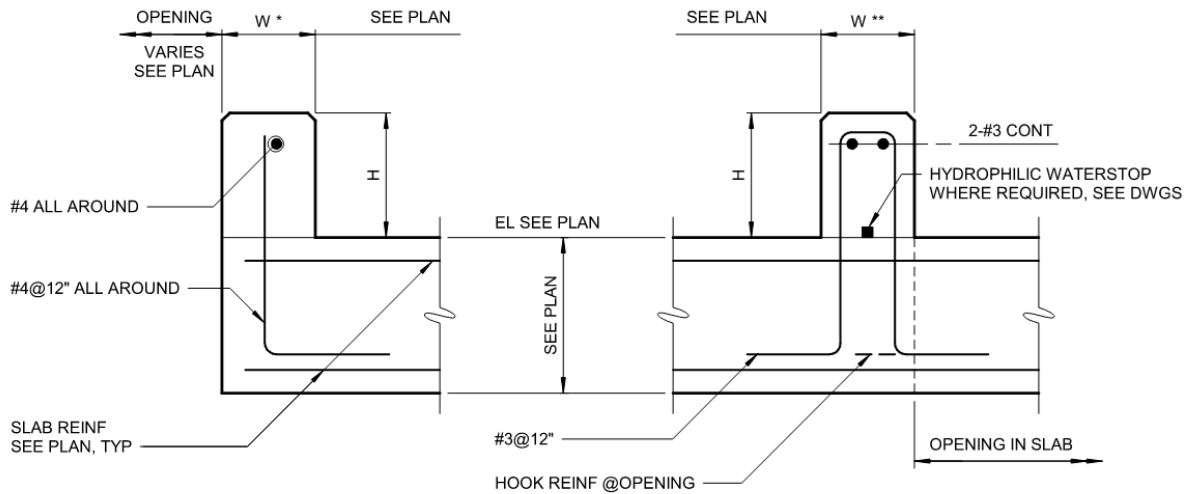


EXHIBIT A14



Answer No. Thirty (30):

The Detail S-03-0603 tagged in Drawings S-10-05 and S-10-07 is the typical Concrete Curb detail and is shown below for reference.



NOTE:

1. W* DENOTES CURBS LESS THAN 8"
2. W** DENOTES CURBS EQUAL TO OR GREATER THAN 8".
3. DOWELS INTO BEAMS SHALL BE CAST IN UNLESS APPROVED BY ENGINEER. ALL OTHER DOWELS MAY BE CAST IN OR ANCHORED WITH DOWEL ADHESIVE SYSTEM WITH A 6" MINIMUM EMBEDMENT.
4. WHERE FLOOR IS 8" THICK OR LESS, USE DOWELS EMBEDDED TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.

CONCRETE CURB

S-03-0603

EXHIBIT A15



SECTION 13310
PROGRAMMABLE LOGIC CONTROLLER (PLC) AND DIGITAL EQUIPMENT

PART 1 - GENERAL

1.01 SCOPE

- A. The requirements of Section 13300 Process Instrumentation and Controls shall apply to this section.
- B. Furnish all labor, materials, equipment and incidentals required, to install, complete and ready for operation, the panels depicted on the Drawings and on the Instrumentation Details provided.
- C. Related Work Specified Elsewhere:
 - a. Division 1 – General Requirements.
 - b. Division 13 – Special Construction.
 - i. Section 13300 – Process Instrumentation and Controls.
 - ii. Section 13315 – Field Instrumentation.
 - c. Division 16 – Electrical.
 - i. Section 16709 – Protectors and Surge Protection Devices (SPDs).
- D. Provide complete lightning and surge protection per Section 16709 – Protectors and Surge Protection Devices (SPDs) on all control panels for power, communication and signal.

1.02 REFERENCES

- A. Refer to Section 13300 Process Instrumentation and Controls for specifics.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Conditions and Section 01420.
- B. All submittal documents shall be provided in bookmarked electronic media - Adobe® Acrobat® portable document format.
- C. All drawings shall be provided in bookmarked electronic media - Autodesk® AutoCAD® file format AND Adobe® Acrobat® portable document format.
- D. Refer to Section 13300 Process Instrumentation and Controls for specifics.

1.04 QUALITY ASSURANCE

- A. The PLC and Digital Equipment MANUFACTURER of this equipment shall have a minimum of ten (10) years consecutive experience producing similar equipment.
- B. The PLC and Digital Equipment MANUFACTURER shall be ISO certified.
- C. UL Listing Requirements:
 - a. “Manufactured in accordance with” is not equivalent to “UL LISTED” and does not meet the intent of this specification.
 - b. The Field Instrumentation shall be posted at www.UL.com under the appropriate Category Code. Products without posting at UL.com shall not be approved.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver product(s) in factory labeled packages.

- B. Handling and shipment of the equipment shall be in such a manner to prevent internal component damage, breakage, and denting and scoring of the enclosure finish.
- C. Store and handle in strict compliance with MANUFACTURER's instructions and recommendations. Protect from potential damage from weather and construction operations. Store so condensation will not form on or in controller and if necessary, apply temporary heat where required to obtain suitable service conditions.

1.06 SPARE PARTS

- 1. In addition to the spare parts listed in other sections of the specification, provide the following:
 - 1. Programmable Logic Controller (PLC) and associated equipment: One (1) spare of each component supplied, plus one additional for every five (5) of any given component supplied.
 - 2. Local Area Network (LAN) system component: One (1) spare of each component supplied, plus one additional for every five (5) of any given component supplied.
- 2. The spares and consumables listed above shall be packed in a manner suitable for long term storage and shall be adequately protected against corrosion, humidity and temperature.

PART 2 - PRODUCTS

2.01 PROGRAMMABLE LOGIC CONTROLLER (PLC) EQUIPMENT

- A. Furnish and install PLC equipment as required by the Contract Drawings and the following Specification and in accordance with the attached data sheets, including all necessary auxiliary equipment, in order to provide a fully integrated and working system.
- B. The OWNER has standardized on SIEMENS SIMATIC Automation products. Therefore, components shall be chosen from the list in this Section and assembled such that the intended function is achieved. In general, each PLC shall be equipped with a CPU with integral PROFINET® communications port and a power supply per control panel on a separate rail, additional rails of inputs/outputs each rail with a power supply, interface module and I/O modules as needed, and any additional modules needed to interface with a CPU, the existing plant network, or other network devices. Furnish all cables, connectors, and ancillary devices necessary for the complete functioning system. Any components needed that are not listed shall be by SIEMENS or those recommended by SIEMENS.
- C. Provide a minimum of twenty percent (20%) active spare I/O points, and twenty percent (20%) room for future I/O modules, on each PLC and Input/output (I/O) rail, local or remote. CPU usage shall be tested, and shall not exceed 50% of capacity under full load conditions.
- D. Distribute series of I/O points across multiple modules and rails so as to eliminate a single point of failure.
- E. Each PLC control panel shall be equipped with an on-line DC UPS, SPDs and all other items necessary for a complete working system as shown on Contract Drawings and/or Specifications.
- F. CONTRACTOR shall provide latest version or revision of each component selected and ensure module is supported by the latest version SIEMENS TIA Portal.

- G. SIEMENS PLC RAIL 0 – Power Supply/PLC/Communication Processors (No I/O modules on Rail 0)
- H. If connecting to legacy PROFIBUS equipment, a Siemens IE/PB Gateway may be used. Latest part# for gateway and accessories shall be obtained from Siemens;
- I. All components used shall be selected from the following component list:

Description	Part #
Power Supply, 120 / 230 VAC In, 24 VDC / 8 Amp	6EP1333-4BA00
S7-1500, Rail, 482.6 mm	6ES7590-1AE80-0AA0
Simatic S7-1500, CPU 1516-3 PN/DP, CPU	6ES7516-3AP03-0AB0
12 MB Micro Memory Card	6ES7954-8LE04-0AA0
S7-1500, 16 Point, 120 VAC Discrete Input Module	6ES7 521-1FH00-0AA0
S7-1500, 8 Point 5A Relay Output Module	6ES7 522-5HF00-0AB0
S7-1500, 8 Channel Analog Input Module (16 Bit)	6ES7 531-7NF10-0AB0
S7-1500, 4 Channel Analog Output Module	6ES7 532-5ND00-0AB0
40-Pin Module Terminal Connector	6ES7 592-1AM00-0XB0
INTERFACE MODULE, ET 200MP, PROFINET IM 155-5 MF HF	6ES7 155-5MU00-0CN0
SIMATIC BUS ADAPTER BA 2XRJ45	6ES7193-6AR00-0AA0
STRAIN RELIEF	6ES7590-5DA00-0AA0

2.02 SIEMENS SIRIUS SIMOCODE® PRO V I/O and Motor Management Rails

- A. Provide SIMOCODE Pro V complete motor management system including base unit, PROFINET communication, current measuring module sized to motor FLA, and voltage measuring module. Contractor shall be responsible for proper module selection based on motor nameplate data.
- B. The OWNER's latest "Low Voltage Standards" (attached) shall be followed for all applications without exception.
 - a. All new panels shall use PROFINET® Interfaces;
 - b. Any additions to existing panels may use PROFIBUS® DP™;
 - c. 5A Power Supply, minimum, required for each rail;
 - d. No ET200S Motor Starters shall be used in any application;
- C. 110VAC Base Unit shall be used unless otherwise specified;

Description	Part #
SIMOCODE® pro V, Motor Management, Base (4DI/3RO), 24VDC, PROFINET	3UF7 011-1AB00-0
SIMOCODE® pro V, Motor Management, Base (4DI/3RO), 110VAC, PROFINET	3UF7 011-1AU00-0
Digital Module (24 VDC, 4 inputs & 2 relay outputs)	3UF7 7300-1AB00-0
Digital Module (24 VDC, bistable relay outputs)	3UF7 7310-1AB00-0
Fail-Safe Digital Module (DM-F)	3UF7 7320-1AB00-0
Decoupling Module	3UF7150-1AA00-0
SIMOCODE® pro Operator Panel with Display	3UF7 210-1AA00-0

Interface Covers	3UF7 950-0AA00-0
Current/Voltage Measuring Module	Part# varies based on motor FLA
Module interconnecting ribbon cable	Part# varies based on length
Memory Module	3UF7 901-0AA00-0

2.03 INDUSTRIAL ETHERNET COMMUNICATIONS

A. General Requirements

1. All control system communications shall utilize PROFINET over Industrial Ethernet.
2. All network switches shall be managed industrial Ethernet switches manufactured by Siemens.
3. All switches shall support:
 - PROFINET RT and IRT traffic
 - VLAN segmentation (IEEE 802.1Q)
 - Rapid Spanning Tree Protocol (RSTP)
 - Media Redundancy Protocol (MRP) ring topology
 - IGMP Snooping
 - SNMP diagnostics
4. Power over Ethernet (PoE) shall be provided where required for HMIs, wireless access points, IP cameras, and other networked devices.
5. All copper Ethernet connections leaving a control panel shall be provided with surge protection.
6. Fiber optic interconnections shall be used between buildings unless otherwise approved.

B. Managed Core / Distribution Switch

1. Acceptable Product

Siemens SCALANCE XM-408 2SFP

The SCALANCE XM-408 2SFP shall be used as:

- Panel backbone switch
- MCC network distribution switch
- Central control room aggregation switch

Minimum requirements:

- 8 x 10/100/1000 Mbps RJ45 ports
- 2 x SFP fiber uplink ports
- Managed Layer 2 capability
- Support for PROFINET diagnostics
- Support for MRP Manager functionality
- Redundant power supply capability
- DIN rail or panel mounting

Where PoE devices are connected at this level, provide PoE-capable version or external Siemens-approved PoE injector modules.

Description	Part #
Siemens SCALANCE XM408-8C	6GK5 408-8GS00-2AM2
POE Power Supply 1.6A	6GK5924-0PS00-1AA2
POE Extender Module	6GK5408-0PA00-8AP2
SFP Expansion Module	6GK5400-8AS00-8AP2
C-Plug Card	6GK1900-0AB00

C. Local / Field Panel Switch

1. Acceptable Product

Siemens SCALANCE XC206-2SFP

The SCALANCE XC206-2SFP shall be used for:

- Local control panels
- Remote I/O panels
- Field instrumentation panels
- Skid-mounted equipment

Minimum requirements:

- 6 x 10/100 Mbps RJ45 ports
- 2 x SFP fiber ports
- Managed Layer 2 functionality
- PROFINET compliant
- MRP Client capability
- DIN rail mount

PoE-capable model shall be provided unless otherwise specified.

Description	Part #
Siemens SCALANCE XC206-2SFP POE	6GK5206-2RS00-2AC2
C-Plug Card	6GK1900-0AB10
Siemens SCALANCE XC206-2SFP	6GK5206-2BS00-2AC2

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The panels shall be installed at locations as shown on the Contract Drawings
- B. Panels shall be factory tested prior to shipment. Field installation shall consist only of setting the panel in place and making necessary electrical and conduit connections.
- C. Verify that electrical and control wiring installation complies with MANUFACTURER's submittal by means of point-to-point continuity testing.

3.02 ADJUSTING AND CLEANING

- A. The panels and devices shall be adjusted accordingly per MANUFACTURER's recommendations.
- B. Clean exposed surfaces using MANUFACTURER recommended materials and methods.
- C. Vacuum all interior spaces.

3.03 TESTING

- A. Panels and panel assemblies shall be tested for proper operation at the panel supplier's factory, or other selected site, prior to the shipment of any panel to the jobsite.
- B. Acceptance of shop tests by OWNER shall not constitute a waiver of requirements to meet the field tests under specified operating conditions.
- C. Refer to Section 13300 - Process Instrumentation and Controls for specifics.

3.04 STARTUP SERVICES

- A. Engage a factory-authorized service representative to perform startup service.
- B. Train OWNER's maintenance personnel on procedures and schedules for energizing and de-energizing, troubleshooting, servicing and maintaining equipment.

- C. Verify that all panels and devices are installed and connected according to the Contract Documents.
- D. Verify that electrical and control wiring installation complies with MANUFACTURER's submittal by means of point-to-point continuity testing.
- E. Verify that wiring installation complies with requirements in Division 13 and 16 Sections.
- F. Complete installation and startup checks according to MANUFACTURER's written instructions.

3.05 WARRANTY

- A. Refer to Section 13300 - Process Instrumentation and Controls for specifics.

CITY OF ORLANDO

PUBLIC WORKS DEPARTMENT

SYSTEMS STANDARDS

PREPARED BY:

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

DRAWING LAYER COLOR LEGEND:

CYAN - FIBER COMMUNICATIONS
GREY - NOTES
BLACK - ELECTRICAL SCHEMATIC WIRING DIAGRAMS AND DEVICES
BLUE - PART IDENTIFICATION
PURPLE - WIRE NUMBERS, AND DRAWING LOCATORS
MAGENTA - PROFIBUS DP COMMUNICATIONS
GREEN - FIELD DEVICES AND WIRING OUTSIDE ENCLOSURE (DASHED)
RED - FUTURE DEVICES AND WIRING
TEAL - DIMENSIONS
LIGHT GREEN - PROFINET

03-02-2026

DRAWING INDEX

REFERENCE :

SHT. NO.	DESCRIPTION	REV. DATE
102	DRAWING INDEX-1	03-02-2026
103	DRAWING INDEX-2	05-23-2025
110	ABBREVIATIONS AND SYMBOL LEGEND	10-07-2020
120	WIRE LABELING CONVENTIONS	10-07-2020
121	CONDUIT / CABLE LABELING CONVENTIONS	10-07-2020

S7-1500 PLC PANEL

SHT. NO.	DESCRIPTION	REV. DATE
202	FRONT, SIDE, TOP ELEVATIONS / GROUNDING DETAILS	10-02-2020
203	INTERIOR LAYOUT	01-07-2025
204	BILL OF MATERIALS	03-02-2026
205	POWER DISTRIBUTION PART 1 WIRING	11-17-2020
206	POWER DISTRIBUTION PART 2 WIRING	08-08-2022
207	RAIL 1 SLOT 2 MODULE WIRING	01-07-2025
208	RAIL 1 SLOT 3 MODULE WIRING	01-07-2025
209 A	RAIL 1 SLOT 4 MODULE CURRENT 2 WIRING	01-07-2025
209 B	RAIL 1 SLOT 4 MODULE CURRENT 4 WIRING	01-07-2025
210	RAIL 1 SLOT 5 MODULE WIRING	01-17-2025
211	COMMUNICATIONS FIBER OPTIC LAYOUT	10-02-2020
212	COMMUNICATIONS COPPER WIRING LAYOUT	11-14-2024
213	FIELD SIDE FTB ASSIGNMENTS PART 1	01-29-2026
214	FIELD SIDE FTB ASSIGNMENTS PART 2	01-29-2026

S7-1500 RIO PANEL

SHT. NO.	DESCRIPTION	REV. DATE
302	FRONT, SIDE, AND TOP ELEVATIONS / GROUNDING DETAILS	10-02-2020
303	INTERIOR LAYOUT	01-29-2026
304	BILL OF MATERIALS	01-29-2026
305	POWER DISTRIBUTION PART 1 WIRING	10-02-2020
306	POWER DISTRIBUTION PART 2 WIRING	10-02-2020
307	RAIL 1, SLOT 2MODULE WIRING	10-02-2020
308	RAIL 1, SLOT 3 MODULE WIRING	10-02-2020
309	RAIL 1, SLOT 4 MODULE WIRING	01-17-2023
310	RAIL 1, SLOT 5 MODULE WIRING	10-02-2020
311	FIBER OPTIC COMMUNICATIONS LAYOUT	10-02-2020
312	COPPER COMMUNICATIONS LAYOUT	01-29-2026
313	FIELD TERMINAL BLOCK WIRING PART 1	01-29-2026
314	FIELD TERMINAL BLOCK WIRING PART 2	01-29-2026



CATEGORY: WW	-	UPDATED	11-14-2024	FH
	-	UPDATED	01-07-2025	FH
SCALE: N.T.S.	-	UPDATED	05-23-2025	FH
	-	UPDATED	01-29-2026	FH
DRAWN BY: JG	-	UPDATED	03-02-2026	FH
APPROVED BY: WW	NO	REVISION	DATE	BY

**WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP**

**CITY OF
ORLANDO, FLORIDA**

TITLE:
**WATER RECLAMATION SYSTEMS
STANDARDS
DRAWING INDEX-1**

**SHEET
102**

DRAWING INDEX

DP AND PN REMOTE FIBER COMMUNICATIONS PANEL

SHT. NO.	DESCRIPTION	REV. DATE
502	FRONT AND SIDE ELEVATIONS	11-09-2020
503	PROFINET INTERIOR LAYOUT	05-23-2025
504	BILL OF MATERIALS	05-23-2025
505	POWER AND I/O WIRING	11-09-2020
506A	PROFINET WIRING LAYOUT	11-09-2020
506B	PROFIBUS DP WIRING LAYOUT	11-09-2020

PROFINET COMMUNICATIONS FOR (MCC) APPLICATIONS

SHT. NO.	DESCRIPTION	REV. DATE
602	FRONT PANEL ELEVATION	10-28-2014
603	INTERIOR LAYOUT	11-12-2014
604	BILL OF MATERIALS	10-28-2014
605	480VAC ONE LINE DISTRIBUTION LAYOUT	10-28-2014
606	120VAC AND 24VDC DISTRIBUTION LAYOUT	10-28-2014
607	COMMUNICATION FIBER OPTIC LAYOUT	11-12-2014
608	COMMUNICATION CATEGORY "6A" WIRING LAYOUT	10-28-2014

DP AND PN COMMUNICATIONS FOR (SWITCHGEAR) APPLICATIONS

SHT. NO.	DESCRIPTION	REV. DATE
702	FRONT PANEL LAYOUT	11-24-2014
703	INTERIOR PANEL LAYOUT	12-08-2014
704	BILL OF MATERIALS	12-08-2014
705	DUAL SOURCE CONTROL POWER TRANSFER CIRCUIT SCHEMATIC	11-24-2014
706	120VAC AND 24VDC DISTRIBUTION LAYOUT	11-24-2014
707	COMMUNICATION FIBER OPTIC LAYOUT	11-25-2014
708	COMMUNICATION COPPER LAYOUT	11-25-2014
709	OVERALL COMMUNICATIONS COPPER SCHEMATIC	11-24-2014

DP AND PN REMOTE FIBER COMMUNICATIONS PANEL

SHT. NO.	DESCRIPTION	REV. DATE
852	FRONT AND SIDE ELEVATIONS	11-11-2016
853	INTERIOR LAYOUT	01-27-2025
854	BILL OF MATERIALS	01-27-2025
855	POWER AND COMMUNICATION WIRING	01-27-2025

DETAILS

SHT. NO.	DESCRIPTION	REV. DATE
902	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-1	05-20-2014
903	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-2	05-20-2014
904	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-3	05-20-2014
905	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-4	06-03-2015
906	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-5	09-17-2014
907	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-6	09-17-2014
908	SYSTEMS PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS-7	05-21-2014
909	SYSTEMS PROFINET TO PROFIBUS DP COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS	05-21-2014
910	SYSTEMS PROFINET COMMUNICATION NETWORK CABLE AND TERMINATION LAYOUT DETAILS	09-17-2014
911	SYSTEMS DP AND PROFINET COMMUNICATION NETWORK FIELD CABLE LABELING CONVENTION DETAILS	05-20-2014



CATEGORY: WW	-	-	11-29-2017	JG
SCALE: N.T.S.	-	REVISED	12-11-2020	FH
DRAWN BY: JG		REVISED	05-23-2025	FH
APPROVED BY: WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

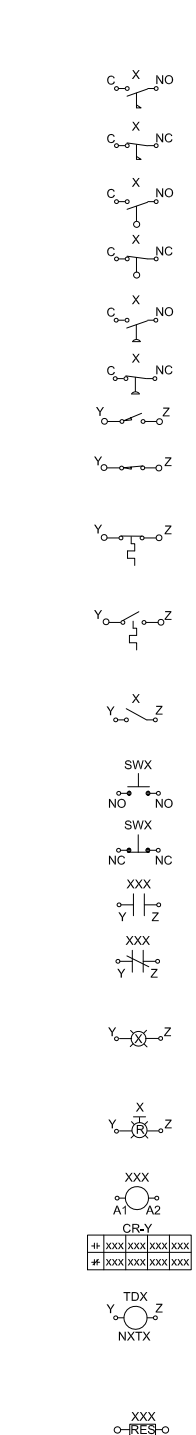
CITY OF
ORLANDO, FLORIDA

TITLE:	SYSTEMS STANDARDS DRAWING INDEX-2	SHEET 103
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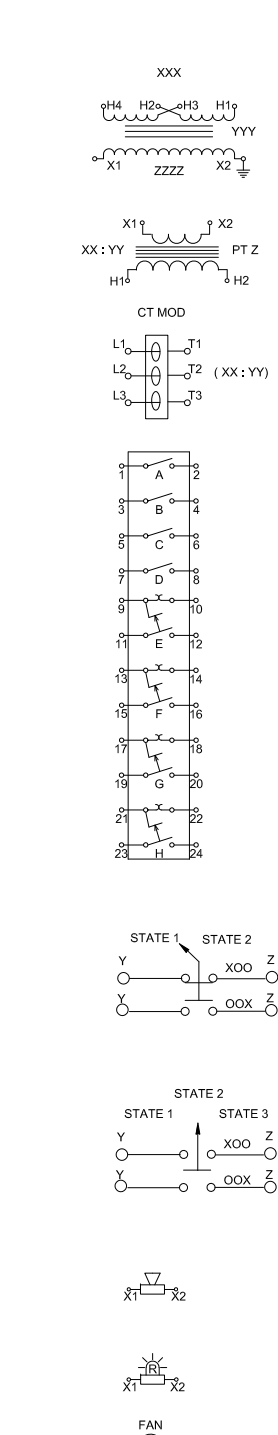
A ACTUATOR OR AMPERE
 AC ALTERNATING CURRENT
 ACP ACCESS CONTROL PANEL
 AD AUDIBLE DEVICE
 AI ANALOG INPUT
 AO ANALOG OUTPUT
 AF AMPERAGE FRAME
 AFF ABOVE FINISHED FLOOR
 AFG ABOVE FINISHED GRADE
 AM AMPERE METER
 AR ALARM RELAY
 ATL ACROSS THE LINE
 ATS AUTOMATIC TRANSFER SWITCH
 BAT BATTERY
 BC BYPASS CONTACTOR
 BG BREAK GLASS STATION
 BM PLC BUFFER MODULE
 BS BUS
 BSD BUS DETAIL
 BYP BYPASS
 C CONTACTOR
 CB CIRCUIT BREAKER
 CCU CABINET COOLER UNIT
 CE CONNECTING ELEMENT
 CKT CIRCUIT
 CMH COMMUNICATIONS MANHOLE
 CMS COMBINATION MOTOR STARTER
 COMM COMMUNICATIONS
 CPT CONTROL POWER TRANSFORMER
 CR CONTROL RELAY
 CS CONTROL SYSTEM
 CSS COMMON SIGNAL SOURCE
 CT CURRENT TRANSFORMER
 CTSB CURRENT TRANSFORMER SHORTING BLOCK
 CLR CONTROLLER
 CPT CURRENT / POTENTIAL TRANSFORMER
 CU COPPER CONDUCTOR
 CV CHECK VALVE
 DC DIRECT CURRENT
 DI DIGITAL INPUT
 DISP DISPLAY
 DO DIGITAL OUTPUT
 DPST DOUBLE POLE SINGLE THROW
 DS DOOR SWITCH
 EF EXHAUST FAN
 EG ELECTRICAL GROUND
 ES EMERGENCY STOP
 ETPC ETHERNET PATCH CABLE
 ETM ELAPSED TIME METER
 FAN FAN MOTOR
 FCB FEEDER CIRCUIT BREAKER
 FU FUSE
 FUB FUSE BLOCK
 FIT FLOW INDICATOR
 FLUOR FLUORESCENT
 FM FLOW METER
 FOC FIBER OPTIC CABLE
 FOP FIBER OPTIC PANEL
 FOPC FIBER OPTIC PATCH CABLE
 FPPC FLEXIBLE PORTABLE POWER CORD
 FS FLOAT SWITCH FLOW SWITCH
 FT FLOW TRANSMITTER
 FTB FIELD TERMINAL BLOCK
 FVNR FULL VOLTAGE NON-REVERSING STARTER
 GEN GENERATOR
 GFI GROUND FAULT INTERRUPTER
 GFR GROUND FAULT RELAY
 GND GROUND
 GRB GROUNDING BAR
 GRT GROUNDING TERMINAL
 HMI HUMAN MACHINE INTERFACE
 HOA HAND / OFF / AUTO
 HWD HARDWARE (I.E. BOLTS,NUTS, WASHERS)
 I & C INSTRUMENTATION AND CONTROL
 IC INTERLOCK CONTACTOR
 IEC INDUSTRIAL ETHERNET CABLE
 IEG PROFIBET TO PROFIBUS DP GATEWAY
 IEPC INDUSTRIAL ETHERNET PATCH CORD
 IES INDUSTRIAL ETHERNET SWITCH
 ILW INDUCTANCE LOOP WIRING
 IN INPUT
 INST INSTANTANEOUS
 INT INTERFACE MODULE
 K KEY INTERLOCK
 KK KIRK KEY INTERLOCK

KIAC THOUSAND INTERRUPTING AMPERAGE CAPACITY
 L LINE SUPPLY
 LIT LEVEL INDICATING TRANSMITTER
 LIU FIBER OPTIC LIGHT INTERFACE UNIT
 LOR LOCAL OFF REMOTE
 LPB LIGHTED PUSH BUTTON OPERATOR
 LS LIMIT SWITCH / LEVEL SWITCH
 LSSW LIGHTED SELECTOR SWITCH
 LTG LIGHTING
 M MAGNETIC CONTACTOR COIL OR MOTOR
 MILLIAMPS
 MC MOTOR CONTACTOR
 MCB MAIN CIRCUIT BREAKER
 MCC MOTOR CONTROL CENTER
 MDP MAIN DISTRIBUTION PANEL
 MLO MAIN LUG ONLY
 MOV MOTOR OPERATED VALVE
 MPR MOTOR PROTECTION RELAY
 MPZ MINI POWER ZONE
 MS MOTOR STARTER
 MTB MOTOR TERMINAL BLOCK
 MTR MOTOR
 MTS MOTOR TEMPERATURE SENSOR
 N NEUTRAL GROUNDED SUPPLY
 NC NORMALLY CLOSED
 NO NORMALLY OPEN
 NP NAME PLATE
 NRMS NON REVERSING MOTOR STARTER
 NTS NOT TO SCALE
 OL OVERLOAD RELAY
 OLM OPTICAL LINK MODULE
 OPTI OPTICAL TRANSCEIVER
 OUTPUT
 P POLE
 PB PUSH BUTTON
 PBC PROFIBUS BUS CONNECTOR
 PC PHOTOCELL
 PDB POWER DISTRIBUTION BLOCK
 PDP PROFIBUS DP
 PE POTENTIAL EARTH
 PFT PROFIBUS TERMINATOR
 PH PHASE
 PHM PHASE MONITOR
 PL PANEL LIGHT
 PLC PROGRAMMABLE LOGIC CONTROLLER
 PI PROFIBUS INTERFACE
 PM POWER METER OR MODULE
 PMH POWER MANHOLE
 PMS PUMP MONITORING SYSTEM
 PN PROFIBET
 POE POWER OVER ETHERNET
 PPR PUMP PROTECTION RELAY
 PR PAIR
 PRS PROXIMITY SENSOR
 PS PRESSURE SWITCH
 PST POLES SINGLE THROW
 PSL POWER SUPPLY
 PT POTENTIAL TRANSFORMER
 RCM RECTIFIER CONTROL MODULE
 REAC REACTOR DEVICE
 REC RECEPTACLE
 RES RESISTOR
 RTU REMOTE TELEMETRY UNIT
 SCH SCHEDULE
 SCTRL SPEED CONTROL DEVICE
 SH SPACE HEATER
 SIMO SIMOCODE CONTROL MODULE
 SL STACK LIGHT INDICATOR
 SPD SURGE PROTECTION DEVICE
 SR START RELAY
 SSF SOLID STATE FLASHER MODULE
 SSVS SOLID STATE REDUCED VOLTAGE STARTER
 SOLENOID VALVE
 SWITCH
 SELECTOR SWITCH
 TRANSFORMER
 TERMINAL BOARD
 THERMOSTAT
 TIE BREAKER
 TIME DELAY RELAY
 TEST POINT
 TSP THERMAL SWITCH
 TWISTED SHIELDED PAIR
 OVER VOLTAGE RELAY
 UNINTERRUPTIBLE POWER SUPPLY
 UNDER VOLTAGE RELAY
 VOLTMETER, VOLT
 VFD CONTACTOR
 VISUAL DEVICE
 VARIABLE FREQUENCY DRIVE
 VIBRATION SWITCH
 WEATHERPROOF
 WET WELL
 WALL-MOUNTABLE CONNECTOR HOUSING
 WALL MOUNTABLE INTERCONNECT CENTER
 TRANSFORMER

XXX VAC
 XX HP
 XX AFLC AC MOTOR
 XPH, 60 Hz
 XXXX RPM
 SPACE HEATER
 LINE OR LOAD REACTOR
 OVERLOAD RELAY HEATER UNIT
 OVERLOAD RELAY ID = XXX
 3 PHASE MOTOR STARTER
 MOTOR STARTER ID = XXX
 ACROSS THE LINE CONTACTOR
 CONTACTOR ID = XXX
 CIRCUIT BREAKER
 AMPERE SENSOR (AS) = XXX
 AMPERE FRAME (AF) = YYY
 CIRCUIT BREAKER ID = Z
 FUSE, X=SIZE RATING OF FUSE
 SINGLE PHASE 1 POLE SPD
 ID = X
 SINGLE PHASE 2 POLE SPD
 ID = X
 PLUGGABLE DIN MOUNTED
 SPD TERMINAL BLOCK
 ID = X
 3 PHASE SURGE PROTECTOR DEVICE
 ID = X
 BATTERY
 BATTERY VOLTAGE = X VDC
 TERMINAL POINT X=ID
 GROUND
 GROUND ROD
 KIRK KEYED CIRCUIT BREAKER INTERLOCK
 GROUND ROD TEST STATION
 FIELD WIRING
 PANEL WIRING
 WIRING GUIDE:
 14 RD 123
 WIRE NUMBER
 WIRE COLOR
 WIRE GAUGE IN AWG



FLOW SWITCH NORMALLY OPEN
 X = TERM ID
 FLOW SWITCH NORMALLY CLOSED
 X = TERM ID
 LEVEL SWITCH NORMALLY OPEN
 X = TERM ID
 LEVEL SWITCH NORMALLY CLOSED
 X = TERM ID
 PRESSURE SWITCH NORMALLY OPEN
 X = TERM ID
 PRESSURE SWITCH NORMALLY CLOSED
 X = TERM ID
 LIMIT SWITCH NORMALLY OPEN
 Y, Z = TERM ID
 LIMIT SWITCH NORMALLY CLOSED
 Y, Z = TERM ID
 MOTOR TEMPERATURE SENSOR (N.C.)
 BREAK ON TEMPERATURE RISE
 Y, Z = TERM ID
 MOTOR TEMPERATURE SENSOR (N.O.)
 MAKE ON TEMPERATURE RISE
 Y Z = TERM ID
 SWITCH Y, Z = TERM, ID
 X=ID
 PUSH-BUTTON SWITCH, MOMENTARY CONTACT,
 NORMALLY OPEN, X =TERM, ID
 PUSH-BUTTON SWITCH, MOMENTARY CONTACT,
 NORMALLY CLOSED, X=TERM, ID
 REMOTE DEVICE Y, Z= TERMINAL ID
 NORMALLY OPEN
 X= CONTROL DEVICE ID
 REMOTE DEVICE Y, Z= TERMINAL ID
 NORMALLY CLOSED
 X= CONTROL DEVICE ID
 INDICATING LIGHT - "X" INDICATES COLOR
 Y, Z = TERMINAL ID
 B=BLUE= IDLE, MOTOR NOT RUNNING, VALVE CLOSED
 R=RED= FAIL, ALARM, RESET NEEDED
 G=GREEN= PUMP RUNNING, VALVE CLOSED
 RED LIGHTED RESET PUSH BUTTON
 X=ID
 CONTROL RELAY X=ID
 CR-Y= CONTROL RELAY ID
 CONTROL RELAY CONTACT LOCATION
 TIME DELAY RELAY, X=SEQUENTIAL NUMBER Y, Z= TERM ID
 NXXT =
 NOTC=NORMALLY OPEN TIMED CLOSED
 NOTO=NORMALLY OPEN TIMED OPEN AFTER CLOSE
 NCTO=NORMALLY CLOSED TIMED OPEN
 NCTC=NORMALLY CLOSED TIMED CLOSED AFTER OPEN
 RESISTOR, X= OHMS, Y= WATTAGE, X = ID
 ELECTRONIC HOUR METER
 GROUND MODULAR TERMINAL BLOCK



CONTROL TRANSFORMER
 X=PRIMARY VOLTAGE
 Y=VA RATING
 Z=SECONDARY VOLTAGE
 POTENTIAL TRANSFORMER
 VOLTAGE RATIO INDICATED (XX : YY)
 PT ID = Z
 CURRENT TRANSFORMER MODULE
 AMPERE RANGE OR AMPERE RATIO INDICATED (XX : YY)
 METERING 12 POLE SHORTING / TEST BLOCK (4 PT & 4 CT)
 MODULE LOCATION GUIDE
 RX : SX
 MODULE SLOT (X) NUMBER
 MODULE RAIL (X) NUMBER
 2 POS. SELECTOR SWITCH: MAINTAINED CONTACT WITH
 CONTACT POSITION INDICATED, CHART IDENTIFIES
 OPERATION

STATE POSITIONS		
CKT.	1	2
1	X	O
2	O	X

 X - CLOSED CONTACT
 O - OPEN CONTACT
 Y Z = TERM ID
 3 POS. SELECTOR SWITCH: MAINTAINED CONTACT WITH
 CONTACT POSITION INDICATED, CHART IDENTIFIES
 OPERATION

STATE POSITIONS			
CKT.	1	2	3
1	X	O	O
2	O	O	X

 X - CLOSED CONTACT
 O - OPEN CONTACT
 Y Z = TERM ID
 AUDIBLE DEVICE
 X=ID
 VISUAL DEVICE
 X=ID
 R= LENS COLOR
 CABINET FAN
 RTD SENSOR
 X,Y,Z= TERM ID
 SOLENOID COIL
 TERMINAL BLOCK GUIDE
 XX : XX
 TERMINAL BLOCK TERMINAL NUMBER
 TERMINAL BLOCK OR DEVICE ID
 (I.e. LINE CIRCUIT 1000= SHEET 210, LINE 00)
 LINE CIRCUIT LOCATOR GUIDE
 XX XX = (XXXX)
 LINE NUMBER LAST TWO DIGITS
 SHEET NUMBER LAST TWO DIGITS
 (I.e. LINE CIRCUIT 1000= SHEET 210, LINE 00)
 MODULE LOCATION GUIDE
 RX : SX
 MODULE SLOT (X) NUMBER
 MODULE RAIL (X) NUMBER

COO COLOR ABBREVIATIONS	
AQ = AQUA	PL = PURPLE
BK = BLACK	RD = RED
BL = BLUE	RS = ROSE
BN & BR = BROWN	SH = SHIELD BARE
CL = CLEAR	SL = SLATE
GN = GREEN	VT = VIOLET
GY = GRAY	WT = WHITE
OR = ORANGE	YL = YELLOW
STRIPED CONDUCTOR = CONDUCTOR COLOR / STRIPE COLOR	

VC
 VD
 VFD
 VS
 WP
 WW
 WCH
 WIC
 XFMR

CATEGORY:	WW			10-07-2020	JG/FH
SCALE:	N.T.S.				
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WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

TITLE:
 WATER RECLAMATION SYSTEM
 STANDARDS
 ABBREVIATIONS AND SYMBOL LEGEND



TERMINAL	ENTITY IDENTIFIER	PROCESS AND SUB-PROCESS AREA IDENTIFIER WIRING OF PLC OR RIO ORINATION OR LIFT STATION RTU NUMBER		SIGNAL TYPE IDENTIFIER		DEVICE / FUNCTIONAL IDENTIFIER		
999:9	-	BB	-	XXX	-	YYY	-	ZZZZ
DIs = 100:1- 300:4	C1 = Conserv I WRF	20 = EQ	NCC = North Chlorine Contact Chamber	DIGITAL INPUTS	DIGITAL OUTPUTS			
DOs = 301:1-500:4	C2 = Conserv II WRF	40 = RAS	NIR = North IR Pump Station	BA = Fire Alarm Initiation	YBP = Bubbler Purge Output	AB = Air Bay	INF = Influent	SB = Switchboard
Als = 501:1-800:4	DC = Distribution Center	130 = Service Water Pump Station	NPW = Non-Potable Water Bldg	BF = Fire Alarm Failure/Trouble	YFV = Fuel Valve Relay	ACC = Access Control Communicator	INT = Interface Module	SCR = Bar Screen
AOs = 801_1-999:4	IB = Iron Bridge RWRf	180 = Operations Center	OF = Outfall	CBC = Circuit Breaker Closed	YH = Horn/Buzzer Output	ACP = Access Control Panel	IR = Internal Recycle	SC = Scum
COMs = 1000:1 To 1100:4	OW = Orlando Easterly Wetlands	999 = Lift Station Number	OPS = Operations Bldg	CBO = Circuit Breaker Opened	YL = Clear Lamp Output	ACKP = Access Control Key Pad	JB = Junction Box	SD=Smoke Detector
	LS = Lift Stations	AB = Aeration Basin	PE = Primary Effluent	CN = SPD Normal Status	YLB = Blue Lamp Output	ACT= Actuator or Ampere	LE = Level Element	SE = Secondary Effluent
	RC = Reclaim	ADM = Administration Bldg	PAE = Post Aeration	ES = ESTOP Indication	YLG = Green Lamp Output	AGI = Agitator	LT = Lighting	SG = Switchgear / Slide Gate
		AER = Aeration	PG = Power Generation	FAH = Flow Alarm High	YLR = Red Lamp Output	AIT = Analytical Transmitter	LIT = Level Transmitter	SH = Stator Housing
		BB = Blower Bldg	PKL = Parking Lot	FAL = Flow Alarm Low	YLY = Yellow Lamp Output	AL = Sodium Aluminate	LP = Lighting Panel	SL = Sludge
		BBB = Bardenpho Blower Bldg	PH2 = Bardenpho Phase 2	GBC = Generator Breaker Closed	YR = Reset Command	ALV = Air Lift Valve	LLS = Liquid Level Switch	SLW = Seal Water
		BFP = (Belt Filter) Press Bldg	PH3 = Bardenpho Phase 3	GBO = Generator Breaker Opened	YRP = Run Permissive Command	AR = Aerator	LS = Limit Switch	SP = Sump Pump or Scum Pump
		BG = Back Gate	PRI = Primary Clarification	GLA = Gas Leak Alarm	YS = Start Command (ON)	ASV = Air Scour Valve	M = Motor	SPD = Sump Pump Discharge
		BP = Bulk Polymer	RAS = RAS/WAS	HS = HOA In AUTO	YSC = Close Command	ALP = Air, Low Pressure	MAI = Maintenance Building	SPD= Surge Protection Device
		BPS = Booster Pump Station	RG = Rear Gate	HSB = Hand Switch Bypass	YSF = Start Fan Command	ATS = Automatic Transfer Switch	MAS = Monitoring and Status Relay	SS = Softstarter
		CCC = Chlorine Contact Chamber	RBP = Recycle Backwash Pump Station	HS = HOA in Hand	YSH = Space Heater Relay Output	B = Blower (Centrifugal, Turbo)	MC = Motor Contactor or Controller	SSM = Secondary Scum
		CHM = Chemical Bldg	RIN = Reclaim Interconnect	HSL = HOA in Local	YSO = Open Command	BC = Bypass Contactor	MCC = Motor Control Center	SSW = Selector Switch
		CL2 = Chlorine Storage Bldg	RPS = Reclaim Pump Station	HSR = HOA in Remote	YSP = Start Pump Command	BFP = Belt Filter Press	MF = Manifold	STC = Smart Touch Gate Controller
		CLR = Clarification	SC = Sludge Conditioning	HSV = Hand Switch VFD	YSR Generator Stop Relay Output	BLDG = Building	MSH=Motor Space Heater	STS = Storm Sewer
		CSB = Chlorine Splitter Box	SCC = South Chlorine Contact Chamber	JA = ATS Alternate Power Available	YVL = Voltage Lower Command	BRK = Brake	MS = Motor Stator Winding	SV = Solenoid Valve
		DBB = DBF Blowers Bldg	SEC = Secondary Clarification	JB = Battery Power Available	YVR = Voltage Raise Command	BRG = Bearing	MSS = Magnetic Switch Sensor	SVR = Server
		DBF = Deep Bed Filters	SCR = Screening Structure	JL = On Line Power	YX = Stop Command (OFF)	BV = Butterfly Valve	MTS = Manual Transfer Switch	SW = Switch OR Seal Water
		DB = Denite Basin	SG = Side Gate	JP = UPS Available		BS = Basin	MTS = Motor Thermal Switch	SWB = Service Water Bypass
		DIG = Digesters	SH = Sludge Handling	JN = ATS Normal Power Available	ANALOG INPUTS	BW = Backwash	NPW = Non-Potable Water	T = Transformer
		DTP = Day Tank Polymer	SIR = South IR Pump Station	JS = Power Supply Voltage Available	AIT = Analytical Indicating Transmitter	BCR = Battery Charger	NEU = AC line Neutral	TER = Terminator Resistor Device
		ECO = Econ River Outfall	SO2 = Sulfur Dioxide Bldg	LSH = Level Switch High	CIT = Chlorine Transmitter	BYP = Bypass	OA = Odorous Air	TI = Tie Breaker
		EQ = Equalization	SS = Sludge Storage	LSHH = Level Switch High High	FIT = Flow	CL2= CL2 Residual Analyzer	OF = Overfill	TIT = Temperature Transmitter
		ER = Energy Recovery	WELL = Well	LSL = Level Switch Low	IIT = Amperage	CAM=Camera	MIX = Mixer	TRB= Turbidity
		FG = Front Gate	WH = Warehouse	LSLL = Level Switch Low Low	LIT = Level	CAS = Control and Status Relay	OLM = Optical Link Module	TK = Tank
		FCL = Final Clarification	WPS = Wetlands Pump Station	MTH = Motor Temperature High	NIT = Turbidity Transmitter	CB = Circuit Breaker	P = Pump	TS = Temperature Switch
		FLO = Flock Tanks		OBS = Gate Obstruction Active	OIT = ORP Transmitter	CNT = Contactor	PB = Push Button	TX = Transfer
		GBT = (Gravity Belt) Thickener		PSH = Pressure Switch High	PIT = Pressure	CLG = Chlorine Gas	PBS = Push Button Station	V = Valve
		GRT = Grit Removal		PSL = Pressure Switch Low	SI = Speed	CLL = Chlorine Liquid	PDR = Process Drain	VFD = Variable Frequency Drive
		HPW = High Pressure NPW		QA = Failed		CLS = Chlorine Solution	PDR = Process Drain Pump	UPS = Uninterruptible Power Supply
		IPS = Intermediate Pump Station		QAM = Belt Motion Sensor Stop	TE = Temperature Element	CPT = Control Power Transformer	PE = Potential Earth (Ground)	VE = Vibration Element
		LAB = Laboratory		QB = Brake Resistor Overheating	TIT = Temperature	CR = Control Relay	PED = Pedestal	VS = Vibration Switch
		MG = Main Gate		QI = Running	VIT = Vibration	CV = Check Valve	PES = Photo Eye Sensor	WAS = Waste Activated Sludge
		MBF = Mixed Bed Filters		QR = Reset Device	ZIT = Valve Position	DD=DUCT Detector	PFR = Power Fall Relay	WER= Wireless Ethernet Radio
		MPS = Master Pump Station		QRP = Run Permissive		DG = De-grit Machine	PFT = Profibus DP Terminator	WELL = Wet Well
		MRF = McLeod Rd Maint. Facility		QS = PLC Intrusion (Door Open)	ANALOG OUTPUTS	DWS = Dewatering Screw Machine	pH = pH Meter	WCH= Wall Connector Housing
		MTC = Maintenance Bldg		QY = Start Requested	AIC = Analytical Indicating Control	DR = Drain	PIT = Pressure Transmitter	WIC = Wall Interconnect Center
		NA = North Authority		TAH = Temperature Alarm High	CIC = CL2 Output	DTP = Day Tank Polymer	PLC = Programmable Logic Controller	WW = Washwater
				TAL = Temperature Alarm Low	FIC = Flow Output	EF = Exhaust Fan	PM = Power Meter or Module	XS = Torque Switch
				TH = Temperature High	SIC = Speed Output	EFF = Finished Effluent	PM = Pump Memory	ZIT = Position Transmitter
				TN = Temperature Normal	YCW= Cooling Water Output	EQ = Equalization	PP = Power Panel	
				VAH = Vibration Alarm High	YPR= Pressure Release Output	FACP= Fire Alarm Control Panel	PS = Polymer Solution	
				WS = Torque Trip	ZIC = Valve Position Output	FCP= Fiber Communication Panel	PS = Pressure Switch	Use Direction:
				ZA = ATS Position in Alternate		FED = Free Exit Detector	PSL = Primary Sludge	E = East
				ZN = ATS Position In Normal		FIT = Flow Transmitter	PT= Pit	W = West
				ZS = Position Switch (Limit/Prox)		FM = Force Main	PI = Profibus Interface	N = North
				ZSC = Position Closed		FWD = Forward	PV = Plug Valve / Polymer Valve	S = South
				ZSO = Position Opened		FS = Flow Switch	RAR = Remote Actuator Reset	M = Middle
						GCS = Generator Control System	RAS = Return Activated Sludge	
						GRC = Grit Reverse Conveyor	RCM = Rectifier Control Module	Use Numbers:
						GEN = Generator	REC = Chart Recorder	1 through 99999
						GR = Ground	REV = Reverse	
						GV = Gate Valve	ROA = Roadway	Use Letters:
						HT = Hydrostatic Tank	RIO = Remote IO	A through Z
						HSP = High Service Pump	RVS = Reduced Voltage Starter	
						IR = Irrigation	S = Sump	
						IES = Industrial Ethernet Switch	SA = Sample	
						IFS = Infrared System Sensor	SF = Supply Fan	

NOTES:
1- ALL TAGGING CONVENTIONS ARE BASED ON THE CURRENT ISA 5.1 STANDARD.
2- TAGGING CONVENTION SHOULD ONLY BE USE IN SINGLE SOURCE TO MULTIPLE DIGITAL INPUTS RETURNS FROM A SINGLE EQUIPMENT APPLICATION ONLY.
3-USE DEVICE / FUNCTIONAL IDENTIFICATION FOR SUB-PROCESS AREAS, IF NOT INCLUDED IN THIS SECTION.

