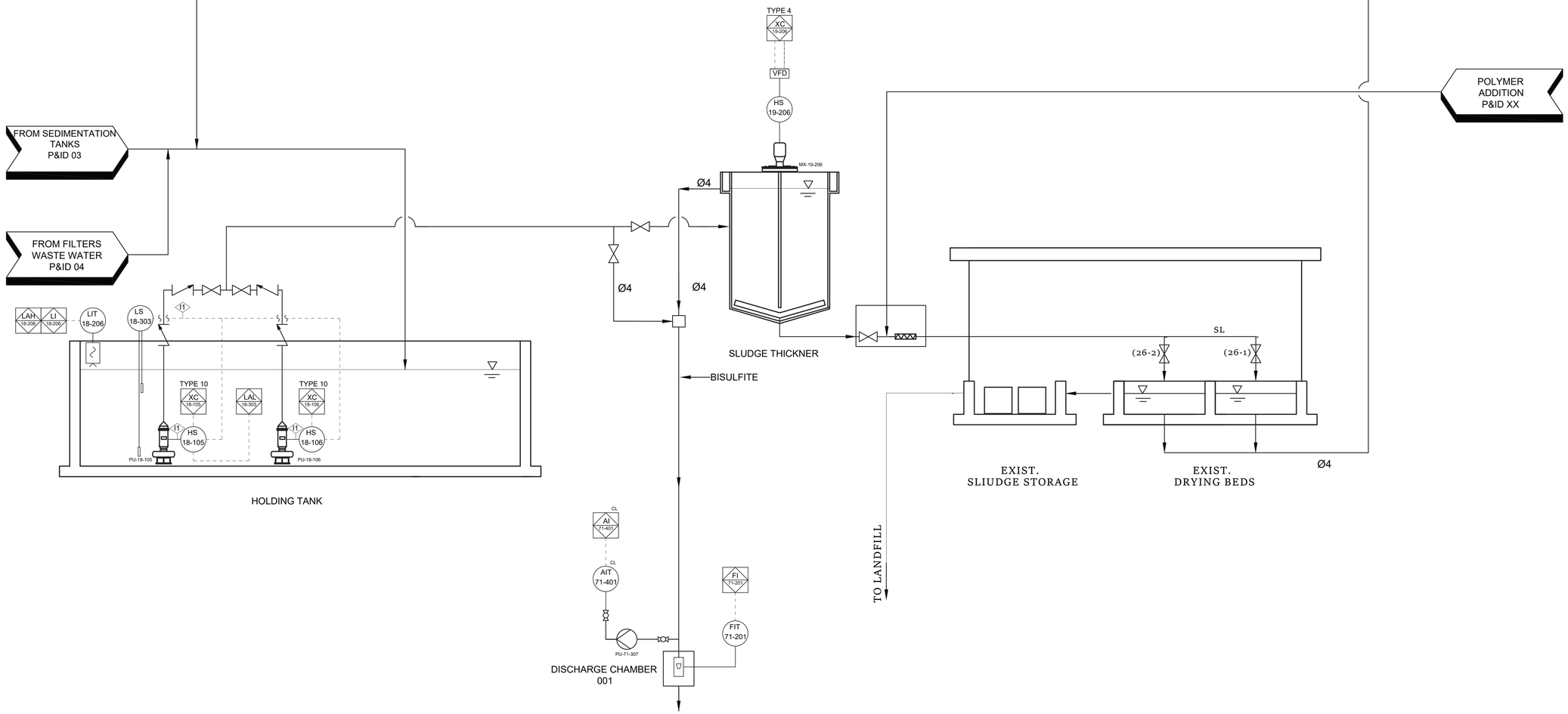
SHEET TITLE
PROCESS & INSTRUMENTATION WASH WATER TANK

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 87 OF
DWG. NO. P&ID-06

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NOTES:

(I1) PU-18-105 AND PU-18-106 WILL SHUT DOWN IF LS-18-303 CLOSED.

Estado O. Infante Vélez
Professional Engineer
Puerto Rico

NO	DATE	REVISION	BY	CK.	APPR.

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

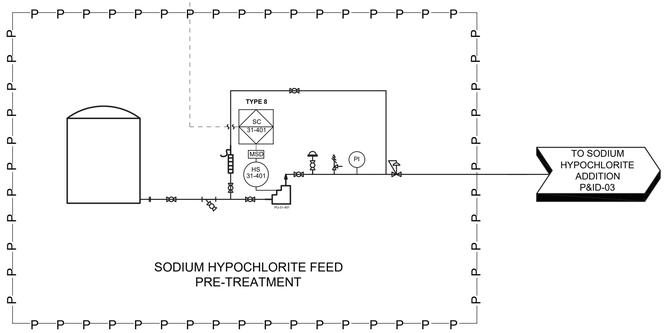
SHEET TITLE
PROCESS & INSTRUMENTATION SLUDGE HOLDING TANK, THICKNER AND DRYING BEDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

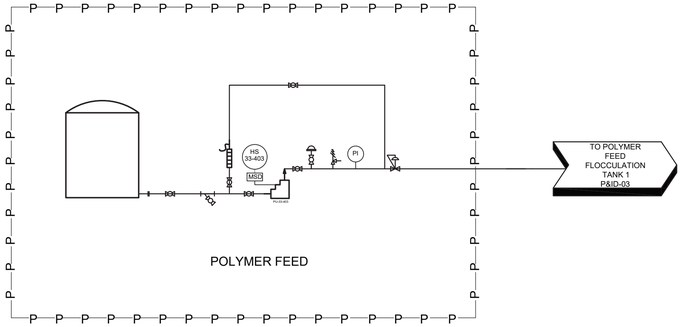
SHEET NO. 88 OF
DWG. NO. P&ID-07
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

FROM FLOW METER P&ID-03



SODIUM HYPOCHLORITE FEED
PRE-TREATMENT

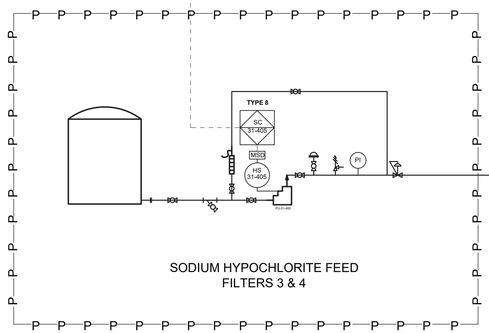
TO SODIUM HYPOCHLORITE ADDITION P&ID-03



POLYMER FEED

TO POLYMER FEED FLOCCULATION TANK 1 P&ID-03

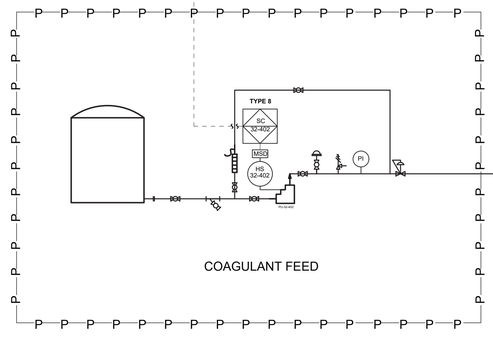
FROM FLOW METER P&ID-03



SODIUM HYPOCHLORITE FEED
FILTERS 3 & 4

TO SODIUM HYPOCHLORITE ADDITION, FILTER 3 & 4 P&ID-04

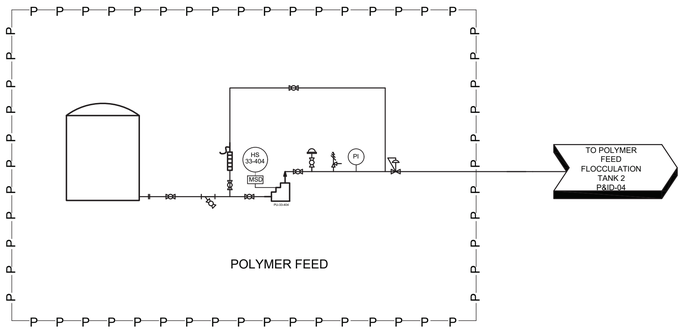
FROM STREAMING CURRENT P&ID-03



COAGULANT FEED

TO COAGULANT ADDITION P&ID-03

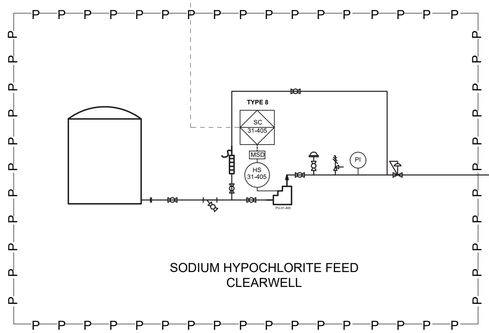
FROM FLOW METER P&ID-03



POLYMER FEED

TO POLYMER FEED FLOCCULATION TANK 2 P&ID-04

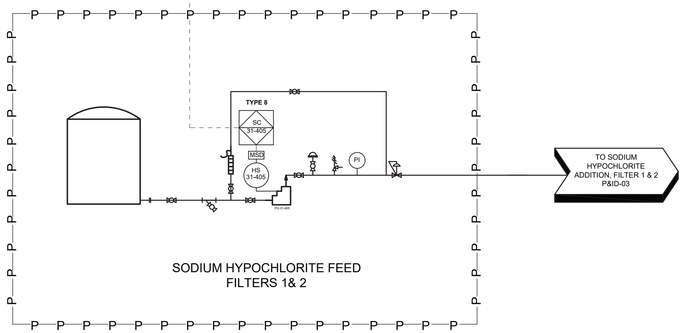
FROM FLOW METER P&ID-03



SODIUM HYPOCHLORITE FEED
CLEARWELL

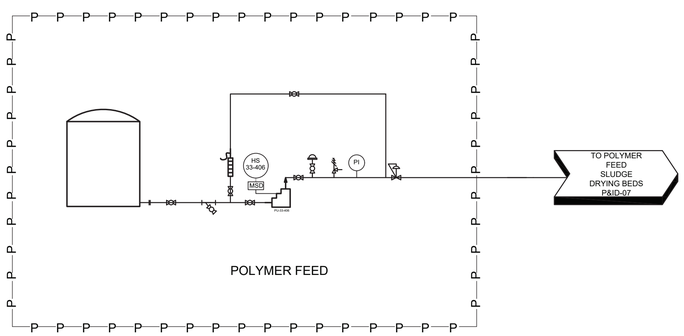
TO SODIUM HYPOCHLORITE ADDITION, CLEARWELL P&ID-04

FROM FLOW METER P&ID-03



SODIUM HYPOCHLORITE FEED
FILTERS 1& 2

TO SODIUM HYPOCHLORITE ADDITION, FILTER 1 & 2 P&ID-03



POLYMER FEED

TO POLYMER FEED SLUDGE DRYING BEDS P&ID-07



NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

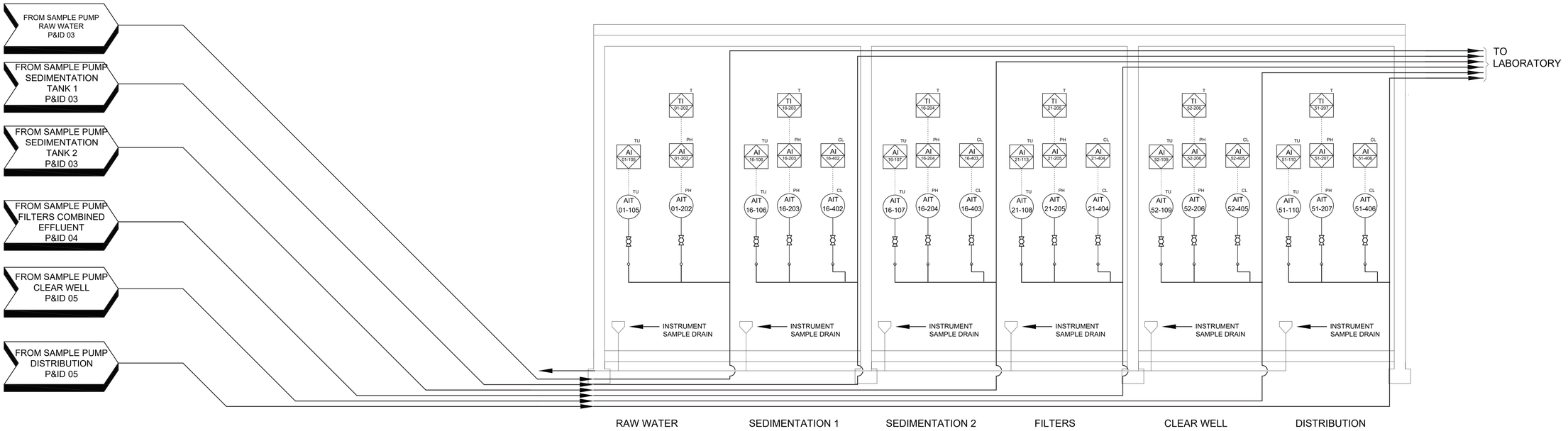
PROCESS & INSTRUMENTATION CHEMICAL SKID FEED

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 89 OF
DWG. NO. P&ID-08

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO.	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

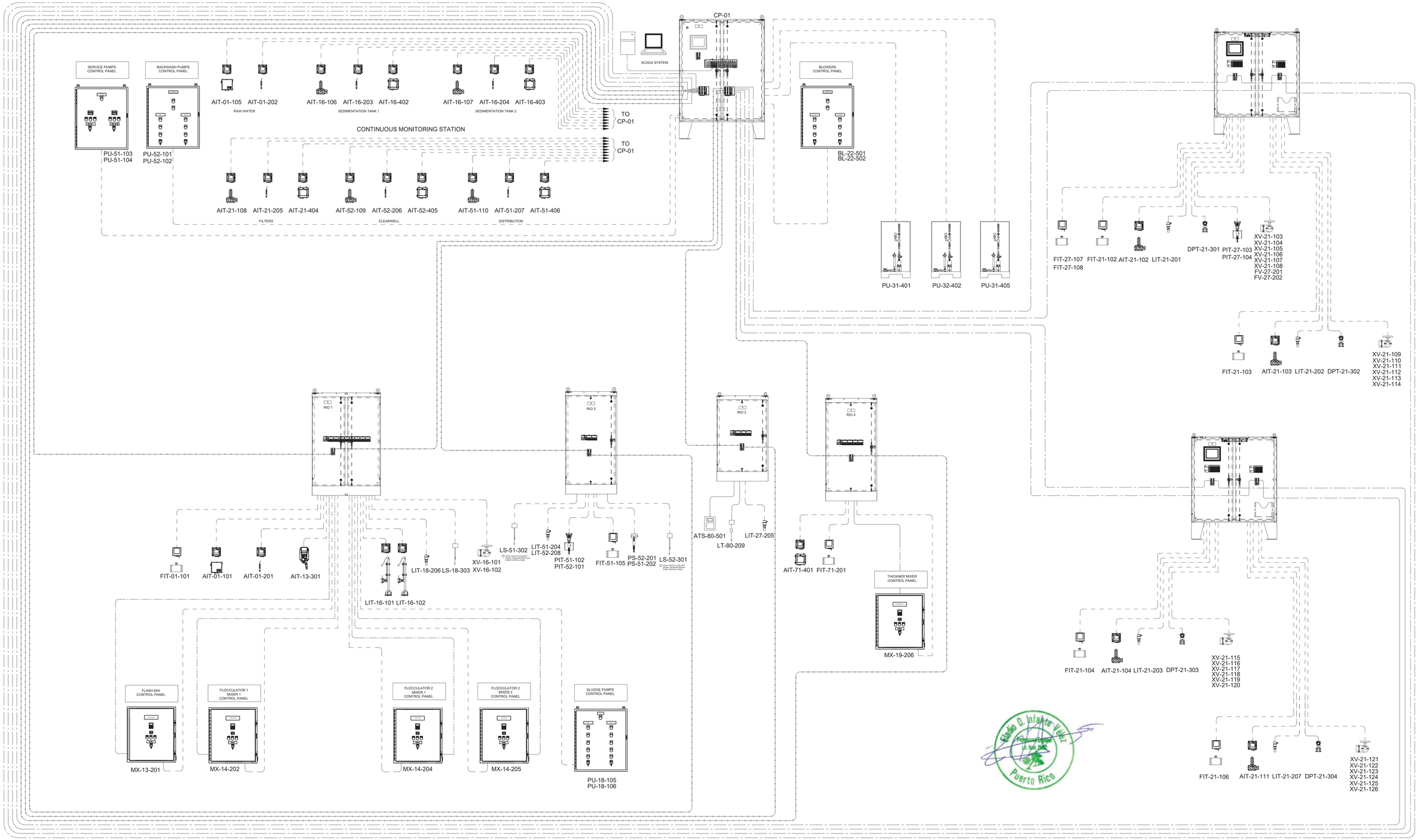
SHEET TITLE
PROCESS & INSTRUMENTATION CONTINUOUS MONITORING STATION

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 90 OF
DWG. NO. P&ID-09

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

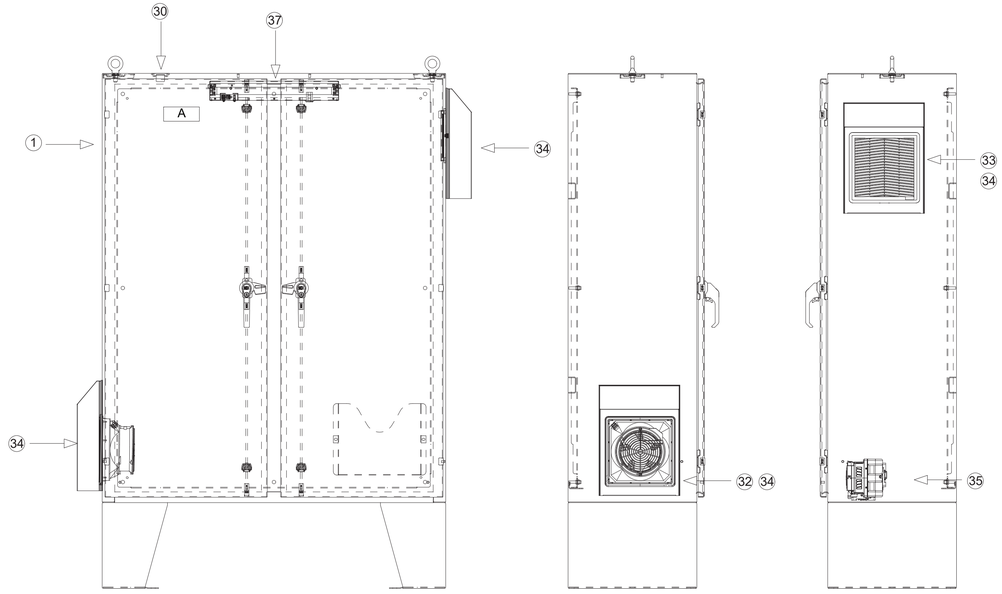
SHEET TITLE
CONTROL NETWORK ARQUITECTURE

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 91 OF
DWG. NO. IC-01

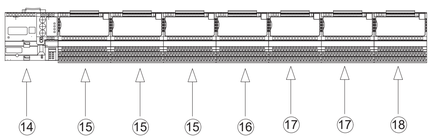
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



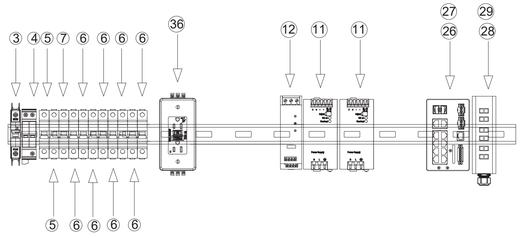
FRONT PANEL
NTS

SIDE PANEL - LEFT
NTS

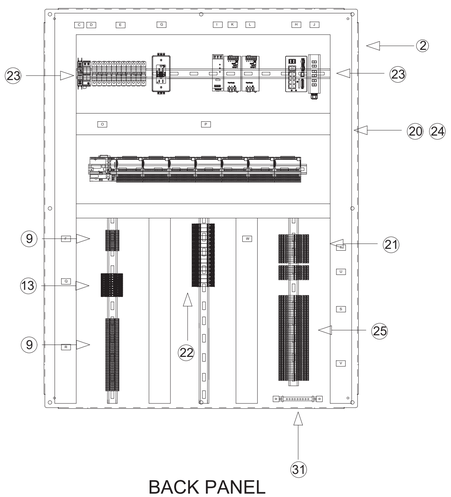
SIDE PANEL - RIGHT
NTS



REMOTE I/O RIO 1
NTS



AC- POWER TERMINAL
NTS



BACK PANEL
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.
2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.
3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.
4) ANALOG I/O LINES, DC POWER LINES FOR ANALOG CIRCUITS AND COMMUNICATIONS CABLE SHOULD BE PROPERLY SHIELDED AND ROUTED IN A RACEWAY SEPARATED FROM AC POWER LINES.
5) FOR POWER SUPPLIES AND I/O CIRCUITS, CONDUCTORS MUST BE RUN WITHOUT SPLICES FROM TERMINAL TO TERMINAL.
6) ALL CONDUCTORS AND CABLES MUST BE IDENTIFIED WITH A PERMANENT TAG IN ACCORDANCE WITH THE ELECTRICAL AND I/O WIRING LOOPS DEFINITIONS.
7) ALL TERMINALS OF THE TERMINAL BLOCKS MUST BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL TO CORRESPOND WITH THE IDENTIFICATION OF THE DRAWING.
8) THE FOLLOWING ARE THE MINIMUM AWG SIZES TO BE USED:
   A. MAIN POWER CIRCUITS: NO. 12
   B. BRANCH POWER CIRCUITS: NO.14
   C. CONTROL CIRCUITS: NO.16
   D. CURRENT LOOPS: NO.16
   E. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   F. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.
9) ALL SINGLE CONDUCTORS MUST BE CODED AS FOLLOW:
   A. BLACK - LINE, LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE.
   B. RED - ALL CONTROL CIRCUITS
   C. BLUE OR PURPLE - DC CONTROL CIRCUIT (POSITIVE)
   D. WHITE - AC GROUNDED CIRCUITS (NEUTRAL)
   E. GRAY - DC GROUNDED CIRCUIT CONDUCTOR
   F. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   G. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.
9) ALL TERMINAL BLOCKS MUST BE RAISED FROM THE BACK PLATE FOR EASE OF WIRING.
10) TERMINAL JUMPERS MUST BE USED IN PLACE OF THE WIRED JUMPERS, WHERE SUCH JUMPERS ARE NECESSARY.
11) WIRING STANDARD AND CONVENTIONS SHOULD CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 300.

NOTES:

8) THE NAME PLATES WILL HAVE BLACK BACKGROUND WITH WHITE LETTERS.
9) PANEL CONTRACTOR SHALL IDENTIFY CORRESPONDING TAG NUMBER TO ALL TERMINAL BLOCKS AND WIRES.
10) PANEL CONTRACTOR WILL PROVIDE TAGS FOR ALL DEVICES INSIDE THE PANEL.
11) ALL PANEL ARRANGEMENTS DETAILS NEED TO BE COORDINATED WITH THE DESIGNATED ENGINEER BEFORE THE PANEL CONSTRUCTION HAS BEGUN.
12) USE ONLY CONDUITS HUBS WHICH ARE COMPATIBLE WITH THE NEMA RATING OF SUBJECTED PANEL AND ITS LOCATION.
13) ALL CONDUIT TO BE INSTALLED AT BOTTOM OF THE PANEL.
14) TO BE INSTALLED WITH VIBRATION ISOLATIONS.
15) INSTRUMENT CONTRACTOR TO PROVIDE ALL REQUIRED ETHERNET PATCHCORDS (FIBER/COPPER) AND SFP CONVERTERS.
16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	SS 2DR EL LPPL ENCLOSURE	SAGINAW CONTROL & ENGINEER	SCE-60EL4818SS6LPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-60P48	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 30A	ALLEN-BRADLEY	1489-M1C300	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	2	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100	PANEL VENDOR
6	8	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
7	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C050	PANEL VENDOR
8	–	–	–	–	–
9	54	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
10	–	–	–	–	–
11	2	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/20A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/20	PANEL VENDOR
12	1	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
13	10	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
14	1	ETHERNET ADAPTER SUPPORTS UP TO 8 LOCAL I/O MODULES XT	ALLEN-BRADLEY	5094-AENTRXT	PANEL VENDOR
15	3	DIGITAL INPUT-24V DC, 16 POINT SINKING DIGITAL INPUT XT	ALLEN-BRADLEY	5094-IB16XT	PANEL VENDOR
16	1	DIGITAL OUTPUT-24 VDC, 16-POINT SOURCING DIGITAL OUTPUT XT	ALLEN-BRADLEY	5094-OB16XT	PANEL VENDOR
17	2	ANALOG INPUT, 8-CHANNEL, UNIVERSAL XT	ALLEN-BRADLEY	5094-IY8XT	PANEL VENDOR
18	1	ANALOG OUTPUT, 8-CHANNEL, UNIVERSAL XT	ALLEN-BRADLEY	5094-OF8XT	PANEL VENDOR
19	–	–	–	–	–
20	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F2X3LG6	PANEL VENDOR
21	24	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
22	16	RELAY MODULE	PHOENIX CONTACT	2967060	PANEL VENDOR
23	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
24	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C3LG6	PANEL VENDOR
25	48	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
26	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
27	1	SFP MODULE	ALLEN-BRADLEY	1783-SFP1GSX	PANEL VENDOR
28	1	MODULAR INDUSTRIAL PATCH PANEL	HIRSCHMANN	MIPP/AD/1L3B	PANEL VENDOR
29	2	FX PATCH CORD, OM3, LC DUPLEX – LC DUPLEX, 2 M, OFNR, DUPLEX ZIP 1.6 MM, A-TO-B, AQUA JACKET	BELDEN	FP3LDLD002MR1XA	PANEL VENDOR
30	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR
31	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
32	1	FILTER FAN	SAGINAW CONTROL & ENGINEER	SCE-N12FA66	PANEL VENDOR
33	1	FILTER & GRILLE ASSY	SAGINAW CONTROL & ENGINEER	SCE-N12FGA66	PANEL VENDOR
34	2	PROTECTION HOOD, HOSE-PROOF	SAGINAW CONTROL & ENGINEER	SCE-RH6N4XSS	PANEL VENDOR
35	1	THERMOELECTRIC DEHUMIDIFIER	SAGINAW CONTROL & ENGINEER	SCE-TEDH24VDC	PANEL VENDOR
36	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
37	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	REMOTE I/O RIO-1
B	–	–	–	–
C	1/8"	2" X 1"	MAIN CIRCUIT BREAKER	CB101
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKERS	
F	1/8"	2" X 1"	TBAC-N	–
G	1/8"	2" X 1"	RECEPTACLE	RCP-128
H	1/8"	2" X 1"	NETWORK SWITCH	NS-180
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	FIBER OPTIC	IPP-172
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	–	–
N	1/8"	2" X 1"	–	–
O	1/8"	2" X 1"	REMOTE I/A ETHERNET ADAPTER	EA-165
P	1/8"	2" X 1"	I/O MODULES	–
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	–
S	1/8"	2" X 1"	TBDI	–
T	1/8"	2" X 1"	TBAI	–
U	1/8"	2" X 1"	TBAO	–
V	1/8"	2" X 1"	TBDO	–
W	1/8"	2" X 1"	CONTROL RELAYS	–

Eladio O. Infante Vélez
Puerto Rico

NO.	DATE	REVISION	BY	CK.	APPR.

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Ancalle ENGINEERS
Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

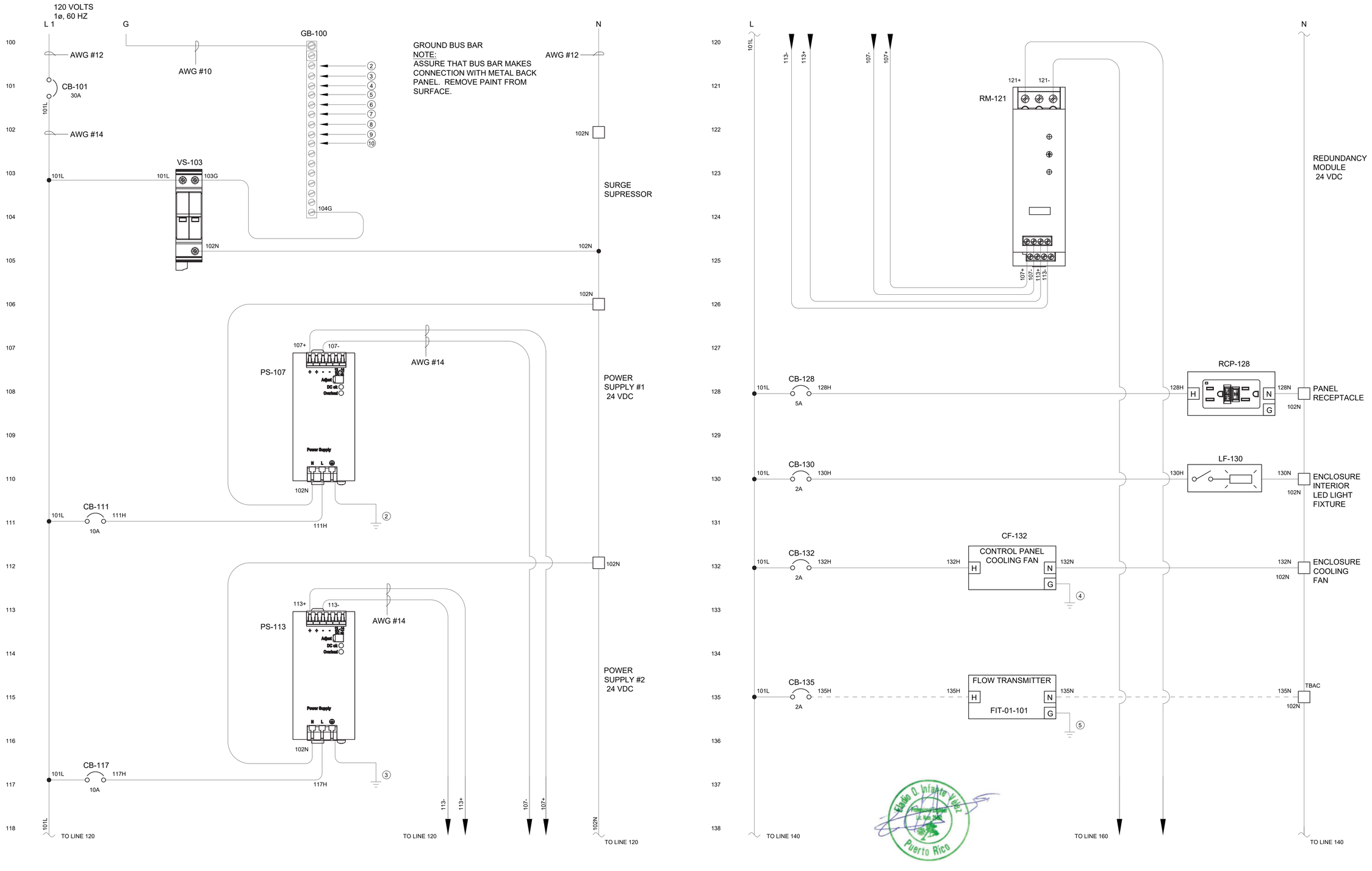
SHEET TITLE
RIO 1 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 92 OF
DWG. NO. IC-02

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

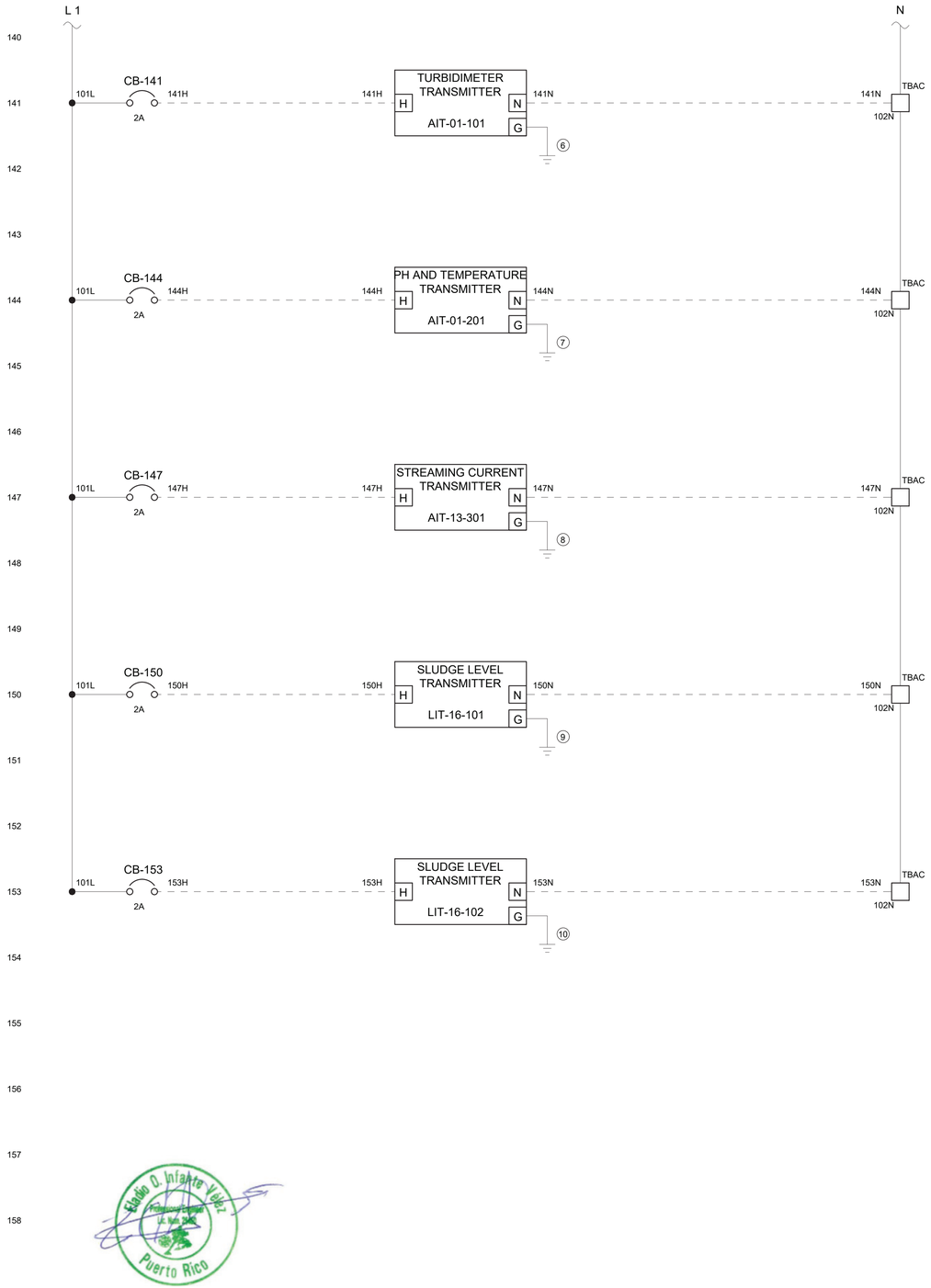
RIO 1 CONTROL PANEL WIRING DIAGRAM POWER DISTRIBUTION

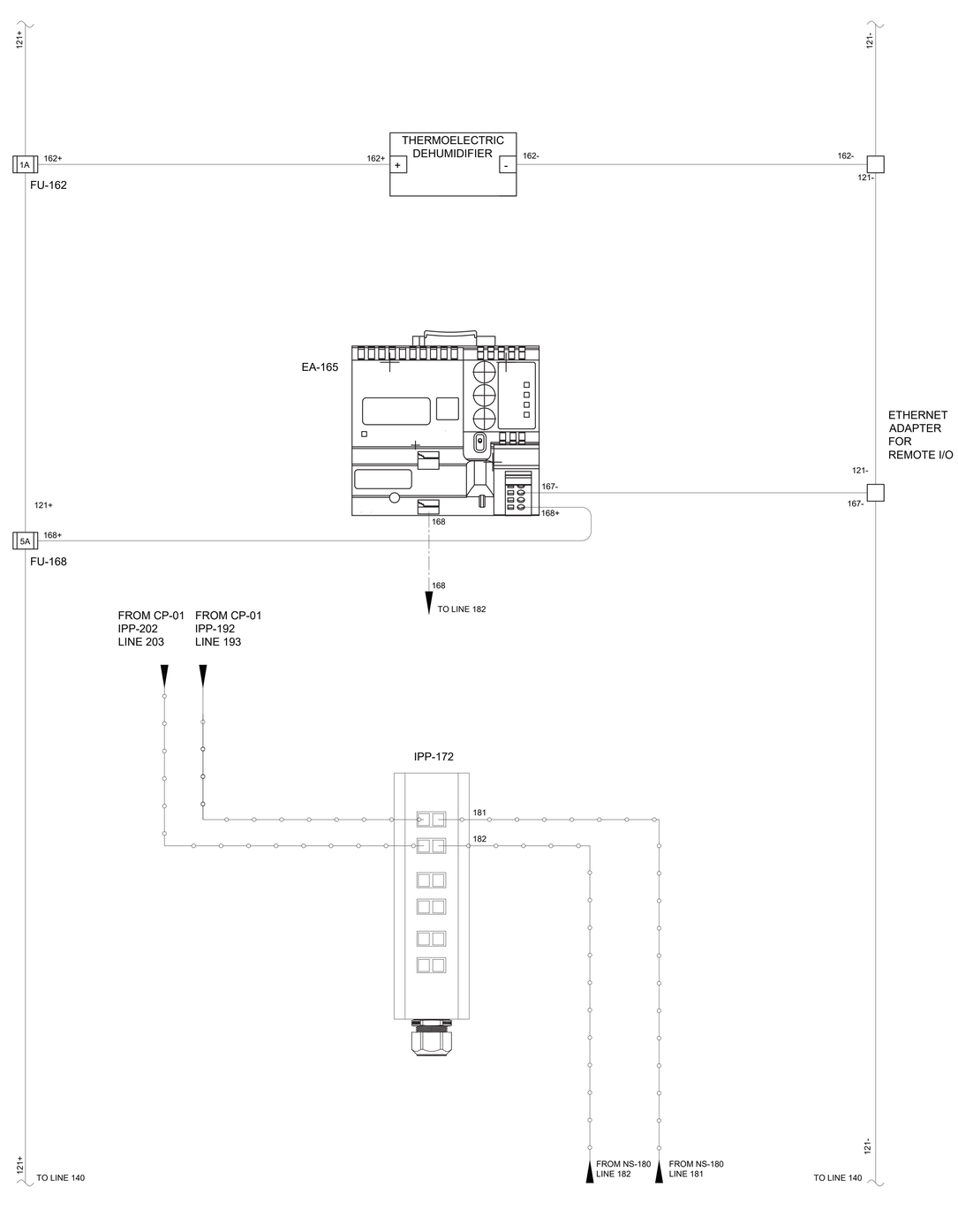
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 93 OF
DWG. NO. IC-03

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





Estado O. Infante Vélez
Registro Único
Núm. 2042
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

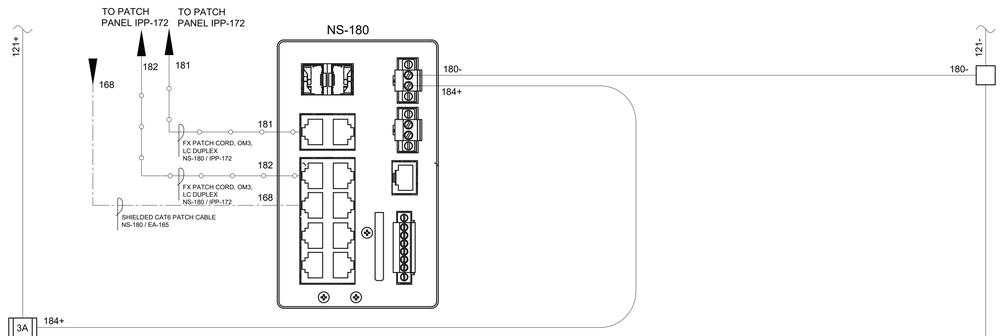
SHEET TITLE
RIO 1 CONTROL PANEL WIRING DIAGRAM POWER DISTRIBUTION CONTINUED

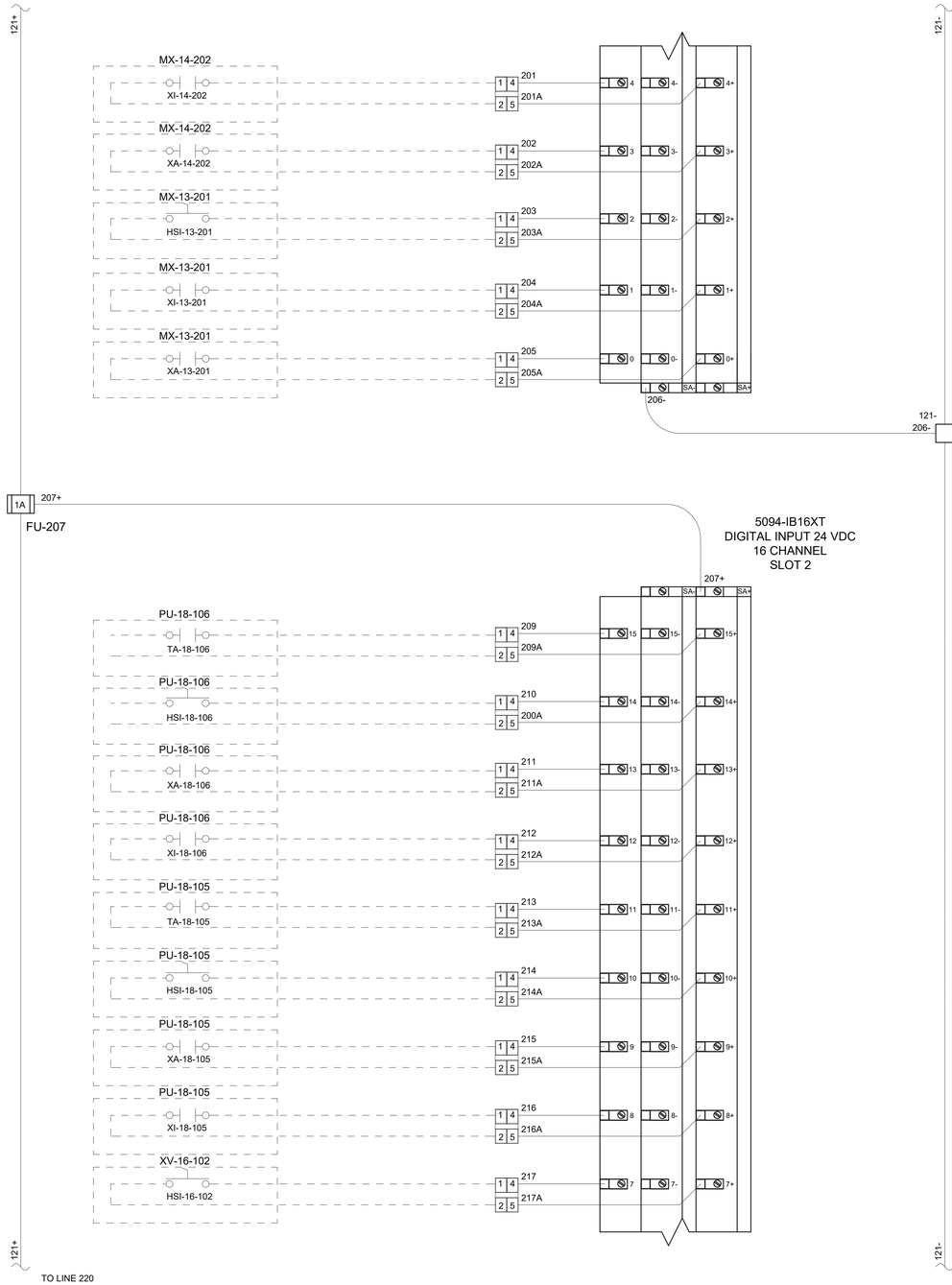
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 94 OF
DWG. NO. IC-04

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

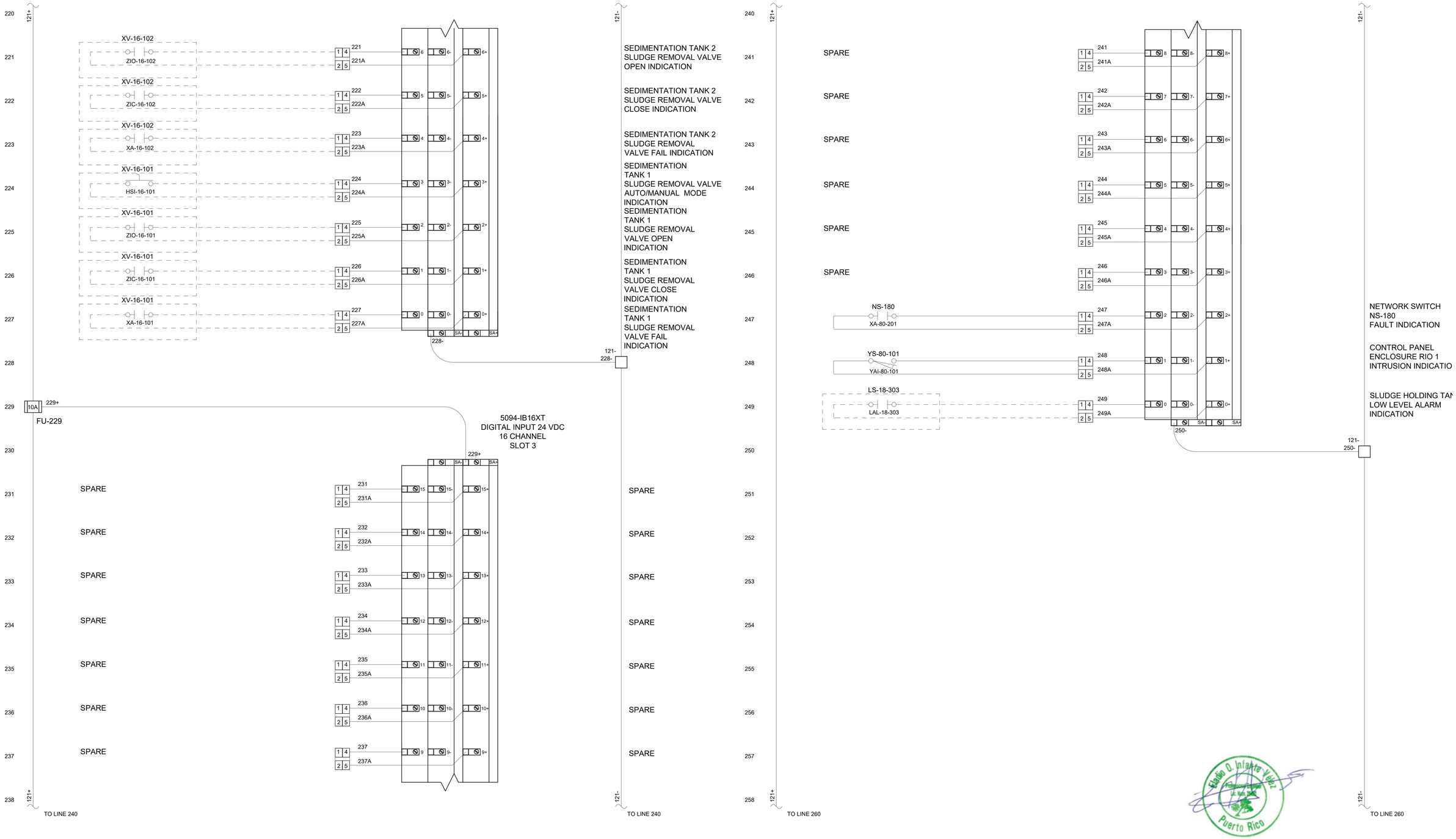
SHEET TITLE
RIO 1 MAIN WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 95 OF
DWG. NO. IC-05

