

JEA Water & Wastewater Standards Manual

Volume VA: Water Treatment Plant Details

January 1, 2022 – Edition

“Foundation for the Future – Water & Wastewater Standards”

JEA Water and Wastewater Standards Distribution and Collection Details

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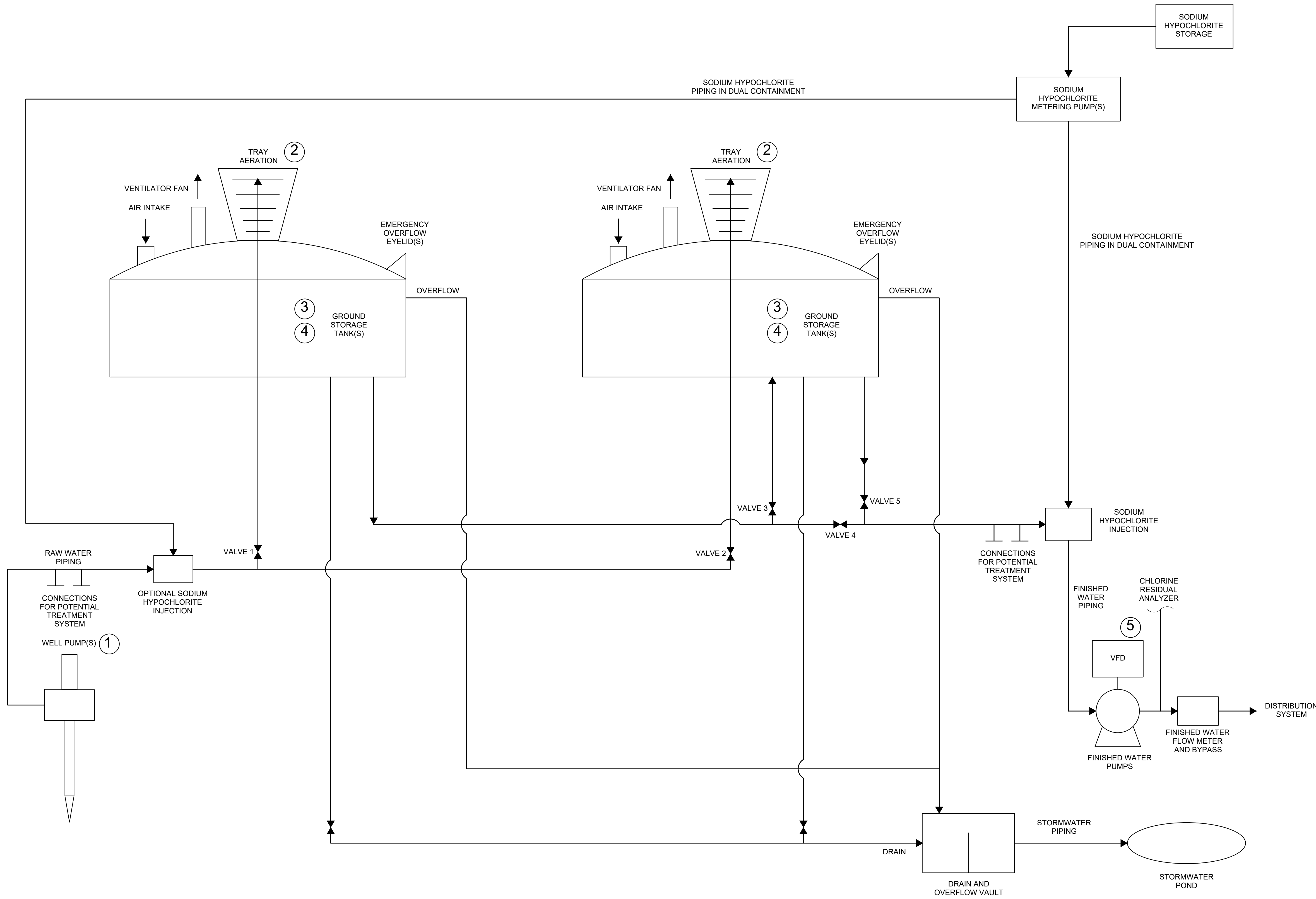
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WATER TREATMENT PLANT

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***JEA Water and Wastewater Standards
Distribution and Collection Details***

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- NOTES
- REFER TO TABLE 1 FOR REQUIRED HYDRAULIC PROFILE COMPONENTS.
 - REFER TO TABLE 2 FOR GROUND STORAGE TANK VALVE POSITION FOR PARALLEL AND IN-SERIES TANK OPERATION.
 - THIS PROCESS FLOW DIAGRAM IS INTENDED TO REPRESENT A GENERIC WTP. ACTUAL PROCESS FLOW DIAGRAMS SHALL BE SITE SPECIFIC AND CUSTOMIZED FOR THE PARTICULAR WTP REQUIREMENTS.

TABLE 1. REQUIRED HYDRAULIC PROFILE COMPONENTS

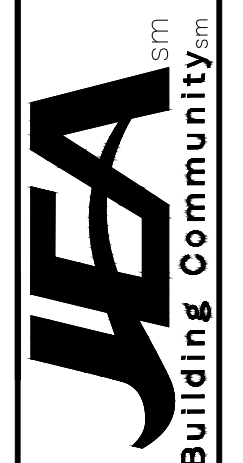
PFD NO.	WTP COMPONENT	HYDRAULIC PROFILE DESCRIPTION
1	WELL PUMPS	HYDRAULIC GRADE LINE FOR WELL PUMP DISCHARGE TO CONVEY WELL FLOWS TO GST STANDPIPE(S)
2	GST TRAY AERATOR STANDPIPE	ELEVATION OF THE GST STANDPIPE(S) DISCHARGE IN THE TRAY AERATOR(S)
3	GST HIGH WATER LEVEL	MAXIMUM OPERATING WATER LEVEL INSIDE OF EACH GST
4	GST LOW WATER LEVEL	MINIMUM OPERATING WATER LEVEL INSIDE OF EACH GST
5	HIGH SERVICE PUMP DISCHARGE	RANGE OF HYDRAULIC GRADE LINE FOR THE HIGH SERVICE PUMP STATION DISCHARGE

NOTES:

- THE REQUIRED HYDRAULIC PROFILE COMPONENTS LISTED ARE A MINIMUM. ACTUAL HYDRAULIC PROFILE FOR EACH WTP SHOULD BE SITE SPECIFIC AND DETERMINED BY THE DESIGN ENGINEER AND CONFIRMED WITH JEA.

TABLE 2. GROUND STORAGE TANK PARALLEL AND IN-SERIES VALVE POSITION

VALVE NO.	PARALLEL	IN-SERIES
VALVE 1	OPEN	OPEN
VALVE 2	OPEN	CLOSED
VALVE 3	CLOSED	OPEN
VALVE 4	OPEN	CLOSED
VALVE 5	OPEN	OPEN



WTP STANDARDS
WTP PROCESS FLOW DIAGRAM AND
HYDRAULIC PROFILE COMPONENTS

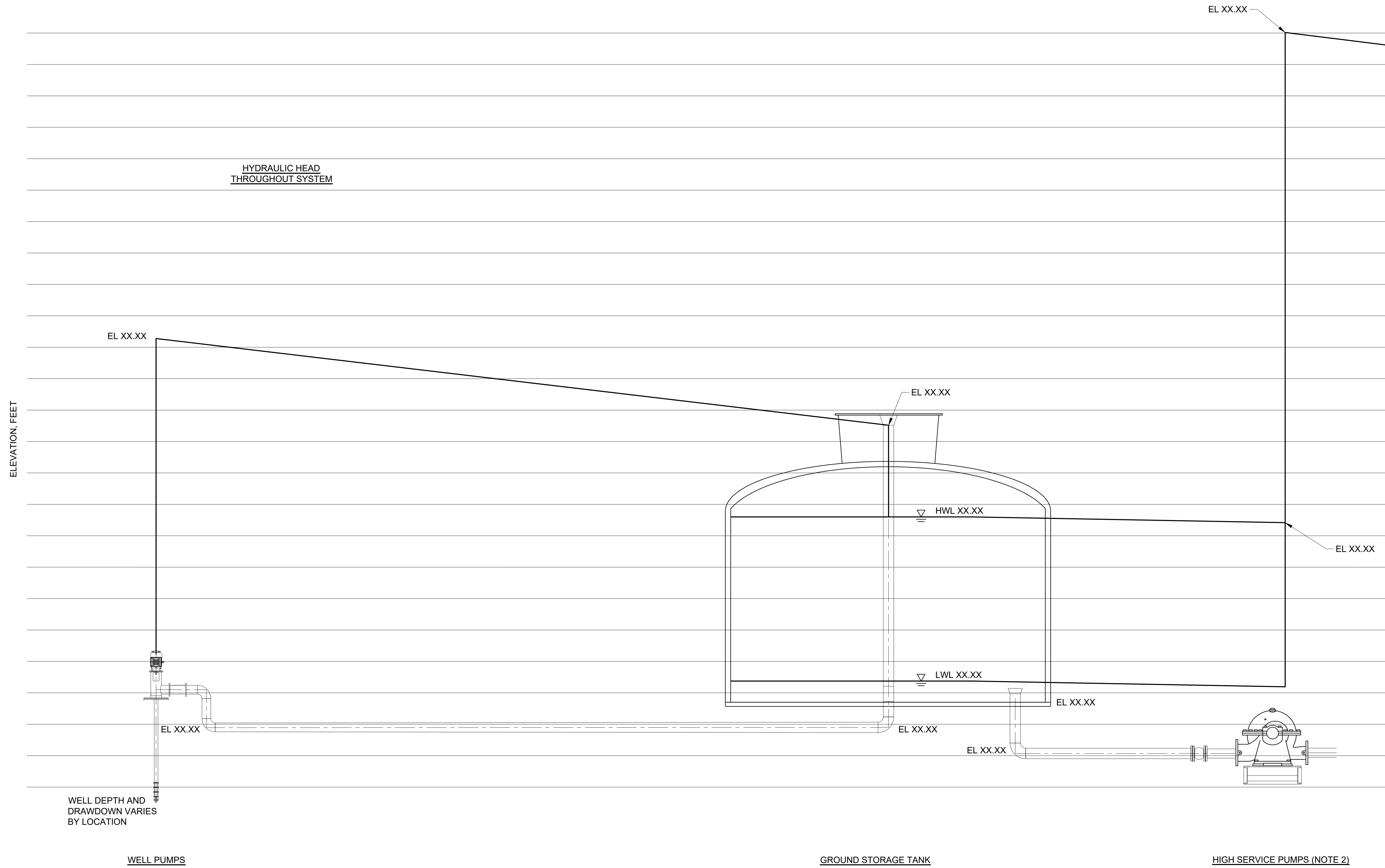
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DRAWING NO.	EXHIBIT 1-1

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CHECKED BY:	
DATE:	

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NOTES:

1. THIS HYDRAULIC PROFILE IS INTENDED TO BE GENERIC. HYDRAULIC PROFILES SHALL BE CUSTOMIZED FOR EACH PROJECT AND BE BASED ON SITE DESIGN AND REQUIREMENTS.
2. THE ELEVATION OF THE HIGH SERVICE PUMPS SHALL ALLOW THE ENTIRE USABLE VOLUME OF THE GROUND STORAGE TANK(S) TO BE PUMPED WITHOUT THE USE OF A VACUUM PRIMING SYSTEM. SUBMERGENCE AND NET POSITIVE SUCTION HEAD SHALL BE DESIGNED TO MEET CURRENT HYDRAULIC INSTITUTE STANDARDS.