WIRE LABEL EXAMPLE: 123_1-BB-XXX-YYY-ZZZZZ



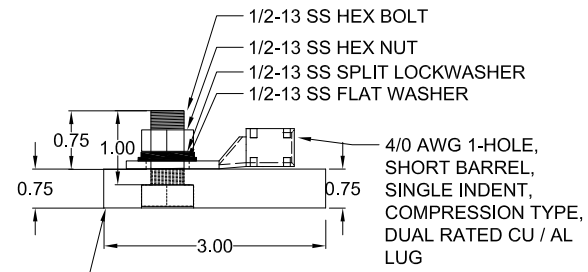
CATEGORY: WW	-	REPRINT WITH UPDATES	10-07-2020	JG/FH
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WATER RECLAMATION DIVISION,
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CITY OF
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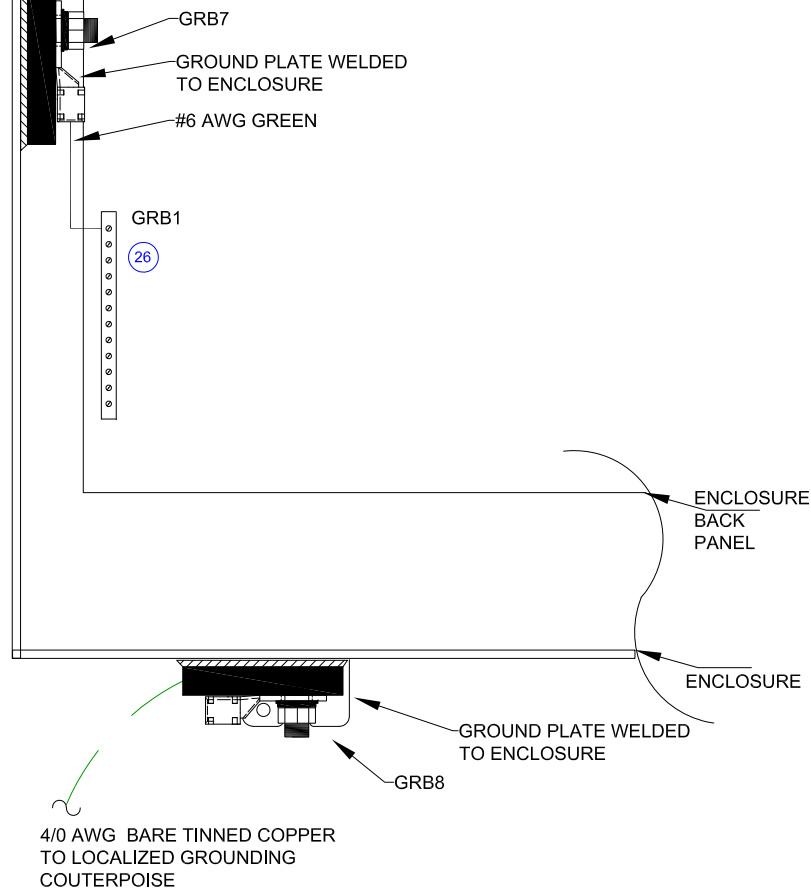
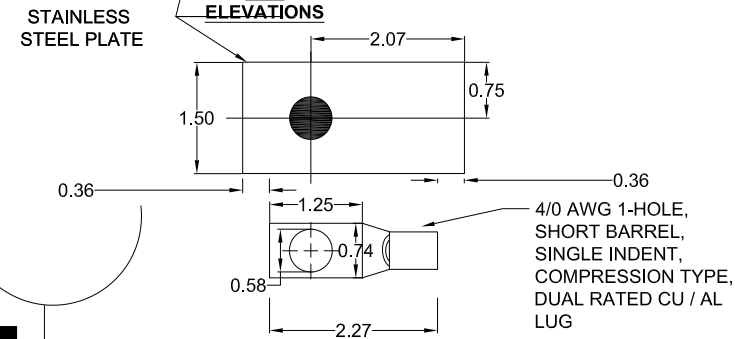
TITLE:
WATER RECLAMATION SYSTEMS
STANDARDS
WIRE LABELING CONVENTIONS

SHEET
120

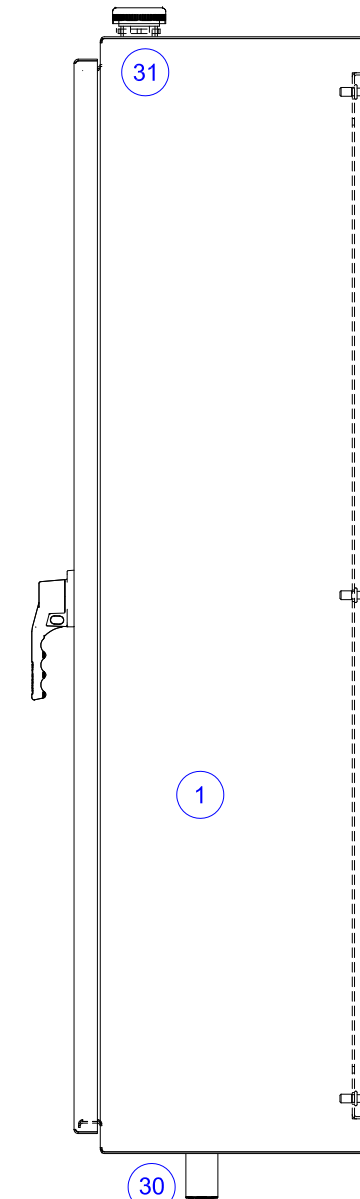
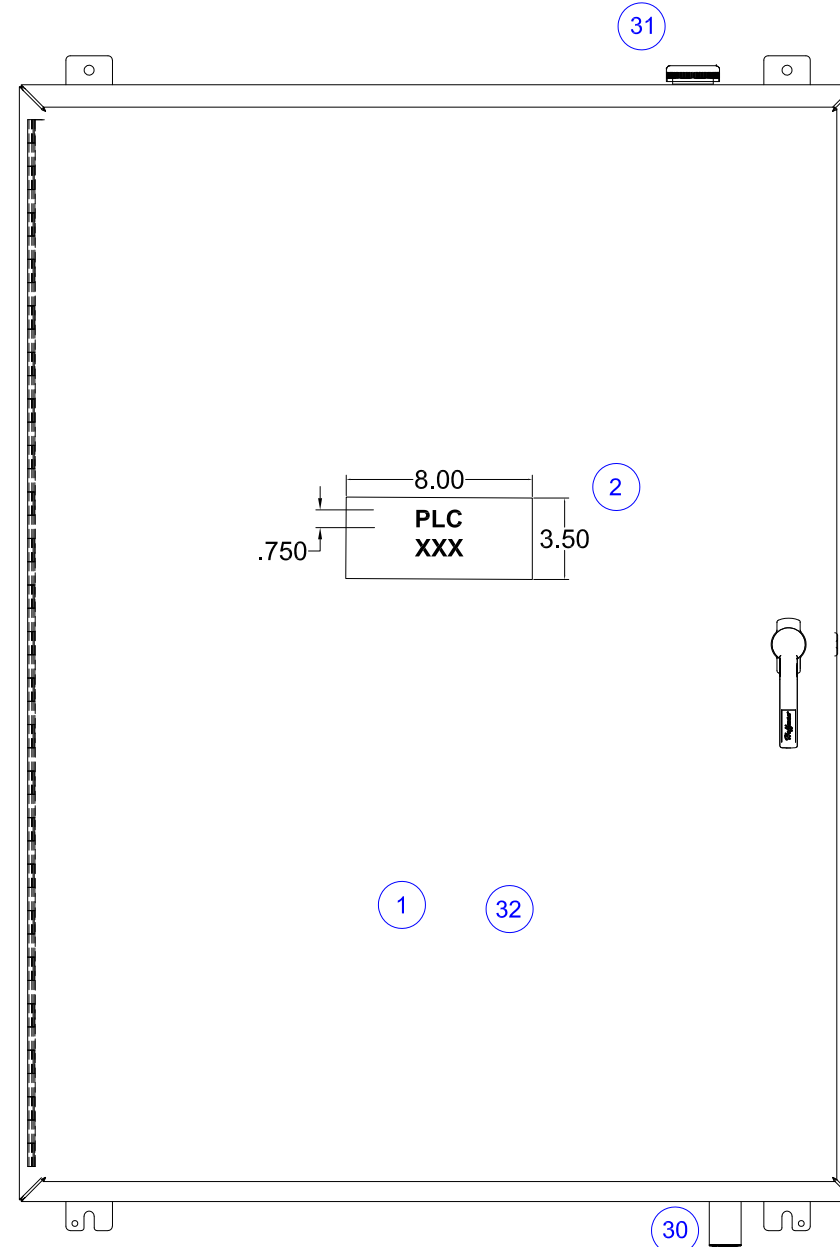
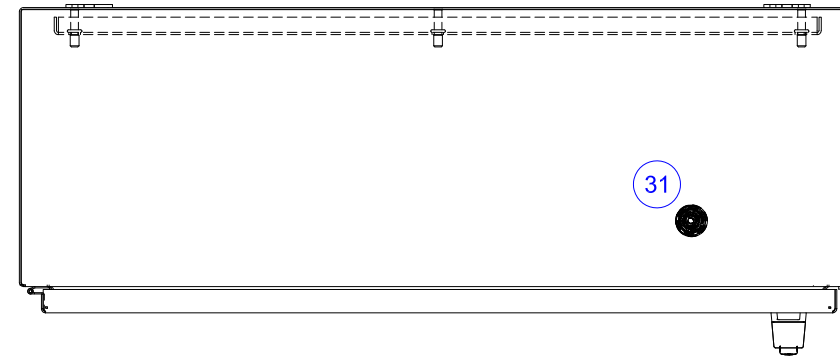
SIDE ELEVATIONS



TOP ELEVATIONS



PANEL GROUNDING TO LOCAL GROUND COUNTERPOISE WIRING DETAIL (402/1)



GENERAL NOTES:
 1. REFER TO DIVISION 13 FOR DETAILS FOR PANEL LOCATION REQUIREMENTS;
 2. PANEL BUILDER SHALL ADJUST PANEL SIZE AS NEEDED BASED ON CONTENTS NEEDED FOR THE SPECIFIC APPLICATION WITH APPROVAL OF ENGINEER/OWNER;



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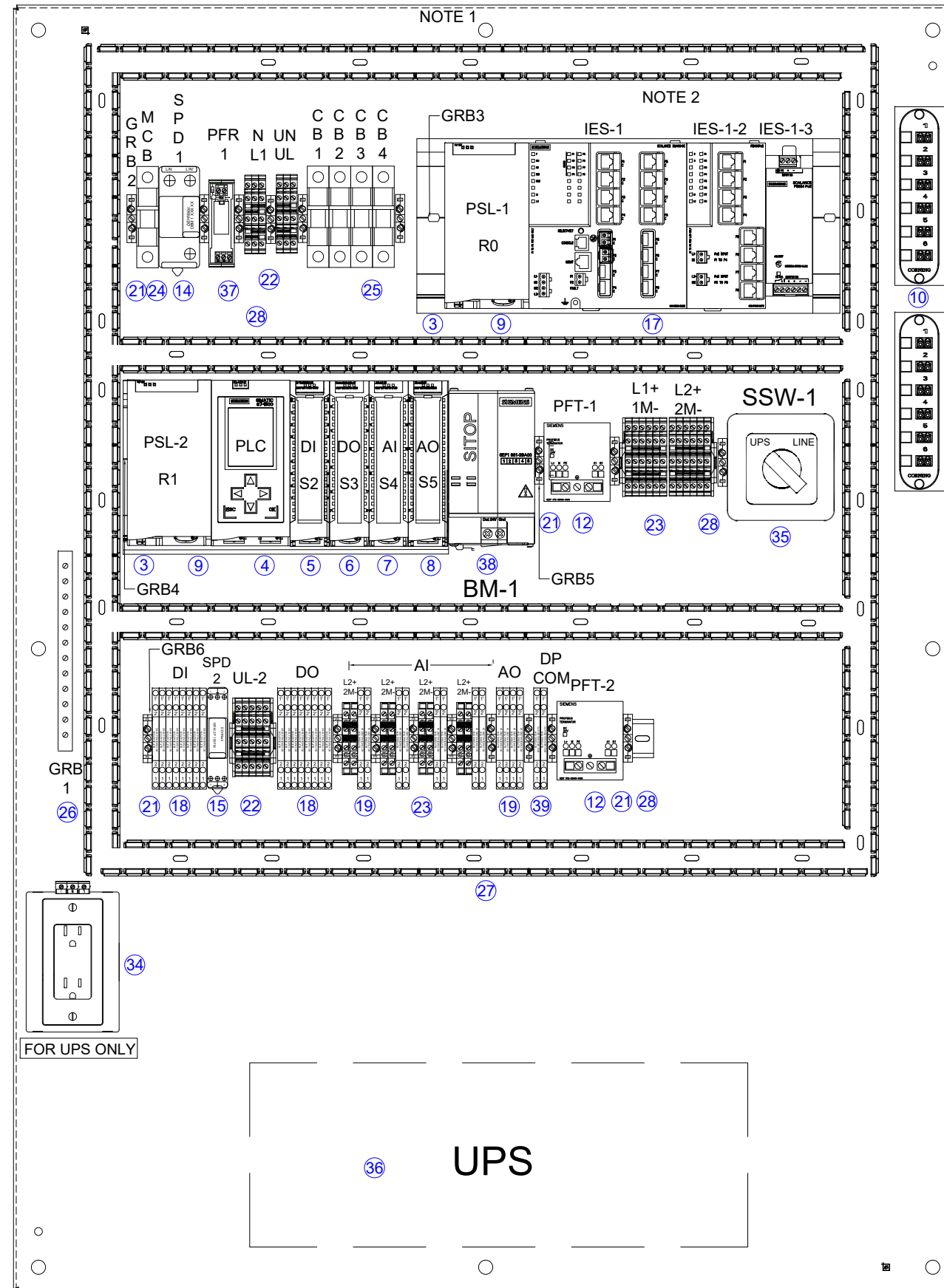
WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

TITLE:
 WATER RECLAMATION STANDARDS
 PLC S7-1500 PANEL
 FRONT, SIDE, AND TOP ELEVATIONS

SHEET
 202

NOTES:

- 1. PANEL BUILDER SHALL ADJUST PANEL SIZE AS NEEDED BASED ON CONTENTS NEEDED FOR THE SPECIFIC APPLICATION WITH APPROVAL OF ENGINEER/OWNER;
- 2. DEVICE ITEM VARY WITH APPLICATION. OWNER WILL SPECIFY SPECIFIC PART NUMBER OF COMMUNICATION DEVICE REQUIRED.



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				DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
xWATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
INTERIOR LAYOUT

SHEET
203

ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER	ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER
1	1	ENCLOSURE, SIZED PER APPLICATION, SS-316, 3 PT. LATCH	AS PER 13325	20			
	1	ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE	AS PER 13325				
2	2	NAMEPLATE, CUSTOM	CUSTOM ENGRAVED, REFER TO SPECIFIC DRAWING	21	18	GROUND MODULE TERMINAL BLOCK (PE)	PHOENIX CONTACT USLKG6N (3)
3	2	S7-1500, RAIL, 482.6 MM	SIEMENS 6ES7590-1AE80-0AA0	22	11	TWO-TIER TERMINAL BLOCK, 2 POLE, GRAY WITH LINK BRIDGES	PHOENIX CONTACT UTTB4 / 3044814 / 303271 (7)
					3	TWO-TIER TERMINAL BLOCK END SECTION	DUTTB 2,5/4 3047293
4	1	SIMATIC S7-1500, CPU 1516-3 PN/DP, CENTRAL PROCESSING UNIT	SIEMENS 6ES7516-3AP03-0AB0 (8)				
	1	12 MB MICRO MEMORY CARD	SIEMENS 6ES7 954-8BLE04-0AA0	23	20	TWO-TIER TERMINAL BLOCK, 2 POLE, BLUE WITH LINK BRIDGES	PHOENIX CONTACT UTTB4BU / 3044791 / 303271 (6)
					6	TWO-TIER TERMINAL BLOCK END SECTION	DUTTB 2,5/4 3047293
5	1	S7-1500, 16 POINT, 120 VAC DISCRETE INPUT MODULE	SIEMENS 6ES7 521-1FH00-0AA0				
	1	40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0	24	1	CIRCUIT BREAKER, SINGLE POLE, 20A TRIP (MCB)	SIEMENS 5SJ4120-7HG41
6	1	S7-1500, 8 POINT 5A RELAY OUTPUT MODULE	SIEMENS 6ES7 522-5HF00-0AB0	25	1	CIRCUIT BREAKER, SINGLE POLE, 15A TRIP (CB1)	SIEMENS 5SJ4110-7HG41
	1	40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0		2	CIRCUIT BREAKER, SINGLE POLE, 10A TRIP (CB2 AND CB3)	SIEMENS 5SJ4110-7HG41
					1	CIRCUIT BREAKER, SINGLE POLE, 1A TRIP (CB4)	SIEMENS 5SJ4101-7HG41
7	1	S7-1500, 8 CHANNEL ANALOG INPUT MODULE (16 BIT)	SIEMENS 6ES7 531-7NF10-0AB0		1	BUS BARS, 1 POLE FIXED LENGTH, 6 CIRCUITS, INSULATED COPPER	SIEMENS 5ST 3663-0HG
	1	40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0				
				26	1	COPPER GROUNDING BAR, 14-POSITION	ILSCO D167-14
8	1	S7-1500, - 4 CHANNEL ANALOG OUTPUT MODULE	SIEMENS 6ES7 532-5ND00-0AB0 (8)				
		40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0	27	3	WIRE TROUGH, PVC, 1"W X 2"H	PANDUIT G1X2WH6
					3	WIRE TROUGH COVER, PVC, 1"W	PANDUIT C1WH6
9	2	POWER SUPPLY, 120 / 230 VAC IN, 24 VDC / 8 AMP	SIEMENS 6EP1333-4BA00				
				28	2	PERFORATED 35MM DIN RAIL GALVANIZED STEEL 2 METER	SIEMENS 5ST 1145
10	2	FIBER OPTIC PATCH PANEL, 12 FIBER CAPACITY	CORNING SPH-01-P				
	2	FIBER OPTIC CONNECTOR PANEL, 12-LC CAPACITY	CORNING CCH-CP12-AD	29	TBD	WIRE, BLACK, GREEN, WHITE, #12 AWG THHN STRANDED	HOUSTON OR APPROVED EQUAL
					TBD	WIRE, BLACK, BLUE, GREY, WHITE, #14 AWG, THHN STRANDED	HOUSTON OR APPROVED EQUAL
11	2	DUPLEX FIBER OPTIC PATCH CABLE, "LC" TO "LC" TYPE	BLACK BOX FOCMP50-003M-LCLC-AQ		TBD	WIRE, RED, YELLOW #16 AWG, TFFN STRANDED	HOUSTON OR APPROVED EQUAL
					TBD	WIRE, BLACK, WHITE, RED, GREEN- 4 CONDUCTOR, #16 AWG	9418 BELDEN OR APPROVED EQUAL
12	2	PROFIBUS DP ACTIVE TERMINATOR, 24VDC POWER	SIEMENS 6ES7 972-0DA00-0AA0				
				30	1	TYPE 4X ENCLOSURE BREATHER VENT / DRAIN	HOFFMAN AVDR4SS4
13	TBD	PROFIBUS/RS-485 PURPLE COLOR JACKETED CABLE	TURCK RB50672-999NW				
	1	PROFIBUS DP, CONNECTOR, 90°, WITH PG PORT	SIEMENS 6ES7 972-0BB12-0XA0	31	1	TYPE 4X ENCLOSURE PRESSURE COMPENSATION DEVICE	STEGO DA 28405.0-00 (1)
14	1	SURGE SUPPRESSOR, 2 POLE, 230V AC VOLT,	DEHN SP 240 3W+GR 1PH. 230VAC, 908-195	32	1	CORROSION- INHIBITING VAPOR CAPSULE	HOFFMAN AHC10E
15	1	SURGE ARRESTOR, TYPE 3, CLASS III	DEHN DR M 2P 150 953-209	33	TBD	INDUSTRIAL ETHERNET CAT 6, 4 BONDED-PAIR 23AWG (SOLID) COPPER	BELDEN 7953A
					12	INDUSTRIAL ETHERNET CAT 6, RJ45 T568A WIRING METHOD	BELDEN R301601
16	TBD	DEVICE ID NAMEPLATES ENGRAVED SELF ADHESIVE	SETON OR EQUAL				
				34	1	DIN MOUNTED, NEMA 5-15R, DUPLEX RECEPTACLE	PHOENIX CONTACT EM-DUO-120/15- 5600461
17	1	IE SWITCH;8X 10/100/1000 MBIT/S RJ45; 8X 100/1000 MBITS/S SFP;	SIEMENS 6GK5408-8GS00-2AM2				
	1	PE408POE, WITH 8X10/100/1000 MBPS TP PORTS, POE TO 802.3AT TYPE 12	SIEMENS 6GK5408-0PA00-8AP2	35	1	2 POS., MAINTAIN POSITION, 6 P, CHANGE OVER, CAM SW. 20AMP	CONTROL SWITCHES N20-61041-15
	2	SFP992-1, 1x1000 MBPS LC PORT, OPTICAL (MULTIMODE, GLASS),UP TO 750 M	SIEMENS 6GK5992-1AL00-8AA0			DEEP ENCLOSURE FOR CAM SWITCH	HOFFMAN E1PBGXSS
	1	KEY PLUG XM-400	SIEMENS 6GK5904-0PA00				
	1	PS924 PoE POWER SUPPLY	SIEMENS 6GK5924-0PS00-1AA2	36	1	UPS, SNMP NETWORK READY CARD, 1000VA,TRUE ONLINE, 120VAC	EATON PSX1000 / NETWORK-MS
	1	DIN RAIL ADD-ON FOR PoE POWER SUPPLY	PULS SLZ10				
				37	1	PLUG IN, S.P.S.T., 120VAC, 10 AMP CONTACT RATING RELAY	PHOENIX CONTACT UMK 22 REL 120/21-ST - 5520705
18	16	SURGE SUPPRESSOR WITH BASE,180 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 B 180 # 927 210 (5)	38	1	MAINS BUFFER 24VDC MODULE	SIEMENS 6EP1961-3BA01 (2)
19	12	SURGE SUPPRESSOR WITH BASE,24 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 BD 24 #927 244 (5)	39	2	SURGE SUPPRESSOR WITH BASE,5 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 BD HF 5 #927 271 (5)

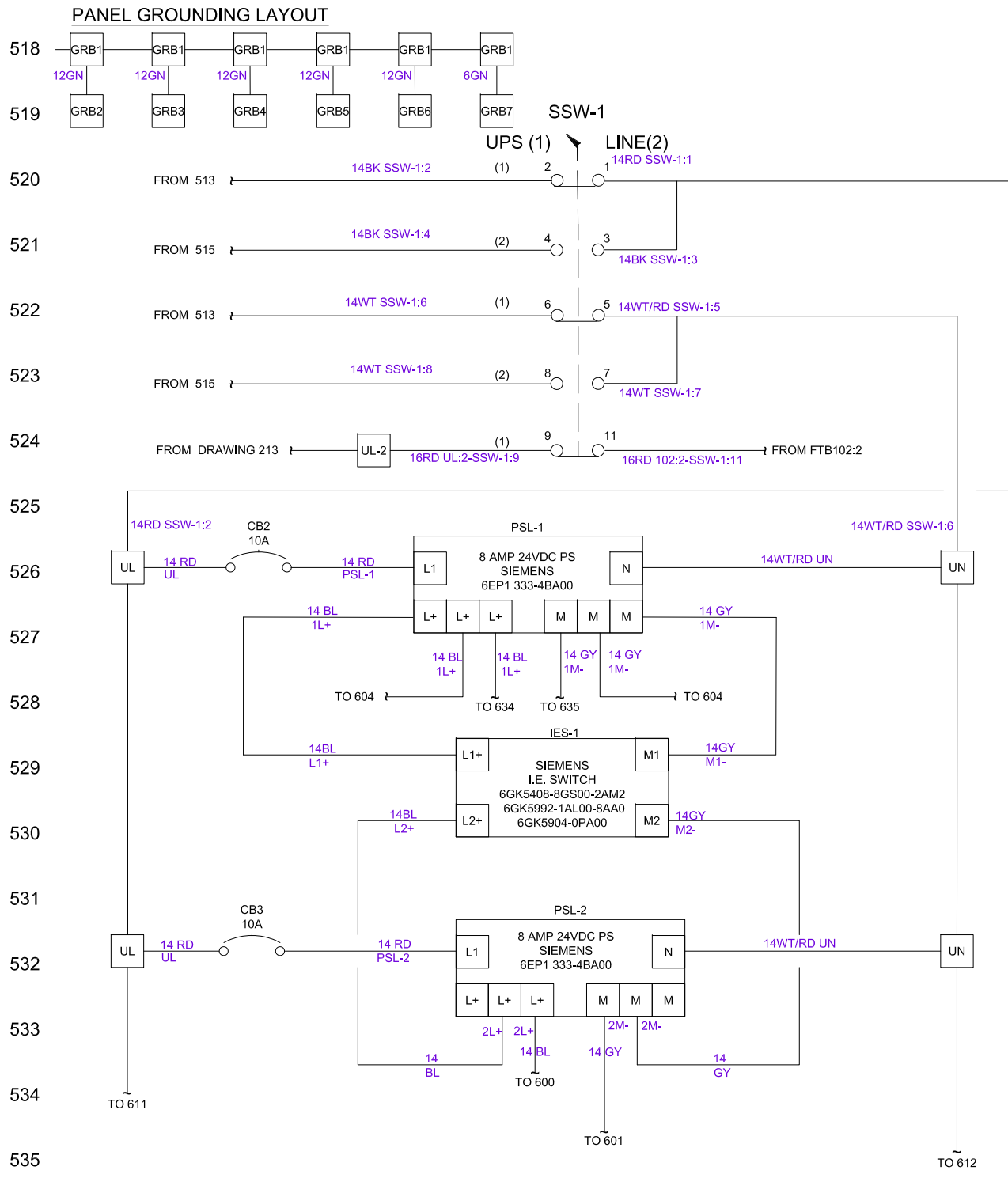
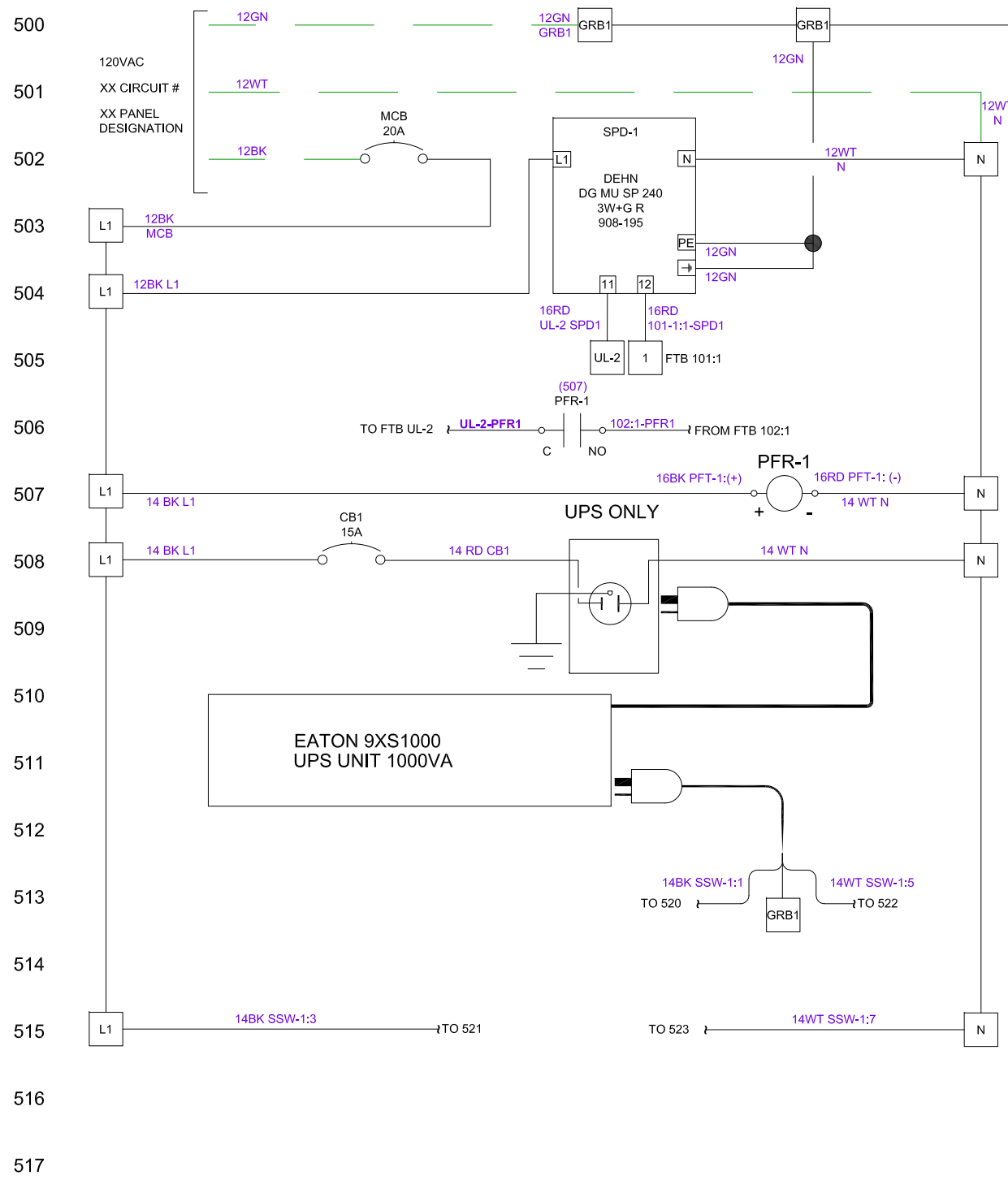


SCALE:	N.T.S.	4	REVISED # 4 PART NUMBER	07-19-2022	FH
		5	CHANGED BLITZDUCTORS TO DEHN	11-08-2024	FH
DESIGN:	IAG	6	CHANGED TERMINAL BLOCKS TO PHOENIX CONTACT	11-11-2024	FH
		7	REVISED QUANTITY	01-07-2025	FH
DRAWN BY:	FH	8	REVISED # 4 PART NUMBER	03-02-2026	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WASTEWATER STANDARDS
PLC S7- 1500 PANEL
BILL OF MATERIALS

SHEET
204

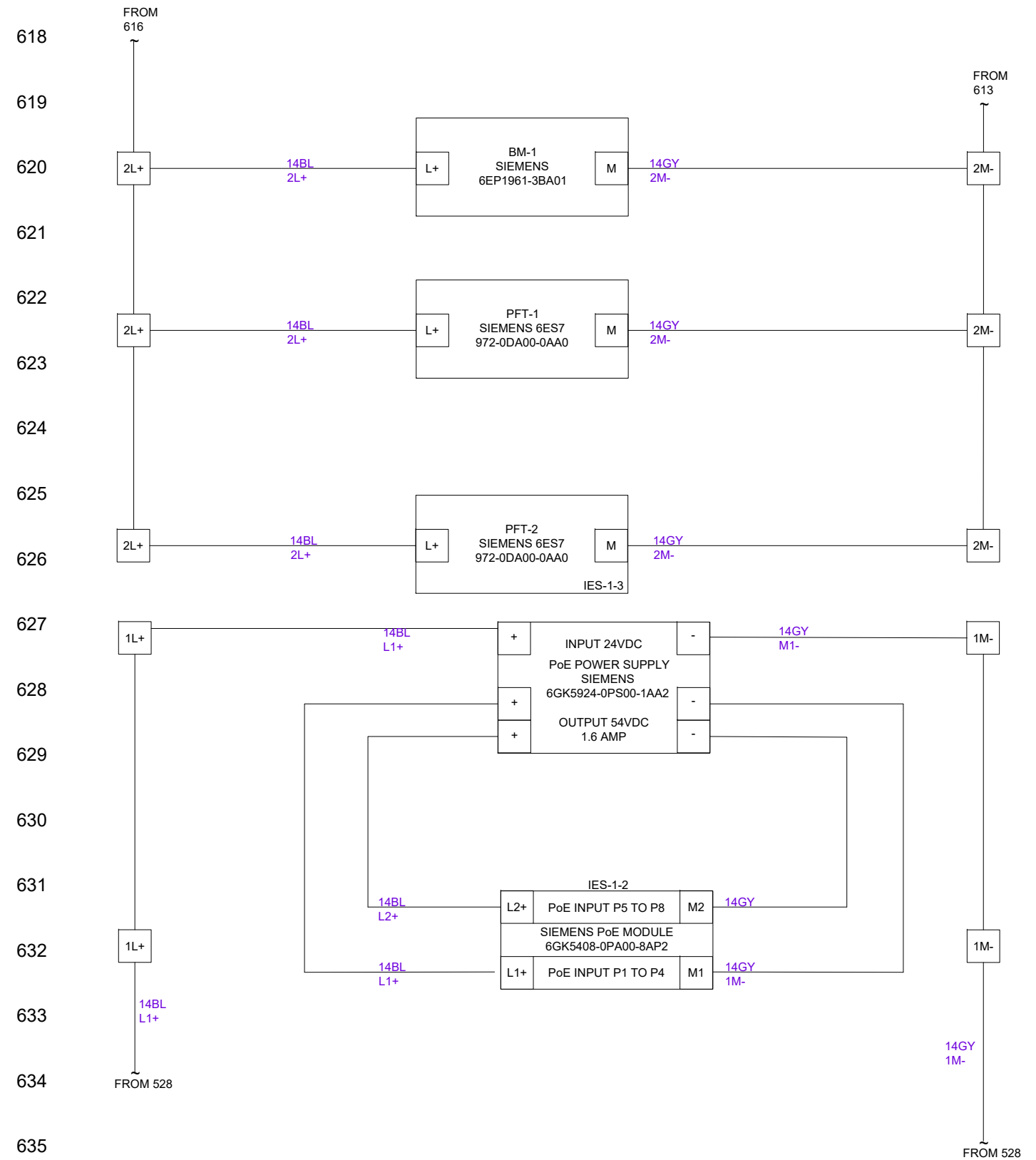
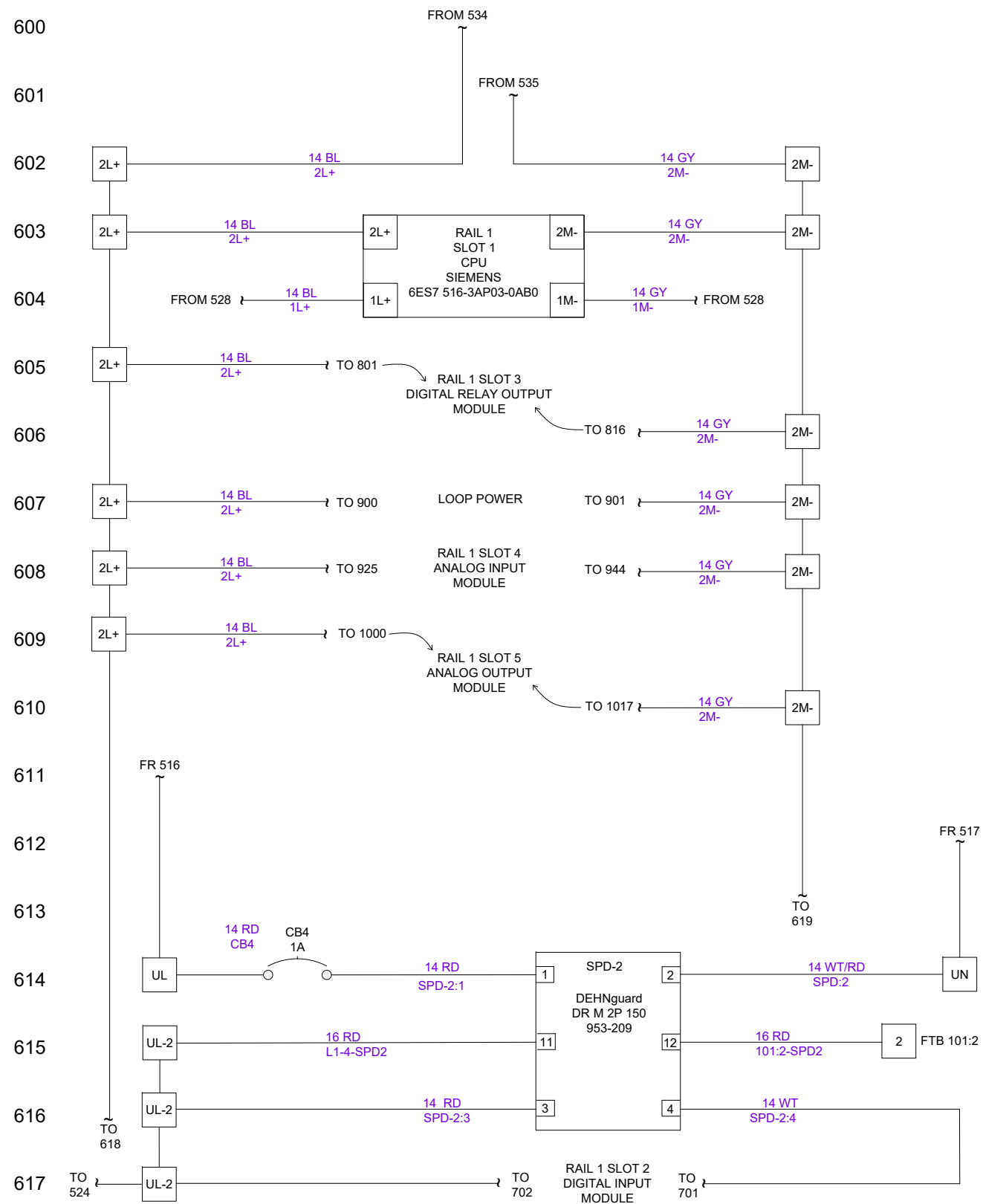


SCALE:	N.T.S.	-	-	11-17-2020	JG/FH
DESIGN:	IAG	-	UPDATED WIRING NUMBER	01-07-2025	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
POWER DISTRIBUTION
PART 1 WIRING

SHEET
205



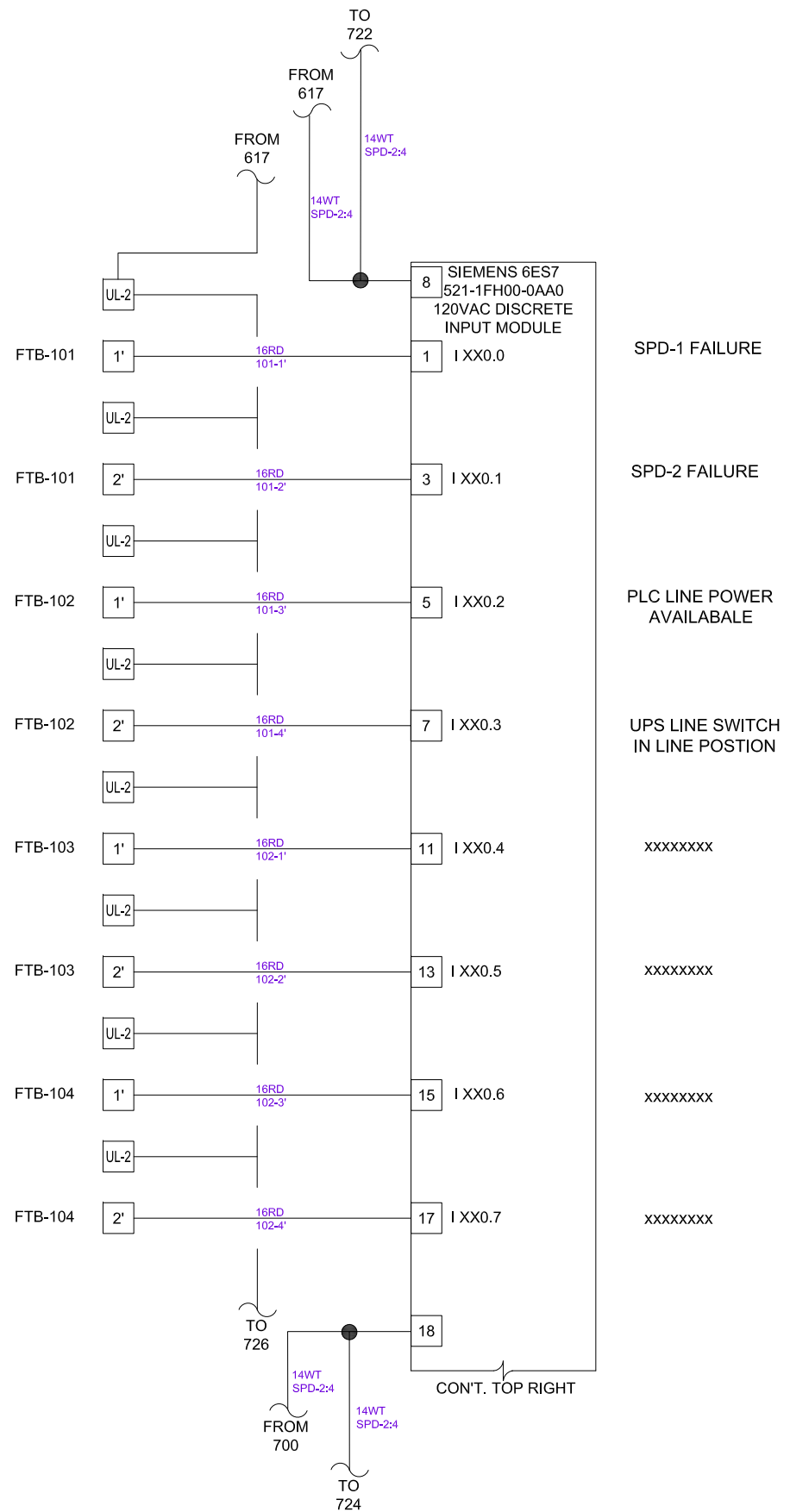
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		-	REVISED	03-29-2021	JG
DESIGN:	IAG	-	REVISED	07-19-2022	FH
		-	REVISED	03-02-2026	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

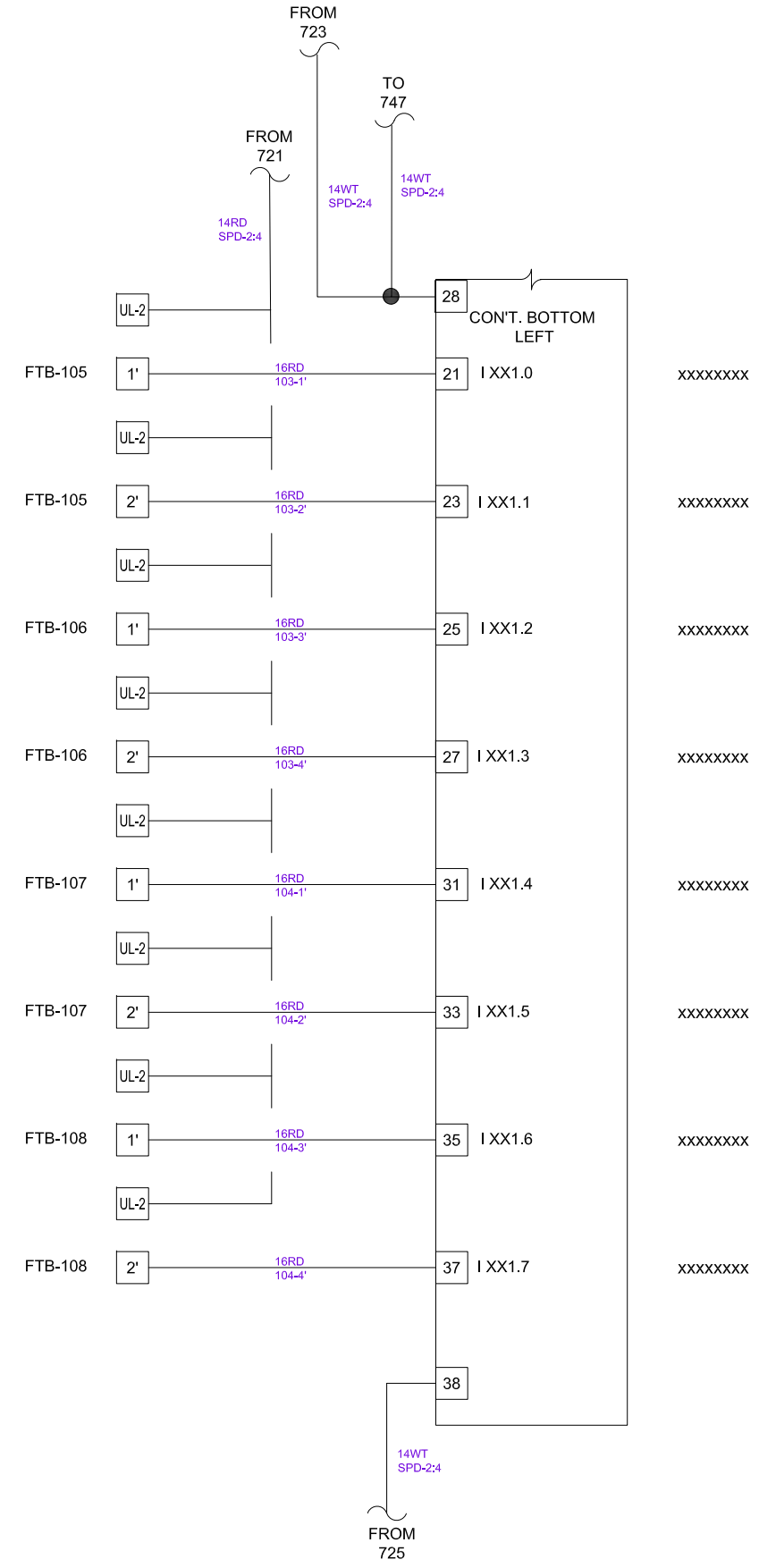
TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
POWER DISTRIBUTION
PART 2 WIRING

SHEET
206

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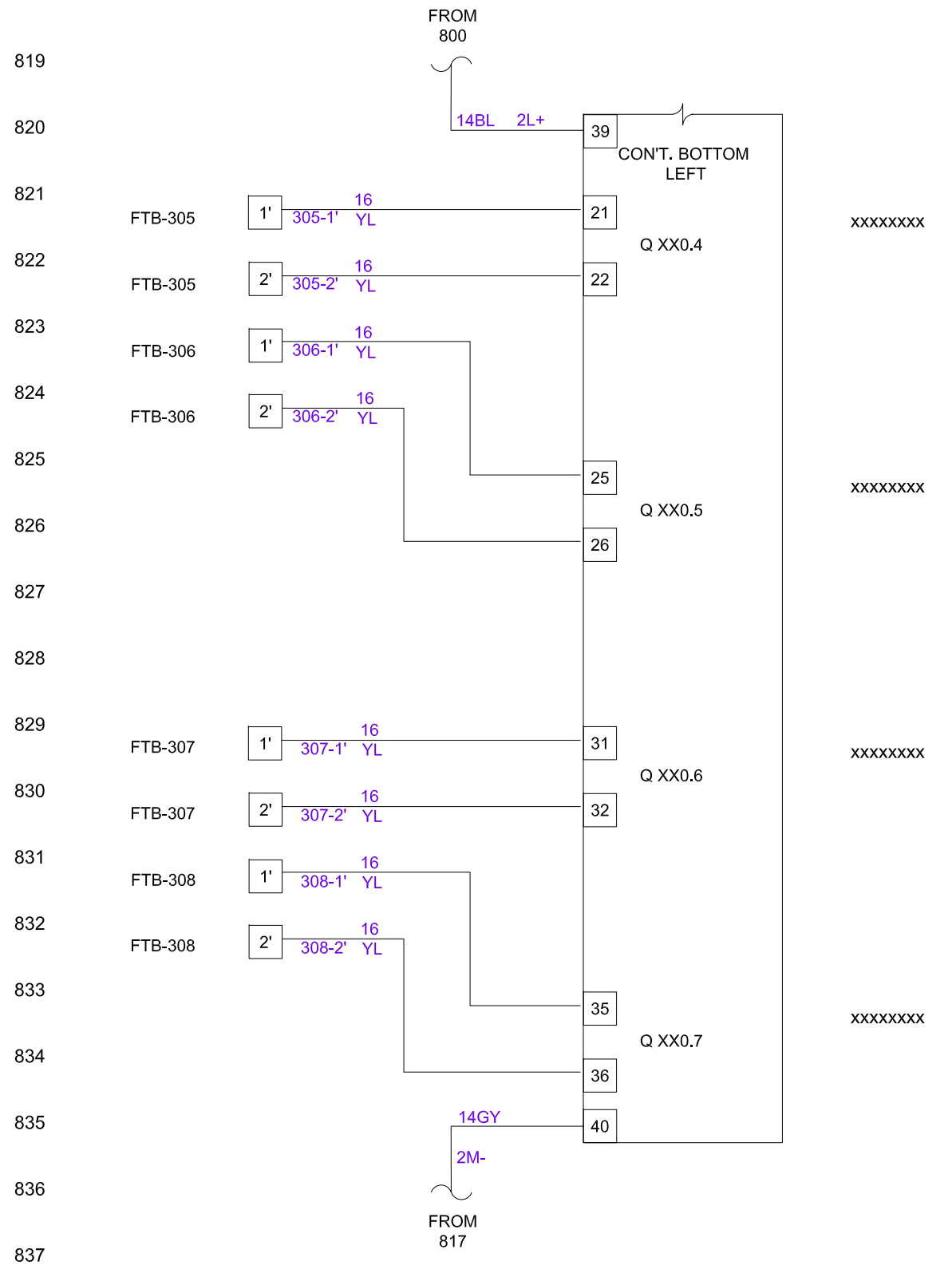
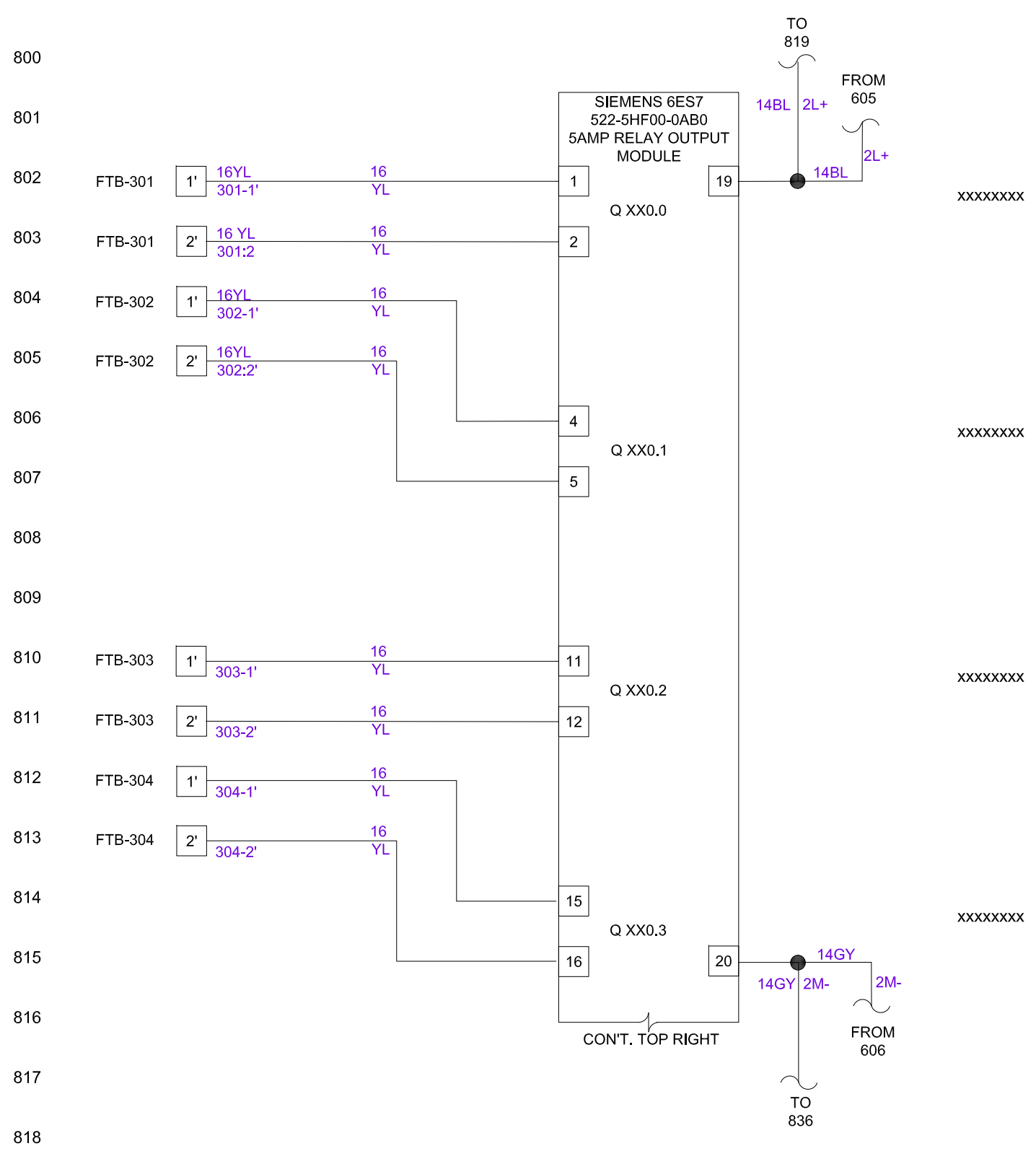