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

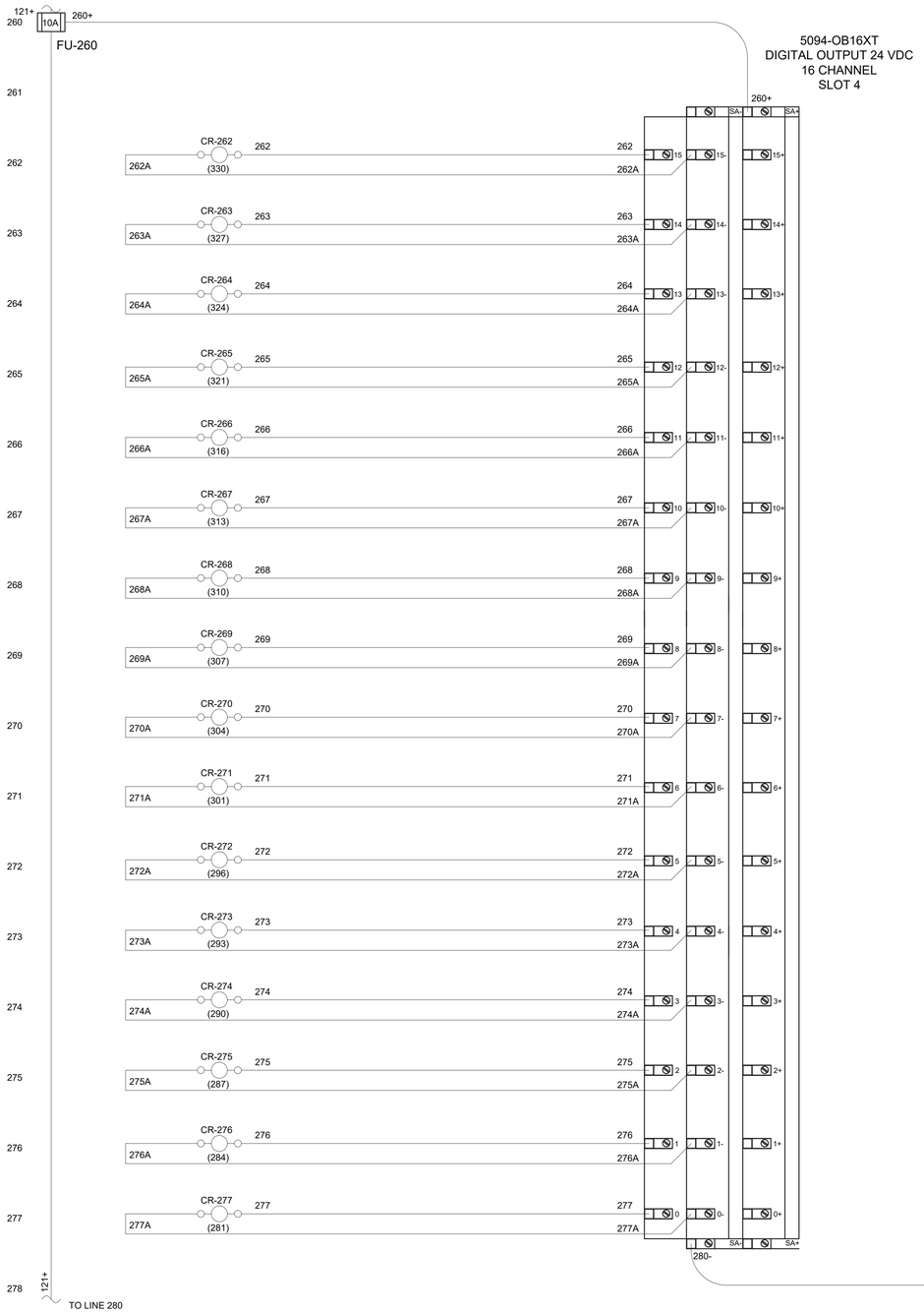
RIO 1 WIRING DIAGRAM DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 96 OF
DWG. NO. IC-06

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

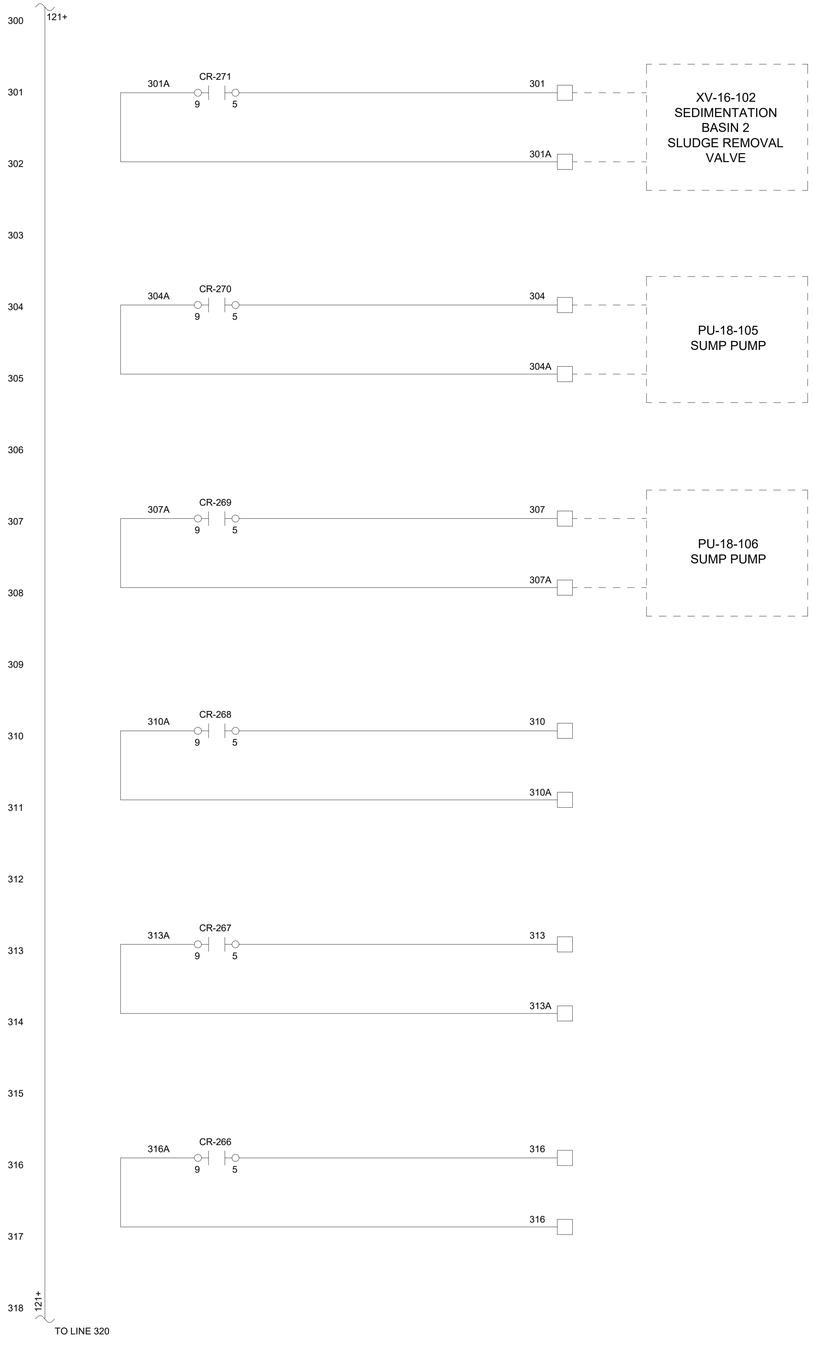
RIO 1 WIRING DIAGRAM DIGITAL OUTPUT CARDS

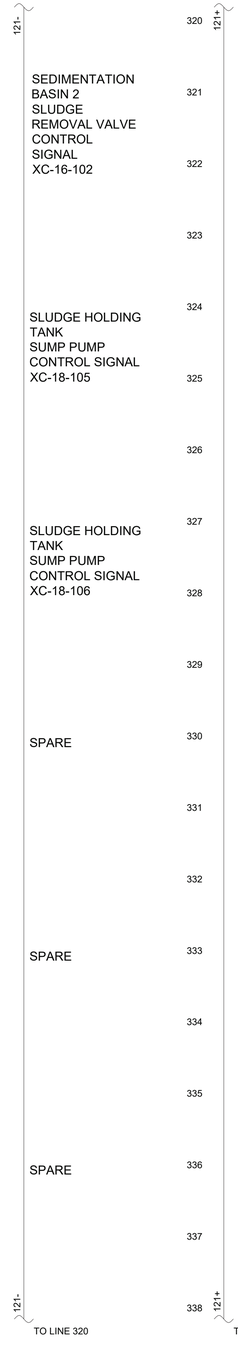
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

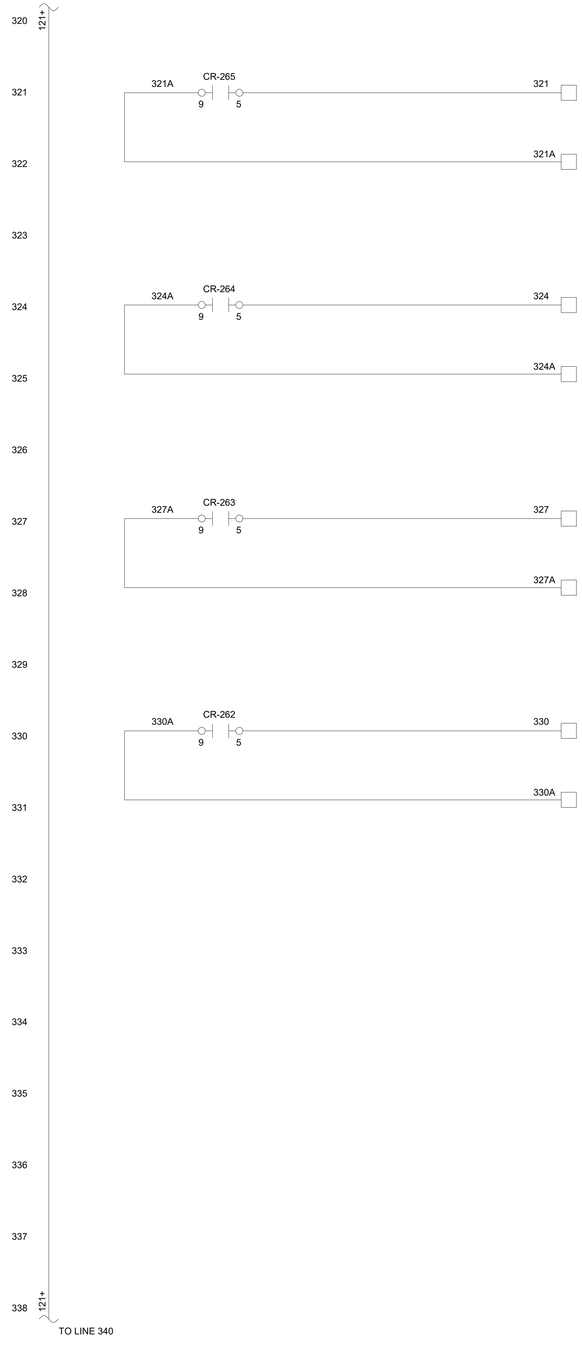
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 97 OF
DWG. NO. IC-07

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM











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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

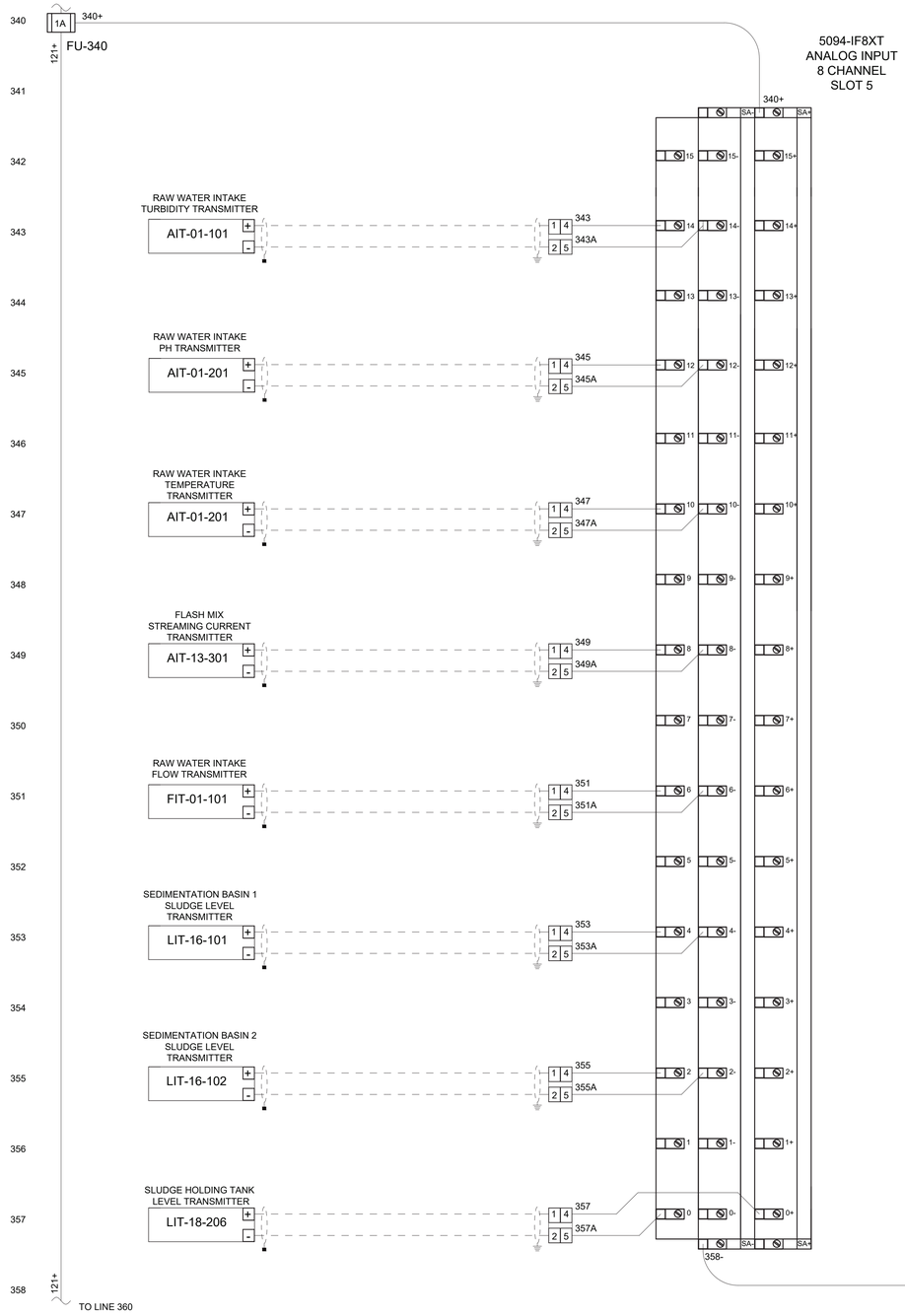
RIO 1 WIRING DIAGRAM DIGITAL OUTPUT CARDS

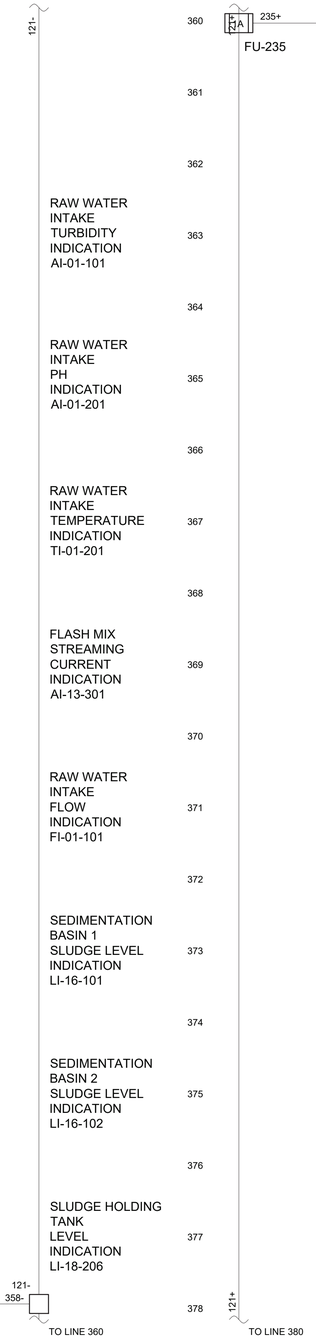
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

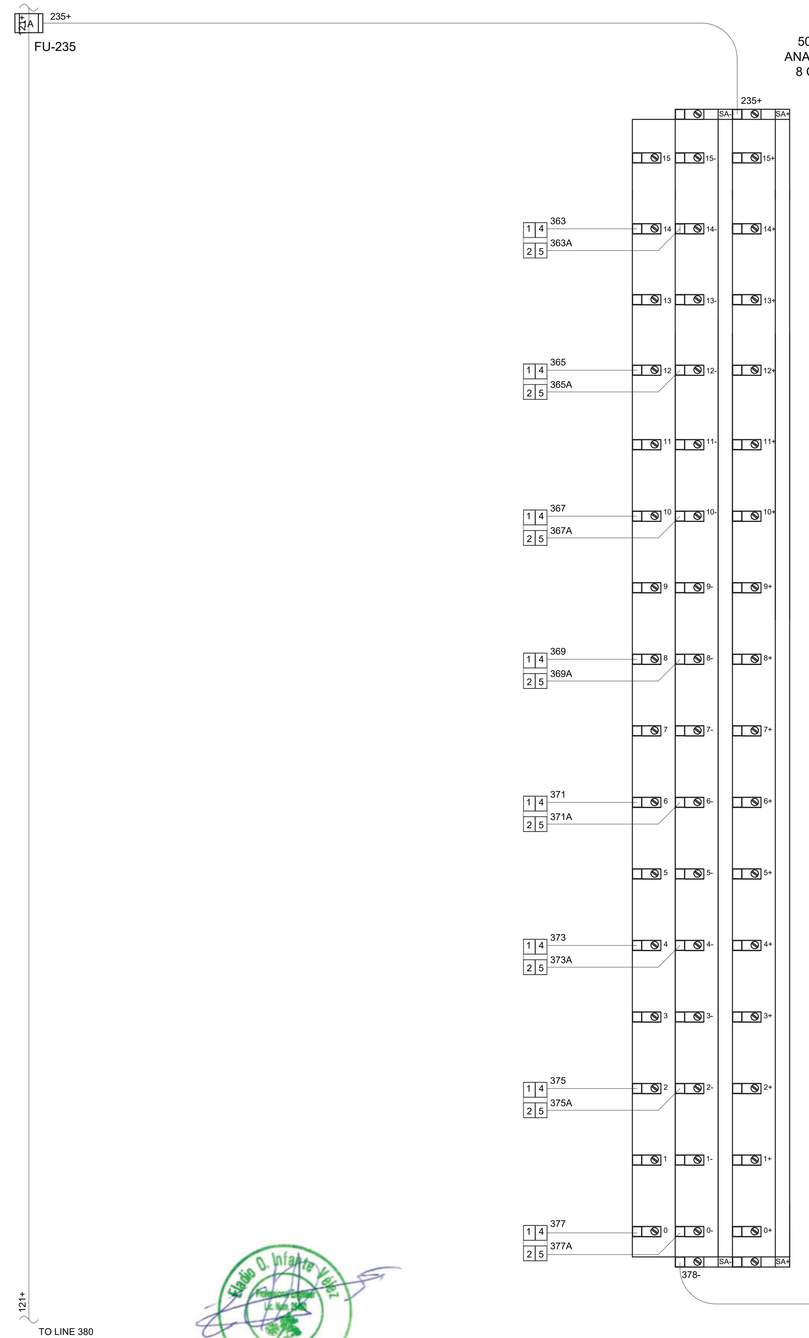
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 98 OF
DWG. NO. IC-08

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

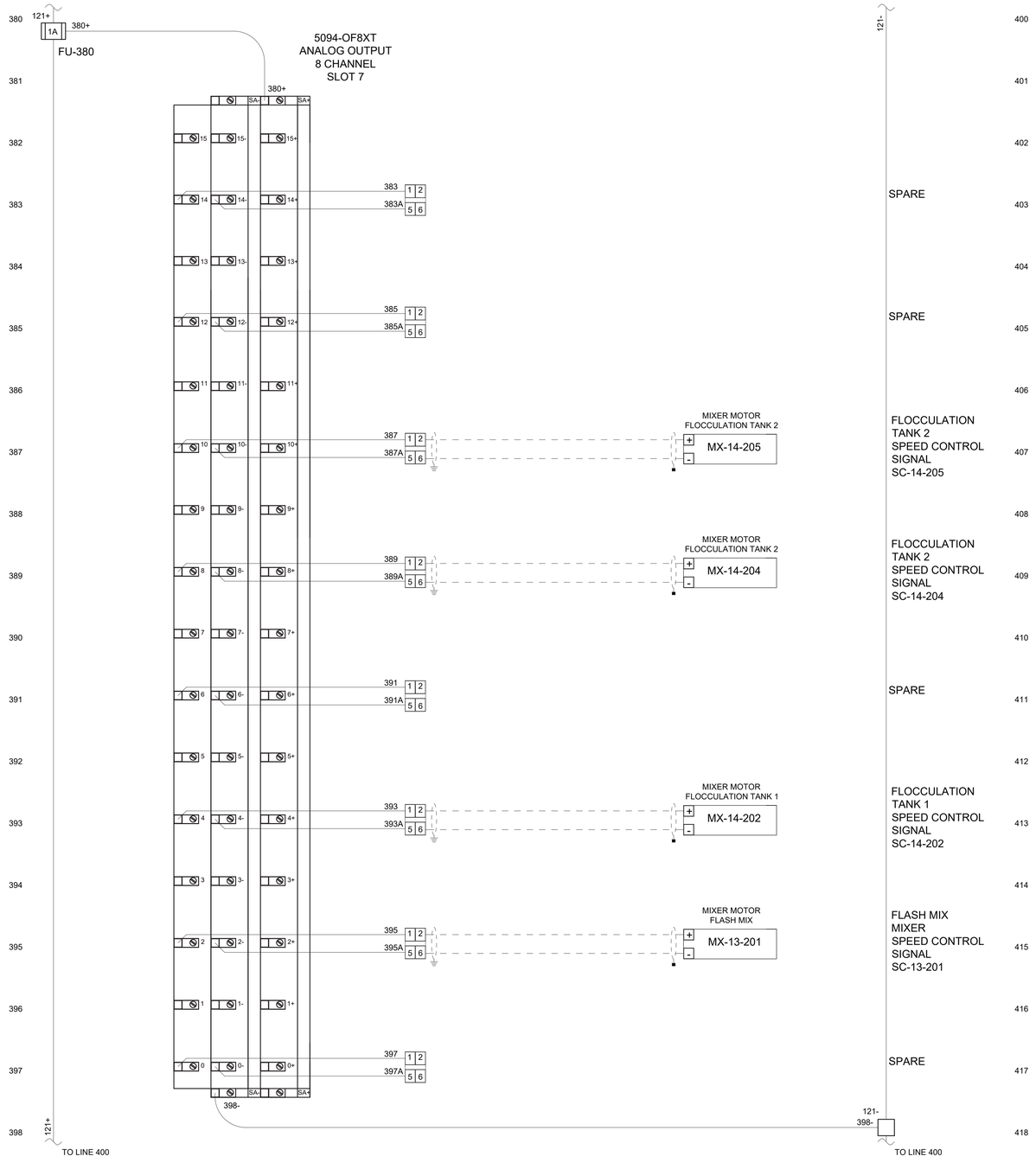
SHEET TITLE
RIO 1 WIRING DIAGRAM ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 99 OF
DWG. NO. IC-09

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

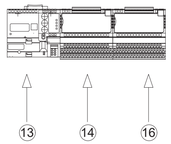
SHEET TITLE
RIO 1 WIRING DIAGRAM ANALOG OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

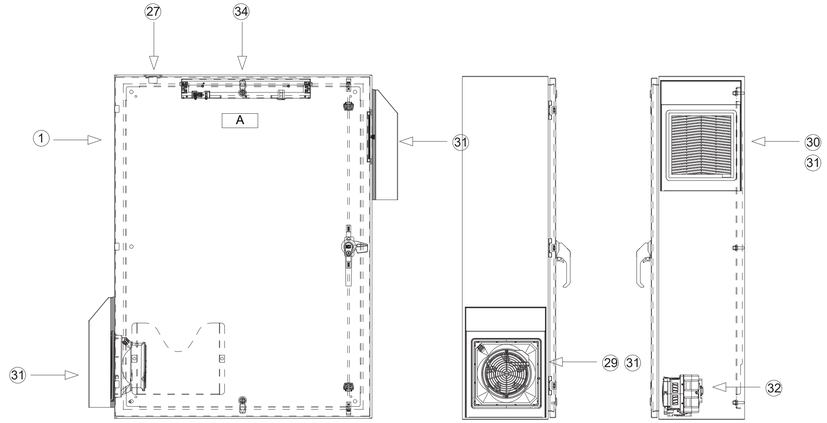
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 100 OF
DWG. NO. IC-10

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



REMOTE I/O RIO 2
NTS

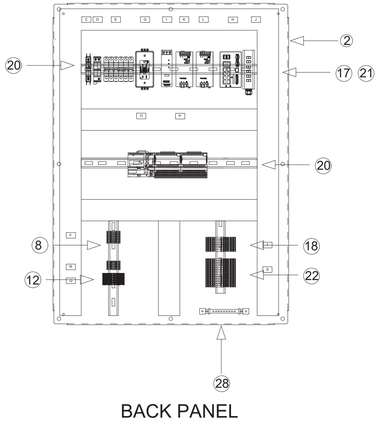


FRONT PANEL
NTS

SIDE PANEL - LEFT
NTS

SIDE PANEL - RIGHT
NTS

AC-DC POWER TERMINAL
NTS



BACK PANEL
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.

2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.

3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.

4) ANALOG I/O LINES, DC POWER LINES FOR ANALOG CIRCUITS AND COMMUNICATIONS CABLE SHOULD BE PROPERLY SHIELDED AND ROUTED IN A RACEWAY SEPARATED FROM AC POWER LINES.

5) FOR POWER SUPPLIES AND I/O CIRCUITS, CONDUCTORS MUST BE RUN WITHOUT SPLICES FROM TERMINAL TO TERMINAL.

6) ALL CONDUCTORS AND CABLES MUST BE IDENTIFIED WITH A PERMANENT TAG IN ACCORDANCE WITH THE ELECTRICAL AND I/O WIRING LOOPS DEFINITIONS.

7) ALL TERMINALS OF THE TERMINAL BLOCKS MUST BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL TO CORRESPOND WITH THE IDENTIFICATION OF THE DRAWING.

8) THE FOLLOWING ARE THE MINIMUM AWG SIZES TO BE USED:
   - A. MAIN POWER CIRCUITS: NO. 12
   - B. BRANCH POWER CIRCUITS: NO.14
   - C. CONTROL CIRCUITS: NO.16
   - D. CURRENT LOOPS: NO.16
   - E. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - F. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL SINGLE CONDUCTORS MUST BE CODED AS FOLLOW:
   - A. BLACK - LINE, LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE.
   - B. RED - ALL CONTROL CIRCUITS
   - C. BLUE OR PURPLE - DC CONTROL CIRCUIT (POSITIVE)
   - D. WHITE - AC GROUNDED CIRCUITS (NEUTRAL)
   - E. GRAY - DC GROUNDED CIRCUIT CONDUCTOR
   - F. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - G. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL TERMINAL BLOCKS MUST BE RAISED FROM THE BACK PLATE FOR EASE OF WIRING.

10) TERMINAL JUMPERS MUST BE USED IN PLACE OF THE WIRED JUMPERS, WHERE SUCH JUMPERS ARE NECESSARY.

11) WIRING STANDARD AND CONVENTIONS SHOULD CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 300.

NOTES:

8) THE NAME PLATES WILL HAVE BLACK BACKGROUND WITH WHITE LETTERS.

9) PANEL CONTRACTOR SHALL IDENTIFY CORRESPONDING TAG NUMBER TO ALL TERMINAL BLOCKS AND WIRES.

10) PANEL CONTRACTOR WILL PROVIDE TAGS FOR ALL DEVICES INSIDE THE PANEL.

11) ALL PANEL ARRANGEMENTS DETAILS NEED TO BE COORDINATED WITH THE DESIGNATED ENGINEER BEFORE THE PANEL CONSTRUCTION HAS BEGUN.

12) USE ONLY CONDUITS HUBS WHICH ARE COMPATIBLE WITH THE NEMA RATING OF SUBJECTED PANEL AND ITS LOCATION.

13) ALL CONDUIT TO BE INSTALLED AT BOTTOM OF THE PANEL.

14) TO BE INSTALLED WITH VIBRATION ISOLATIONS.

15) INSTRUMENT CONTRACTOR TO PROVIDE ALL REQUIRED ETHERNET PATCHCORDS (FIBER/COPPER) AND SFP CONVERTERS.

16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	SS LPPL ENCLOSURE	SAGINAW CONTROL & ENGINEER	SCE-48EL3612SS6LPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-48P36	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 20A	ALLEN-BRADLEY	1489-M1C200	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	2	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100	PANEL VENDOR
6	3	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
7	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C005	PANEL VENDOR
8	12	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
9	–	–	–	–	–
10	2	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/20A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/20	PANEL VENDOR
11	1	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
12	5	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
13	1	ETHERNET ADAPTER SUPPORTS UP TO 8 LOCAL I/O MODULES XT	ALLEN-BRADLEY	5094-AENTRXT	PANEL VENDOR
14	1	DIGITAL INPUT-24V DC, 16 POINT SINKING DIGITAL INPUT XT	ALLEN-BRADLEY	5094-IB16XT	PANEL VENDOR
15	–	–	–	–	–
16	1	ANALOG INPUT, 8-CHANNEL, UNIVERSAL XT	ALLEN-BRADLEY	5094-IY8XT	PANEL VENDOR
17	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F2X3LG6	PANEL VENDOR
18	8	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
19	–	–	–	–	–
20	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
21	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C2LG6	PANEL VENDOR
22	16	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
23	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
24	2	SFP MODULE	ALLEN-BRADLEY	1783-SFP1GSX	PANEL VENDOR
25	1	MODULAR INDUSTRIAL PATCH PANEL	HIRSCHMANN	MIPP/AD/1L3B	PANEL VENDOR
26	2	FX PATCH CORD, OM3, LC DUPLEX - LC DUPLEX, 2 M, OFNR, DUPLEX ZIP 1.6 MM, A-TO-B, AQUA JACKET	BELDEN	FP3LDLD002MR1XA	PANEL VENDOR
27	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR
28	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
29	1	FILTER FAN	SAGINAW CONTROL & ENGINEER	SCE-N12FA66	PANEL VENDOR
30	1	FILTER & GRILLE ASSY	SAGINAW CONTROL & ENGINEER	SCE-N12FGA66	PANEL VENDOR
31	2	PROTECTION HOOD, HOSE-PROOF	SAGINAW CONTROL & ENGINEER	SCE-RH6N4XSS	PANEL VENDOR
32	1	THERMOELECTRIC DEHUMIDIFIER	SAGINAW CONTROL & ENGINEER	SCE-TEDH24VDC	PANEL VENDOR
33	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
34	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	REMOTE I/O RIO-2
B	–	–	–	–
C	1/8"	2" X 1"	MAIN CIRCUIT BREAKER	CB101
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKERS	
F	1/8"	2" X 1"	TBAC-N	–
G	1/8"	2" X 1"	RECEPTACLE	RCP-128
H	1/8"	2" X 1"	NETWORK SWITCH	NS-160
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	FIBER OPTIC	IPP-152
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	–	–
N	1/8"	2" X 1"	–	–
O	1/8"	2" X 1"	REMOTE I/A ETHERNET ADAPTER	EA-145
P	1/8"	2" X 1"	I/O MODULES	–
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	–
S	1/8"	2" X 1"	TBDI	–
T	1/8"	2" X 1"	TBAI	–
U	1/8"	2" X 1"	TBAO	–
V	1/8"	2" X 1"	TBDO	–
W	1/8"	2" X 1"	CONTROL RELAYS	–



NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

Ancalle ENGINEERS
Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

SHEET TITLE

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

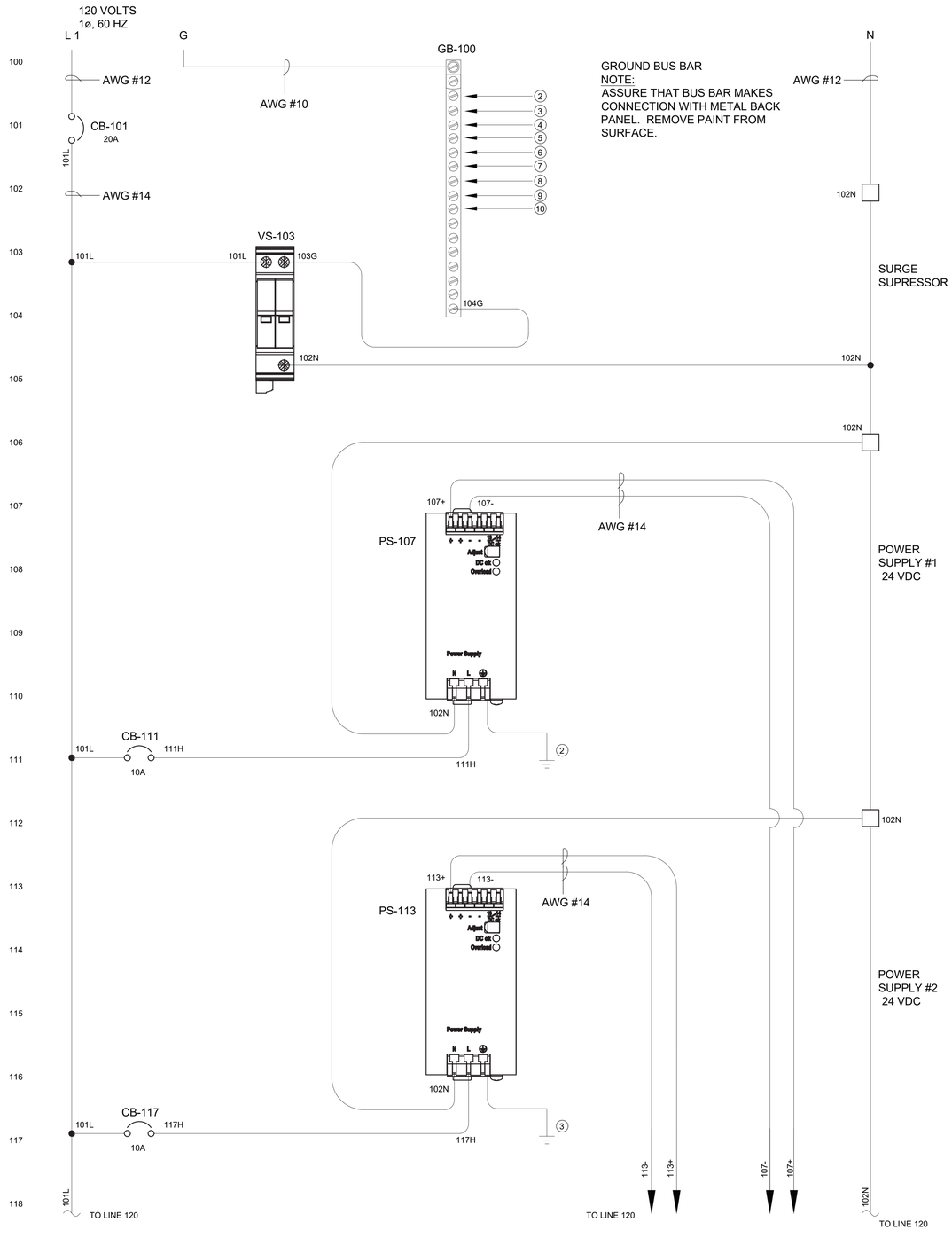
RIO 2 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 101 OF
DWG. NO. IC-11

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO.	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
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APPR. BY:

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

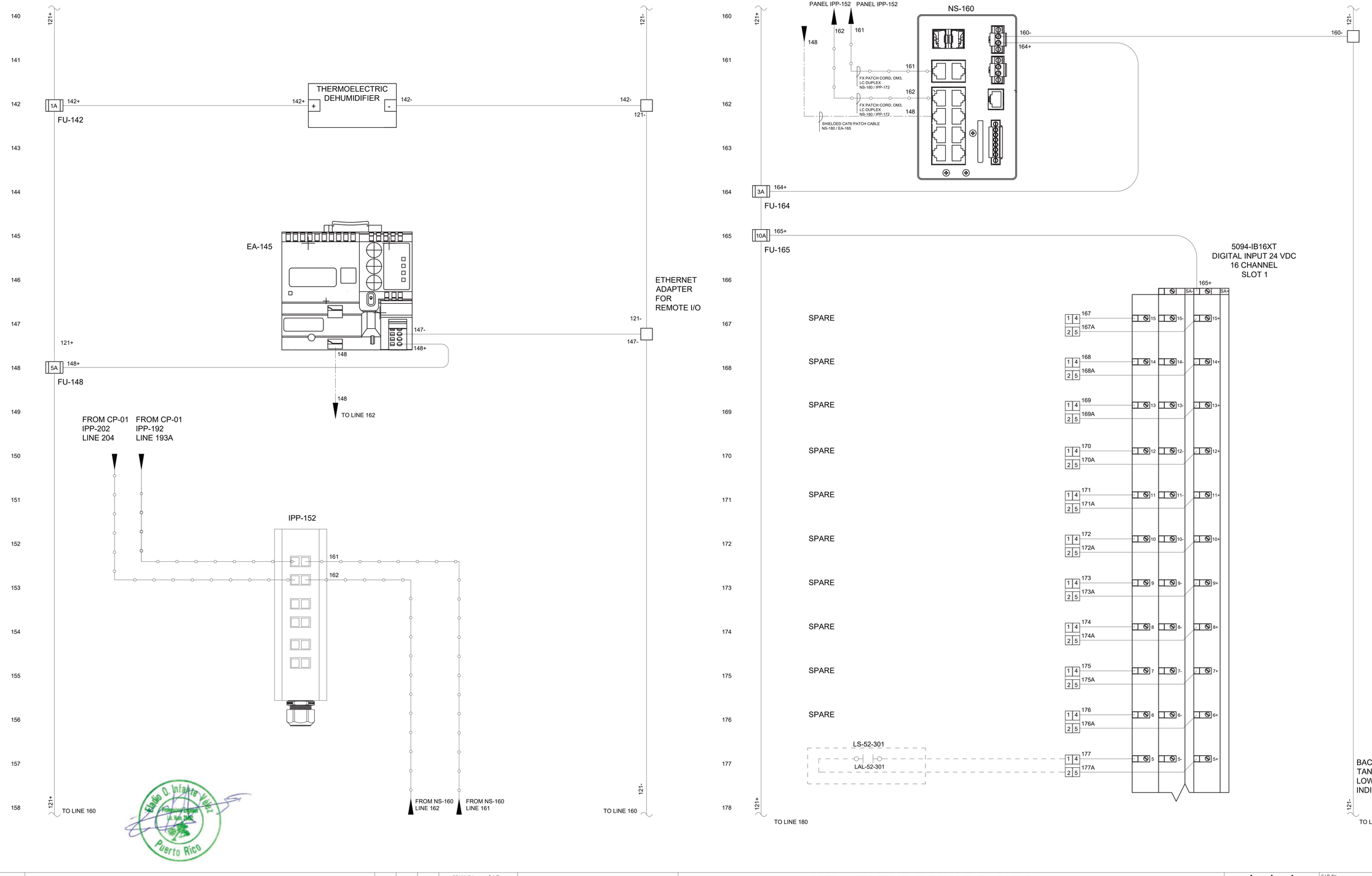
SHEET TITLE
RIO 2 CONTROL PANEL WIRING DIAGRAM POWER DISTRIBUTION

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 102 OF
DWG. NO. IC-12

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

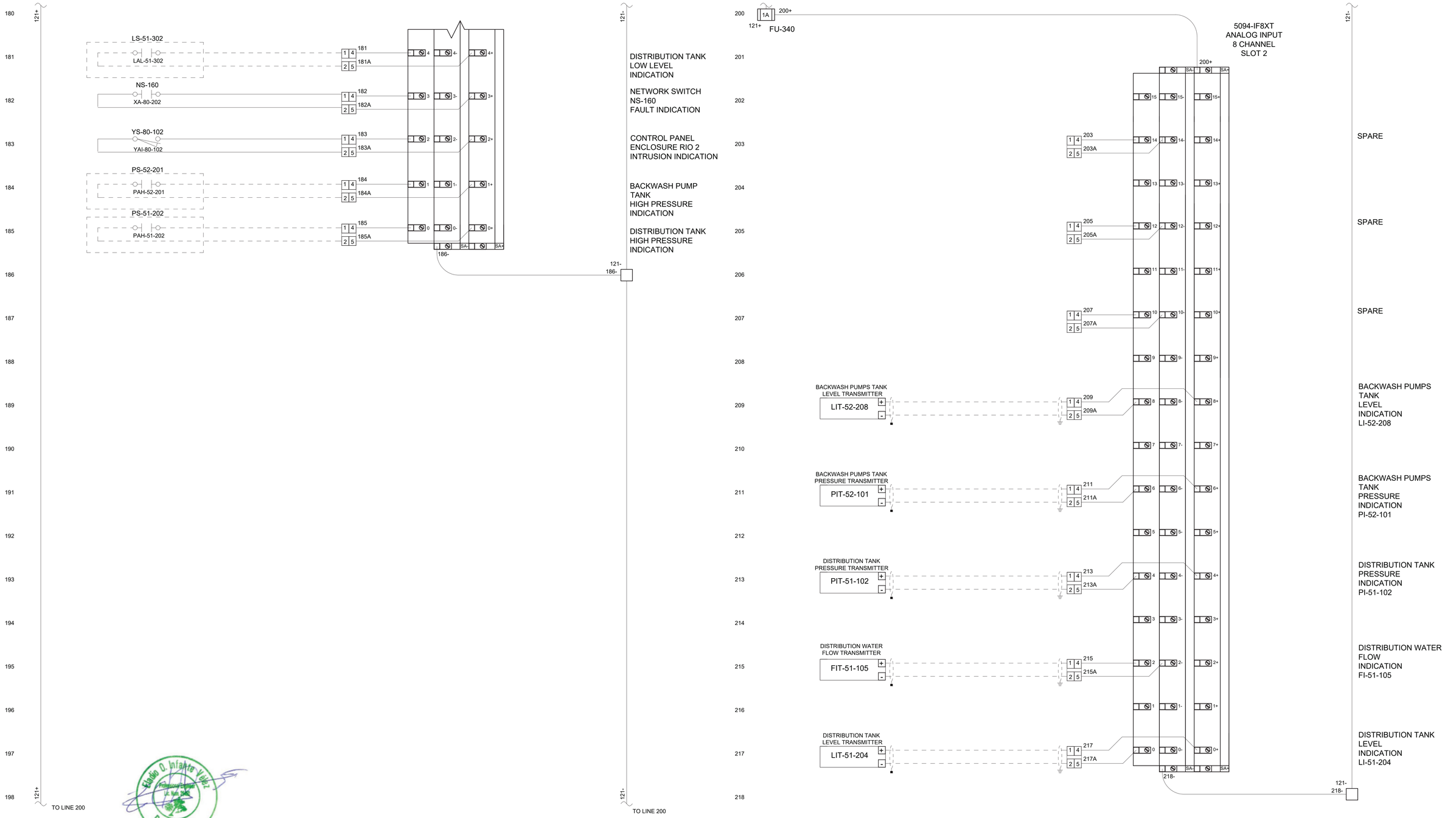
SHEET TITLE
RIO 2 WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 103 OF
DWG. NO. IC-13

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

Ancalle ENGINEERS
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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

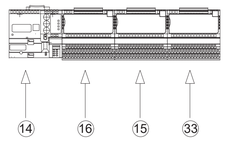
SHEET TITLE
RIO 2 WIRING DIAGRAM ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

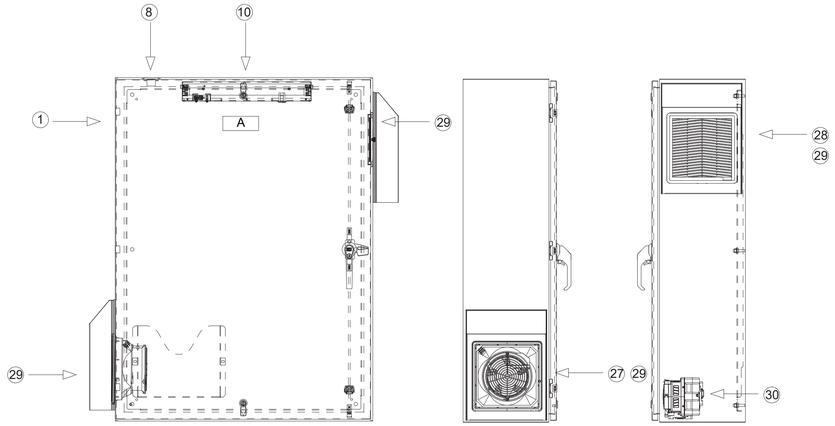
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 104 OF
DWG. NO. IC-14

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



REMOTE I/O RIO 3
NTS

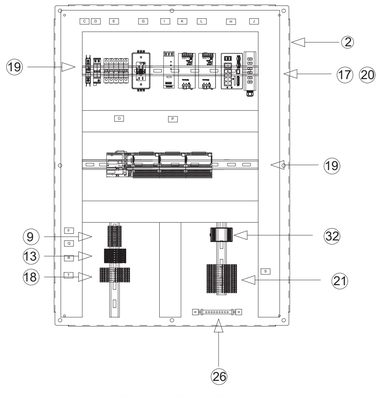


FRONT PANEL
NTS

SIDE PANEL - LEFT
NTS

SIDE PANEL - RIGHT
NTS

AC- POWER TERMINAL
NTS



BACK PANEL
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.

2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.

3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.

4) ANALOG I/O LINES, DC POWER LINES FOR ANALOG CIRCUITS AND COMMUNICATIONS CABLE SHOULD BE PROPERLY SHIELDED AND ROUTED IN A RACEWAY SEPARATED FROM AC POWER LINES.

5) FOR POWER SUPPLIES AND I/O CIRCUITS, CONDUCTORS MUST BE RUN WITHOUT SPLICES FROM TERMINAL TO TERMINAL.

6) ALL CONDUCTORS AND CABLES MUST BE IDENTIFIED WITH A PERMANENT TAG IN ACCORDANCE WITH THE ELECTRICAL AND I/O WIRING LOOPS DEFINITIONS.

7) ALL TERMINALS OF THE TERMINAL BLOCKS MUST BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL TO CORRESPOND WITH THE IDENTIFICATION OF THE DRAWING.

8) THE FOLLOWING ARE THE MINIMUM AWG SIZES TO BE USED:
   - A. MAIN POWER CIRCUITS: NO. 12
   - B. BRANCH POWER CIRCUITS: NO.14
   - C. CONTROL CIRCUITS: NO.16
   - D. CURRENT LOOPS: NO.16
   - E. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - F. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL SINGLE CONDUCTORS MUST BE CODED AS FOLLOW:
   - A. BLACK - LINE, LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE.
   - B. RED - ALL CONTROL CIRCUITS
   - C. BLUE OR PURPLE - DC CONTROL CIRCUIT (POSITIVE)
   - D. WHITE - AC GROUNDED CIRCUITS (NEUTRAL)
   - E. GRAY - DC GROUNDED CIRCUIT CONDUCTOR
   - F. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - G. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL TERMINAL BLOCKS MUST BE RAISED FROM THE BACK PLATE FOR EASE OF WIRING.

10) TERMINAL JUMPERS MUST BE USED IN PLACE OF THE WIRED JUMPERS, WHERE SUCH JUMPERS ARE NECESSARY.

11) WIRING STANDARD AND CONVENTIONS SHOULD CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 300.

NOTES:

8) THE NAME PLATES WILL HAVE BLACK BACKGROUND WITH WHITE LETTERS.

9) PANEL CONTRACTOR SHALL IDENTIFY CORRESPONDING TAG NUMBER TO ALL TERMINAL BLOCKS AND WIRES.