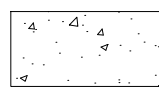

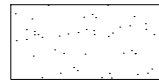
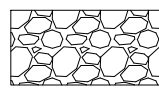


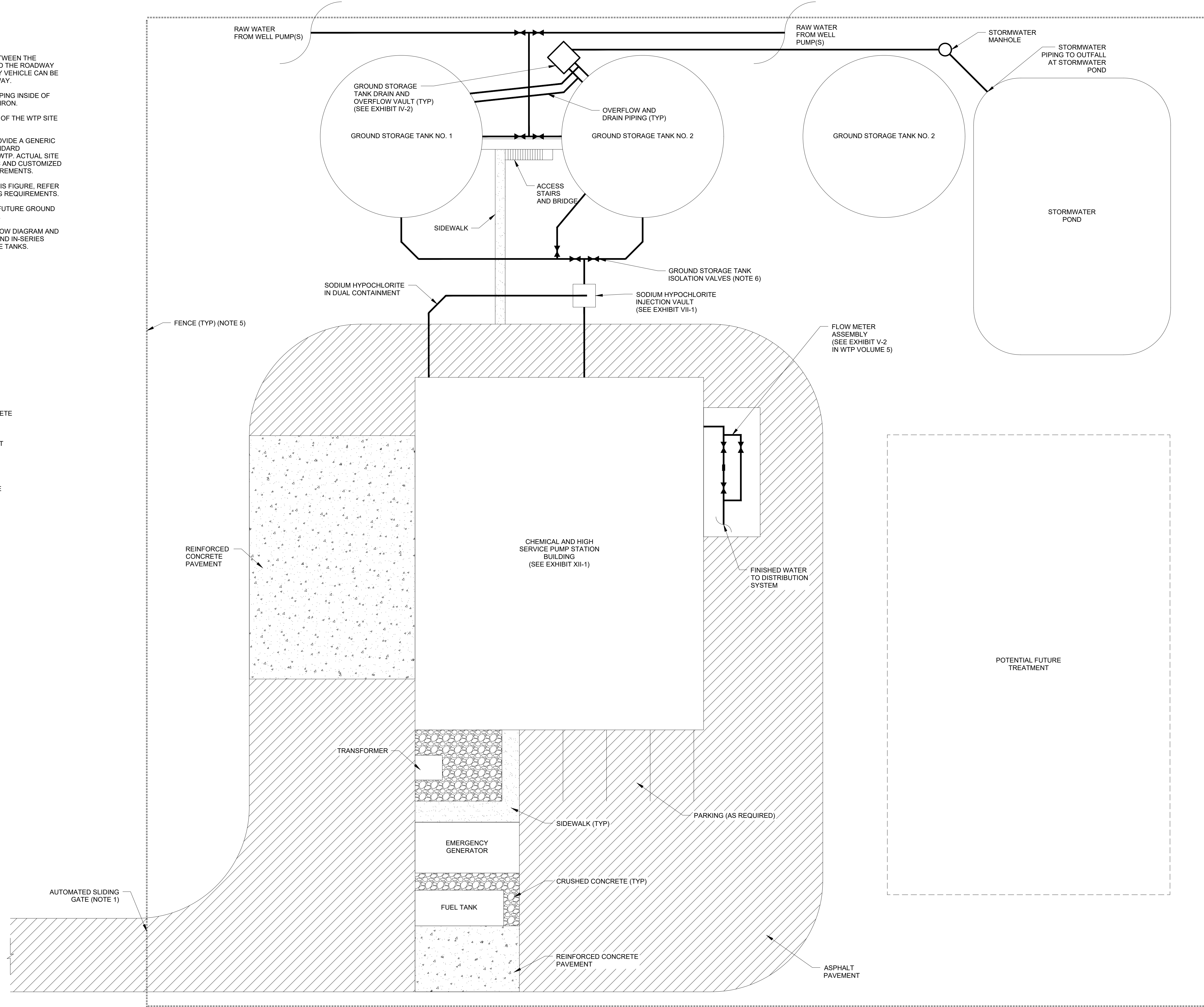
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DATE:		DATE:					
WTP STANDARDS TYPICAL WTP HYDRAULIC PROFILE							
PROJ. NO. 10557K00		DATE: OCTOBER 2020					
SHEET NO.		SCALE: NTS					
DRAWING NO.		EXHIBIT I2					

NOTES:

1. PROVIDE ADEQUATE SPACING BETWEEN THE AUTOMATED ENTRANCE GATE AND THE ROADWAY SUCH THAT A CHEMICAL DELIVERY VEHICLE CAN BE COMPLETELY OUT OF THE ROADWAY.
2. ALL RAW AND FINISHED WATER PIPING INSIDE OF THE WTP SITE SHALL BE DUCTILE IRON.
3. ALL BELOW GRADE PIPING INSIDE OF THE WTP SITE SHALL BE FULLY RESTRAINED.
4. THIS LAYOUT IS INTENDED TO PROVIDE A GENERIC LAYOUT TO ILLUSTRATE THE STANDARD COMPONENTS AND LAYOUT OF A WTP. ACTUAL SITE LAYOUTS SHALL BE SITE SPECIFIC AND CUSTOMIZED FOR THE PARTICULAR WTP REQUIREMENTS.
5. LANDSCAPING NOT SHOWN ON THIS FIGURE, REFER TO SECTION 16 FOR LANDSCAPING REQUIREMENTS.
6. PROVIDE ADEQUATE SPACE FOR FUTURE GROUND STORAGE TANKS, AS NECESSARY.
7. SEE EXHIBIT II-1 FOR PROCESS FLOW DIAGRAM AND VALVE POSITION FOR PARALLEL AND IN-SERIES OPERATION OF GROUND STORAGE TANKS.

PAVING LEGEND

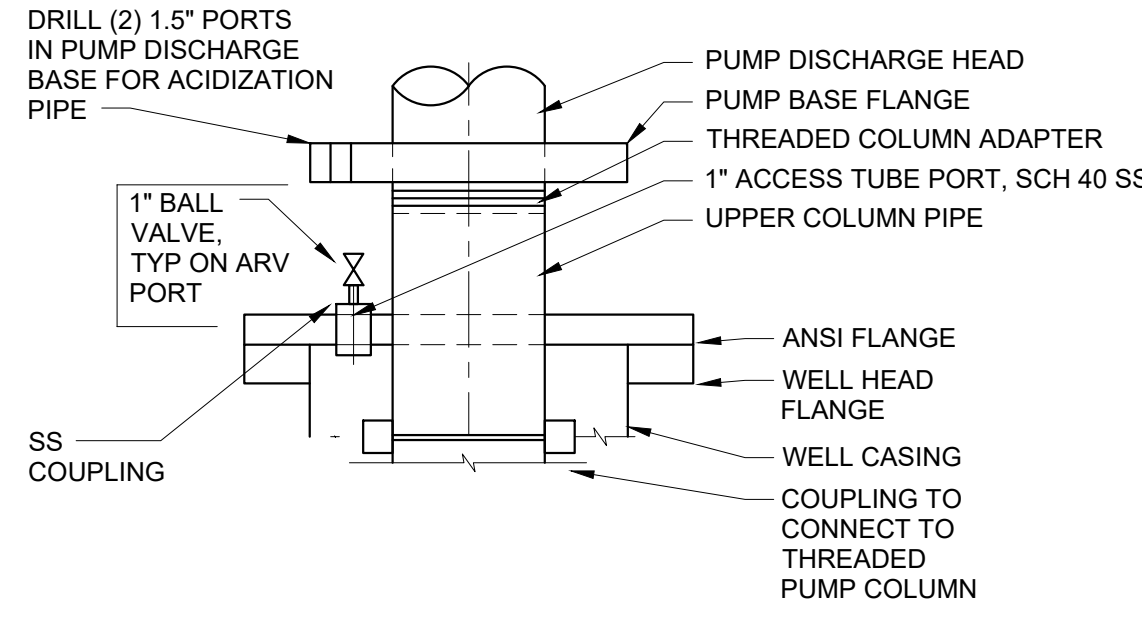
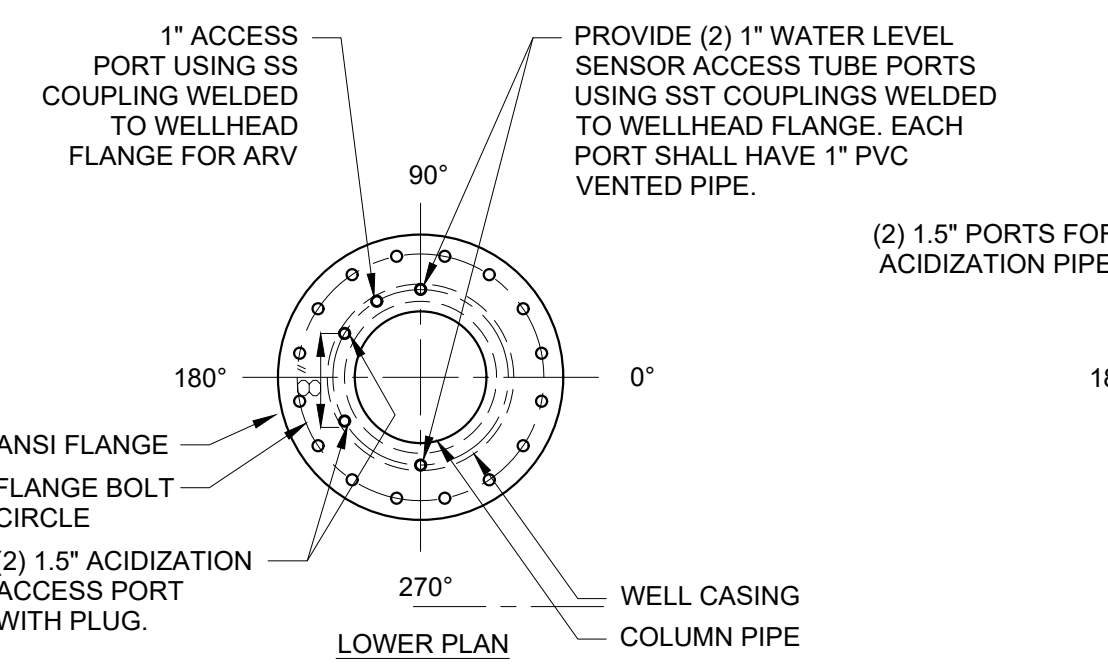
-  REINFORCED CONCRETE PAVEMENT
-  ASPHALT PAVEMENT
-  SIDEWALK
-  CRUSHED CONCRETE