SCALE:	N.T.S.	-	-	11-17-2020	JG/FH
DESIGN:	IAG	-	UPDATED TERMINAL BLOCK NUMBERS	01-07-2025	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
PLC PANEL RAIL 1, SLOT 2
DIGITAL INPUT MODULE WIRING

SHEET
207



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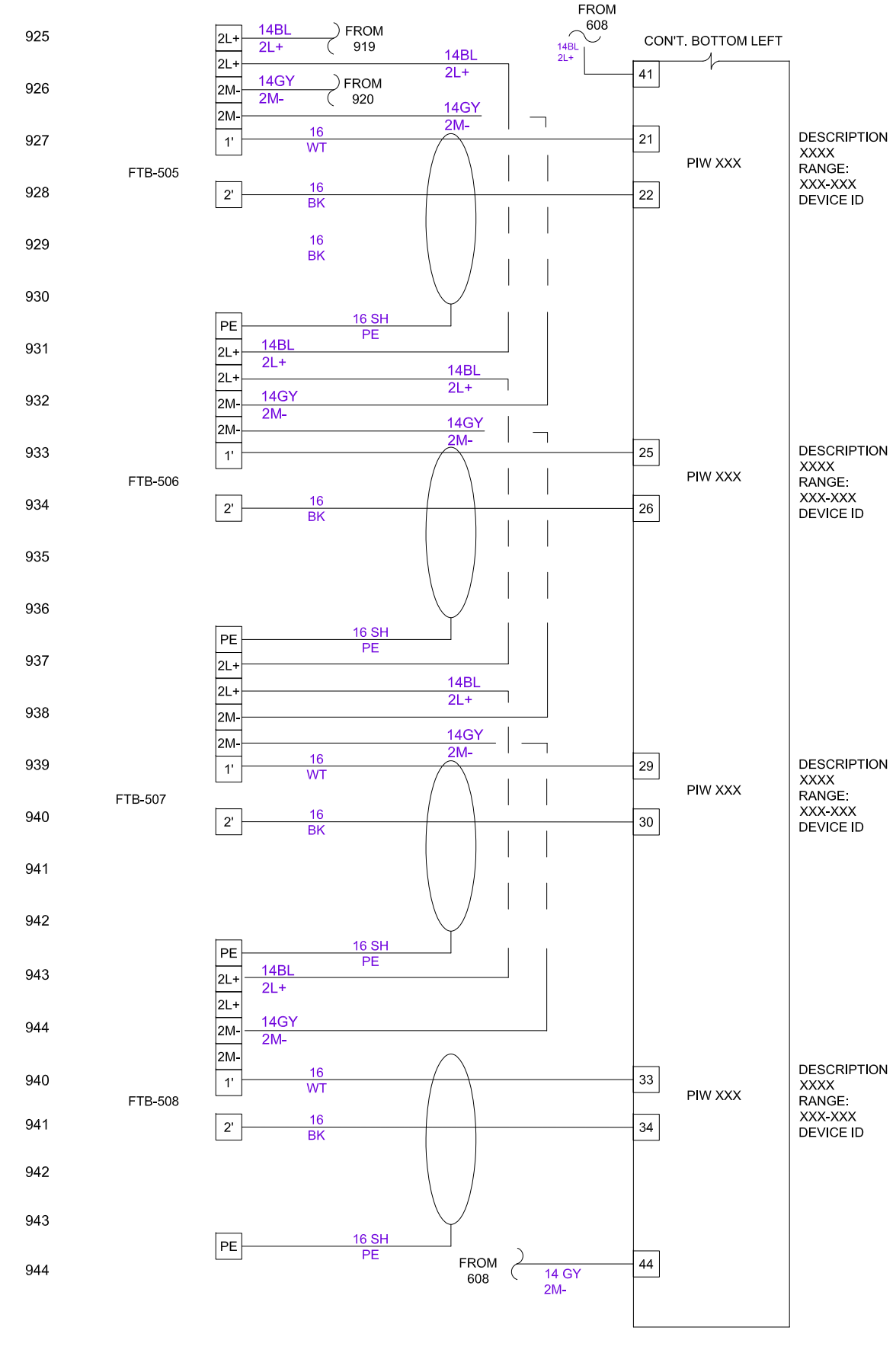
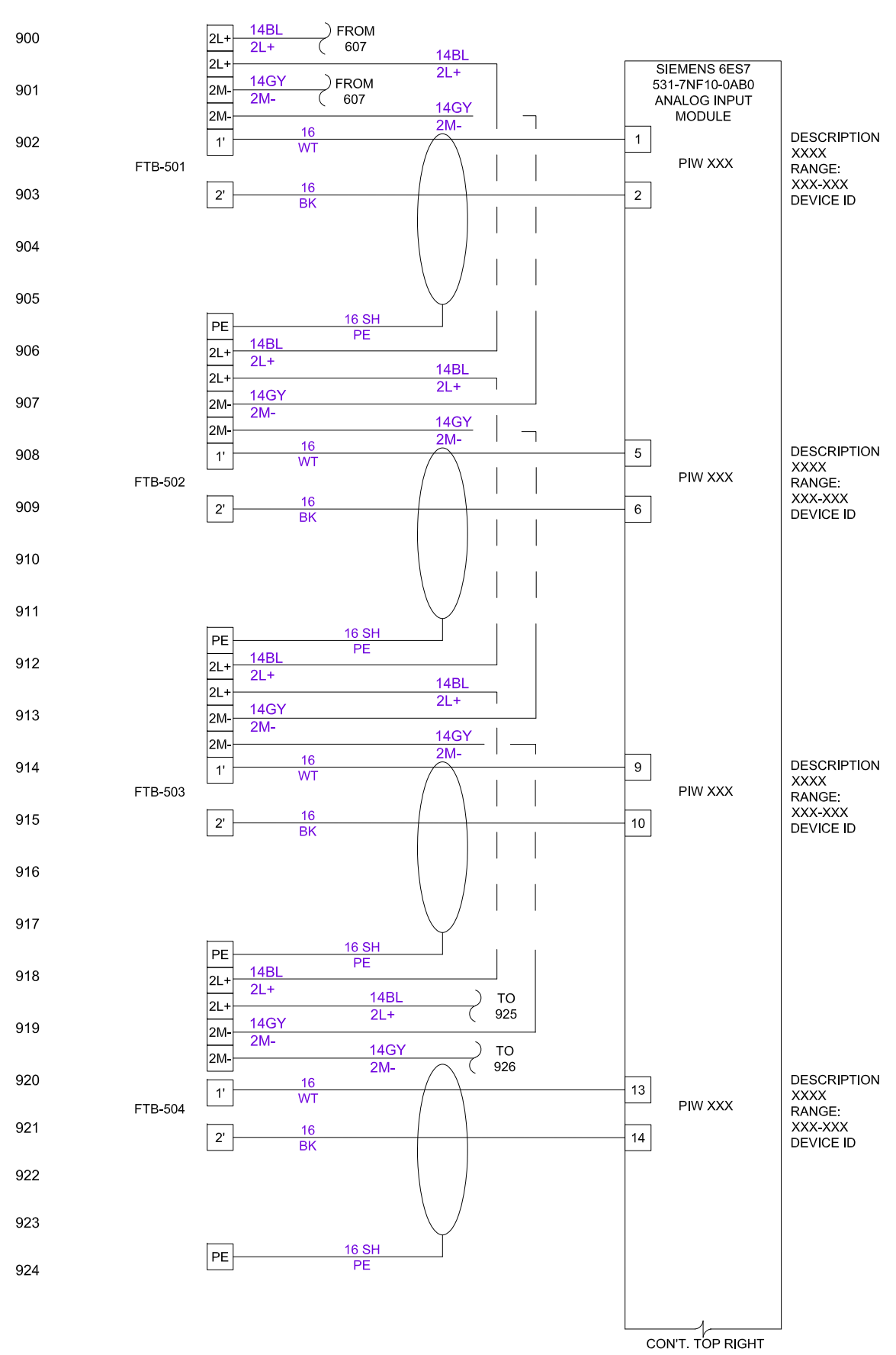


SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED OUTPUTS AND WIRING	01-07-2025	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
RAIL 1, SLOT 3
RELAY OUTPUT MODULE WIRING

SHEET
208



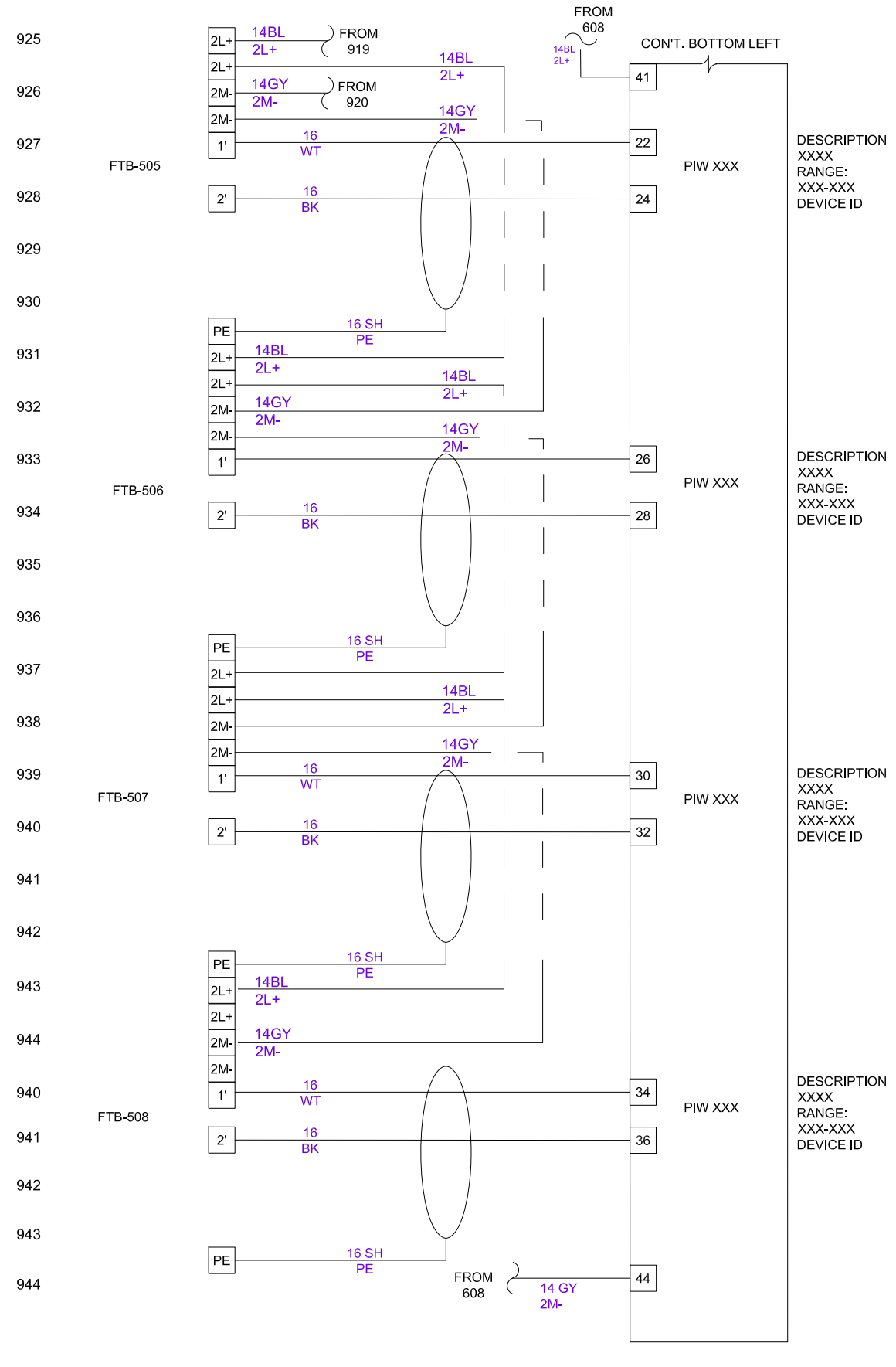
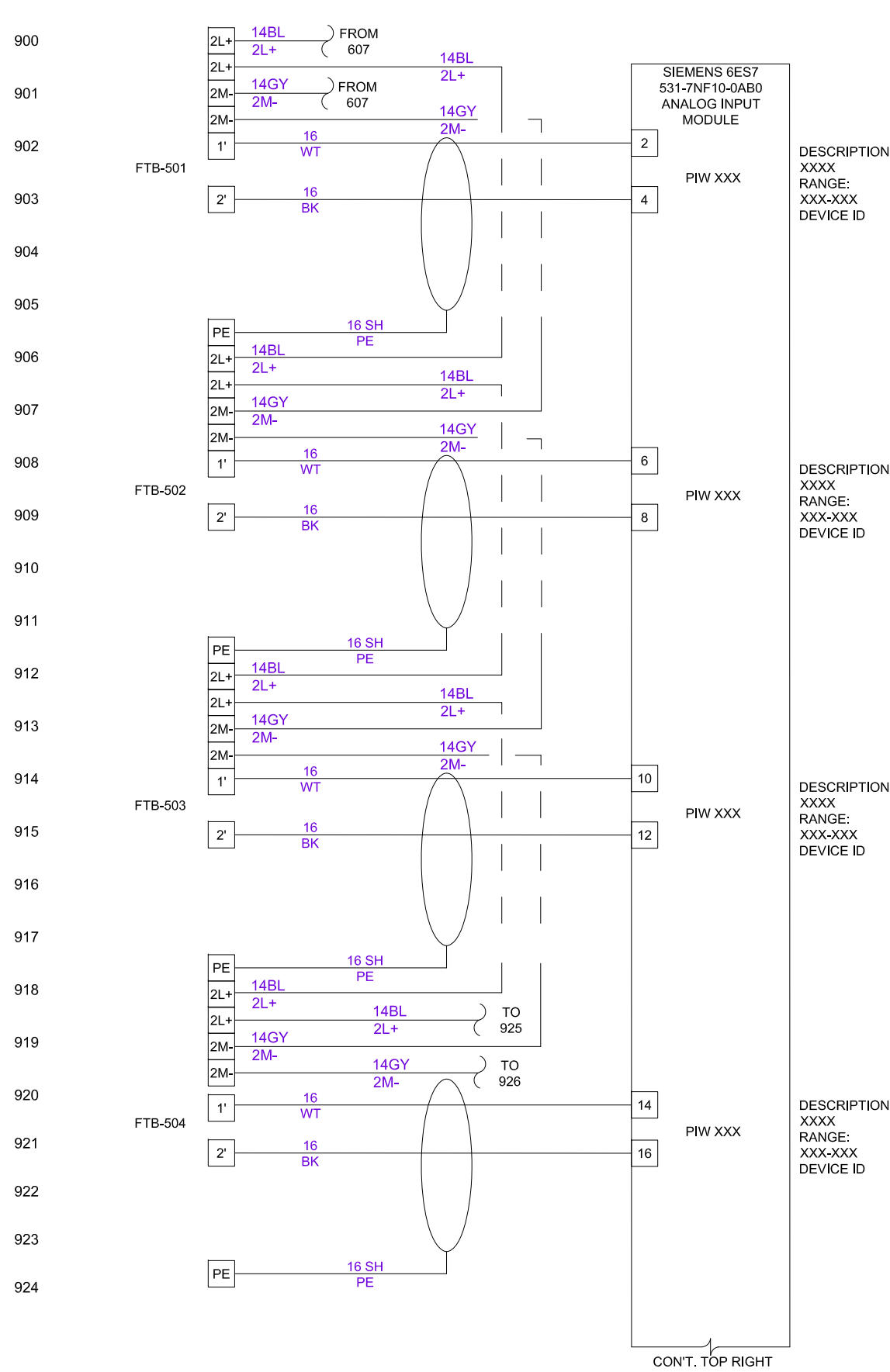
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DESIGN:	IAG	-			
DRAWN BY:	FH	-			
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
RAIL 1, SLOT 4
ANALOG INPUT MODULE CURRENT 2
WIRE

SHEET
209 A

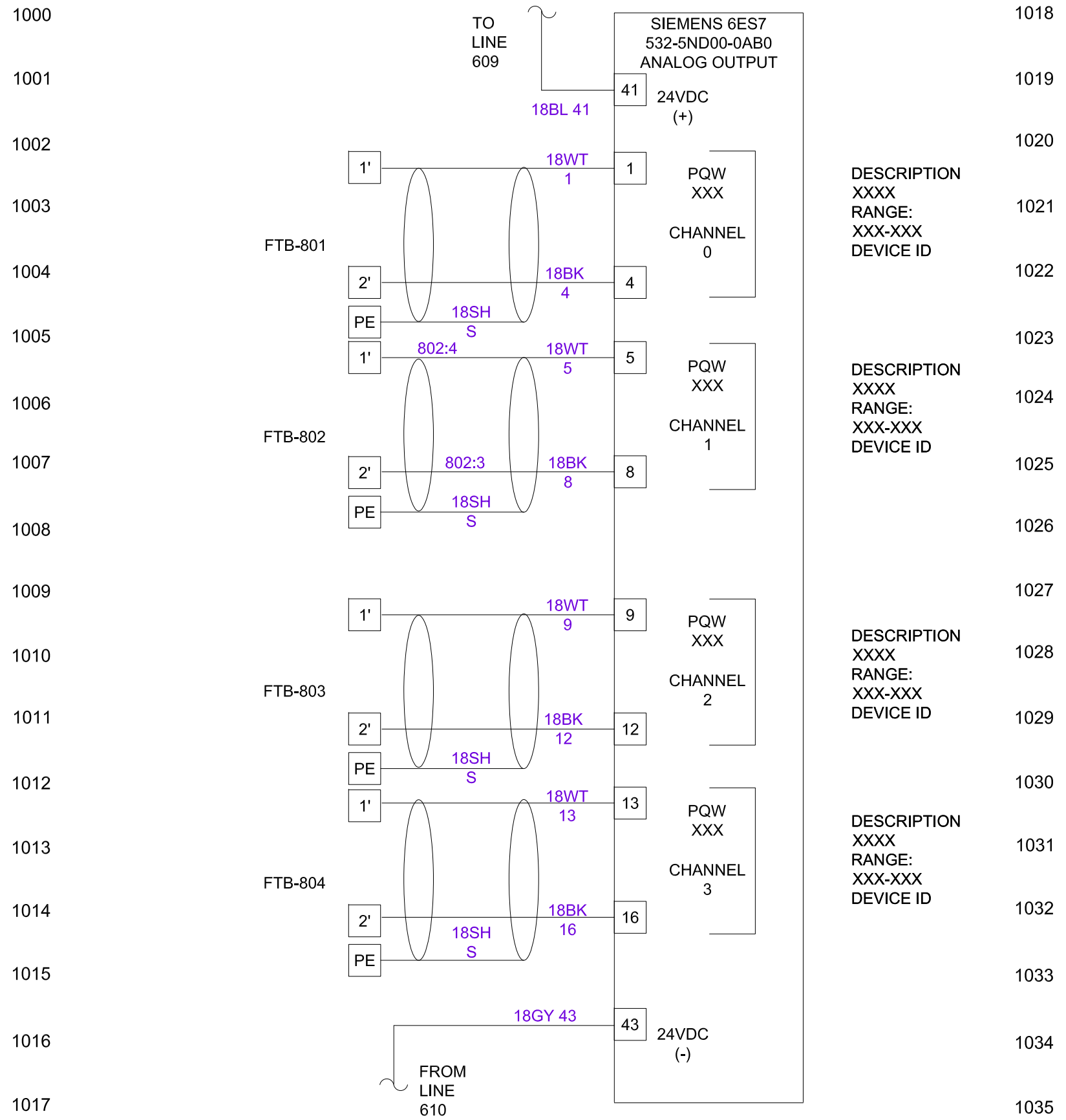


SCALE:	N.T.S.	-	-	10-01-2020	JG/FH
DESIGN:	IAG	-	REVISED WIRING	03/29/2021	JG
DRAWN BY:	FH	-	REVISED LINE 920 & 926	08-05-2022	JG
APPROVED BY:	GM	NO	UPDATED FIELD TERMINAL BLOCKS	01-07-2025	FH
			REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
RAIL 1, SLOT 4
ANALOG INPUT MODULE CURRENT 4
WIRE

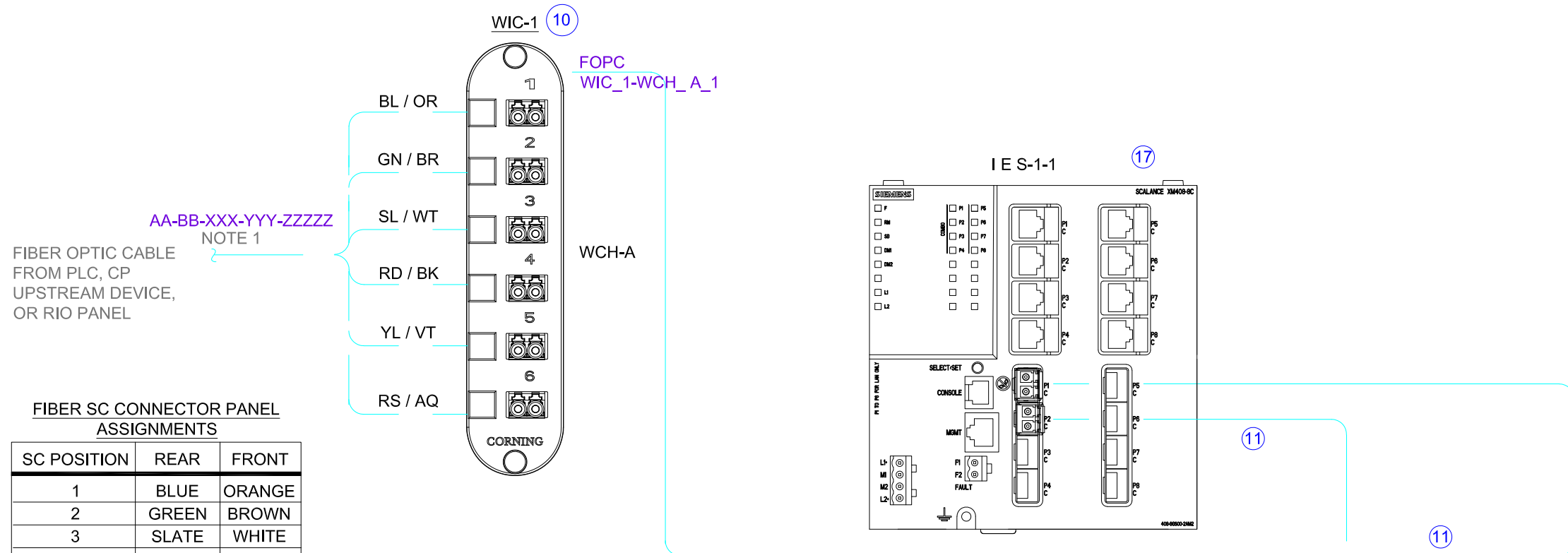
SHEET
209 B



SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED LINE 1000 & 1017	08-03-2022	FH
DRAWN BY:	FH	-	UPDATED TERMINALS	01-17-2025	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
RAIL 1, SLOT 5
CURRENT ANALOG OUTPUT MODULE
WIRING



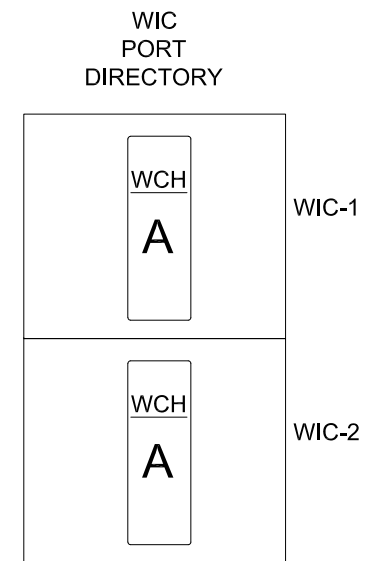
AA-BB-XXX-YYY-ZZZZ
NOTE 1
FIBER OPTIC CABLE FROM PLC, CP UPSTREAM DEVICE, OR RIO PANEL

FIBER SC CONNECTOR PANEL ASSIGNMENTS

SC POSITION	REAR	FRONT
1	BLUE	ORANGE
2	GREEN	BROWN
3	SLATE	WHITE
4	RED	BLACK
5	YELLOW	VIOLET
6	ROSE	AQUA

AA-BB-XXX-YYY-ZZZZ
NOTE 1
FIBER OPTIC CABLE TO PLC, CP UPSTREAM DEVICE, OR RIO PANEL

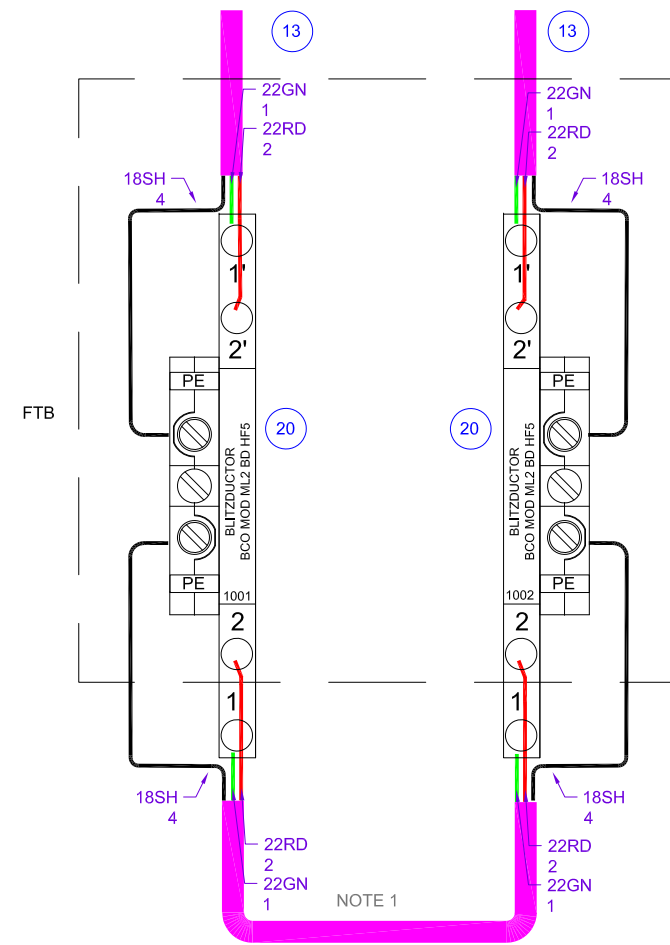
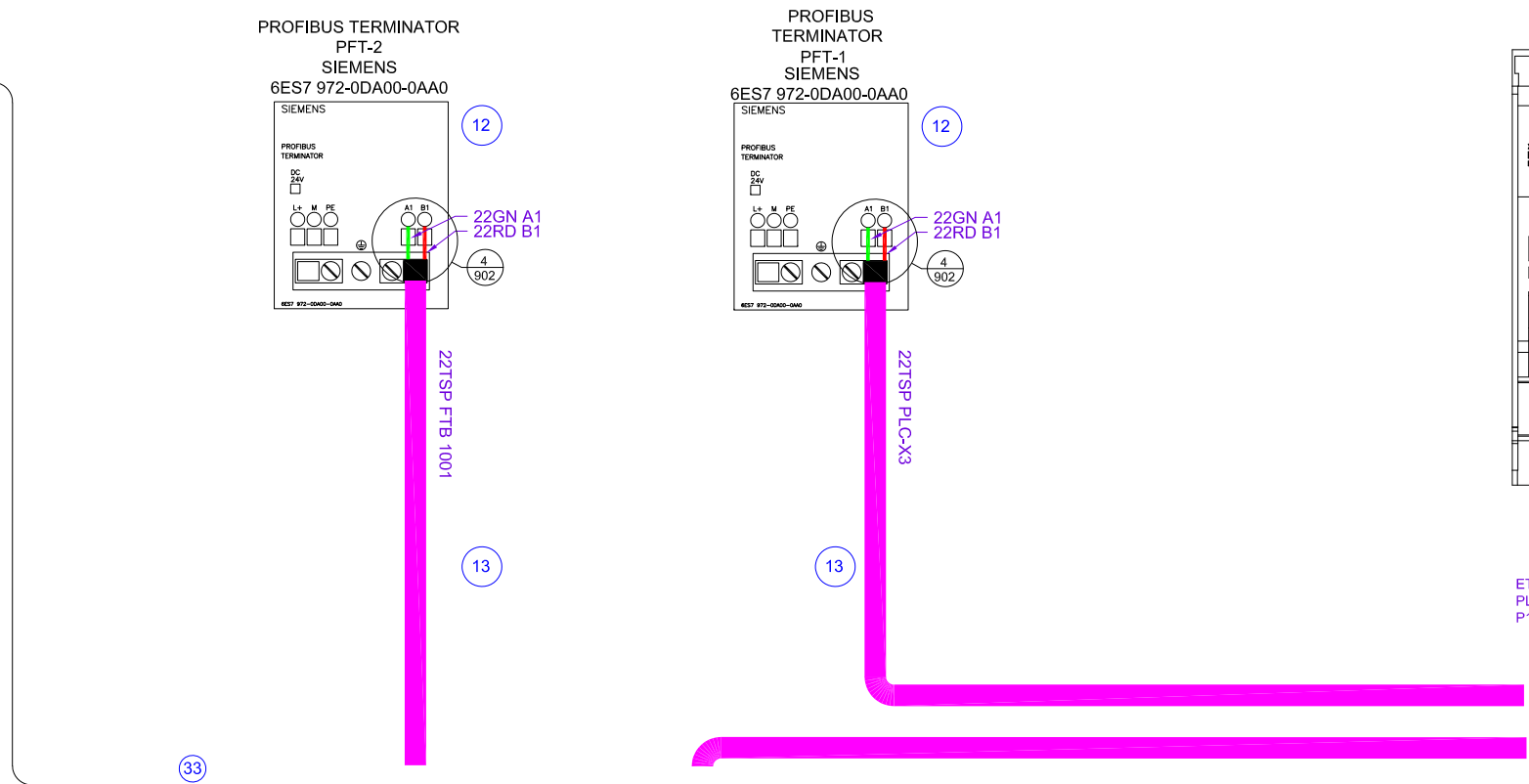
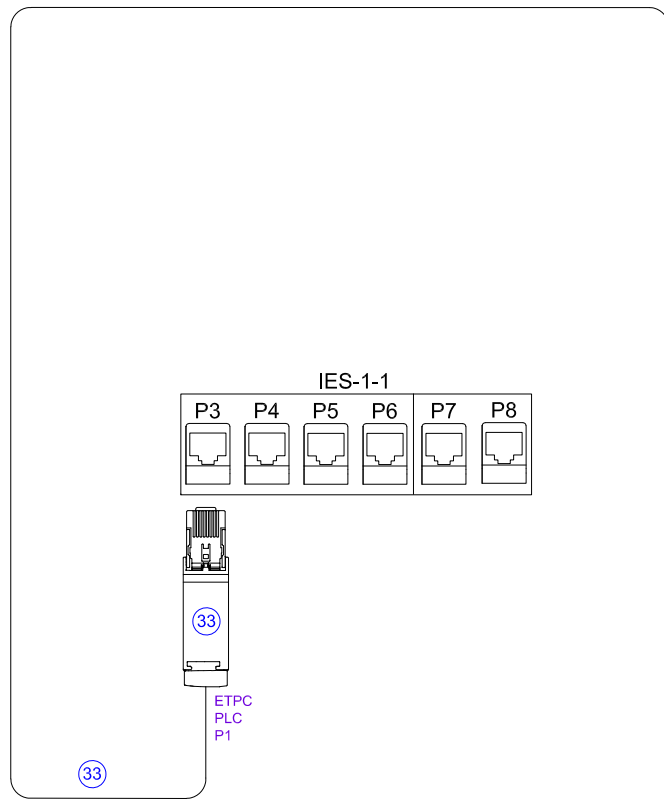
NOTE:
1. FIELD SIDE STRUCTURE OF WIRE AND CABLE TAGGING CONVENTIONS SHALL COMPLY WITH SPECIFICATION DETAILS.



SCALE:	N.T.S.			10-02-2020	JG/FH
DESIGN:	IAG				
DRAWN BY:	JG/FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
FIBER OPTIC COM LAYOUT



NOTES

1. REMOVE PROFIBUS DP CABLE BEFORE CONNECTING FIELD DEVICE OR RIO PANEL. CABLE TO REMAIN CONNECTED WHEN NOT "IN USE".



SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	CHANGED FTB TO DEHN	11-14-2024	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

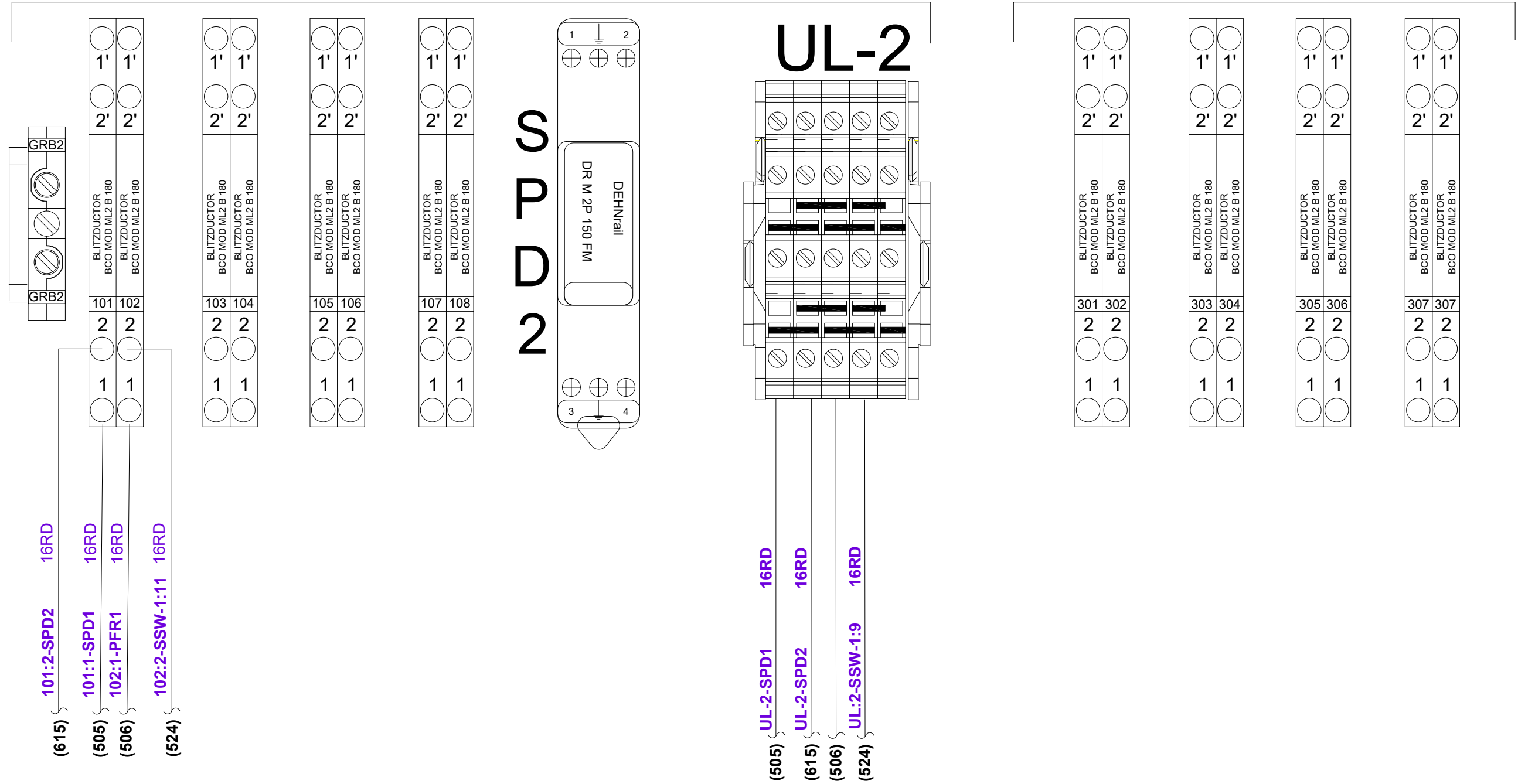
CITY OF
ORLANDO, FLORIDA

TITLE:	WATER WATER STANDARDS PLC S7-1500 PANEL COPPER COMMUNICATION LAYOUT
SHEET	212

FTB

DIGITAL INPUT MODULES
REFER TO DRAWINGS # 207
FOR PANEL WIRING

DIGITAL OUTPUT MODULE
REFER TO DRAWING # 208
FOR PANEL WIRING



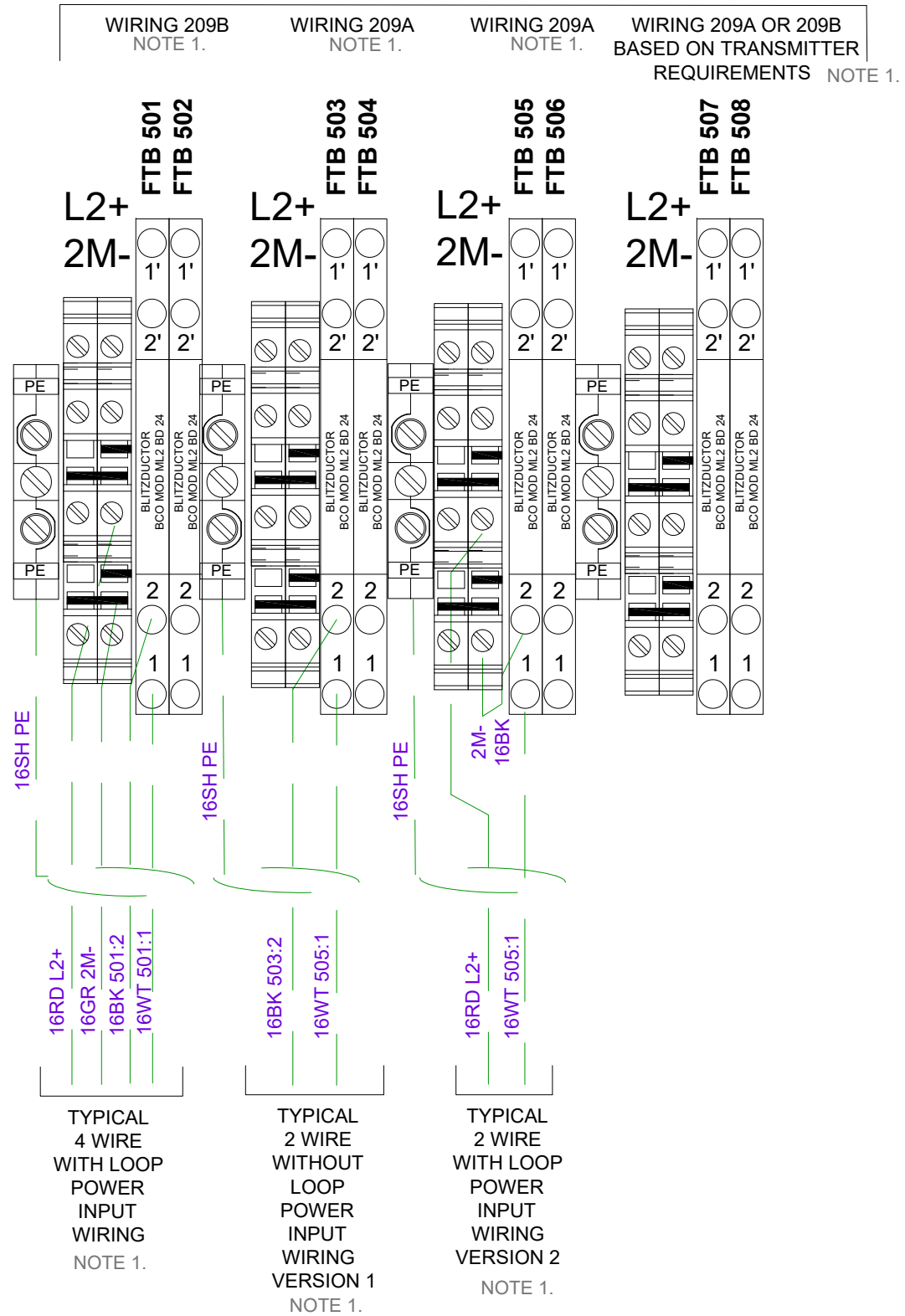
APPROVED BY:	GM	NO	REVISION	DATE	BY
SCALE:	N.T.S.	-	-	11-17-2020	JG/FH
DESIGN:	IAG	-	UPDATED WIRING	11-12-2024	FH
DRAWN BY:	FH	-	CHANGED TERMINAL BLOCKS AND WIRING	01-07-2025	FH
		-	CHANGED SURGE PROTECTION	01-29-2026	FH

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

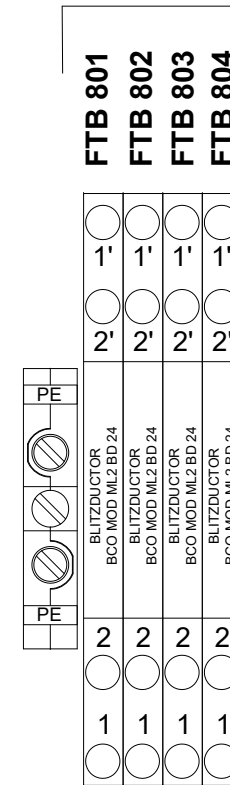
TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
FIELD TERMINAL BLOCK
WIRING PART 1

SHEET
213

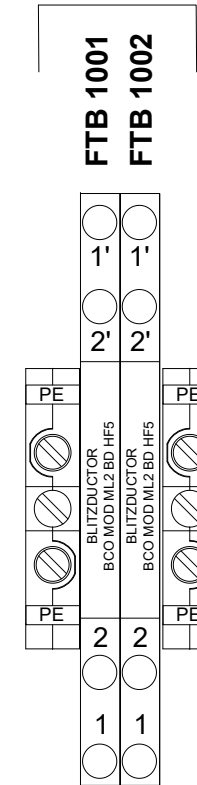
ANALOG INPUT MODULES
REFER TO DRAWING 209A & 209B
FOR PANEL WIRING



ANALOG OUTPUT MODULES
REFER TO DRAWING 210
FOR PANEL WIRING



PB COMM WIRING
REFER TO DRAWING 212
FOR PANEL WIRING



NOTE
1. PROVIDE SPECIFIC WIRING AS PER APPLICATION

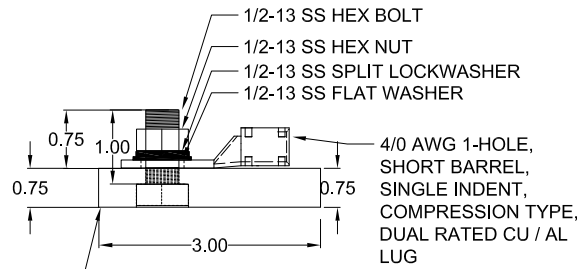


SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED FIELD TERMINAL BLOCKS	03-29-2021	JG
DRAWN BY:	FH	-	UPDATED SURGE PROTECTION	01-17-2025	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

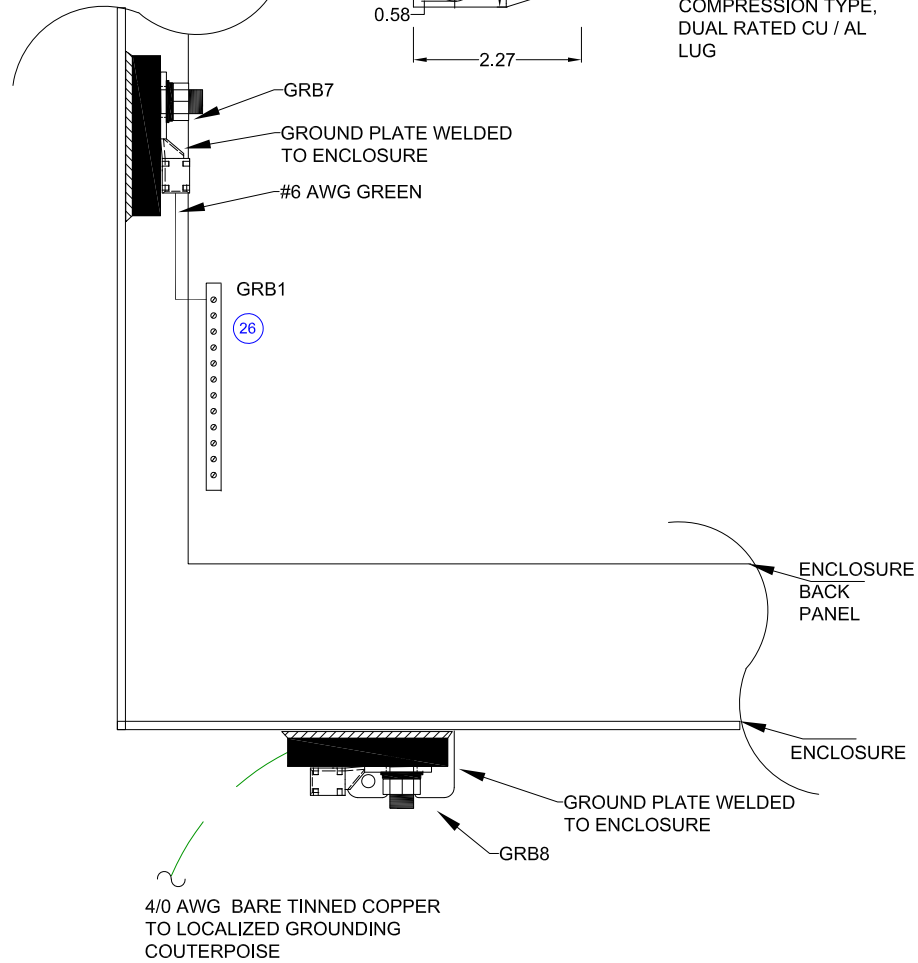
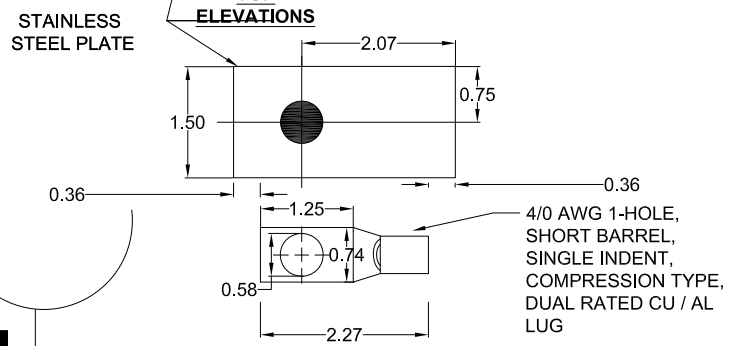
WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
PLC S7-1500 PANEL
FIELD TERMINAL BLOCK
WIRING PART 2

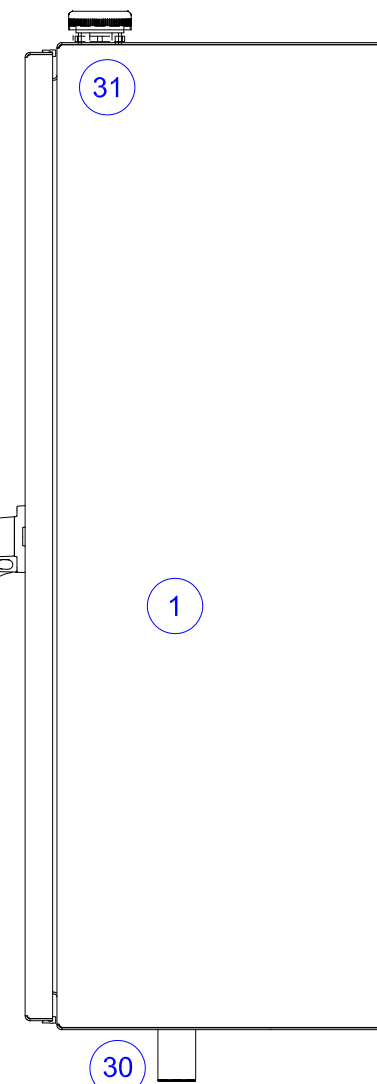
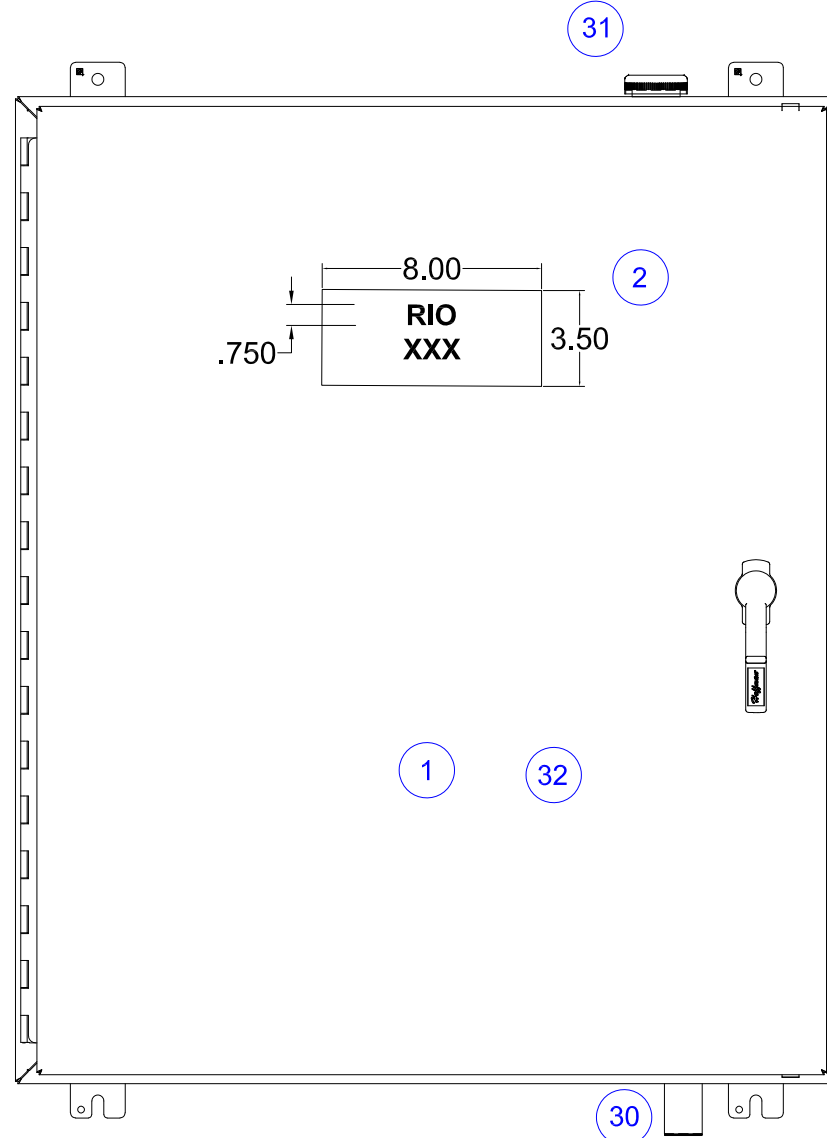
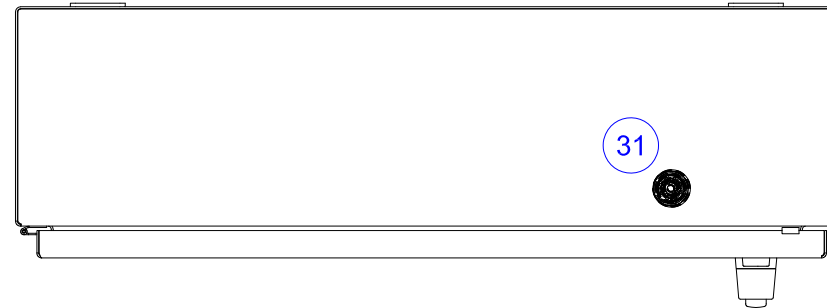
SIDE ELEVATIONS



TOP ELEVATIONS



PANEL GROUNDING TO LOCAL GROUND COUNTERPOISE WIRING DETAIL (402/1)



- GENERAL NOTES:**
1. REFER TO DIVISION 13 FOR DETAILS FOR PANEL LOCATION REQUIREMENTS;
 2. PANEL BUILDER SHALL ADJUST PANEL SIZE AS NEEDED BASED ON CONTENTS NEEDED FOR THE SPECIFIC APPLICATION WITH APPROVAL OF ENGINEER/OWNER;
 3. FOR OUTDOOR APPLICATIONS SUN SHIELD MUST BE INSTALLED.