10) PANEL CONTRACTOR WILL PROVIDE TAGS FOR ALL DEVICES INSIDE THE PANEL.

11) ALL PANEL ARRANGEMENTS DETAILS NEED TO BE COORDINATED WITH THE DESIGNATED ENGINEER BEFORE THE PANEL CONSTRUCTION HAS BEGUN.

12) USE ONLY CONDUITS HUBS WHICH ARE COMPATIBLE WITH THE NEMA RATING OF SUBJECTED PANEL AND ITS LOCATION.

13) ALL CONDUIT TO BE INSTALLED AT BOTTOM OF THE PANEL.

14) TO BE INSTALLED WITH VIBRATION ISOLATIONS.

15) INSTRUMENT CONTRACTOR TO PROVIDE ALL REQUIRED ETHERNET PATCHCORDS (FIBER/COPPER) AND SFP CONVERTERS.

16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	SS LPPL ENCLOSURE	SAGINAW CONTROL & ENGINEER	SCE-48EL3612SS6LPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-48P36	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 20A	ALLEN-BRADLEY	1489-M1C200	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C050	PANEL VENDOR
6	2	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100	PANEL VENDOR
7	2	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
8	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR
9	12	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
10	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR
11	2	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/10A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/10	PANEL VENDOR
12	1	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
13	6	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
14	1	ETHERNET ADAPTER SUPPORTS UP TO 8 LOCAL I/O MODULES XT	ALLEN-BRADLEY	5094-AENTRXT	PANEL VENDOR
15	1	ANALOG INPUT, 8-CHANNEL, UNIVERSAL XT	ALLEN-BRADLEY	5094-IY8XT	PANEL VENDOR
16	1	DIGITAL INPUT-24V DC, 16 POINT SINKING DIGITAL INPUT XT	ALLEN-BRADLEY	5094-IB16XT	PANEL VENDOR
17	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F2X3LG6	PANEL VENDOR
18	8	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
19	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
20	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C2LG6	PANEL VENDOR
21	16	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
22	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
23	2	SFP MODULE	ALLEN-BRADLEY	1783-SFP1GSX	PANEL VENDOR
24	1	MODULAR INDUSTRIAL PATCH PANEL	HIRSCHMANN	MIPP/AD/1L3B	PANEL VENDOR
25	2	FX PATCH CORD, OM3, LC DUPLEX - LC DUPLEX, 2 M, OFNR, DUPLEX ZIP 1.6 MM, A-TO-B, AQUA JACKET	BELDEN	FP3LDLD002MR1XA	PANEL VENDOR
26	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
27	1	FILTER FAN	SAGINAW CONTROL & ENGINEER	SCE-N12FA66	PANEL VENDOR
28	1	FILTER & GRILLE ASSY	SAGINAW CONTROL & ENGINEER	SCE-N12FGA66	PANEL VENDOR
29	2	PROTECTION HOOD, HOSE-PROOF	SAGINAW CONTROL & ENGINEER	SCE-RH6N4XSS	PANEL VENDOR
30	1	THERMOELECTRIC DEHUMIDIFIER	SAGINAW CONTROL & ENGINEER	SCE-TEDH24VDC	PANEL VENDOR
31	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
32	1	RS485 - SURGE PROTECTION DEVICE	PHOENIX CONTACT	2762265	PANEL VENDOR
33	1	SERIAL MODULE REMOTE I/O	ALLEN-BRADLEY	5094-SERIALXT	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	REMOTE I/O RIO-3
B	–	–	–	–
C	1/8"	2" X 1"	MAIN CIRCUIT BREAKER	CB101
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKERS	
F	1/8"	2" X 1"	TBAC-N	–
G	1/8"	2" X 1"	RECEPTACLE	RCP-128
H	1/8"	2" X 1"	NETWORK SWITCH	NS-148
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	FIBER OPTIC	IPP-153
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	–	–
N	1/8"	2" X 1"	–	–
O	1/8"	2" X 1"	REMOTE I/A ETHERNET ADAPTER	EA-143
P	1/8"	2" X 1"	I/O MODULES	–
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	–
S	1/8"	2" X 1"	TBDI	–
T	1/8"	2" X 1"	TBAI	–
U	1/8"	2" X 1"	TBAO	–
V	1/8"	2" X 1"	TBDO	–
W	1/8"	2" X 1"	CONTROL RELAYS	–

Eladio O. Infante Vélez
Professional Engineer
Lic. Núm. 24,945
Puerto Rico

NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

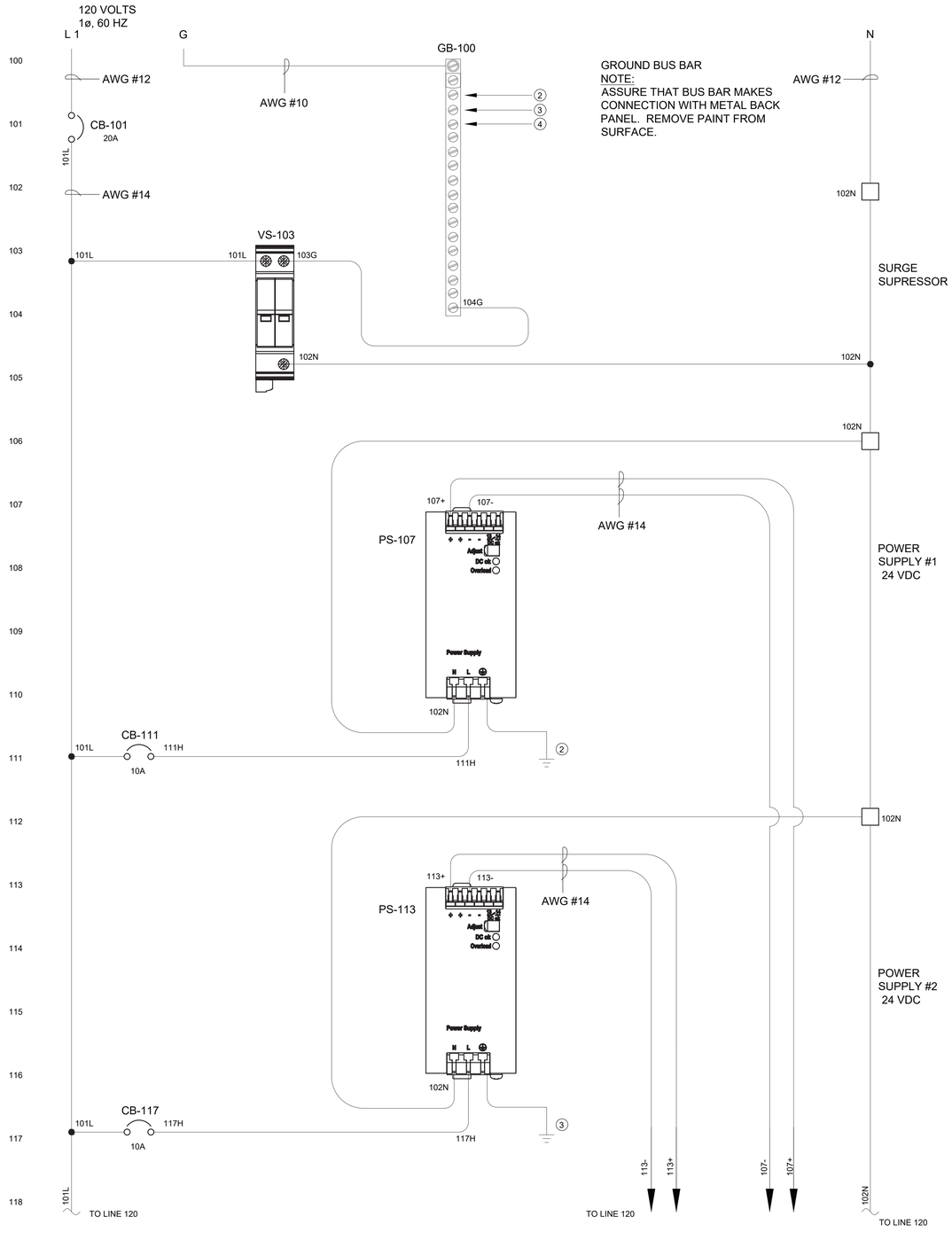
SHEET TITLE
RIO 3 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

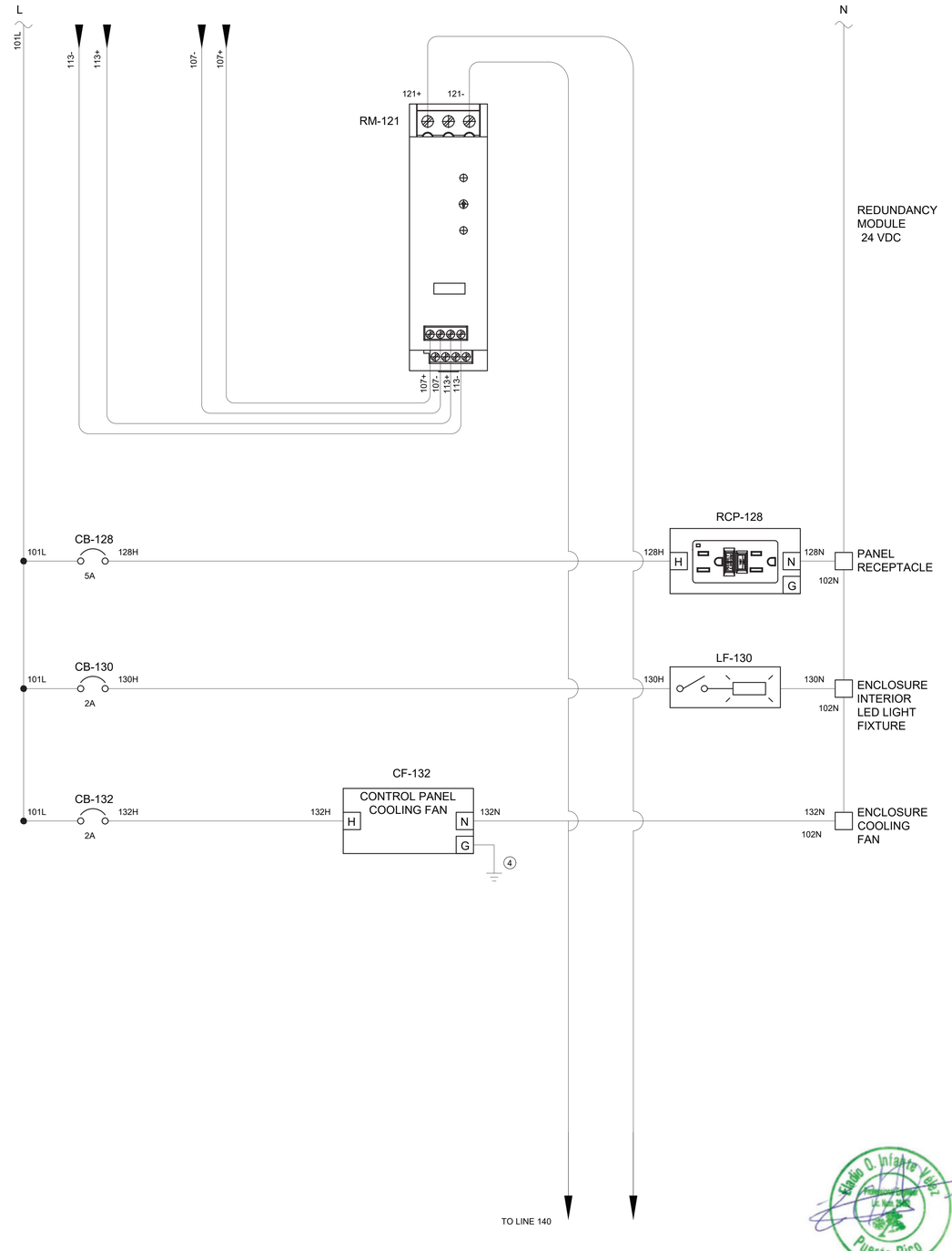
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 105 OF
DWG. NO. IC-15

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





NO.	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
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APPR. BY:

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Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
RIO 3 CONTROL PANEL POWER DISTRIBUTION

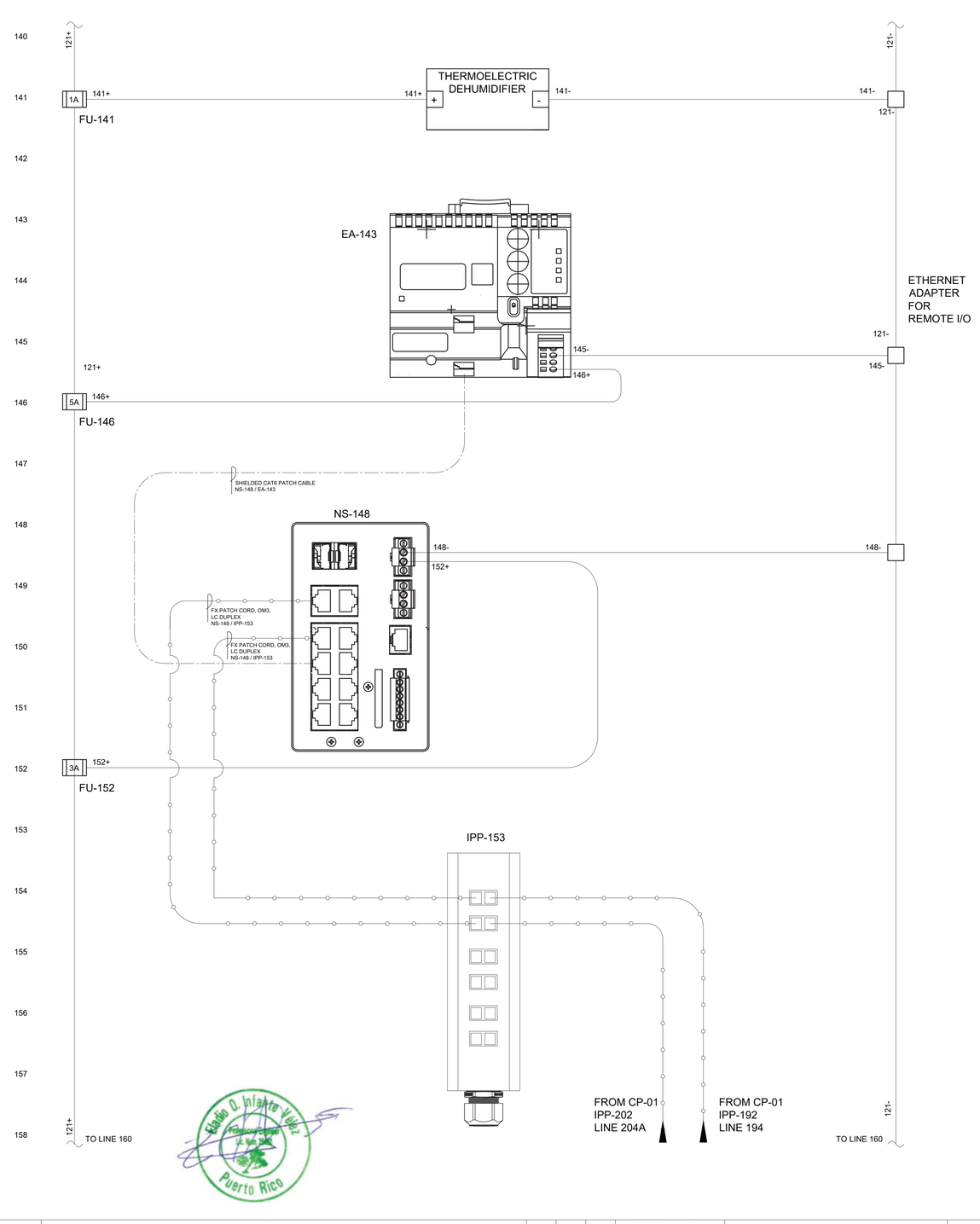
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

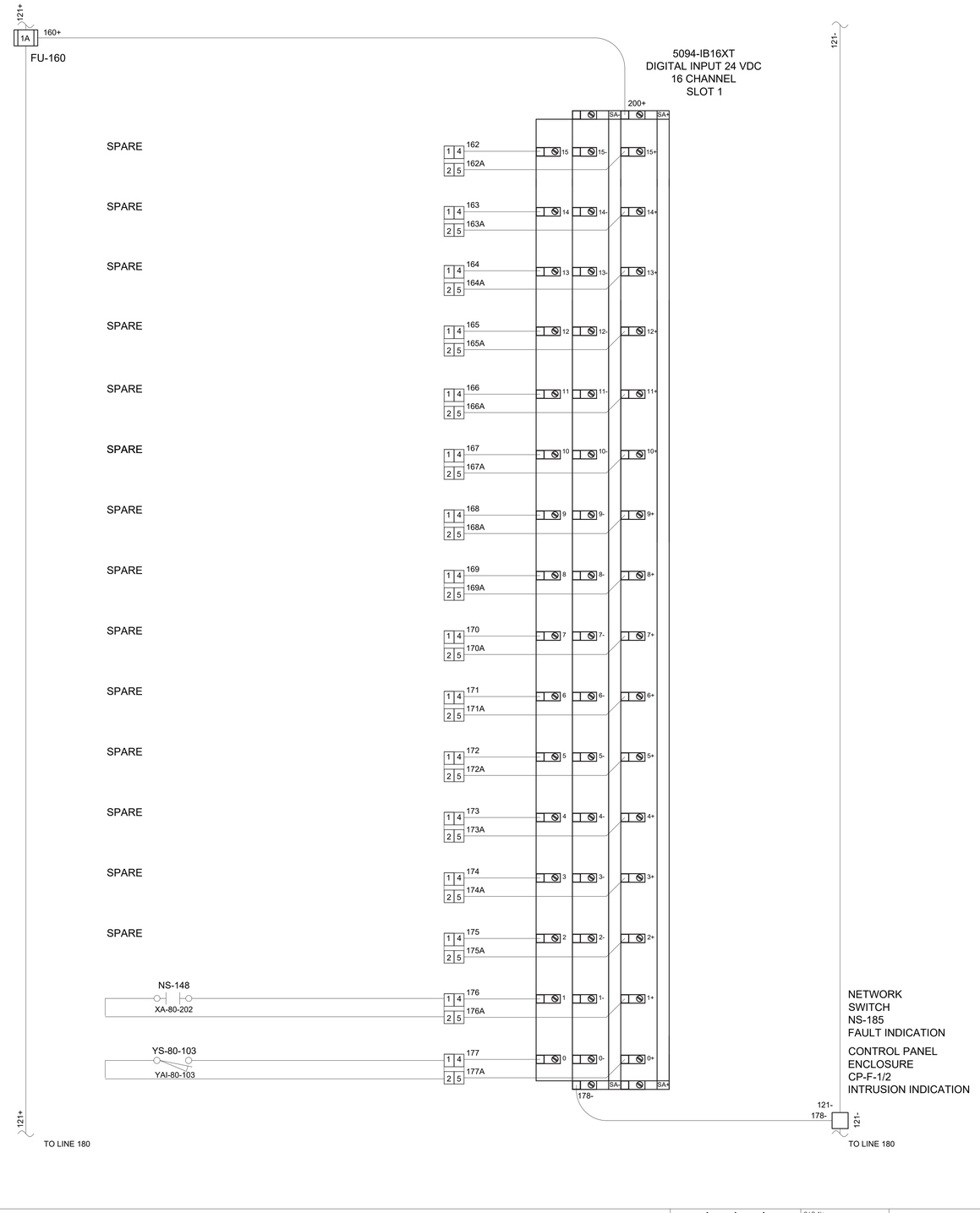
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 106 OF
DWG. NO. IC-16

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

Eladio O. Iniakte Vélez
Puerto Rico





NO.	DATE	REVISION	BY	CK.	APPR.

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

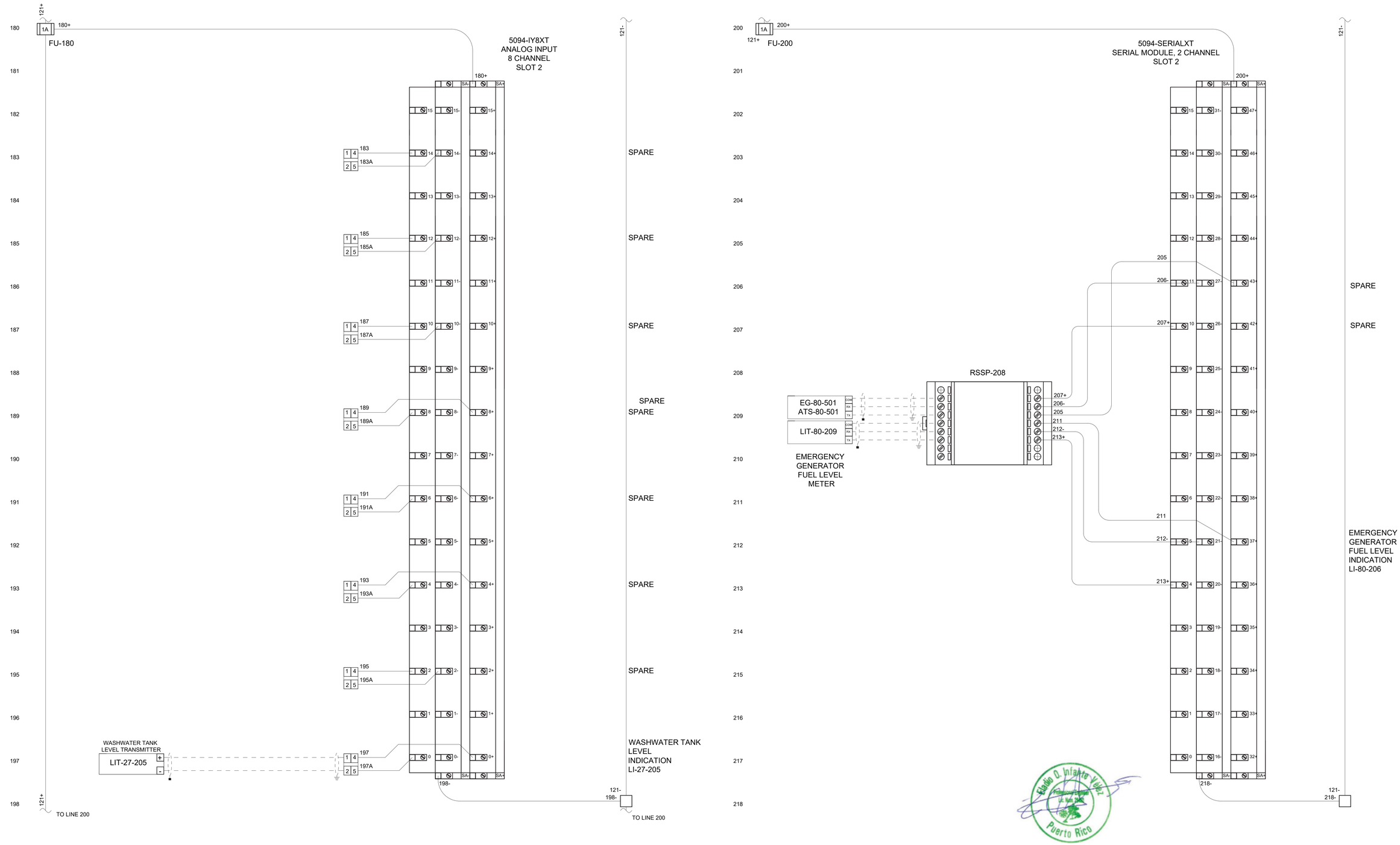
SHEET TITLE
RIO 3 WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 107 OF
DWG. NO. IC-17

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

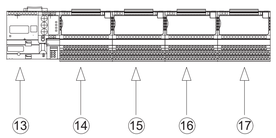
RIO 3 WIRING DIAGRAM ANALOG INPUT CARDS AND
SERIAL COMMUNICATION

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

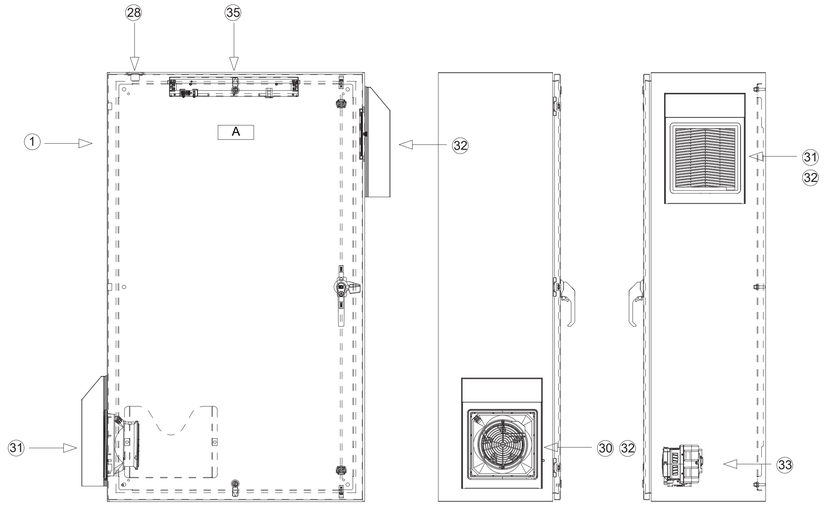
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 108 OF
DWG. NO. IC-18

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



REMOTE I/O RIO 4
NTS

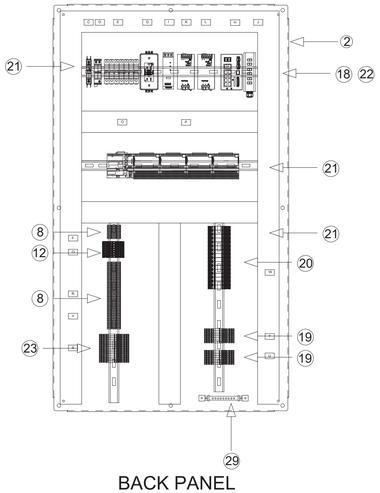


FRONT PANEL
NTS

SIDE PANEL - LEFT
NTS

SIDE PANEL - RIGHT
NTS

AC/DC- POWER TERMINAL
NTS



BACK PANEL
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.

2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.

3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.

4) ANALOG I/O LINES, DC POWER LINES FOR ANALOG CIRCUITS AND COMMUNICATIONS CABLE SHOULD BE PROPERLY SHIELDED AND ROUTED IN A RACEWAY SEPARATED FROM AC POWER LINES.

5) FOR POWER SUPPLIES AND I/O CIRCUITS, CONDUCTORS MUST BE RUN WITHOUT SPLICES FROM TERMINAL TO TERMINAL.

6) ALL CONDUCTORS AND CABLES MUST BE IDENTIFIED WITH A PERMANENT TAG IN ACCORDANCE WITH THE ELECTRICAL AND I/O WIRING LOOPS DEFINITIONS.

7) ALL TERMINALS OF THE TERMINAL BLOCKS MUST BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL TO CORRESPOND WITH THE IDENTIFICATION OF THE DRAWING.

8) THE FOLLOWING ARE THE MINIMUM AWG SIZES TO BE USED:
   - A. MAIN POWER CIRCUITS: NO. 12
   - B. BRANCH POWER CIRCUITS: NO.14
   - C. CONTROL CIRCUITS: NO.16
   - D. CURRENT LOOPS: NO.16
   - E. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - F. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL SINGLE CONDUCTORS MUST BE CODED AS FOLLOW:
   - A. BLACK - LINE, LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE.
   - B. RED - ALL CONTROL CIRCUITS
   - C. BLUE OR PURPLE - DC CONTROL CIRCUIT (POSITIVE)
   - D. WHITE - AC GROUNDED CIRCUITS (NEUTRAL)
   - E. GRAY - DC GROUNDED CIRCUIT CONDUCTOR
   - F. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - G. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL TERMINAL BLOCKS MUST BE RAISED FROM THE BACK PLATE FOR EASE OF WIRING.

10) TERMINAL JUMPERS MUST BE USED IN PLACE OF THE WIRED JUMPERS, WHERE SUCH JUMPERS ARE NECESSARY.

11) WIRING STANDARD AND CONVENTIONS SHOULD CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 300.

NOTES:

8) THE NAME PLATES WILL HAVE BLACK BACKGROUND WITH WHITE LETTERS.

9) PANEL CONTRACTOR SHALL IDENTIFY CORRESPONDING TAG NUMBER TO ALL TERMINAL BLOCKS AND WIRES.

10) PANEL CONTRACTOR WILL PROVIDE TAGS FOR ALL DEVICES INSIDE THE PANEL.

11) ALL PANEL ARRANGEMENTS DETAILS NEED TO BE COORDINATED WITH THE DESIGNATED ENGINEER BEFORE THE PANEL CONSTRUCTION HAS BEGUN.

12) USE ONLY CONDUITS HUBS WHICH ARE COMPATIBLE WITH THE NEMA RATING OF SUBJECTED PANEL AND ITS LOCATION.

13) ALL CONDUIT TO BE INSTALLED AT BOTTOM OF THE PANEL.

14) TO BE INSTALLED WITH VIBRATION ISOLATIONS.

15) INSTRUMENT CONTRACTOR TO PROVIDE ALL REQUIRED ETHERNET PATCHCORDS (FIBER/COPPER) AND SFP CONVERTERS.

16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	STAINLESS STEEL EL ENCLOSURE 60" H X 36" W X 16"D	SAGINAW CONTROL & ENGINEER	SCE-60EL3616SS6LPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-60P36	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 20A	ALLEN-BRADLEY	1489-M1C200	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	2	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100	PANEL VENDOR
6	4	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
7	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C050	PANEL VENDOR
8	47	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
9	-	-	-	-	-
10	2	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/20A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/20	PANEL VENDOR
11	1	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
12	7	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
13	1	ETHERNET ADAPTER SUPPORTS UP TO 8 LOCAL I/O MODULES XT	ALLEN-BRADLEY	5094-AENTRXT	PANEL VENDOR
14	1	DIGITAL INPUT-24V DC, 16 POINT SINKING DIGITAL INPUT XT	ALLEN-BRADLEY	5094-IB16XT	PANEL VENDOR
15	1	DIGITAL OUTPUT-24 VDC, 16-POINT SOURCING DIGITAL OUTPUT XT	ALLEN-BRADLEY	5094-OB16XT	PANEL VENDOR
16	1	ANALOG INPUT, 8-CHANNEL, UNIVERSAL XT	ALLEN-BRADLEY	5094-IY8XT	PANEL VENDOR
17	1	ANALOG OUTPUT, 8-CHANNEL, UNIVERSAL XT	ALLEN-BRADLEY	5094-OF8XT	PANEL VENDOR
18	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F2X3LG6	PANEL VENDOR
19	16	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
20	16	RELAY MODULE	PHOENIX CONTACT	2967060	PANEL VENDOR
21	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
22	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C2LG6	PANEL VENDOR
23	16	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
24	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
25	2	SFP MODULE	ALLEN-BRADLEY	1783-SFP1GSX	PANEL VENDOR
26	1	MODULAR INDUSTRIAL PATCH PANEL	HIRSCHMANN	MIPP/AD/1L3B	PANEL VENDOR
27	2	FX PATCH CORD, OM3, LC DUPLEX - LC DUPLEX, 2 M, OFNR, DUPLEX ZIP 1.6 MM, A-TO-B, AQUA JACKET	BELDEN	FP3LDLD002MR1XA	PANEL VENDOR
28	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR
29	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
30	1	FILTER FAN	SAGINAW CONTROL & ENGINEER	SCE-N12FA66	PANEL VENDOR
31	1	FILTER & GRILLE ASSY	SAGINAW CONTROL & ENGINEER	SCE-N12FGA66	PANEL VENDOR
32	2	PROTECTION HOOD, HOSE-PROOF	SAGINAW CONTROL & ENGINEER	SCE-RH6N4XSS	PANEL VENDOR
33	1	THERMOELECTRIC DEHUMIDIFIER	SAGINAW CONTROL & ENGINEER	SCE-TEDH24VDC	PANEL VENDOR
34	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
35	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	REMOTE I/O RIO-4
B	-	-	-	-
C	1/8"	2" X 1"	MAIN CIRCUIT BREAKER	CB101
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKERS	
F	1/8"	2" X 1"	TBAC-N	-
G	1/8"	2" X 1"	RECEPTACLE	RCP-128
H	1/8"	2" X 1"	NETWORK SWITCH	NS-160
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	FIBER OPTIC	IPP-152
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	-	-
N	1/8"	2" X 1"	-	-
O	1/8"	2" X 1"	REMOTE I/A ETHERNET ADAPTER	EA-145
P	1/8"	2" X 1"	I/O MODULES	-
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	-
S	1/8"	2" X 1"	TBDI	-
T	1/8"	2" X 1"	TBAI	-
U	1/8"	2" X 1"	TBAO	-
V	1/8"	2" X 1"	TBDO	-
W	1/8"	2" X 1"	CONTROL RELAYS	-

Eladio O. Infante Vélez
Professional Engineer
Lic. Núm. 24,962
Puerto Rico

NO	DATE	REVISION	BY	CK.	APPR.

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Ancalle ENGINEERS
Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

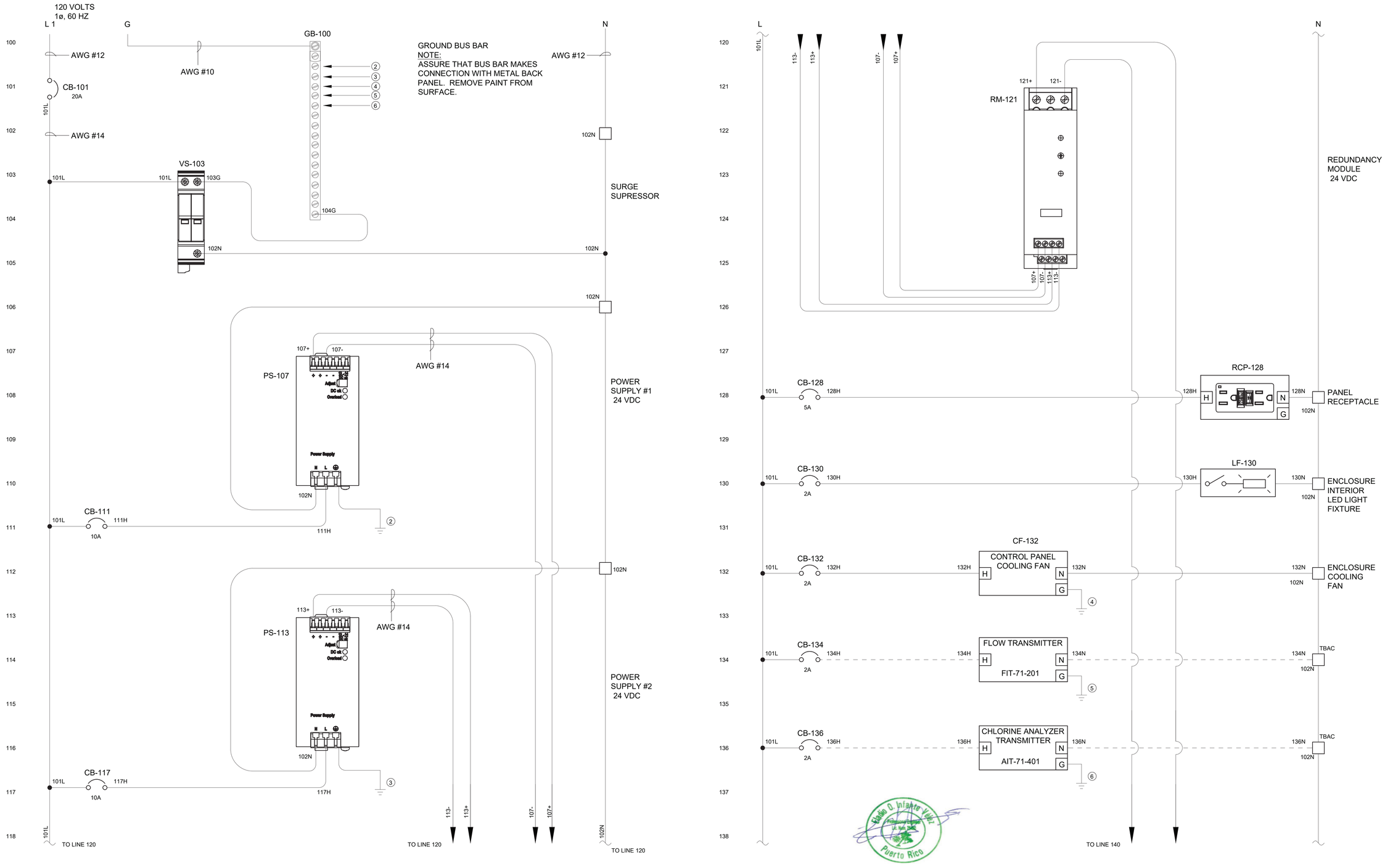
SHEET TITLE
RIO 4 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 109 OF
DWG. NO. IC-19

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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DRAWN BY CAE
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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
RIO 4 CONTROL PANEL POWER DISTRIBUTION

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 110 OF
DWG. NO. IC-20

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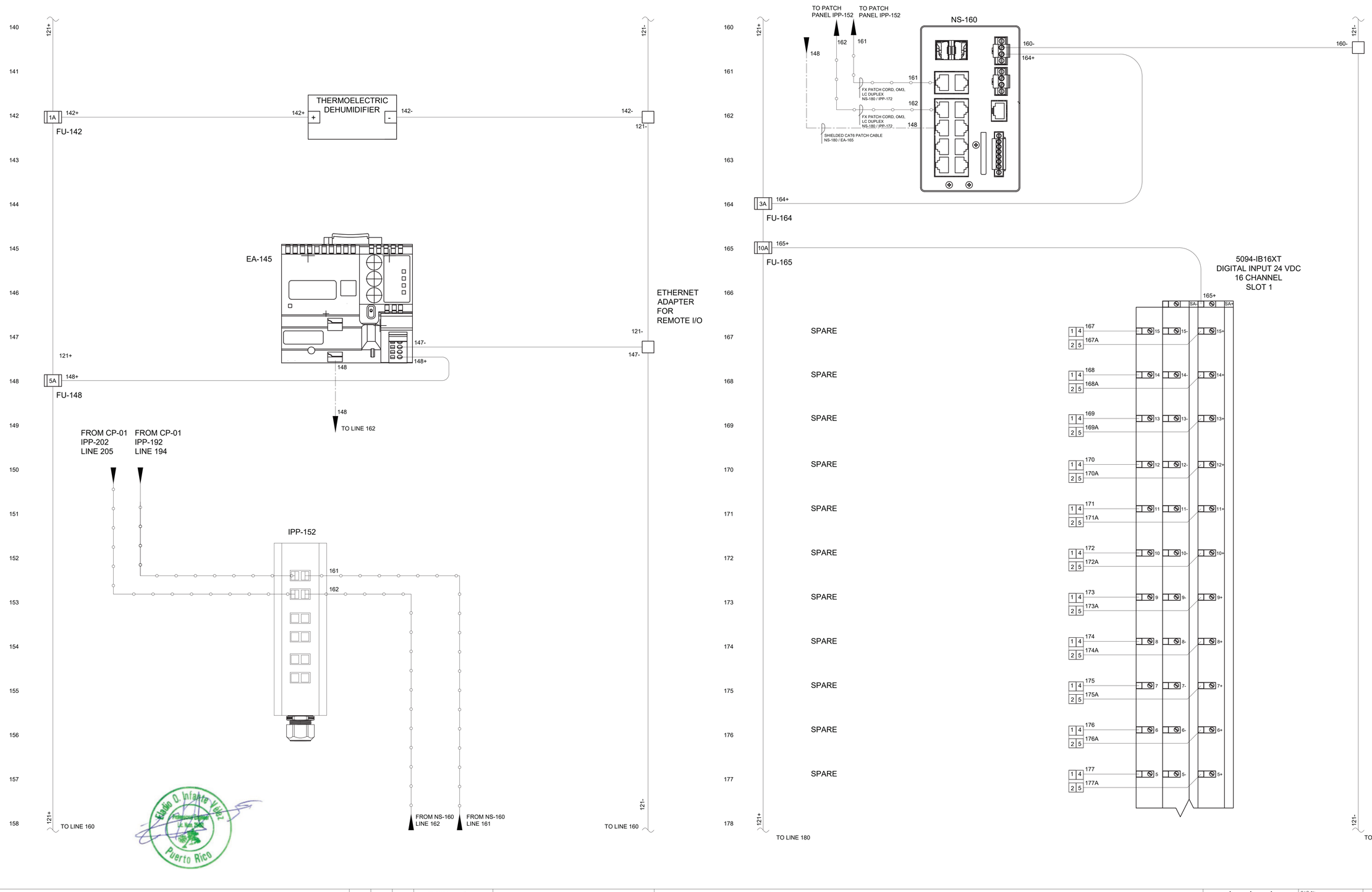
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

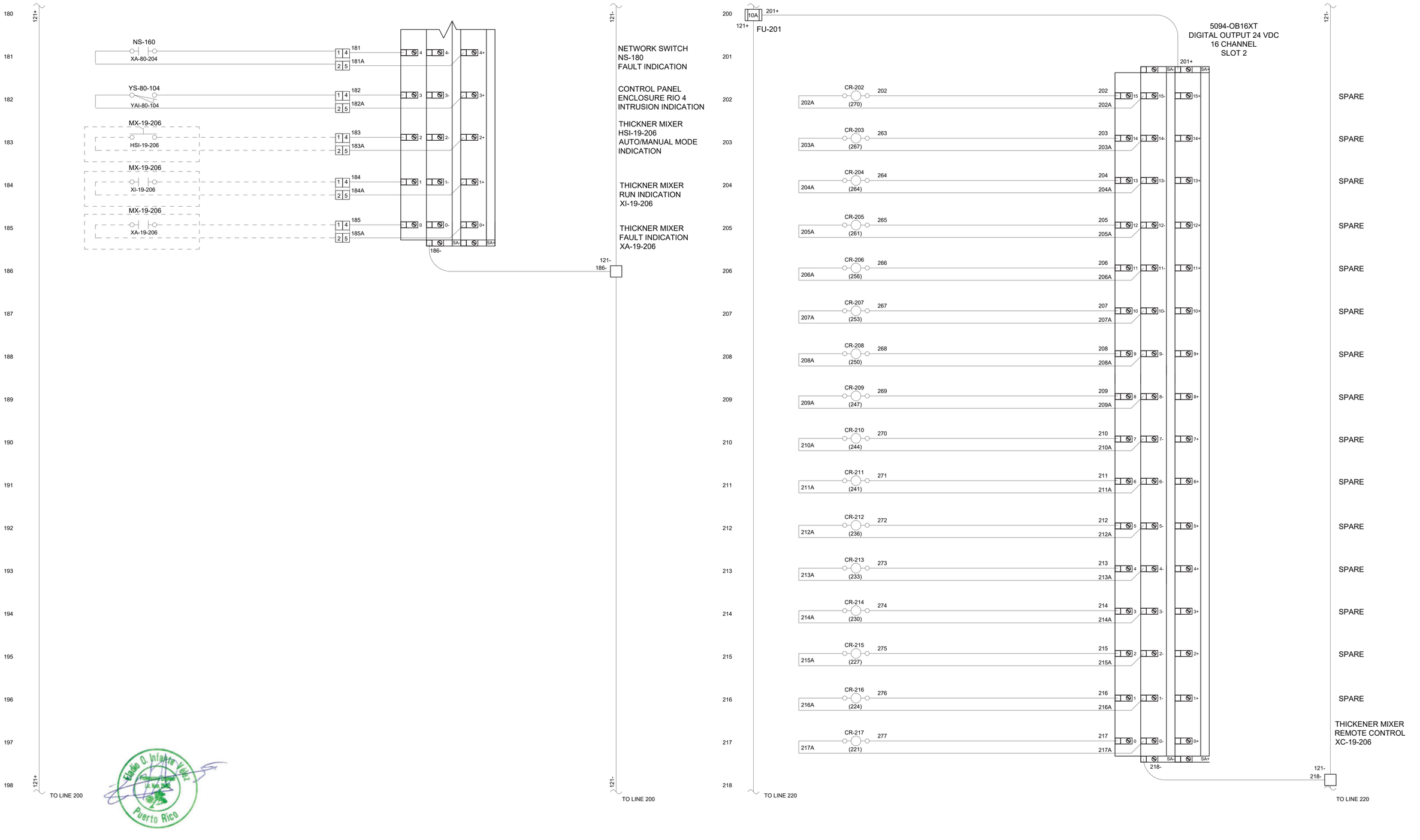
SHEET TITLE
RIO 4 MAIN WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 111 OF
DWG. NO. IC-21

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

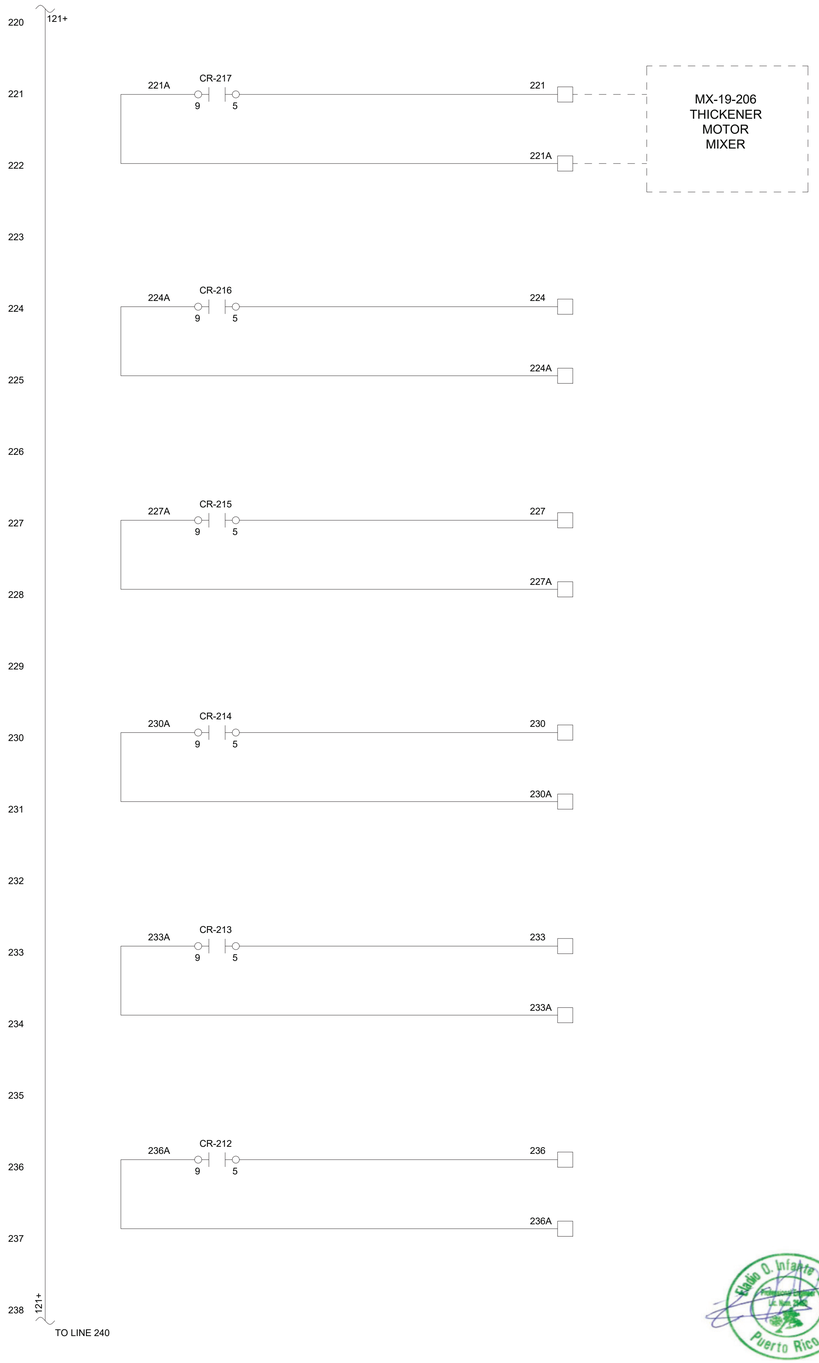
SHEET TITLE
RIO 4 WIRING DIAGRAM DIGITAL INPUT AND OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