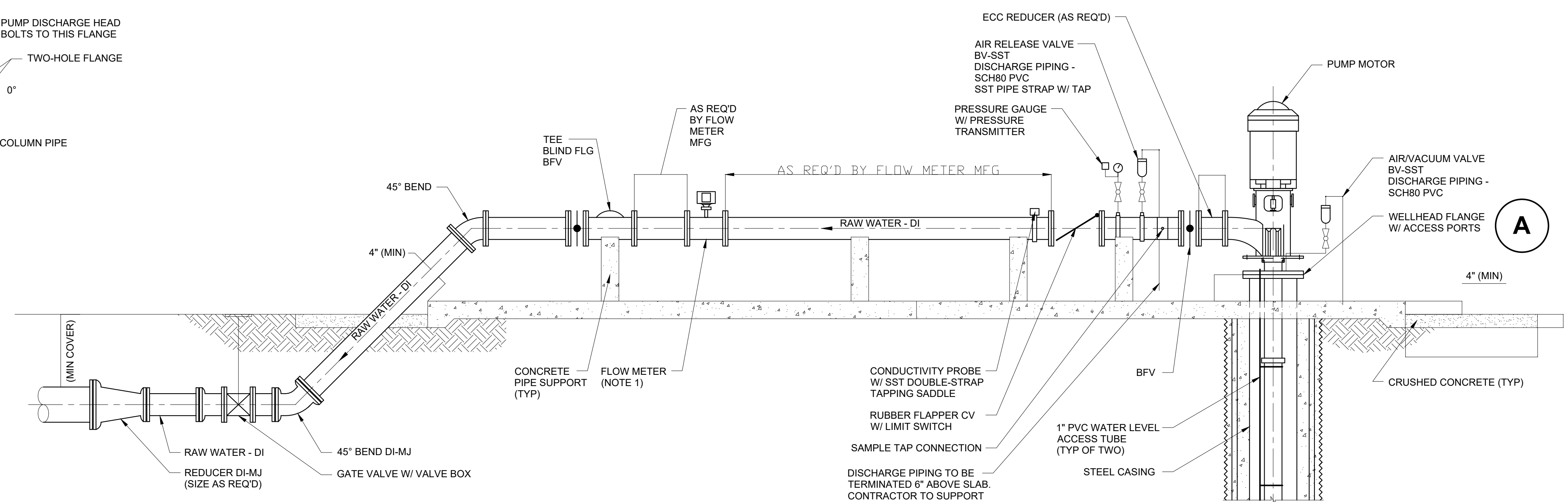
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**WTP STANDARDS
TYPICAL WTP SITE LAYOUT
AND MAJOR YARD PIPING**

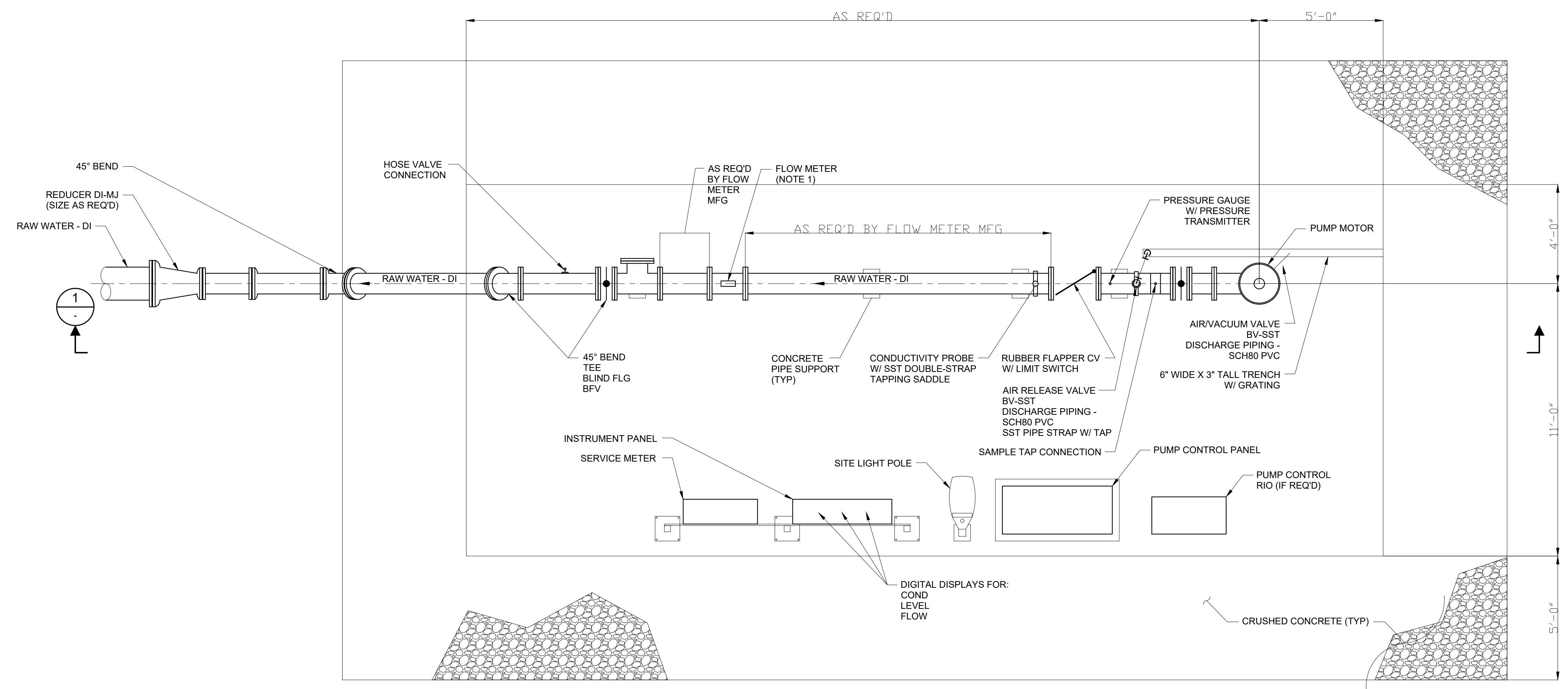




A DETAIL
SCALE: 3/4" = 1'-0"



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



NOTES:

1. COORDINATE TYPE OF FLOW METER WITH JEA.
2. ALL ABOVE GRADE PIPING SHALL BE FLANGED DUCTILE IRON.
3. ALL BELOW GRADE PIPING WITHIN THE WELL SITE SHALL BE RESTRAINED MECHANICAL JOINT AND DUCTILE IRON.

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

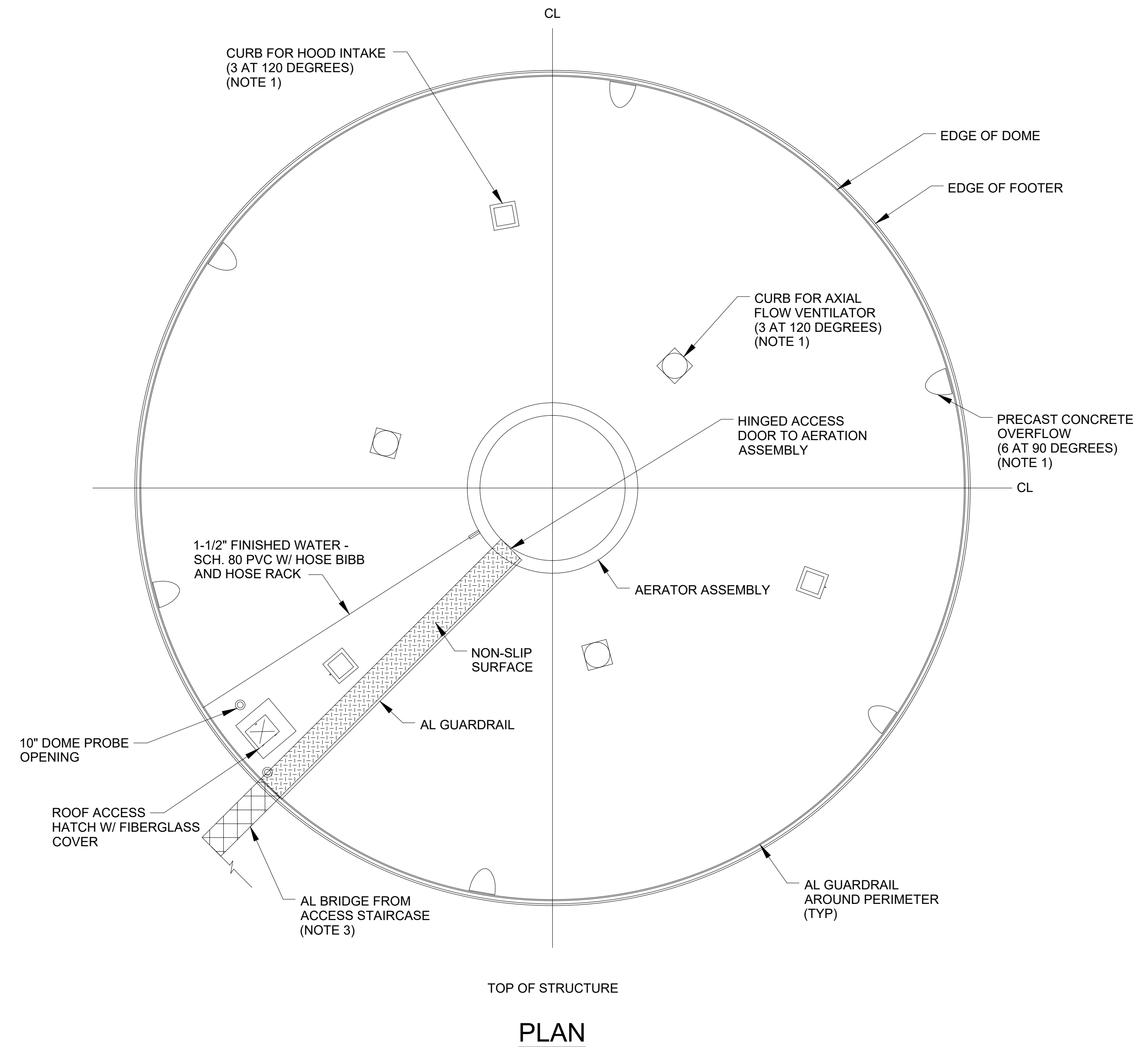
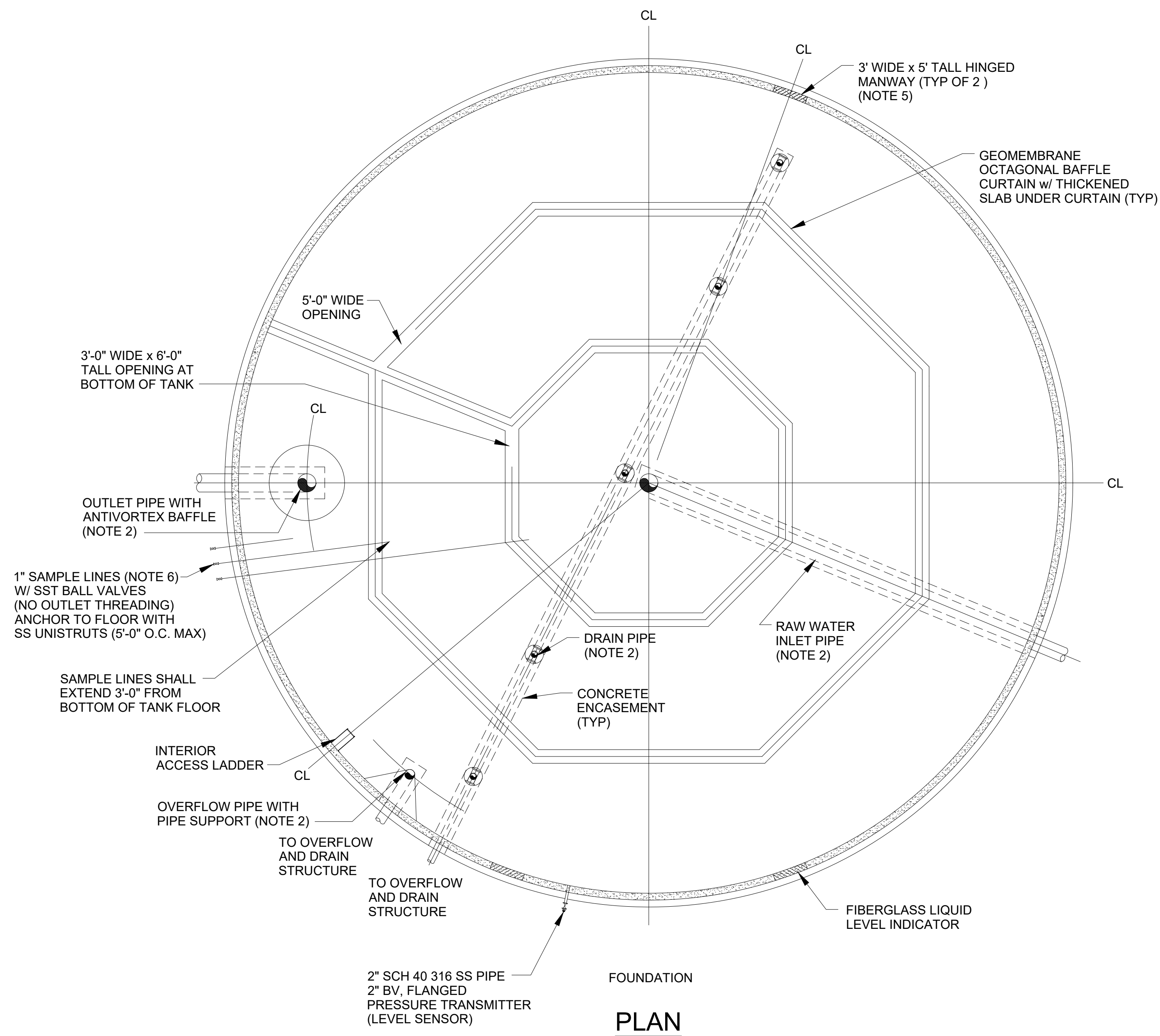
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WTP STANDARDS
TYPICAL SUPPLY WELL PLAN,
SECTION, AND DETAILS