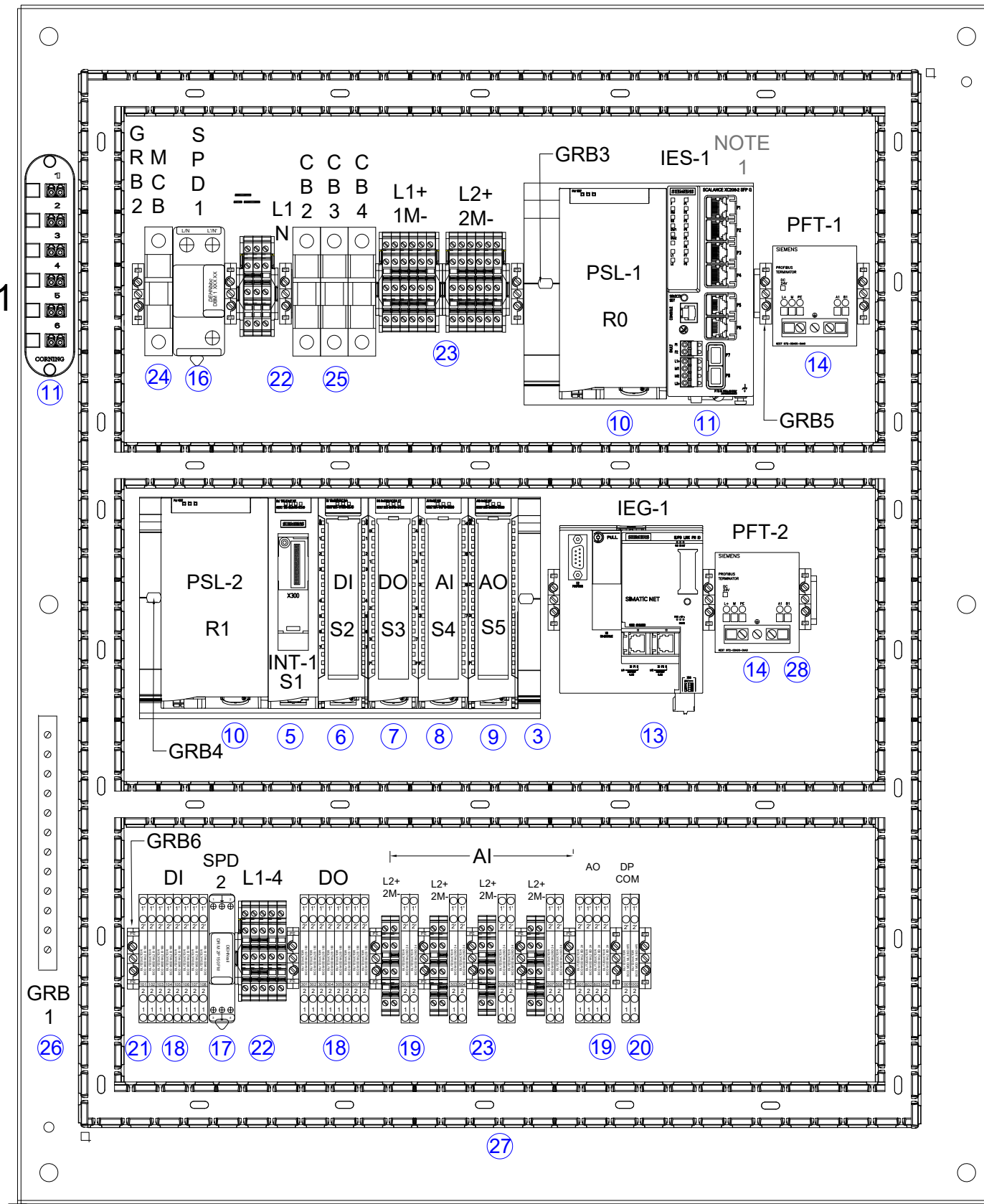
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DESIGN:	IAG				
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
FRONT, SIDE AND TOP ELEVATIONS

SHEET
302

WIC-1



NOTE:
 1. DEVICE ITEM VARY WITH APPLICATION. OWNER WILL SPECIFY SPECIFIC PART NUMBER OF COMMUNICATION DEVICE REQUIRED.



SCALE:	N.T.S.	-	-	03-29-2021	JG
		-	MOVED NOTE 1	08-01-2022	FH
DESIGN:	IAG	-	CHANGED ITEM #5	09-17-2024	FH
		-	UPDATED TERMINAL BLOCKS	01-21-2025	FH
DRAWN BY:	FH	-	UPDATED SURGE PROTECTION	01-29-2026	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

TITLE:	WATER RECLAMATION STANDARDS RIO S7-1500 PANEL INTERIOR LAYOUT
--------	---

SHEET
 303

ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER	ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER
1	1	ENCLOSURE, SIZED PER APPLICATION, SS-316, 3 PT. LATCH	AS PER 13325	18	16	SURGE SUPPRESSOR WITH BASE,180 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 B 180 # 927 210 (4)
	1	ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE	AS PER 13325				(2)
				19	14	SURGE SUPPRESSOR WITH BASE,24 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 BD 24 #927 244 (4)
2	2	NAMEPLATE, CUSTOM	CUSTOM ENGRAVED, REFER TO SPECIFIC DRAWING				
				20	2	SURGE SUPPRESSOR WITH BASE,5 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 BD HF 5 #927 271 (4)
3	1	S7-1500, RAIL, 245 MM	SIEMENS 6ES7590-1AC40-0AA0				
4	1	S7-1500, RAIL, 160 MM	SIEMENS 6ES7590-1AB60-0AA0	21	18	GROUND MODULE TERMINAL BLOCK (PE)	PHOENIX CONTACT USLKG6N
5	1	INTERFACE MODULE, ET 200MP, PROFINET IM 155-5 MF HF	SIEMENS 6ES7 155-5MU00-0CN0	22	8	TWO-TIER TERMINAL BLOCK, 2 POLE, GRAY WITH BRIDGE	PHOENIX CONTACT UTTB4 3044 814 / 303271 (5)
	1	SIMATIC BUS ADAPTER BA 2XRJ45	SIEMENS 6ES7193-6AR00-0AA0		2	TWO-TIER TERMINAL BLOCK END SECTION	PHOENIX CONTACT DUTTB 2,5/4 3047 293
	1	STRAIN RELIEF	SIEMENS 6ES7590-5DA00-0AA0				
				23	20	TWO-TIER TERMINAL BLOCK, 2 POLE, BLUE WITH BRIDGE	PHOENIX CONTACT UTTB4BU 3044 791 / 303271 (5)
6	1	S7-1500, 16 POINT, 120 VAC DISCRETE INPUT MODULE	SIEMENS 6ES7 521-1FH00-0AA0		6	TWO-TIER TERMINAL BLOCK END SECTION	PHOENIX CONTACT DUTTB 2,5/4 3047 293 (2)
	1	40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0				
				24	1	CIRCUIT BREAKER, SINGLE POLE, 20A TRIP (MCB)	SIEMENS 5SJ4120-7HG41
7	1	S7-1500, 8 POINT 5A RELAY OUTPUT MODULE	SIEMENS 6ES7 522-5HF00-0AB0				
	1	40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0	25	2	CIRCUIT BREAKER, SINGLE POLE, 10A TRIP (CB2 AND CB3)	SIEMENS 5SJ4110-7HG41
					1	CIRCUIT BREAKER, SINGLE POLE, 1A TRIP (CB4)	SIEMENS 5SJ4101-7HG41
8	1	S7-1500, 8 CHANNEL ANALOG INPUT MODULE (16 BIT)	SIEMENS 6ES7 531-7NF10-0AB0		1	BUS BARS, 1 POLE FIXED LENGTH, 6 CIRCUITS, INSULATED COPPER	SIEMENS 5ST 3663-0HG
	1	40-PIN MODULE TERMINAL CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0				
				26	1	COPPER GROUNDING BAR, 14-POSITION	ILSCO D167-14
9	1	ANALOG OUTPUT MODULE - 4 CHANNEL	SIEMENS 6ES7 532-5ND00-0AB0				
		40 PIN CONNECTOR	SIEMENS 6ES7 592-1AM00-0XB0	27	3	WIRE TROUGH, PVC, 1"W X 2"H	PANDUIT G1X2WH6
					3	WIRE TROUGH COVER, PVC, 1"W	PANDUIT C1WH6
10	2	POWER SUPPLY, 120 / 230 VAC IN, 24 VDC / 8 AMP	SIEMENS 6EP1333-4BA00				
				28	2	PERFORATED 35MM DIN RAIL GALVANIZED STEEL 2 METER	SIEMENS 5ST1145
11	1	INDUSTRIAL ETHERNET SWITCH DEVICE	SIEMENS XC206-2SFP G, 6GK5 206-2BS00-2AC2				
	2	SCALANCE X ACCESSORY ; PLUG IN TRANSCEIVER SFP992-1; 1X 1000 MBIT/S LC PORT, OPTICAL; MULTIMODE OPTICAL UP TO MAX. 750 M	SIEMENS 6GK5992 1AL00-8AA0	29	TBD	WIRE, BLACK, GREEN, WHITE, #12 AWG THHN STRANDED	HOUSTON OR APPROVED EQUAL
					TBD	WIRE, BLACK, BLUE, GREY, WHITE, #14 AWG,THHN STRANDED	HOUSTON OR APPROVED EQUAL
					TBD	WIRE, RED, YELLOW #16 AWG, TFFN STRANDED	HOUSTON OR APPROVED EQUAL
12	1	DUPLEX FIBER OPTIC PATCH CABLE, "LC" TO "LC" TYPE	BLACK BOX FOCMP50-003M-LCLC-AQ		TBD	WIRE, BLACK, WHITE, RED, GREEN- 4 CONDUCTOR, #16 AWG	9418 BELDEN OR APPROVED EQUAL
13	1	INDUSTRIAL ETHERNET / PROFIBUS DP LINK GATEWAY	SIEMENS 6GK1 411-5AB10	30	1	TYPE 4X ENCLOSURE BREATHER VENT / DRAIN	HOFFMAN AVDR4SS4
	1	32 MB C- PLUG	SIEMENS 6GK1 900-0AB00				
				31	1	TYPE 4X ENCLOSURE PRESSURE COMPENSATION DEVICE	STEGO DA 28405.0-00 (1)
14	2	PROFIBUS DP ACTIVE TERMINATOR, 24VDC POWER	SIEMENS 6ES7 972-0DA00-0AA0				
				32	1	CORROSION- INHIBITING VAPOR CAPSULE	HOFFMAN AHC10E
15	TBD	PROFIBUS/RS-485 PURPLE COLOR JACKETED CABLE	TURCK RB50672-999NW				
	1	PROFIBUS DP, CONNECTOR, 90°, WITH PG PORT	SIEMENS 6ES7 972-0BB12-0XA0	33	TBD	INDUSTRIAL ETHERNET CAT 6, 4 BONDED-PAIR 23AWG (SOLID) COPPER	BELDEN 7953A
					14	INDUSTRIAL ETHERNET CAT 6, RJ45 T568A WIRING METHOD	BELDEN R301601
16	1	SURGE SUPPRESSOR, 2 POLE, 230V AC VOLT,	DEHN SP 240 3W+GR 1PH. 230VAC, 908-195				
				34	1	FIBER OPTIC PATCH PANEL, 12 FIBER CAPACITY	CORNING SPH-01-P
17	1	SURGE ARRESTOR, TYPE 3, CLASS III	DEHN DR M 2P 150 953-209		1	FIBER OPTIC CONNECTOR PANEL, 12-LC CAPACITY	CORNING CCH-CP12-AD
18	TBD	DEVICE ID NAMEPLATES ENGRAVED SELF ADHESIVE	SETON OR EQUAL				



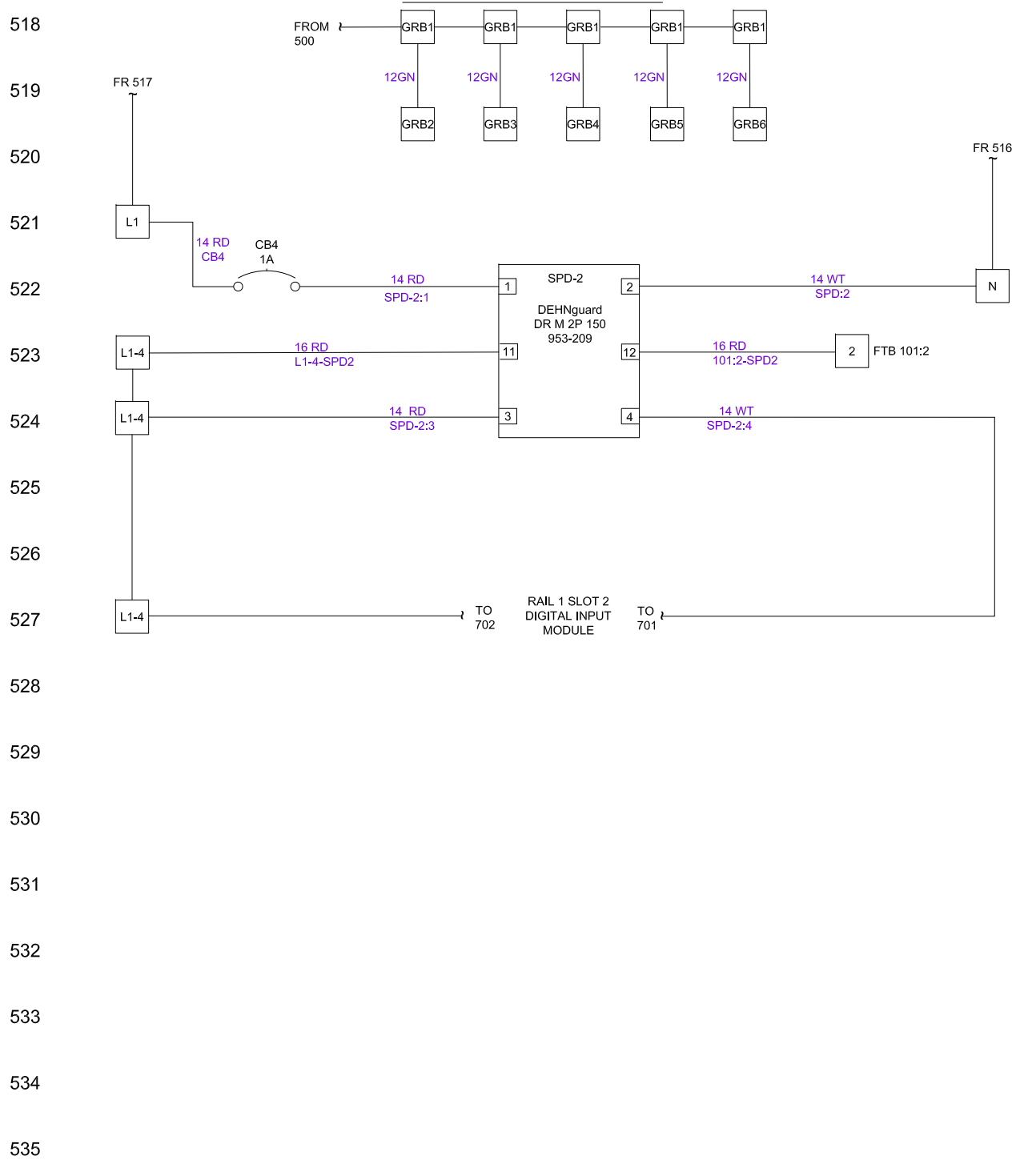
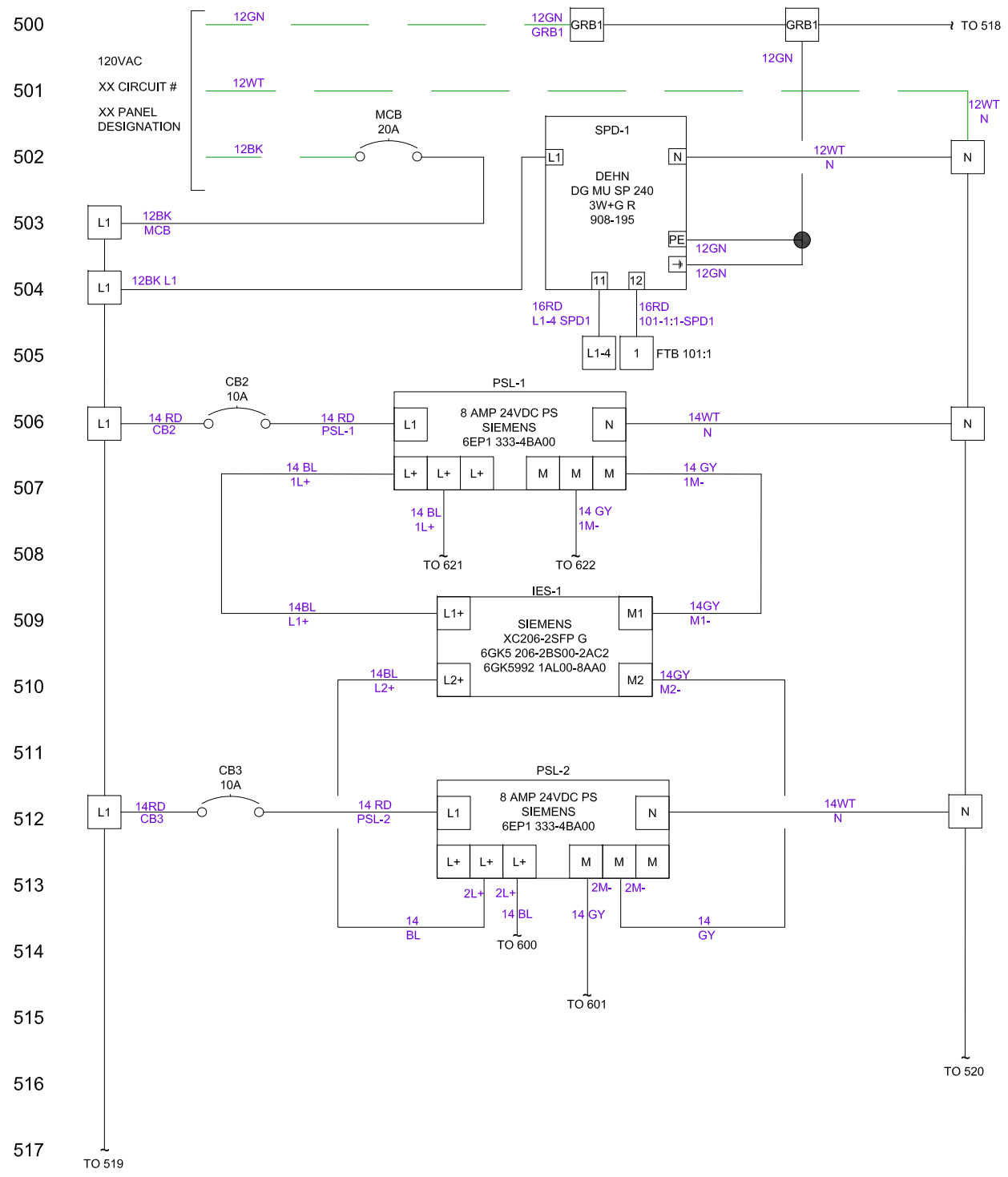
SCALE:	N.T.S.	1	REVISED	12-11-2020	FH
		2	REVISED	03-29-2021	JG
DESIGN:	IAG	3	REVISED ITEM #5	09-20-2024	FH
		4	REVISED ITEMS 18, 19, 20	01-21-2025	FH
DRAWN BY:	FH	5	REVISED ITEMS 22 AND 23	01-29-2026	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

**WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP**

**CITY OF
ORLANDO, FLORIDA**

TITLE:
**WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
BILL OF MATERIALS**

**SHEET
304**

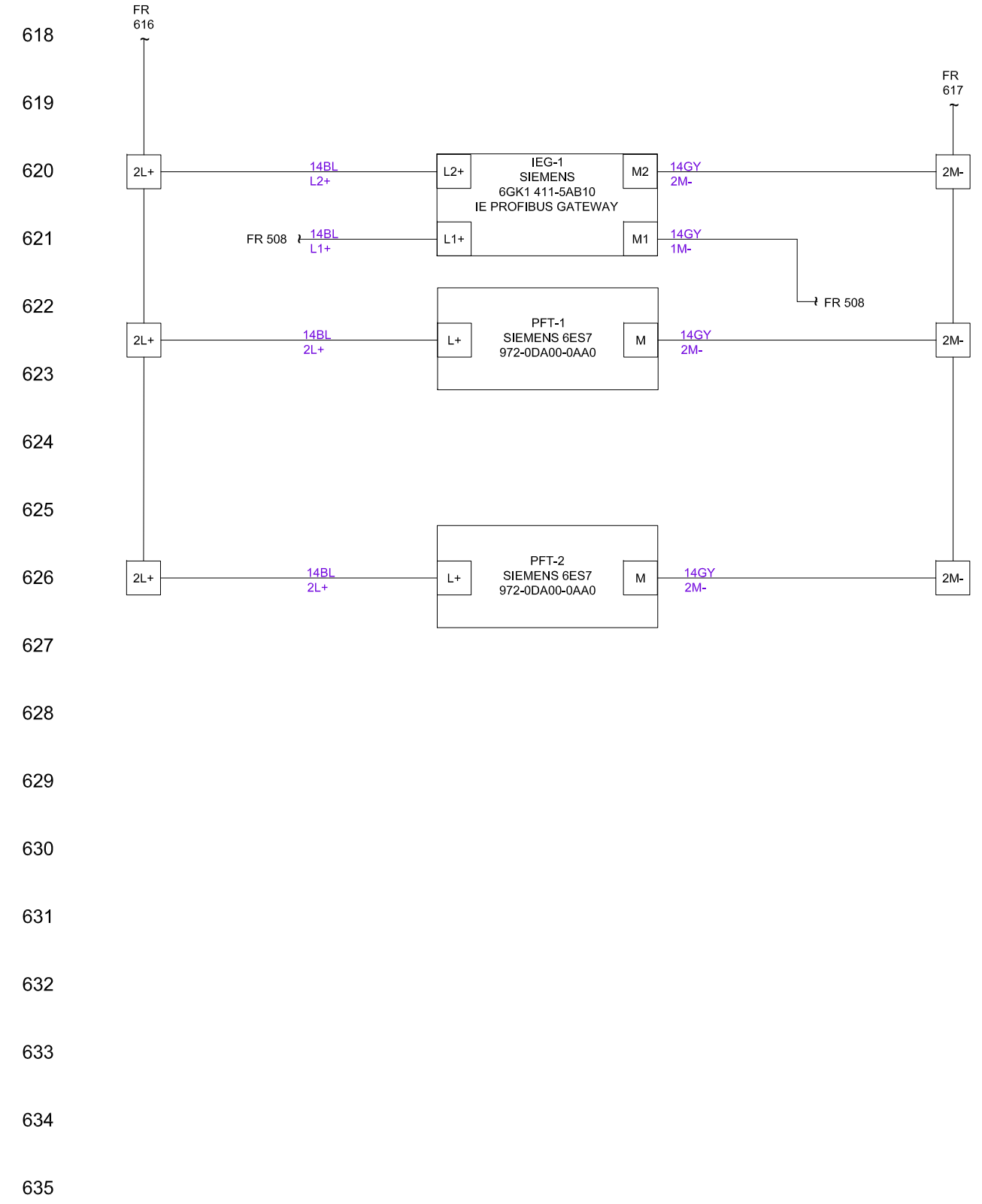
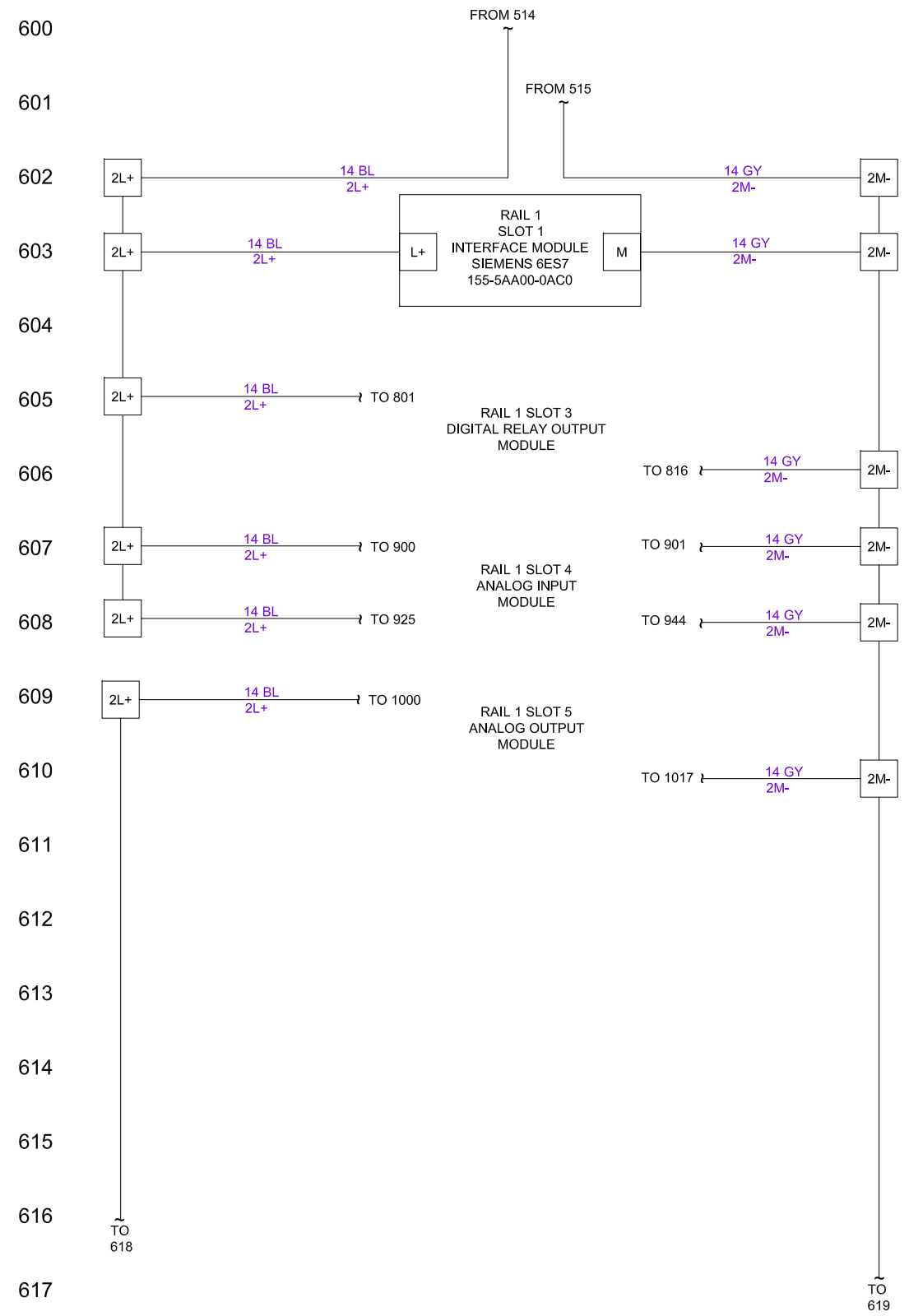


SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG				
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
POWER DISTRIBUTION
PART 1 WIRING

SHEET
305



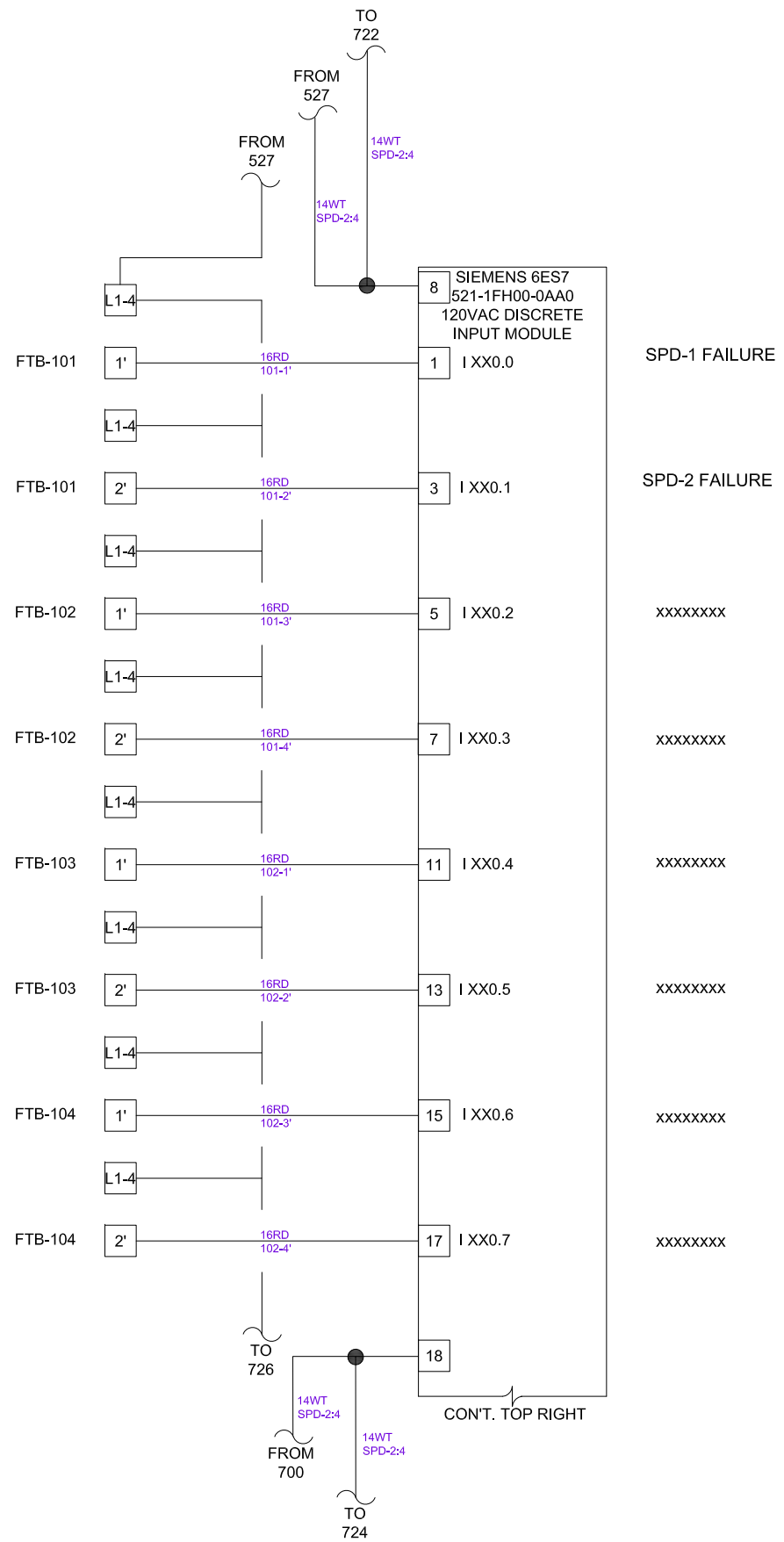
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DESIGN:	IAG				
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
POWER DISTRIBUTION
PART 2 WIRING

SHEET
306

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SPD-1 FAILURE

SPD-2 FAILURE

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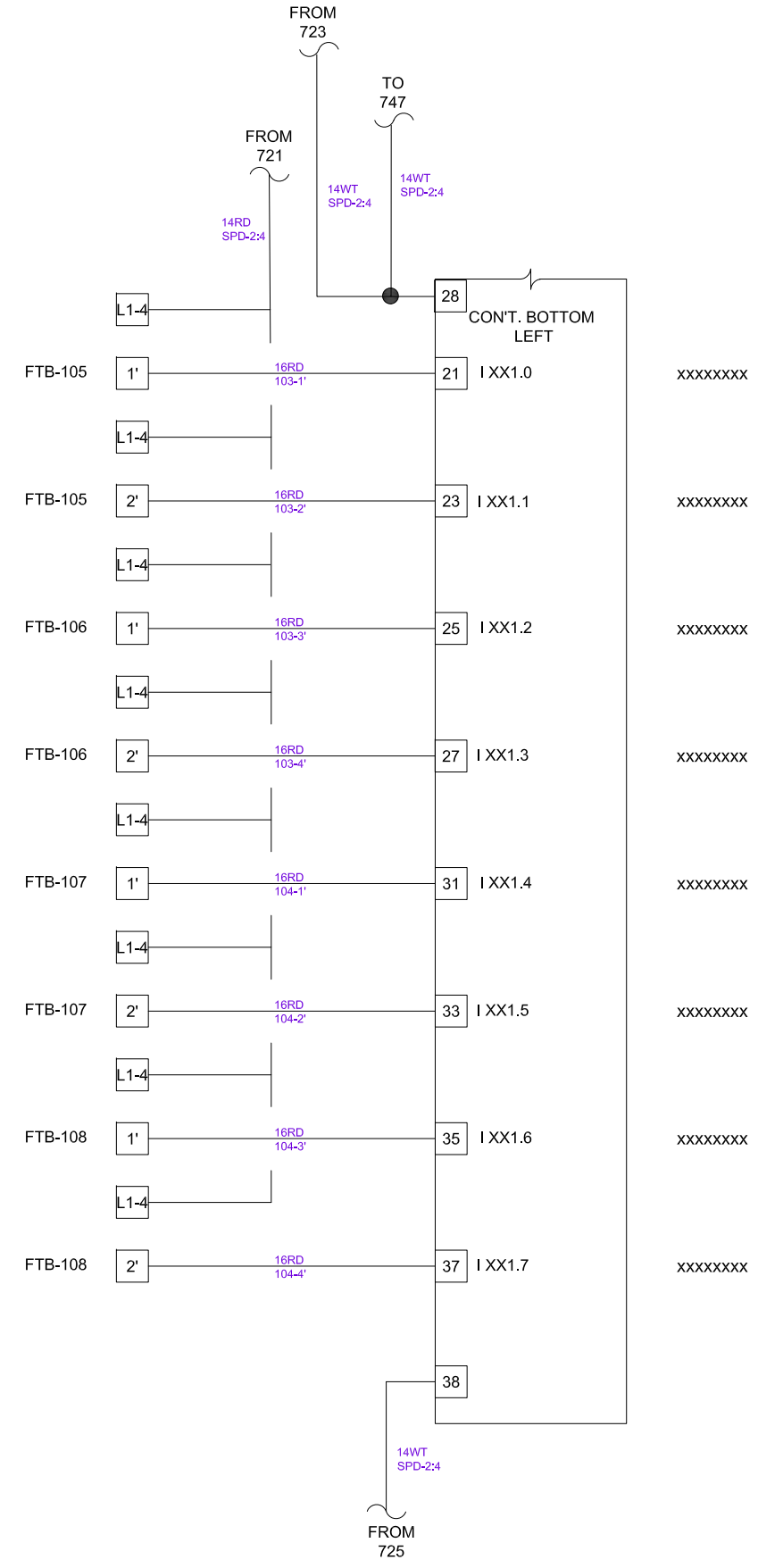
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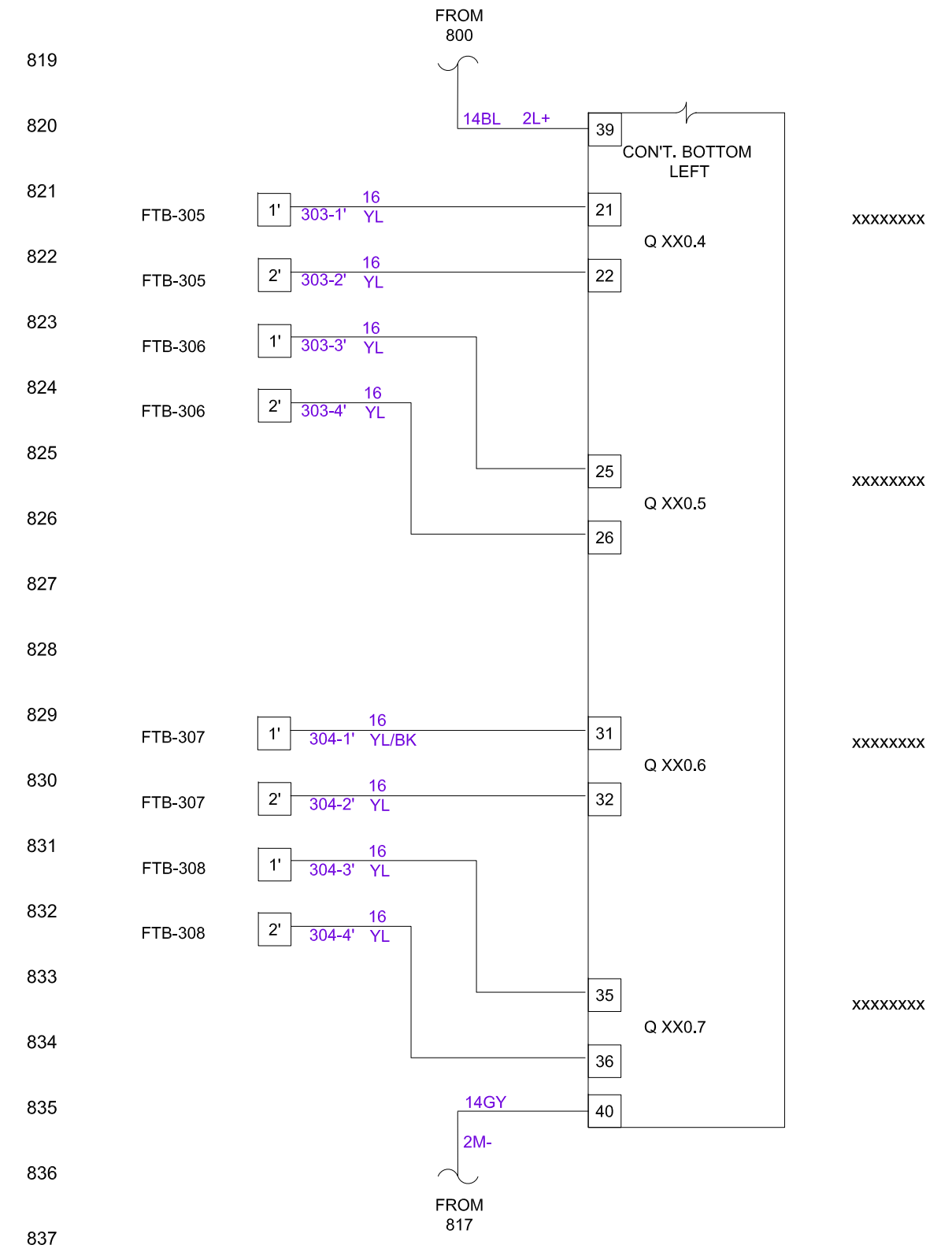
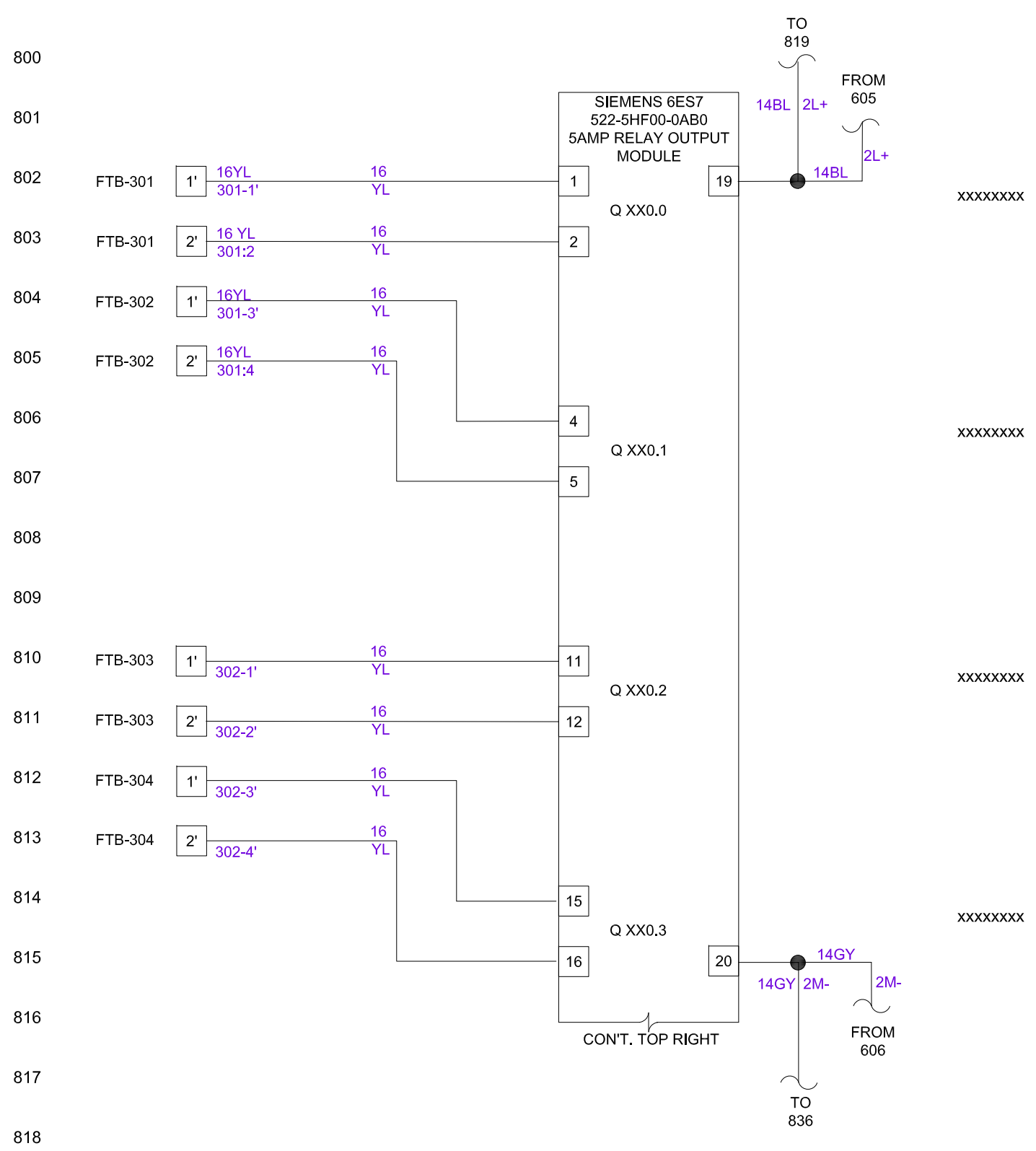
TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
PLC PANEL RAIL 1, SLOT 2
DIGITAL INPUT MODULE WIRING

SHEET
307



SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	CHANGED TERMINAL BLOCKS	01-16-2025	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA



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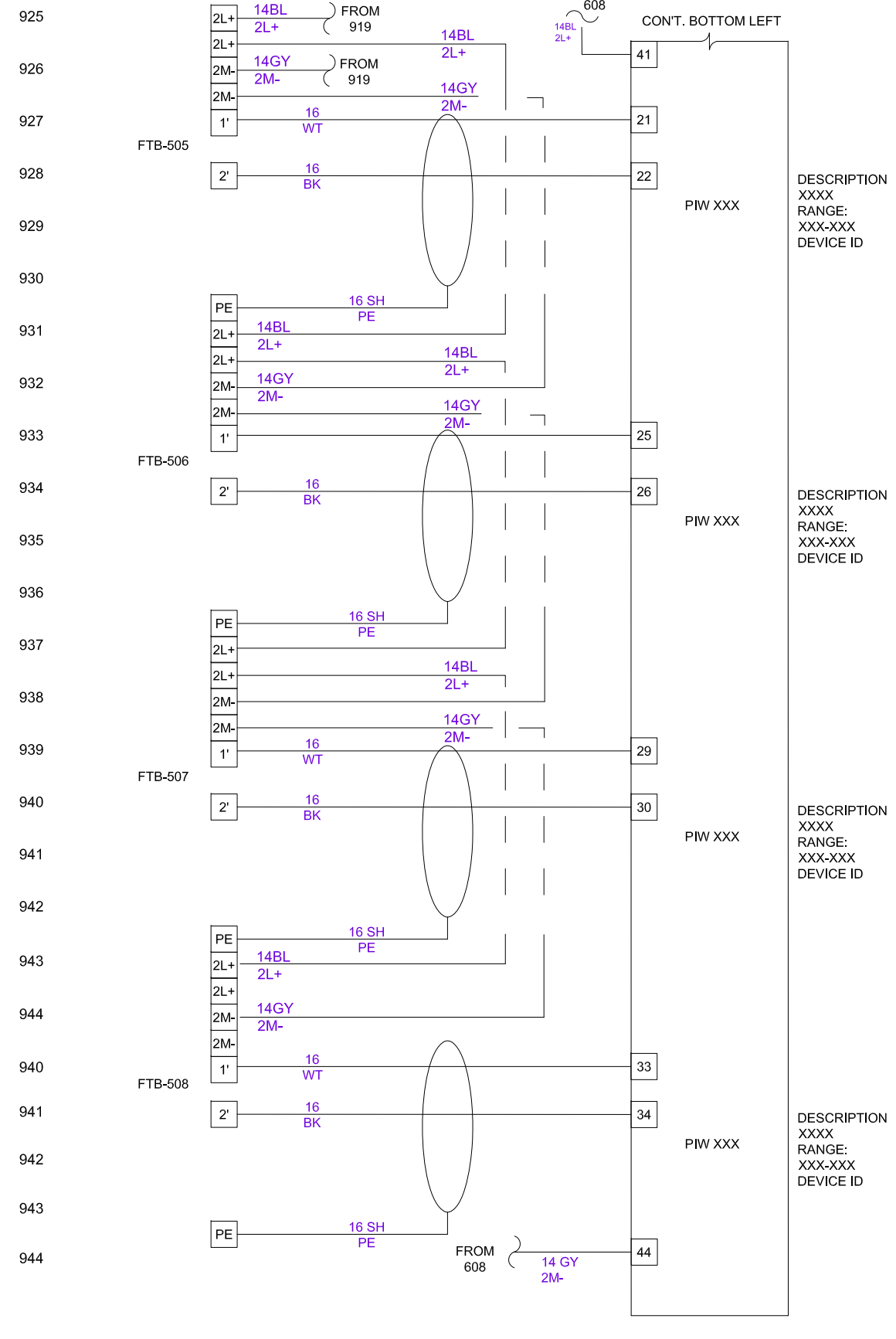
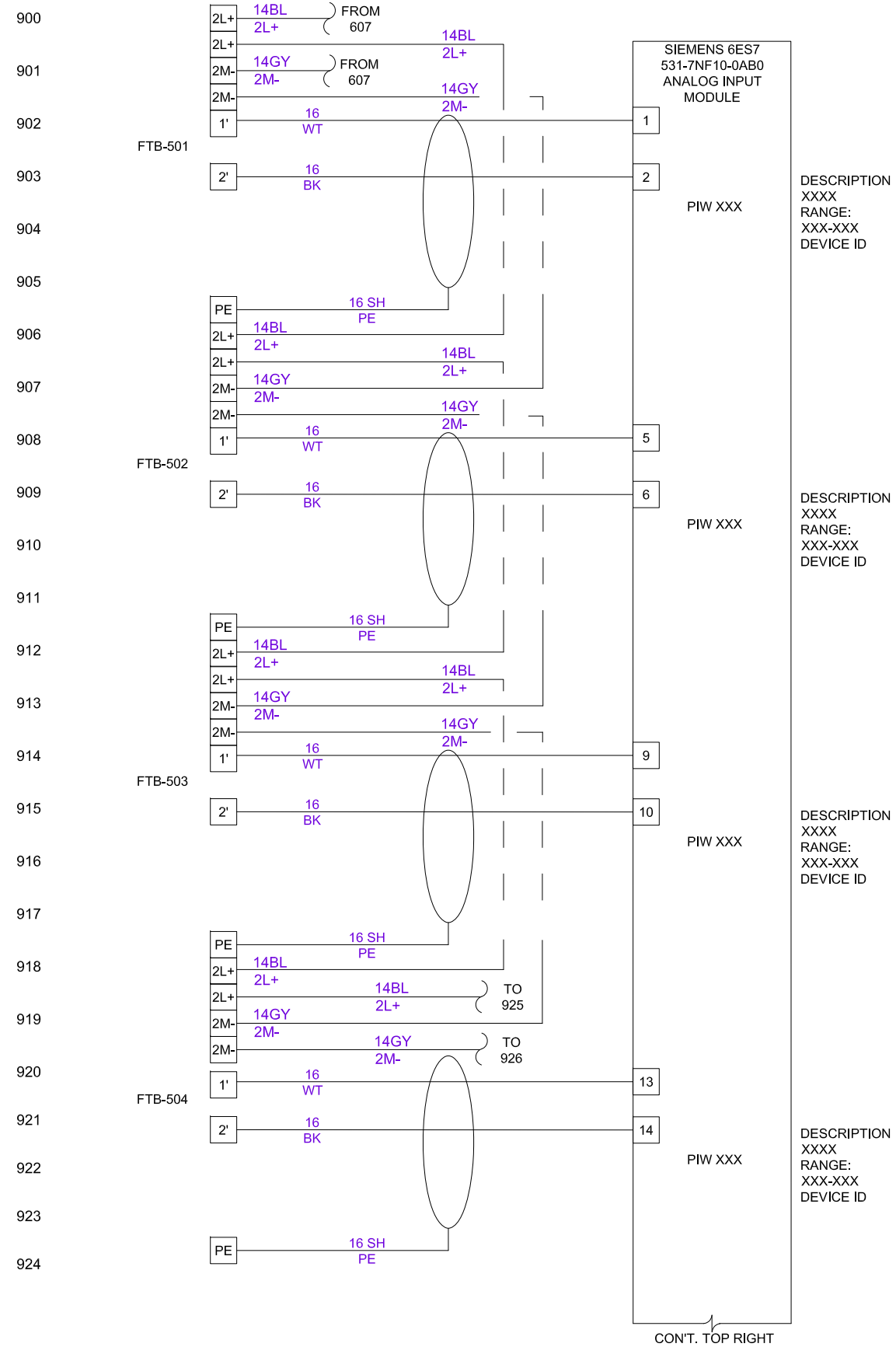