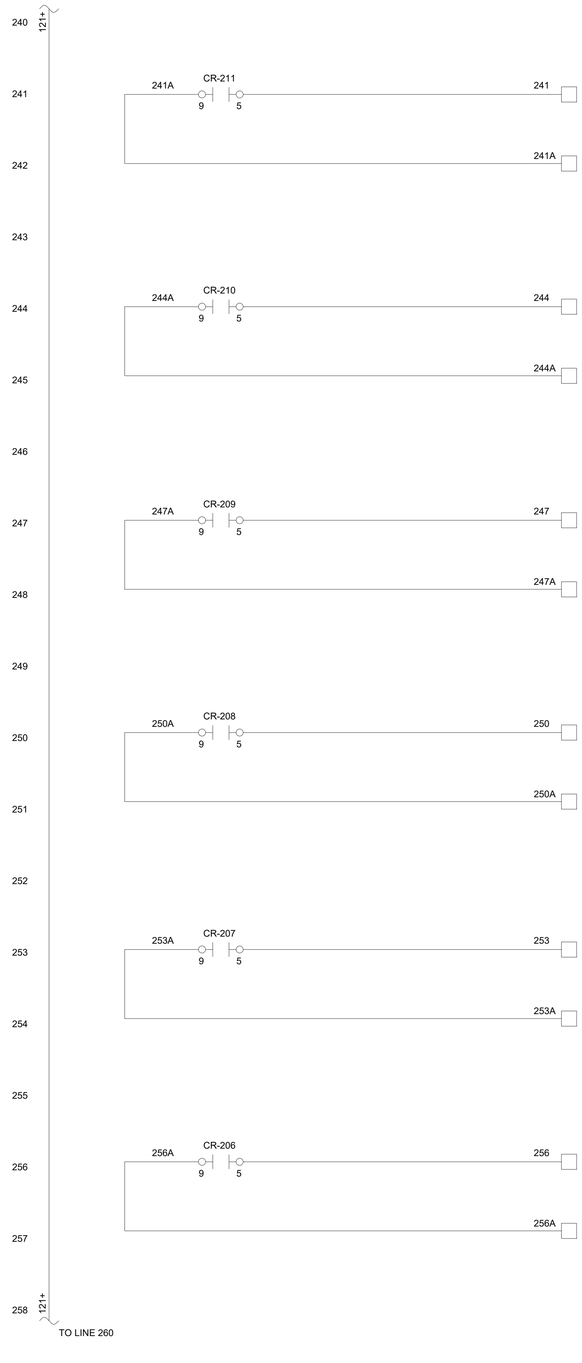
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 112 OF
DWG. NO. IC-22

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

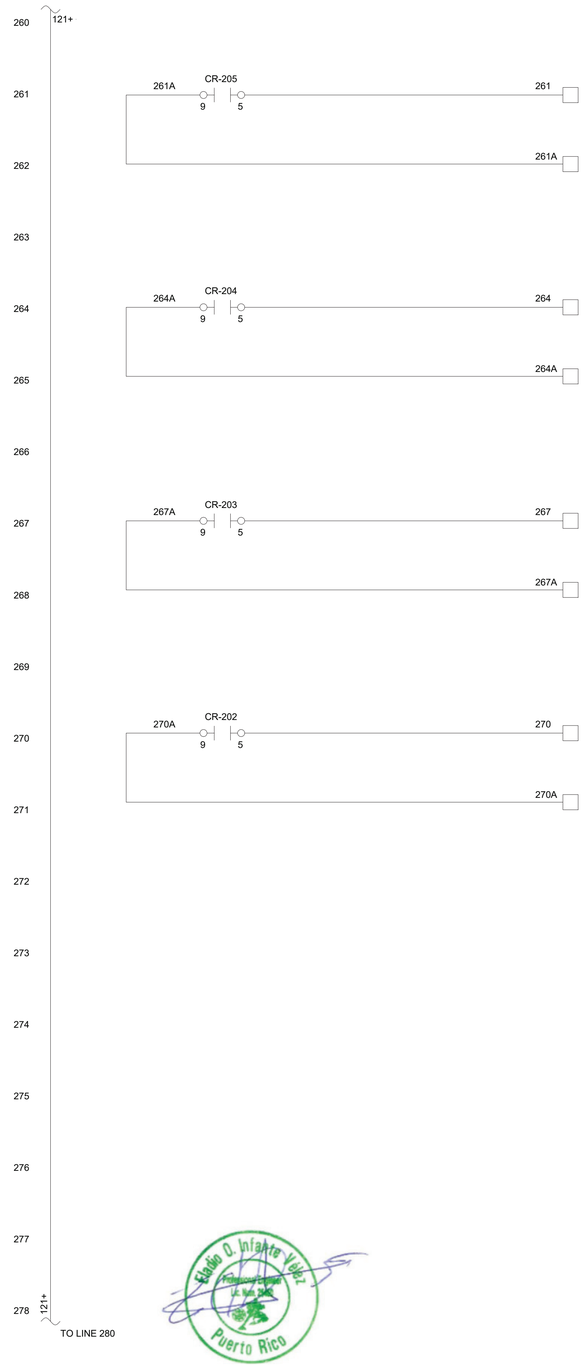
SHEET TITLE
RIO 4 WIRING DIAGRAM DIGITAL OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

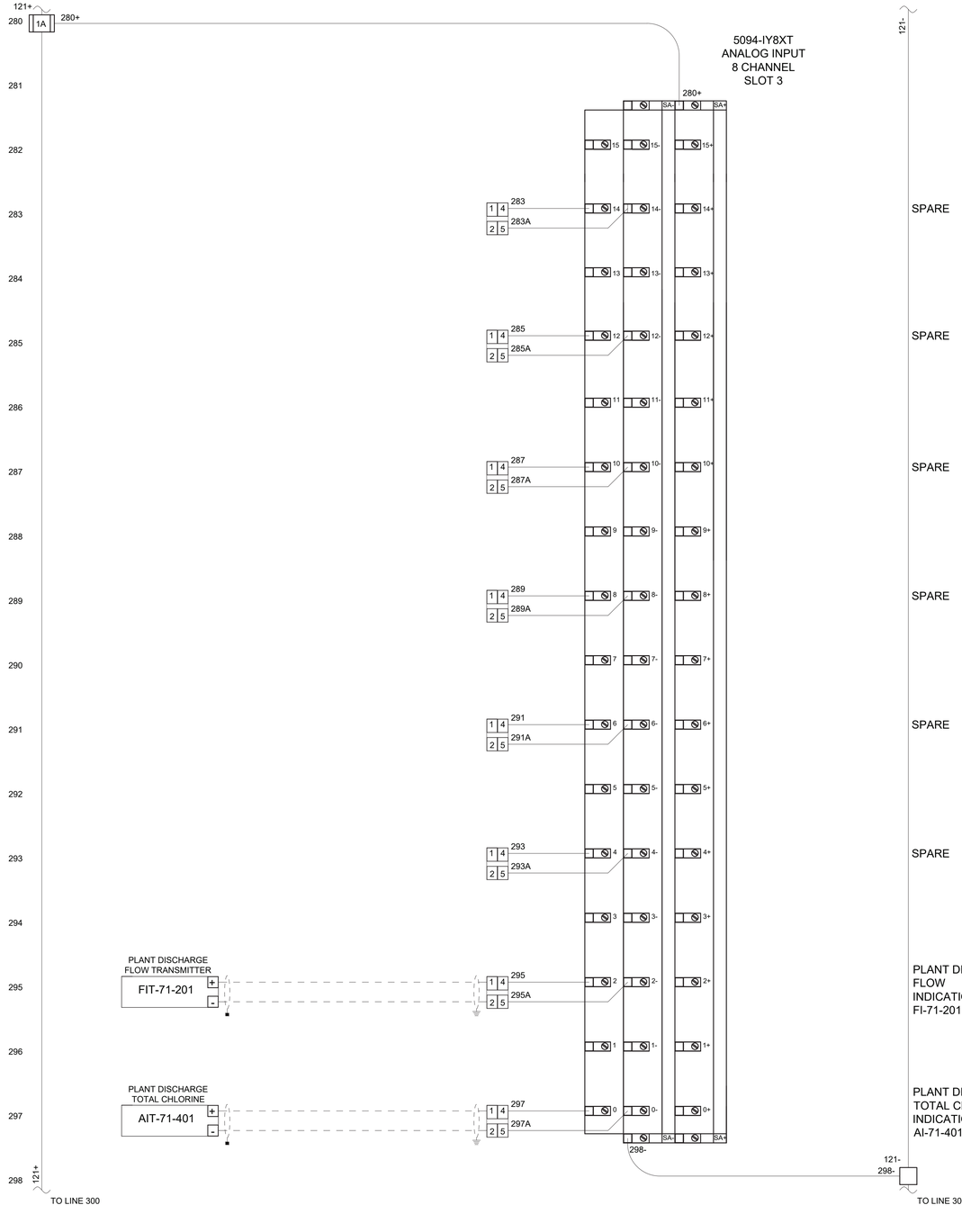
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 113 OF
DWG. NO. IC-23

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM







Eladio O. Infante Vélez
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

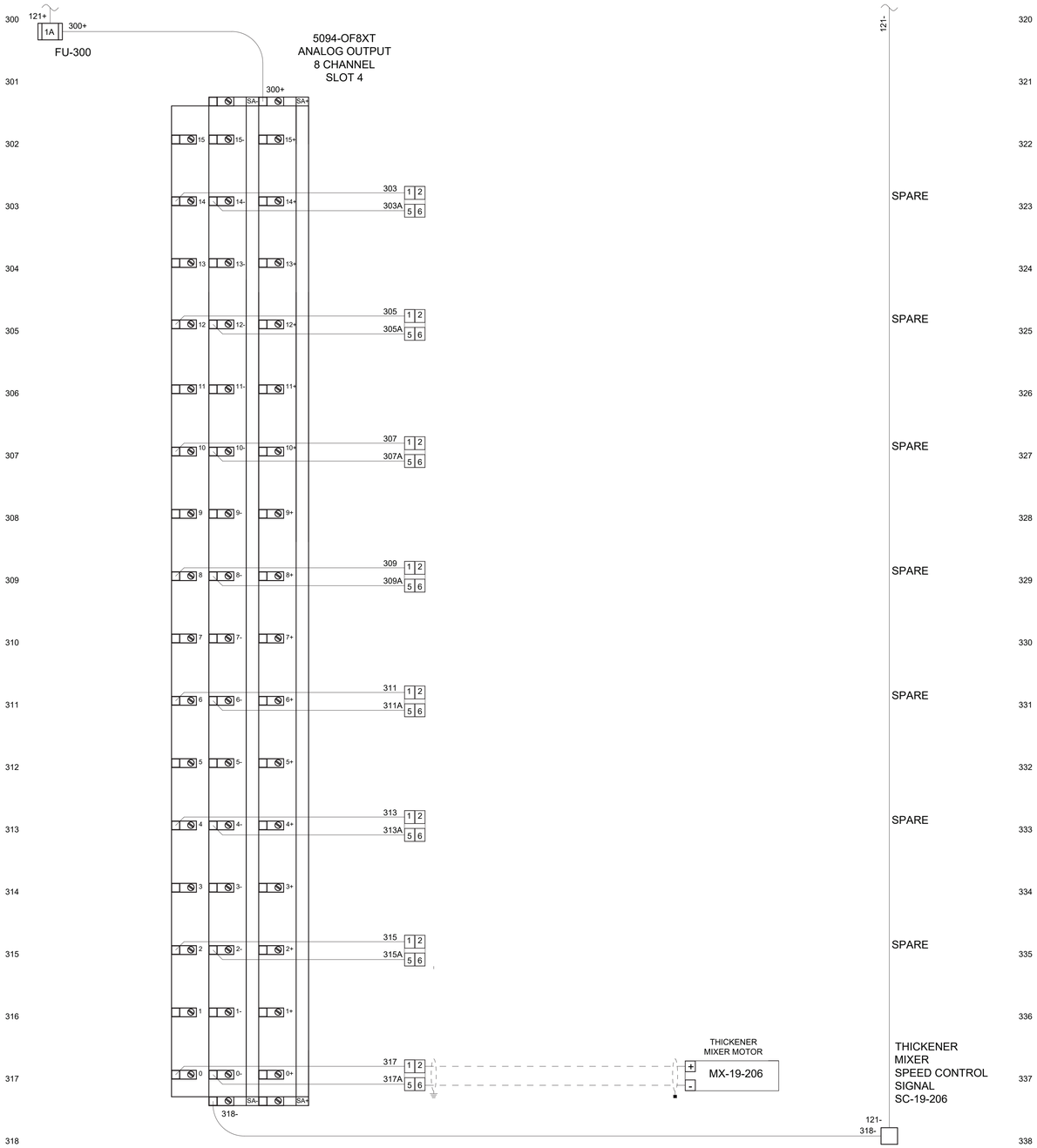
RIO 4 WIRING DIAGRAM DIGITAL OUTPUT AND ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 114 OF
DWG. NO. IC-24

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318

121-

320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

THICKENER
MIXER
SPEED CONTROL
SIGNAL
SC-19-206

Eladio O. Infante Vélez
Professional Engineer
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

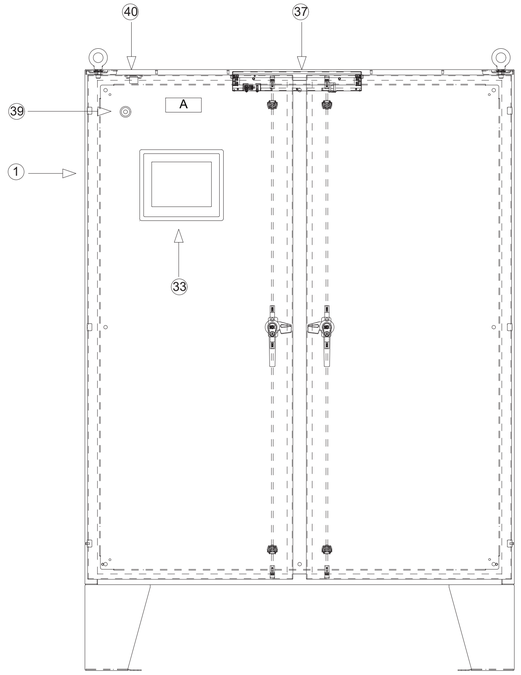
RIO 4 WIRING DIAGRAM ANALOG OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

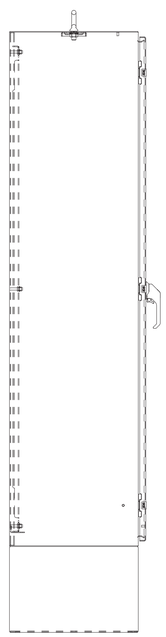
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 115 OF
DWG. NO. IC-25

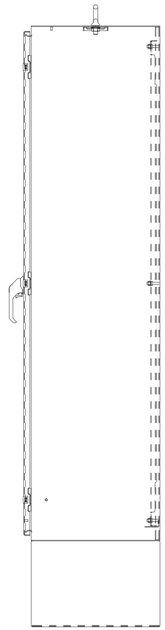
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



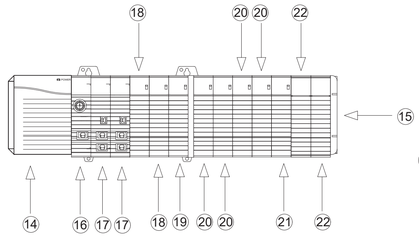
FRONT PANEL
NTS



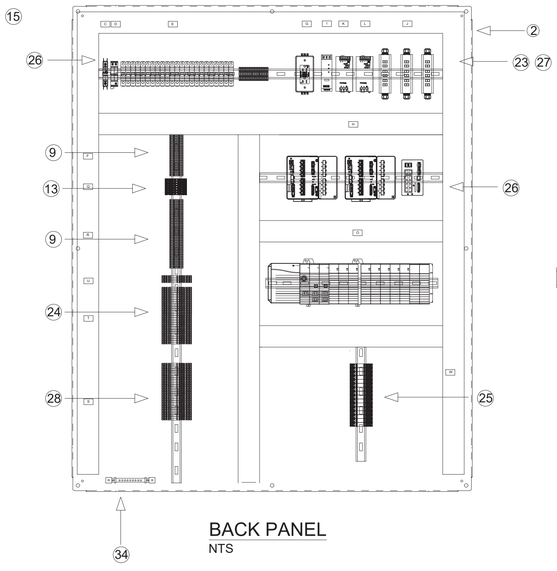
SIDE PANEL - LEFT
NTS



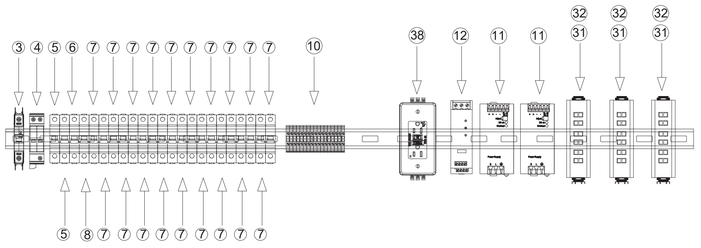
SIDE PANEL - RIGHT
NTS



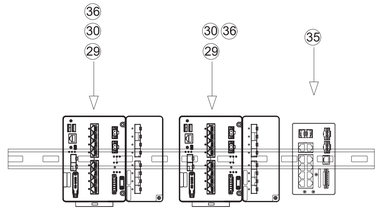
CENTRAL CONTROL PANEL CP-01
NTS



BACK PANEL
NTS



AC- POWER TERMINAL
NTS



NETWORK MODULES
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.

2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.

3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.

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16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	SS2DR EL LPPL ENCLOSURE	SAGINAW CONTROL & ENGINEER	SCE-72EL6018SSLPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-72P60	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 40A	ALLEN-BRADLEY	1489-M1C400	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	2	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100N	PANEL VENDOR
6	1	1-POLE SUPPLEMENTARY PROTECTORS 15 AMP	ALLEN-BRADLEY	1492-SPM1C150	PANEL VENDOR
7	19	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
8	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C050	PANEL VENDOR
9	63	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
10	17	UT4- PE GROUND TERMINAL	PHOENIX CONTACT	3044128	PANEL VENDOR
11	2	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/20A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/20	PANEL VENDOR
12	1	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
13	7	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
14	1	CONTROL LOGIX POWER SUPPLY	ALLEN-BRADLEY	1756-PA72	PANEL VENDOR
15	1	1756 CHASSIS 13 SLOT	ALLEN-BRADLEY	1756-A13	PANEL VENDOR
16	1	LOGIX5580E CONTROLLER WITH 10 MBYTES MEMORY	ALLEN-BRADLEY	1756-L83E	PANEL VENDOR
17	2	ETHERNET/IP10/100/IGBM BRIDGE MODULE	ALLEN-BRADLEY	1756-EN4TR	PANEL VENDOR
18	2	10-30 VDC ISOLATED INPUT 16 PTS	ALLEN-BRADLEY	1756-IB16I	PANEL VENDOR
19	1	10-30 VDC ISOLATED OUTPUT 16 PTS	ALLEN-BRADLEY	1756-OB16I	PANEL VENDOR
20	4	ANALOG INPUT MODULE, 8 ISOLATED POINTS, CURRENT, CURRENT SOURCING AND VOLTAGE	ALLEN-BRADLEY	1756-IF8I	PANEL VENDOR
21	1	ANALOG OUTPUT MODULE, 8 ISOLATED POINTS, CURRENT AND VOLTAGE	ALLEN-BRADLEY	1756-OF8I	PANEL VENDOR
22	2	EMPTY SLOT FILTER FOR 1756 CHASSIS	ALLEN-BRADLEY	1756-N2	PANEL VENDOR
23	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F3X3LG6	PANEL VENDOR
24	36	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
25	16	RELAY MODULE	PHOENIX CONTACT	2967060	PANEL VENDOR
26	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
27	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C3LG6	PANEL VENDOR
28	32	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
29	2	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 SFP 100/1000 SLOT, LAYER 2 FW	ALLEN-BRADLEY	1783-MMS10A	PANEL VENDOR
30	8	SFP MODULE	ALLEN-BRADLEY	1783-SFP1GSX	PANEL VENDOR
31	3	MODULAR INDUSTRIAL PATCH PANEL	HIRSCHMANN	MIPP/AD/1L3B	PANEL VENDOR
32	8	FX PATCH CORD, OM3, LC DUPLEX - LC DUPLEX, 2 M, OFNR, DUPLEX ZIP 1.6 MM, A-TO-B, AQUA JACKET	BELDEN	FP3LDLD002MR1XA	PANEL VENDOR
33	1	PANEL VIEW 5510, 10 IN, 4.3 DISPLAY, TOUCH, DC, CC	ALLEN-BRADLEY	2715P-T10CD-K	PANEL VENDOR
34	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
35	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
36	2	STRATIX 5800 EXPANSION MODULE, 8 SFP 100/1000 SLOTS ADVANCED FEATURES	ALLEN-BRADLEY	1783-MMX8SA	PANEL VENDOR
37	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR
38	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
39	1	HORNS VIBRATING SERIES	EDWARDS CO	871P-G1	PANEL VENDOR
40	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	CONTROL PANEL CP-01
B	–	–	–	–
C	1/8"	2" X 1"	CIRCUIT BREAKER	CB1
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKERS	
F	1/8"	2" X 1"	TBAC-N	–
G	1/8"	2" X 1"	RECEPTACLE	RCP-127
H	1/8"	2" X 1"	NETWORK SWITCH	NS-180/NS-185/NS-208
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	FIBER OPTICS	–
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	–	–
N	1/8"	2" X 1"	–	–
O	1/8"	2" X 1"	PROGRAMMABLE LOGIC CONTROLLER	PLC-134
P	1/8"	2" X 1"	–	–
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	–
S	1/8"	2" X 1"	TBDI	–
T	1/8"	2" X 1"	TBAI	–
U	1/8"	2" X 1"	TBAO	–
V	1/8"	2" X 1"	TBDO	–
W	1/8"	2" X 1"	CONTROL RELAYS	–



NO	DATE	REVISION	BY	CK.	APPR.

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-01 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 116 OF
DWG. NO. IC-26

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

120 VOLTS
1ø, 60 HZ

L 1

G

N

GB-100

GROUND BUS BAR
NOTE:
ASSURE THAT BUS BAR MAKES CONNECTION WITH METAL BACK PANEL. REMOVE PAINT FROM SURFACE.

AWG #8

AWG #12

CB-101
40A

101L

AWG #14

VS-103

101L

103G

102N

SURGE SUPRESSOR

PS-107

107+

107-

AWG #14

Adjust

DC ok

Overload

Power Supply

N L

POWER SUPPLY #1
24 VDC

CB-111

101L

111H

10A

111H

PS-113

113+

113-

AWG #14

POWER SUPPLY #2
24 VDC

CB-117

101L

117H

10A

117H

TO LINE 120

TO LINE 120

TO LINE 120

L

N

101L

113-

113+

107-

107+

RM-121

121+

121-

107+

107-

113+

113-

REDUNDANCY MODULE
24 VDC

CB-127

101L

127H

5A

RCP-127

127H

H

N

G

127N

102N

PANEL RECEPTACLE

CB-129

101L

129H

2A

LF-129

129H

129N

102N

ENCLOSURE INTERIOR LED LIGHT FIXTURE

CF-131

CB-131

101L

131H

2A

131H

CONTROL PANEL COOLING FAN

H

N

G

131N

131N

102N

ENCLOSURE COOLING FAN

PLC-134

POWER

ETHERNET ADAPTER FOR REMOTE I/O

137H

137N

136A

136B

CB-137

101L

137H

15A

SHIELDED CAT6 PATCH CABLE PLC-134/NS-140

SHIELDED CAT6 PATCH CABLE PLC-134/NS-145

102N

137N

121-

121+

TO LINE 180

TO LINE 185

TO LINE 180

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

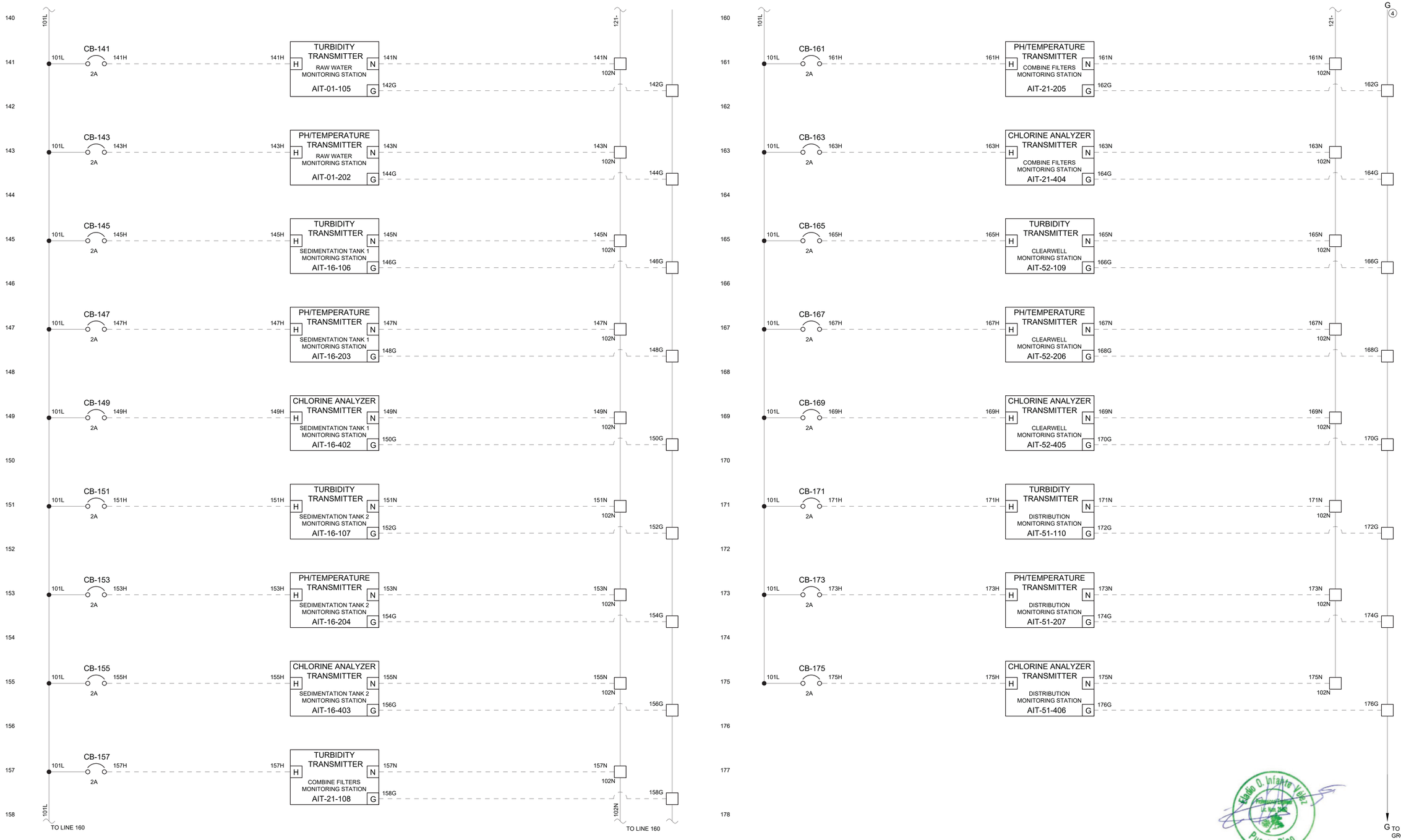
CP-01 CONTROL PANEL WIRING DIAGRAM POWER DISTRIBUTION

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 117 OF
DWG. NO. IC-27

BAR IS TWO CM ON ORIGINAL DWG. IF NOT, TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

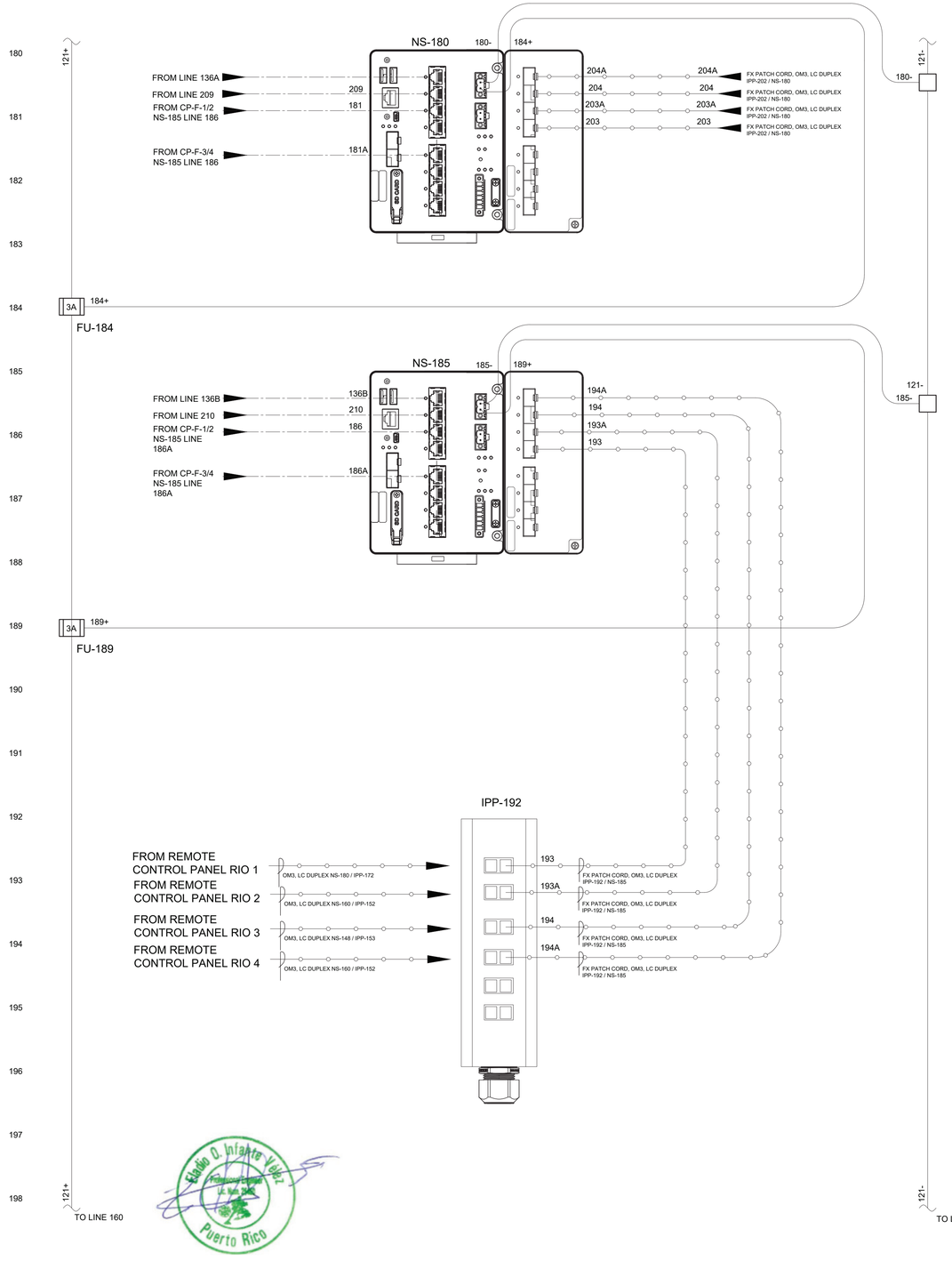
SHEET TITLE
CP-01 CONTROL PANEL WIRING DIAGRAM POWER DISTRIBUTION CONTINUED

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 118 OF
DWG. NO. IC-28

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

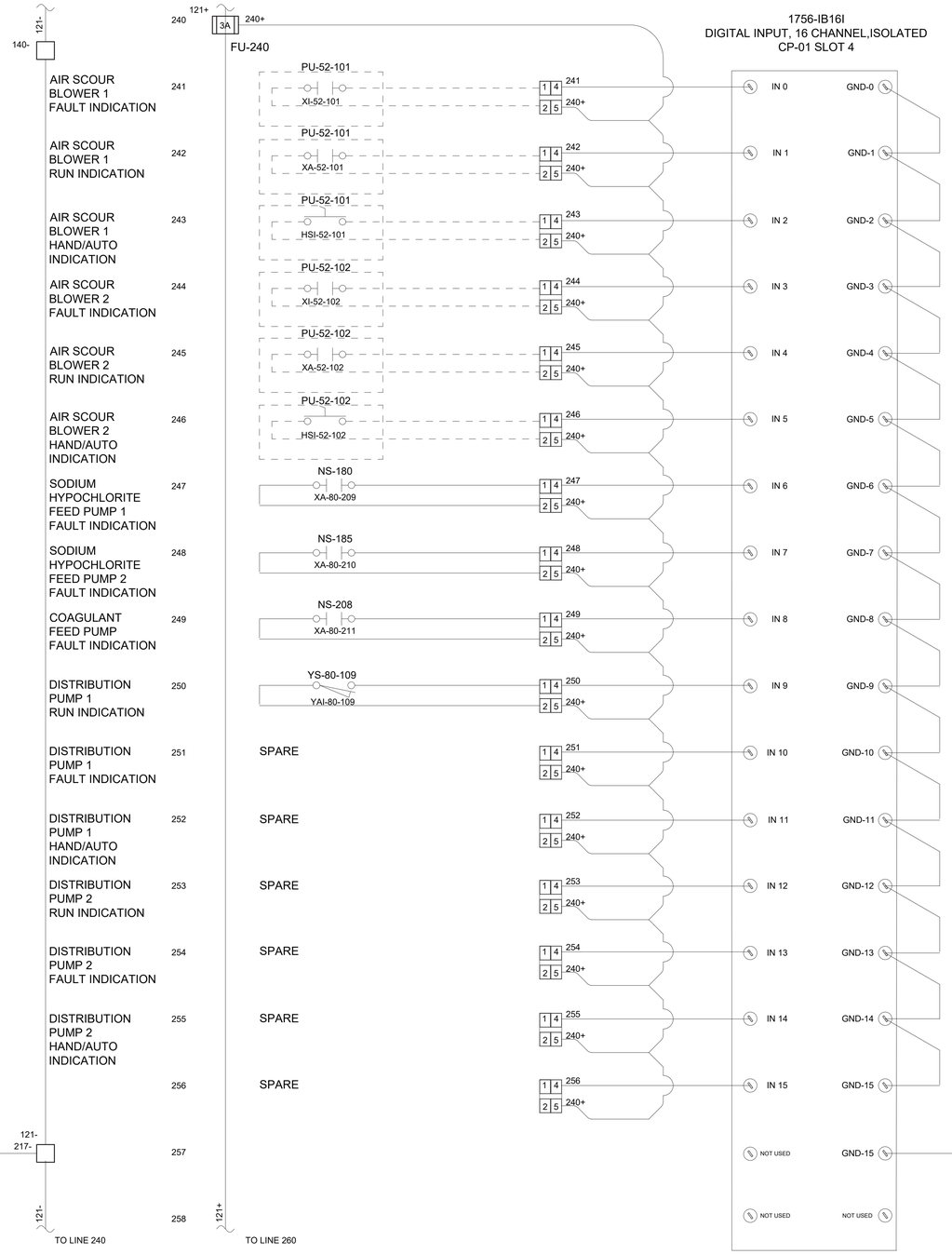
SHEET TITLE
CP--01 MAIN WIRING DIAGRAM

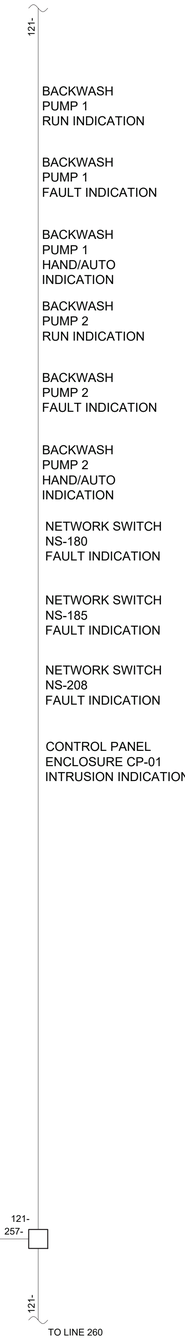
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 119 OF
DWG. NO. IC-29
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM







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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-01 WIRING DIAGRAM DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

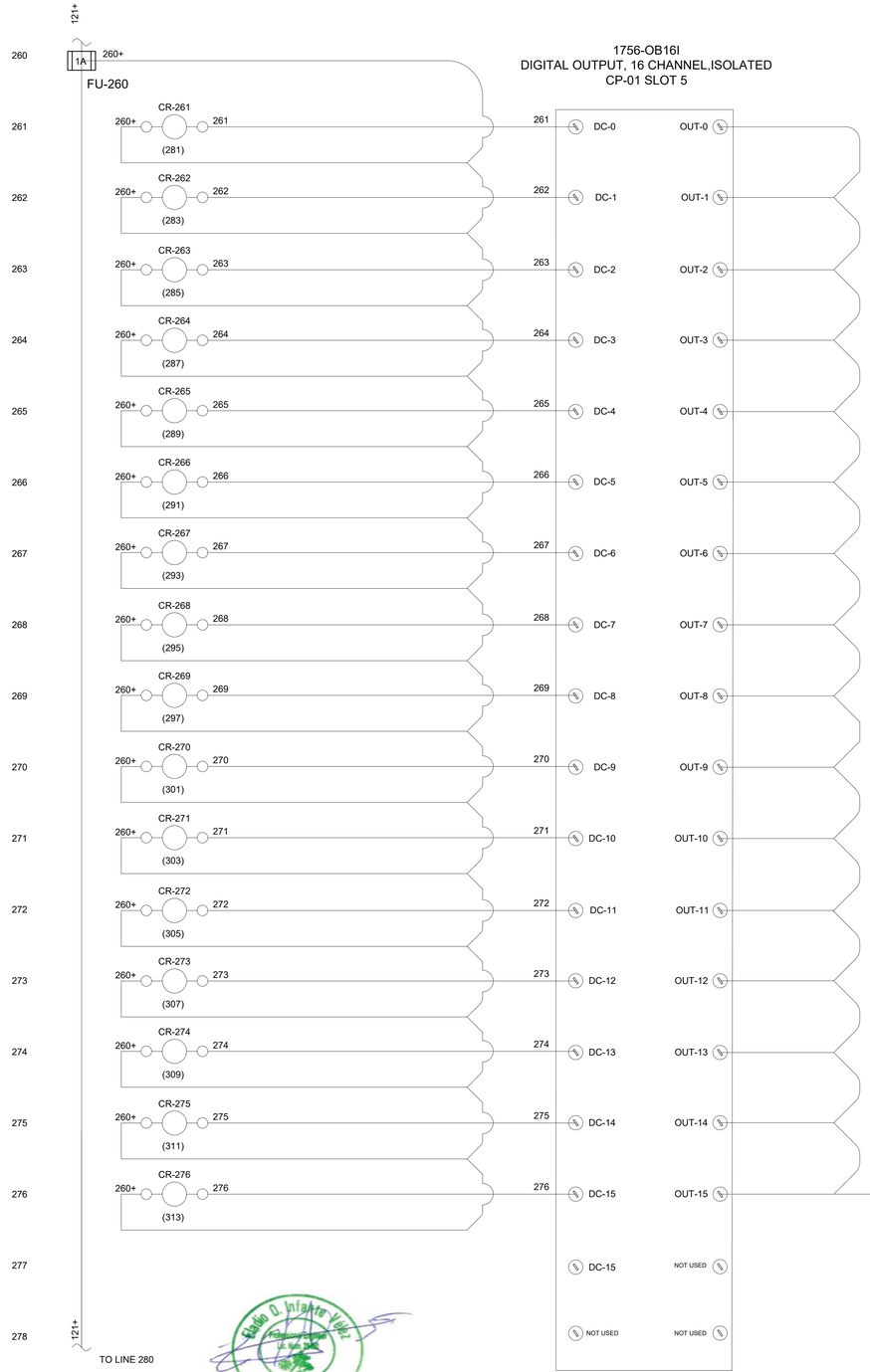
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

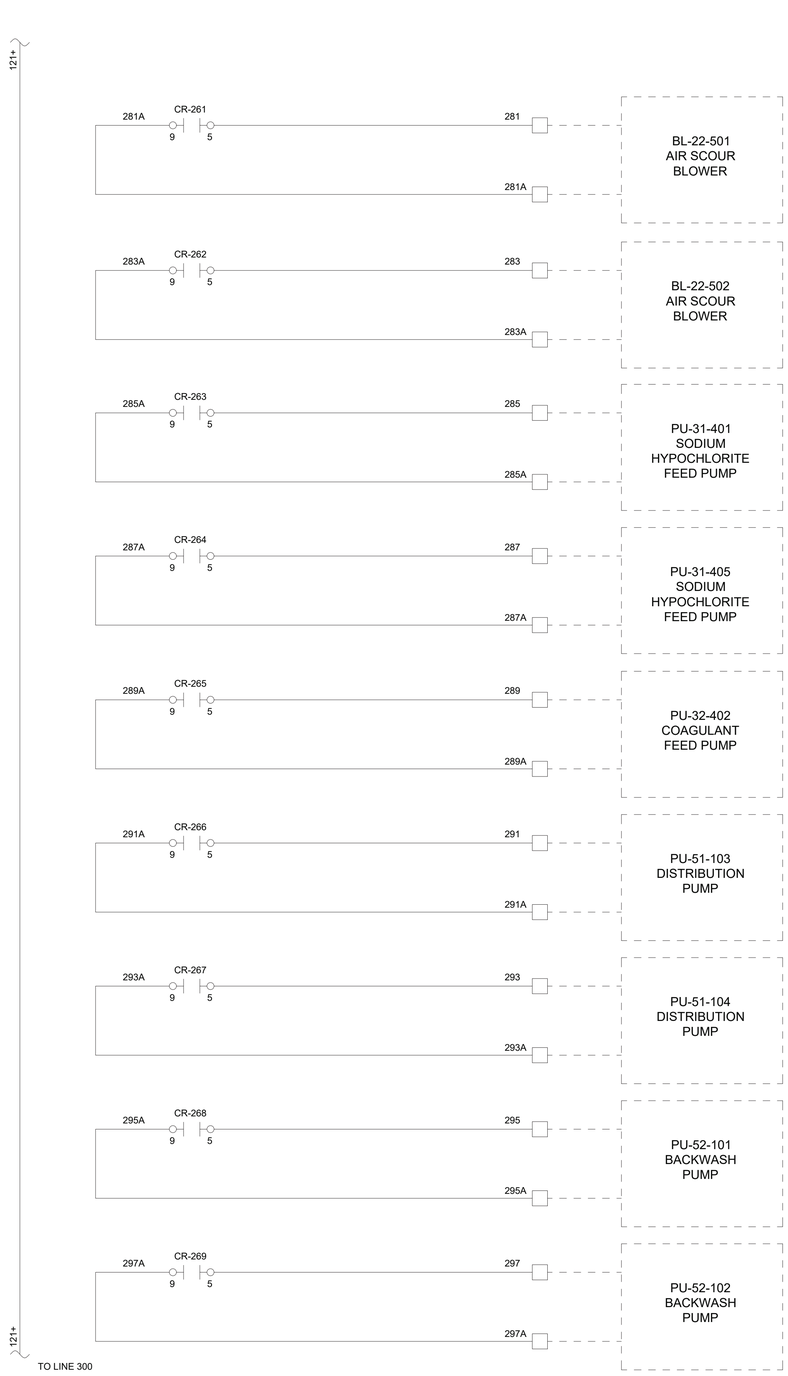
SHEET NO. 120 OF
DWG. NO. IC-30

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

1756-OB16I
DIGITAL OUTPUT, 16 CHANNEL,ISOLATED
CP-01 SLOT 5

FU-260







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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

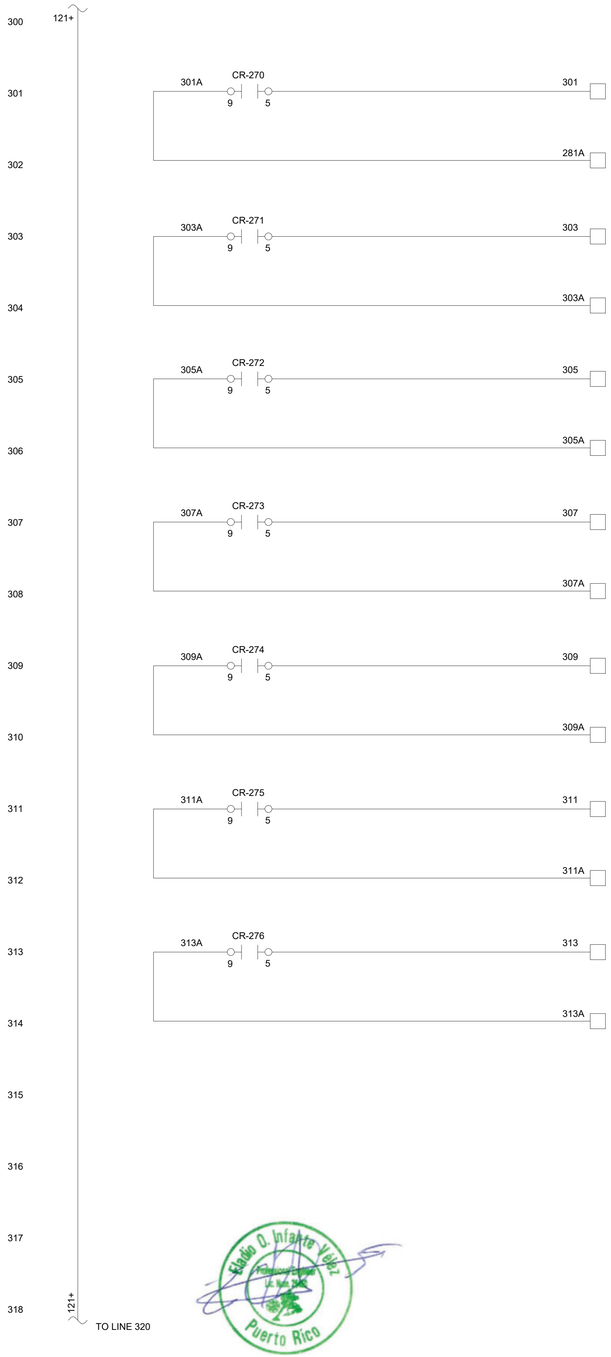
SHEET TITLE
CP-01 WIRING DIAGRAM DIGITAL OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