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DRAWING NO. EXHIBIT 101	

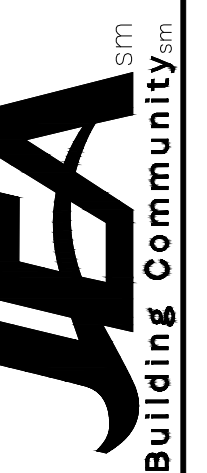


NOTES:

1. TYPICALLY PROVIDE DOUBLE THE NUMBER OF OVERFLOWS AS AXIAL FLOW VENTILATORS SHOULD NOT BE LOCATED ALONG THE SAME RADIAL LOCATION AS THE OVERFLOWS OR VENTS TO AVOID SHORT -CIRCUITING. QUANTITY AND LOCATION OF PRECAST OVERFLOWS, CURBS FOR AXIAL VENTILATORS AND CURBS FOR INTAKE HOODS MAY VARY WITH TANK SIZE. COORDINATE WITH TANK MANUFACTURER.
2. LOCATION AND SIZE OF PIPING WILL VARY BASED ON SITE, TANK SIZE AND WTP FLOWS.
3. ACCESS STAIRCASE TO BE LOCATED AS CLOSE TO THE GROUND STORAGE TANK AS ALLOWED BY THE TANK MANUFACTURER AND COORDINATED WITH THE LOCATION OF THE SECOND OR FUTURE GROUND STORAGE TANK. MAXIMUM DISTANCE BETWEEN TANKS SHALL BE 25 FEET. COORDINATE CONNECTION OF THE BRIDGE WITH THE GROUND STORAGE TANK MANUFACTURER.
4. PIPING SHALL BE CONFIGURED TO ALLOW PARALLEL AND IN-SERIES OPERATION OF GROUND STORAGE TANKS.
5. LOCATE MANWAYS ADJACENT TO DRAIN LINES FOR EASE OF ACCESS DURING TANK CLEANING.

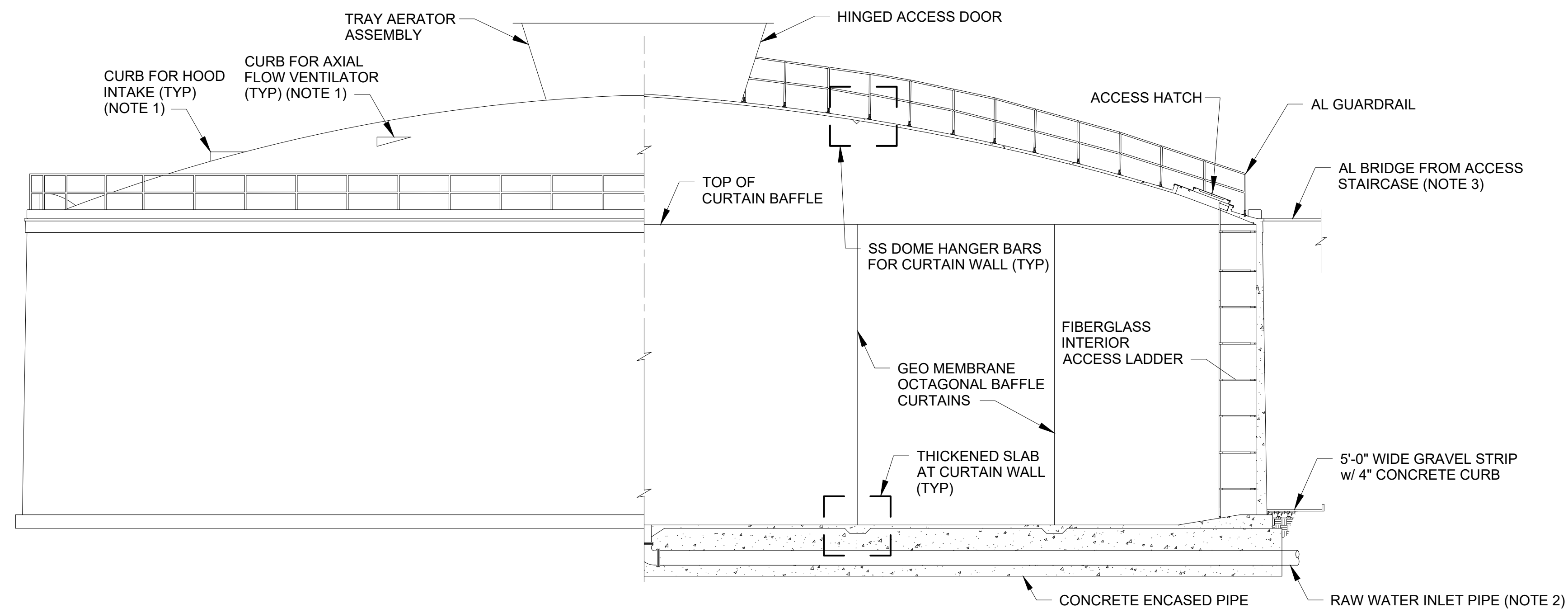
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**WTP STANDARDS
GROUND STORAGE TANK
GENERAL LAYOUT**

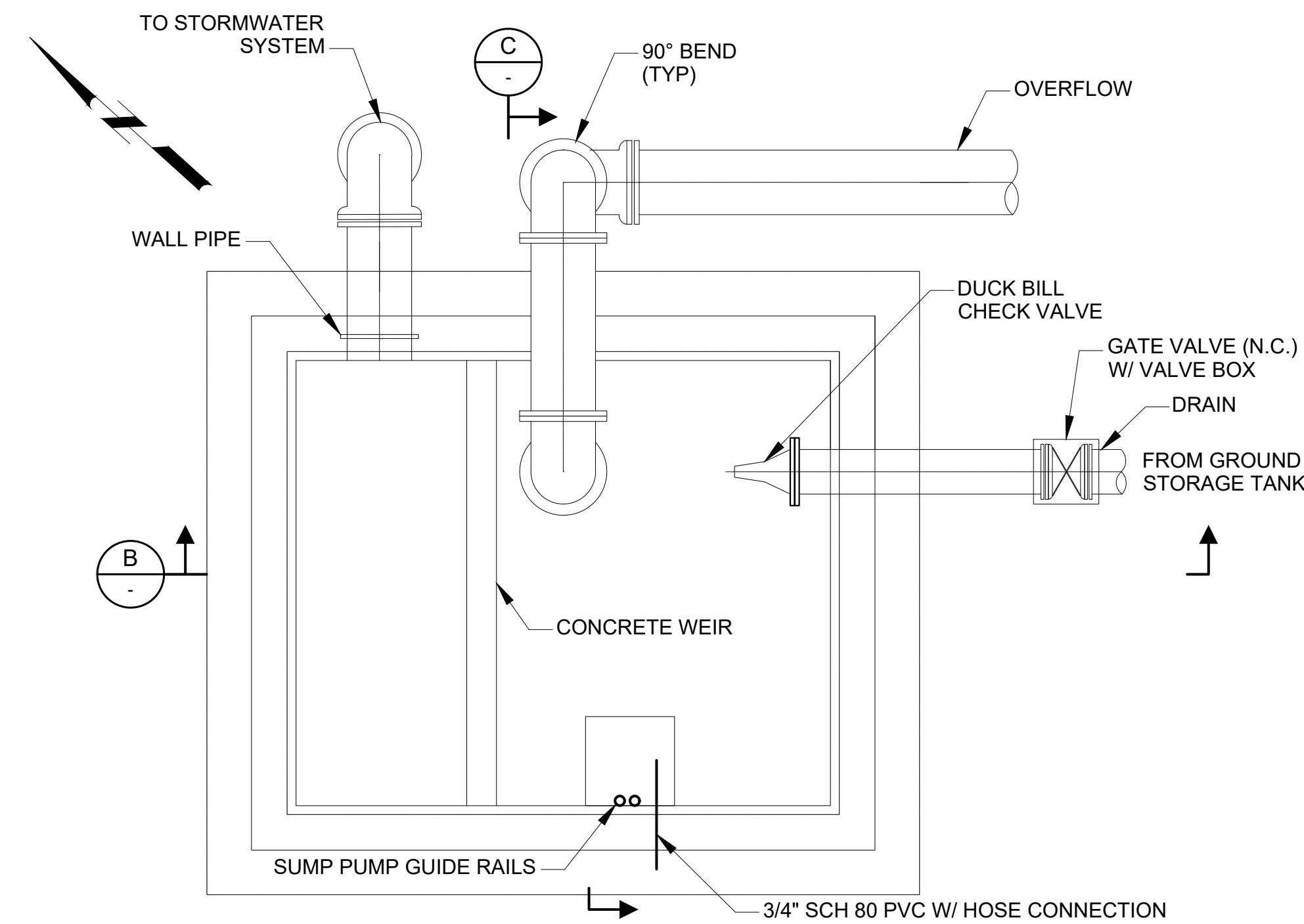
NO. SHEETS	PROJ. NO.
SHEET NO.	DATE: OCTOBER 2020
DRAWING NO. EXHIBIT IV.1	SCALE: NTS



NOTES:

1. QUANTITY AND LOCATION OF PRECAST OVERFLOWS, CURBS FOR AXIAL VENTILATORS AND CURBS FOR INTAKE HOODS MAY VARY WITH TANK SIZE. COORDINATE WITH TANK MANUFACTURER.
2. LOCATION AND SIZE OF PIPING WILL VARY BASED ON SITE, TANK SIZE AND WTP FLOWS.
3. ACCESS STAIRCASE TO BE LOCATED AS CLOSE TO THE GROUND STORAGE TANK AS ALLOWED BY THE TANK MANUFACTURER AND COORDINATED WITH THE LOCATION OF THE SECOND OR FUTURE GROUND STORAGE TANK. MAXIMUM DISTANCE BETWEEN TANKS SHALL BE 25 FEET. COORDINATE CONNECTION OF THE BRIDGE WITH THE GROUND STORAGE TANK MANUFACTURER.
4. PIPING SHALL BE CONFIGURED TO ALLOW PARALLEL AND IN-SERIES OPERATION OF GROUND STORAGE TANKS.
5. LOCATE MANWAYS ADJACENT TO DRAIN LINES FOR EASE OF ACCESS DURING TANK CLEANING.