SCALE:	N.T.S.			10-02-2020	JG/FH
DESIGN:	IAG				
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
RAIL 1, SLOT 3
RELAY OUTPUT MODULE WIRING

SHEET
308



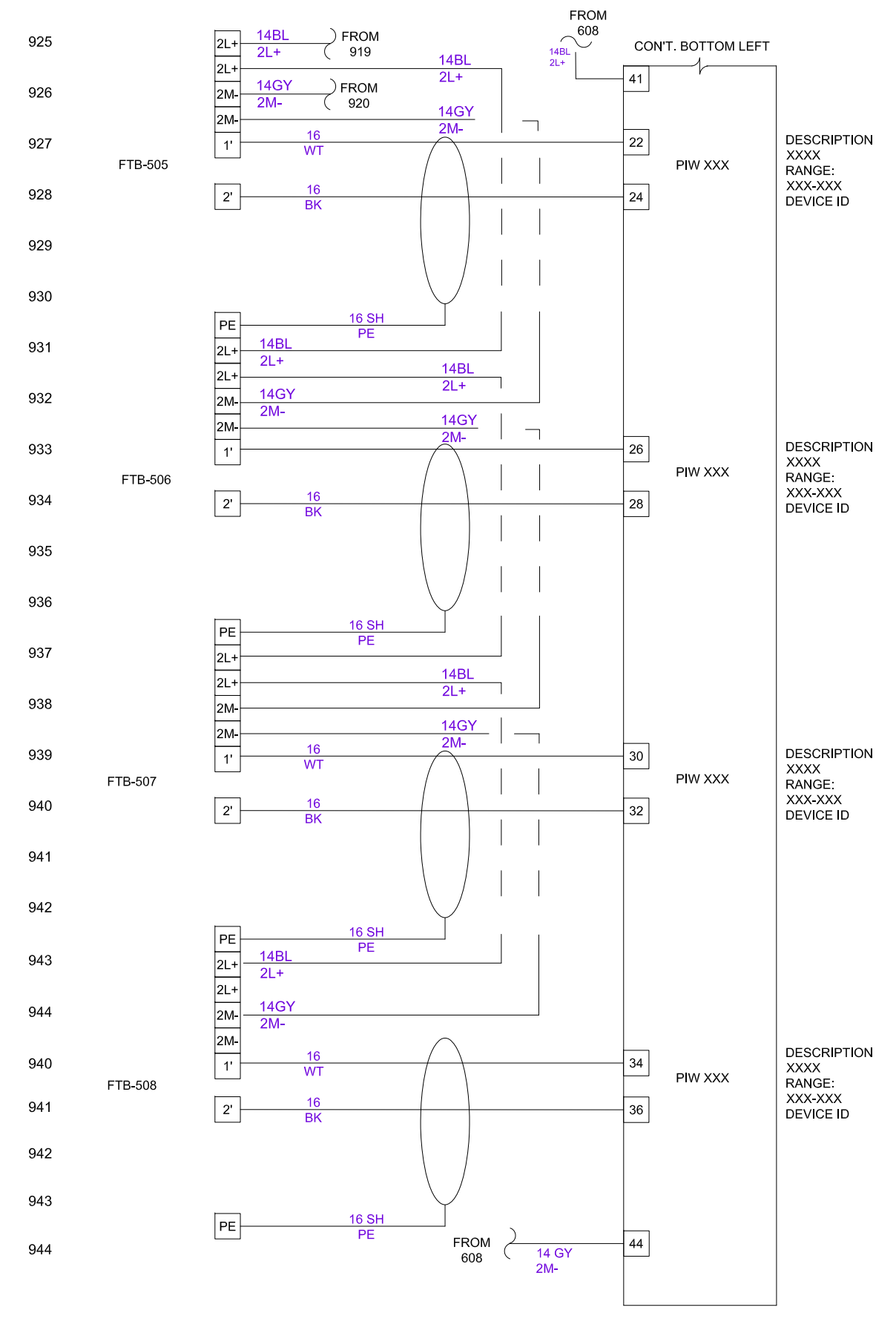
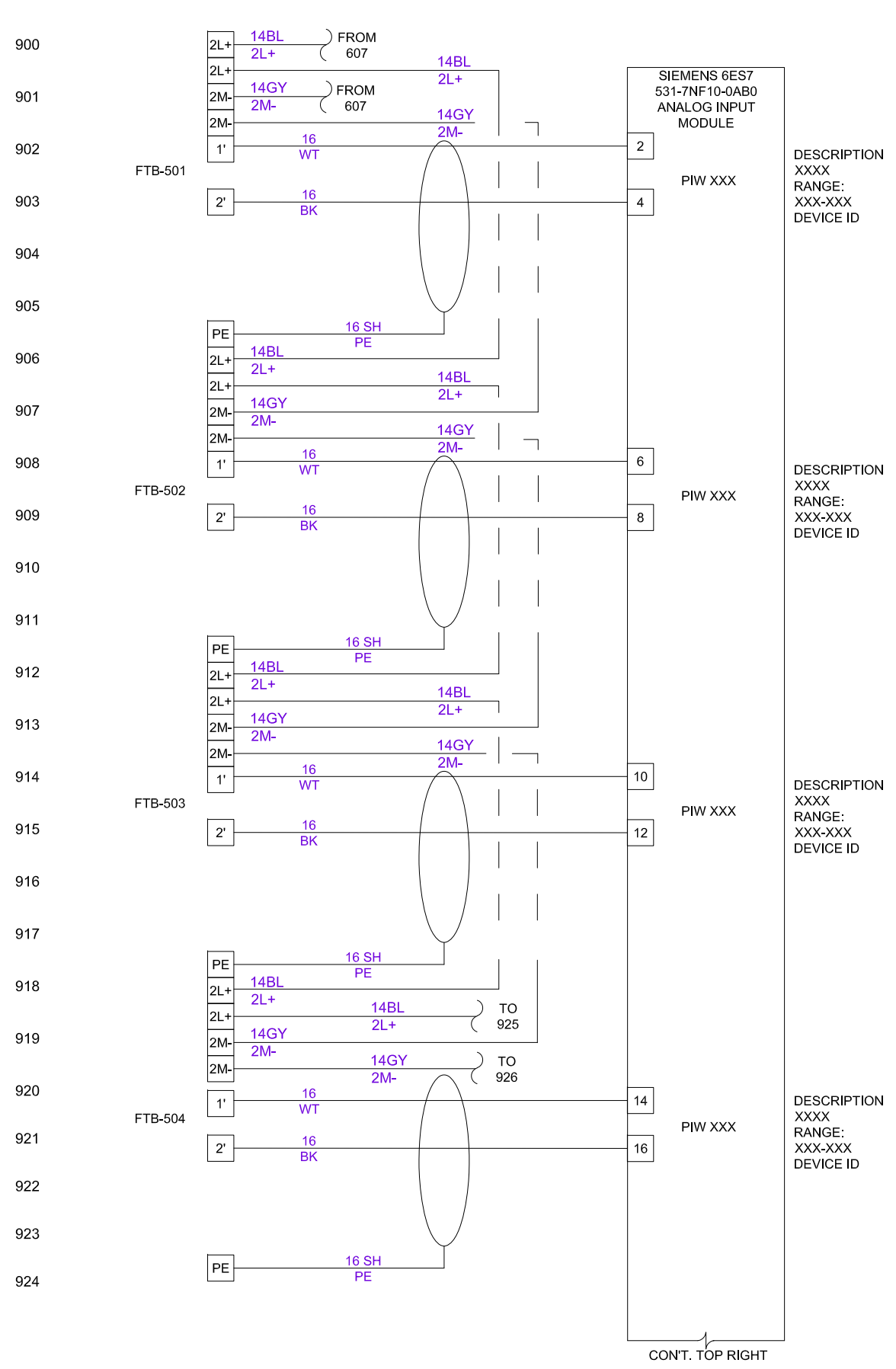
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		-	REVISED WIRING	03-29-2021	JG
DESIGN:	IAG	-	REMOVED WIRING	01-17-2022	JG
		-	REVISED WIRING DIAGRAM	01-17-2022	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
RAIL 1, SLOT 4
ANALOG INPUT MODULE CURRENT 2
WIRE

SHEET
309 A

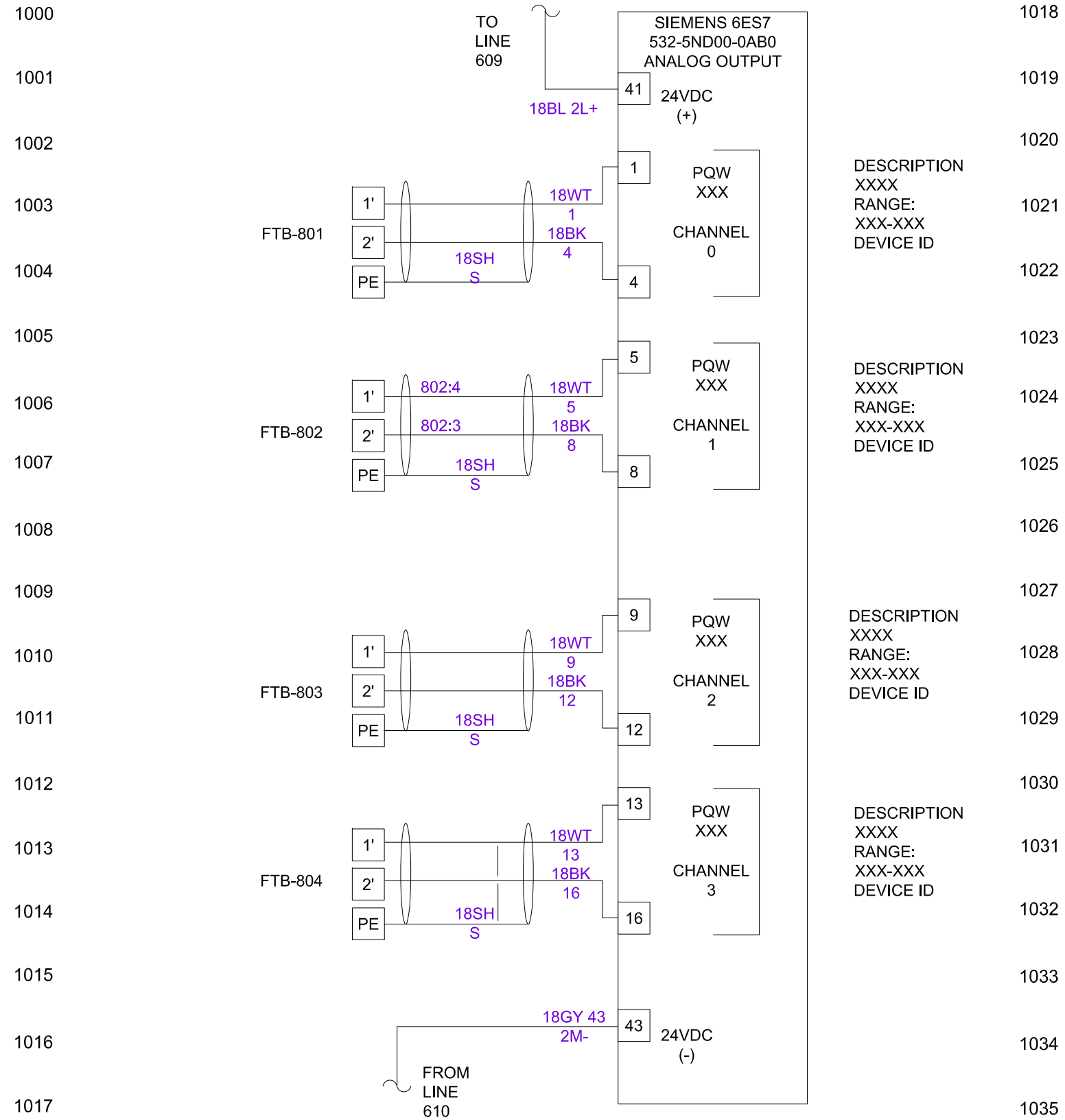


SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
		-	REVISED WIRING	03-29-2021	JG
DESIGN:	IAG	-	REMOVED WIRING	01-17-2022	JG
		-	REVISED WIRING DIAGRAM	01-17-2022	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
RAIL 1, SLOT 4
ANALOG INPUT MODULE CURRENT 4
WIRE

SHEET
309 B



SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED TERMINAL BLOCKS	01-22-2025	FH
DRAWN BY:	FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
RAIL 1, SLOT 5
CURRENT ANALOG OUTPUT MODULE
WIRING

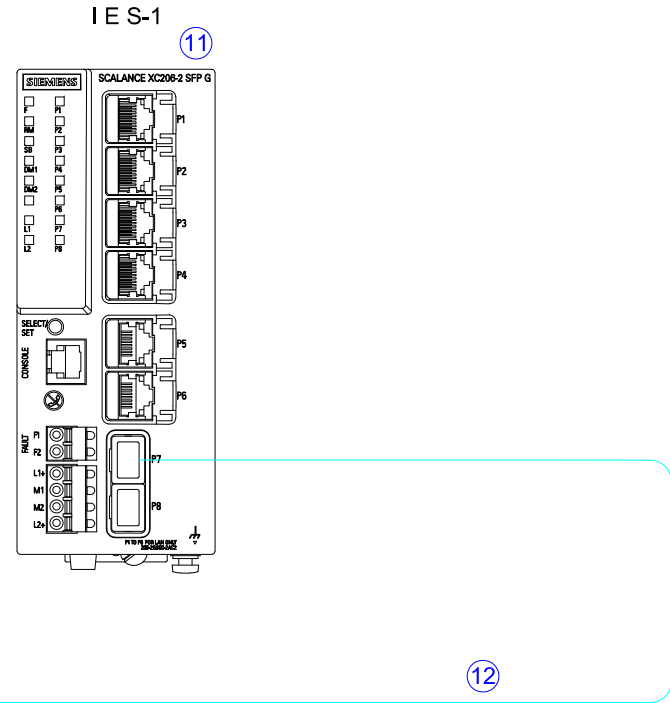
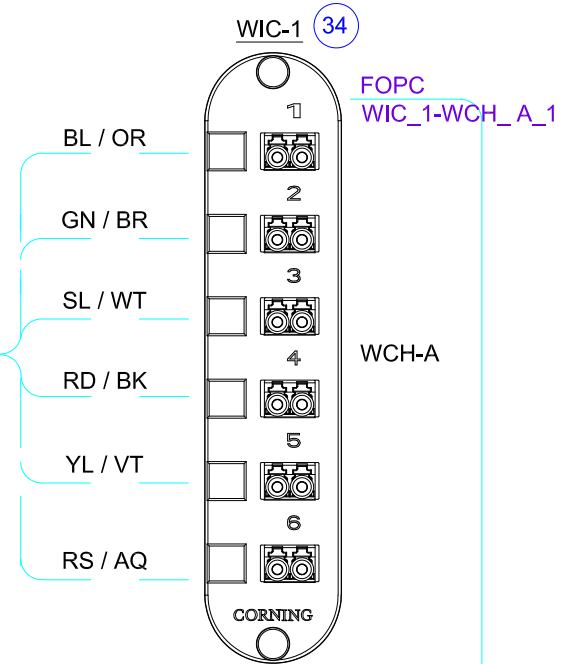
SHEET
310

AA-BB-XXX-YYY-ZZZZ
 FIBER OPTIC CABLE FROM PLC, CP
 UPSTREAM DEVICE,
 OR RIO PANEL

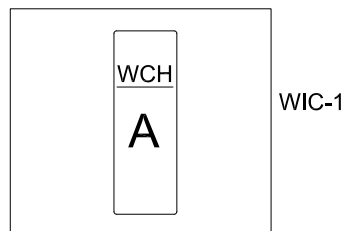
NOTE 1

FIBER SC CONNECTOR PANEL
 ASSIGNMENTS

SC POSITION	REAR	FRONT
1	BLUE	ORANGE
2	GREEN	BROWN
3	SLATE	WHITE
4	RED	BLACK
5	YELLOW	VIOLET
6	ROSE	AQUA



WIC
 PORT
 DIRECTORY



NOTE:
 1. FIELD SIDE STRUCTURE OF WIRE
 AND CABLE TAGGING
 CONVENTIONS SHALL
 COMPLY WITH SPECIFICATION
 DETAILS INDICATED ON DRAWINGS
 120 AND 121.



SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG				
DRAWN BY:	JG/FH				
APPROVED BY:	GM	NO	REVISION	DATE	BY

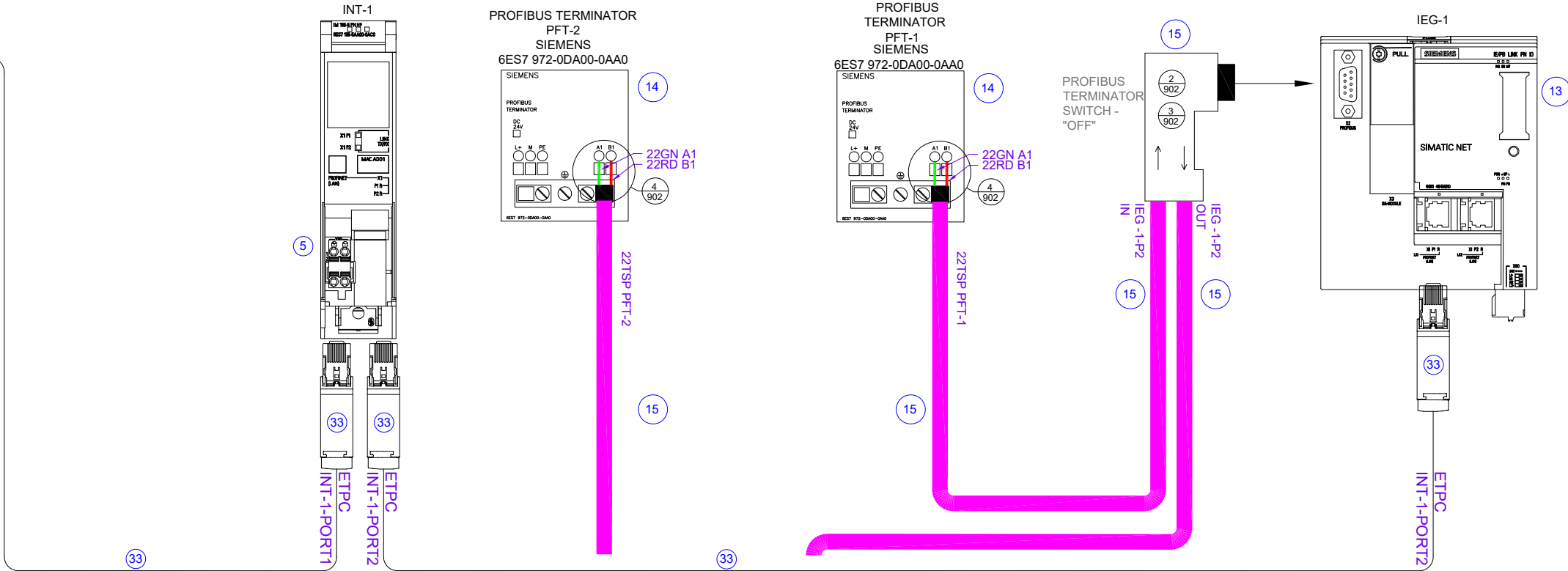
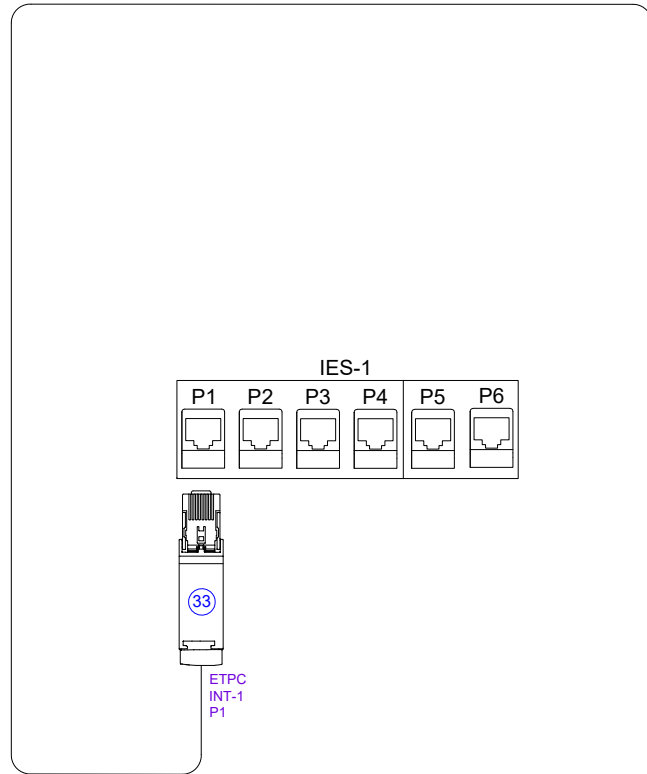
WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

TITLE:

WATER RECLAMATION STANDARDS
 RIO S7-1500 PANEL
 FIBER OPTIC COM LAYOUT

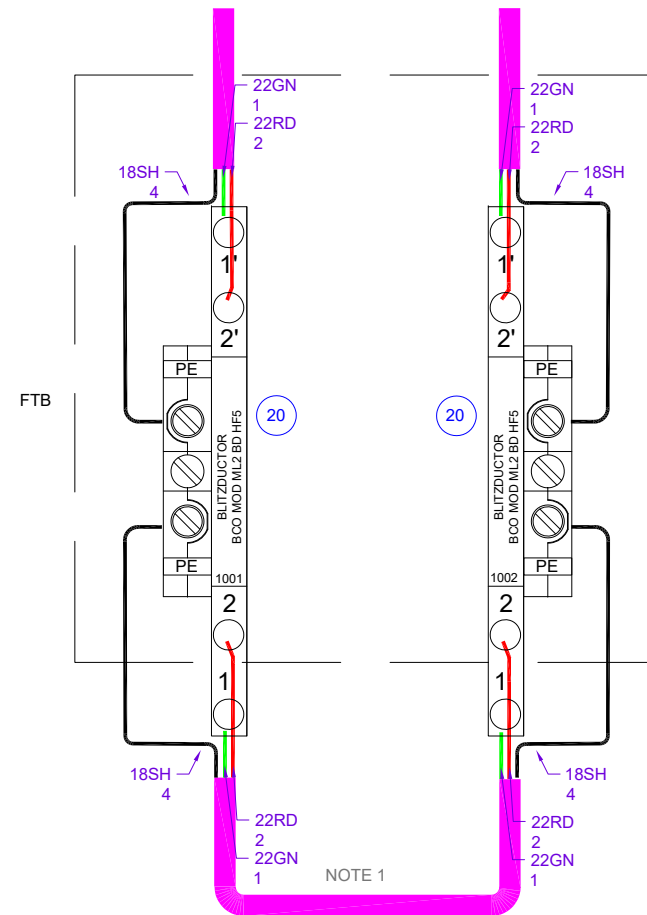
SHEET

311



NOTES

1. REMOVE PROFIBUS DP CABLE BEFORE CONNECTING FIELD DEVICE OR RIO PANEL. CABLE TO REMAIN CONNECTED WHEN NOT "IN USE".



SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED SURGE	01-16-2025	FH
DRAWN BY:	FH			01-29-2026	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

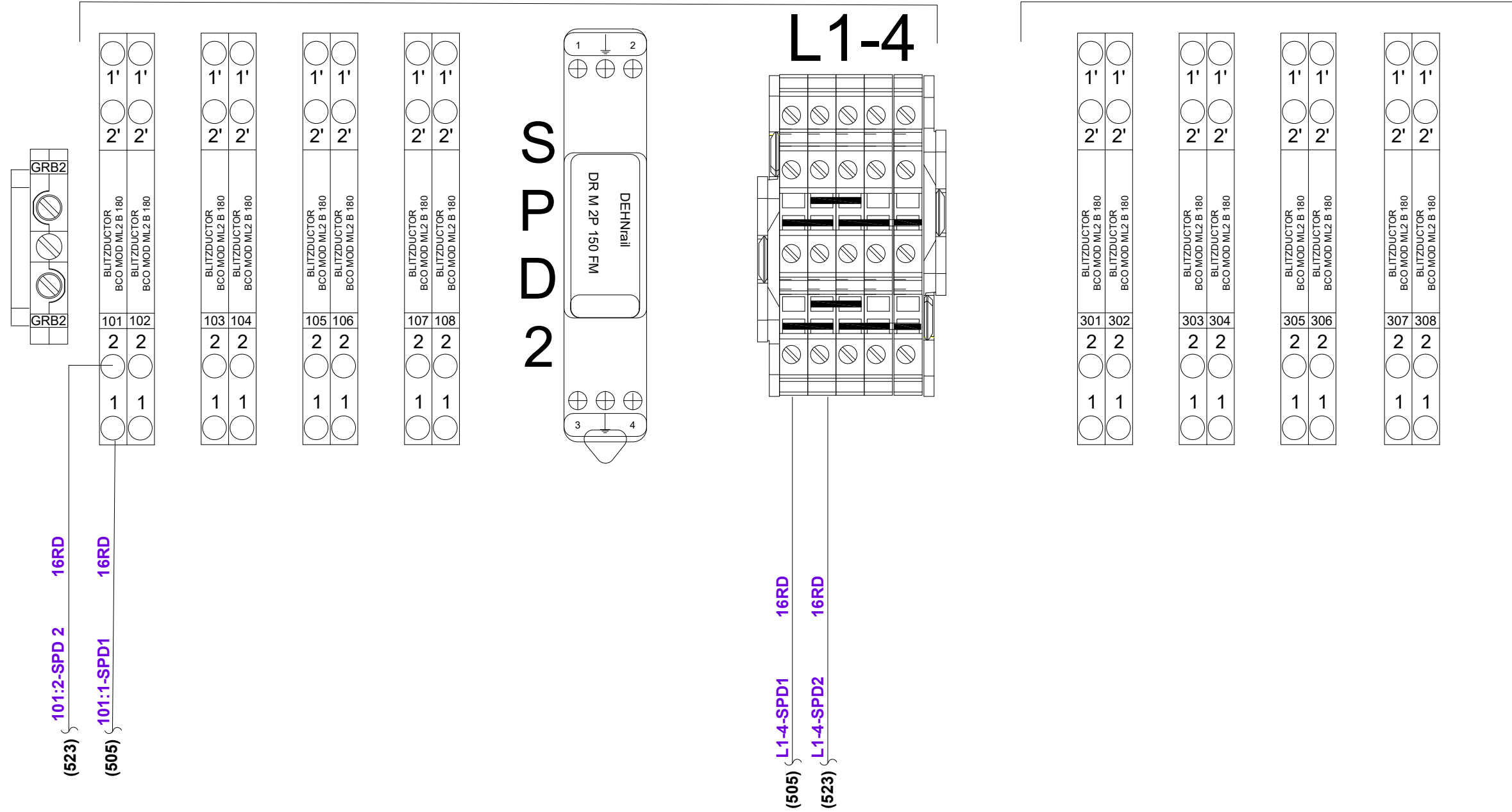
TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
COPPER
COMMUNICATION LAYOUT

SHEET
312

FTB

DIGITAL INPUT MODULES
REFER TO DRAWING # 307
FOR PANEL WIRING

DIGITAL OUTPUT MODULE
REFER TO DRAWING # 308
FOR PANEL WIRING



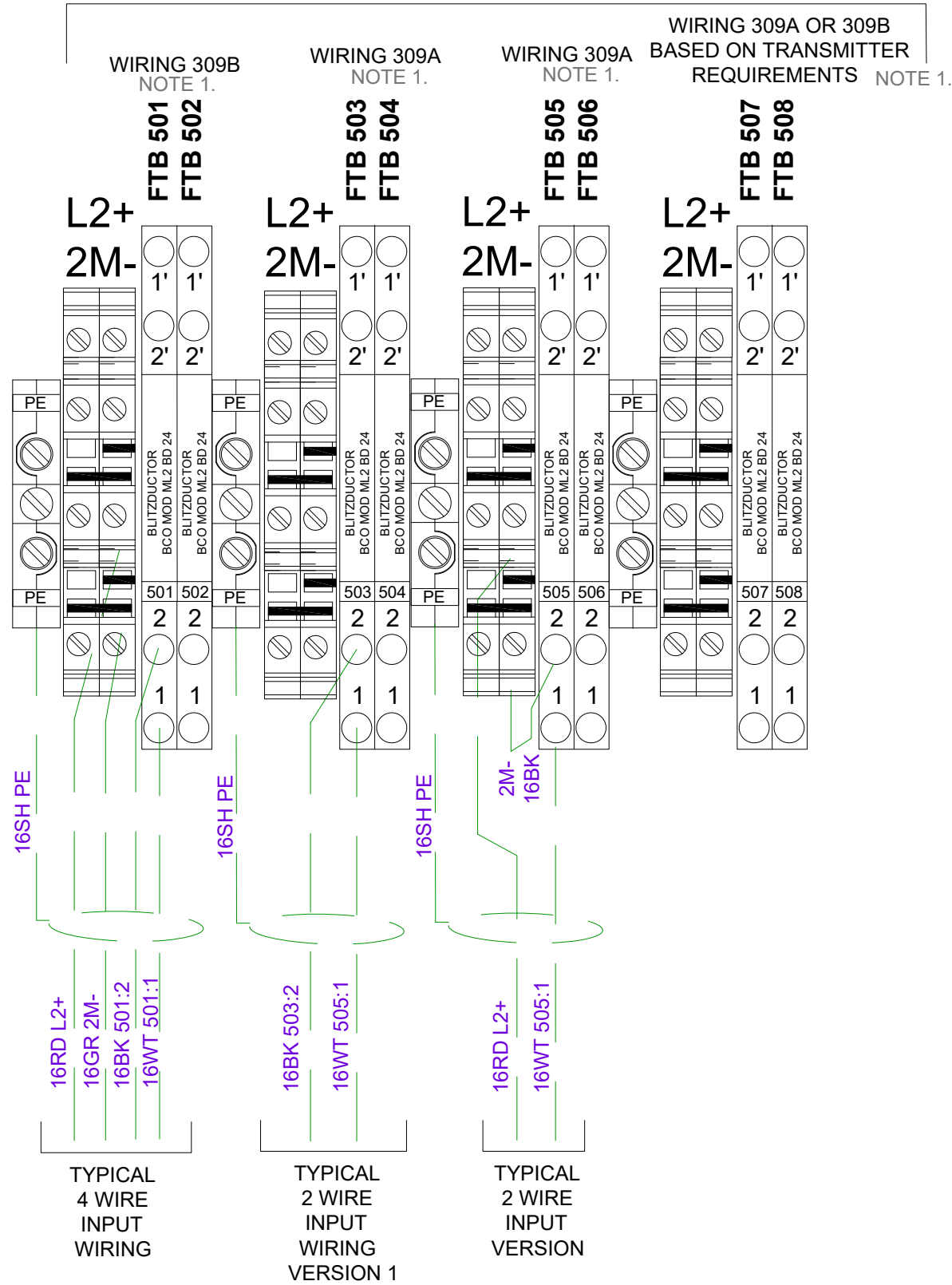
SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED TERMINAL BLOCKS	01-21-2025	FH
DRAWN BY:	FH	-	UPDATED BLITZDUCTORS	01-29-2026	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

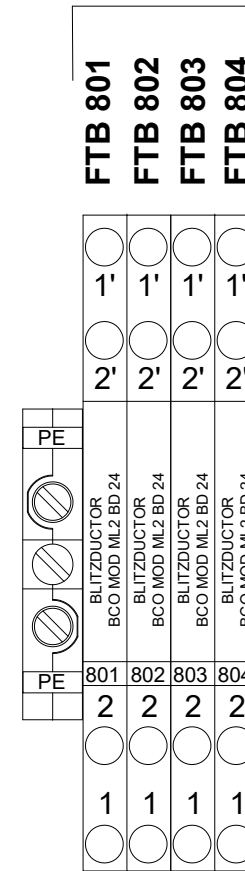
TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
FIELD TERMINAL BLOCK
WIRING PART 1

SHEET
313

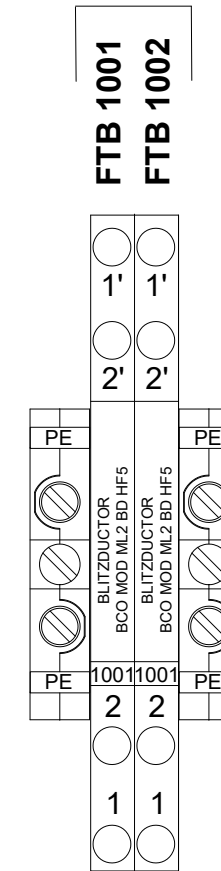
ANALOG INPUT MODULES
REFER TO DRAWING # 209 & 209B
FOR PANEL WIRING



ANALOG OUTPUT MODULES
REFER TO DRAWING 310
FOR PANEL WIRING



PB COMM WIRING
REFER TO DRAWING 312
FOR PANEL WIRING



NOTE

1. PROVIDE SPECIFIC WIRING AS PER APPLICATION

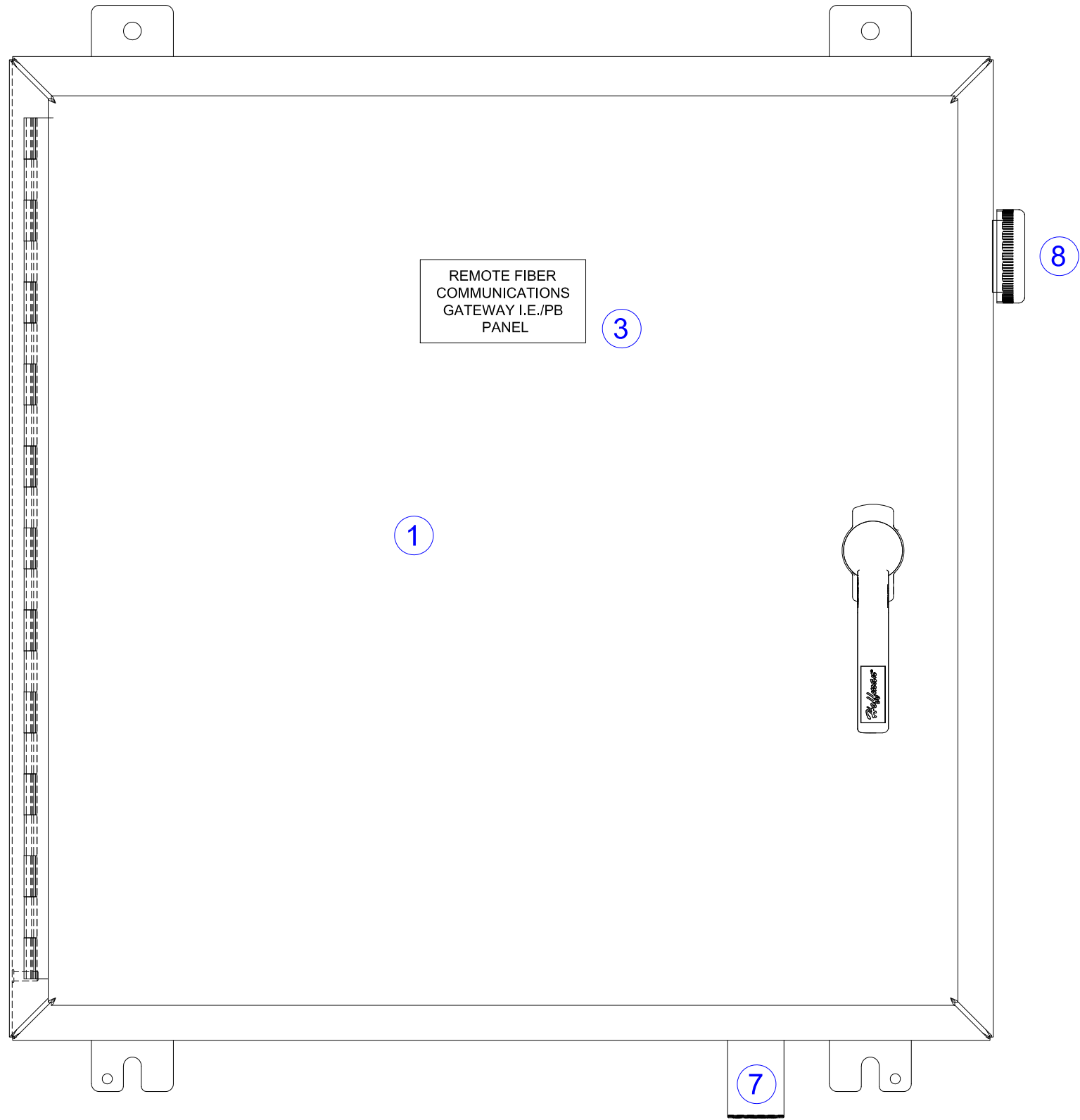


SCALE:	N.T.S.	-	-	10-02-2020	JG/FH
DESIGN:	IAG	-	UPDATED TERMINAL BLOCKS	01-22-2025	FH
DRAWN BY:	FH	-	UPDATED SURGE PROTECTION	01-29-2026	FH
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
WATER RECLAMATION STANDARDS
RIO S7-1500 PANEL
FIELD TERMINAL BLOCK
WIRING PART 2

SHEET
314

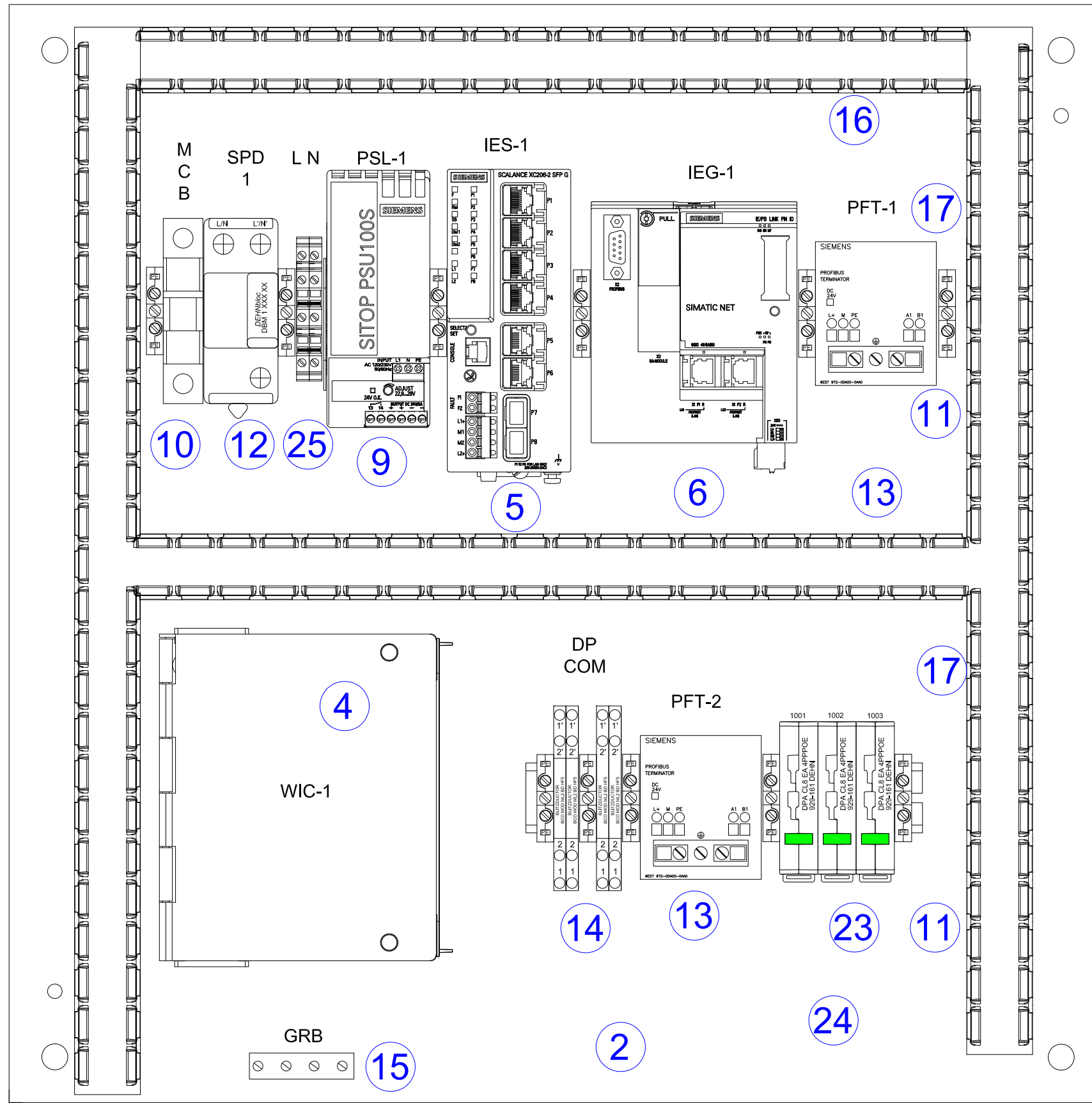


SCALE:	NONE	1		11-09-2020	FH/JG
		2			
DESIGN:	IAG	3			
		4			
DRAWN BY:	FH/JG	5			
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
REMOTE FIBER COMMUNICATIONS
GATEWAY I.E./PB PANEL
FRONT ELEVATION

SHEET
502



SCALE:	NONE	1	-	11-09-2020	FH/JG
		2	UPDATED 14 AND 23	01-27-2025	FH
DESIGN:	IAG	3	UPDATED 25	05-23-2025	FH
		4			
DRAWN BY:	FH/JG	5			
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
REMOTE FIBER COMMUNICATIONS
GATEWAY I.E./PB PANEL
INTERIOR LAYOUT

SHEET
503

ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER	ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER
1	1	ENCLOSURE, 316SS, HINGE-COVER WITH 3-POINT LATCH	SPECIFICATION 13325	14	4	SURGE SUPPRESSOR WITH BASE,5 VOLTS	DEHN BLITZDUCTOR BCO MOD ML2 BD HF 5 #927 271 2
2	1	ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE	SPECIFICATION 13325	15	1	COPPER GROUNDING BAR, 4-POSITION	ILSCO D167-4
3	1	NAMEPLATE, 4W X 2H, WHITE W/ .25 INCH BLACK LETTERS	CUSTOM ENGRAVED	16	2	WIRE TROUGH, PVC, 1-1/2W X 4H	PANDUIT G1X3WH6
4	1	FIBER OPTIC PATCH PANEL, 12 FIBER CAPACITY	CORNING SPH-01-P	2	2	WIRE TROUGH COVER, PVC, 1-1/2W	PANDUIT C1WH6
	1	FIBER OPTIC CONNECTOR PANEL, 12-LC CAPACITY	CORNING CCH-CP12-AD	17	2	PERFORATED 35MM DIN RAIL GALVANIZED STEEL 2 METER	SIEMENS 5ST 145
	1	DUPLEX FIBER OPTIC JUMPER, LC-LC, 1M	BLACK BOX FOCMP50-003M-L-LCLC-AQ	18	TBD	WIRE, GREEN, #14 AWG, MTW/TEW or AWM-I A	SOUTHWIRE OR APPROVED EQUAL
5	1	INDUSTRIAL ETHERNET SWITCH DEVICE SCALANCE	SIEMENS XC206-2SFP, 6GK5 206-2BS00-2AC2	NOTE 3		WIRE, BLUE, GREY, BLACK, WHITE #16 AWG, MTW/TEW or AWM-I A	SOUTHWIRE OR APPROVED EQUAL
	2	PLUG IN TRANSCEIVER SFP992-1; 1X 1000 MBIT/S LC PORT, OPTICAL; MULTIMODE OPTICAL	SIEMENS 6GK5992 1AL00-8AA0	19	TBD	PROFIBUS/RS-485 PURPLE COLOR JACKETED CABLE	BELDEN 3079E
6	1	INDUSTRIAL ETHERNET / PROFIBUS DP LINK GATEWAY	SIEMENS 6GK1 411-5AB10	20	1	PROFIBUS DP, CONNECTOR, 90°, WITH PG PORT	SIEMENS 6ES7 972-0BB12-0XA0
	1	32 MB C- PLUG	SIEMENS 6GK1 900-0AB00	21	TBD	PROFINET, GREEN JACKETED, 22 AWG, CAT 6, CABLE	SIEMENS 6XV 870-2E
7	1	TYPE 4X ENCLOSURE BREATHER VENT / DRAIN	HOFFMAN AVDR4SS4	22	8	IEC RJ 45 PLUG, FAST CONNECT, 180 DEGREE, 4: 2 PAIR	SIEMENS 6GK1901-1BB11-2AA0
8	1	TYPE 4X ENCLOSURE PRESSURE COMPENSATION DEVICE	STEGO DA 28405.0-00 1	23	3	SURGE SUPPRESSOR INDUSTRIAL ETHERNET DEVICE	DEHN DPA CL8 4PPOE, 929 -161 2
9	1	POWER SUPPLY, 120/230VAC IN, 24VDC/5A	SIEMENS 6EP1 333-2BA20	24	1	CORROSION- INHIBITING VAPOR CAPSULE	HOFFMAN AHC10E
10	1	CIRCUIT BREAKER, SINGLE POLE, 6A TRIP	SIEMENS 5SJ4106-7HG41	25	2	TWO-TIER TERMINAL BLOCK, 1 POLE, GRAY WITH BRIDGE	PHOENIX CONTACT UT4 3044102 / 303271
11	10	GROUND MODULE TERMINAL BLOCK (PE)	PHOENIX CONTACT USLKG6N	1	1	TWO-TIER TERMINAL BLOCK END SECTION	PHOENIX CONTACT D-UT 3,5/10 3047 028
12	1	SURGE SUPPRESSOR, 2 POLE, 230V AC VOLT,	DEHN SP 240 3W+GR 1PH. 230VAC, 908-195	26	4	CAT 6 SHIELDED PATCH CORD	BLACK BOX EVNSL0272BK-0003
13	2	PROFIBUS DP ACTIVE TERMINATOR, 24VDC POWER	SIEMENS 6GK7 972-0DA00-0AA0	27	-	-	-

NOTES:
1. NO SUBSTITUTION OR EQUAL ACCEPTED, PROVIDE AS SPECIFIED.
2. COO WASTEWATER DIVISION 13 AND/OR DIVISION 16 SPECIFIED EQUAL ONLY
3. DEVICE ITEM VARY WITH APPLICATION. OWNER WILL SPECIFY SPECIFIC PART NUMBER OF COMMUNICATION DEVICE REQUIRED.