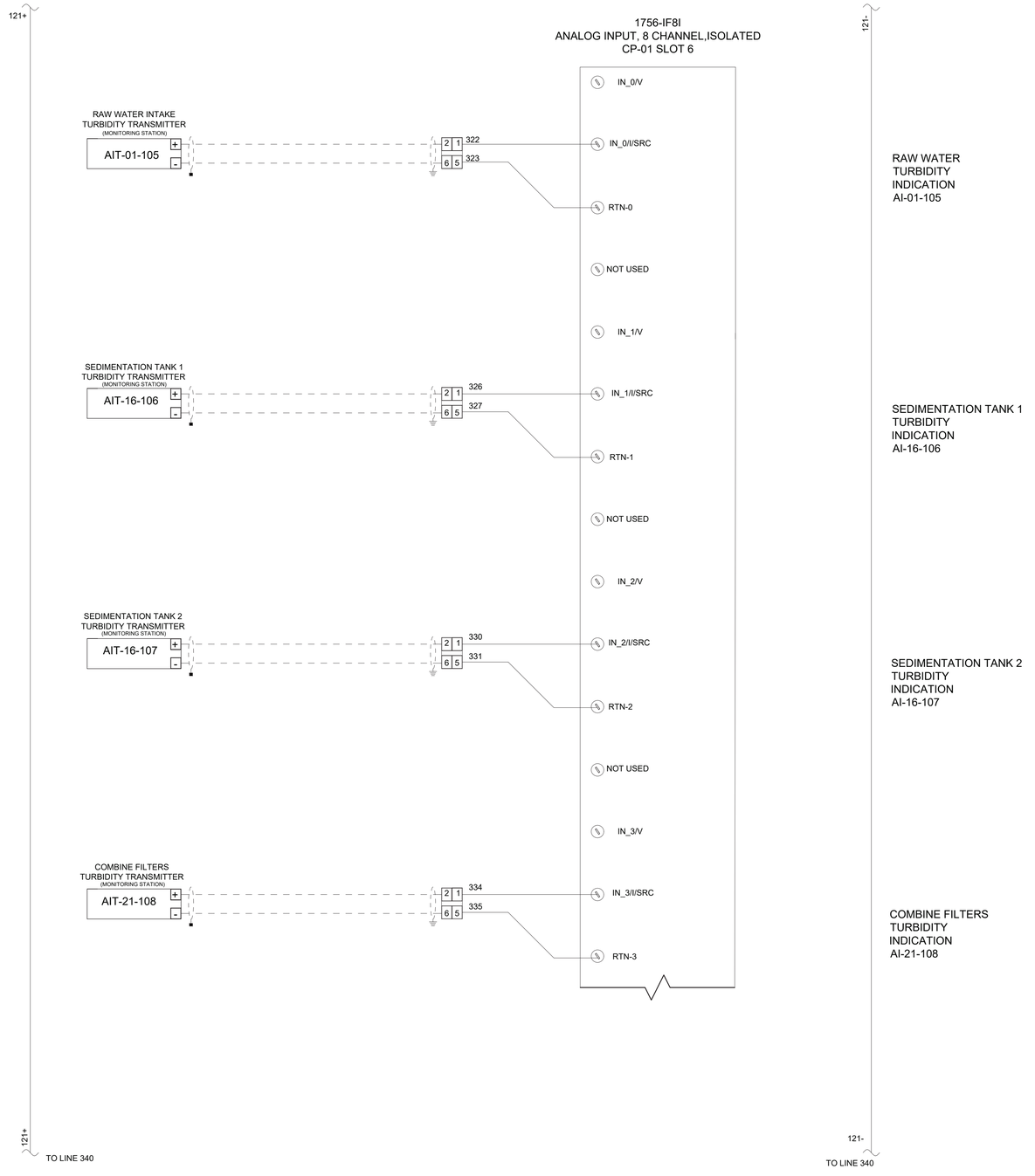
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 121 OF
DWG. NO. IC-31

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM







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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

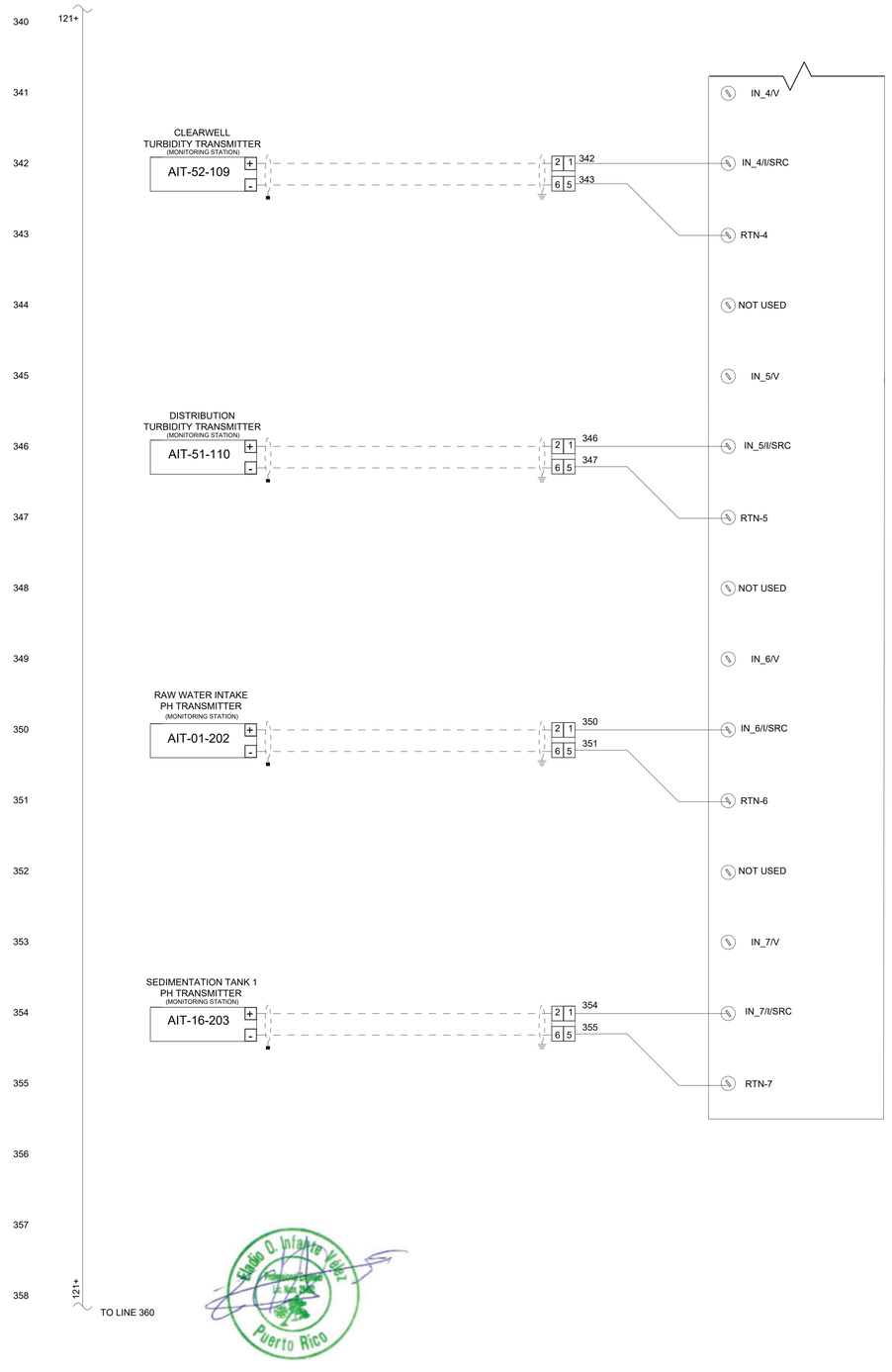
SHEET TITLE
CP-01 WIRING DIAGRAM DIGITAL OUTPUT AND ANALOG INPUT CARDS

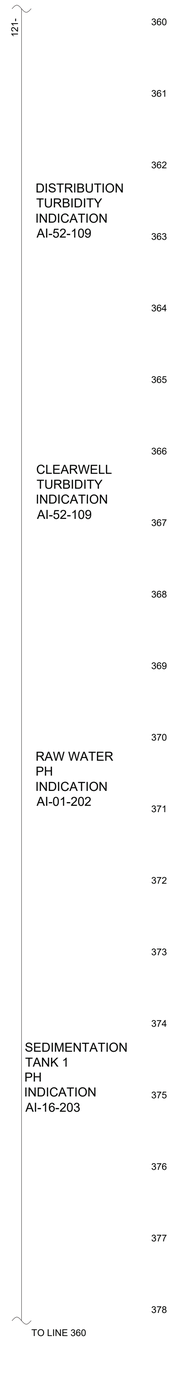
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

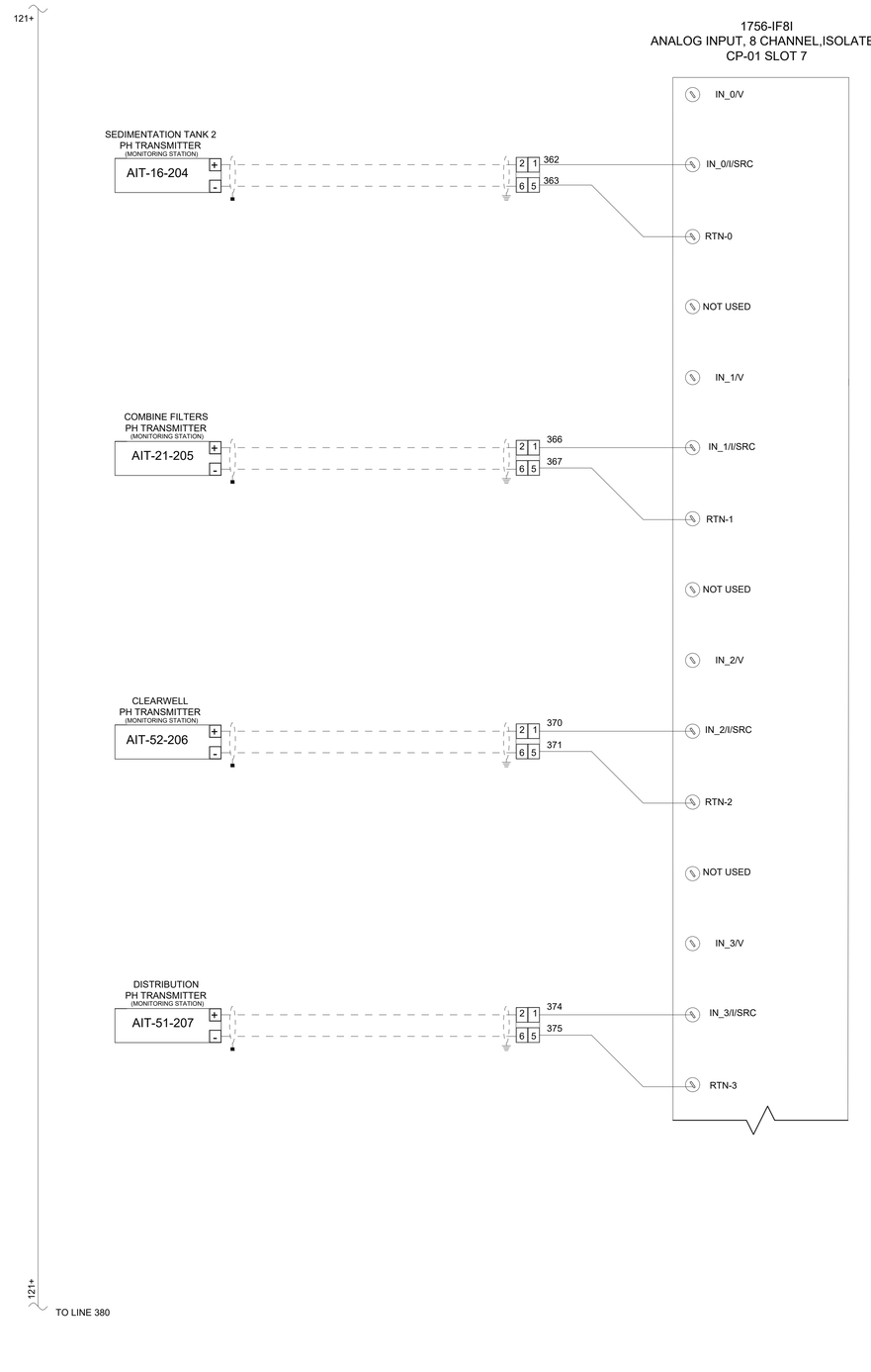
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

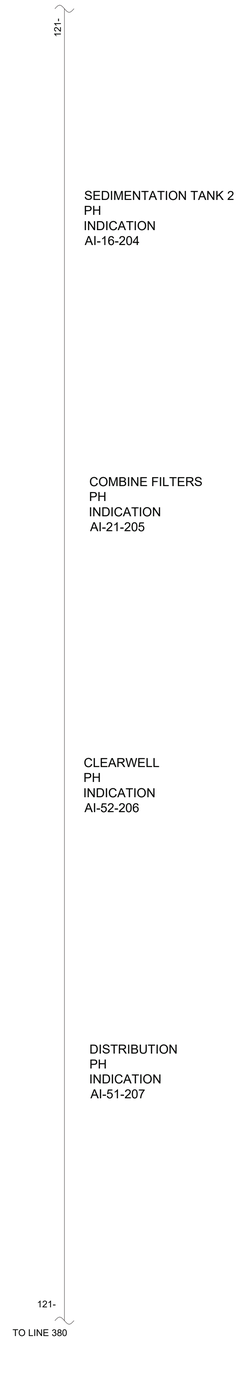
SHEET NO. 122 OF
DWG. NO. IC-32

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

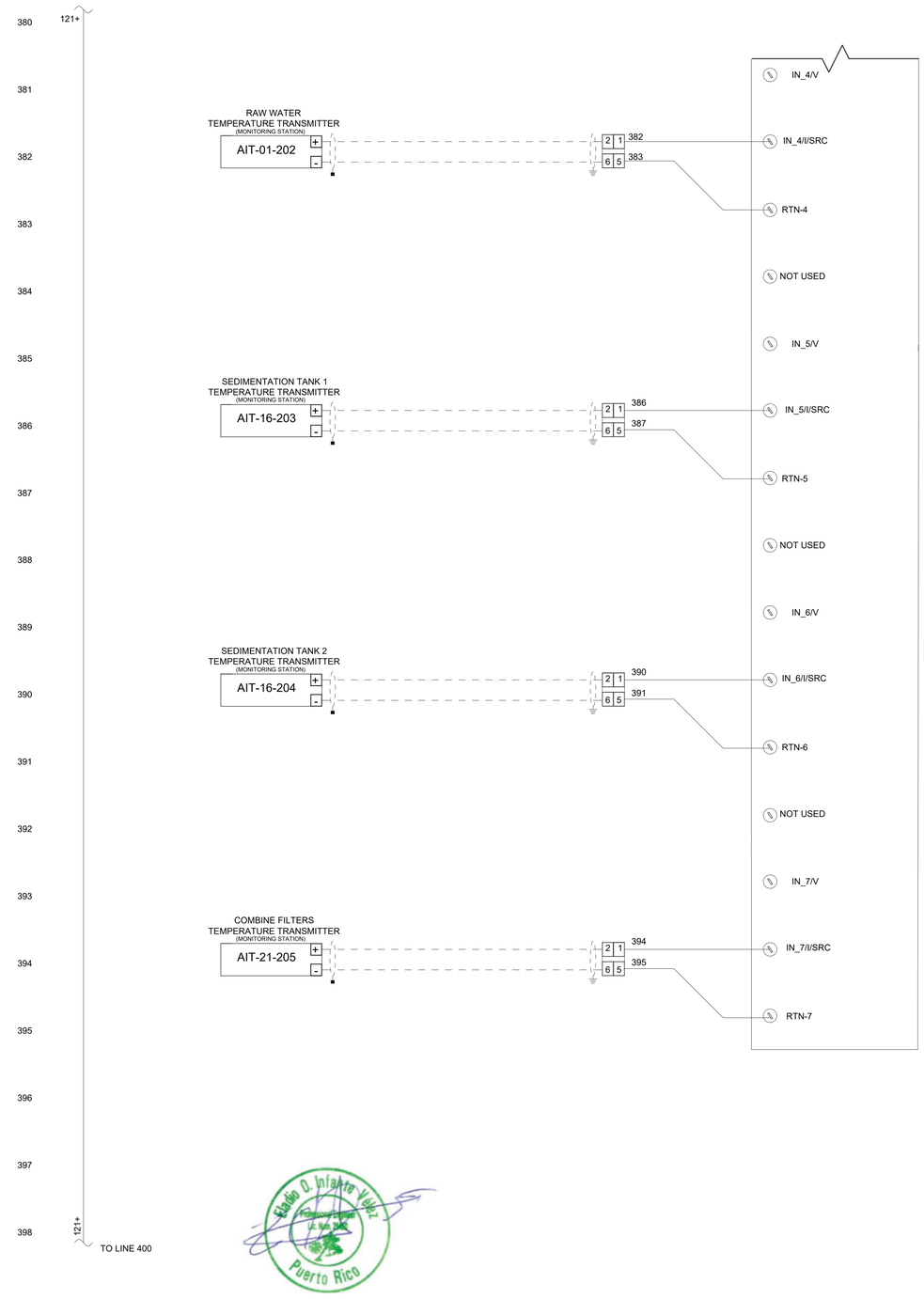
SHEET TITLE
CP-01 WIRING DIAGRAM ANALOG INPUT CARDS

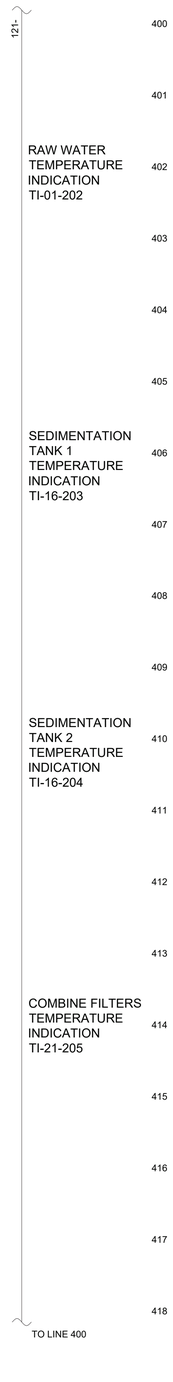
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

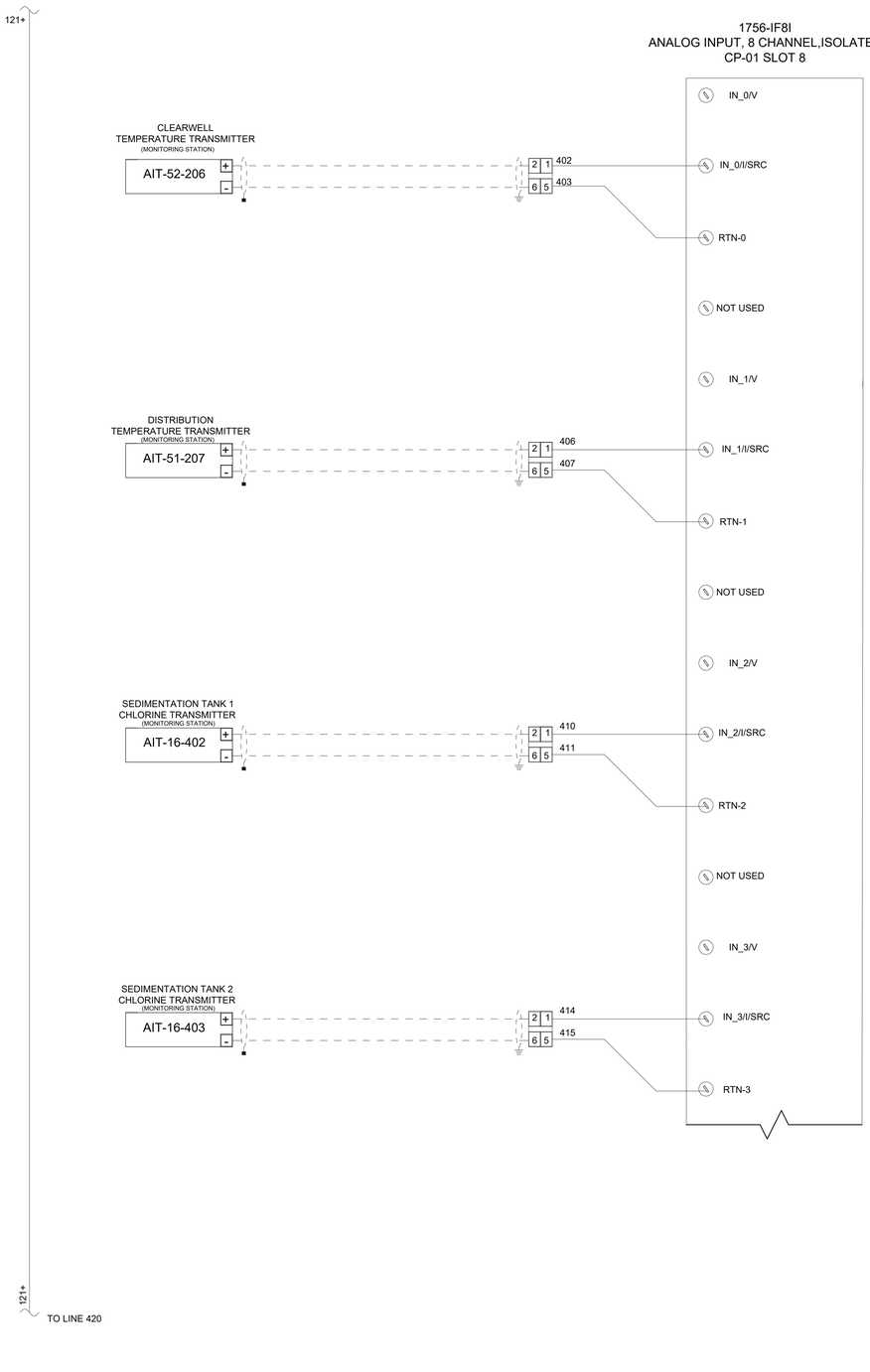
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

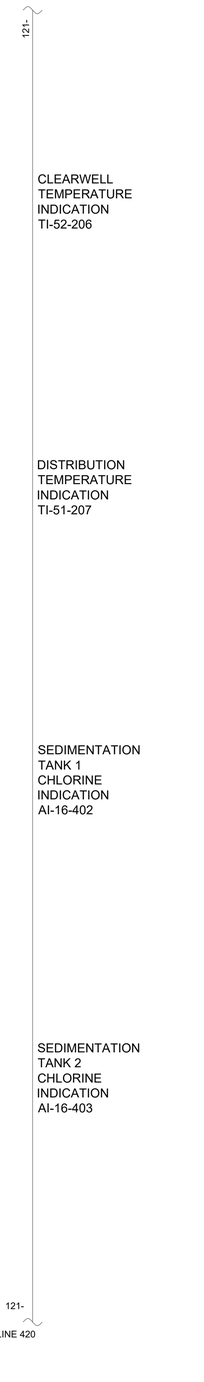
SHEET NO. 123 OF
DWG. NO. IC-33

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

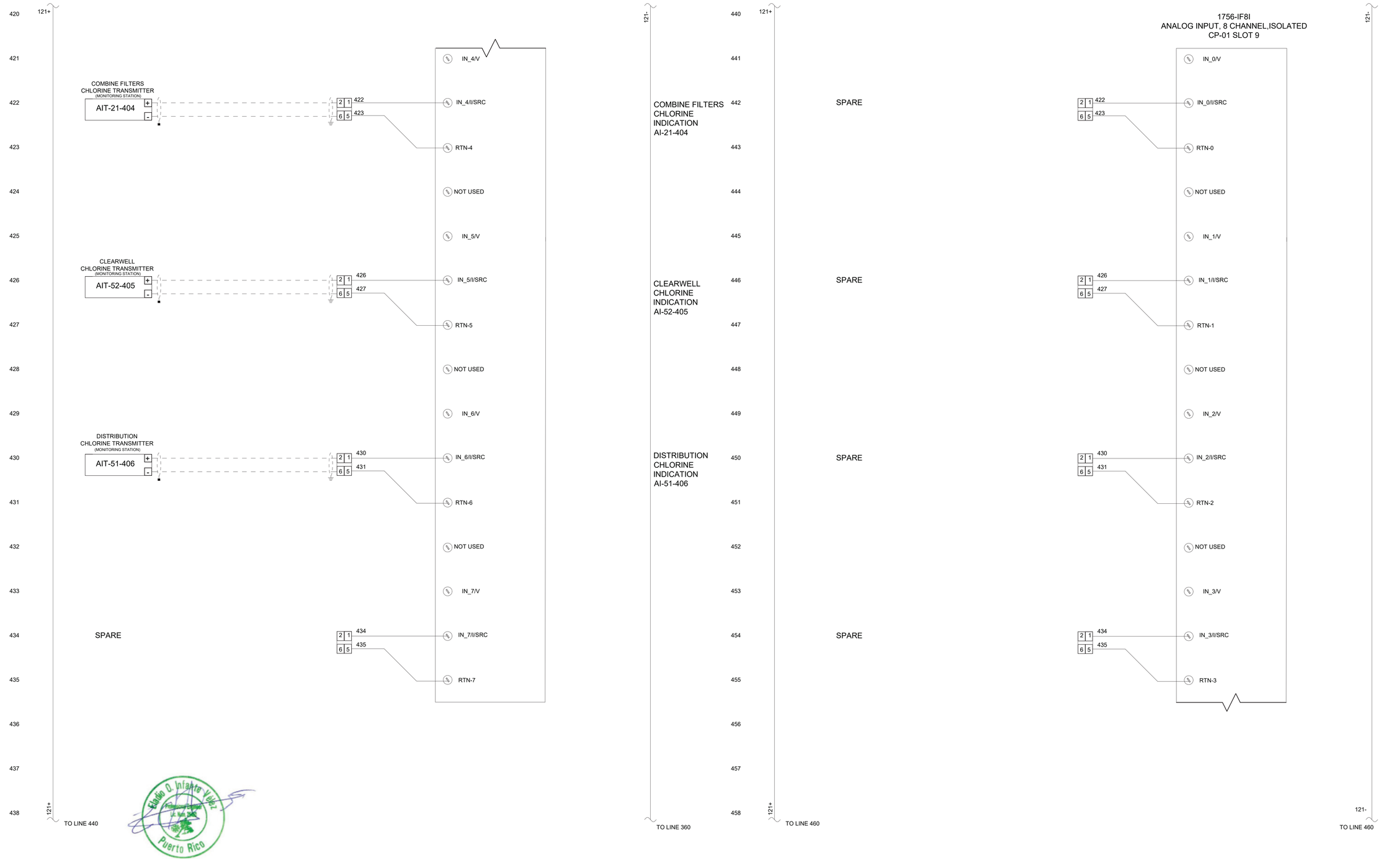
SHEET TITLE
CP-01 WIRING DIAGRAM ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 124 OF
DWG. NO. IC-34

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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DESIGNED BY: CAE
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APPR. BY:

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-01 WIRING DIAGRAM ANALOG INPUT CARDS
CONTINUED

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 125 OF
DWG. NO. IC-35

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

460 121+

461

462 SPARE

463

464

465

466 SPARE

467

468

469

470 SPARE

471

472

473

474 SPARE

475

476

477

478 121+ TO LINE 480

121-

IN_4/V

2 1 422 IN_4/I/SRC
6 5 423

RTN-4

NOT USED

IN_5/V

2 1 426 IN_5/I/SRC
6 5 427

RTN-5

NOT USED

IN_6/V

2 1 430 IN_6/I/SRC
6 5 431

RTN-6

NOT USED

IN_7/V

2 1 434 IN_7/I/SRC
6 5 435

RTN-7

121-

TO LINE 480

480 121+

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

1756-OF8I
ANALOG OUTPUT, 8 CHANNEL,ISOLATED
CP-01 SLOT 10

OUT_0/V	OUT_1/V
OUT_0/I	OUT_1/I
RTN-0	RTN-1
NOT USED	NOT USED
OUT_2/V	OUT_3/V
OUT_2/I	OUT_3/I
RTN-2	RTN-3
NOT USED	NOT USED
OUT_4/V	OUT_5/V
OUT_4/I	OUT_5/I
RTN-4	RTN-5
NOT USED	NOT USED
OUT_6/V	OUT_7/V
OUT_6/I	OUT_7/I
RTN-6	RTN-7
NOT USED	NOT USED
NOT USED	NOT USED
NOT USED	NOT USED

362 1 2
363 5 6

CHEMICAL FEED PUMP
SODIUM HYPOCHLORITE
FLASH MIX
PU-31-401

366 1 2
367 5 6

CHEMICAL FEED PUMP
SODIUM HYPOCHLORITE
FILTERS
PU-31-405

370 1 2
371 5 6

CHEMICAL FEED PUMP
COAGULANT
FLASH MIX
PU-32-402

370 1 2
371 5 6

SPARE

121-

SODIUM HYPOCHLO
FEED CONTROL
RAW WATER
SC-31-401
METERING PUMP

SODIUM HYPOCHLO
FEED CONTROL
FILTERS
SC-31-401
METERING PUMP

SODIUM HYPOCHLO
FEED CONTROL
FLASH MIX
SC-32-402
METERING PUMP

Eladio D. Infante Vélez
Professional Engineer
Lic. Núm. 24,...
Puerto Rico

NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY CAE
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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

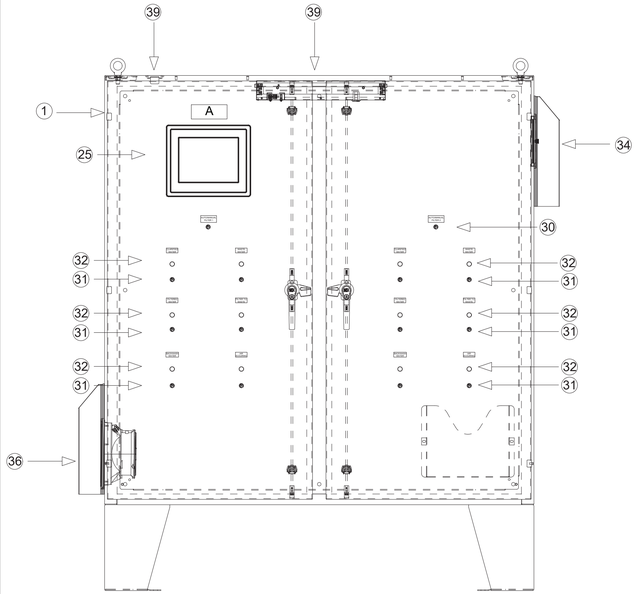
SHEET TITLE
CP-01 WIRING DIAGRAM ANALOG INPUT AND OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

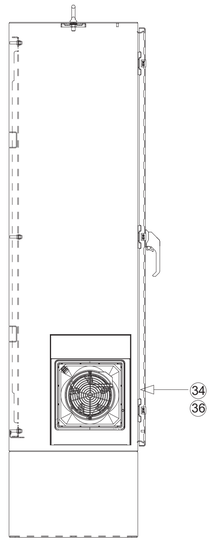
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 126 OF
DWG. NO. IC-36

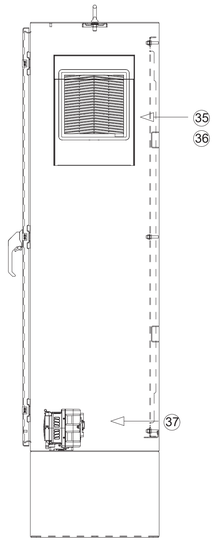
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



FRONT PANEL
NTS



SIDE PANEL - LEFT
NTS



SIDE PANEL - RIGHT
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.

2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.

3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.

4) ANALOG I/O LINES, DC POWER LINES FOR ANALOG CIRCUITS AND COMMUNICATIONS CABLE SHOULD BE PROPERLY SHIELDED AND ROUTED IN A RACEWAY SEPARATED FROM AC POWER LINES.

5) FOR POWER SUPPLIES AND I/O CIRCUITS, CONDUCTORS MUST BE RUN WITHOUT SPLICES FROM TERMINAL TO TERMINAL.

6) ALL CONDUCTORS AND CABLES MUST BE IDENTIFIED WITH A PERMANENT TAG IN ACCORDANCE WITH THE ELECTRICAL AND I/O WIRING LOOPS DEFINITIONS.

7) ALL TERMINALS OF THE TERMINAL BLOCKS MUST BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL TO CORRESPOND WITH THE IDENTIFICATION OF THE DRAWING.

8) THE FOLLOWING ARE THE MINIMUM AWG SIZES TO BE USED:
   - A. MAIN POWER CIRCUITS: NO. 12
   - B. BRANCH POWER CIRCUITS: NO.14
   - C. CONTROL CIRCUITS: NO.16
   - D. CURRENT LOOPS: NO.16
   - E. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - F. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL SINGLE CONDUCTORS MUST BE CODED AS FOLLOW:
   - A. BLACK - LINE, LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE.
   - B. RED - ALL CONTROL CIRCUITS
   - C. BLUE OR PURPLE - DC CONTROL CIRCUIT (POSITIVE)
   - D. WHITE - AC GROUNDED CIRCUITS (NEUTRAL)
   - E. GRAY - DC GROUNDED CIRCUIT CONDUCTOR
   - F. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - G. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL TERMINAL BLOCKS MUST BE RAISED FROM THE BACK PLATE FOR EASE OF WIRING.

10) TERMINAL JUMPERS MUST BE USED IN PLACE OF THE WIRED JUMPERS, WHERE SUCH JUMPERS ARE NECESSARY.

11) WIRING STANDARD AND CONVENTIONS SHOULD CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 300.

NOTES:

8) THE NAME PLATES WILL HAVE BLACK BACKGROUND WITH WHITE LETTERS.

9) PANEL CONTRACTOR SHALL IDENTIFY CORRESPONDING TAG NUMBER TO ALL TERMINAL BLOCKS AND WIRES.

10) PANEL CONTRACTOR WILL PROVIDE TAGS FOR ALL DEVICES INSIDE THE PANEL.

11) ALL PANEL ARRANGEMENTS DETAILS NEED TO BE COORDINATED WITH THE DESIGNATED ENGINEER BEFORE THE PANEL CONSTRUCTION HAS BEGUN.

12) USE ONLY CONDUITS HUBS WHICH ARE COMPATIBLE WITH THE NEMA RATING OF SUBJECTED PANEL AND ITS LOCATION.

13) ALL CONDUIT TO BE INSTALLED AT BOTTOM OF THE PANEL.

14) TO BE INSTALLED WITH VIBRATION ISOLATIONS.

15) INSTRUMENT CONTRACTOR TO PROVIDE ALL REQUIRED ETHERNET PATCHCORDS (FIBER/COPPER) AND SFP CONVERTERS.

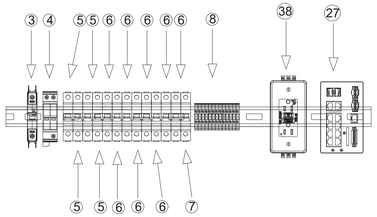
16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

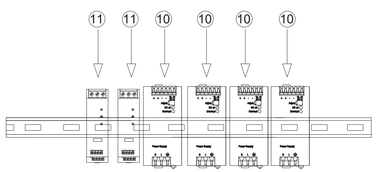
ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	STAINLESS STEEL EL FS ENCLOSURE 60" H X 48" W X 12"D	SAGINAW CONTROL & ENGINEER	SCE-60EL4812SSLPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-60P48	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 30A	ALLEN-BRADLEY	1489-M1C300	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	4	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100	PANEL VENDOR
6	8	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
7	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C010	PANEL VENDOR
8	89	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
9	–	–	–	–	–
10	4	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/20A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/20	PANEL VENDOR
11	2	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
12	18	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
13	2	COMPACTLOGIX 5380 CONTROLLER, 2MB, 16 I/OS, 8 AXIS, 40 NODES, STANDARD -CC	ALLEN-BRADLEY	5069-L320ERMK	PANEL VENDOR
14	6	COMPACT I/O 16 CHANNEL 24 VDC SINK INPUT MODULE	ALLEN-BRADLEY	5069-IB16K	PANEL VENDOR
15	2	COMPACT I/O 16 CHANNEL 24 VDC SOURCE OUTPUT MODULE	ALLEN-BRADLEY	5069-OB16K	PANEL VENDOR
16	6	COMPACT I/O 4 CHANNEL UNIVERSAL VOLTAGE/CURRENT/RTD/TC ANALOG INPUT MODULE	ALLEN-BRADLEY	5069-IY4K	PANEL VENDOR
17	2	COMPACT I/O 4 CHANNEL VOLTAGE/CURRENT ANALOG OUTPUT MODULE	ALLEN-BRADLEY	5069-OF4K	PANEL VENDOR
18	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F2X3LG6	PANEL VENDOR
19	96	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
20	32	RELAY MODULE	PHOENIX CONTACT	2967060	PANEL VENDOR
21	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
22	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C2LG6	PANEL VENDOR
23	32	PREASSEMBLED RELAY MODULE WITH PUSH-IN CONNECTION 3 CHANGEOVER CONTACTS	PHOENIX CONTACT	RIF-3-RPT-LDP-24DC/3X21	PANEL VENDOR
24	32	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
25	1	PANEL VIEW 5510, 10 IN, 4.3 DISPLAY, TOUCH, DC, CC	ALLEN-BRADLEY	2715P-T10CD-K	PANEL VENDOR
26	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
27	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
28	–	–	–	–	–
29	–	–	–	–	–
30	2	POSITION SELECTOR SWITCH, BLACK,MAINTAINED, 1 NO AND 1 NC	SCHNEIDER	XB4BD25	PANEL VENDOR
31	12	22MM, 2 POSITION SELECTOR SWITCH, BLACK, MAINTAINED, 1 NO.	SCHNEIDER	XB4BD21	PANEL VENDOR
32	12	PILOT LIGHT, XB4,METAL, GREEN, 22MM, UNIVERSAL LED, PLAIN LENS, 24V AC DC	SCHNEIDER	XB4BVB3	PANEL VENDOR
33	–	–	–	–	–
34	1	FILTER FAN	SAGINAW CONTROL & ENGINEER	SCE-N12FA66	PANEL VENDOR
35	1	FILTER & GRILLE ASSY	SAGINAW CONTROL & ENGINEER	SCE-N12FGA66	PANEL VENDOR
36	2	PROTECTION HOOD, HOSE-PROOF	SAGINAW CONTROL & ENGINEER	SCE-RH6N4XSS	PANEL VENDOR
37	1	THERMOELECTRIC DEHUMIDIFIER	SAGINAW CONTROL & ENGINEER	SCE-TEDH24VDC	PANEL VENDOR
38	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
39	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR
40	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	CONTROL PANEL FILTER CP-F-1/2
B	–	–	–	–
C	1/8"	2" X 1"	CIRCUIT BREAKER	CB1
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKER	CB2 – CB12
F	1/8"	2" X 1"	TBAC-N	–
G	1/8"	2" X 1"	RECEPTACLE	RCP-147
H	1/8"	2" X 1"	NETWORK SWITCH	NS-185
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	REDUNDANCY MODULE	RM-141
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-128
N	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-134
O	1/8"	2" X 1"	PROGRAMMABLE LOGIC CONTROLLER	PLC-180
P	1/8"	2" X 1"	PROGRAMMABLE LOGIC CONTROLLER	PLC-440
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	–
S	1/8"	2" X 1"	TBDI	–
T	1/8"	2" X 1"	TBAI	–
U	1/8"	2" X 1"	TBAO	–
V	1/8"	2" X 1"	TBDO	–
W	1/8"	2" X 1"	CONTROL RELAYS	–



AC- POWER TERMINAL
NTS



DC POWER TERMINAL
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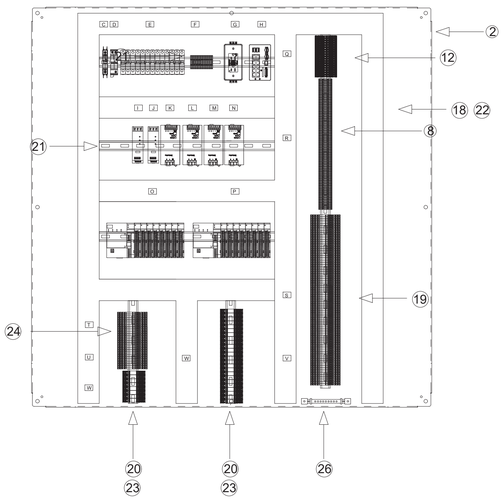
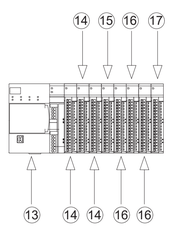
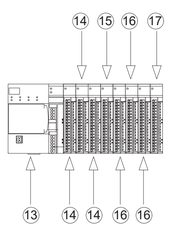


BACK PANEL
NTS



PLC CP-F-01
NTS



PLC CP-F-02
NTS



NO.	DATE	REVISION	BY	CK.	APPR.

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CHECKED BY
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Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

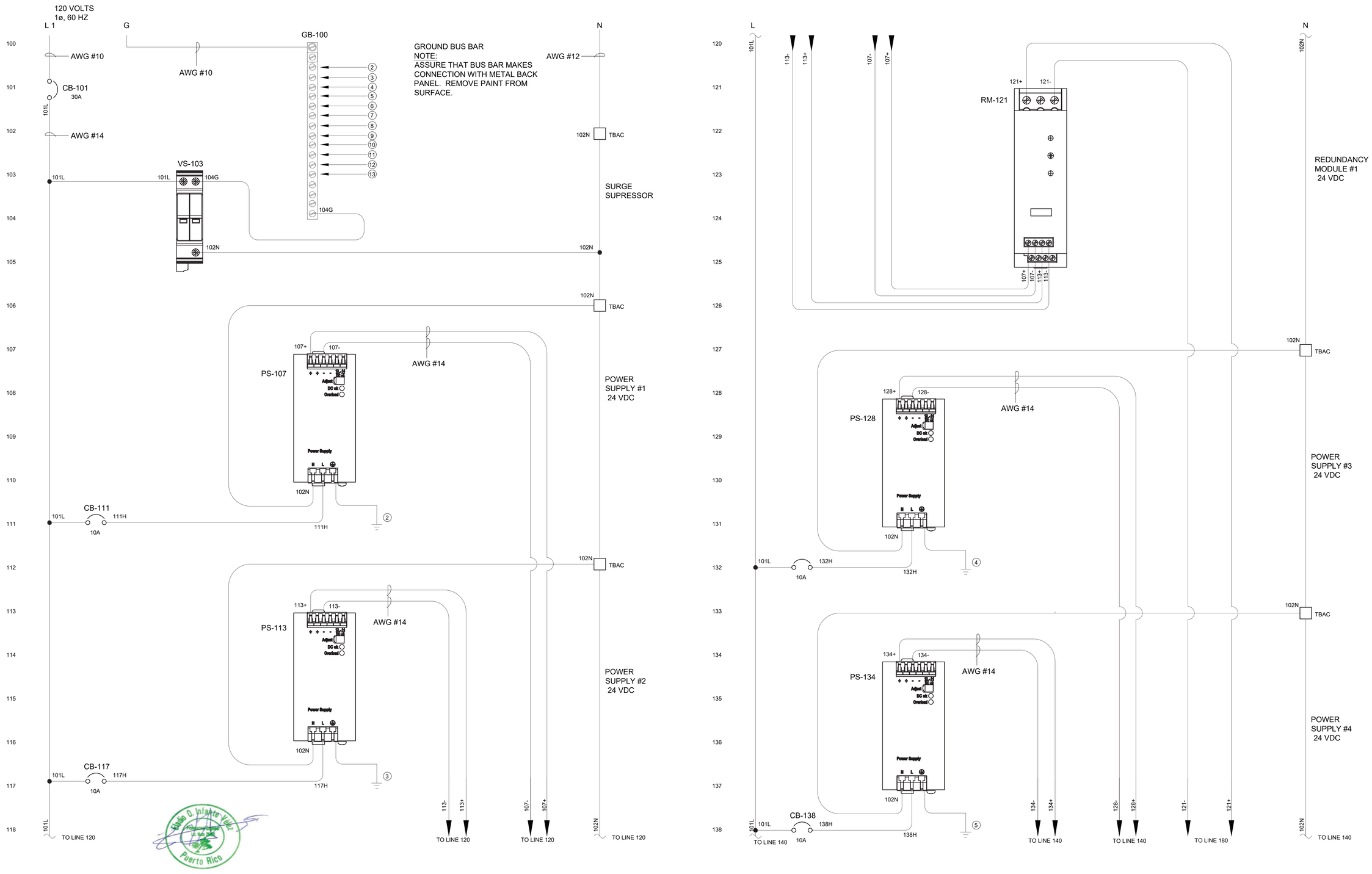
SHEET TITLE
CP-F-1/2 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 127 OF
DWG. NO. IC-37

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY CAE
CHECKED BY
APPR. BY

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

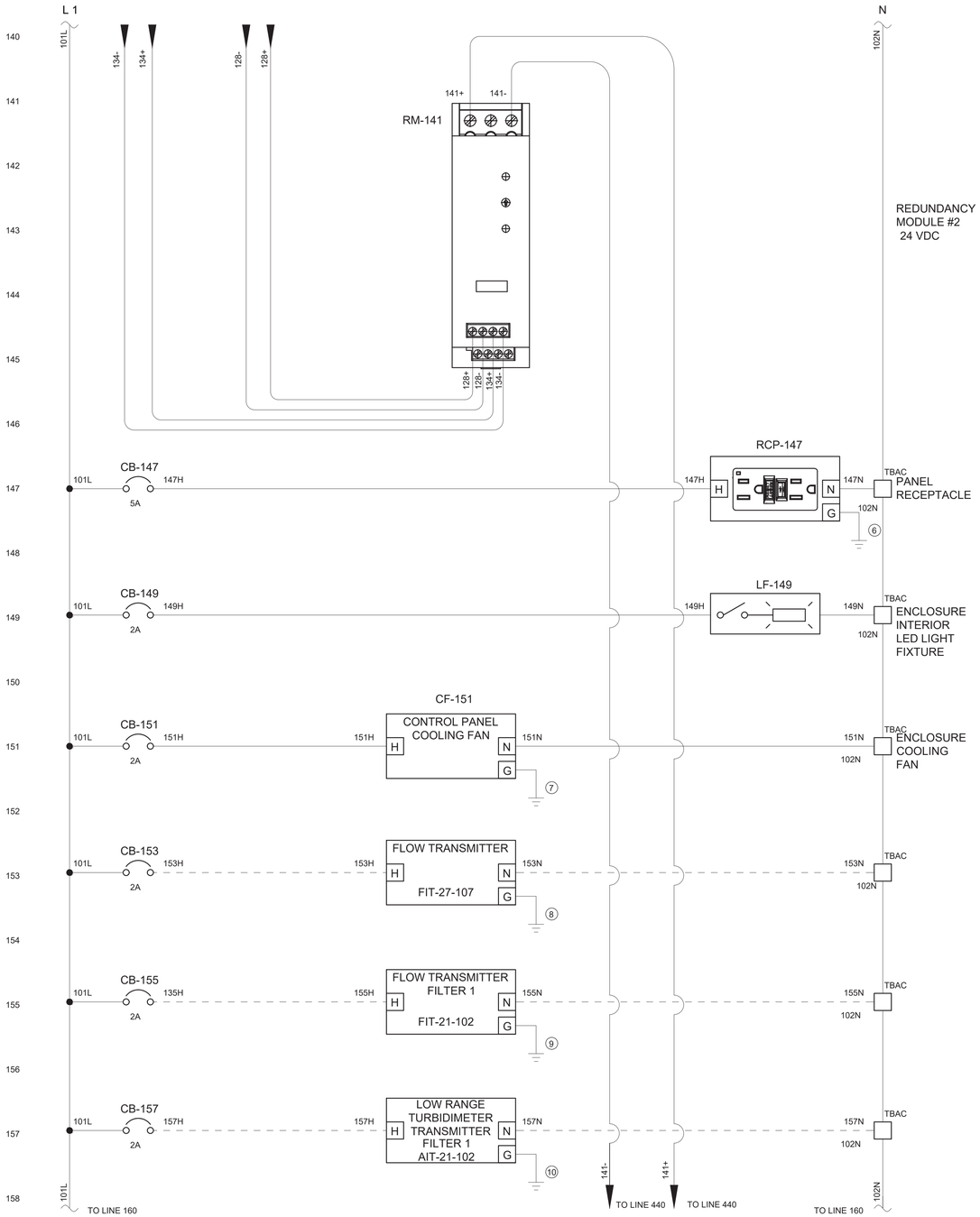
SHEET TITLE
CP-F-1/2 CONTROL PANEL POWER DISTRIBUTION

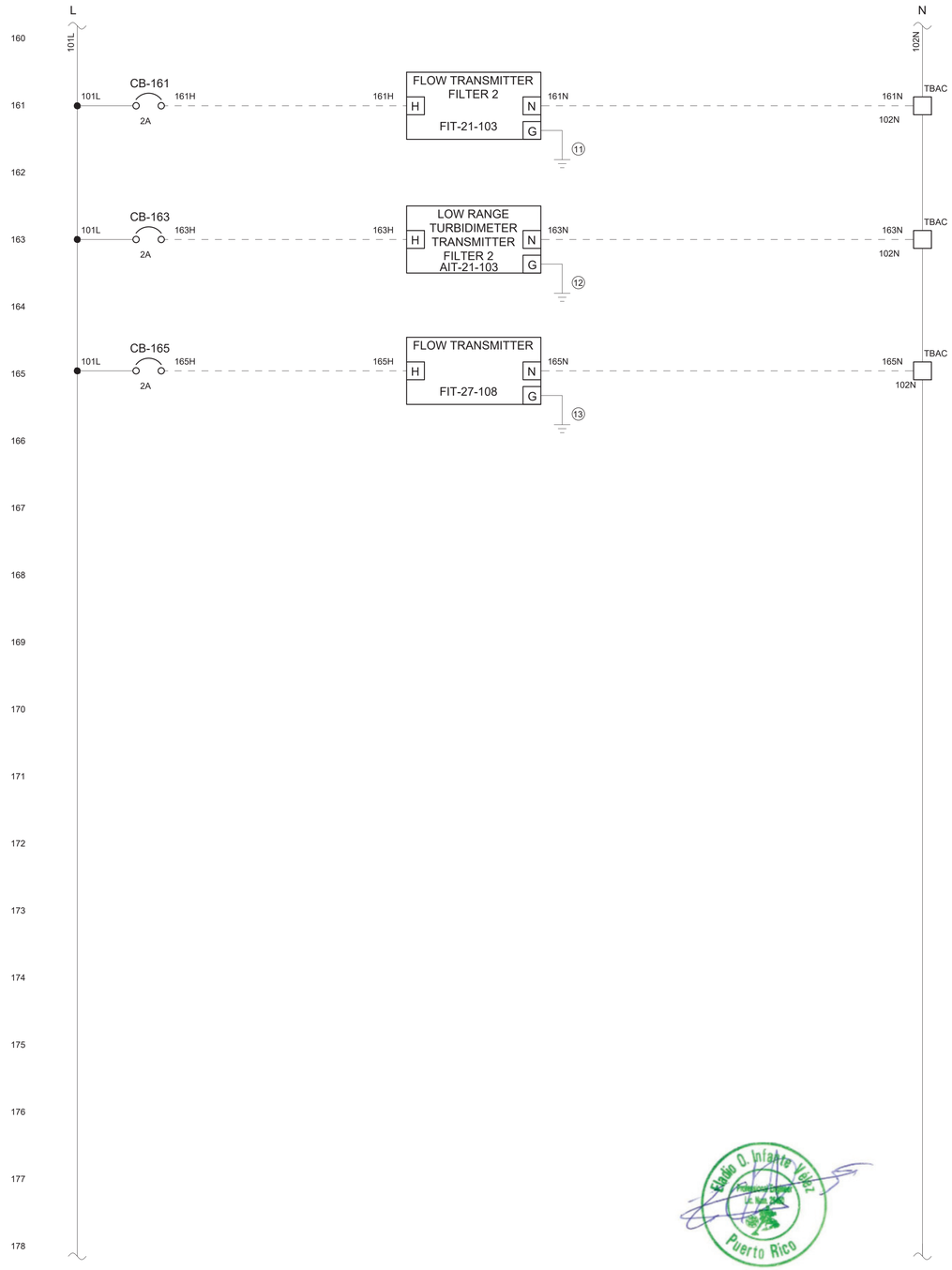
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 128 OF
DWG. NO. IC-38