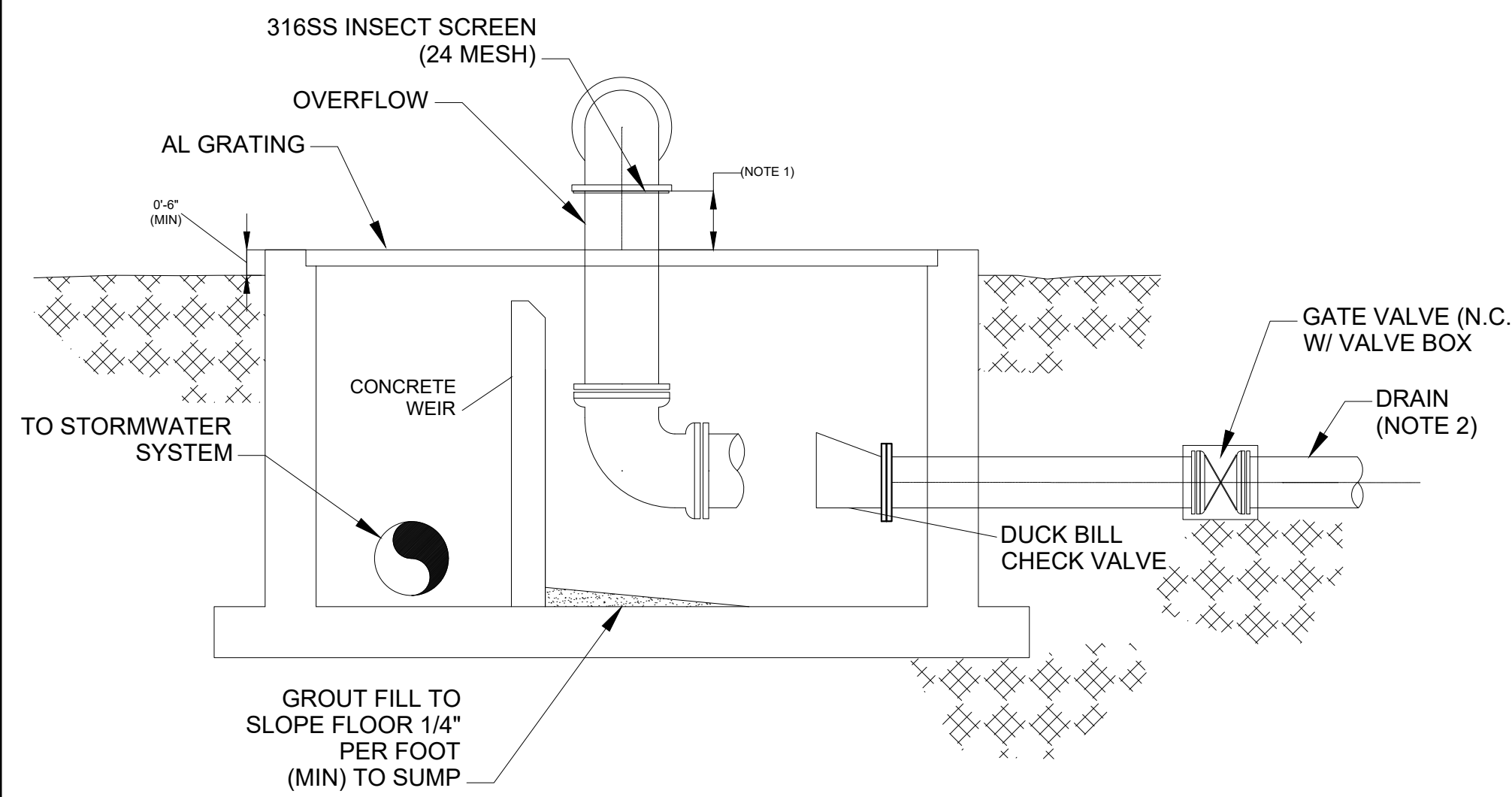
SECTION 1



NOTES:

1. EXACT DIMENSIONS AND PIPE SIZING TO BE DETERMINED BY THE DESIGN ENGINEER.

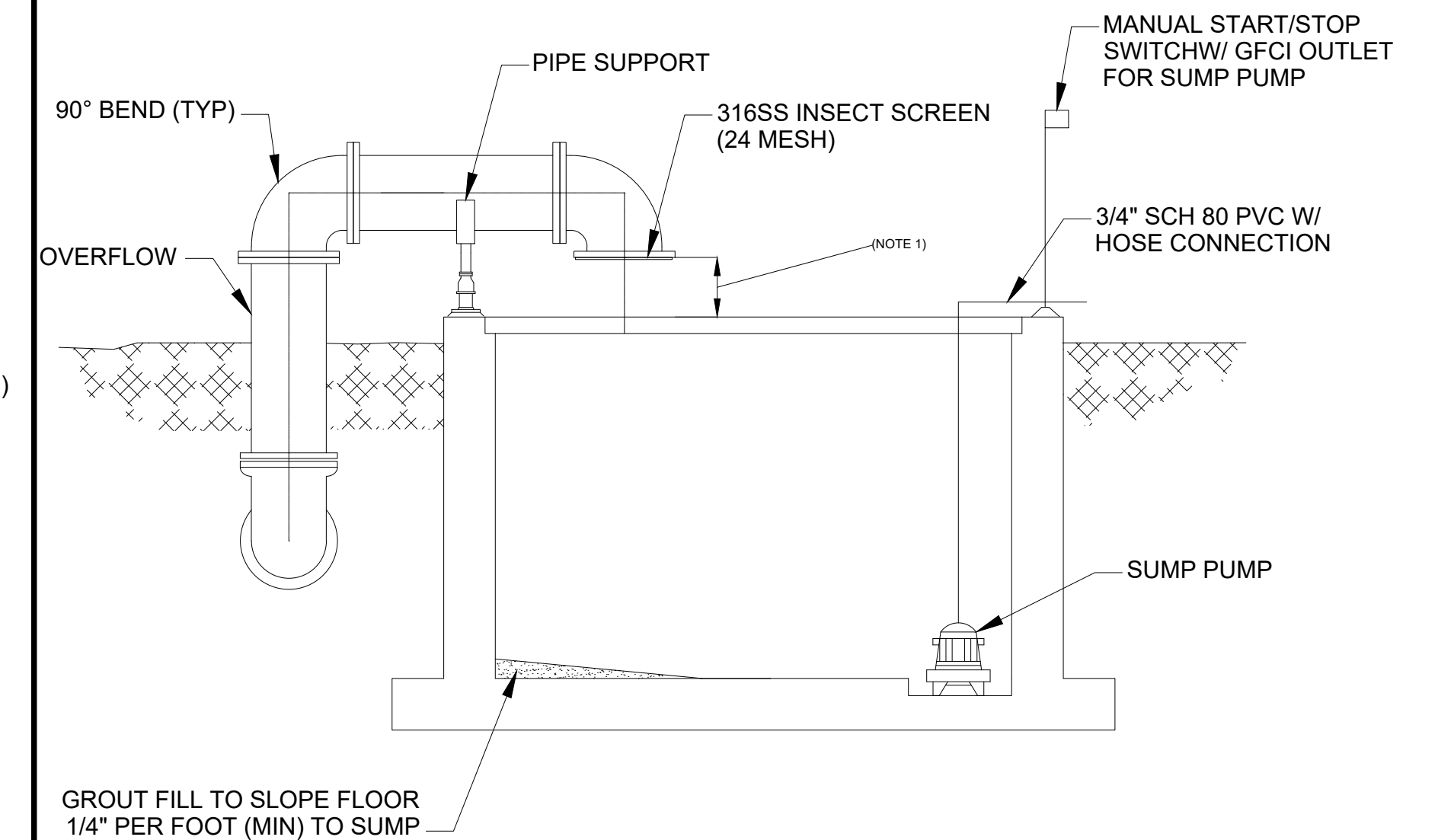
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NOTES:

1. AIR GAP SHALL BE A MINIMUM DISTANCE OF 2 DIAMETER LENGTHS AND MEET ALL FDEP AND F.A.C. REQUIREMENTS.
2. DRAIN OUTLET SHALL BE CAPABLE OF FULLY DRAINING THE GROUND STORAGE TANK. ADJUST ELEVATION AS APPROPRIATE BASED ON SITE CONDITIONS.

B SECTION
SCALE: NO SCALE
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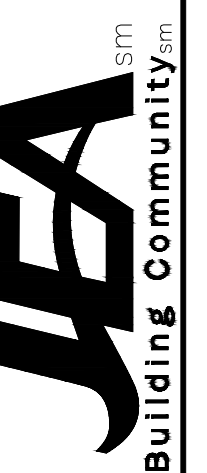
NOTES:

1. AIR GAP SHALL BE A MINIMUM DISTANCE OF 2 DIAMETER LENGTHS AND MEET ALL FDEP AND F.A.C. REQUIREMENTS.

C SECTION
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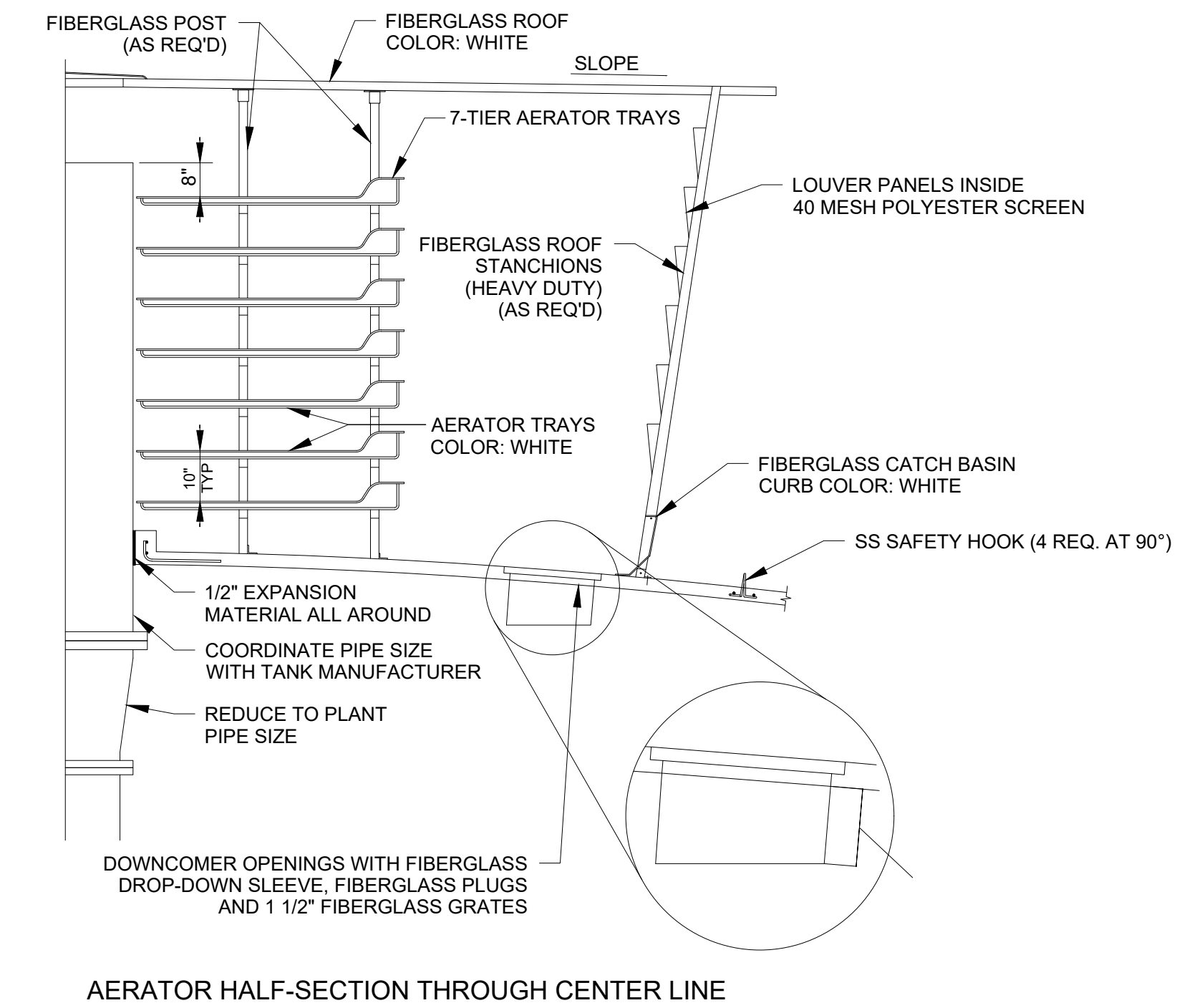
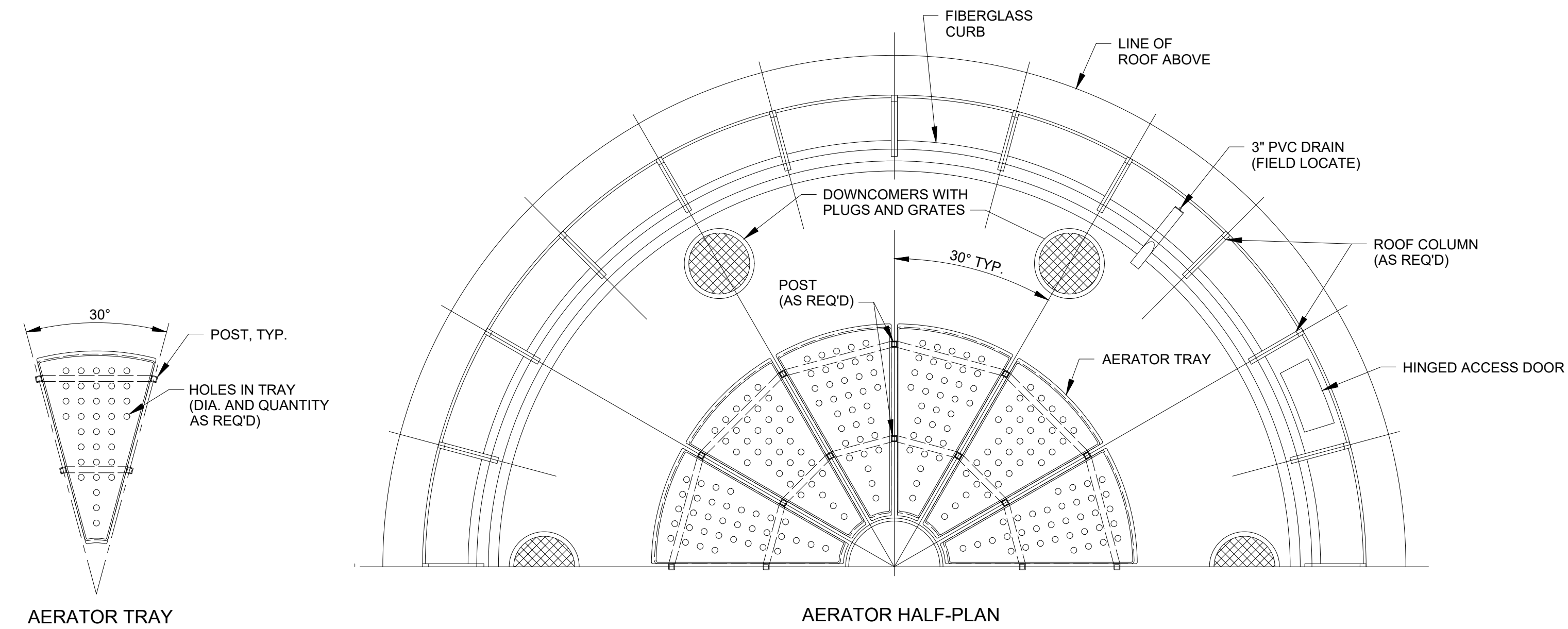
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**WTP STANDARDS
GROUND STORAGE TANK GENERAL SECTION
AND OVERFLOW AND DRAIN TANK DETAILS**

PROJ. NO.	DATE: OCTOBER 2020
SHEET NO.	SCALE: NTS
DRAWING NO. EXHIBIT IV2	



NOTES:

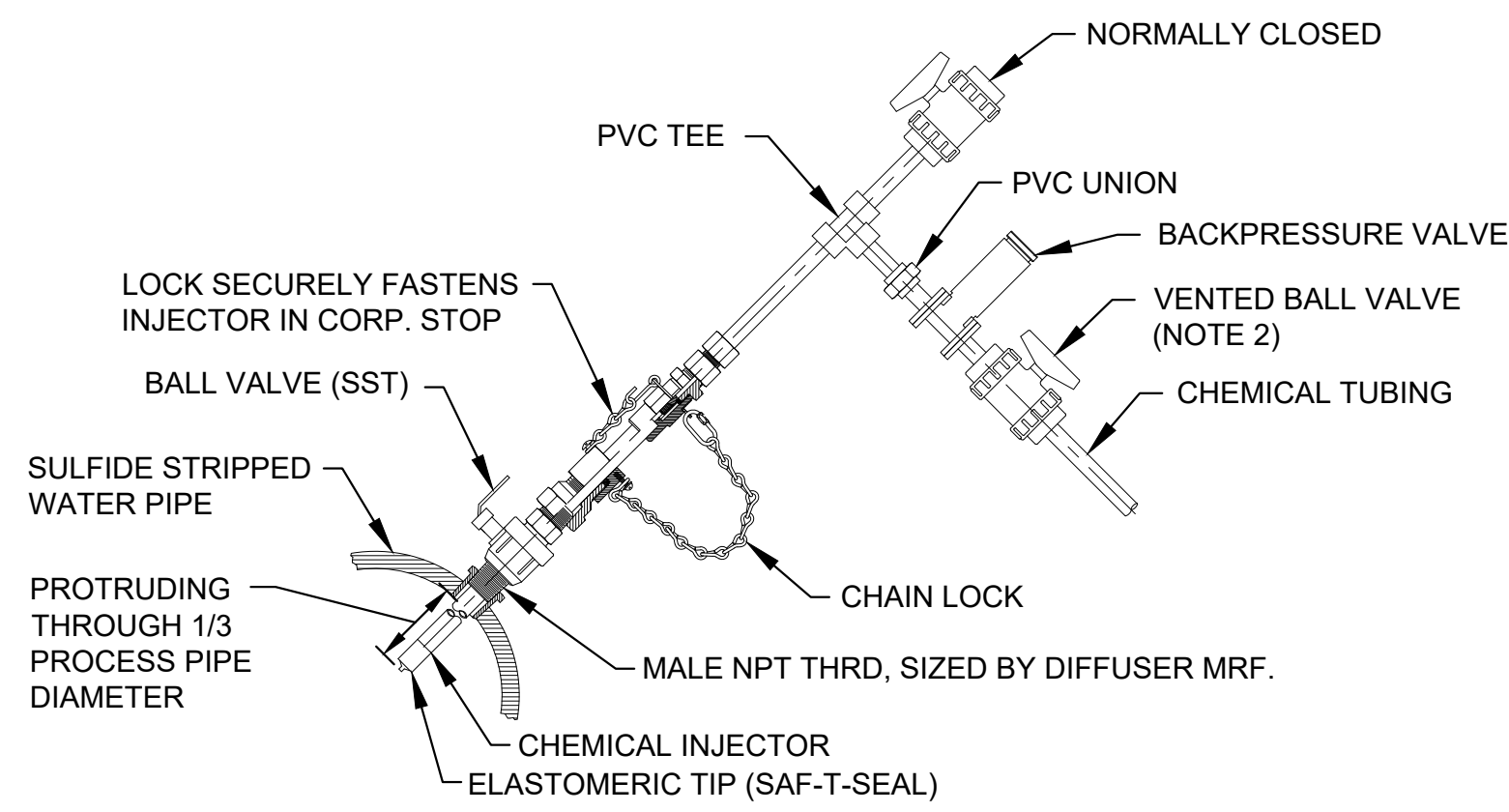
1. ALL FIBERGLASS SHALL BE CONSTRUCTED WITH STAINLESS STEEL HARDWARE.
2. EXACT ARRANGEMENT AND DIMENSIONS OF THE AERATOR ASSEMBLY TO BE SITE AND PROJECT SPECIFIC.