NOTE 2
NOTE 1
NOTE 2
NOTE 1

NOTE 1
NOTE 2
NOTE 1
NOTE 2

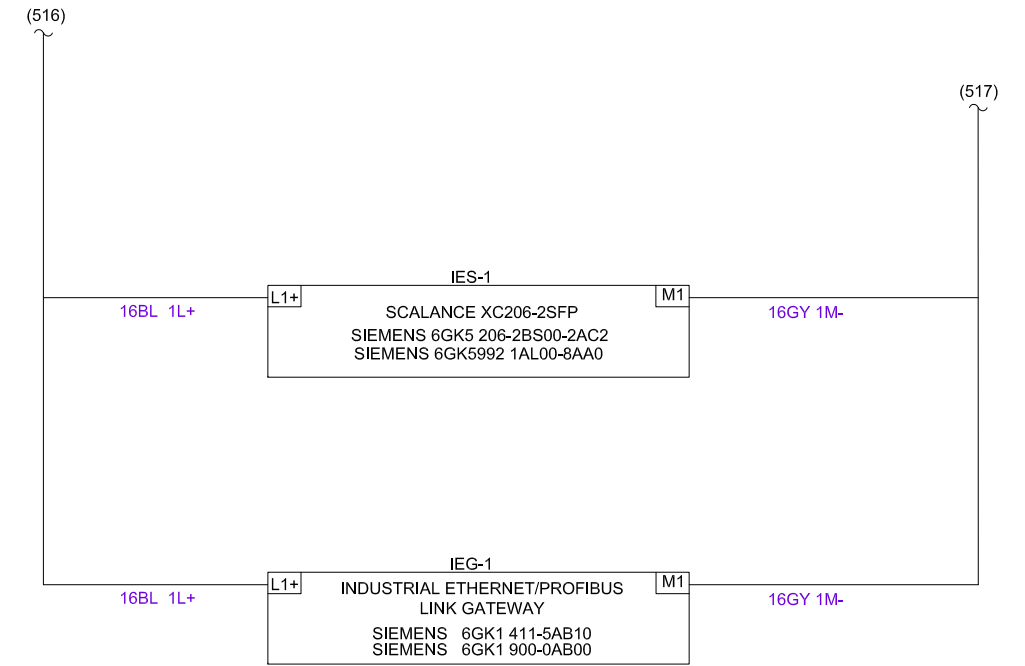
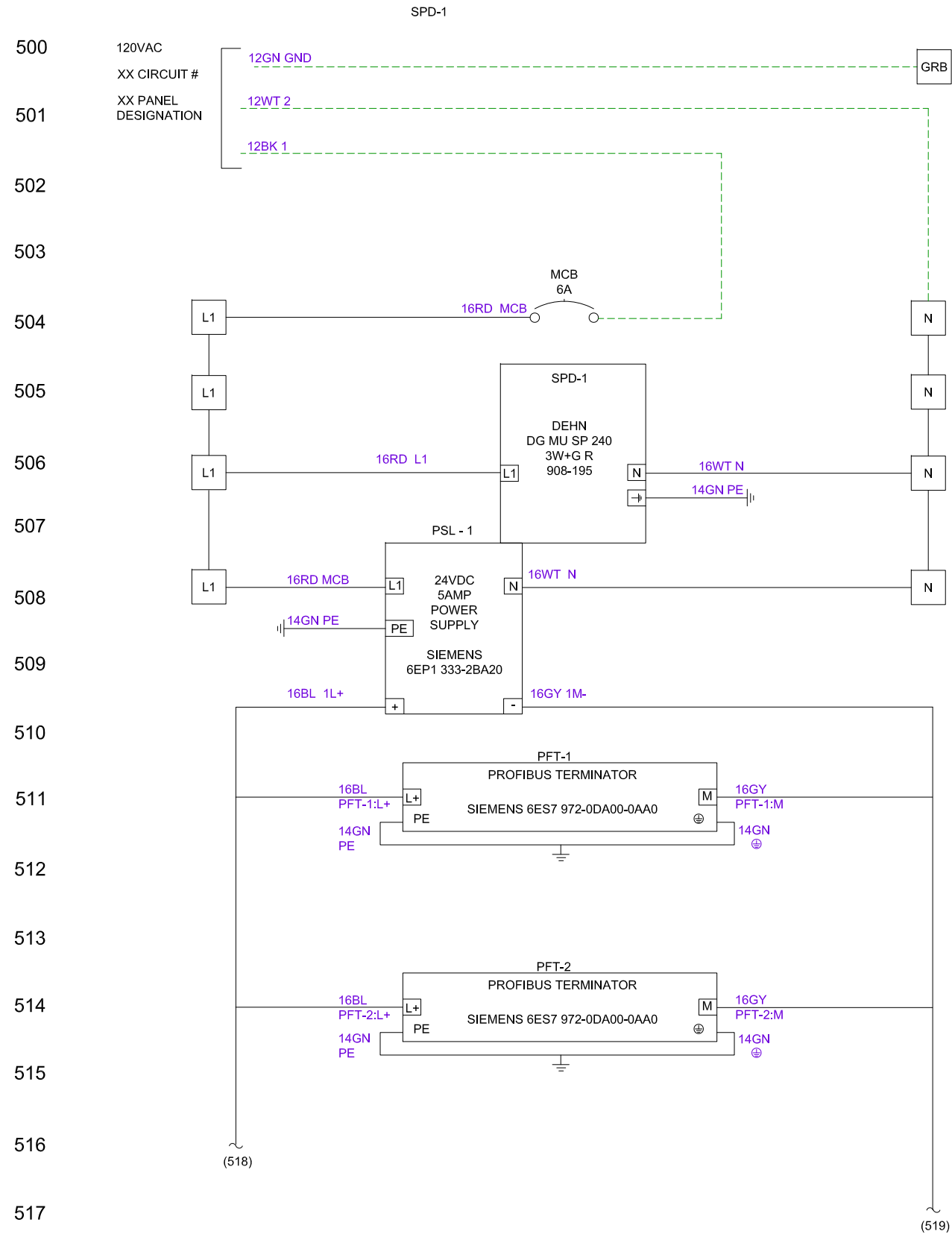


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DESIGN:	IAG	1	REVISED	01-27-2025	FH
		1	REVISED	05-23-2025	FH
DRAWN BY:	FH/JG				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
REMOTE FIBER COMMUNICATIONS
GATEWAY I.E./PB PANEL
BILL OF MATERIALS

SHEET
504



SCALE:	NONE	1		11-09-2020	FH/JG
		2			
DESIGN:	IAG	3			
		4			
DRAWN BY:	FH/JG	5			
APPROVED BY:	GM	NO	REVISION	DATE	BY

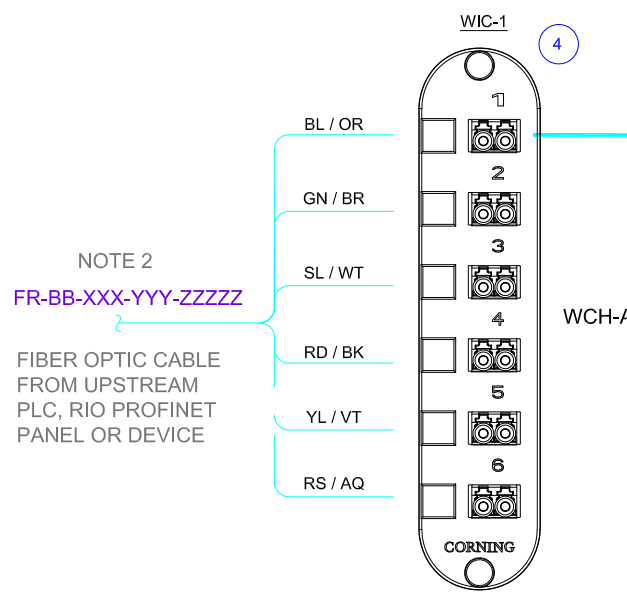
WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:

SYSTEM STANDARDS
REMOTE FIBER COMMUNICATIONS
GATEWAY I.E./PB PANEL
120VAC AND 24VDC POWER WIRING

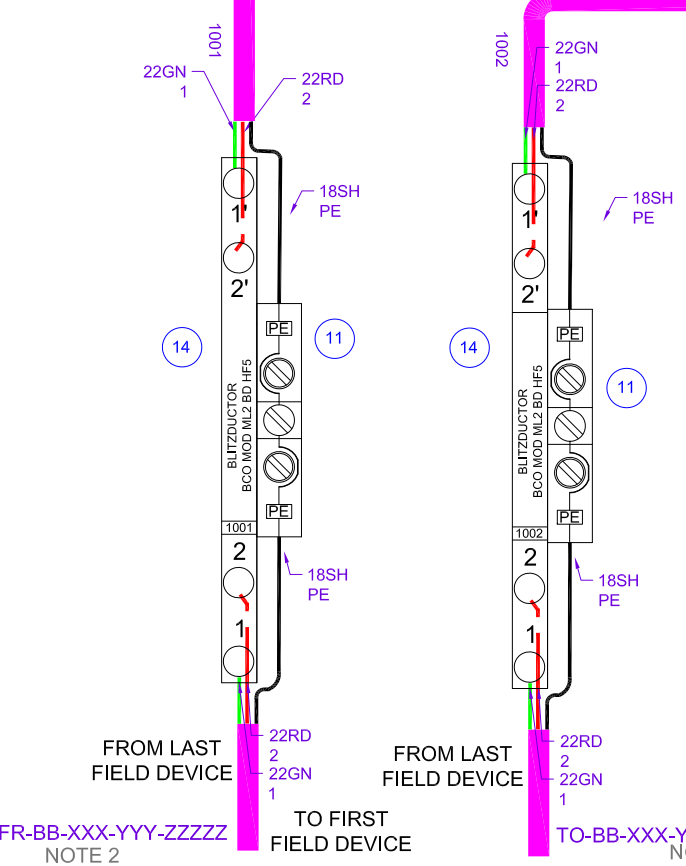
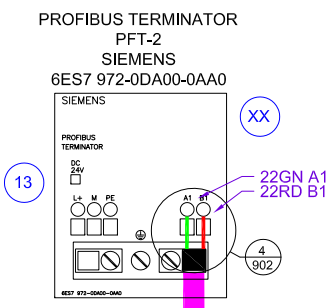
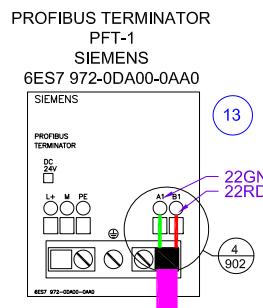
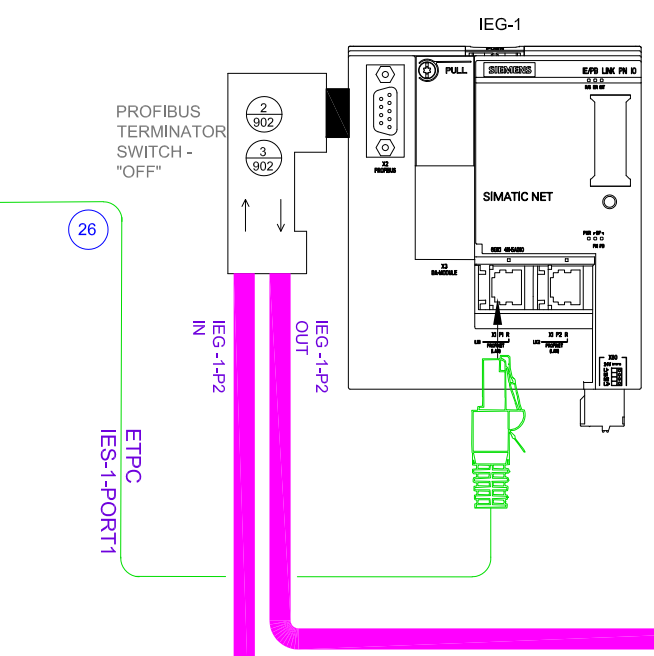
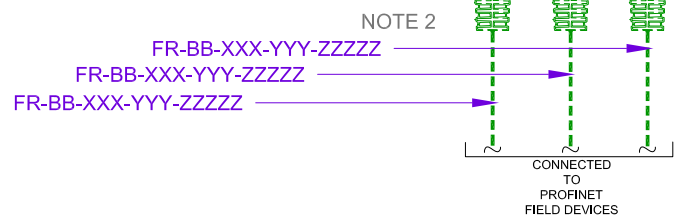
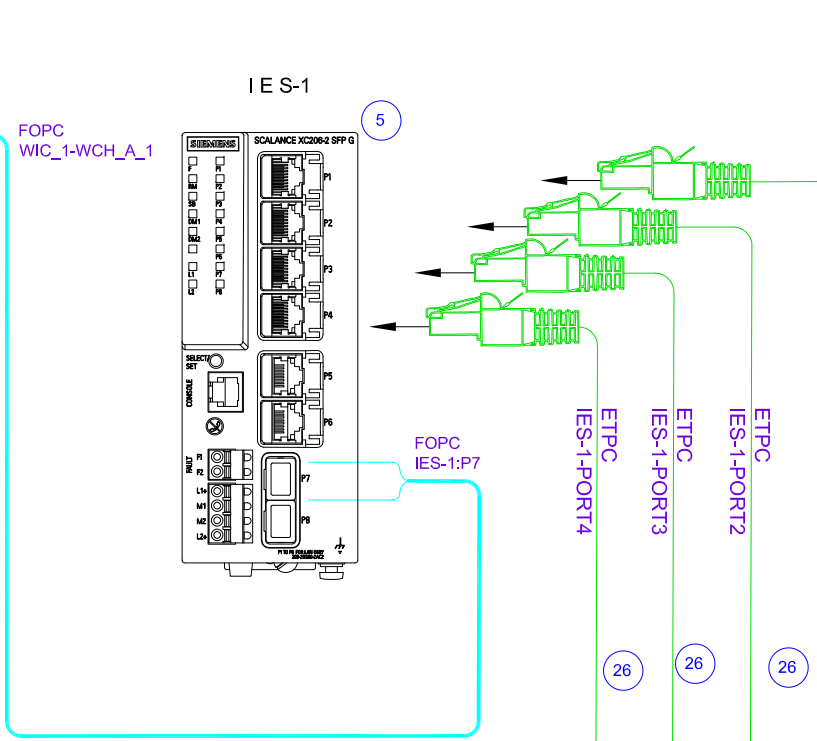
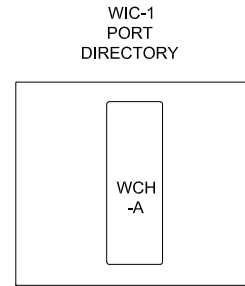
SHEET
505



NOTE 2
FR-BB-XXX-YYY-ZZZZ
FIBER OPTIC CABLE FROM UPSTREAM PLC, RIO PROFINET PANEL OR DEVICE

FIBER SC CONNECTOR PANEL ASSIGNMENTS

SC POSITION	REAR	FRONT
1	BLUE	ORANGE
2	GREEN	BROWN
3	SLATE	WHITE
4	RED	BLACK
5	YELLOW	VIOLET
6	ROSE	AQUA



NOTES:
1. SUPPLY FIBER OPTIC DEVICES AND CABLING, IF ADDITIONAL DOWN STREAM RIO PANEL IS REQUIRED VIA FIBER OPTIC COMMUNICATION.
2. FIELD SIDE STRUCTURE OF WIRE AND CABLE TAGGING CONVENTIONS SHALL COMPLY WITH SPECIFICATION DETAILS INDICATED ON DRAWINGS 120 AND 121.

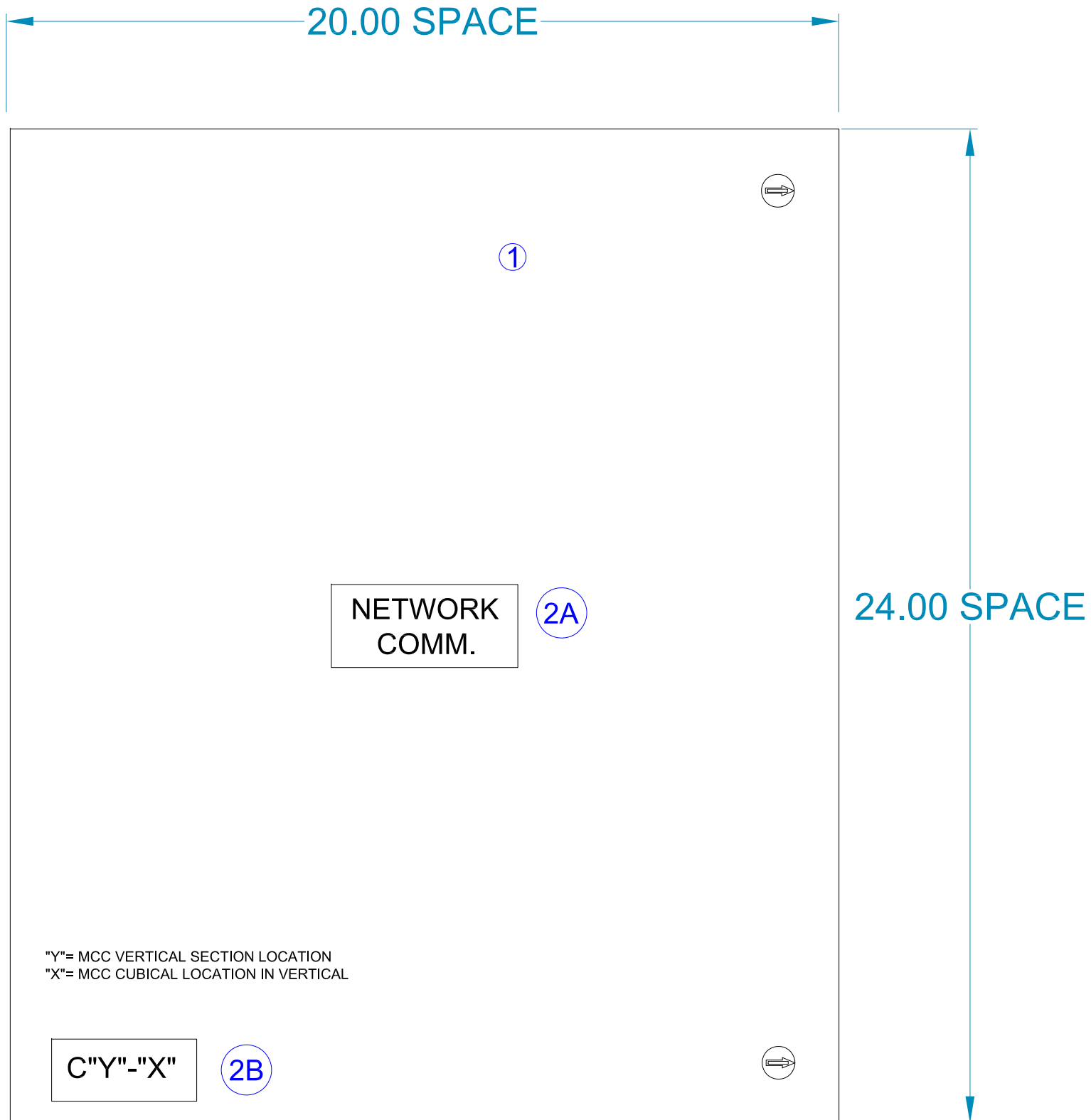


SCALE:	NONE	1	-	11-09-2020	FH/JG
		2	REVISED	01-27-2025	FH
DESIGN:	IAG	3			
		4			
DRAWN BY:	FH/JG	5			
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
REMOTE FIBER COMMUNICATIONS
GATEWAY I.E./PB PANEL
COMMUNICATIONS LAYOUT

SHEET
506



"Y"= MCC VERTICAL SECTION LOCATION
 "X"= MCC CUBICAL LOCATION IN VERTICAL

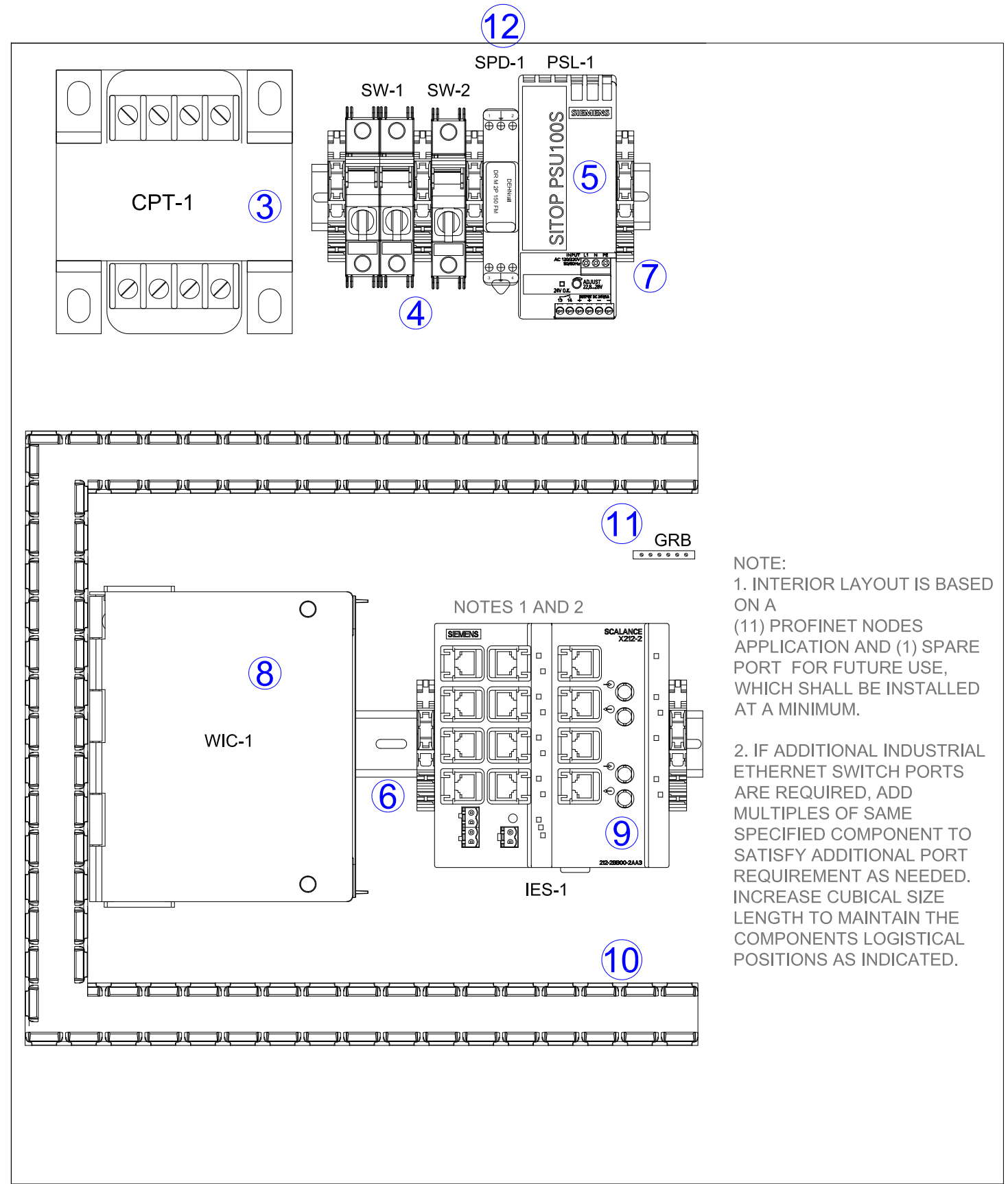


SCALE:	N.T.S.	1		10-28-2014	JG
		2			
DESIGN:	IAG	3			
		4			
DRAWN BY:	JG	5			
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

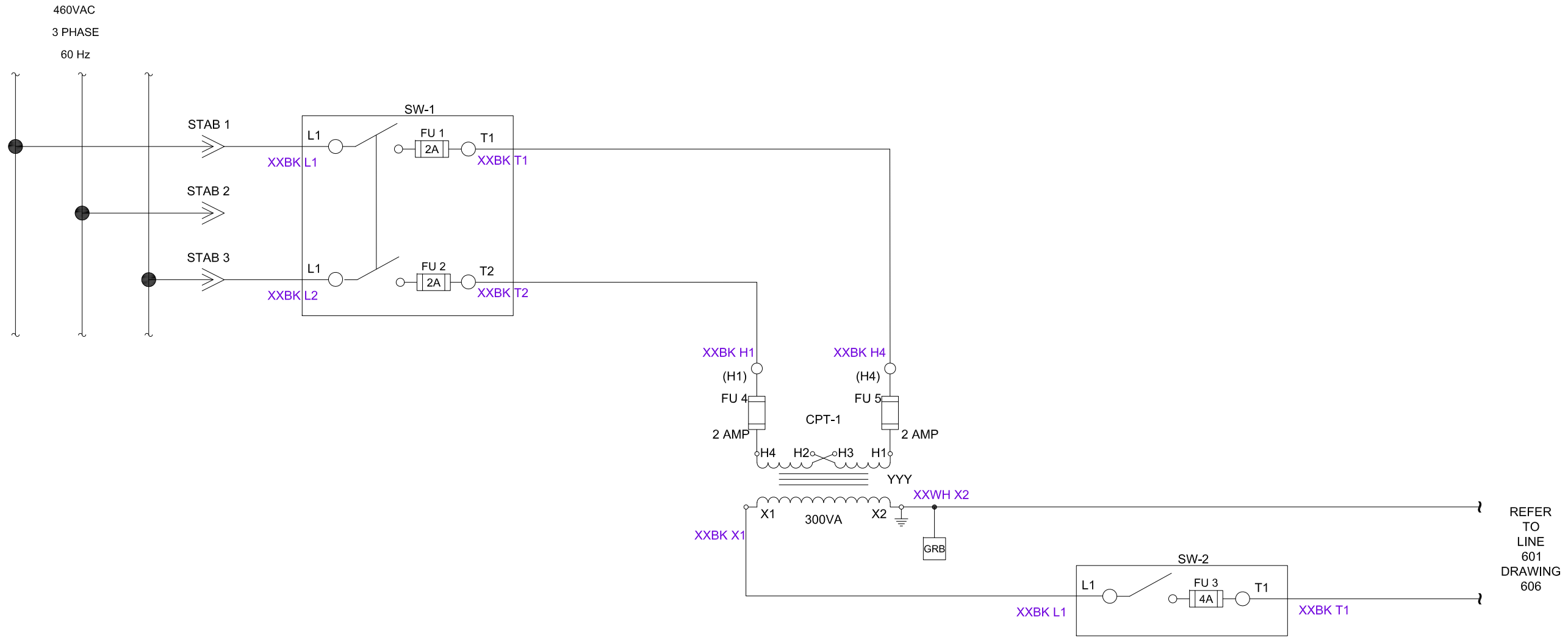
TITLE: SYSTEM STANDARDS
 PROFINET COMMUNICATIONS FOR
 (MCC) APPLICATIONS
 FRONT PANEL LAYOUT

SHEET
 602



NOTE:
 1. INTERIOR LAYOUT IS BASED ON A (11) PROFINET NODES APPLICATION AND (1) SPARE PORT FOR FUTURE USE, WHICH SHALL BE INSTALLED AT A MINIMUM.
 2. IF ADDITIONAL INDUSTRIAL ETHERNET SWITCH PORTS ARE REQUIRED, ADD MULTIPLES OF SAME SPECIFIED COMPONENT TO SATISFY ADDITIONAL PORT REQUIREMENT AS NEEDED. INCREASE CUBICAL SIZE LENGTH TO MAINTAIN THE COMPONENTS LOGISTICAL POSITIONS AS INDICATED.

SCALE:	N.T.S.	1		11-12-2014	JG
		2			
DESIGN:	IAG	3			
		4			
DRAWN BY:	JG	5			
APPROVED BY:	WW	NO	REVISION	DATE	BY



REFER TO LINE 601 DRAWING 606

- NOTES:
1. WIRE NUMBER INDICATING WIRE GAUGE SIZE; "XX", SHALL BE SIZED BASED ON MANUFACTURER'S RECOMMENDATION.
 2. WIRE NUMBER INDICATING WIRE GAUGE SIZE; "WW", SHALL BE SIZED BASED ON MOTOR APPLICATION.



SCALE:	N.T.S.	-	-	10-28-2014	JG
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

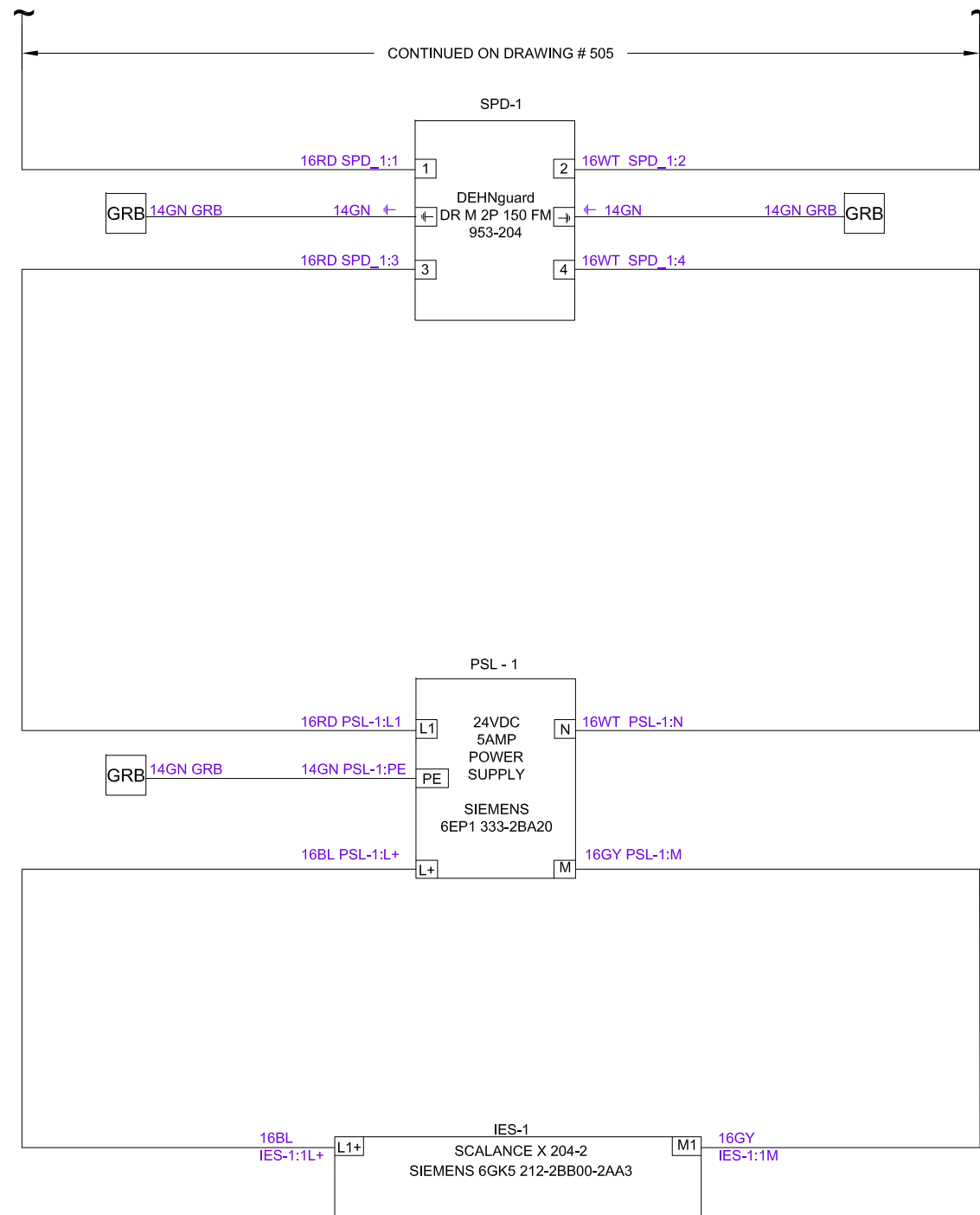
WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE: SYSTEM STANDARDS
PROFINET COMMUNICATIONS FOR
(MCC) APPLICATIONS
480VAC ONE LINE DISTRIBUTION
LAYOUT

SHEET
605

600
601
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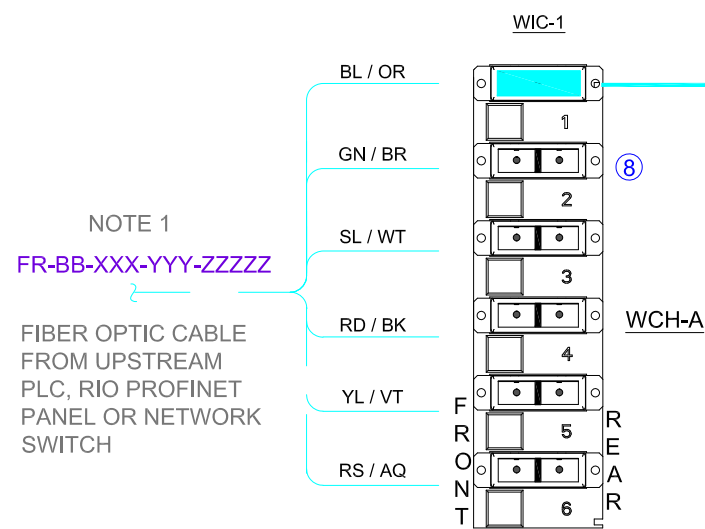
SCALE:	N.T.S.			10-28-2014	JG
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE: SYSTEM STANDARDS
PROFINET COMMUNICATIONS FOR
(MCC) APPLICATIONS
120VAC AND 24VDC DISTRIBUTION
LAYOUT

SHEET
606

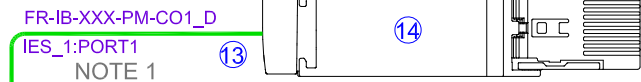


FIBER SC CONNECTOR PANEL ASSIGNMENTS

SC POSITION	REAR	FRONT
1	BLUE	ORANGE
2	GREEN	BROWN
3	SLATE	WHITE
4	RED	BLACK
5	YELLOW	VIOLET
6	ROSE	AQUA

NOTES:
1. FIELD AND MCC SIDE STRUCTURE OF WIRE AND CABLE TAGGING CONVENTIONS SHALL COMPLY WITH SPECIFICATION DETAILS INDICATED ON DRAWINGS 120 AND 121.

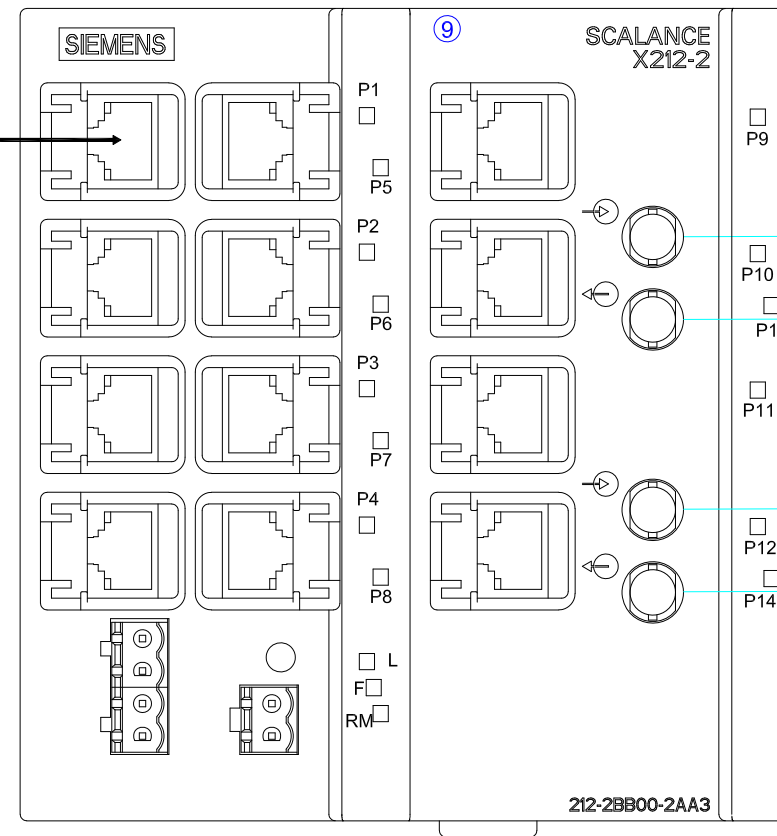
TYPICAL ASSIGNMENT AND COMPONENTS



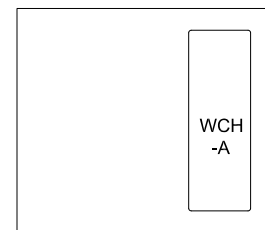
TO POWER METER PORT IN MCC CUBICAL: "C01-D"

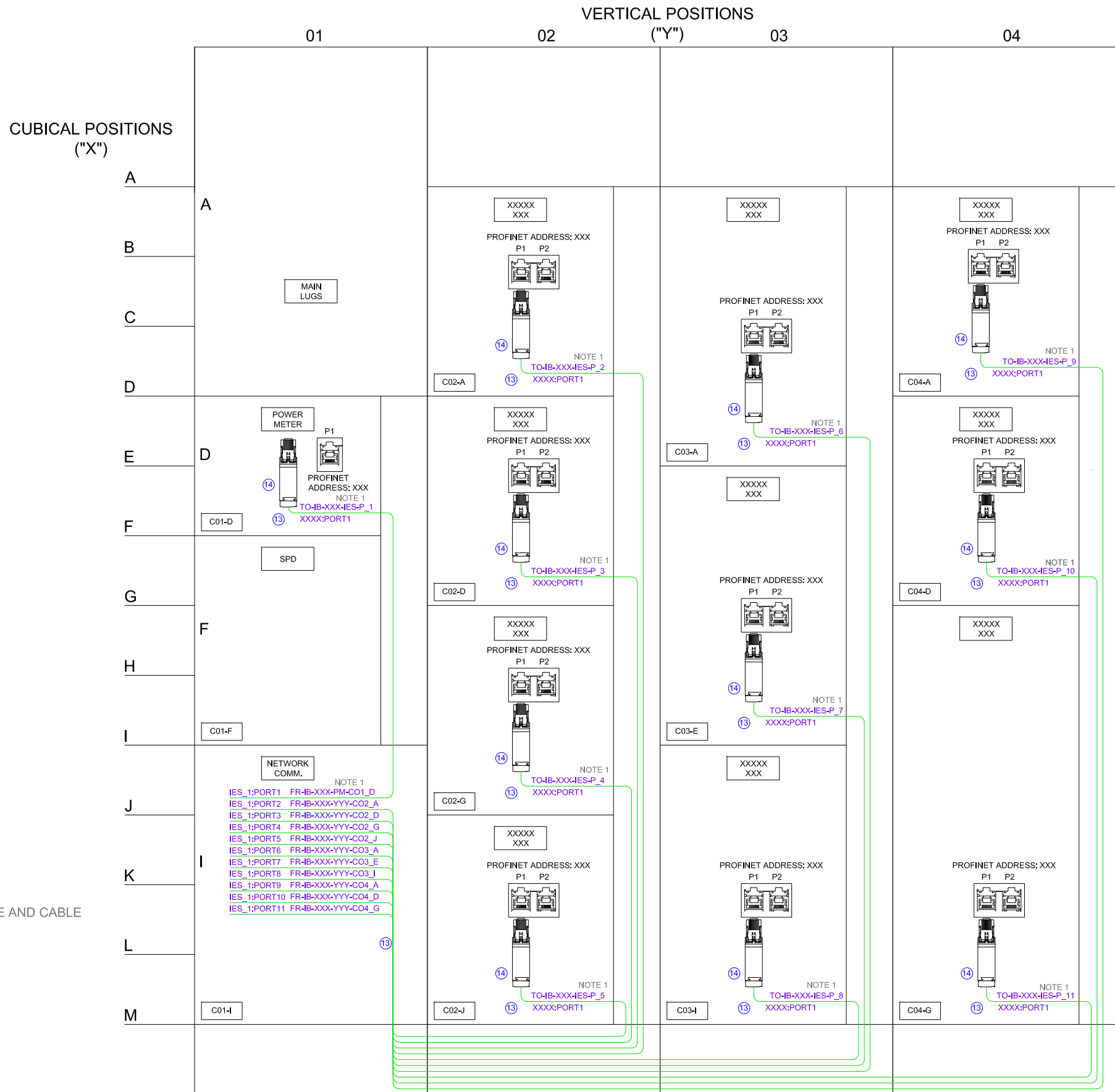
TO NEXT INDUSTRIAL ETHERNET SWITCH FOR ADDITIONAL PORTS AS NEEDED FOR APPLICATION

IES-1



WIC-1 PORT DIRECTORY





NOTES:
 1. FIELD AND MCC SIDE STRUCTURE OF WIRE AND CABLE TAGGING CONVENTIONS SHALL COMPLY WITH SPECIFICATION DETAILS INDICATED ON DRAWINGS 120 AND 121.

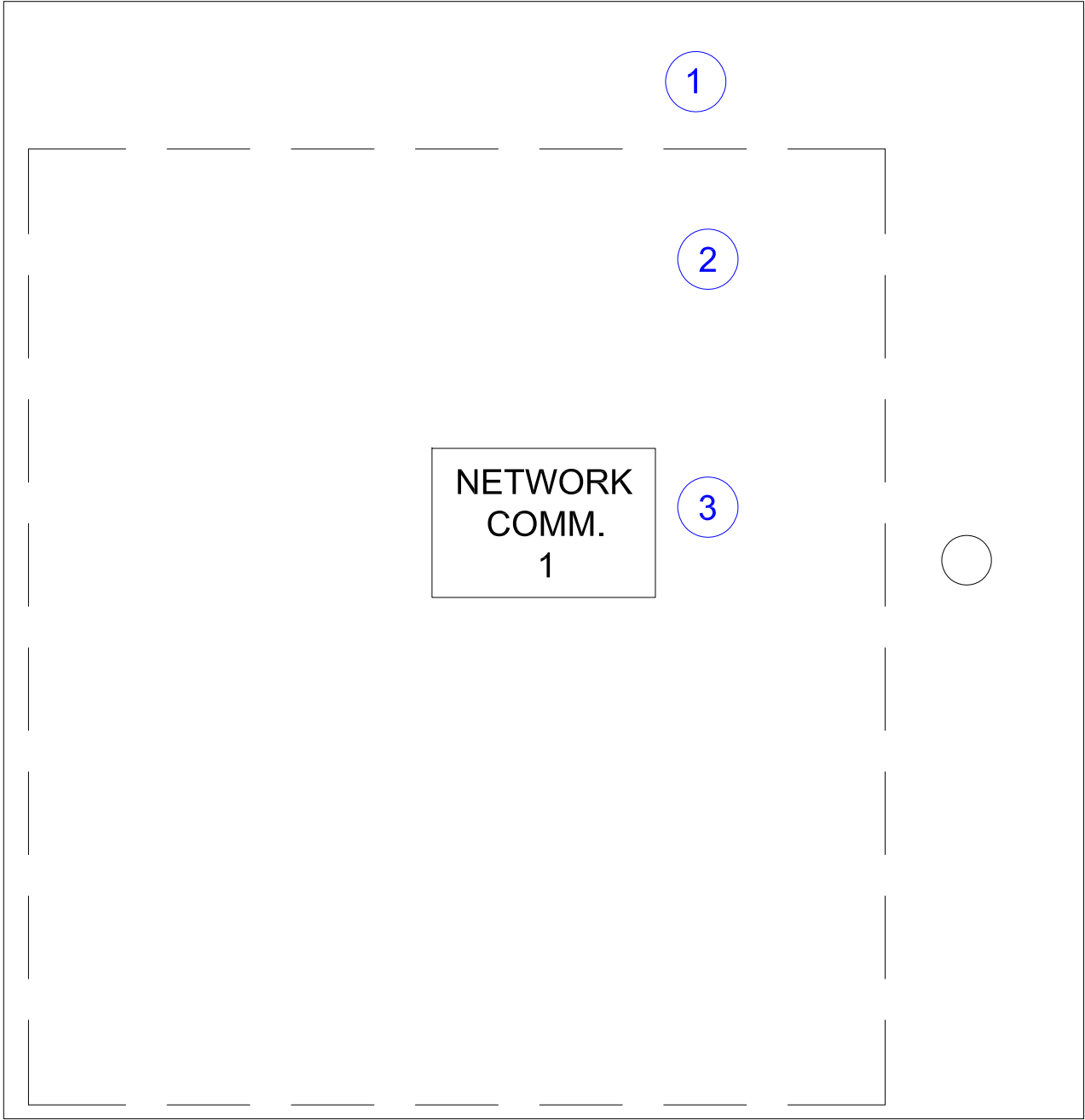


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DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

TITLE: SYSTEM STANDARDS
 PROFINET COMMUNICATIONS FOR
 (MCC) APPLICATIONS
 COMMUNICATIONS CATEGORY "6A"
 WIRING LAYOUT

SHEET
 608



FRONT PANEL ELEVATION
CUBICLE "1D"

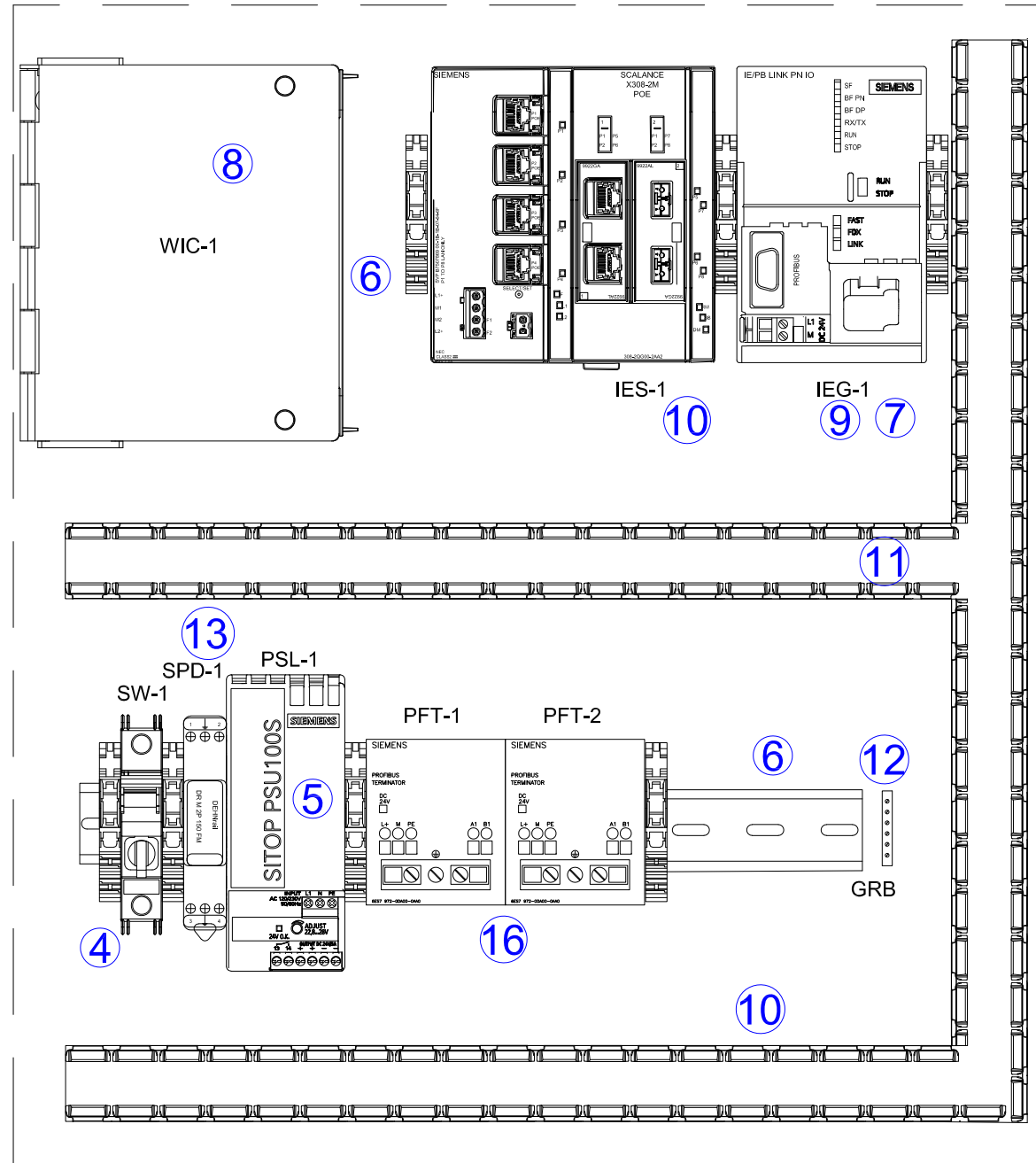


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DESIGN:	IAG				
DRAWN BY:	JG				
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WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
COMMUNICATIONS FOR (SWITCHGEAR)
APPLICATIONS
FRONT PANEL LAYOUT



**FRONT PANEL ELEVATION
CUBICLE "01D"**



SCALE:	N.T.S.			12-08-2014	JG
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:

SYSTEM STANDARDS
COMMUNICATIONS FOR
(SWITCHGEAR) APPLICATIONS
INTERIOR PANEL LAYOUT

SHEET
703

NO.	QTY.	DESCRIPTION	MANUFACTURER'S PART NO.
1	1	AUXILIARY COMMUNICATION COMPONENTS CUBICLE	SIEMENS "W L LOW VOLTAGE METAL-ENCLOSED SWITCHGEAR"
		OVERALL 22.5 INCHES SQUARE SPACE	
2	1	AUXILIARY COMMUNICATION COMPONENTS INTERIOR CUBICLE	SIEMENS "W L LOW VOLTAGE METAL-ENCLOSED SWITCHGEAR"
		OVERALL 17.25 HIGH X17.25 WIDE X 14.25 DEEP SPACE	
NOTE 2			
3	1	NAMEPLATE, 4.5W X 2H, WHITE WITH .50 INCH HIGH BLACK LETTERS	CUSTOM ENGRAVED- NAME TAG DATA PROVIDED BY OWNER
4	1	FINGER SAFE, CIRCUIT PROTECTOR TYPE CC FUSED DISCONNECT, 1 POLE	BUSSMANN CCP-1-30CC
		FUSE, CLASS M, 4A	BUSSMANN FNM-4
NOTE 1			
5	1	POWER SUPPLY, 120/230VAC IN, 24VDC/5A	SIEMENS 6EP1 333-2BA20
NOTE 2			
6	1	PERFORATED SLOTTED MOUNTING RAIL STEEL	SIEMENS 5ST1 145
NOTE 2			
7	7	DIN RAIL RETAINER	SIEMENS 8WA2 808
8	1	FIBER OPTIC PATCH PANEL, 12 FIBER CAPACITY	CORNING SPH-01-P
		FIBER OPTIC CONNECTOR PANEL, 12-SC CAPACITY	CORNING CCH-CP12-G7
		DUPLEX FIBER OPTIC JUMPER, 50/125, SC-ST, 1M	CORNING 505702T5120001M
NOTE 1			
9	1	NETWORK, PROFIBUS DP TRANSITION TO PROFINET GATEWAY	SIEMENS 6GK1 411-5AB00
10	1	IES, 4: 10/100 MBIT/S RJ45 PORTS AND 2:100/1000MBITS MEDIA SLOTS	SIEMENS 6GK5308-2QG00-2AA2
		2: 10/1000MBIT/S RJ45 PORTS MEDIA SLOT	SIEMENS 6GK5992-2GA00-8AA0
		2: 1000MBIT/S OPTICAL SC-PORT MULTIMODE MEDIA SLOT	SIEMENS 6GK5992-2AL00-8AA0
11	1	WIRE TROUGH, PVC, 1-1/2W X 4H	PANDUIT G1X3WH6
		WIRE TROUGH COVER, PVC, 1-1/2W	PANDUIT C1WH6
NOTE 2			
12	1	COPPER GROUNDING BAR, 6-POSITION	ILSCO D167-06
13	1	SURGE SUPPRESSOR PLUG/BASE, DR M 2P 150 FM	DEHN DEHNRail #953-209
14	14	PROFIBUS DP, CONNECTOR, 90°, WITH PG PORT	SIEMENS 6ES7 972-0BB12-0XA0
NOTE 1			
15	4	RJ45 METAL ENCLOSURE PLUG CONNECTOR	SIEMENS 6GK1901-1BB12-2AA0
16	2	PLC, NETWORK, PROFIBUS DP TERMINATING RESISTOR	SIEMENS 6ES7 972-0DA00-0AA0
NOTE 2			
17	TBD	PROFIBUS/RS-485 PURPLE COLOR JACKETED CABLE	SIEMENS 6XV1 830-0PH10
NOTE 1			
18	TBD	CAT 6, 24AWG, 4 PAIR, BRAIDED SHIELD, FLEXIBLE GREEN JACKET, CABLE	SIEMENS 6XV 1878 2B, PER METER
19	1	INTERLOCKING REVERSING CONTACTORS, 230VAC, 30AMP CONTACT RATED	SIEMENS 3RA13268XB301AP6
20	2	CONTROL TRANSFORMER, 3000VA, 480 X 120/240	SIEMENS MT3000G
NOTE 2			
21	1	CONTACTOR RELAY, SIZE 00, 2 NO / 2NC, 240VAC, 6 AMP RATED CONTACT	SIEMENS 3RH11221AP60
22	1	CONTACTOR RELAY, SIZE 0, 1 NO / 1NC, 240VAC, 32 AMP RATED CONTACT	SIEMENS 3RT2027-1AP60
		AUXILIARY SWITCH BLOCK, 2NC, 240VAC, 3 AMP RATED CONTACT	SIEMENS 3RH2921-1DA02

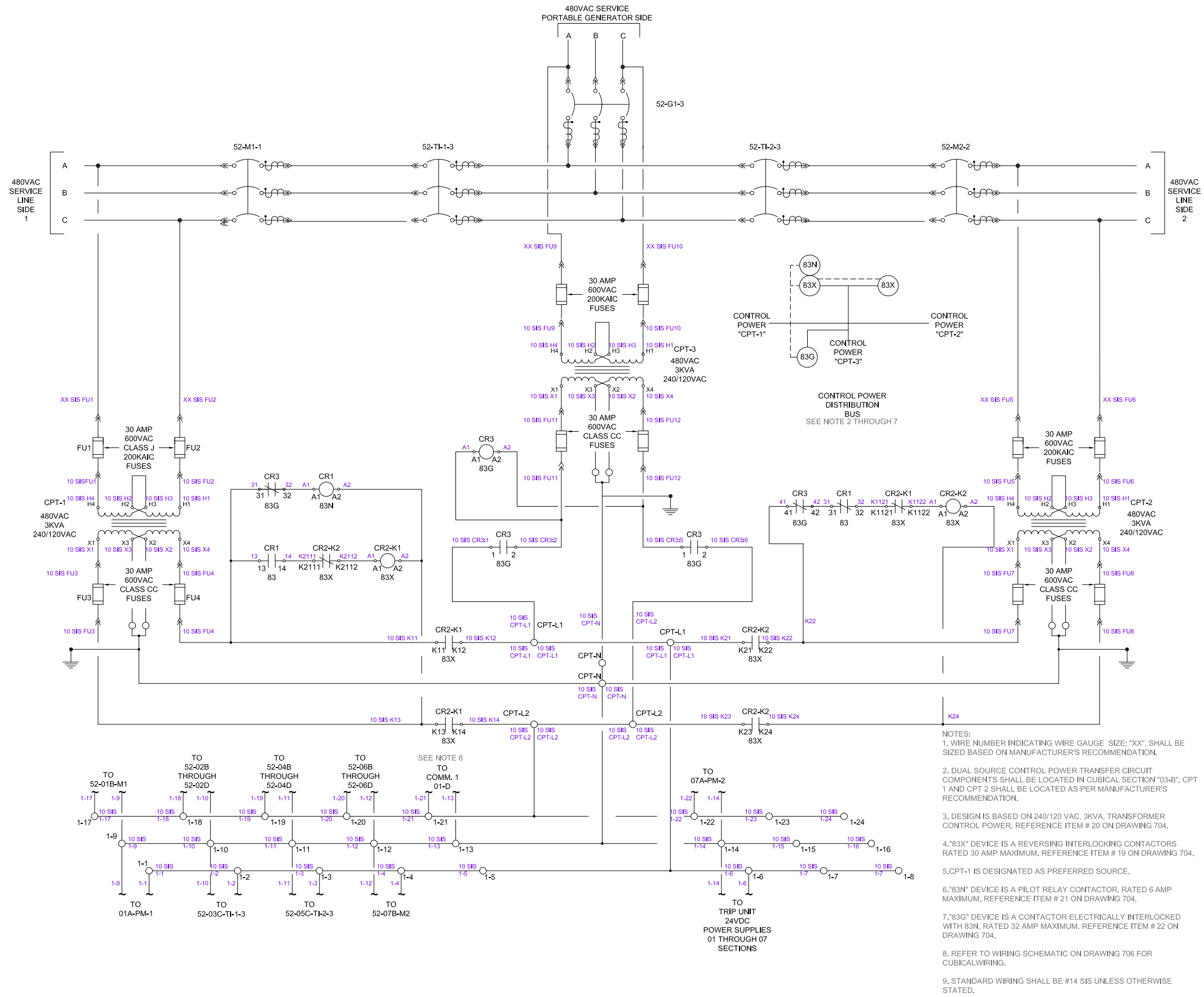
NOTES:
1. NO SUBSTITUTION OR EQUAL ACCEPTED, PROVIDE AS SPECIFIED.
2. COO WASTEWATER DIVISION 13 AND/OR DIVISION 16 SPECIFIED EQUAL ONLY



SCALE:	N.T.S.	1	-	12-08-2014	JG
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:	SYSTEM STANDARDS COMMUNICATIONS FOR (SWITCHGEAR) APPLICATIONS BILL OF MATERIALS
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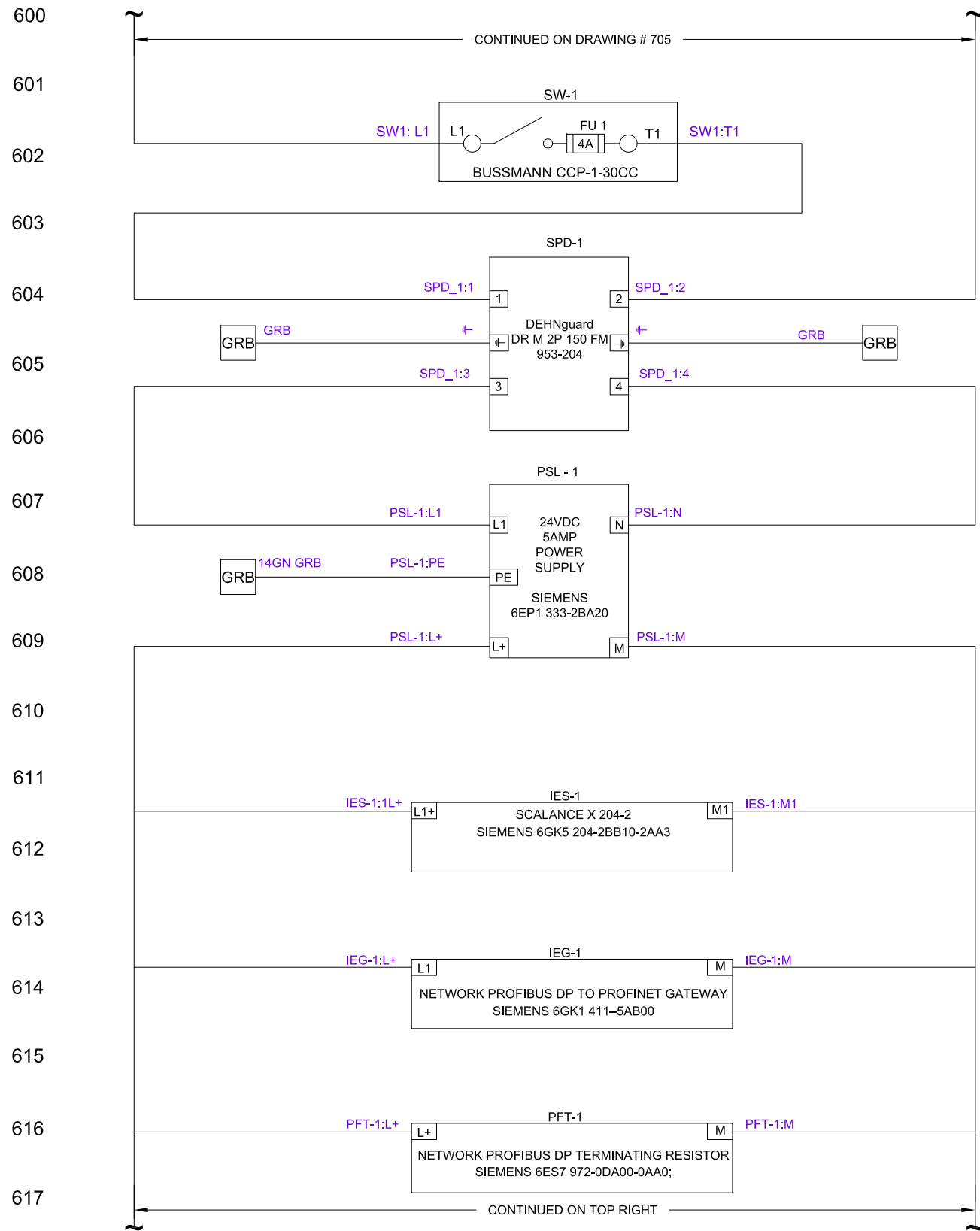
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DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE: SYSTEM STANDARDS
COMMUNICATIONS FOR
(SWITCHGEAR) APPLICATIONS
CONTROL POWER TRANSFER
CIRCUIT SCHEMATIC

SHEET
705



NOTE:
1. STANDARD WIRING SHALL BE #14
SIS UNLESS OTHERWISE STATED.

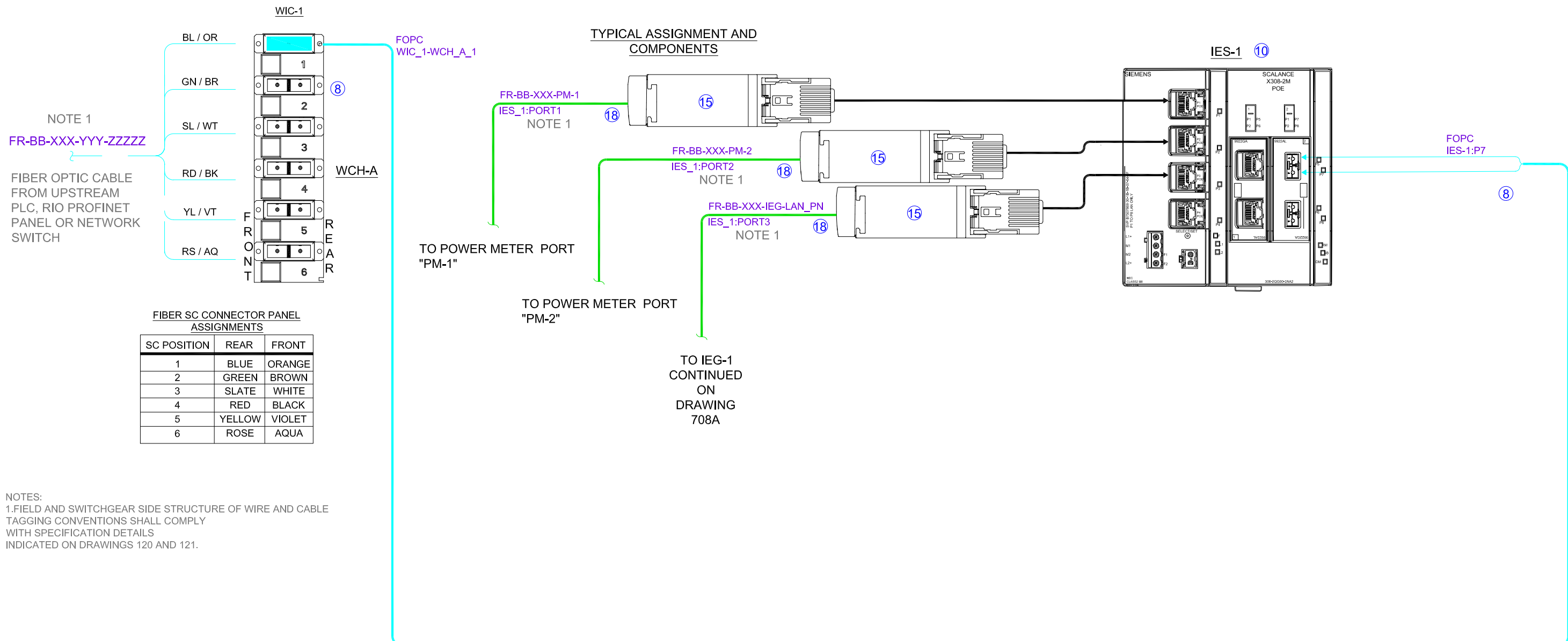


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APPROVED BY:	WW	NO	REVISION	DATE	BY

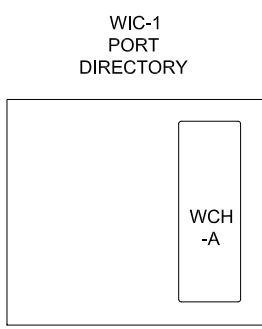
WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE: SYSTEM STANDARDS
COMMUNICATIONS FOR (SWITCHGEAR)
APPLICATIONS
120VAC AND 24VDC DISTRIBUTION
LAYOUT

SHEET
706



NOTES:
1.FIELD AND SWITCHGEAR SIDE STRUCTURE OF WIRE AND CABLE TAGGING CONVENTIONS SHALL COMPLY WITH SPECIFICATION DETAILS INDICATED ON DRAWINGS 120 AND 121.

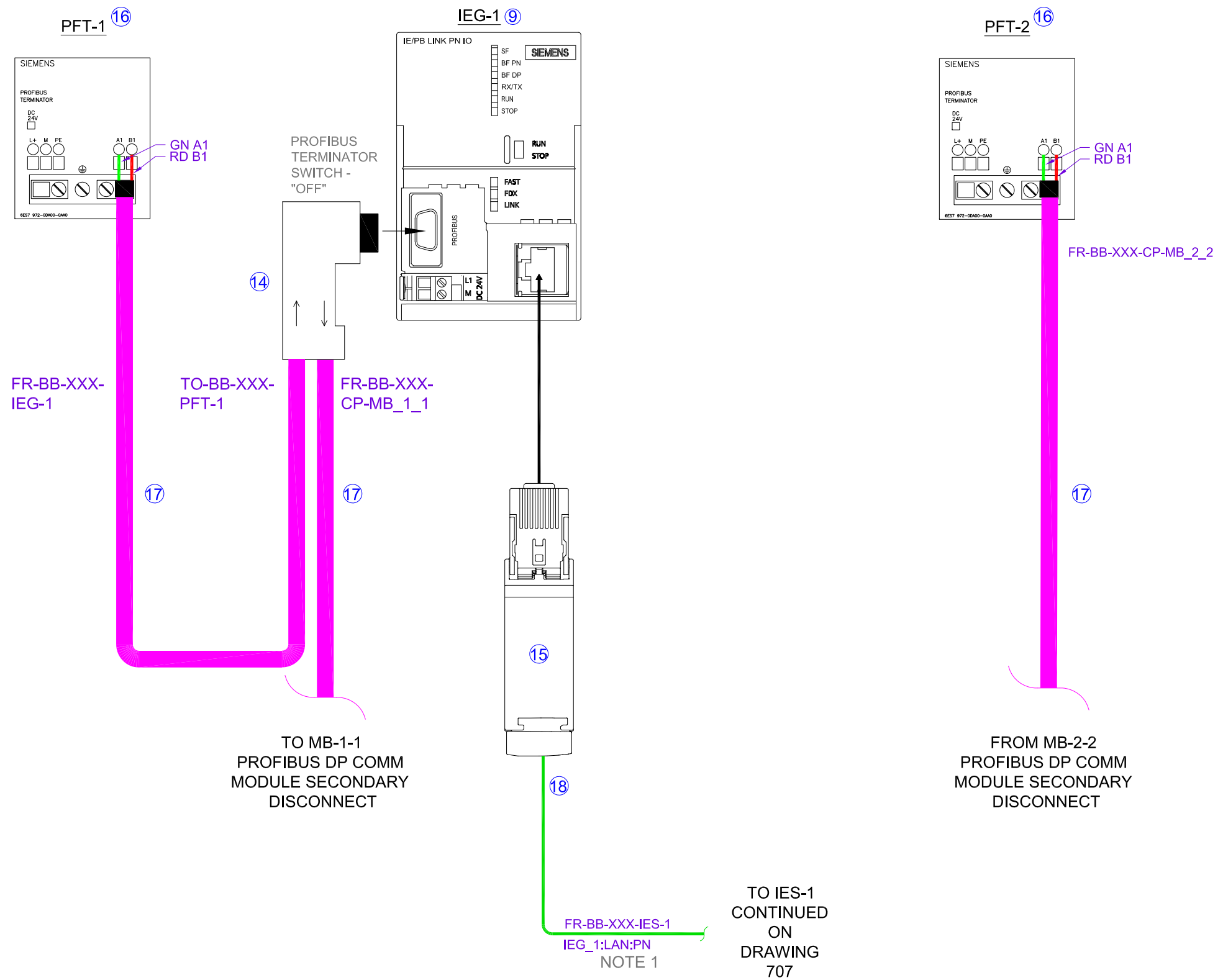


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DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
COMMUNICATIONS FOR
(SWITCHGEAR) APPLICATIONS
FIBER LAYOUT

CUBICLE "01D"



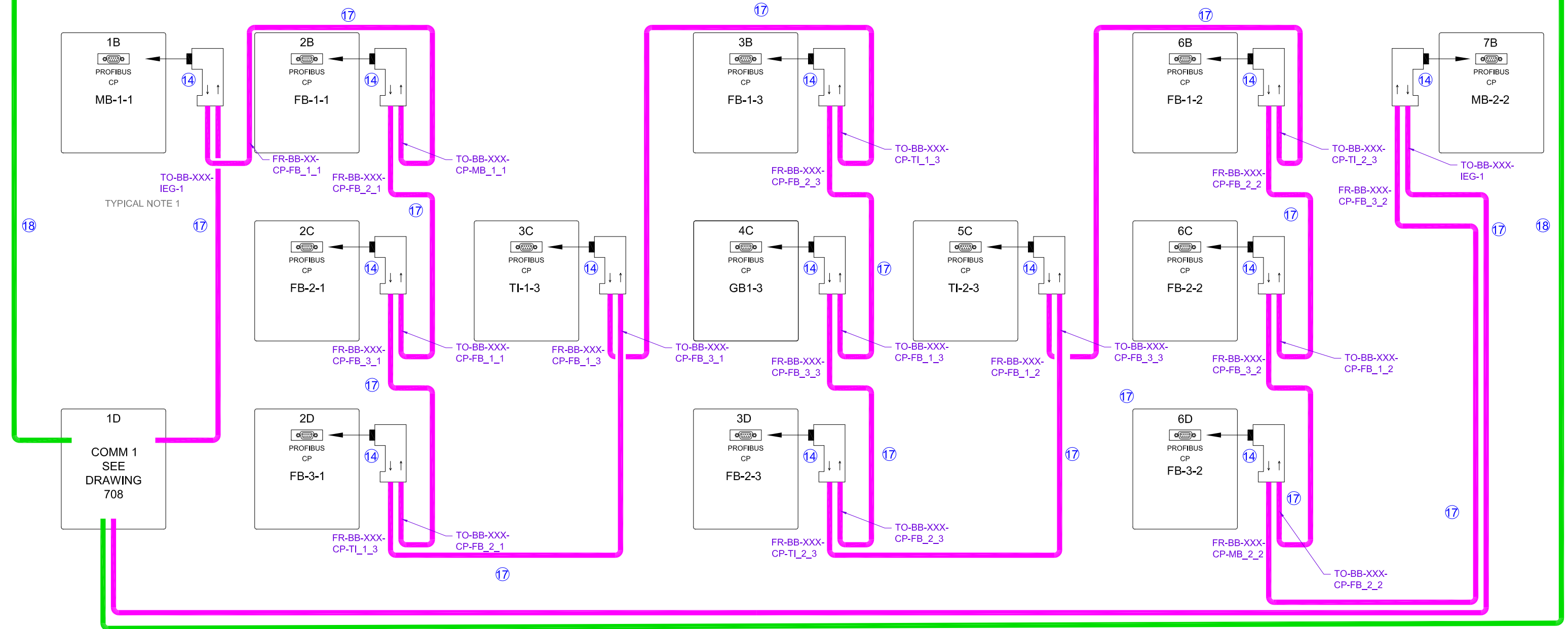
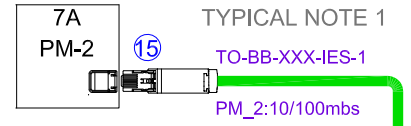
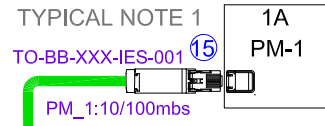
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DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
COMMUNICATIONS FOR
(SWITCHGEAR) APPLICATIONS
COPPER LAYOUT

SHEET
708

NOTES:
 1.FIELD AND SWITCHGEAR SIDE
 STRUCTURE OF WIRE AND CABLE
 TAGGING CONVENTIONS SHALL
 COMPLY
 WITH SPECIFICATION DETAILS
 INDICATED ON DRAWINGS 120 AND
 121.

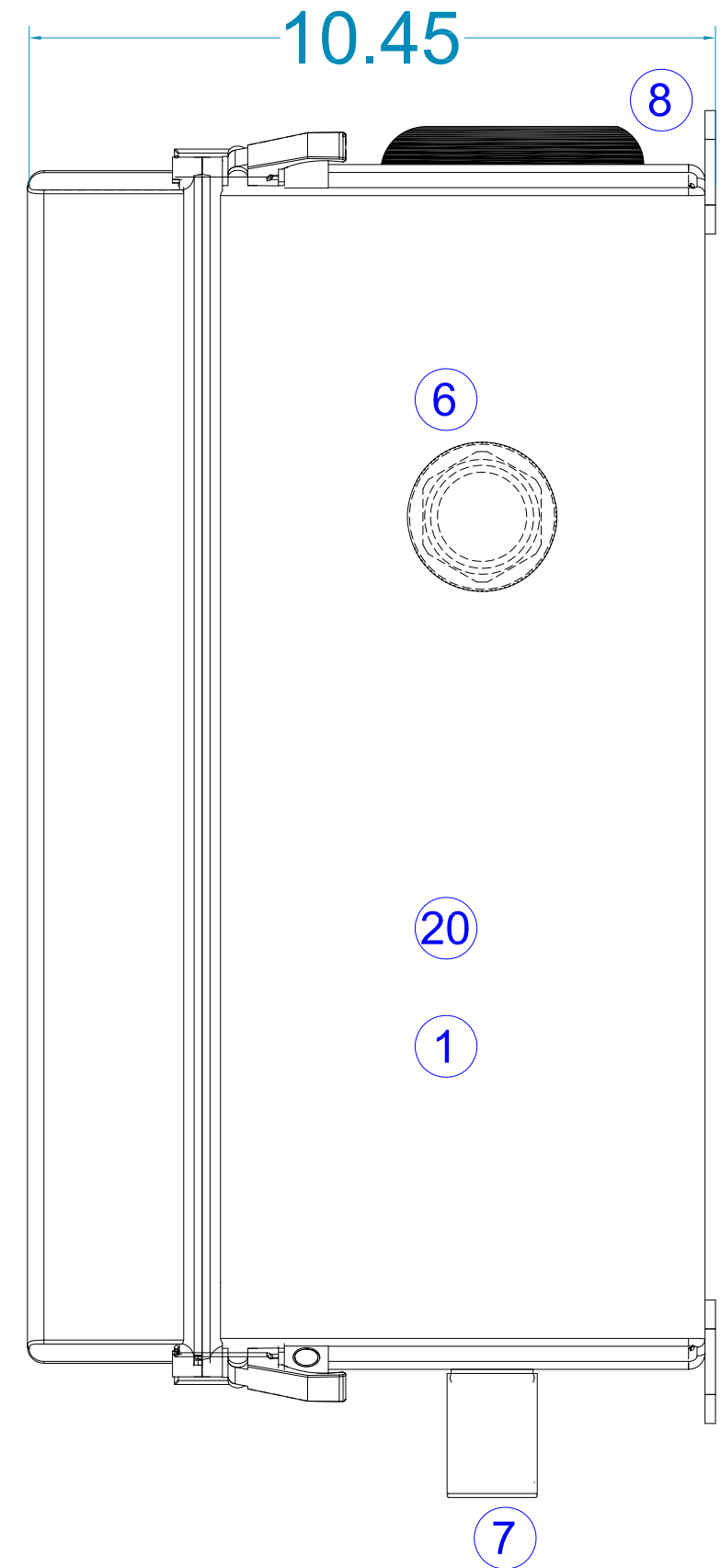
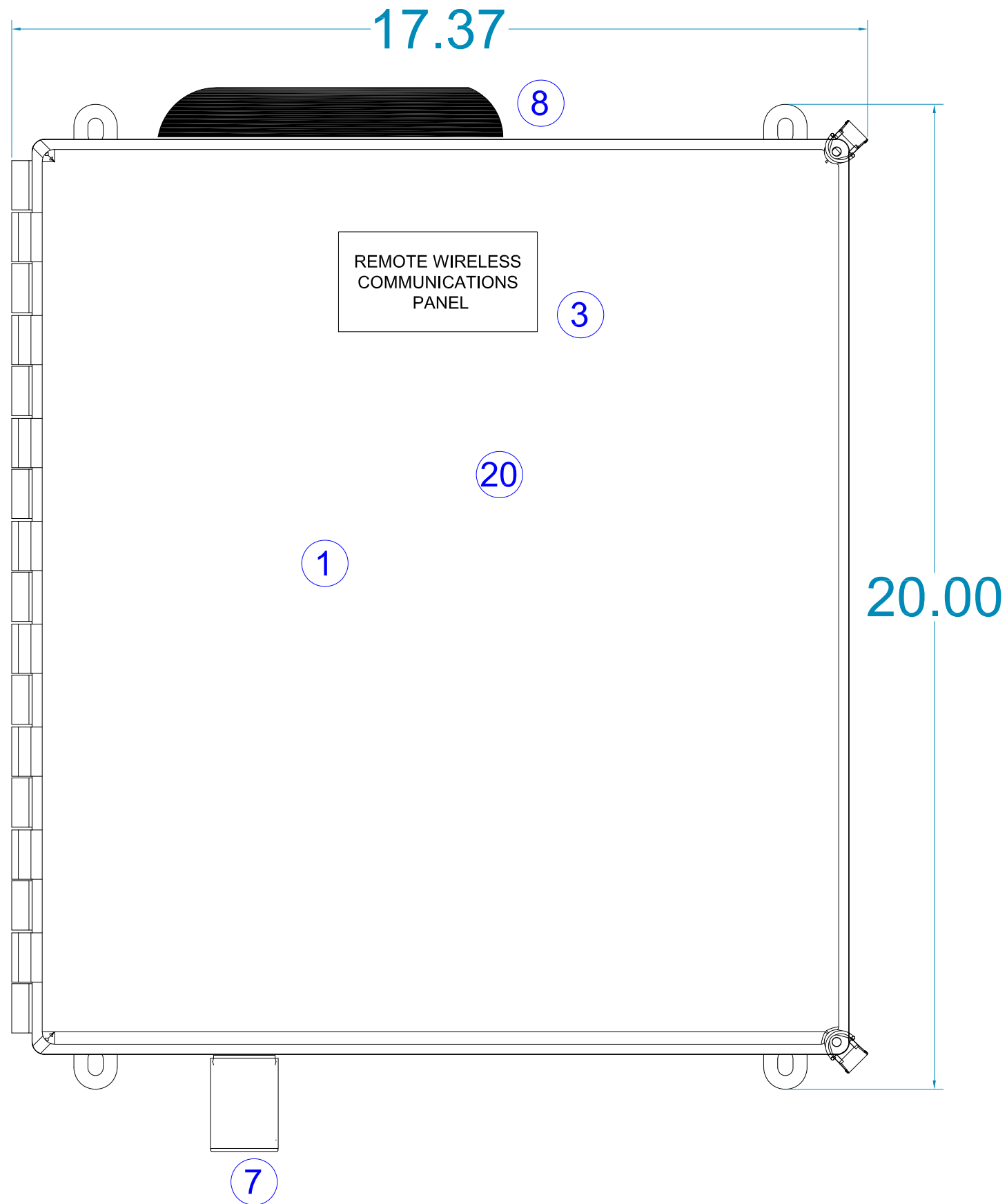


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DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
 INDUSTRIAL AUTOMATION GROUP
 CITY OF
 ORLANDO, FLORIDA

TITLE:
 SYSTEM STANDARDS
 COMMUNICATIONS FOR
 (SWITCHGEAR)APPLICATIONS
 OVERALL COMMUNICATIONS COPPER
 SCHEMATIC

SHEET
 709



SCALE:	N.T.S.			11-11-2016	JG
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	GM	NO	REVISION	DATE	BY

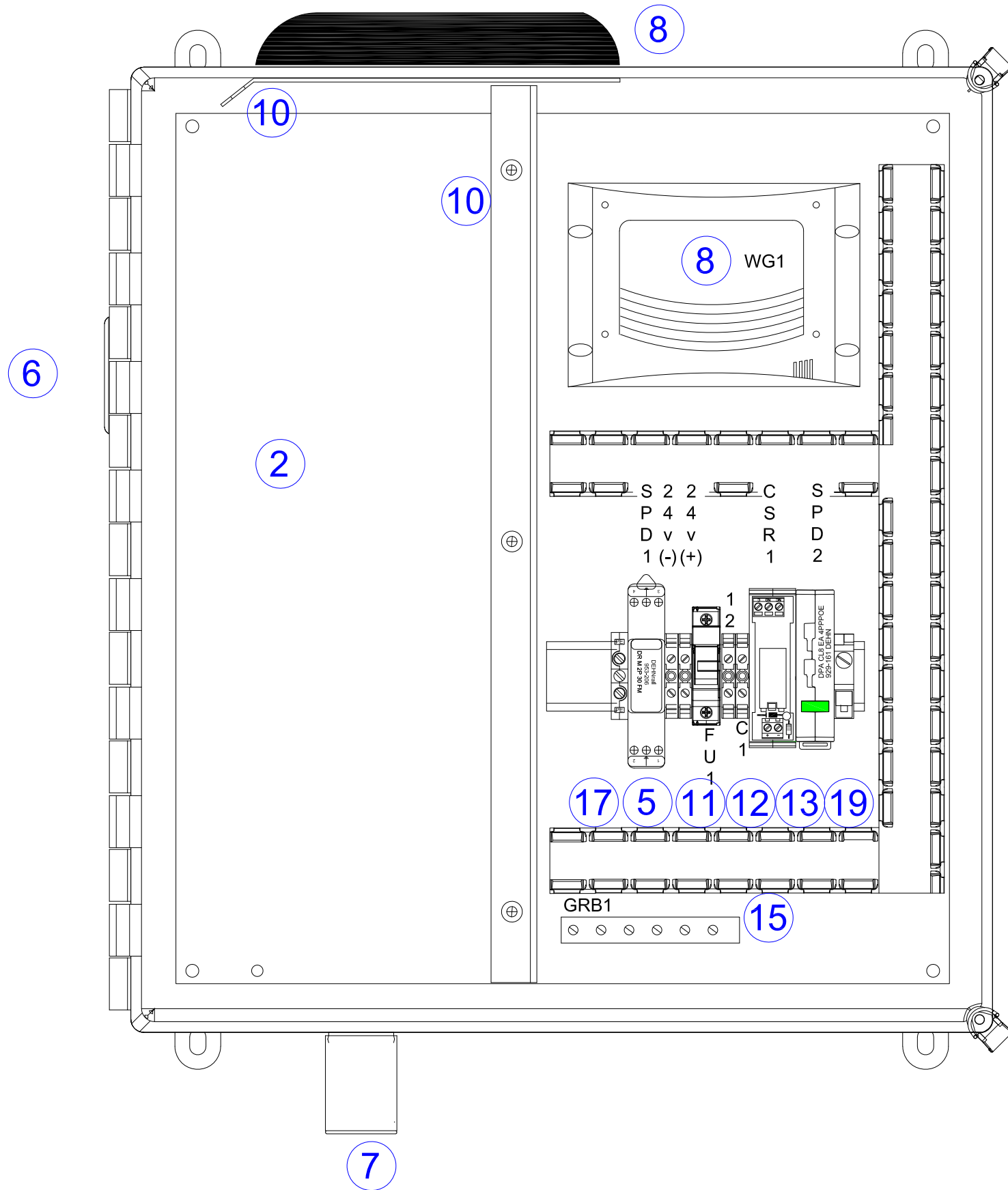
WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:

SYSTEM STANDARDS
REMOTE WIRELESS
COMMUNICATIONS PANEL
FRONT AND SIDE ELEVATIONS

SHEET

852



SCALE:	N.T.S.	-	-	11-11-2016	JG
			UPDATED 19	01-27-2025	FH
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:	SYSTEM STANDARDS REMOTE WIRELESS COMMUNICATIONS PANEL INTERIOR LAYOUT
--------	--

SHEET
853

ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER	ID	QUAN.	ITEM DESCRIPTION	MANUFACTURE'S PART NUMBER
1	1	ENCLOSURE, 18.00H X 16.00W X 10D, FIBERGLASS, HINGE-COVER WITH LOCKABLE QUICK RELEASE	HOFFMAN A181610CHQRFQ	14	-	-	-
2	1	ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE	HOFFMAN A18P16	15	1	COPPER GROUNDING BAR, 4-POSITION	ILSCO D167-6
3	1	NAMEPLATE, 4W X 2H, WHITE W/ .25 INCH BLACK LETTERS	CUSTOM ENGRAVED	16	1	WIRE TROUGH, PVC, 1-1/2W X 2H	PANDUIT G1X2WH6
4	1	GROUND MODULE TERMINAL BLOCK (PE)	PHOENIX CONTACT USLKG6N	1	1	WIRE TROUGH COVER, PVC, 1-1/2W	PANDUIT C1WH6
5	1	SURGE SUPPRESSOR, 2POLE, 30 VOLT WITH ALARM CONTACT	DEHN DR M 2P 30 FM, #953-206	17	1	PERFORATED 35MM DIN RAIL GALVANIZED STEEL 2 METER	SIEMENS 5ST 145
6	1	TYPE 4X PRESSURE COMPENSATION DEVICE	HOFFMAN APCDSS6	18	TBD	WIRE, GREEN, #14 AWG, MTW/TEW or AWM-I A	SOUTHWIRE OR APPROVED EQUAL
7	1	TYPE 4X ENCLOSURE BREATHER / DRAIN	HOFFMAN AVDR4SS4			WIRE, BLUE, GREY, YELLOW #16 AWG, MTW/TEW or AWM-I A	SOUTHWIRE OR APPROVED EQUAL
8	1	MIMO LTE/CELLUAR/PCS/GPS/WIFI COMBO ANTENNA	SIERRA WIRELESS AP-CCWG-Q-2222-RP3-WH	19	3	SURGE SUPPRESSOR INDUSTRIAL ETHERNET DEVICE	DEHN DPA CL8 4PPOE, 929 -161
9	1	SECURE MOBILE GATEWAY	SIERRA WIRELESS AIRLINK GX450	20	1	CORROSION- INHIBITING VAPOR CAPSULE	HOFFMAN AHC10E
10	1	ALUMINUM METAL BARRIER 6.75"X 8.75"X.25"	HOFFMAN A10P8AL WITH CORNER BENT AT 45 FOR GR. LUG	21	1	CAT 6 SHIELDED PATCH CORD	BLACK BOX EVNSL0272BK-0003
	1	ALUMINUM METAL BARRIER 17.25"X 9.00"X.25"	CUSTOM FABRICATED	22	-	-	-
11	4	THROUGH-TYPE TERMINAL SIZE 2.5MM	SIEMENS 8WAA1-011-1DF11	23	-	-	-
12	1	GLOBAL MODULAR FUSE HOLDER	BUSSMANN CHCC1DI-48U	24	-	-	-
	1	FAST ACTING CURRENT LIMITING 2 AMP FUSE TYPE CC	BUSSMANN LP-CC-2	25	-	-	-
13	1	PLUG IN, S.P.S.T., 120VAC, 10 AMP CONTACT RATING RELAY	PHOENIX CONTACT UMK 22 REL 120/21-ST - 5520705	26	-	-	-

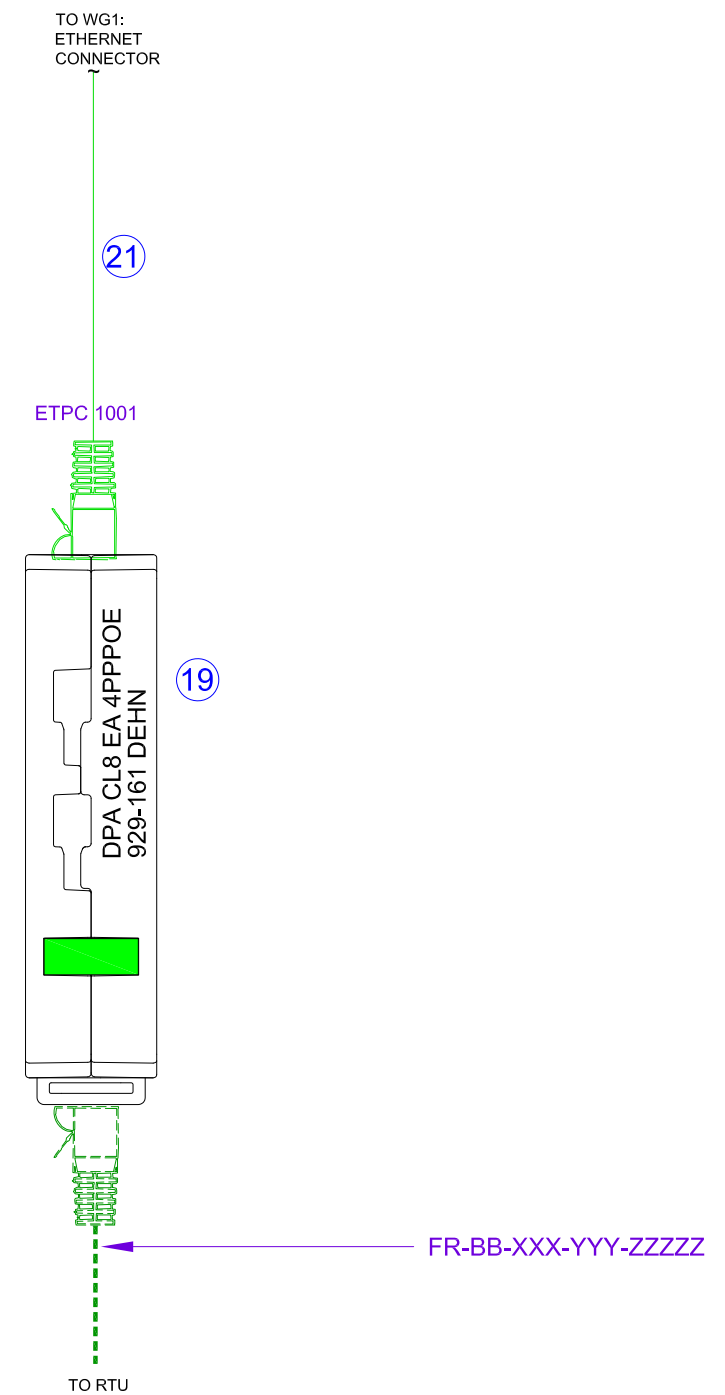
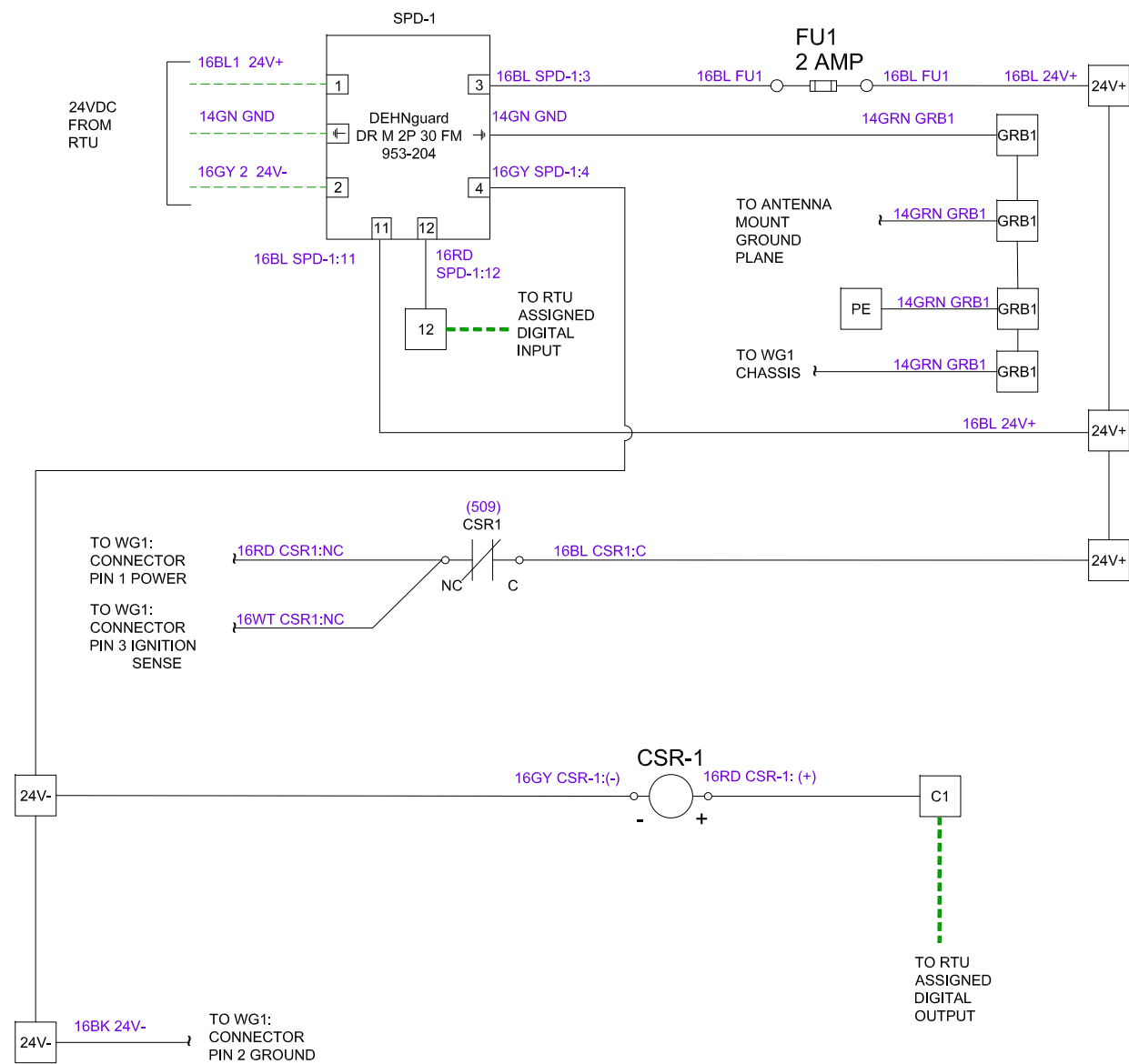


SCALE:	N.T.S.	1	-	11-11-2016	JG
		2	UPDATED 19	01-27-2025	FH
DESIGN:	IAG				
DRAWN BY:	JG				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:	SYSTEM STANDARDS REMOTE WIRELESS COMMUNICATIONS PANEL BILL OF MATERIALS
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SHEET
854