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

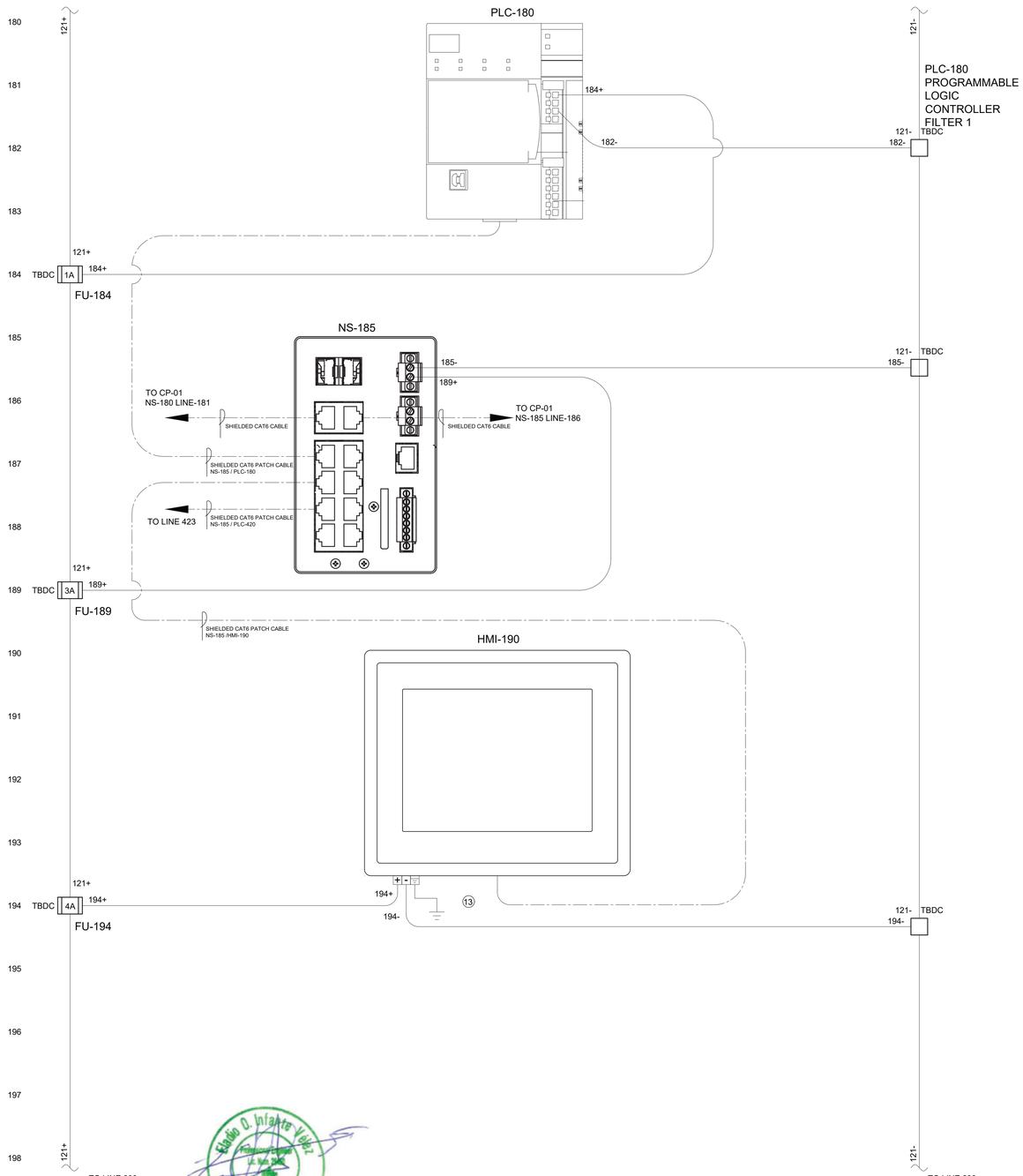
SHEET TITLE
CP-F-1/2 CONTROL PANEL POWER DISTRIBUTION CONTINUED

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 129 OF
DWG. NO. IC-39

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

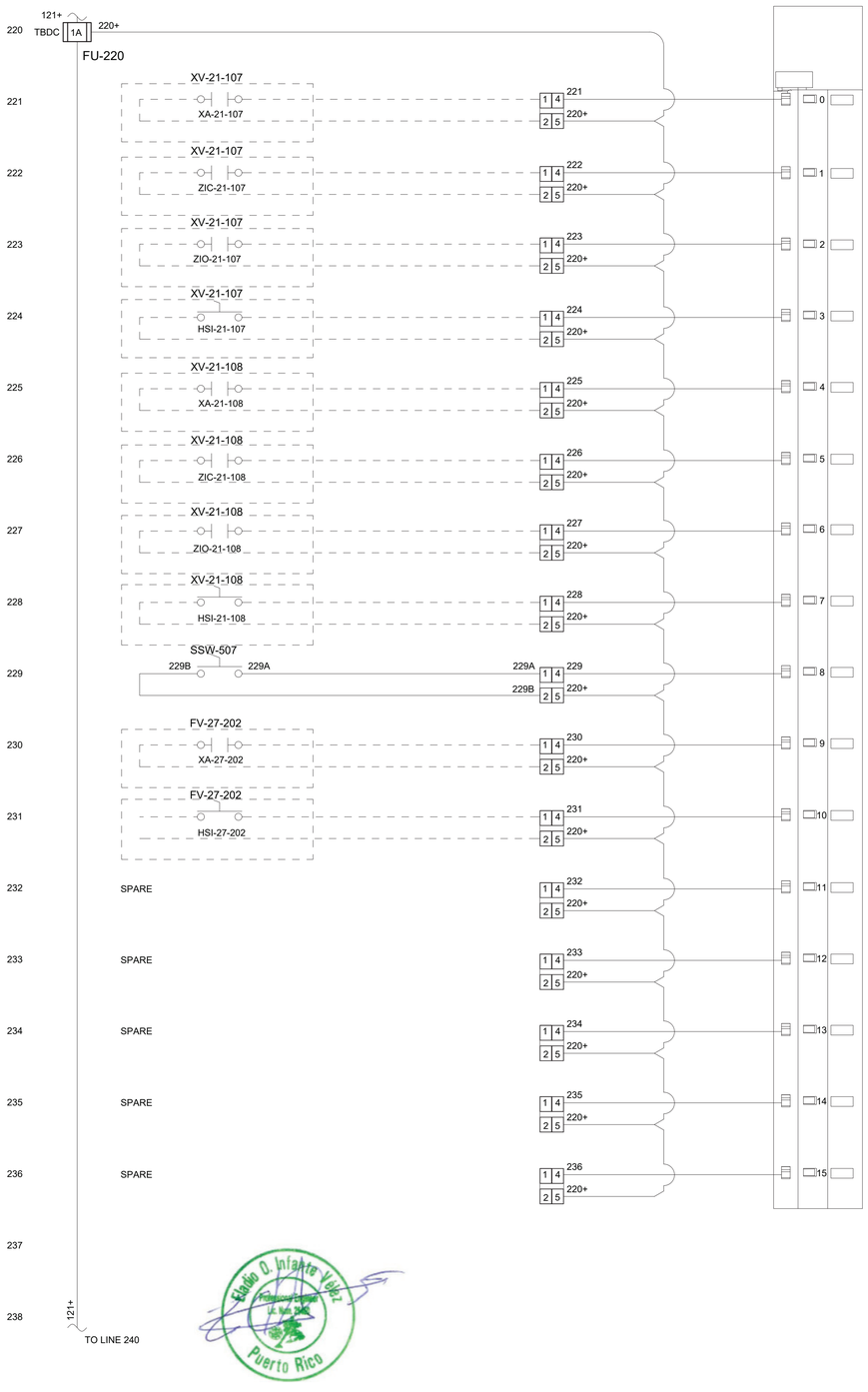
CP-F-1 MAIN WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

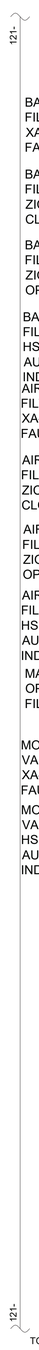
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 130 OF
DWG. NO. IC-40

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



5069-IB16K DIGITAL INPUT MODULE 2



BACKWASH VALVE FILTER 1 XA-21-107 FAULT INDICATION

BACKWASH VALVE FILTER 1 ZIC-21-107 CLOSE INDICATION

BACKWASH VALVE FILTER 1 ZIO-21-107 OPEN INDICATION

BACKWASH VALVE FILTER 1 HSI-21-107 AUTO/MANUAL INDICATION

AIR WASH VALVE FILTER 1 XA-21-108 FAULT INDICATION

AIR WASH VALVE FILTER 1 ZIC-21-108 CLOSE INDICATION

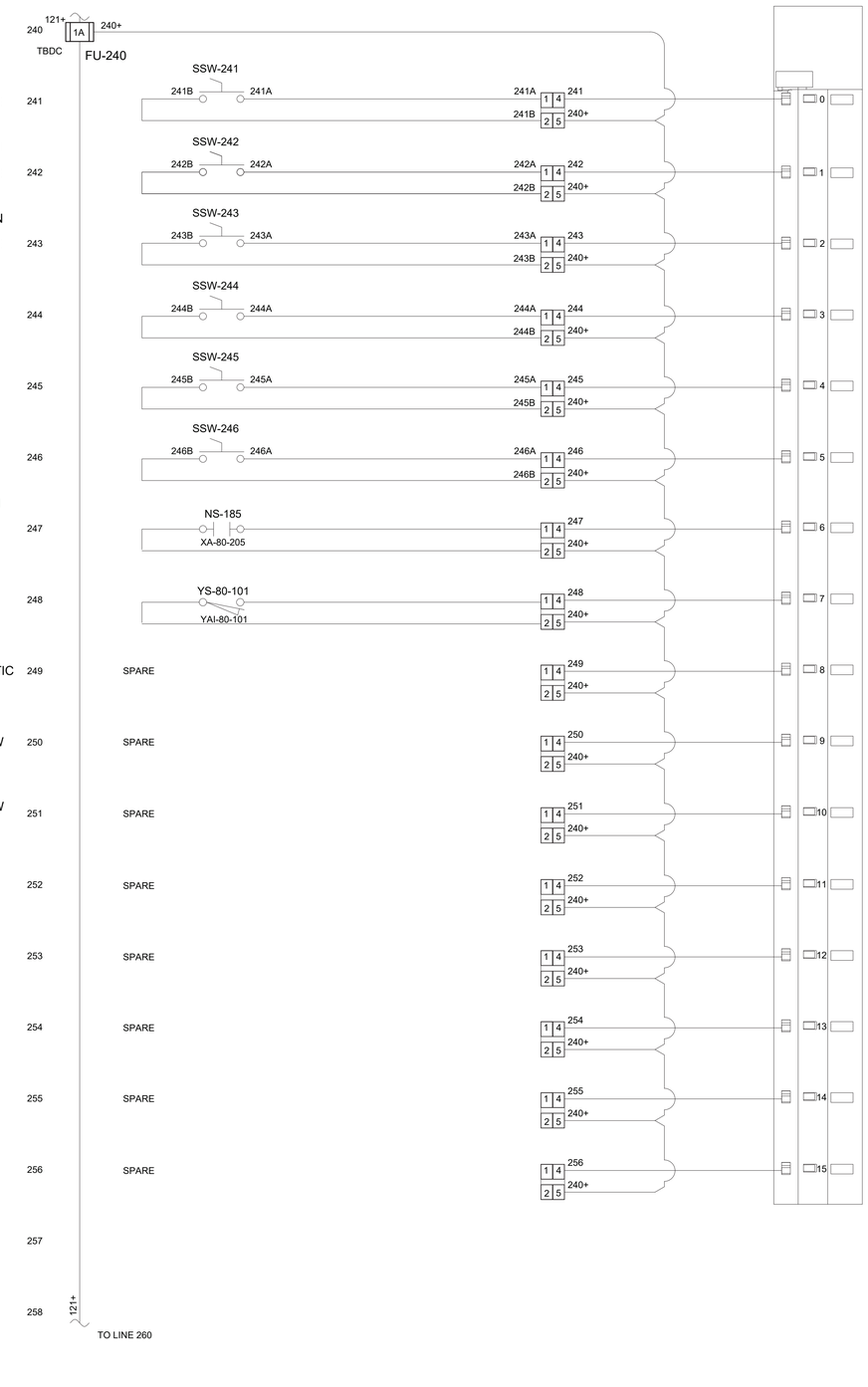
AIR WASH VALVE FILTER 1 ZIO-21-108 OPEN INDICATION

AIR WASH VALVE FILTER 1 HSI-21-108 AUTO/MANUAL INDICATION

MANUAL/AUTOMATIC OPERATION FILTER 1

MODULATING FLOW VALVE XA-27-202 FAULT INDICATION

MODULATING FLOW VALVE HSI-27-202 AUTO/MANUAL INDICATION



5069-IB16K DIGITAL INPUT MODULE 3



INFLUENT VALVE FILTER 1 XV-21-103 MANUAL OPEN/CLOSE

WASTE WATER VALVE FILTER 1 XV-21-104 MANUAL OPEN/CLOSE

FILTERED WATER VALVE FILTER 1 XV-21-105 MANUAL OPEN/CLOSE

FILTER TO WASTE VALVE FILTER 1 XV-21-106 MANUAL OPEN/CLOSE

BACKWASH WATER VALV FILTER 1 XV-21-107 MANUAL OPEN/CLOSE

AIR SCOUR VALVE FILTER 1 XV-21-108 MANUAL OPEN/CLOSE

NETWORK SWITCH NS-185 FAULT INDICATION

CONTROL PANEL ENCLOSURE CP-F-1/2 INTRUSION INDICATION

NO	DATE	REVISION	BY	CK.	APPR.

DRAWN BY: CAE
DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

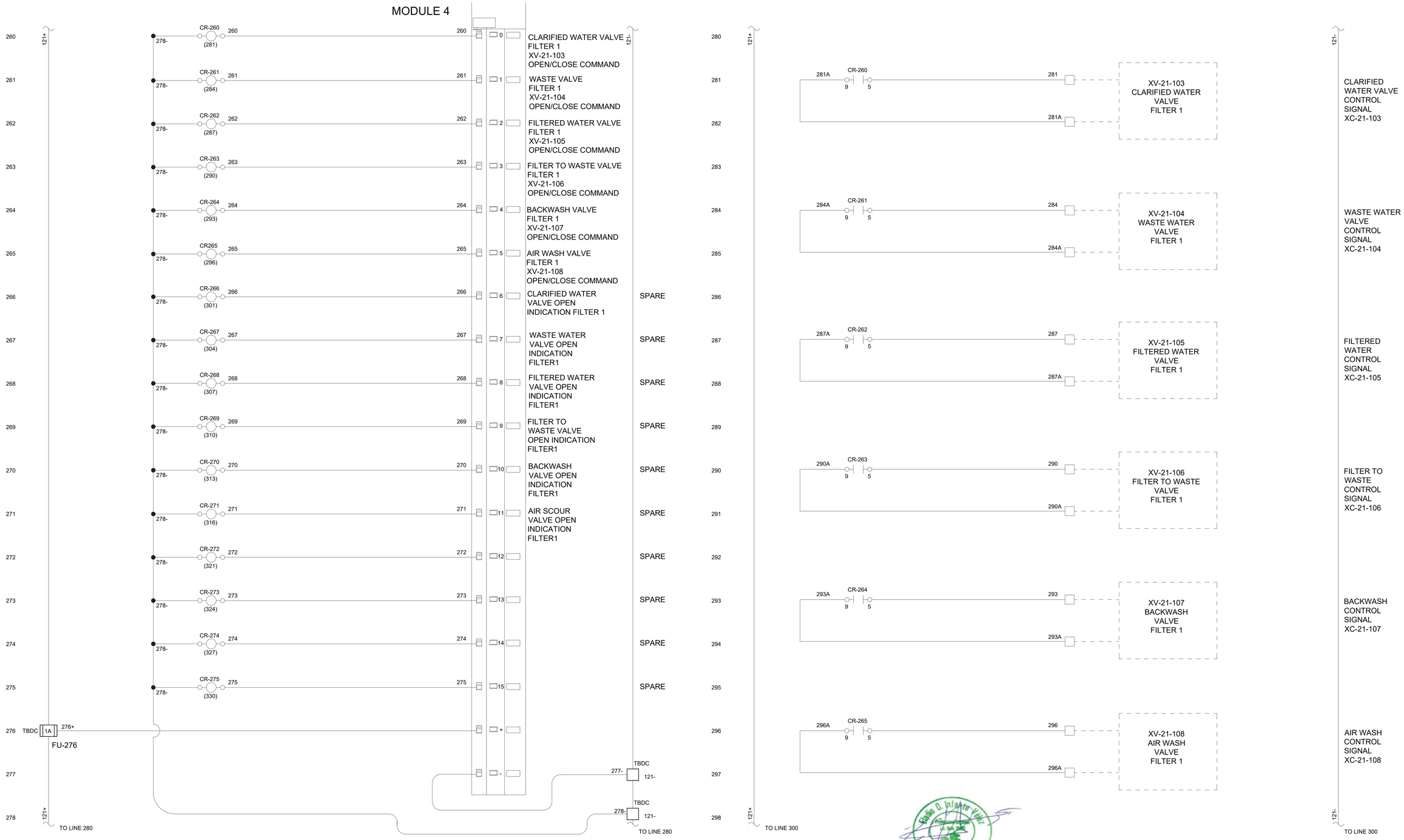
SHEET TITLE: CP-F-1 WIRING DIAGRAM DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 131 OF
DWG. NO. IC-41

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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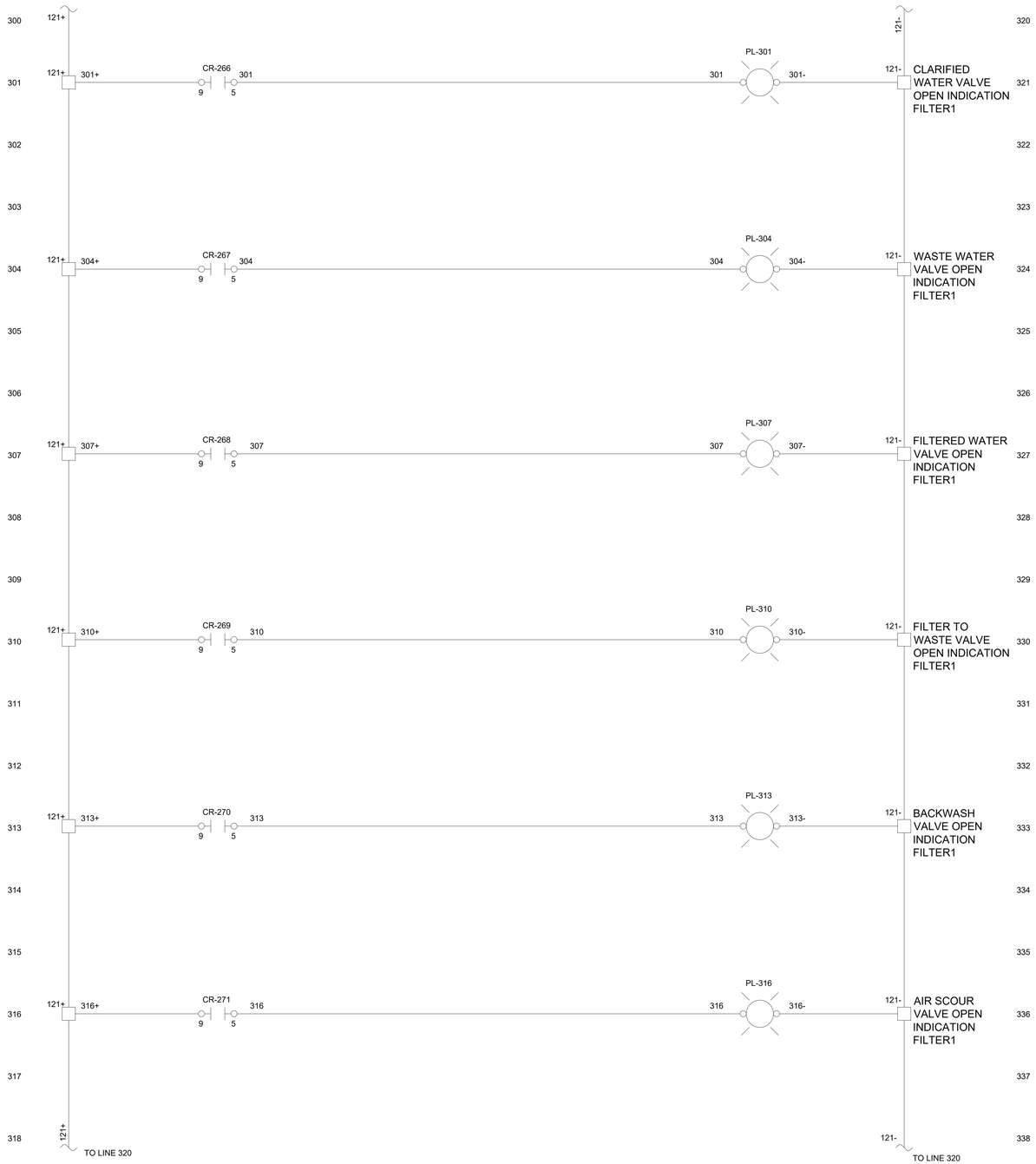
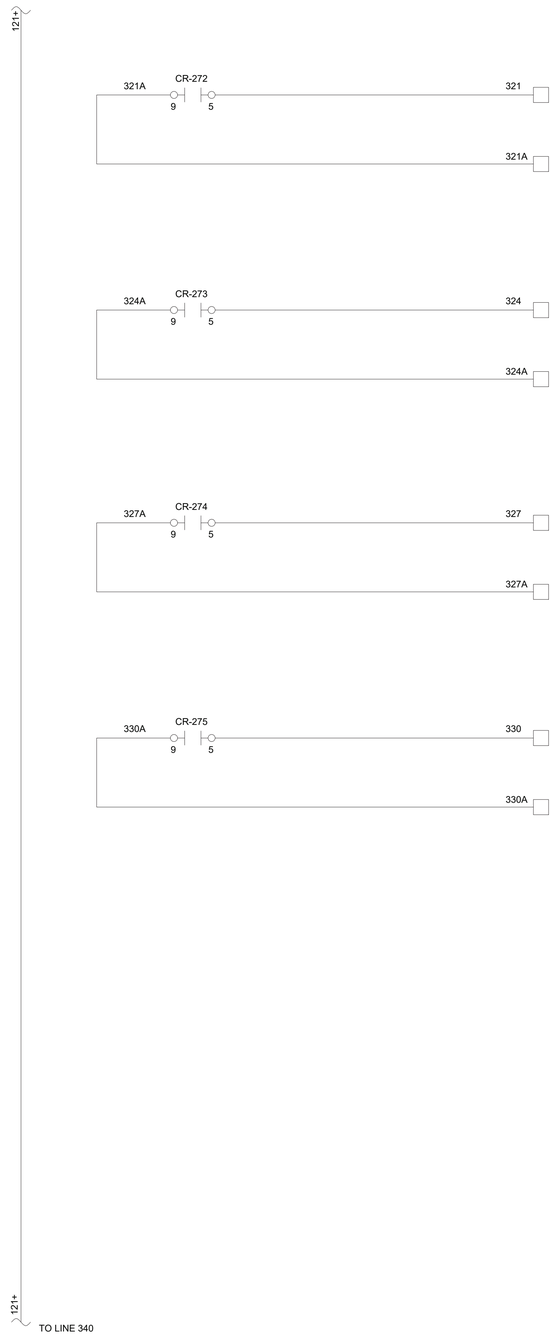
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-1 WIRING DIAGRAM DIGITAL OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 132 OF
DWG. NO. IC-42
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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Water | Wastewater | Stormwater
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

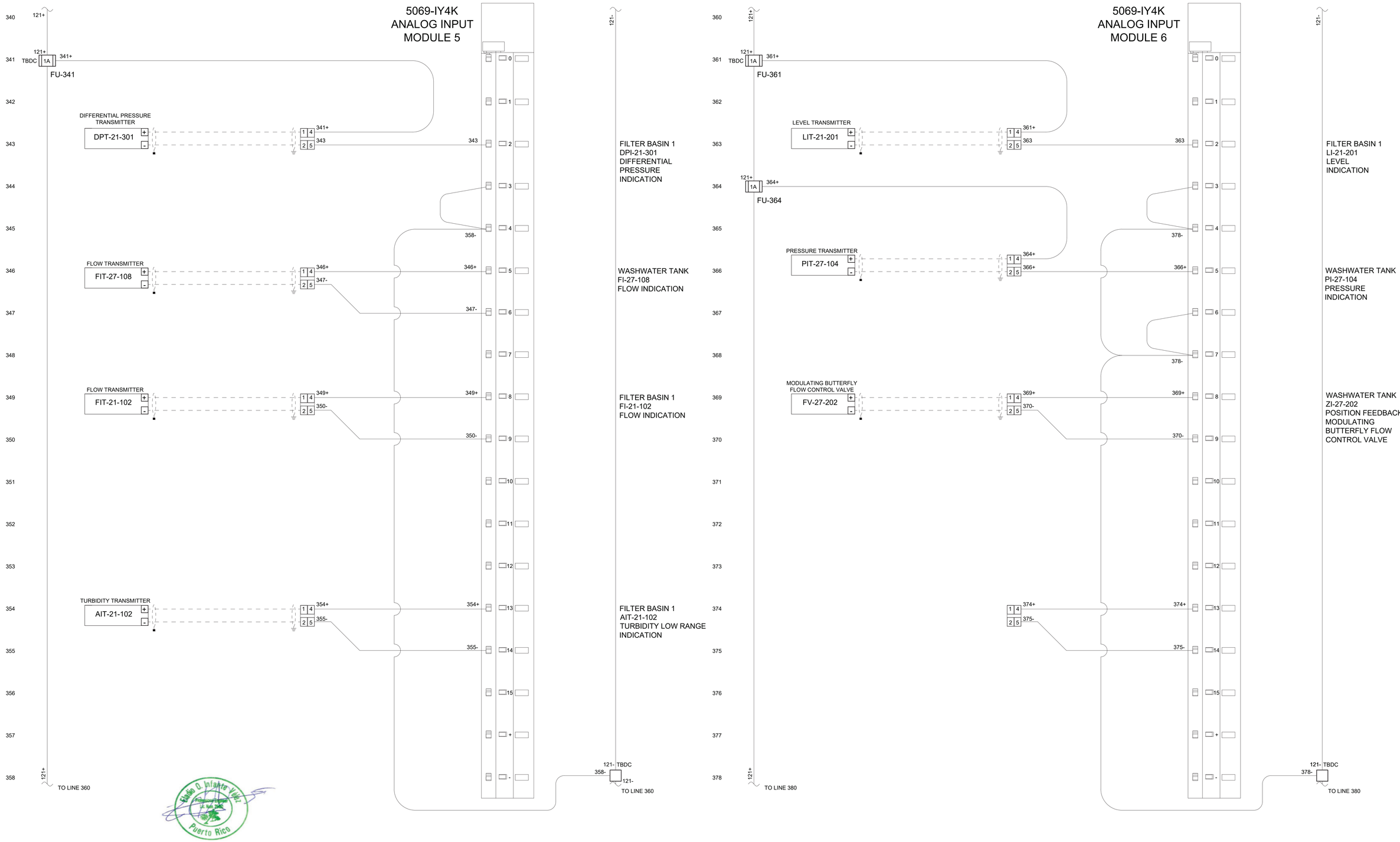
SHEET TITLE
CP-F-1 WIRING DIAGRAM DIGITAL OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 133 OF
DWG. NO. IC-43

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-1 WIRING DIAGRAM ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 134 OF
DWG. NO. IC-44
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-IY4K ANALOG INPUT MODULE 7

380 121+

381

382

383 SPARE

384

385

386 SPARE

387

388

389 SPARE

390

391

392

393

394 SPARE

395

396

397

398 121+ TO LINE 400

1 4 383+ — 383+ 2
2 5 384- — 384- 3

1 4 386+ — 386+ 5
2 5 387- — 387- 6

1 4 389+ — 389+ 8
2 5 390- — 390- 9

1 4 394+ — 394+ 13
2 5 395- — 395- 14

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 + -

121- TO LINE400

400 121+

401

402

403 SPARE

404

405 SPARE

406

407 SPARE

408

409

410

411

412

413

414

415

416

417

418

MODULATING BUTTERFLY FLOW CONTROL VALVE
FV-27-202 (+ / -)

1 4 401+ — 401+ 0
2 5 402- — 402- 1

1 4 403+ — 403+ 2
2 5 404- — 404- 3

1 4 405+ — 405+ 4
2 5 406- — 406- 5

1 4 407+ — 407+ 6
2 5 408- — 408- 7

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 + -

5069-OF4K ANALOG OUTPUT MODULE 7

121-

WASHWATER TANK
FC-27-202
CONTROL POSITION, MODULATING BUTTERFLY FLOW CONTROL VALVE

Eladio O. Infante Vélez
Professional Engineer
Lic. No. 24,...
Puerto Rico

NO.	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY: CAE
CHECKED BY:
APPR. BY:

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

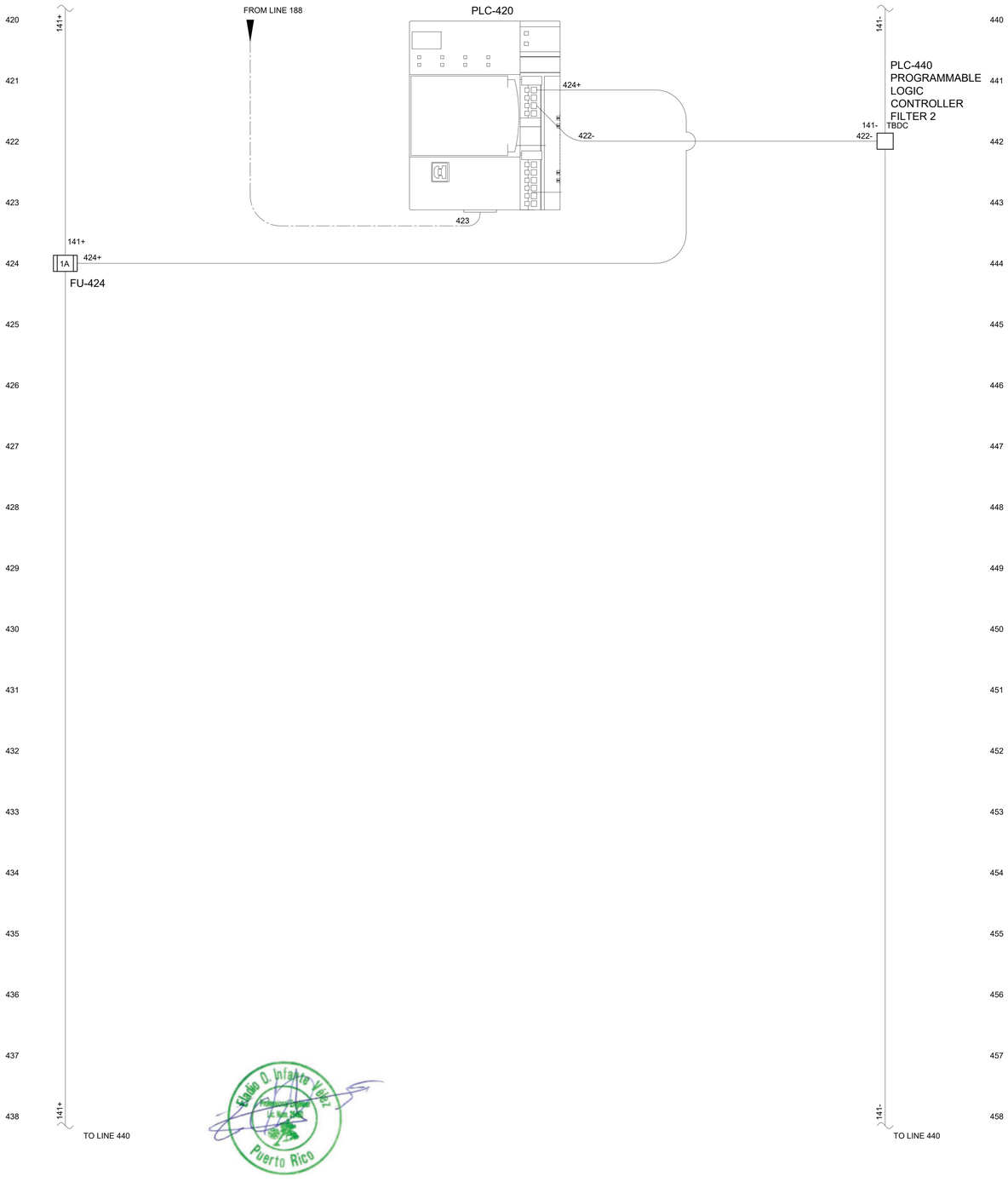
SHEET TITLE
CP-F-1 WIRING DIAGRAM ANALOG INPUT AND OUTPUT CARDS

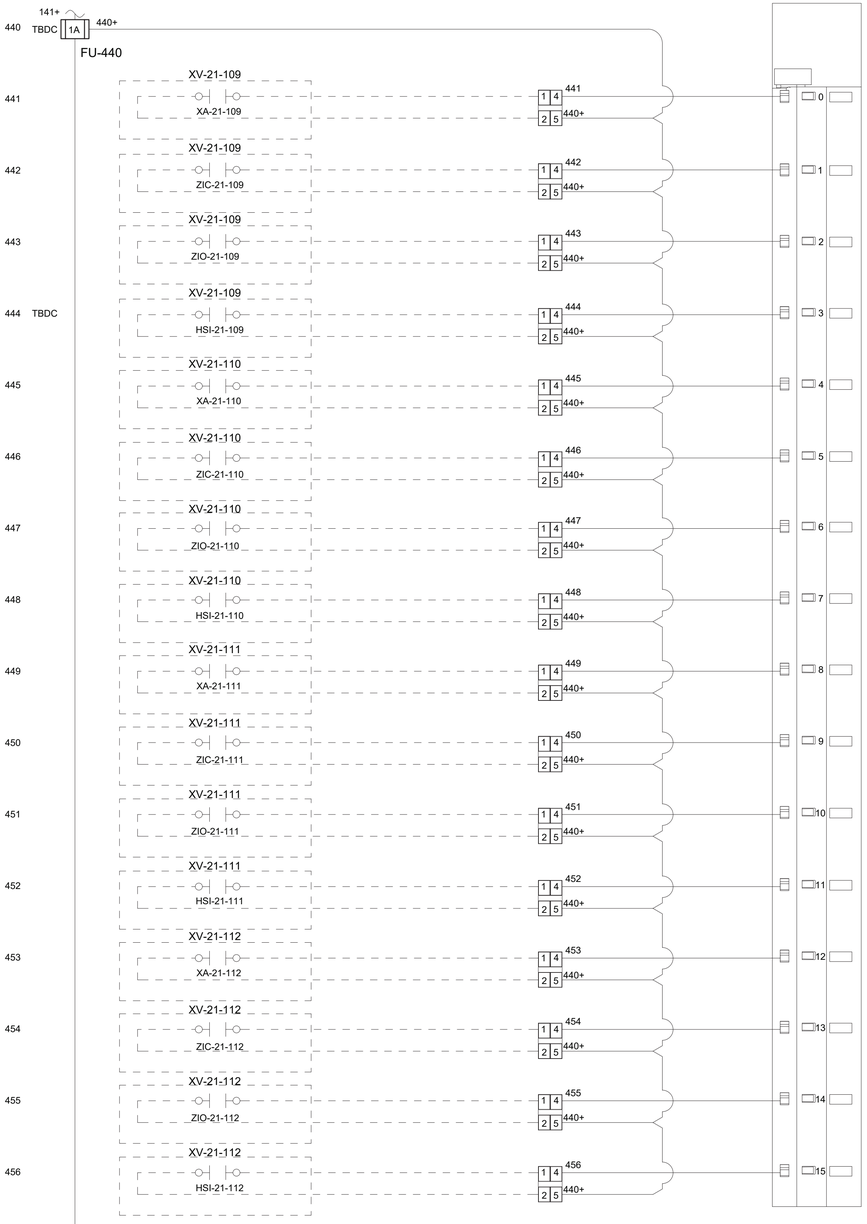
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 135 OF
DWG. NO. IC-45

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





5069-IB16K DIGITAL INPUT MODULE 1

141-

0 CLARIFIED WATER VALVE FILTER 2 XA-21-109 FAULT INDICATION

1 CLARIFIED WATER VALVE FILTER 2 ZIC-21-109 CLOSE INDICATION

2 CLARIFIED WATER VALVE FILTER 2 ZIO-21-109 OPEN INDICATION

3 CLARIFIED WATER VALVE FILTER 2 HSI-21-109 AUTO/MANUAL INDICATION

4 WASTE VALVE FILTER 2 XA-21-110 FAULT INDICATION

5 WASTE VALVE FILTER 2 ZIC-21-110 CLOSE INDICATION

6 WASTE VALVE FILTER 2 ZIO-21-110 OPEN INDICATION

7 WASTE VALVE FILTER 2 HSI-21-110 AUTO/MANUAL INDICATION

8 FILTERED WATER VALVE FILTER 2 XA-21-111 FAULT INDICATION

9 FILTERED WATER VALVE FILTER 2 ZIC-21-111 CLOSE INDICATION

10 FILTERED WATER VALVE FILTER 2 ZIO-21-111 OPEN INDICATION

11 FILTERED WATER VALVE FILTER 2 HSI-21-111 AUTO/MANUAL INDICATION

12 FILTER TO WASTE VALVE FILTER 2 XA-21-112 FAULT INDICATION

13 FILTER TO WASTE VALVE FILTER 2 ZIC-21-112 CLOSE INDICATION

14 FILTER TO WASTE VALVE FILTER 2 ZIO-21-112 OPEN INDICATION

15 FILTER TO WASTE VALVE FILTER 2 HSI-21-112 AUTO/MANUAL INDICATION

141-
TO LINE 460

Eladio O. Infante Vélez
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

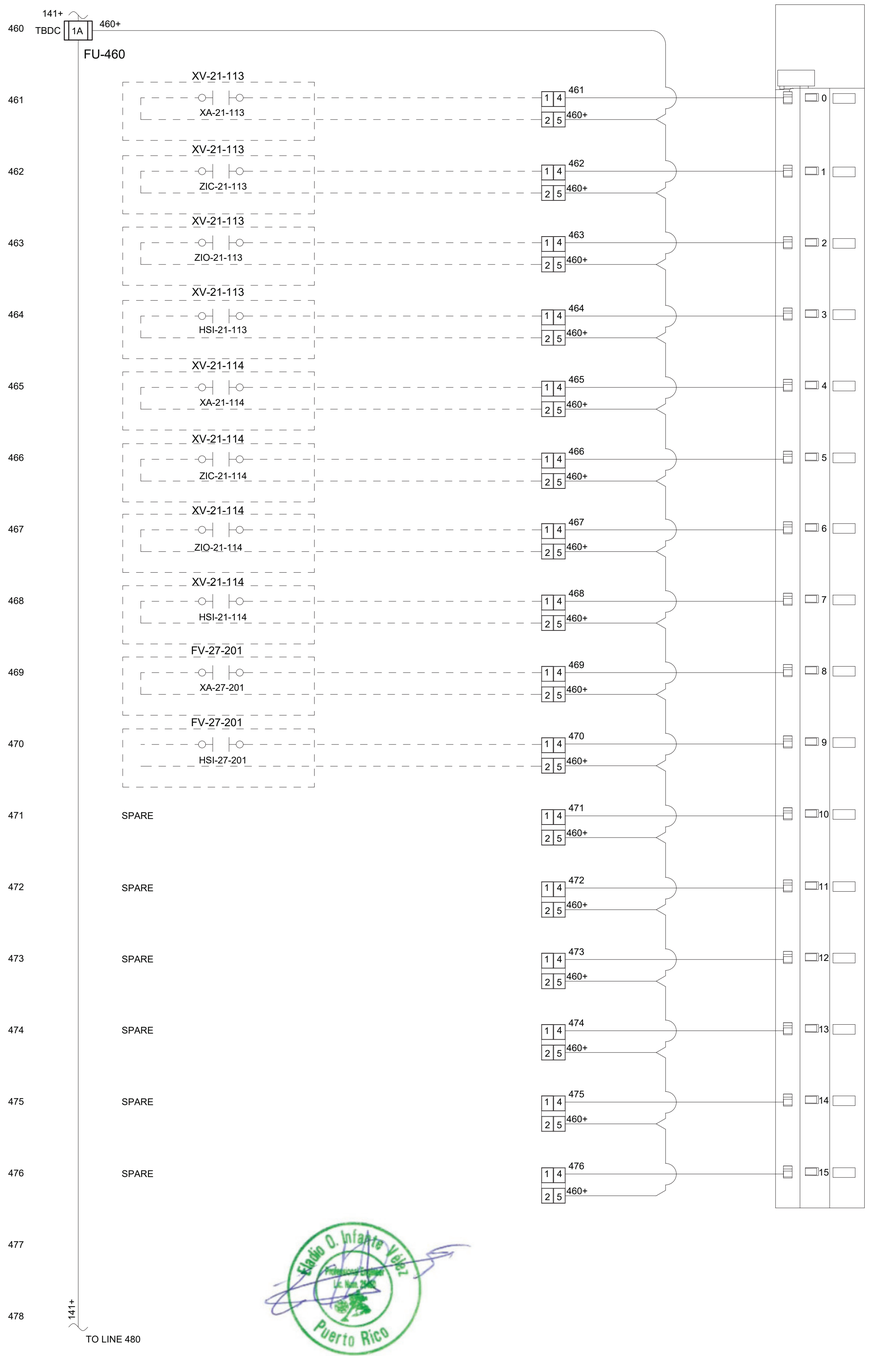
SHEET TITLE
CP-F-2 MAIN WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

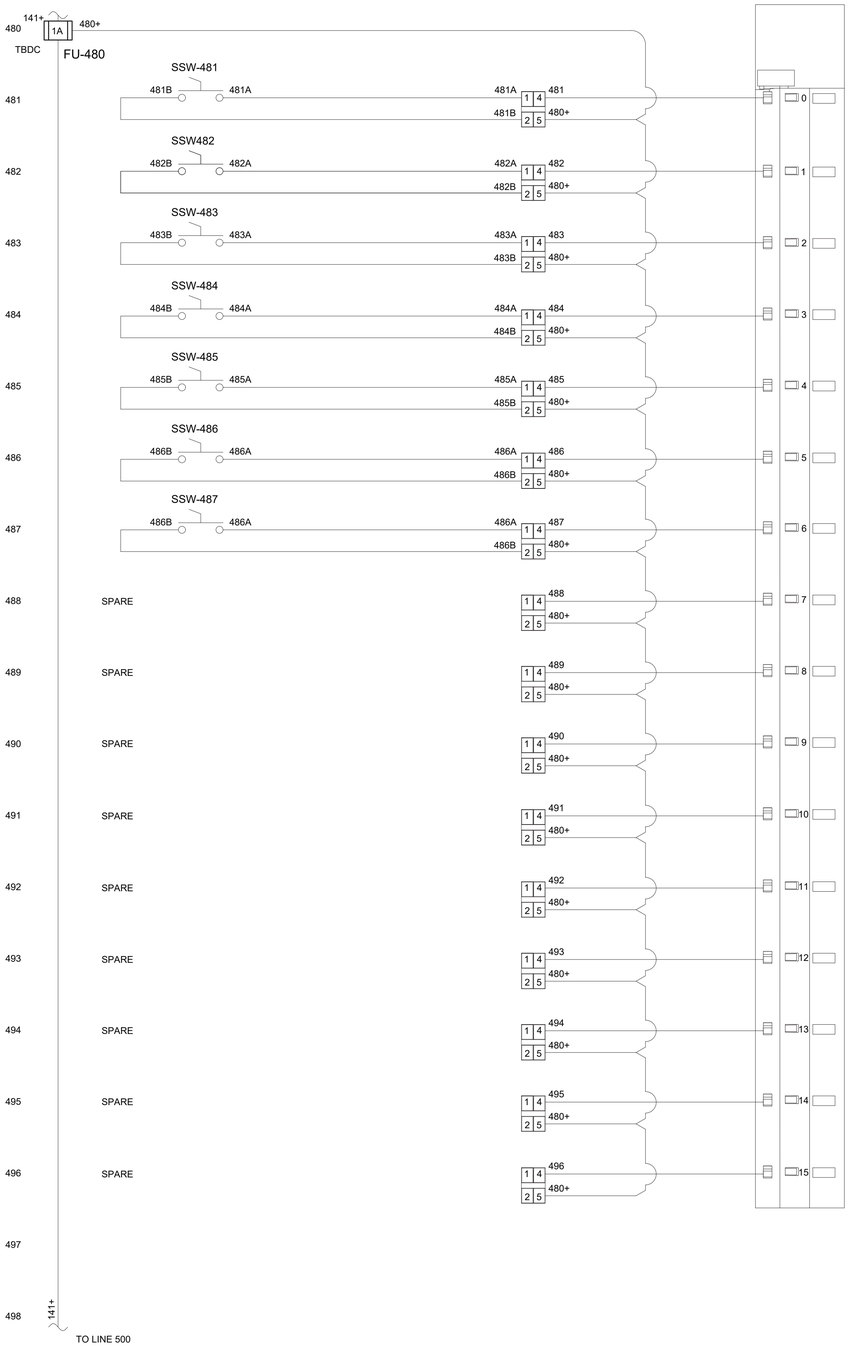
SHEET NO. 136 OF
DWG. NO. IC-46

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



5069-IB16K
DIGITAL INPUT
MODULE 2





5069-IB16K
DIGITAL INPUT
MODULE 3



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-2 WIRING DIAGRAM DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 137 OF
DWG. NO. IC-47

BAR IS TWO CM ON ORIGINAL DWG. IF NOT, TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-OB16K
DIGITAL OUTPUT
MODULE 4

500	141+	CR-500 (521) 518-	500	500	0	CLARIFIED WATER VALVE FILTER 2 XV-21-109 OPEN/CLOSE COMMAND		520
501		CR-501 (524) 518-	501	501	1	WASTE VALVE FILTER 2 XV-21-110 OPEN/CLOSE COMMAND		521
502		CR-502 (527) 518-	502	502	2	FILTERED WATER VALVE FILTER 2 XV-21-111 OPEN/CLOSE COMMAND		522
503		CR-503 (530) 518-	503	503	3	FILTER TO WASTE VALVE FILTER 2 XV-21-112 OPEN/CLOSE COMMAND		523
504		CR-504 (533) 518-	504	504	4	BACKWASH VALVE FILTER 2 XV-21-113 OPEN/CLOSE COMMAND		524
505		CR-505 (536) 518-	505	505	5	AIR WASH VALVE FILTER 2 XV-21-114 OPEN/CLOSE COMMAND		525
506		CR-506 (541) 518-	506	506	6	CLARIFIED WATER VALVE OPEN INDICATION FILTER 2	SPARE	526
507		CR-507 (544) 518-	507	507	7	WASTE WATER VALVE OPEN INDICATION FILTER 2	SPARE	527
508		CR-508 (547) 518-	508	508	8	FILTERED WATER VALVE OPEN INDICATION FILTER 2	SPARE	528
509		CR-509 (550) 518-	509	509	9	FILTER TO WASTE VALVE OPEN INDICATION FILTER 2	SPARE	529
510		CR-510 (553) 518-	510	510	10	BACKWASH VALVE OPEN INDICATION FILTER 2	SPARE	530
511		CR-511 (556) 518-	511	511	11	AIR SCOUR VALVE OPEN INDICATION FILTER 2	SPARE	531
512		CR-512 (561) 518-	512	512	12		SPARE	532
513		CR-513 (564) 518-	513	513	13		SPARE	533
514		CR-514 (567) 518-	514	514	14		SPARE	534
515		CR-515 (570) 518-	515	515	15		SPARE	535
516	TBDC 1A FU-516	516+			1 +			536
517					1 -	TBDC 517- 141-		537
518	141+ TO LINE 520					TBDC 518- 141- TO LINE 520		538

141+	521A CR-500 9 5 521A	521	XV-21-109 CLARIFIED WATER VALVE FILTER 2	141- CLARIFIED WATER VALVE CONTROL SIGNAL XC-21-109
	524A CR-501 9 5 524A	524	XV-21-110 WASTE WATER VALVE FILTER 2	WASTE WATER VALVE CONTROL SIGNAL XC-21-110
	527A CR-502 9 5 527A	527	XV-21-111 FILTERED WATER VALVE FILTER 2	FILTERED WATER CONTROL SIGNAL XC-21-111
	530A CR-503 9 5 530A	530	XV-21-112 FILTER TO WASTE VALVE FILTER 2	FILTER TO WASTE CONTROL SIGNAL XC-21-112
	533A CR-504 9 5 533A	533	XV-21-113 BACKWASH VALVE FILTER 2	BACKWASH CONTROL SIGNAL XC-21-113
	536A CR-505 9 5 536A	536	XV-21-114 AIR WASH VALVE FILTER 2	AIR WASH CONTROL SIGNAL XC-21-114
141+ TO LINE 540				141- TO LINE 540

Eladio O. Infante Vélez
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

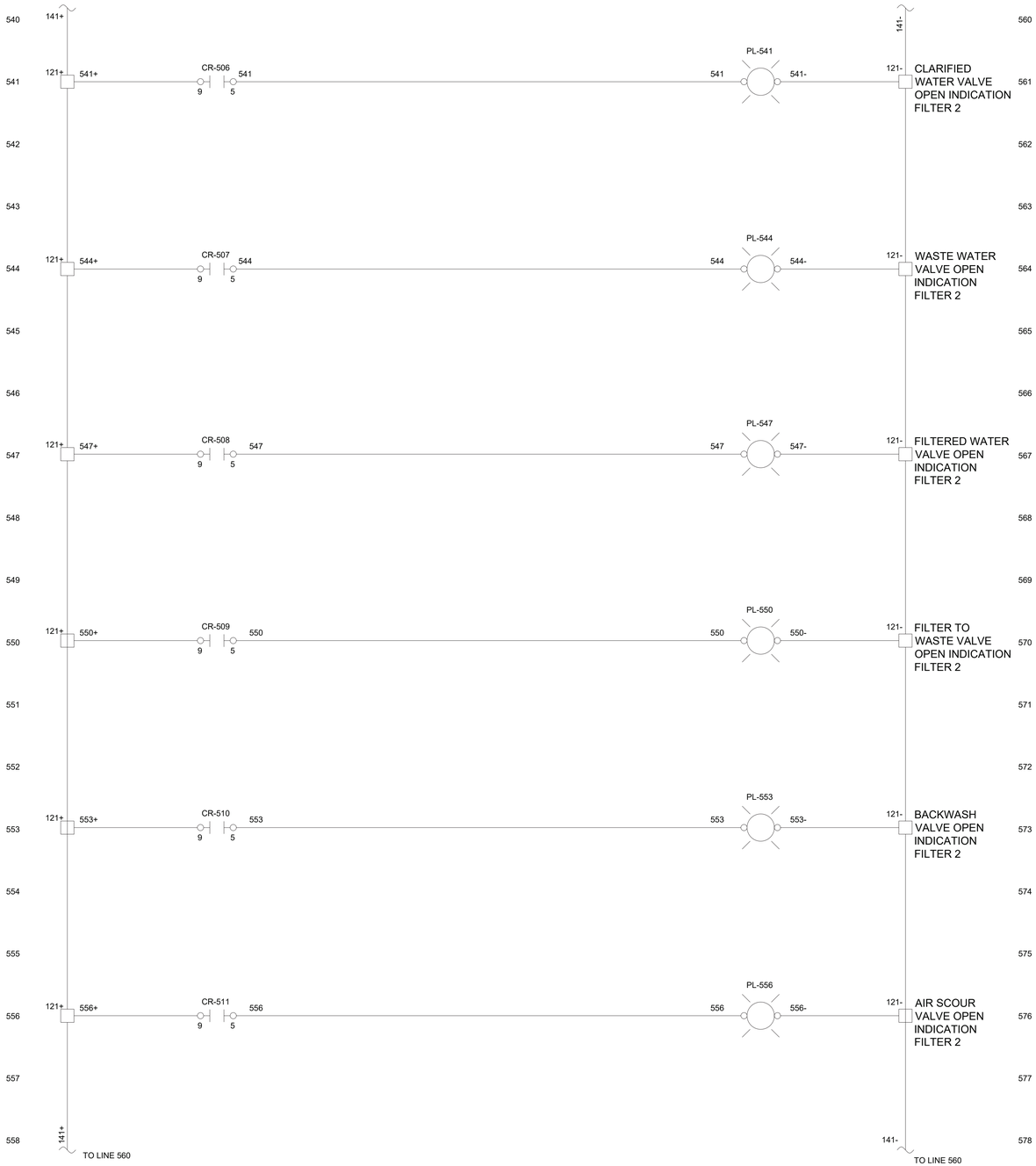
SHEET TITLE
CP-F-2 WIRING DIAGRAM DIGITAL OUTPUT CARD

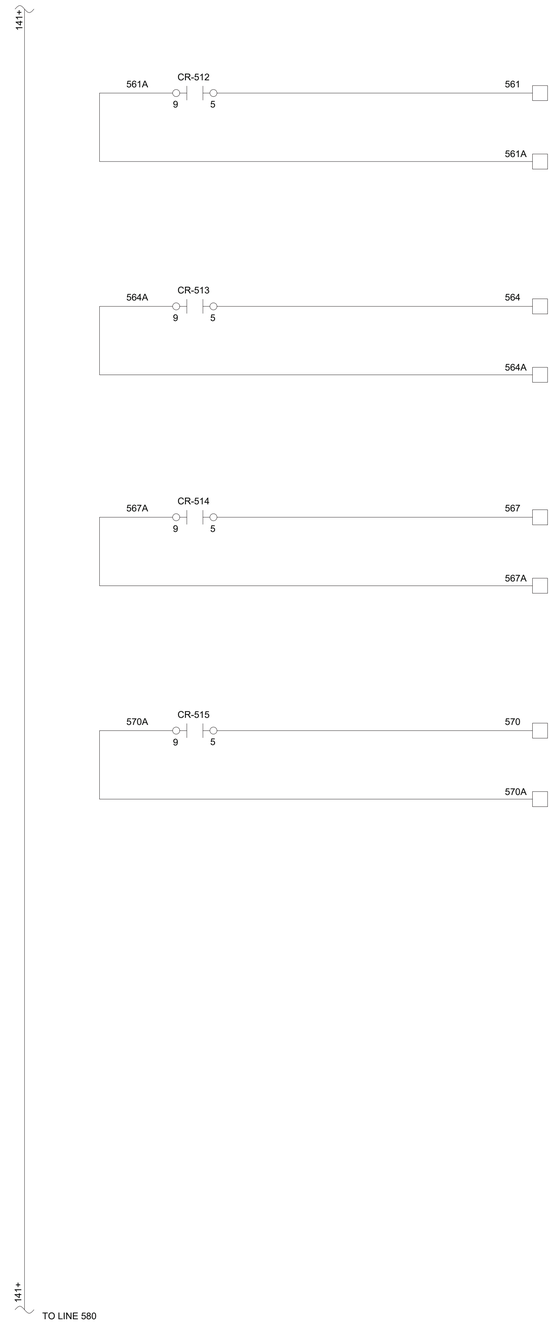
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 138 OF
DWG. NO. IC-48

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









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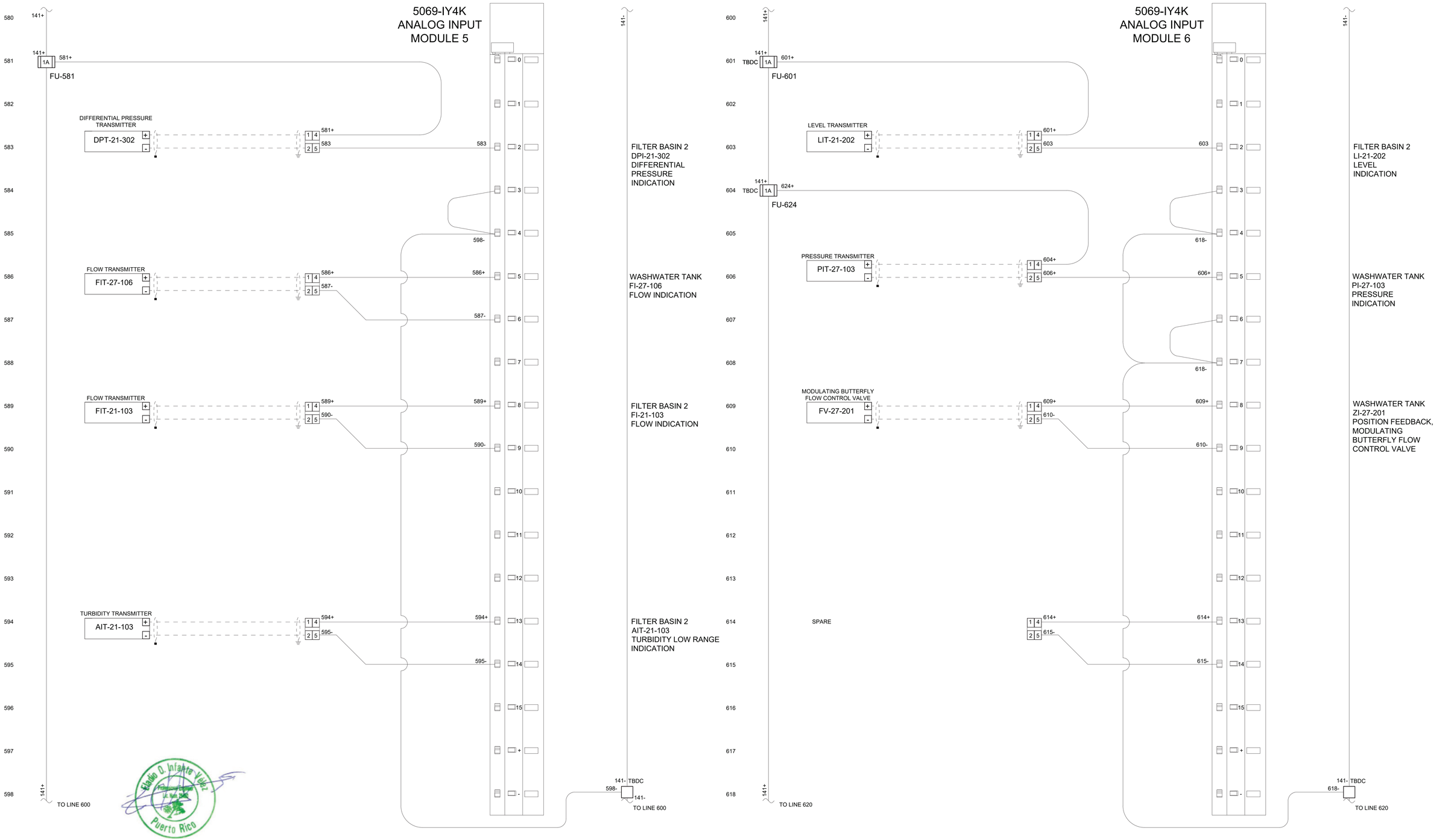
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-2 WIRING DIAGRAM DIGITAL OUTPUT CARD

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 139 OF
DWG. NO. IC-49
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-2 WIRING DIAGRAM ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 140 OF
DWG. NO. IC-50
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-IY4K ANALOG INPUT MODULE 7

141+

620			0
621			1
622		623+	2
623	SPARE	624-	3
624			4
625		626+	5
626	SPARE	627-	6
627			7
628		629+	8
629	SPARE	630-	9
630			10
631			11
632			12
633		634+	13
634	SPARE	635-	14
635			15
636			+
637			-
638	141+ TO LINE 640		

121+

141- TO LINE 640

5069-OF4K ANALOG OUTPUT MODULE 7

141+

MODULATING BUTTERFLY FLOW CONTROL VALVE
FV-27-201 (+, -)

640		641+	0
641		642-	1
642			2
643	SPARE	643+	3
644		644-	4
645	SPARE	645+	5
646		646-	6
647	SPARE	647+	7
648		648-	8
649			9
650			10
651			11
652			12
653			13
654			14
655			15
656			+
657			-
658			

141-

WASHWATER TANK
FC-27-201
CONTROL POSITION, MODULATING BUTTERFLY FLOW CONTROL VALVE

Eladio O. Infante Vélez
Professional Engineer
Puerto Rico

NO	DATE	REVISION	BY	CK.	APPR.

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

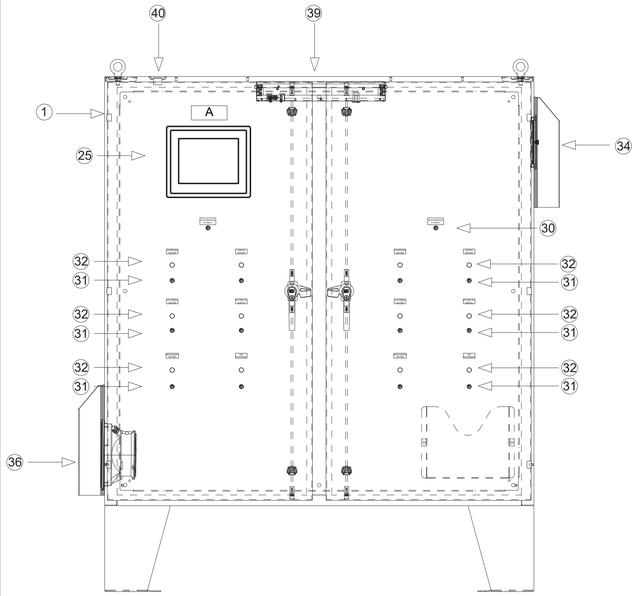
SHEET TITLE
CP-F-2 WIRING DIAGRAM ANALOG INPUT AND OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

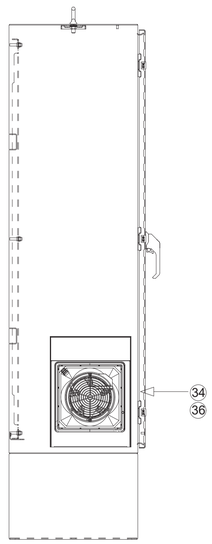
C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 141 OF
DWG. NO. IC-51

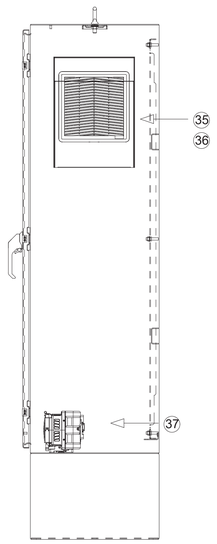
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



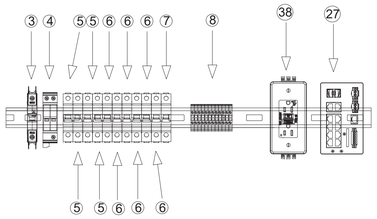
FRONT PANEL
NTS



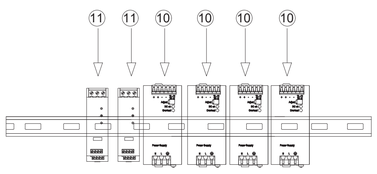
SIDE PANEL - LEFT
NTS



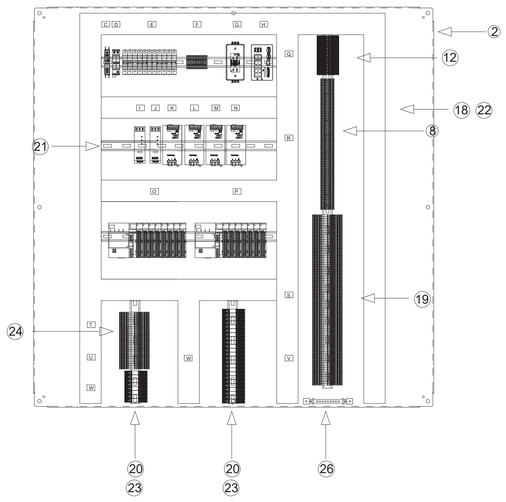
SIDE PANEL - RIGHT
NTS



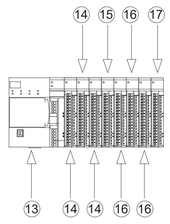
AC- POWER TERMINAL
NTS



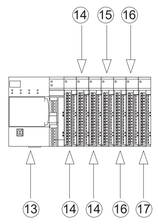
DC POWER TERMINAL
NTS



BACK PANEL
NTS



PLC CP-F-1
NTS



PLC CP-F-2
NTS

WIRING REQUIREMENTS:

1) ALL AC CIRCUITS MUST BE ROUTED AT A MINIMUM DISTANCE OF 6 INCHES FROM ANY CURRENT LOOP AND LOW VOLTAGE AND A MINIMUM OF 5 FT FROM HIGH VOLTAGE ENCLOSURE OR SOURCE OF RF/MICROWAVE RADIATION.

2) ANALOG SIGNALS SHALL BE SHIELD, WITH THE SHIELDED TERMINATED AT THE ISOLATED GROUND IN THE PANEL ONLY. THE OTHER END SHOULD BE CUT, FOLDED BACK AND TAPED OFF.

3) ALL WIRING SHOULD BE PLACED IN WIRING THROUGH, PREFERABLY WIRE DUCT, WITH A COVER AND A MINIMUM OF 20% EXTRA SPACE FOR EASY ACCESS AND TROUBLESHOOTING.

4) ANALOG I/O LINES, DC POWER LINES FOR ANALOG CIRCUITS AND COMMUNICATIONS CABLE SHOULD BE PROPERLY SHIELDED AND ROUTED IN A RACEWAY SEPARATED FROM AC POWER LINES.

5) FOR POWER SUPPLIES AND I/O CIRCUITS, CONDUCTORS MUST BE RUN WITHOUT SPLICES FROM TERMINAL TO TERMINAL.

6) ALL CONDUCTORS AND CABLES MUST BE IDENTIFIED WITH A PERMANENT TAG IN ACCORDANCE WITH THE ELECTRICAL AND I/O WIRING LOOPS DEFINITIONS.

7) ALL TERMINALS OF THE TERMINAL BLOCKS MUST BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL TO CORRESPOND WITH THE IDENTIFICATION OF THE DRAWING.

8) THE FOLLOWING ARE THE MINIMUM AWG SIZES TO BE USED:
   - A. MAIN POWER CIRCUITS: NO. 12
   - B. BRANCH POWER CIRCUITS: NO.14
   - C. CONTROL CIRCUITS: NO.16
   - D. CURRENT LOOPS: NO.16
   - E. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - F. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL SINGLE CONDUCTORS MUST BE CODED AS FOLLOW:
   - A. BLACK - LINE, LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE.
   - B. RED - ALL CONTROL CIRCUITS
   - C. BLUE OR PURPLE - DC CONTROL CIRCUIT (POSITIVE)
   - D. WHITE - AC GROUNDED CIRCUITS (NEUTRAL)
   - E. GRAY - DC GROUNDED CIRCUIT CONDUCTOR
   - F. GREEN - EQUIPMENT GROUNDED CONDUCTOR
   - G. LIGHT BLUE - INTRINSICALLY SAFE CONDUCTORS.

9) ALL TERMINAL BLOCKS MUST BE RAISED FROM THE BACK PLATE FOR EASE OF WIRING.

10) TERMINAL JUMPERS MUST BE USED IN PLACE OF THE WIRED JUMPERS, WHERE SUCH JUMPERS ARE NECESSARY.

11) WIRING STANDARD AND CONVENTIONS SHOULD CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 300.

NOTES:

8) THE NAME PLATES WILL HAVE BLACK BACKGROUND WITH WHITE LETTERS.

9) PANEL CONTRACTOR SHALL IDENTIFY CORRESPONDING TAG NUMBER TO ALL TERMINAL BLOCKS AND WIRES.

10) PANEL CONTRACTOR WILL PROVIDE TAGS FOR ALL DEVICES INSIDE THE PANEL.

11) ALL PANEL ARRANGEMENTS DETAILS NEED TO BE COORDINATED WITH THE DESIGNATED ENGINEER BEFORE THE PANEL CONSTRUCTION HAS BEGUN.

12) USE ONLY CONDUITS HUBS WHICH ARE COMPATIBLE WITH THE NEMA RATING OF SUBJECTED PANEL AND ITS LOCATION.

13) ALL CONDUIT TO BE INSTALLED AT BOTTOM OF THE PANEL.

14) TO BE INSTALLED WITH VIBRATION ISOLATIONS.

15) INSTRUMENT CONTRACTOR TO PROVIDE ALL REQUIRED ETHERNET PATCHCORDS (FIBER/COPPER) AND SFP CONVERTERS.

16) REFER TO INSTRUMENTATION AND CONTROL SPECIFICATIONS SECTION 13.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER	FURNISHED BY
1	1	STAINLESS STEEL EL FS ENCLOSURE 60" H X 48" W X 12"D	SAGINAW CONTROL & ENGINEER	SCE-60EL4812SSLPPL	PANEL VENDOR
2	1	SUBPANEL, BENT	SAGINAW CONTROL & ENGINEER	SCE-60P48	PANEL VENDOR
3	1	1-POLE THERMAL MAGNETIC CIRCUIT BREAKER 30A	ALLEN-BRADLEY	1489-M1C300	PANEL VENDOR
4	1	TYPE 2 SURGE PROTECTIVE DEVICE	PHOENIX CONTACT	2905348	PANEL VENDOR
5	4	1-POLE SUPPLEMENTARY PROTECTORS 10 AMP	ALLEN-BRADLEY	1492-SPM1C100	PANEL VENDOR
6	6	1-POLE SUPPLEMENTARY PROTECTORS 2 AMP	ALLEN-BRADLEY	1492-SPM1C020	PANEL VENDOR
7	1	1-POLE SUPPLEMENTARY PROTECTORS 5 AMP	ALLEN-BRADLEY	1492-SPM1C010	PANEL VENDOR
8	88	UT4- FEED THROUGH TERMINAL BLOCK	PHOENIX CONTACT	3044102	PANEL VENDOR
9	–	–	–	–	–
10	4	POWER SUPPLY UNIT WITH PUSH-IN CONNECTION, 24 VDC/20A	PHOENIX CONTACT	TRIO-PS-2G/1AC/24DC/20	PANEL VENDOR
11	2	ACTIVE REDUNDANCY MODULE	PHOENIX CONTACT	QUINT-ORING/24DC/2X20/1X40	PANEL VENDOR
12	17	SCREW CONNECTION FUSE TERMINAL BLOCKS	ALLEN-BRADLEY	1492-JD3FB	PANEL VENDOR
13	2	COMPACTLOGIX 5380 CONTROLLER, 2MB, 16 I/OS, 8 AXIS, 40 NODES, STANDARD -CC	ALLEN-BRADLEY	5069-L320ERMK	PANEL VENDOR
14	6	COMPACT I/O 16 CHANNEL 24 VDC SINK INPUT MODULE	ALLEN-BRADLEY	5069-IB16K	PANEL VENDOR
15	2	COMPACT I/O 16 CHANNEL 24 VDC SOURCE OUTPUT MODULE	ALLEN-BRADLEY	5069-OB16K	PANEL VENDOR
16	5	COMPACT I/O 4 CHANNEL UNIVERSAL VOLTAGE/CURRENT/RTD/TC ANALOG INPUT MODULE	ALLEN-BRADLEY	5069-IY4K	PANEL VENDOR
17	2	COMPACT I/O 4 CHANNEL VOLTAGE/CURRENT ANALOG OUTPUT MODULE	ALLEN-BRADLEY	5069-OF4K	PANEL VENDOR
18	AS REQUIRED	PVC NARROW SLOT WIRING DUCT	PANDUIT	F2X3LG6	PANEL VENDOR
19	96	SURGE PROTECTION FOR TWO SIGNAL WIRE DIGITAL	PHOENIX CONTACT	2906810	PANEL VENDOR
20	32	RELAY MODULE	PHOENIX CONTACT	2967060	PANEL VENDOR
21	AS REQUIRED	NS 35/7.5 DIN RAIL PERFORATED	PHOENIX CONTACT	1206421	PANEL VENDOR
22	AS REQUIRED	FLUSH DUCT COVER	PANDUIT	C2LG6	PANEL VENDOR
23	32	PREASSEMBLED RELAY MODULE WITH PUSH-IN CONNECTION 3 CHANGEOVER CONTACTS	PHOENIX CONTACT	RIF-3-RPT-LDP-24DC/3X21	PANEL VENDOR
24	32	SURGE PROTECTION FOR TWO WIRE ANALOG SIGNAL	PHOENIX CONTACT	2906809	PANEL VENDOR
25	1	PANEL VIEW 5510, 10 IN, 4.3 DISPLAY, TOUCH, DC, CC	ALLEN-BRADLEY	2715P-T10CD-K	PANEL VENDOR
26	1	ISOLATED GORUNDING BAR SYSTEM	HOFFMAN	P-GS2K	PANEL VENDOR
27	1	NETWORK SWITCH, 8 COPPER 100/1000 PORTS, 2 COMBO 100/1000 PORTS, FULL FW,DLR, PRP, NAT	ALLEN-BRADLEY	1783-CMS10DN	PANEL VENDOR
28	–	–	–	–	–
29	–	–	–	–	–
30	1	POSITION SELECTOR SWITCH, BLACK,MAINTAINED, 1 NO AND 1 NC	SCHNEIDER	XB4BD25	PANEL VENDOR
31	12	22MM, 2 POSITION SELECTOR SWITCH, BLACK, MAINTAINED, 1 NO.	SCHNEIDER	XB4BD21	PANEL VENDOR
32	12	PILOT LIGHT, XB4,METAL, GREEN, 22MM, UNIVERSAL LED, PLAIN LENS, 24V AC DC	SCHNEIDER	XB4BVB3	PANEL VENDOR
33	–	–	–	–	–
34	1	FILTER FAN	SAGINAW CONTROL & ENGINEER	SCE-N12FA66	PANEL VENDOR
35	1	FILTER & GRILLE ASSY	SAGINAW CONTROL & ENGINEER	SCE-N12FGA66	PANEL VENDOR
36	2	PROTECTION HOOD, HOSE-PROOF	SAGINAW CONTROL & ENGINEER	SCE-RH6N4XSS	PANEL VENDOR
37	1	THERMOELECTRIC DEHUMIDIFIER	SAGINAW CONTROL & ENGINEER	SCE-TEDH24VDC	PANEL VENDOR
38	1	DIN-RAILMOUNT RECEPTACLE	LEVITON	3801-DIN	PANEL VENDOR
39	1	FIXTURE LED, LIGHT	SAGINAW CONTROL & ENGINEER	SCE-LF18	PANEL VENDOR
40	1	ENCLOSURE DOOR SWITCH	STEGO INC	013500-00	PANEL VENDOR

NAME PLATE SCHEDULE

ITEM NO.	TEXT SIZE	NAME PLATE SIZE	FIRST LINE	SECOND LINE
A	1"	AS REQUIRED	GUILARTE WTP	CONTROL PANEL FILTER CP-F-1/2
B	–	–	–	–
C	1/8"	2" X 1"	CIRCUIT BREAKER	CB1
D	1/8"	2" X 1"	SURGE SUPRESSOR	VS-103
E	1/8"	2" X 1"	CIRCUIT BREAKER	CB2 – CB12
F	1/8"	2" X 1"	TBAC-N	–
G	1/8"	2" X 1"	RECEPTACLE	RCP-147
H	1/8"	2" X 1"	NETWORK SWITCH	NS-185
I	1/8"	2" X 1"	REDUNDANCY MODULE	RM-121
J	1/8"	2" X 1"	REDUNDANCY MODULE	RM-141
K	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-107
L	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-113
M	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-128
N	1/8"	2" X 1"	POWER SUPPLY 24 VDC	PS-134
O	1/8"	2" X 1"	PROGRAMMABLE LOGIC CONTROLLER	PLC-180
P	1/8"	2" X 1"	PROGRAMMABLE LOGIC CONTROLLER	PLC-440
Q	1/8"	2" X 1"	TBDC	FUSE TERMINAL BLOCK
R	1/8"	2" X 1"	TBDC	–
S	1/8"	2" X 1"	TBDI	–
T	1/8"	2" X 1"	TBAI	–
U	1/8"	2" X 1"	TBAO	–
V	1/8"	2" X 1"	TBDO	–
W	1/8"	2" X 1"	CONTROL RELAYS	–

Eladio O. Infante Vélez
Professional Engineer
Lic. Núm. 24...
Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

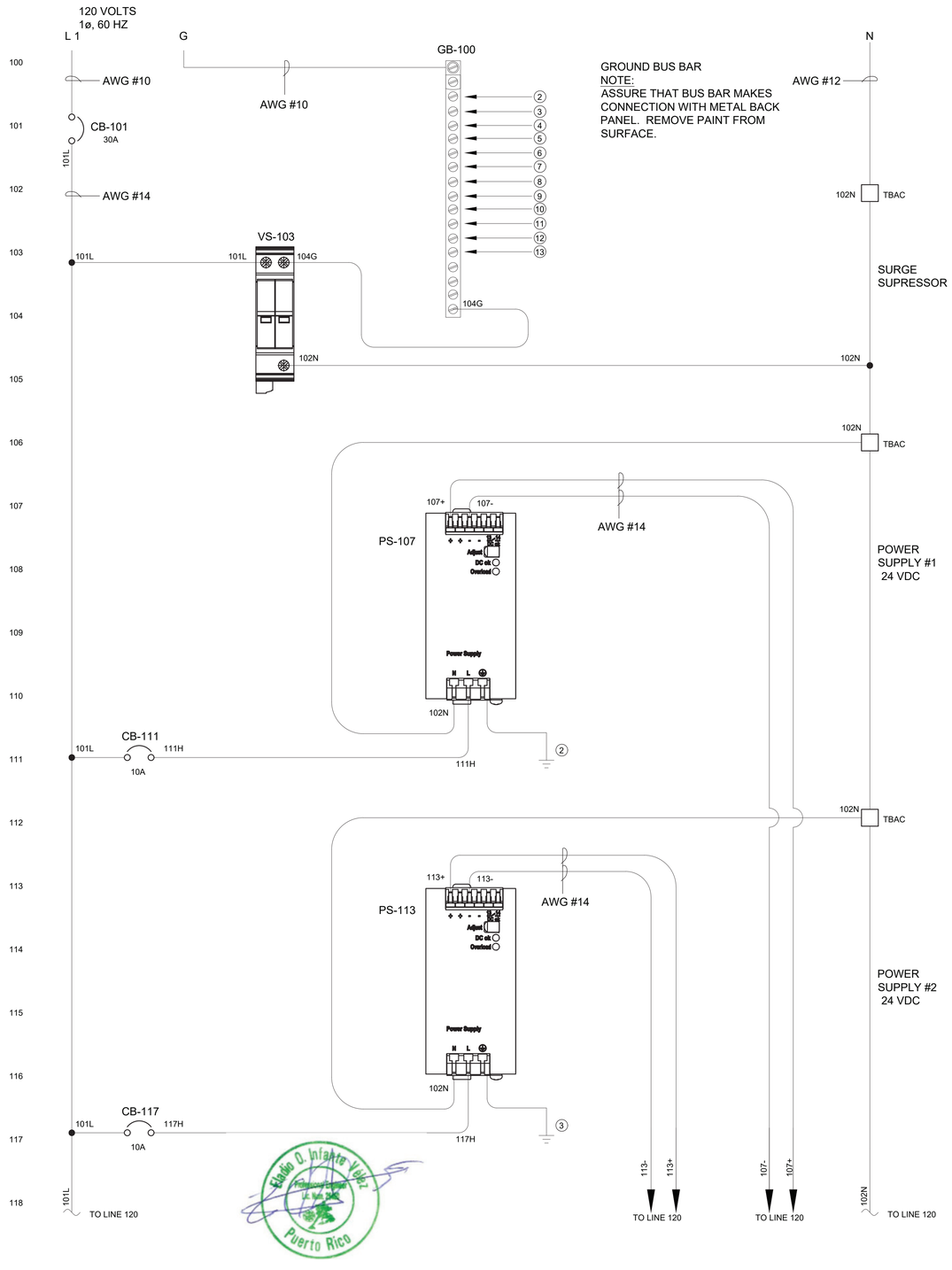
SHEET TITLE
CP-F-3/4 CONTROL PANEL LAYOUT AND BILL OF MATERIALS

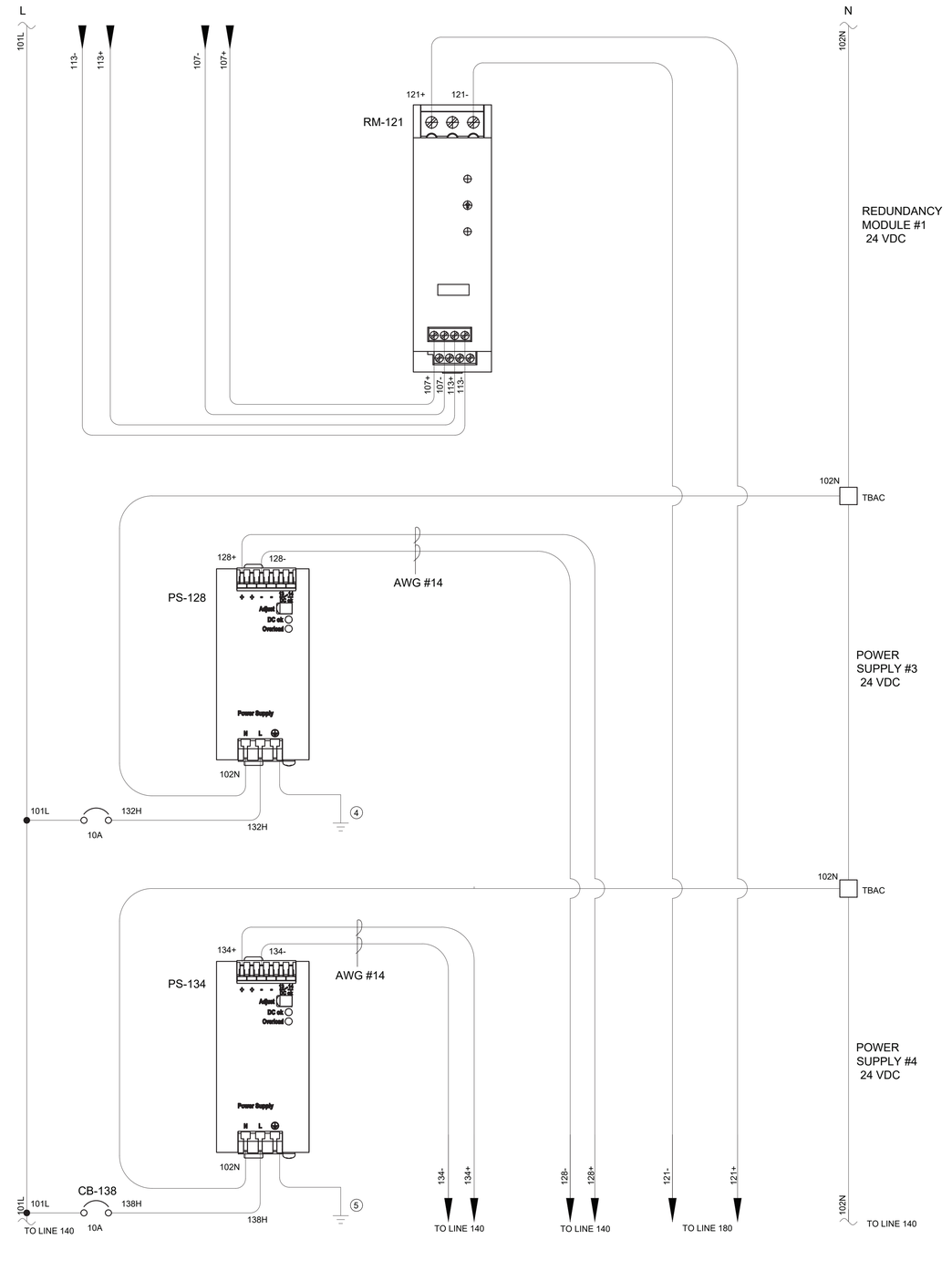
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 142 OF
DWG. NO. IC-52

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM





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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

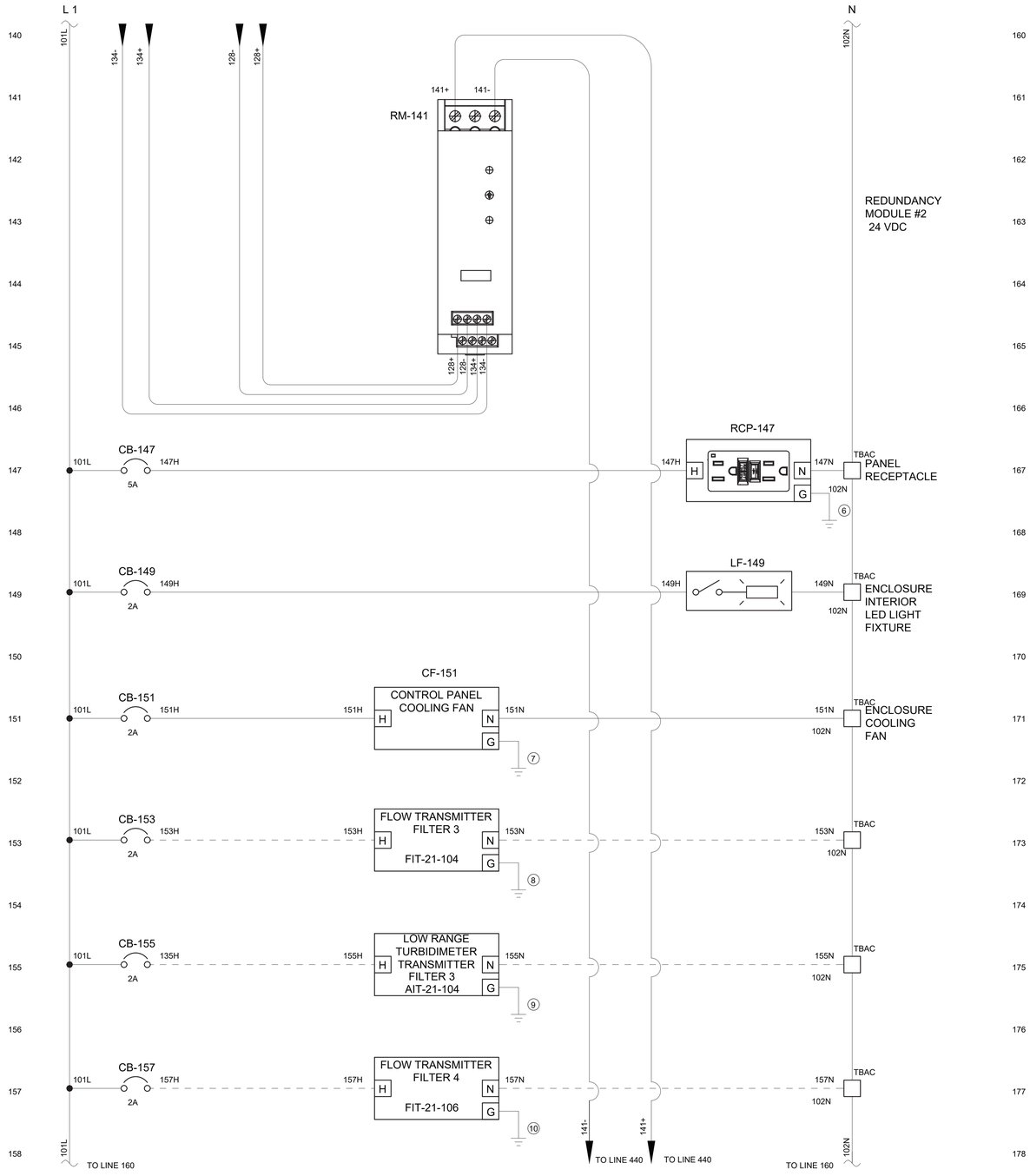
SHEET TITLE
CP-F-3/4 CONTROL PANEL POWER DISTRIBUTION

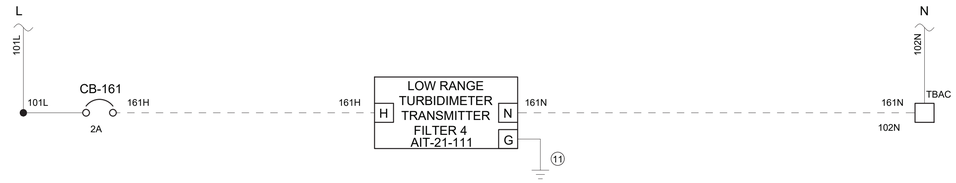
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 143 OF
DWG. NO. IC-53

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM







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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

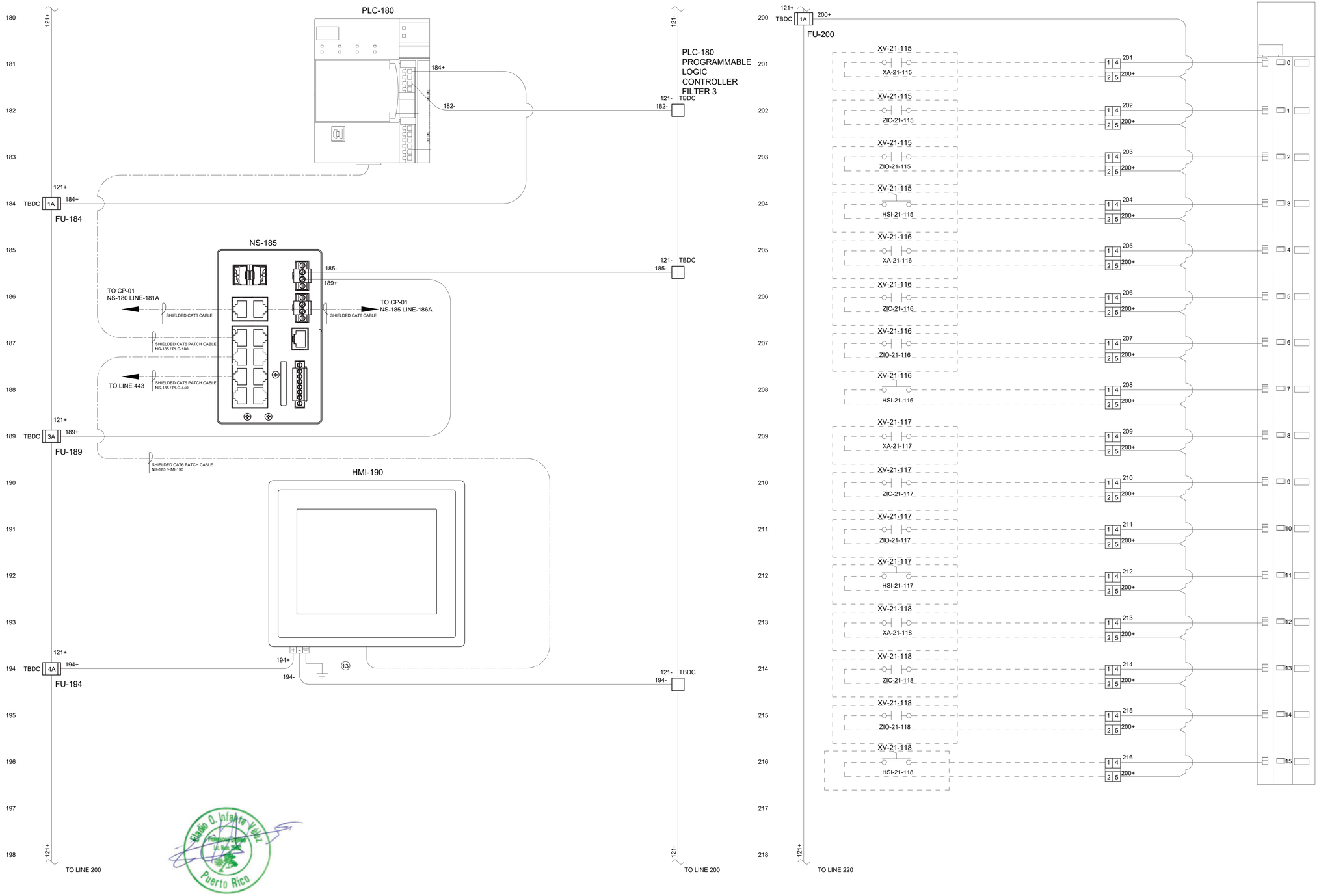
SHEET TITLE
CP-F-3/4 CONTROL PANEL POWER DISTRIBUTION CONTINUED

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 144 OF
DWG. NO. IC-54

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

CP-F-3 MAIN WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 145 OF
DWG. NO. IC-55

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-IB16K DIGITAL INPUT MODULE 2