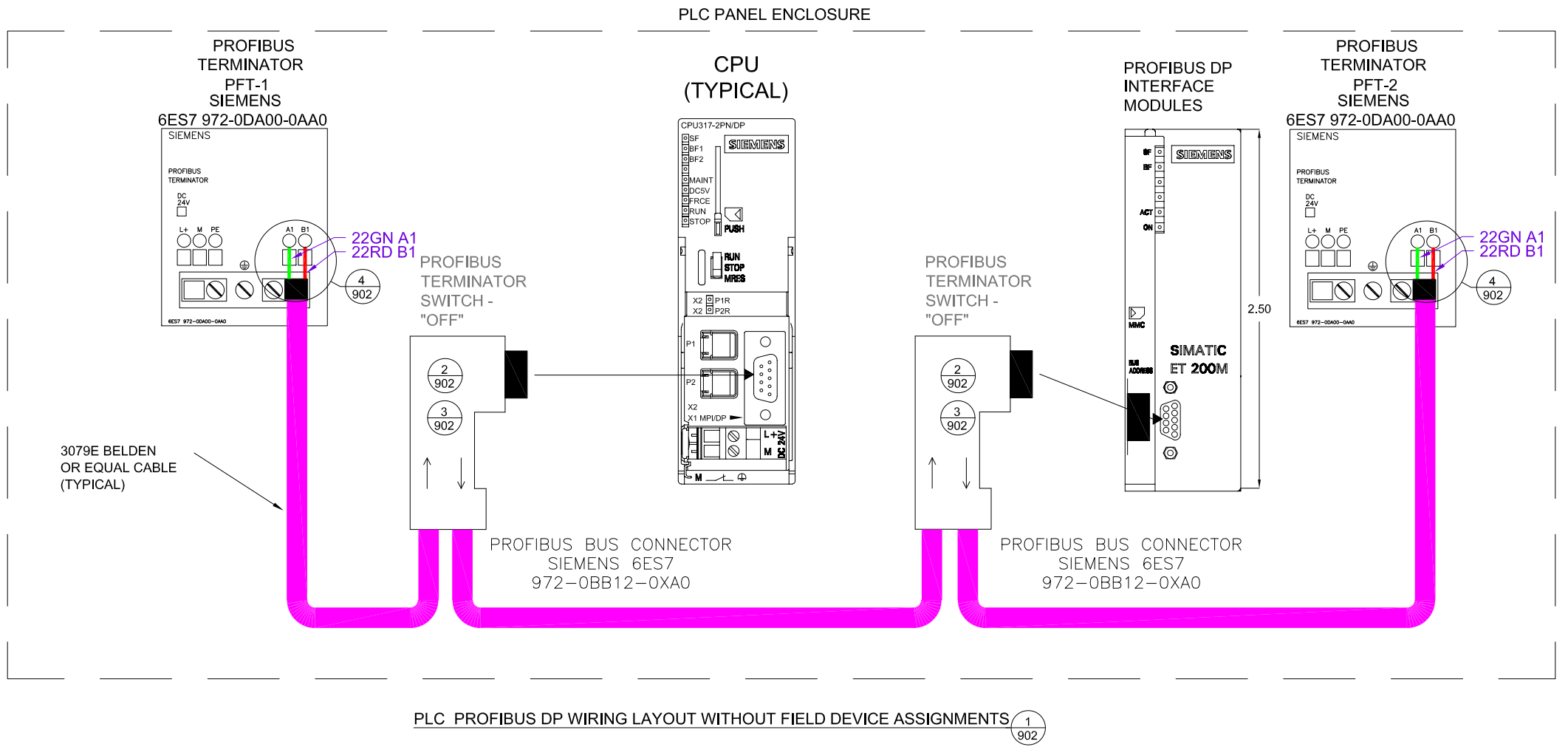
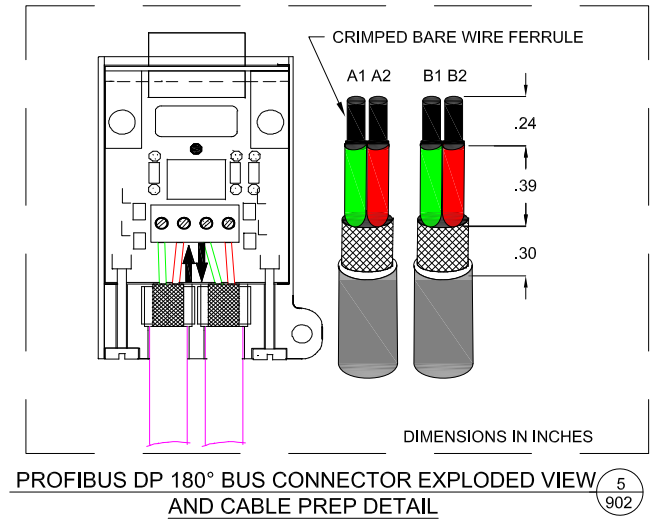
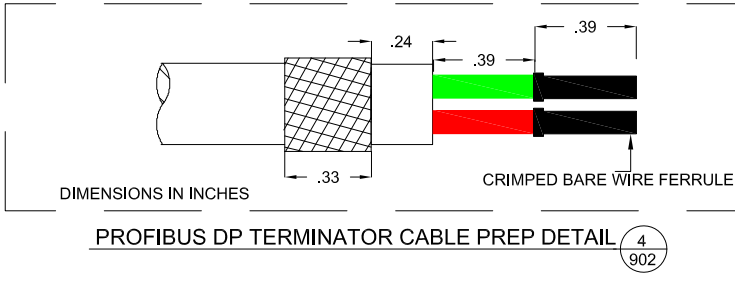
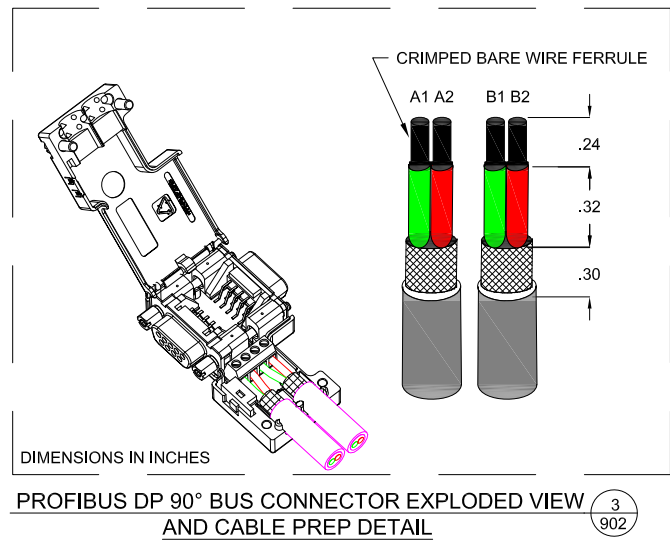
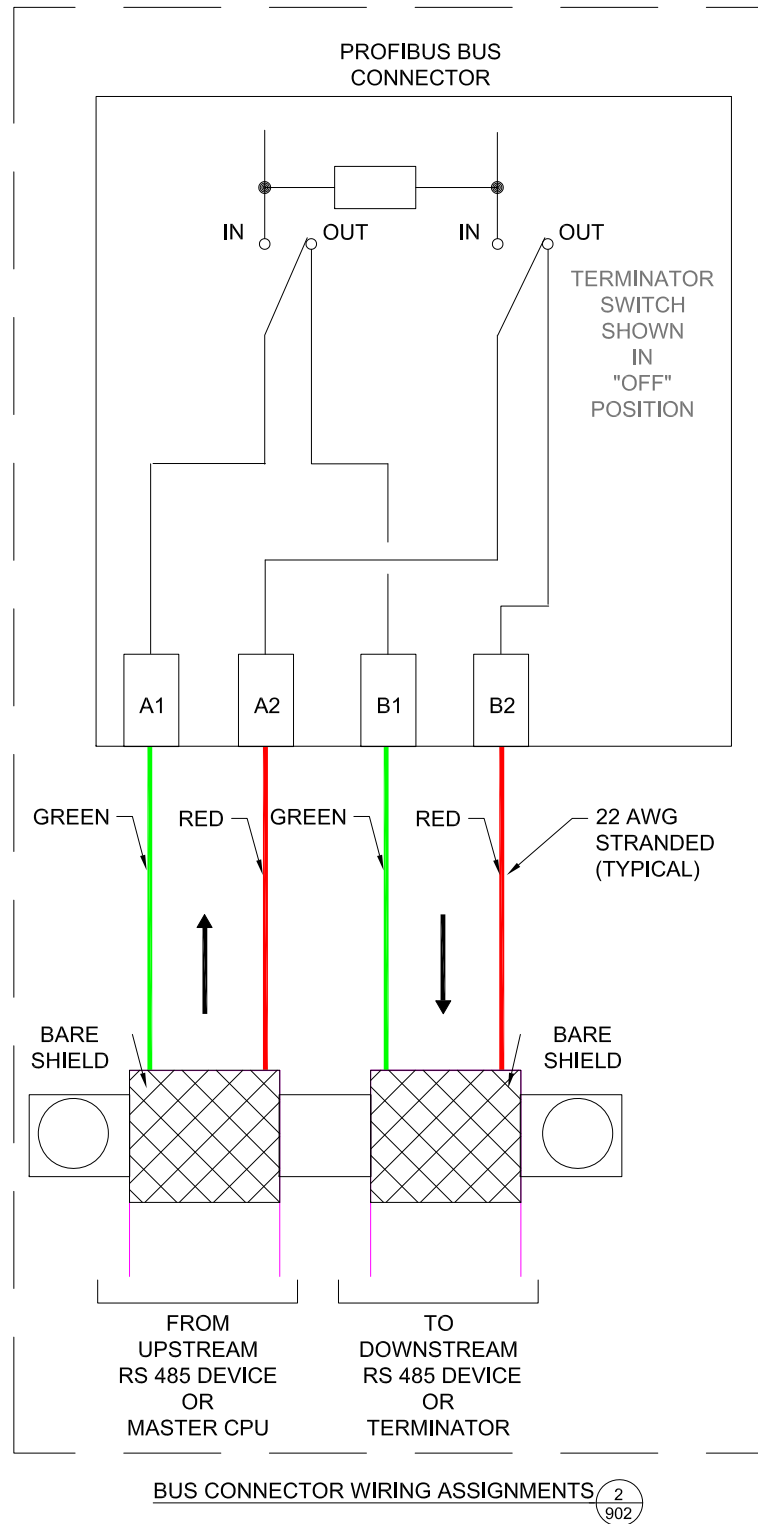


SCALE:	N.T.S.	-	-	11-11-2016	JG
DESIGN:	IAG	-	UPDATED 19	01-27-2025	FH
DRAWN BY:	JG				
APPROVED BY:	GM	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEM STANDARDS
REMOTE WIRELESS
COMMUNICATIONS PANEL
POWER AND COMM WIRING

SHEET
855



SCALE:	N.T.S.	-	REVISED AS PER MEETING	05-20-2014	JG
DESIGN:	DG/JG				
DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

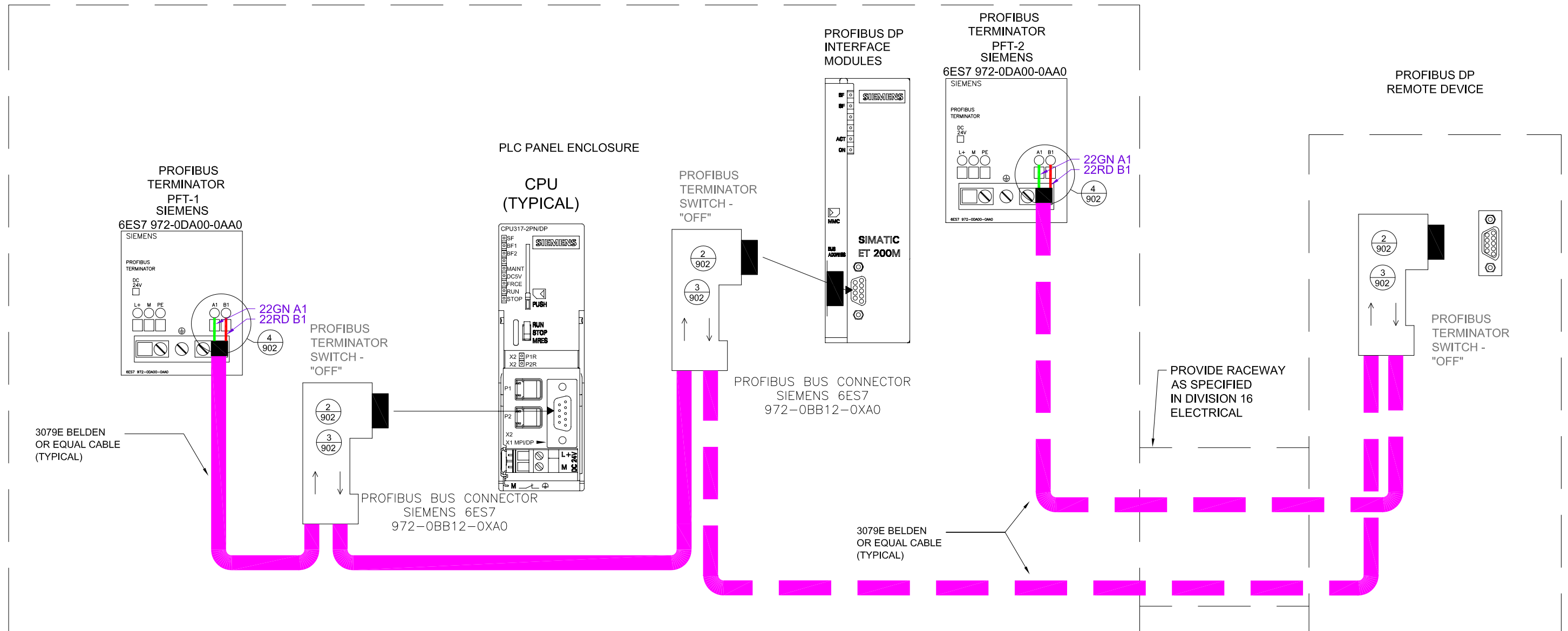
WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP

CITY OF
ORLANDO, FLORIDA

TITLE:

SYSTEMS STANDARDS
PROFIBUS DP COMMUNICATION
NETWORK CABLE AND TERMINATION
LAYOUT DETAILS-1

SHEET
902



PLC PROFIBUS DP WIRING LAYOUT WITH FIELD DEVICE BUS PORT ASSIGNMENTS WITHIN BUILDING PROCESS INTERIOR AREA 1
903

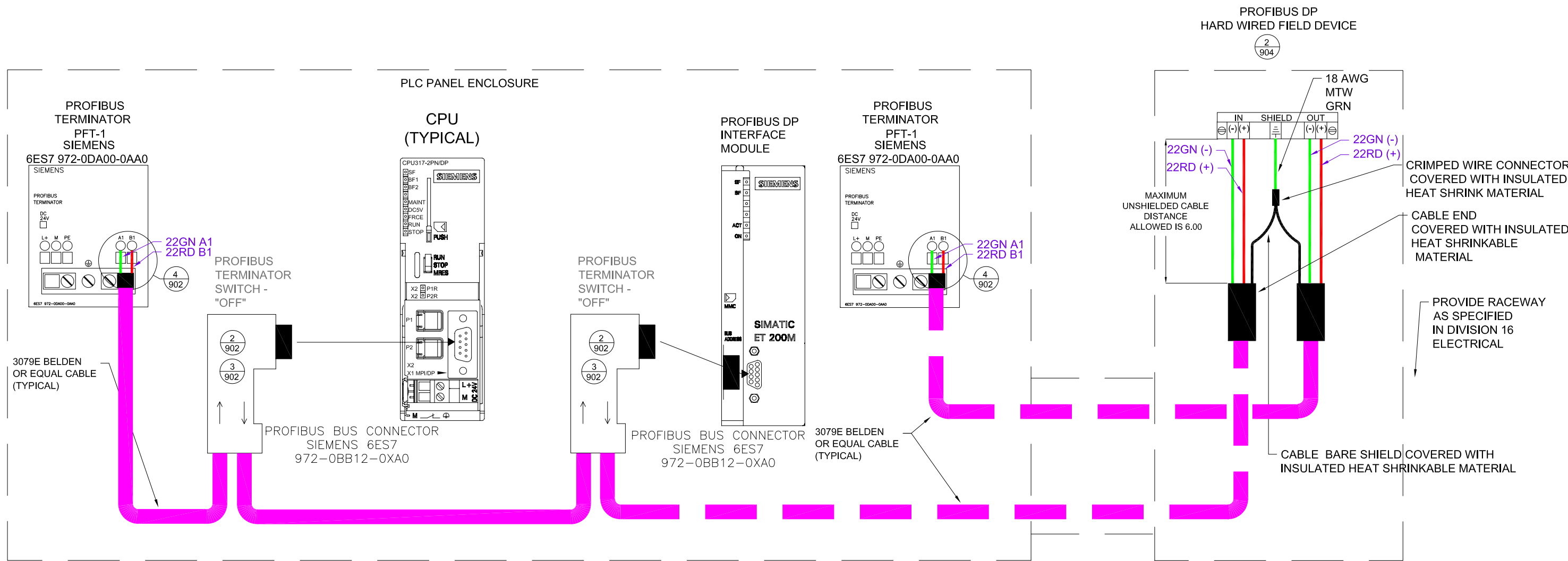


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DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF
ORLANDO, FLORIDA

TITLE:
SYSTEMS STANDARDS
PROFIBUS DP COMMUNICATION
NETWORK CABLE AND TERMINATION
LAYOUT DETAILS-2

SHEET
903



PLC PROFIBUS DP WIRING LAYOUT WITH HARD WIRED FIELD DEVICE WITH INPUT AND OUTPUT ASSIGNMENTS WITHIN BUILDING PROCESS INTERIOR AREA 1
904

- NOTES:
- DIMENSION IN INCHES
 - TERMINAL CONNECTIONS SHALL INCLUDE CRIMPED RING TERMINALS OR BARE WIRE FERRULES ON END OF WIRES TO TERMINATE CONNECTION TO HARD WIRED DEVICE.



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CITY OF
ORLANDO, FLORIDA

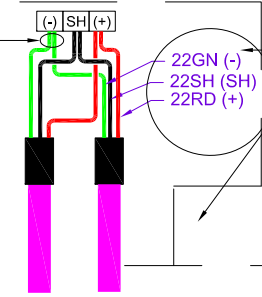
TITLE:
SYSTEMS STANDARDS
PROFIBUS DP COMMUNICATION
NETWORK CABLE AND TERMINATION
LAYOUT DETAILS-3

SHEET
904

DIMENSIONS IN INCHES

(TYPICAL)
CONDUCTORS OF THE SAME POLARITY
FROM EACH CABLE SHALL BE SOLDERED
TOGETHER BEFORE BEING TERMINATED.

PROFIBUS DP
HARD WIRED WITH SINGLE ASSIGNMENT
INPUT
FIELD DEVICE



(TYPICAL)
PROVIDE RACEWAY
AS SPECIFIED
IN DIVISION 16
ELECTRICAL

NEMA 4 X S/S
ENCLOSURE WITH
BACK PLATE
SEE
DETAIL
2
905

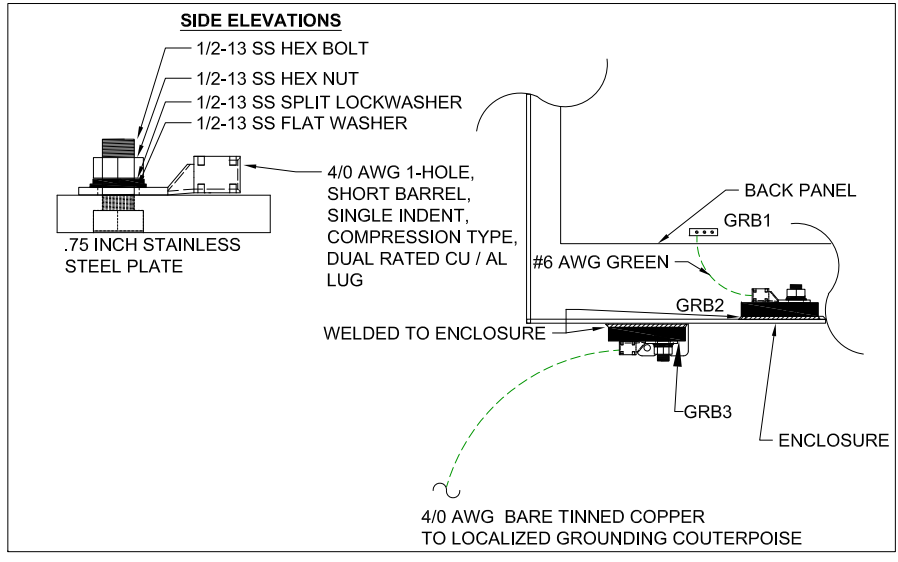
(TYPICAL)
22GN (1)
22SH (4)
22RD (2)

(TYP.) CRIMPED BARE WIRE FERRULES
INSTALLED ON ALL CONDUCTORS

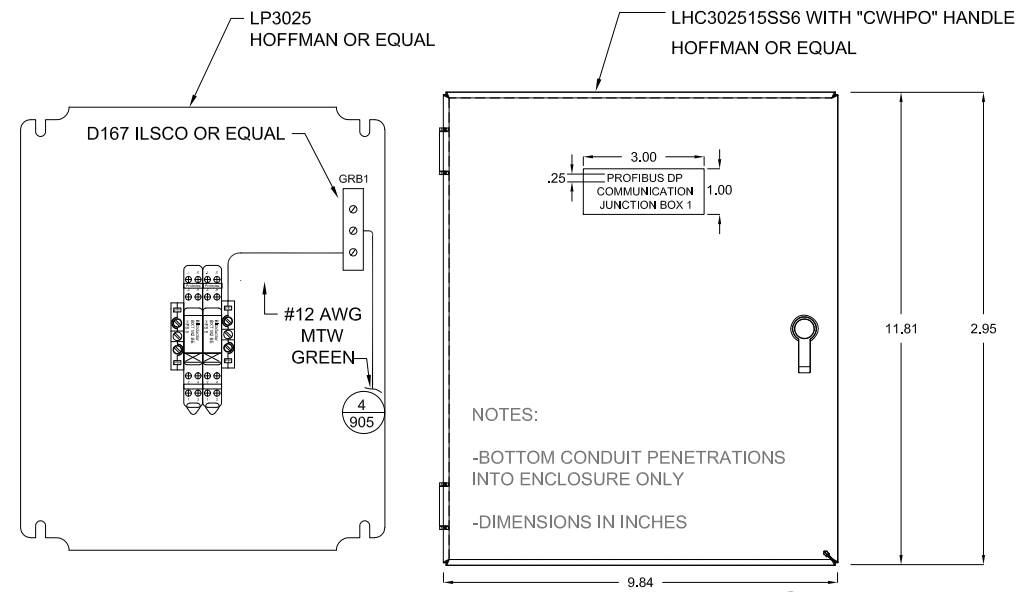
(TYP.) CABLE END
COVERED
WITH INSULATED
HEAT SHRINKABLE
MATERIAL

3079E BELDEN
OR EQUAL CABLE
(TYPICAL)

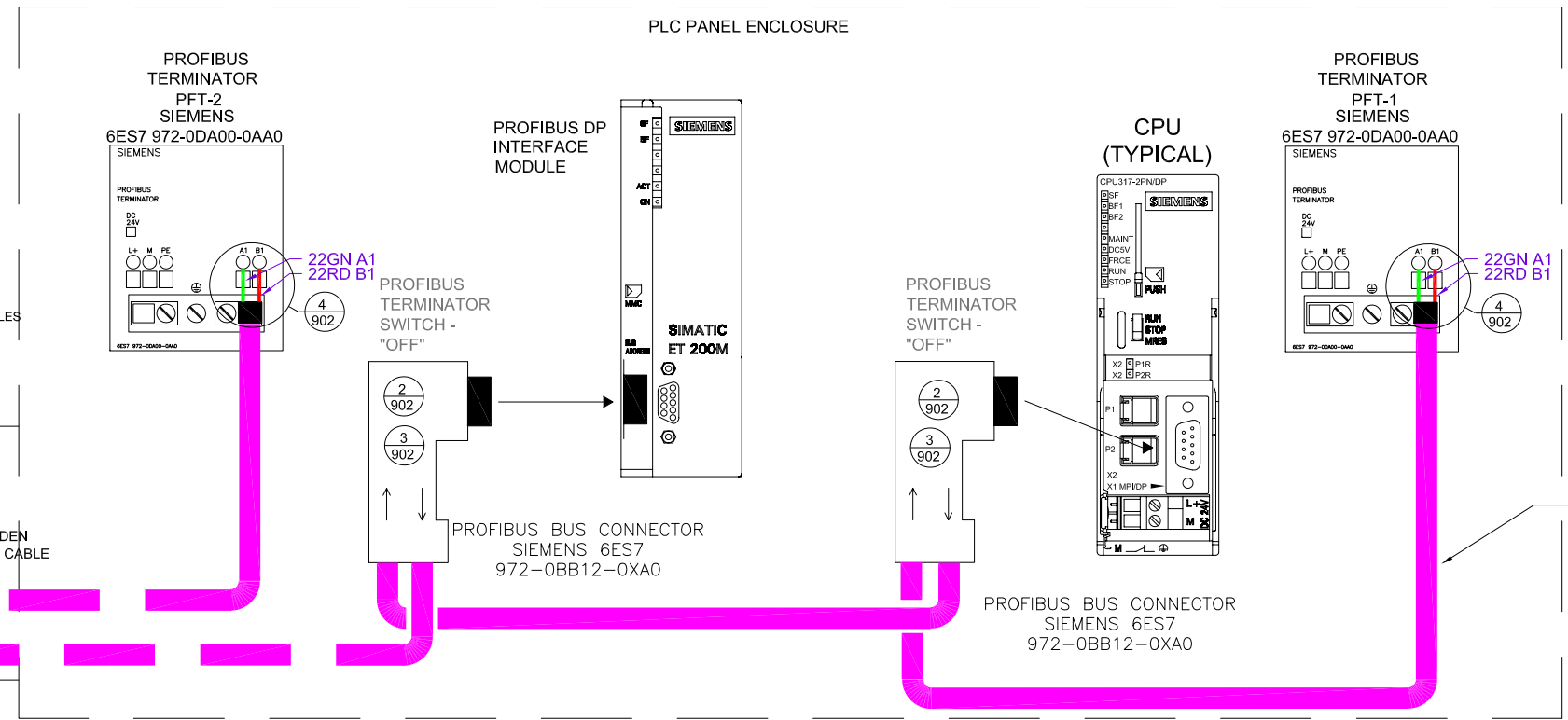
PROVIDE RACEWAY
AS SPECIFIED
IN DIVISION 16
ELECTRICAL



PANEL GROUNDING TO LOCAL GROUND COUNTERPOISE WIRING DETAIL **4**
905



PLC PROFIBUS DP COMMUNICATION JUNCTION BOX FRONT AND INTERIOR
ELEVATIONS SINGLE INPUT ASSIGNMENT WITHIN BUILDING PROCESS INTERIOR
AREA **2**
905



PLC PROFIBUS DP WIRING LAYOUT WITH HARD WIRED FIELD DEVICE WITH
SINGLE INPUT ASSIGNMENT WITHIN BUILDING PROCESS INTERIOR AREA **1**
905



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APPROVED BY:	GM	NO	REVISION	DATE	BY

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INDUSTRIAL AUTOMATION GROUP
CITY OF
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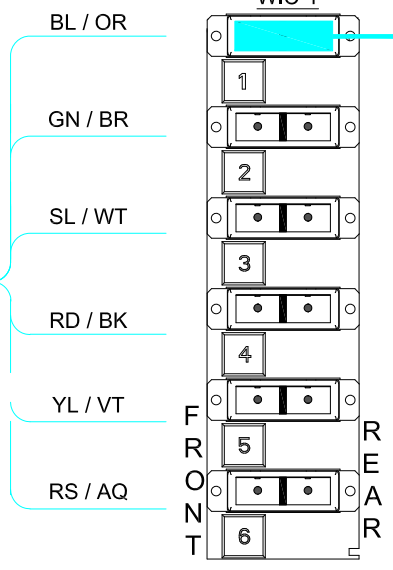
TITLE:
SYSTEMS STANDARDS
PROFIBUS DP COMMUNICATION
NETWORK CABLE AND TERMINATION
LAYOUT DETAILS-4

SHEET
905

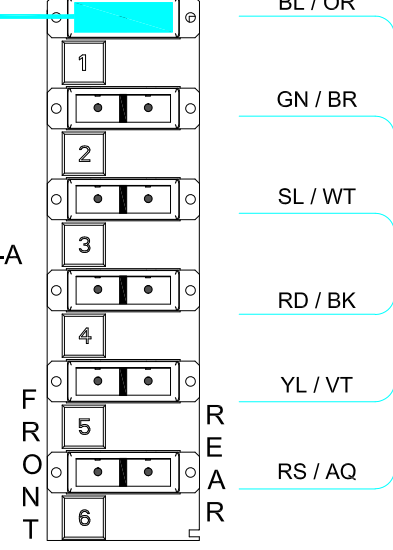
PLC PANEL ENCLOSURE

FIBER SC CONNECTOR PANEL ASSIGNMENTS

SC POSITION	REAR	FRONT
1	BLUE	ORANGE
2	GREEN	BROWN
3	SLATE	WHITE
4	RED	BLACK
5	YELLOW	VIOLET
6	ROSE	AQUA



WIC-2



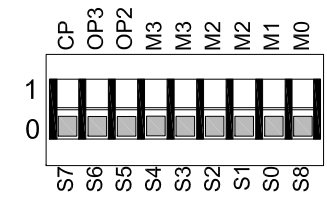
WIC PORT DIRECTORY

WCH -C	WCH -A
WCH -D	WCH -B

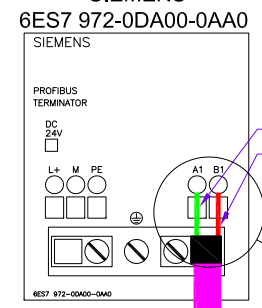
FIBER OPTIC CABLE FROM RIO PANEL

FIBER OPTIC CABLE FROM RIO PANEL

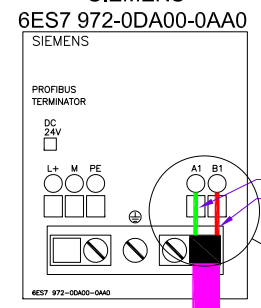
OLM DIP SWITCH DEFAULT SETTINGS



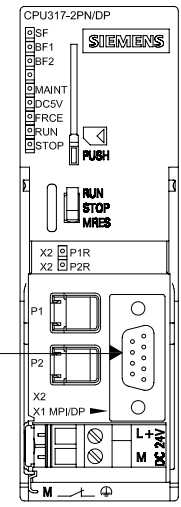
PROFIBUS TERMINATOR PFT-2 SIEMENS 6ES7 972-0DA00-0AA0



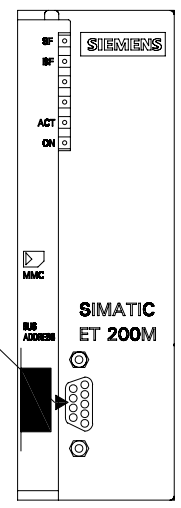
PROFIBUS TERMINATOR PFT-1 SIEMENS 6ES7 972-0DA00-0AA0



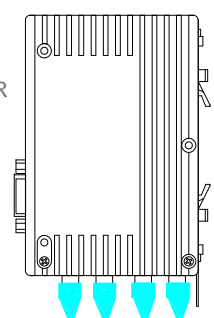
CPU (TYPICAL)



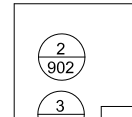
PROFIBUS DP INTERFACE MODULES



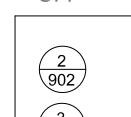
OLM-1



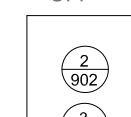
PROFIBUS TERMINATOR SWITCH - "OFF"



PROFIBUS TERMINATOR SWITCH - "OFF"



PROFIBUS TERMINATOR SWITCH - "OFF"



PROFIBUS BUS CONNECTOR SIEMENS 6ES7 972-0BB12-0XA0

PROFIBUS BUS CONNECTOR SIEMENS 6ES7 972-0BB12-0XA0

PLC PROFIBUS DP WIRING LAYOUT WITH EXTERIOR FIELD DEVICE ASSIGNMENTS VIA FIBER OPTIC CABLE

3079E BELDEN OR EQUAL CABLE (TYPICAL)

22GN A1
22RD B1



SCALE:	N.T.S.	-	REVISED WCH TO WIC AND WIC DIRECTORY	09-17-2014	JG
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DRAWN BY:	JG				
APPROVED BY:	WW	NO	REVISION	DATE	BY

WATER RECLAMATION DIVISION,
INDUSTRIAL AUTOMATION GROUP
CITY OF ORLANDO, FLORIDA

TITLE:
SYSTEMS STANDARDS PROFIBUS DP
COMMUNICATION NETWORK
CABLE AND TERMINATION LAYOUT
DETAIL-5

SHEET
906

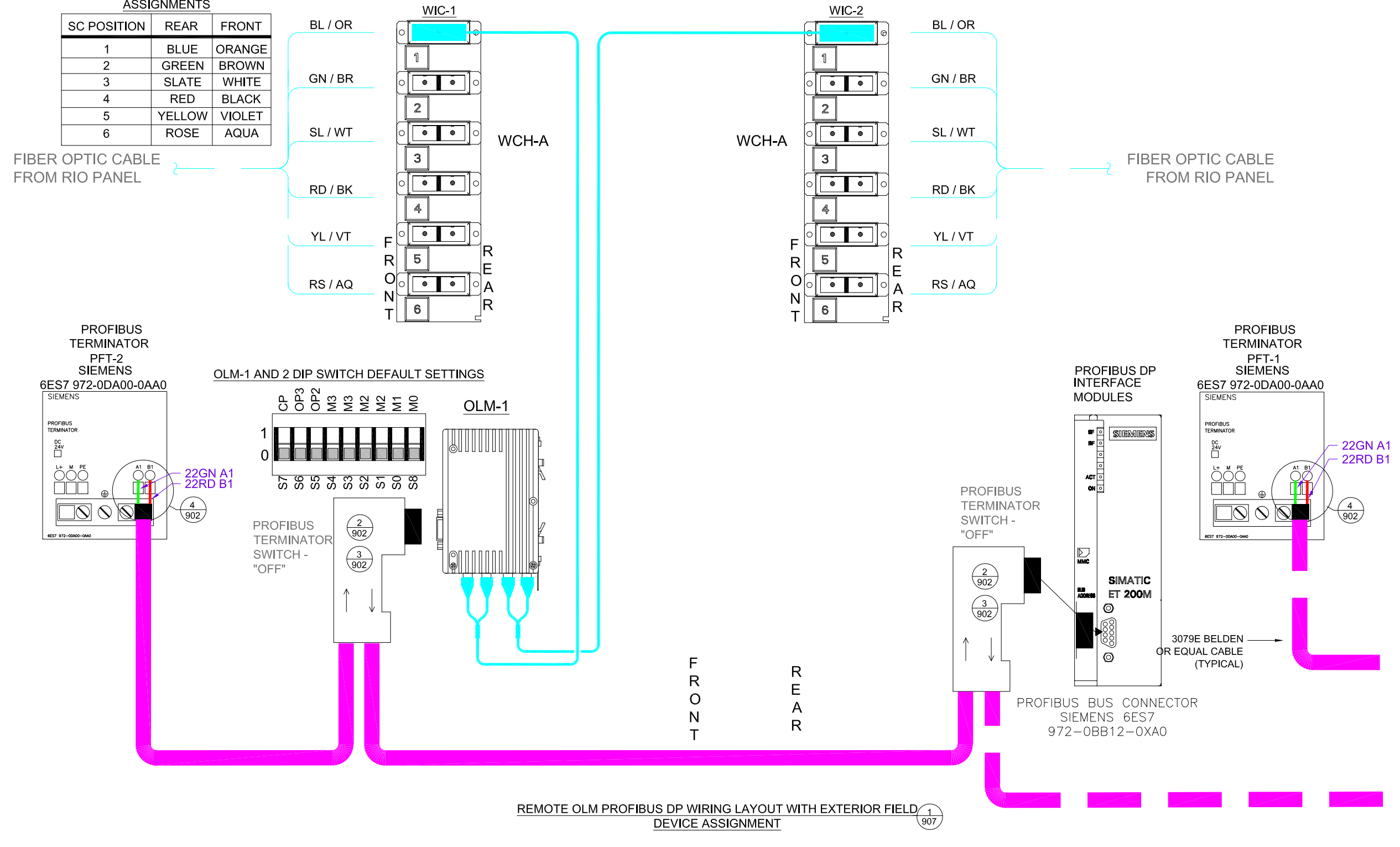
RIO PANEL ENCLOSURE

WIC PORT DIRECTORY

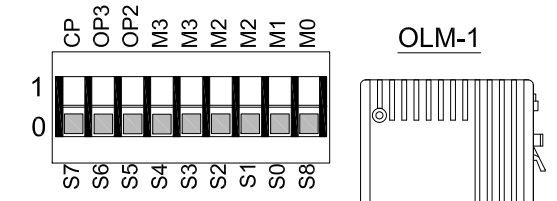
WCH -C	WCH -A
WCH -D	WCH -B

FIBER SC CONNECTOR PANEL ASSIGNMENTS

SC POSITION	REAR	FRONT
1	BLUE	ORANGE
2	GREEN	BROWN
3	SLATE	WHITE
4	RED	BLACK
5	YELLOW	VIOLET
6	ROSE	AQUA



OLM-1 AND 2 DIP SWITCH DEFAULT SETTINGS



REMOTE OLM PROFIBUS DP WIRING LAYOUT WITH EXTERIOR FIELD DEVICE ASSIGNMENT ¹/₉₀₇

FROM LAST FIELD DEVICE

SEE 902,904 AND 905 DRAWINGS FOR WIRING DETAILS

TO FIRST FIELD DEVICE

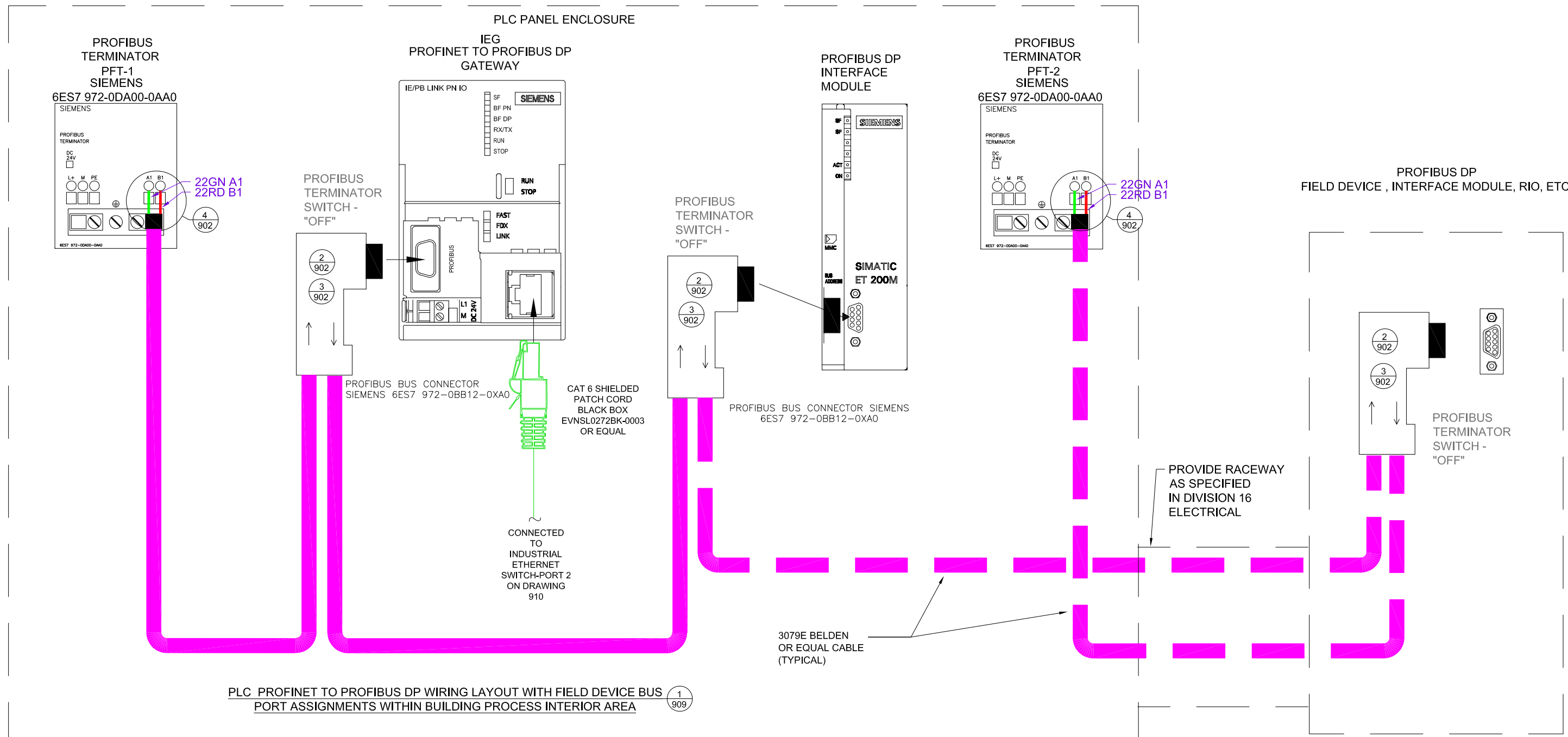


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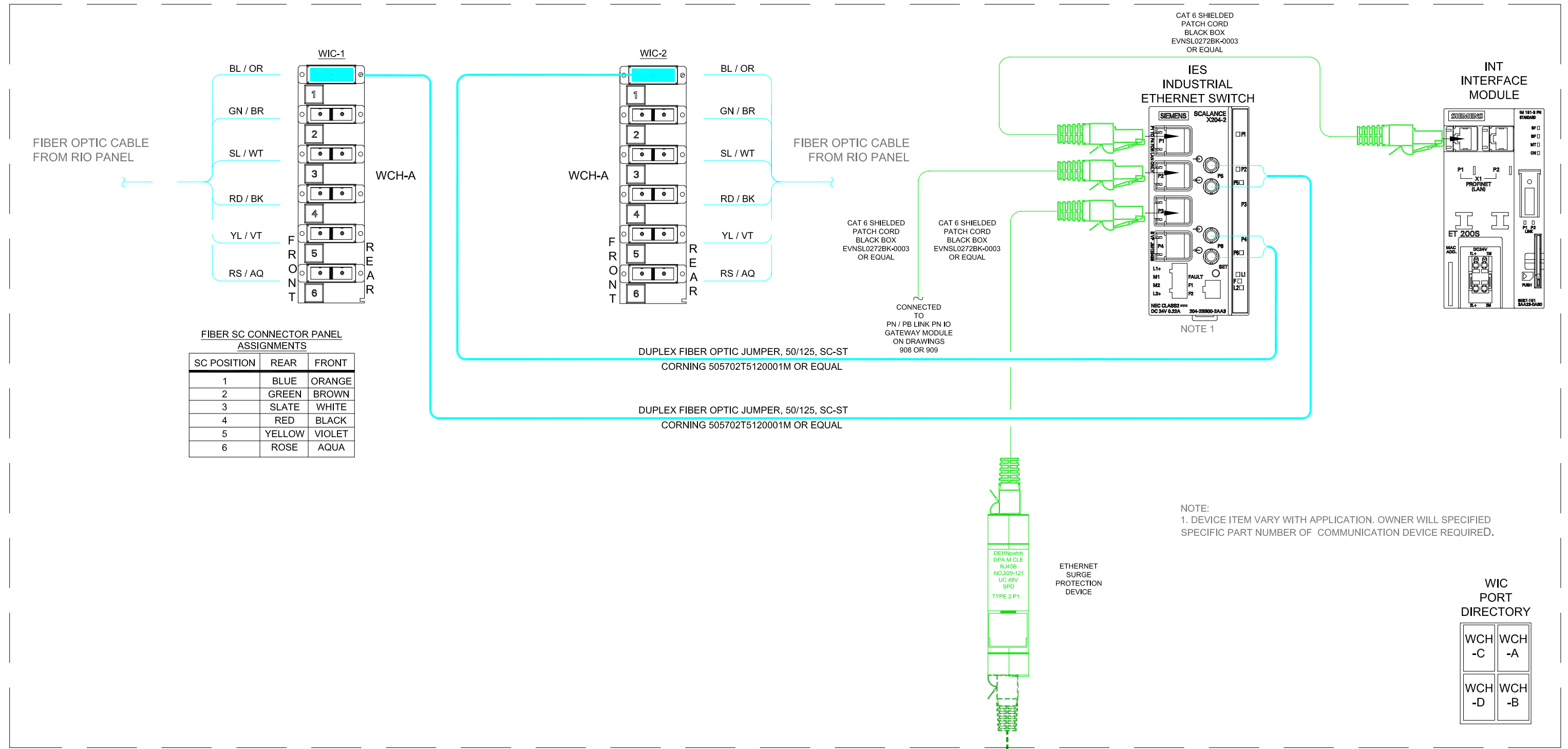
TITLE:
SYSTEMS STANDARDS PROFIBUS DP
COMMUNICATION NETWORK
CABLE AND TERMINATION LAYOUT
DETAILS-6

SHEET
907



SCALE:	N.T.S.	-	REVISED AS PER MEETING	05-21-2014	JG
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PLC OR RIO PANEL ENCLOSURE



PLC OR RIO PROFINET LAYOUT WITH ETHERNET SWITCH PORT ASSIGNMENTS FOR: FIELD DEVICE WITHIN BUILDING PROCESS INTERIOR AREA, INTERFACE MODULE AND PROFIBUS DP TO PROFINET GATEWAY MODULE

1/908

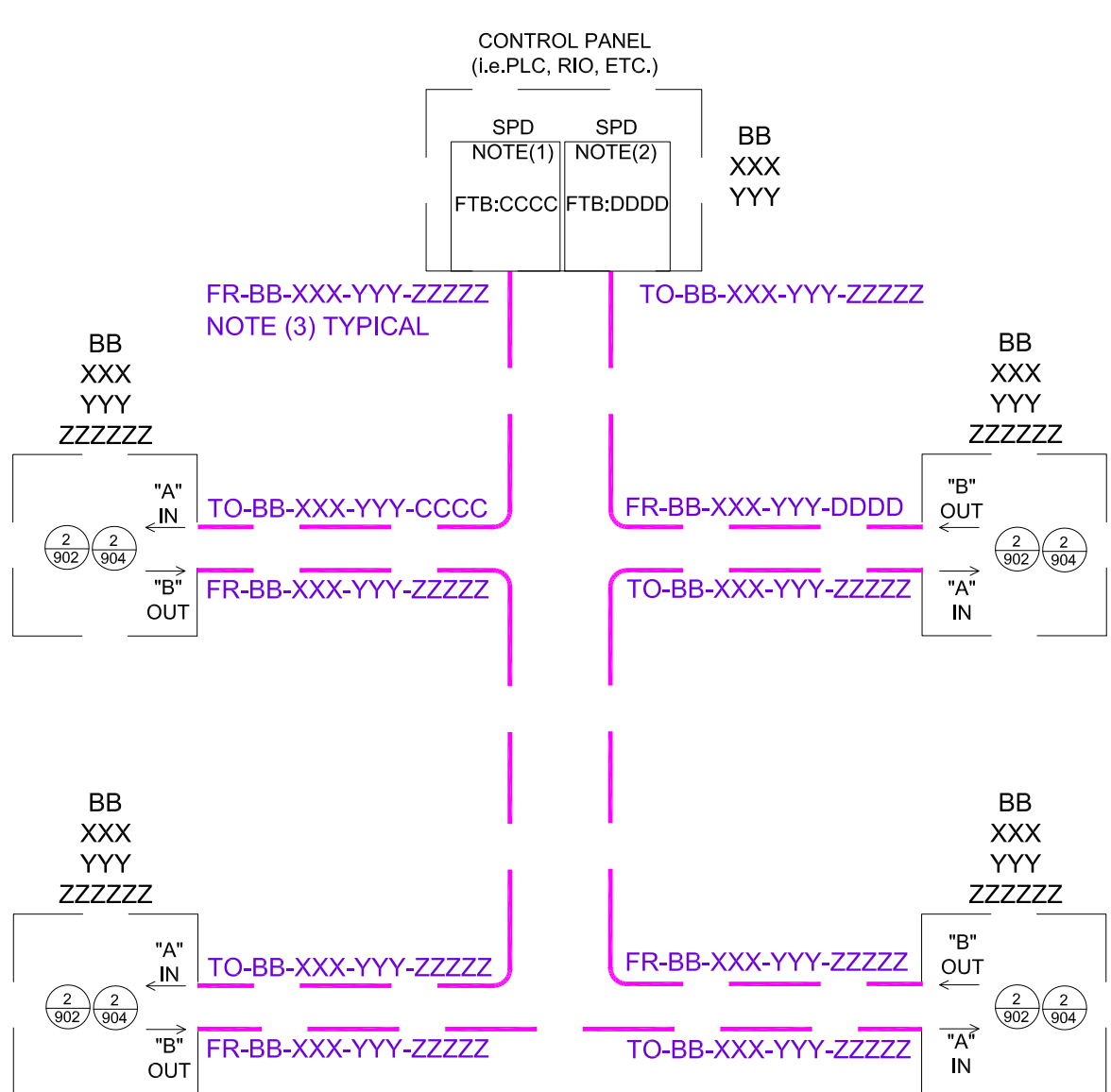


SCALE:	N.T.S.	-	REVISED WCH TO WIC AND WIC DIRECTORY	09-17-2014	JG
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DRAWN BY:	JG				
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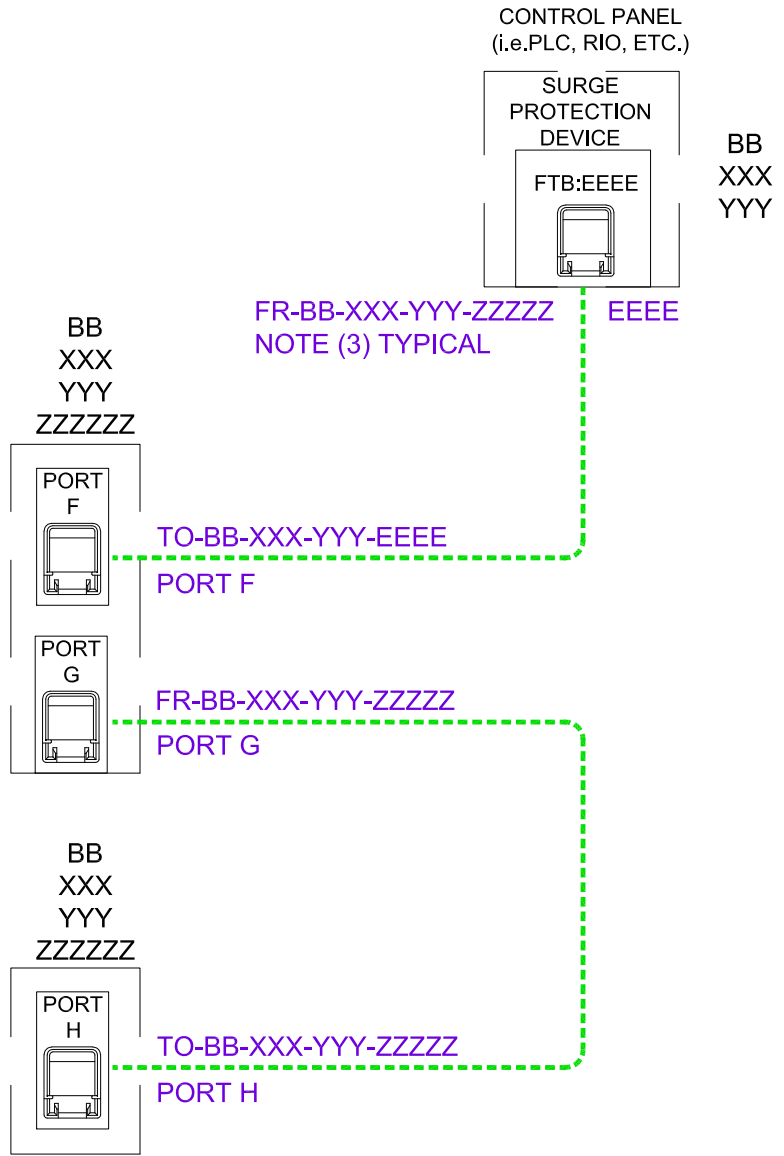
TITLE:
SYSTEMS SYSTEMS PROFINET
COMMUNICATION NETWORK
CABLE AND TERMINATION LAYOUT
DETAILS

SHEET
910



PROFIBUS DP COMMUNICATION NETWORK CABLE TAGGING CONVENTION
FOR FIELD DEVICES 1
911

NOTES:
 (1) FIELD TERMINAL BLOCK CONNECTED TO PANEL INTERFACE DEVICE.
 (2) FIELD TERMINAL BLOCK CONNECTED TO PANEL PROFIBUS TERMINATOR DEVICE.
 (3) CABLE STRUCTURE LABELING BASED ON TAGGING CONVENTIONS REQUIREMENTS ON DRAWINGS 120 AND 121. LABELING ACTUALLY IMPLEMENTED, WILL VARY AS PER APPLICATION



PROFINET COMMUNICATION NETWORK CABLE TAGGING CONVENTION
FOR FIELD DEVICES 2
911

SYSTEMS STANDARDS
 PROFIBUS DP COMMUNICATION
 NETWORK CABLE AND TERMINATION
 LAYOUT DETAILS-1



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TITLE:
 SYSTEMS STANDARDS
 DP AND PROFINET COMMUNICATION
 NETWORK FIELD CABLE LABELING
 CONVENTION LAYOUT DETAILS

EXHIBIT A14

6



DIVISION 4 - MASONRY

04100	Mortar and Masonry Grout
04150	Masonry Accessories
04200	Unit Masonry

DIVISION 5 – METALS

05010	Metal Materials
05050	Metal Fastening
05140	Structural Aluminum
05500	Metal Fabrications
05510	Metal Stairs
05515	Ladders
05520	Guard and Railings
05531	Gratings, Access Hatches, and Access Doors
05530	Stair Treads and Nosings

DIVISION 6 – (NOT USED)**DIVISION 7 – THERMAL AND MOISTURE PROTECTION**

07150	Dampproofing
07185	Masonry Water Repellant Coating
07190	Vapor Barrier
07510	Built-up Bituminous Roofing
07535	Thermoplastic Polyolefin (TPO) Roofing, Fully Adhered
07920	Sealants and Caulking

DIVISION 8 – DOORS AND WINDOWS

08225	Fiberglass Doors and Frames
08710	Finish Hardware

DIVISION 9 – FINISHES

09900	Painting
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DIVISION 10 – (NOT USED)**DIVISION 11 – EQUIPMENT GENERAL PROVISION**

11000	Equipment General Provisions
11100	Pump – General
11350	Dry Pit Submersible Solids-Handling Pumps

DIVISION 12 – (NOT USED)**DIVISION 13 – SPECIAL CONSTRUCTION**

13300	Process Instrumentation and Controls
13315	Field Instrumentation
13325	Control Panels and Panel Mounted Equipment