121+ TBDC 1A 220+ — FU-220

220			
221	XV-21-119 / XA-21-119	221	0
222	XV-21-119 / ZIC-21-119	222	1
223	XV-21-119 / ZIO-21-119	223	2
224	XV-21-119 / HSI-21-119	224	3
225	XV-21-120 / XA-21-120	225	4
226	XV-21-120 / ZIC-21-120	226	5
227	XV-21-120 / ZIO-21-120	227	6
228	XV-21-120 / HSI-21-120	228	7
229	SSW-507 (229B / 229A)	229	8
230	SPARE	230	9
231	SPARE	231	10
232	SPARE	232	11
233	SPARE	233	12
234	SPARE	234	13
235	SPARE	235	14
236	SPARE	236	15
237			
238	121+ TO LINE 240		

121-	
241	BACKWASH VALVE FILTER 3 XA-21-119 FAULT INDICATION
242	BACKWASH VALVE FILTER 3 ZIC-21-119 CLOSE INDICATION
243	BACKWASH VALVE FILTER 3 ZIO-21-119 OPEN INDICATION
244	BACKWASH VALVE FILTER 3 HSI-21-119 AUTO/MANUAL INDICATION
245	AIR WASH VALVE FILTER 3 XA-21-120 FAULT INDICATION
246	AIR WASH VALVE FILTER 3 ZIC-21-120 CLOSE INDICATION
247	AIR WASH VALVE FILTER 3 ZIO-21-120 OPEN INDICATION
248	AIR WASH VALVE FILTER 3 HSI-21-120 AUTO/MANUAL INDICATION
249	MANUAL/AUTOMATIC OPERATION FILTER 3
250	
251	
252	
253	
254	
255	
256	
257	
258	121- TO LINE 240

5069-IB16K DIGITAL INPUT MODULE 3

121+ TBDC 1A 240+ — FU-240

240			
241	SSW-241 (241B / 241A)	241	0
242	SSW-242 (242B / 242A)	242	1
243	SSW-243 (243B / 243A)	243	2
244	SSW-244 (244B / 244A)	244	3
245	SSW-245 (245B / 245A)	245	4
246	SSW-246 (246B / 246A)	246	5
247	NS-185 / XA-80-206	247	6
248	YS-80-106 / YAI-80-106	248	7
249	SPARE	249	8
250	SPARE	250	9
251	SPARE	251	10
252	SPARE	252	11
253	SPARE	253	12
254	SPARE	254	13
255	SPARE	255	14
256	SPARE	256	15
257			
258	121+ TO LINE 260		

121-	
	INFLUENT VALVE FILTER 3 XV-21-115 MANUAL OPEN/CLOSE
	WASTE WATER VALVE FILTER 3 XV-21-116 MANUAL OPEN/CLOSE
	FILTERED WATER VALVE FILTER 3 XV-21-117 MANUAL OPEN/CLOSE
	FILTER TO WASTE VALVE FILTER 3 XV-21-118 MANUAL OPEN/CLOSE
	BACKWASH WATER VALV FILTER 3 XV-21-119 MANUAL OPEN/CLOSE
	AIR SCOUR VALVE FILTER 3 XV-21-120 MANUAL OPEN/CLOSE
	NETWORK SWITCH NS-185 FAULT INDICATION
	CONTROL PANEL ENCLOSURE CP-F-3/4 INTRUSION INDICATION
	121- TO LINE 260

Estado O. Infante Vélez — Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE: CP-F-3 WIRING DIAGRAM DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 146 OF
DWG. NO. IC-56

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

MODULE 4

260	121+	CR-260 (281)	278-	260	260	0	CLARIFIED WATER VALVE FILTER 3 XV-21-115 OPEN/CLOSE COMMAND		280	121+
261		CR-261 (284)	278-	261	261	1	WASTE VALVE FILTER 3 XV-21-116 OPEN/CLOSE COMMAND		281	
262		CR-262 (287)	278-	262	262	2	FILTERED WATER VALVE FILTER 3 XV-21-117 OPEN/CLOSE COMMAND		282	
263		CR-263 (290)	278-	263	263	3	FILTER TO WASTE VALVE FILTER 3 XV-21-118 OPEN/CLOSE COMMAND		283	
264		CR-264 (293)	278-	264	264	4	BACKWASH VALVE FILTER 3 XV-21-119 OPEN/CLOSE COMMAND		284	
265		CR265 (296)	278-	265	265	5	AIR WASH VALVE FILTER 3 XV-21-120 OPEN/CLOSE COMMAND		285	
266		CR-266 (301)	278-	266	266	6	CLARIFIED WATER VALVE OPEN INDICATION FILTER 3	SPARE	286	
267		CR-267 (304)	278-	267	267	7	WASTE WATER VALVE OPEN INDICATION FILTER 3	SPARE	287	
268		CR-268 (307)	278-	268	268	8	FILTERED WATER VALVE OPEN INDICATION FILTER 3	SPARE	288	
269		CR-269 (310)	278-	269	269	9	FILTER TO WASTE VALVE OPEN INDICATION FILTER 3	SPARE	289	
270		CR-270 (313)	278-	270	270	10	BACKWASH VALVE OPEN INDICATION FILTER 3	SPARE	290	
271		CR-271 (316)	278-	271	271	11	AIR SCOUR VALVE OPEN INDICATION FILTER 3	SPARE	291	
272		CR-272 (321)	278-	272	272	12		SPARE	292	
273		CR-273 (324)	278-	273	273	13		SPARE	293	
274		CR-274 (327)	278-	274	274	14		SPARE	294	
275		CR-275 (330)	278-	275	275	15		SPARE	295	
276	TBDC 1A FU-276	276+				+			296	
277						-		TBDC 277- 121-	297	
278	121+ TO LINE 280							TBDC 278- 121- TO LINE 280	298	121+ TO LINE 300

281A	CR-260 9 5	281 / 281A	XV-21-115 CLARIFIED WATER VALVE FILTER 3	CLARIFIED WATER VALVE CONTROL SIGNAL XC-21-115
284A	CR-261 9 5	284 / 284A	XV-21-116 WASTE WATER VALVE FILTER 1	WASTE WATER VALVE CONTROL SIGNAL XC-21-116
287A	CR-262 9 5	287 / 287A	XV-21-117 FILTERED WATER VALVE FILTER 1	FILTERED WATER CONTROL SIGNAL XC-21-117
290A	CR-263 9 5	290 / 290A	XV-21-118 FILTER TO WASTE VALVE FILTER 1	FILTER TO WASTE CONTROL SIGNAL XC-21-118
293A	CR-264 9 5	293 / 293A	XV-21-119 BACKWASH VALVE FILTER 3	BACKWASH CONTROL SIGNAL XC-21-119
296A	CR-265 9 5	296 / 296A	XV-21-120 AIR WASH VALVE FILTER 3	AIR WASH CONTROL SIGNAL XC-21-120

121+ TO LINE 300



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE

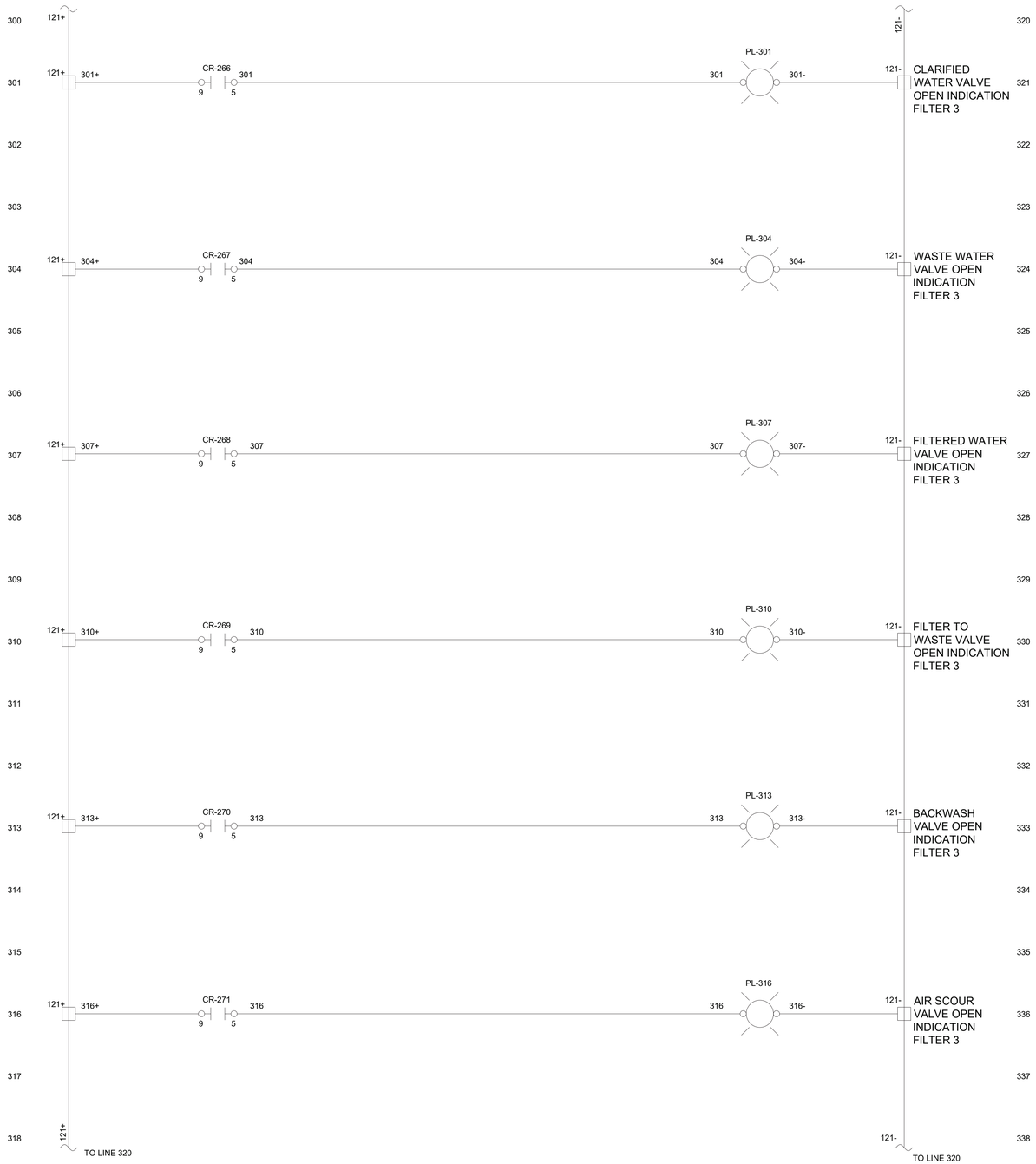
CP-F-3 WIRING DIAGRAM DIGITAL OUTPUT CARDS

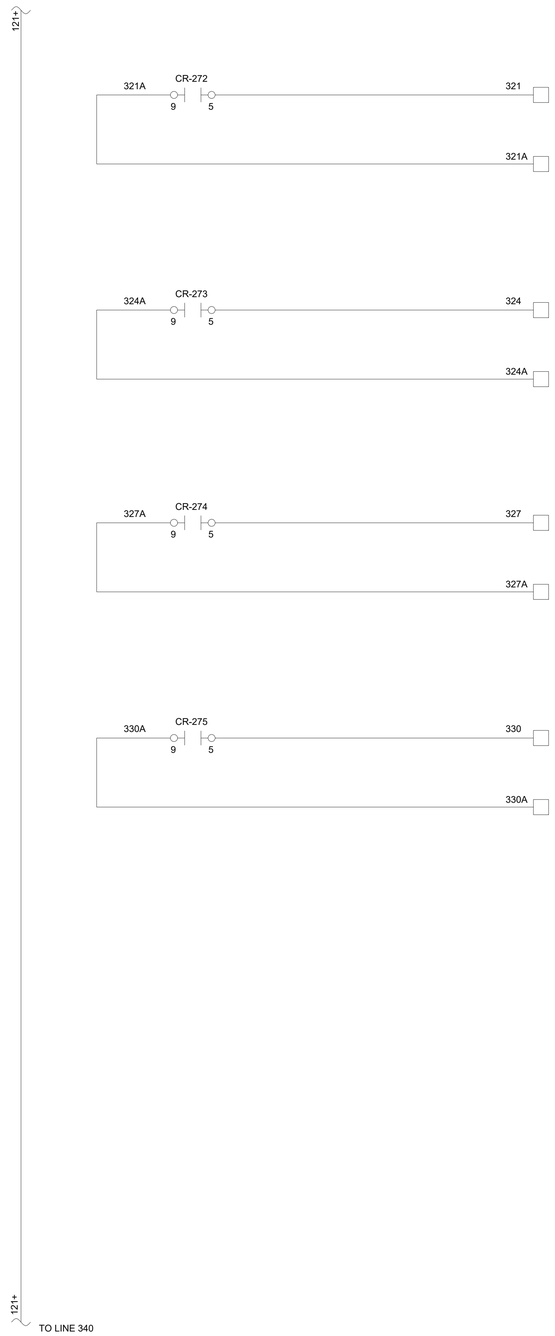
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 147 OF
DWG. NO. IC-57

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM









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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

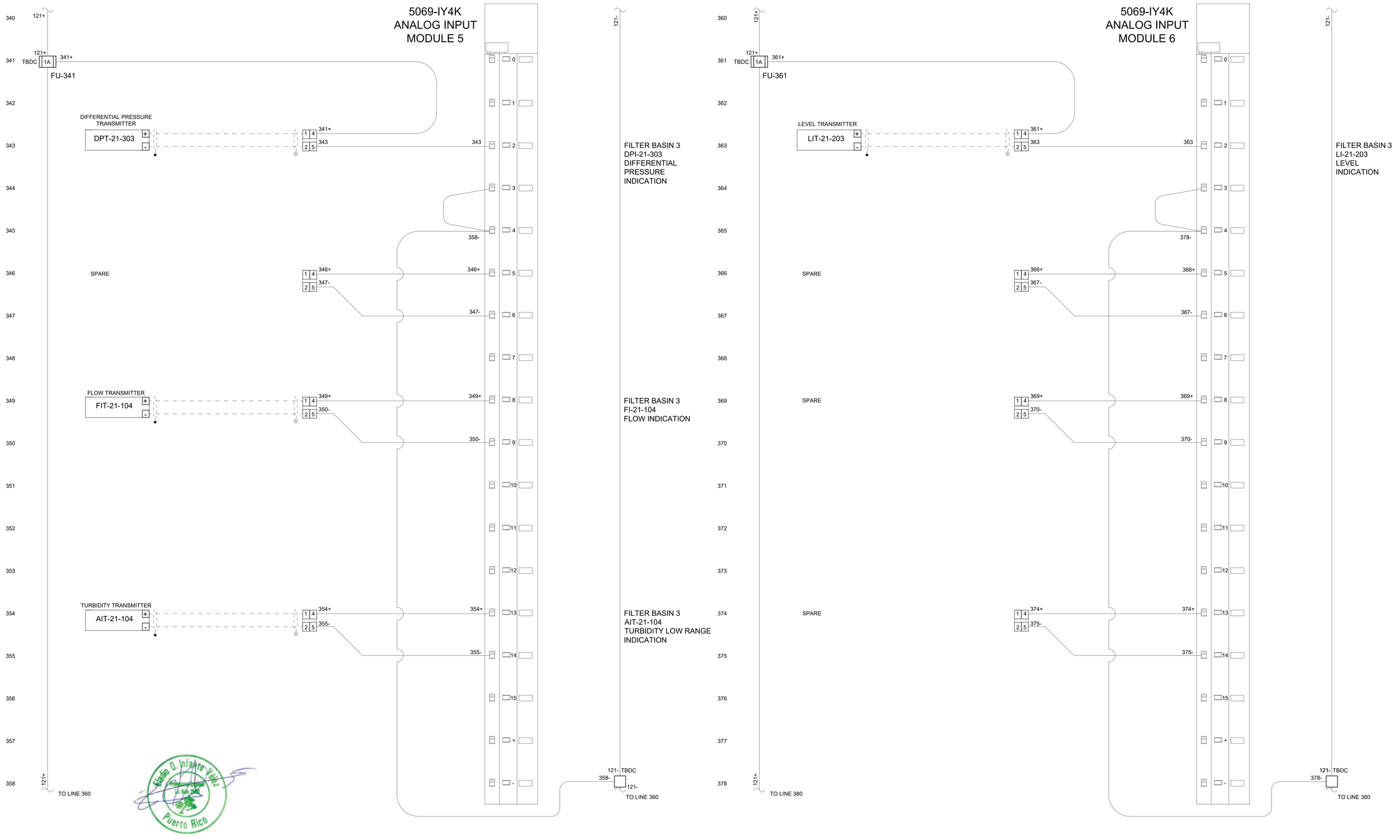
SHEET TITLE
CP-F-3 WIRING DIAGRAM DIGITAL OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 148 OF
DWG. NO. IC-58

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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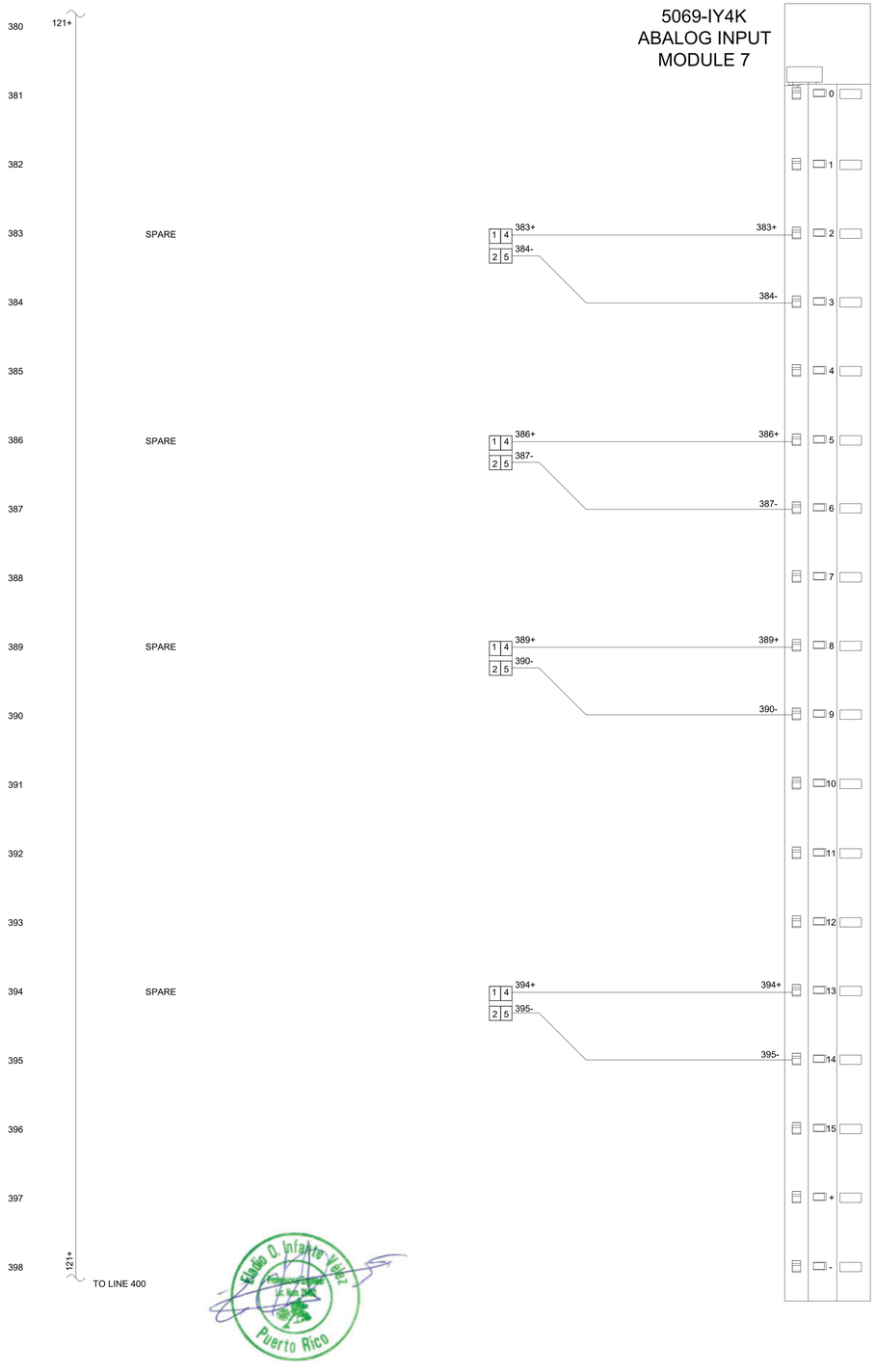
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-3 WIRING DIAGRAM ANALOG INPUT CARDS

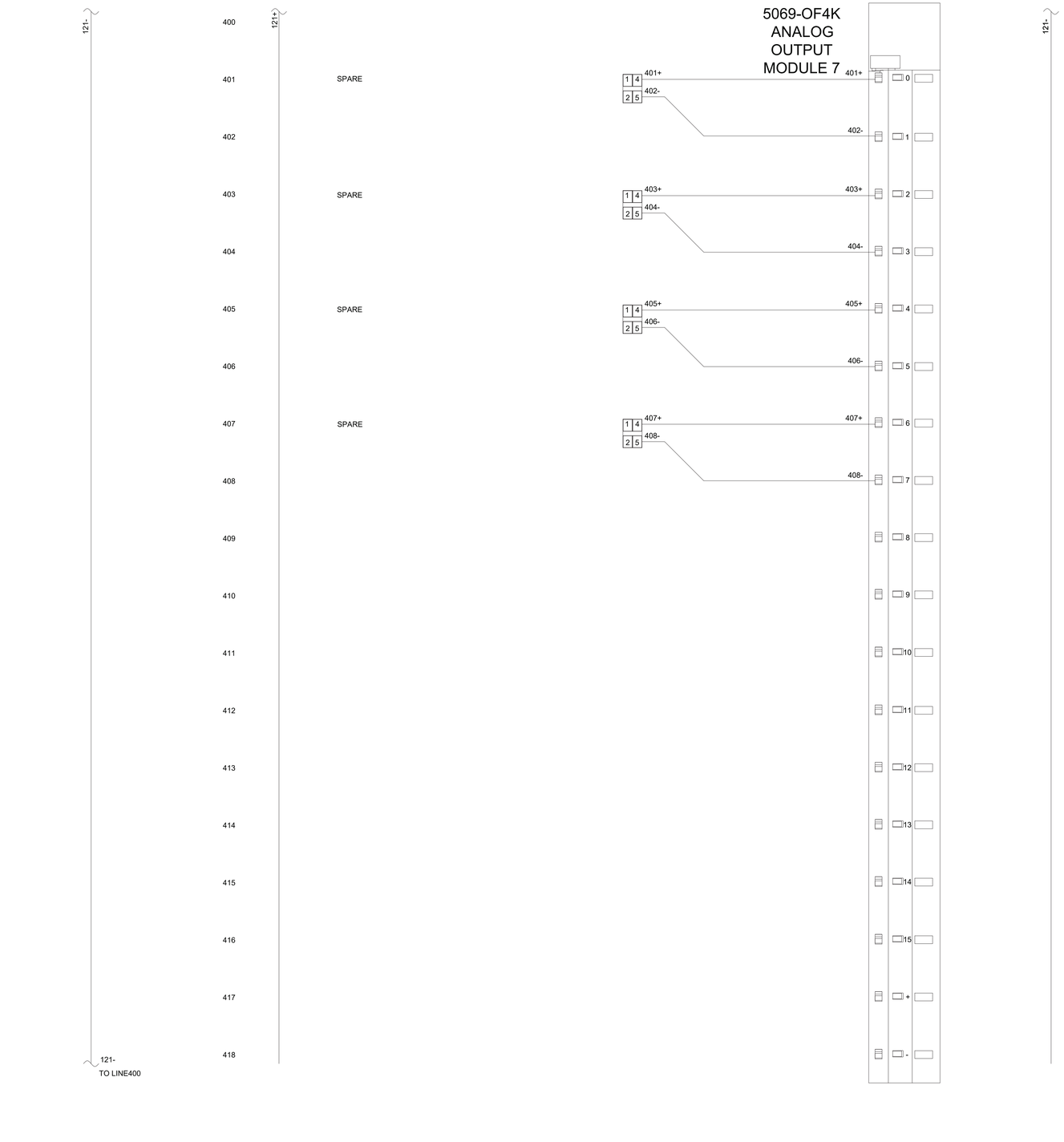
Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 149 OF
DWG. NO. IC-59
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-IY4K ANALOG INPUT MODULE 7



5069-OF4K ANALOG OUTPUT MODULE 7



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DESIGNED BY: CAE
CHECKED BY:
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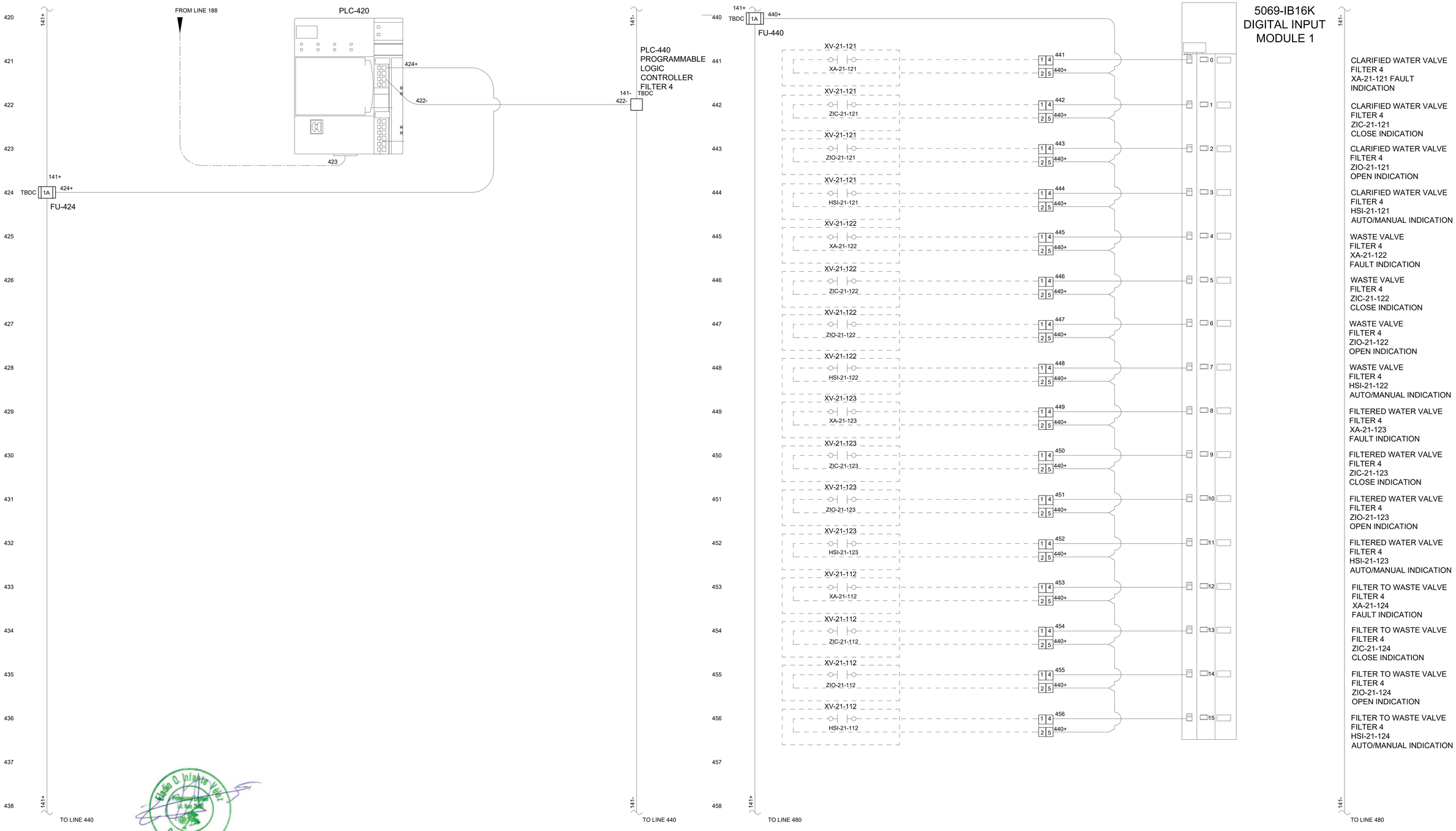
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-3 WIRING DIAGRAM ANALOG INPUT AND OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 150 OF
DWG. NO. IC-60
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



NO	DATE	REVISION	BY	CK.	APPR.

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DESIGNED BY CAE
CHECKED BY
APPR. BY

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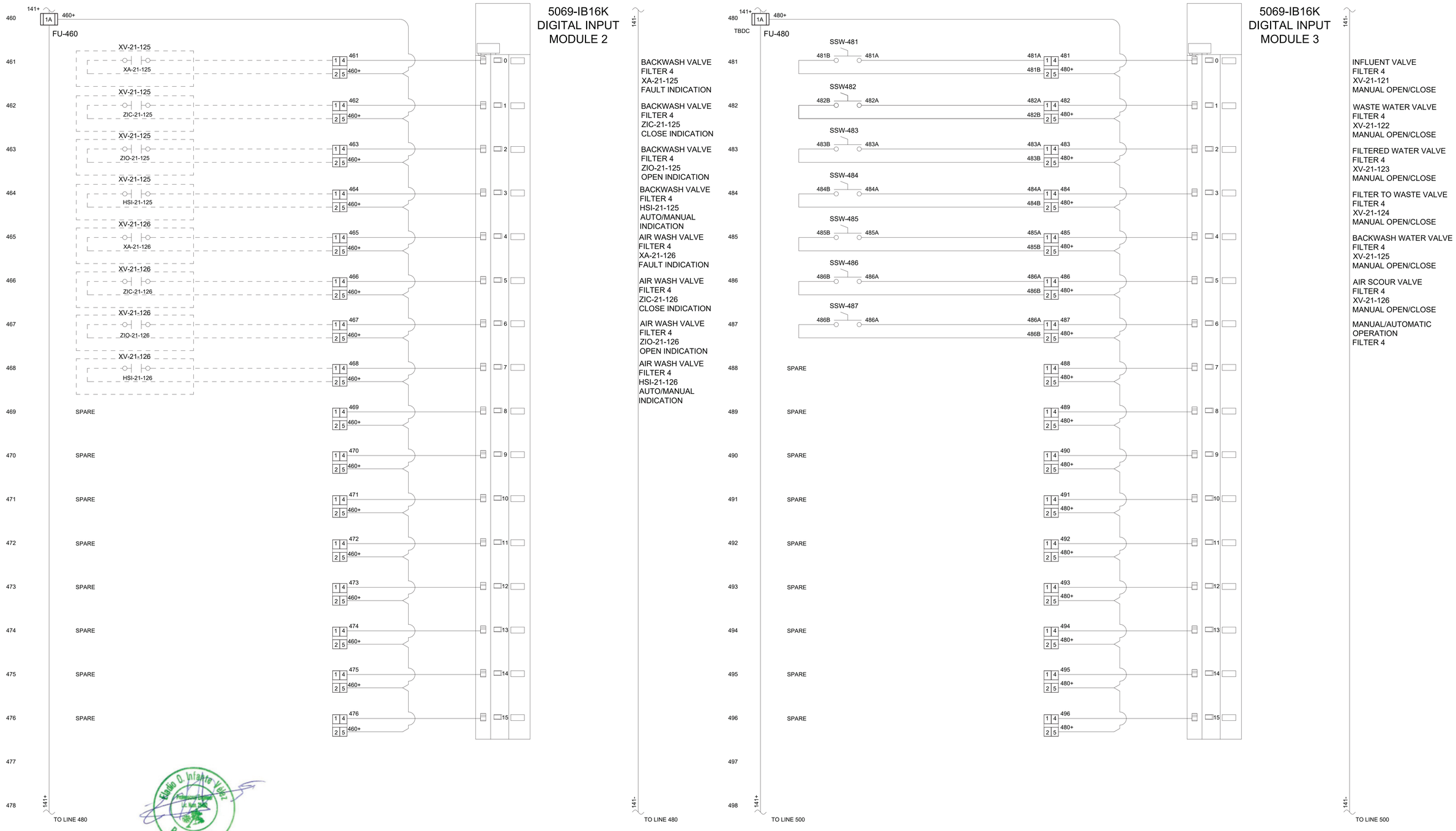
Since 1992 Email: cae@ca-eng.com | Web: www.ca-eng.com

GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-4 WIRING DIAGRAM AND DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 151 OF
DWG. NO. IC-61
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-4 WIRING DIAGRAM DIGITAL INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 152 OF
DWG. NO. IC-62
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-OB16K DIGITAL OUTPUT MODULE 4

500	141+	CR-500 (521) 518-	500	500	0	CLARIFIED WATER VALVE FILTER 4 XV-21-121 OPEN/CLOSE COMMAND	520
501		CR-501 (524) 518-	501	501	1	WASTE VALVE FILTER 4 XV-21-122 OPEN/CLOSE COMMAND	521
502		CR-502 (527) 518-	502	502	2	FILTERED WATER VALVE FILTER 4 XV-21-123 OPEN/CLOSE COMMAND	522
503		CR-503 (530) 518-	503	503	3	FILTER TO WASTE VALVE FILTER 4 XV-21-124 OPEN/CLOSE COMMAND	523
504		CR-504 (533) 518-	504	504	4	BACKWASH VALVE FILTER 4 XV-21-125 OPEN/CLOSE COMMAND	524
505		CR-505 (536) 518-	505	505	5	AIR WASH VALVE FILTER 4 XV-21-126 OPEN/CLOSE COMMAND	525
506		CR-506 (541) 518-	506	506	6	CLARIFIED WATER VALVE OPEN INDICATION FILTER 4	SPARE 526
507		CR-507 (544) 518-	507	507	7	WASTE WATER VALVE OPEN INDICATION FILTER 4	SPARE 527
508		CR-508 (547) 518-	508	508	8	FILTERED WATER VALVE OPEN INDICATION FILTER 4	SPARE 528
509		CR-509 (550) 518-	509	509	9	FILTER TO WASTE VALVE OPEN INDICATION FILTER 4	SPARE 529
510		CR-510 (553) 518-	510	510	10	BACKWASH VALVE OPEN INDICATION FILTER 4	SPARE 530
511		CR-511 (556) 518-	511	511	11	AIR SCOUR VALVE OPEN INDICATION FILTER 4	SPARE 531
512		CR-512 (561) 518-	512	512	12		SPARE 532
513		CR-513 (564) 518-	513	513	13		SPARE 533
514		CR-514 (567) 518-	514	514	14		SPARE 534
515		CR-515 (570) 518-	515	515	15		SPARE 535
516	TBDC 1A FU-516	516+			+		536
517					-	TBDC 517- 141-	537
518	141+ TO LINE 520					TBDC 518- 141- TO LINE 520	538

141+	521A CR-500 9 5	521 / 521A	XV-21-121 CLARIFIED WATER VALVE FILTER 4	141-	CLARIFIED WATER VALVE CONTROL SIGNAL XC-21-121
	524A CR-501 9 5	524 / 524A	XV-21-122 WASTE WATER VALVE FILTER 4		WASTE WATER VALVE CONTROL SIGNAL XC-21-122
	527A CR-502 9 5	527 / 527A	XV-21-123 FILTERED WATER VALVE FILTER 4		FILTERED WATER CONTROL SIGNAL XC-21-123
	530A CR-503 9 5	530 / 530A	XV-21-124 FILTER TO WASTE VALVE FILTER 4		FILTER TO WASTE CONTROL SIGNAL XC-21-124
	533A CR-504 9 5	533 / 533A	XV-21-125 BACKWASH VALVE FILTER 4		BACKWASH CONTROL SIGNAL XC-21-125
	536A CR-505 9 5	536 / 536A	XV-21-126 AIR WASH VALVE FILTER 4		AIR WASH CONTROL SIGNAL XC-21-126
141+ TO LINE 540				141- TO LINE 540	

Eladio O. Infante Vidal Puerto Rico

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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

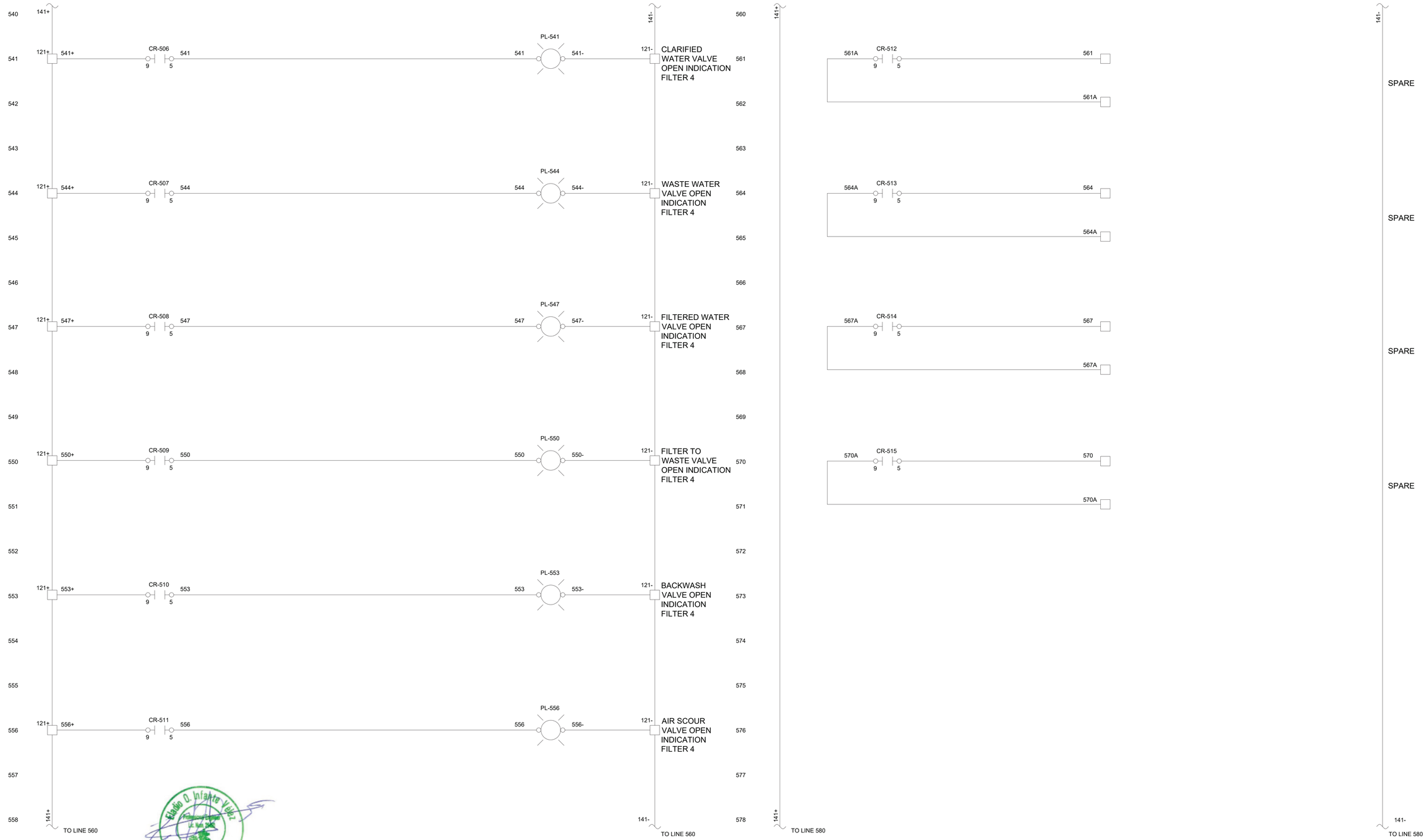
SHEET TITLE
CP-F-4 WIRING DIAGRAM DIGITAL OUTPUT CARD

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 153 OF
DWG. NO. IC-63

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



Eladio O. Infante Vélez
Puerto Rico

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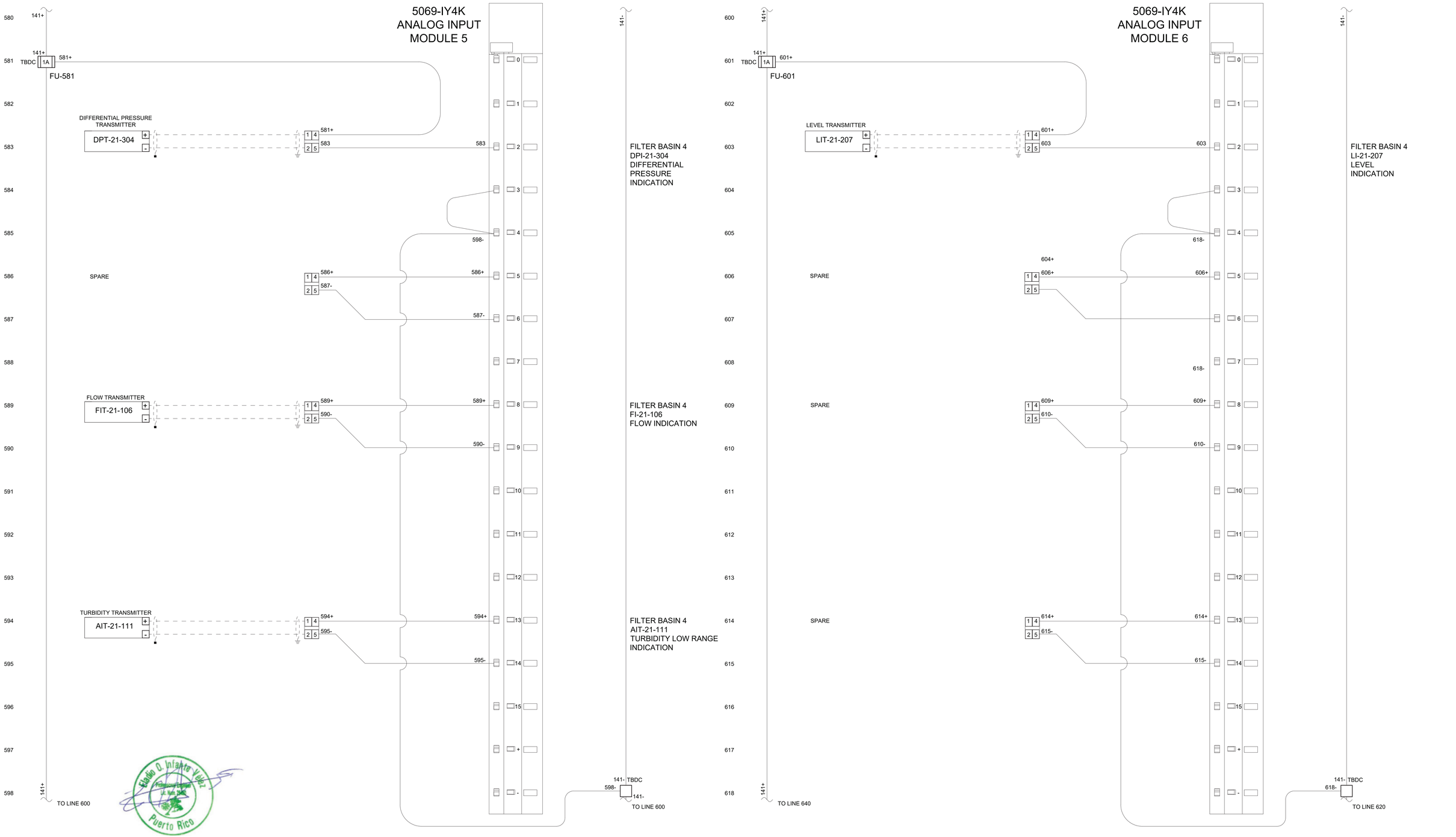
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-4 WIRING DIAGRAM DIGITAL OUTPUT CARD

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 154 OF
DWG. NO. IC-64
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM



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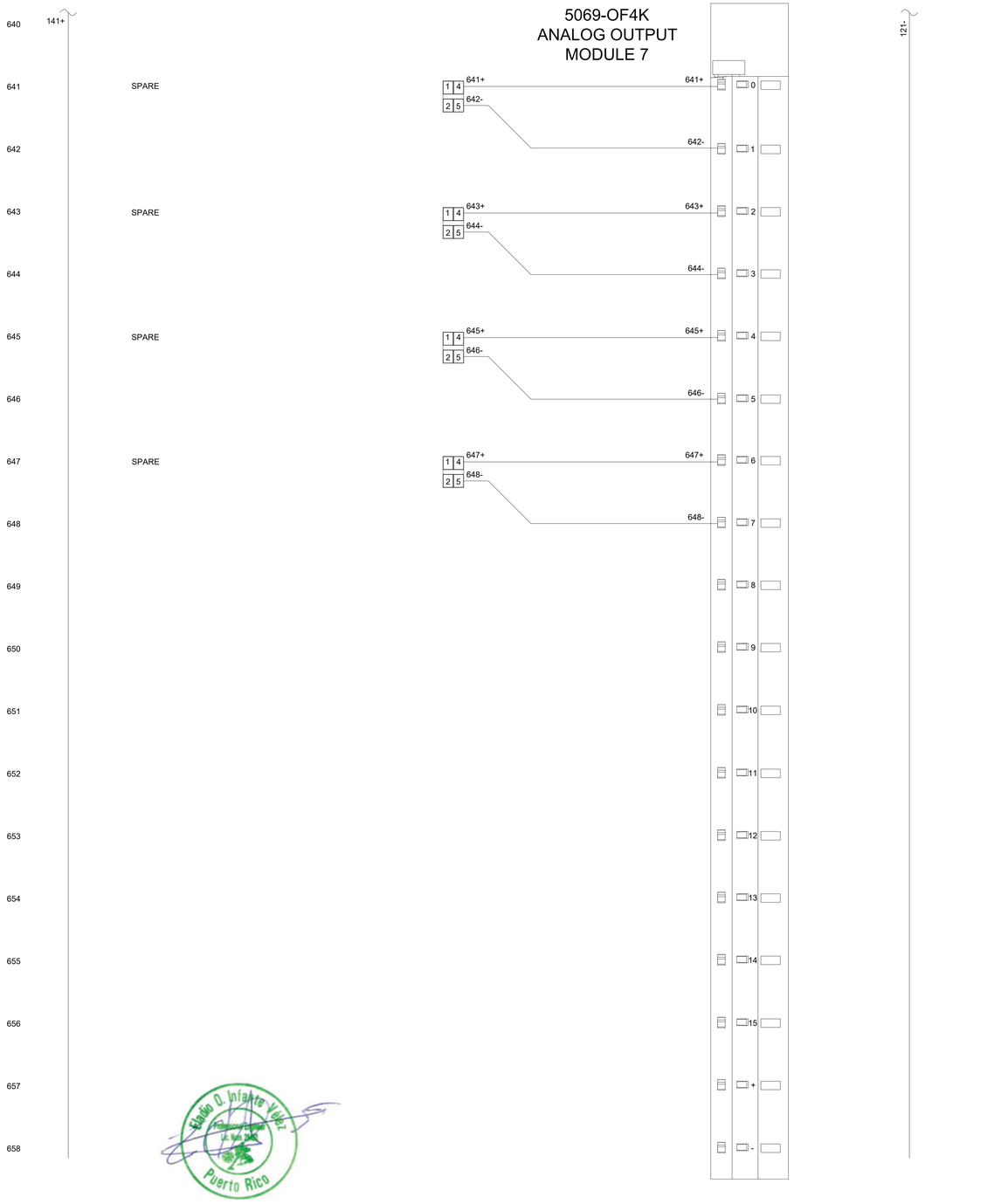
GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-4 WIRING DIAGRAM ANALOG INPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:
SHEET NO. 155 OF
DWG. NO. IC-65
BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM

5069-OF4K
ANALOG OUTPUT
MODULE 7



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GUILARTE WATER TREATMENT PLANT REHABILITATION (FAASt)
ADJUNTAS, PUERTO RICO

SHEET TITLE
CP-F-4 WIRING DIAGRAM ANALOG INPUT/OUTPUT CARDS

Autoridad de Acueductos y Alcantarillados
GOBIERNO DE PUERTO RICO

C.I.P. No. 4-01-6012
PSWID
DATE: NOV / 2026
SCALE:

SHEET NO. 156 OF
DWG. NO. IC-66

BAR IS TWO CM ON ORIGINAL DWG. IF NOT TWO CM ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 2 CM