PERFORATED TRAY AERATOR WITH LOUVERED PANELS

NO. SHEETS	PROJ. NO.	DATE: OCTOBER 2020	SCALE: NTS	DESIGN ENGINEER	NO.	BY	DATE	REVISIONS
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DRAWING NO. EXHIBIT IV3				FLORIDA REGISTRATION NO.	3			
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WTP STANDARDS
GROUND STORAGE TANK GENERAL TRAY
AERATOR DETAILS

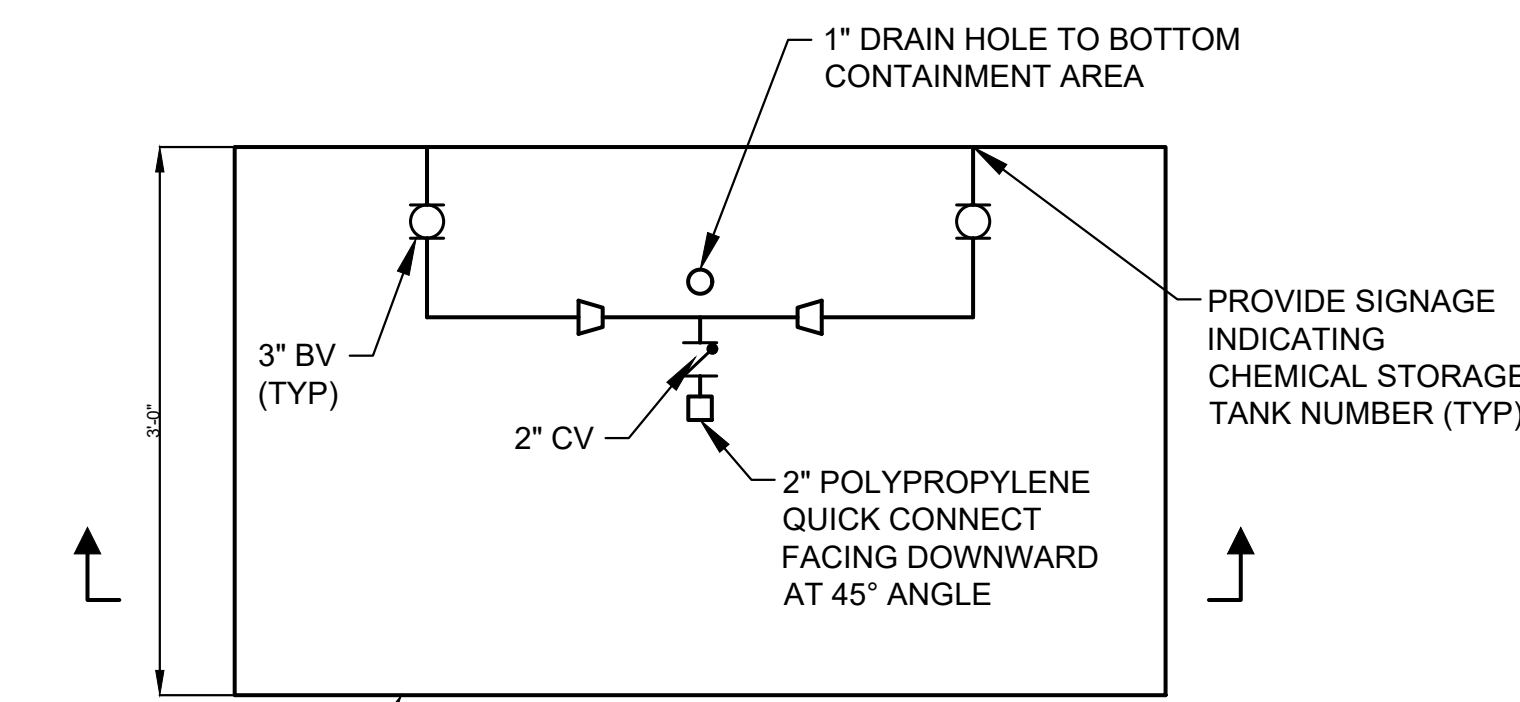


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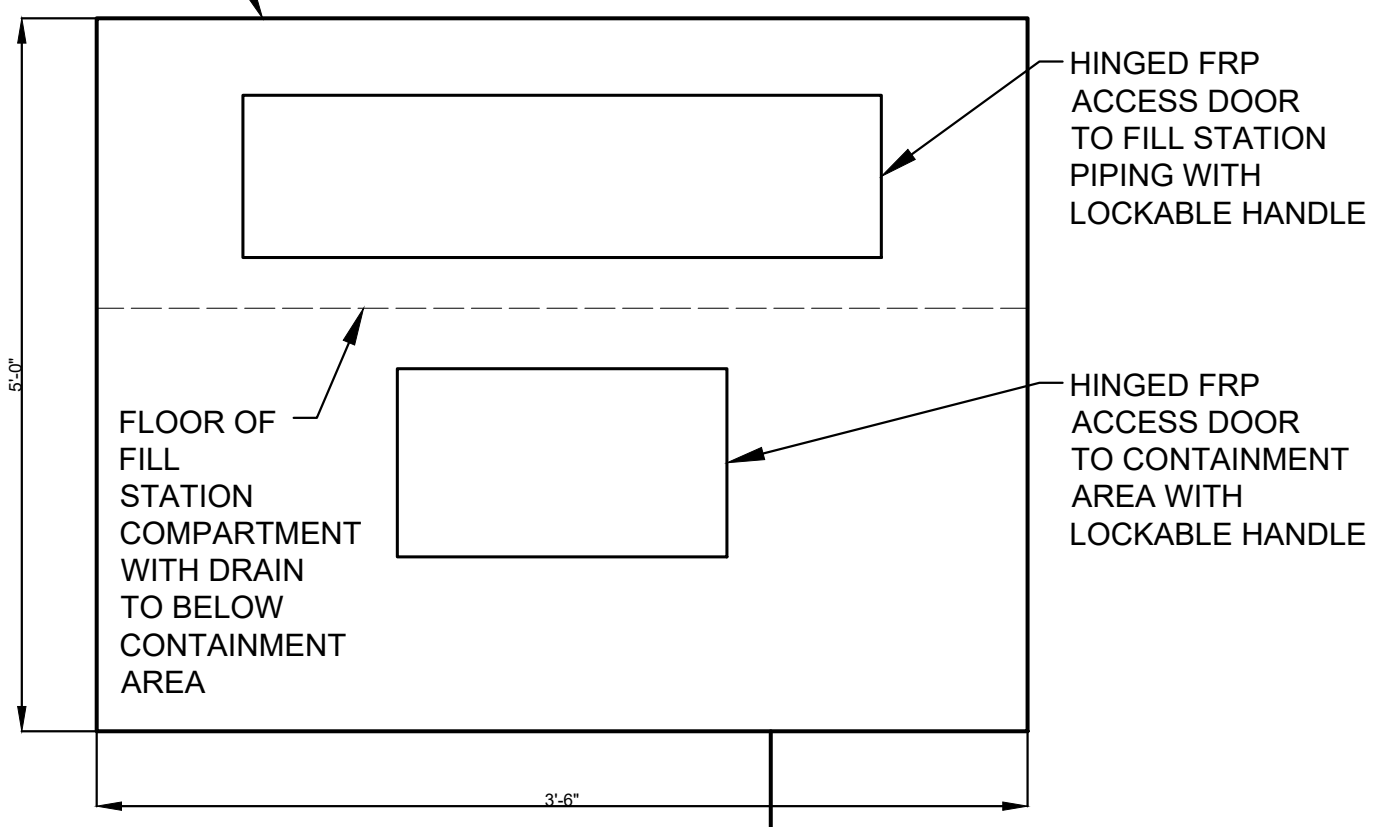
1. INJECTOR SHALL BE RETRACTABLE INJECTION QUILL WITH BALL VALVE. REFER TO JEA APPROVED MANUFACTURERS.
2. MATERIAL OF DIFFUSER, CONNECTIONS AND PIPING TO BE COMPATIBLE WITH CHEMICAL AND APPLICATION.
3. EACH CHEMICAL INJECTION SITE SHALL RECEIVE TWO INJECTORS TO PROVIDE REDUNDANCY. PIPING AND VALVES SHALL ALLOW ISOLATION OF EACH INJECTOR WHILE THE OTHER REMAINS IN SERVICE.
4. INJECTOR PENETRATION LOCATIONS SHALL BE STAGGERED AND SPACED SUFFICIENTLY TO ENSURE PIPE INTEGRITY IS NOT COMPROMISED AND SUFFICIENT ACCESSIBILITY IS PROVIDED.

CHEMICAL INJECTOR
NTS

1



FRP CONTAINMENT ENCLOSURE
PLAN

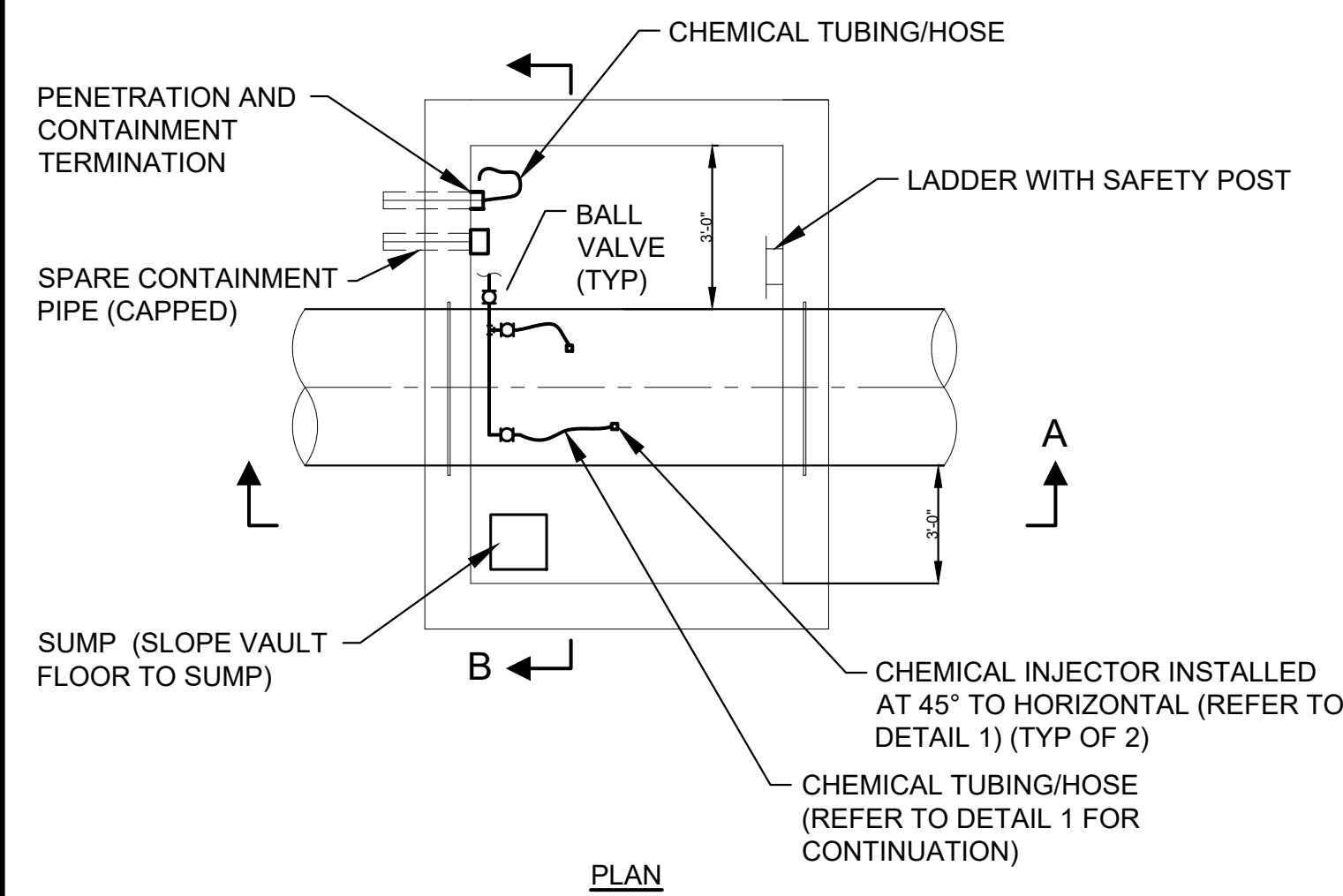


NOTES:

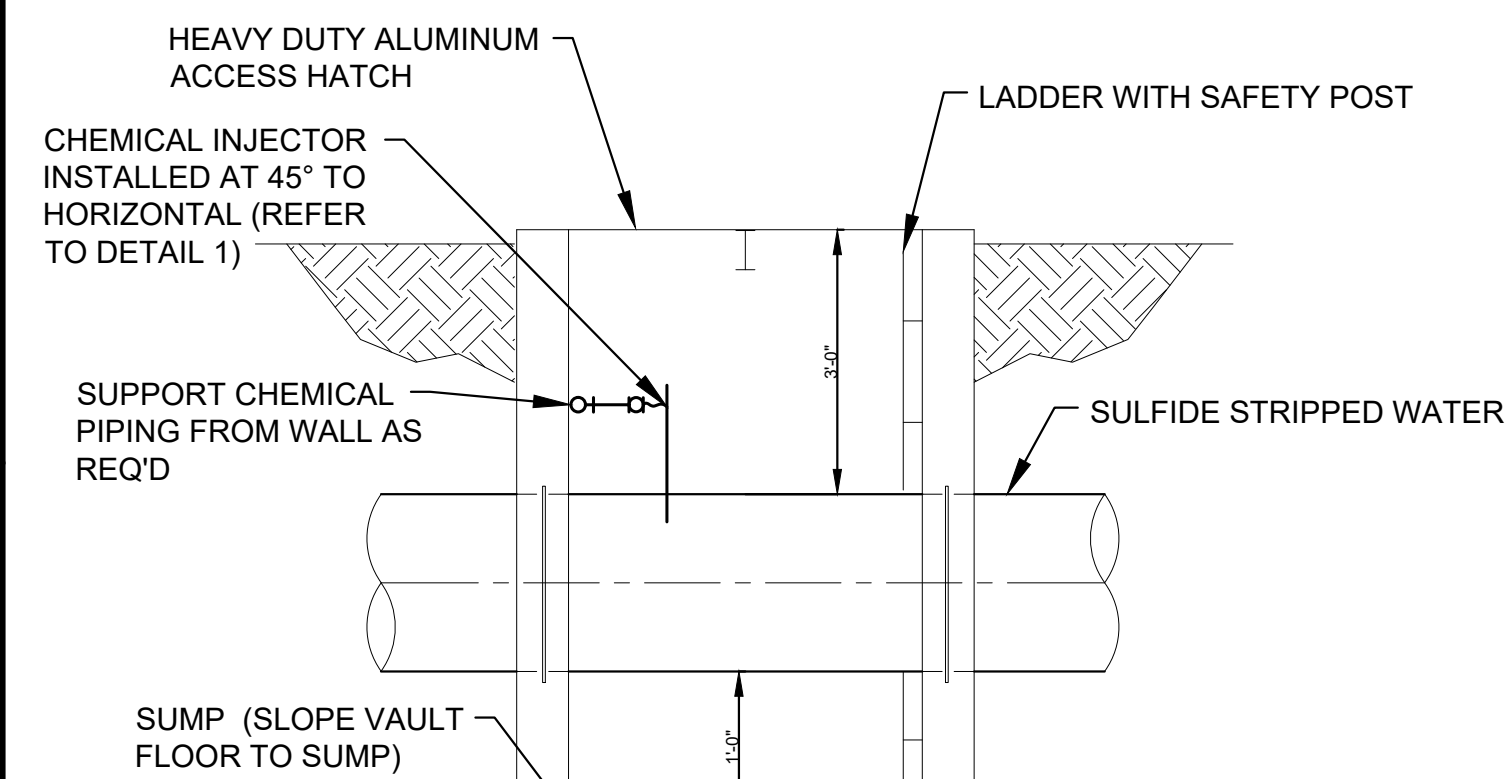
1. COORDINATE WITH JEA AND CHEMICAL DELIVERY SUPPLIER TO CONFIRM PIPE AND QUICK CONNECT SIZING.
2. SEE EXHIBIT VI-1A FOR EXAMPLE CHEMICAL FILL STATION.

CHEMICAL FILL STATION
NTS

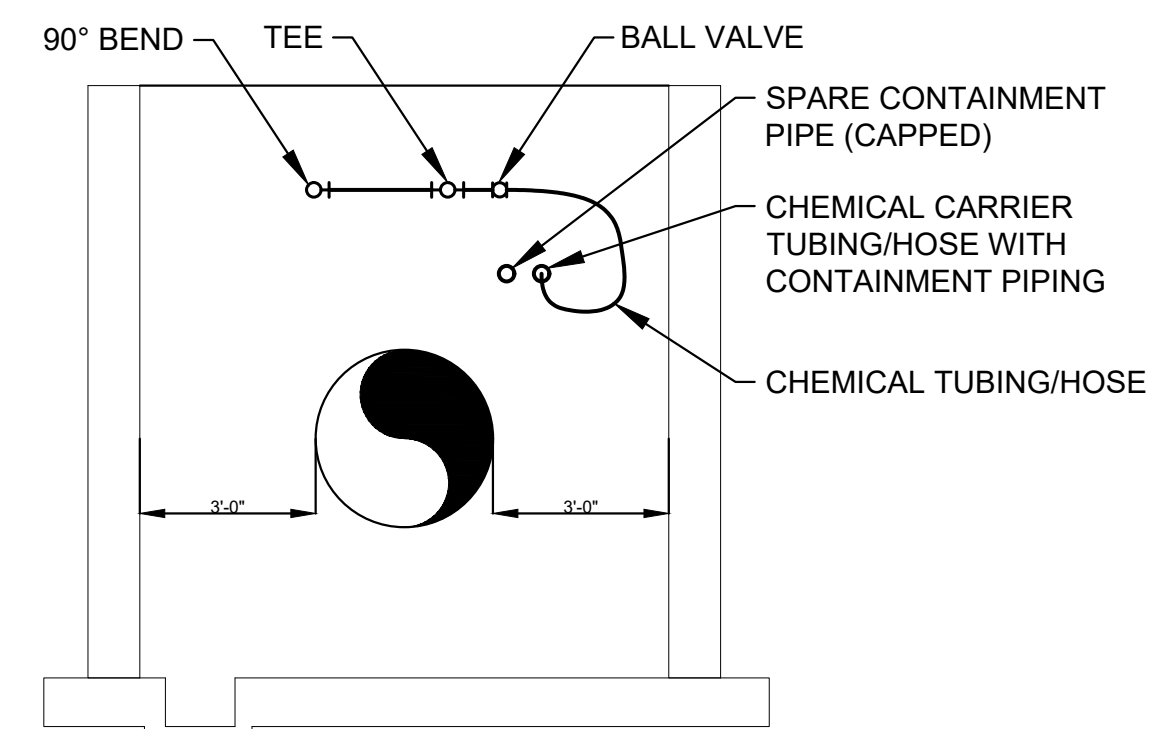
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PLAN



SECTION A



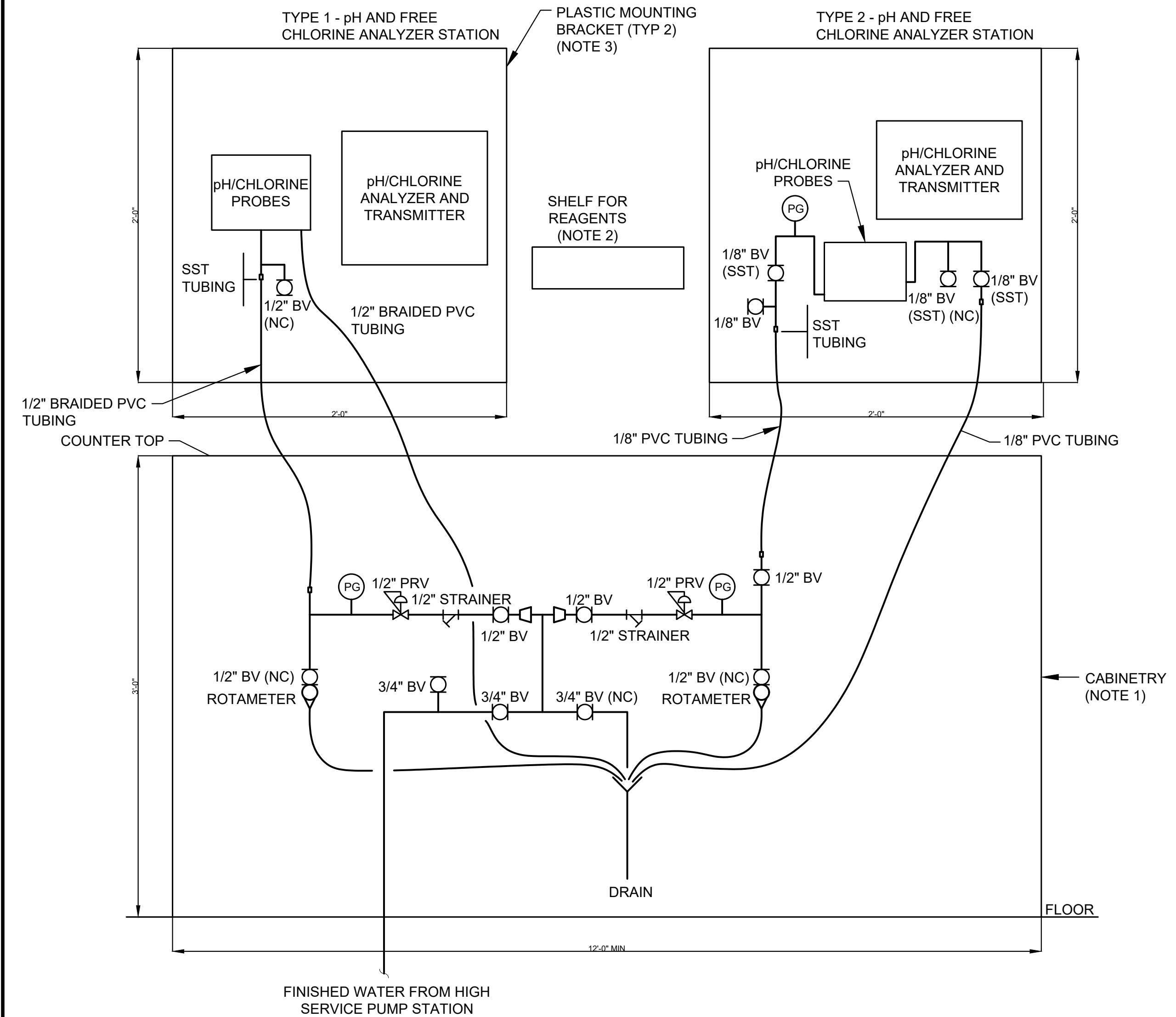
SECTION B

NOTES:

1. ALL BALL VALVES TO BE VENTED TYPE.
2. MATERIALS OF PIPING, TUBING, VALVES AND FITTINGS TO BE COMPATIBLE WITH CHEMICAL AND APPLICATION.
3. VAULT DIMENSIONS SHALL ALLOW FOR EASE OF REMOVAL OF THE CHEMICAL INJECTORS.

CHEMICAL INJECTION VAULT DETAIL
NTS

3



NOTES:

1. CABINETRY SHALL INCLUDE A SLIDING DOOR TO PROVIDE FULL ACCESS TO SAMPLE PIPING. ADEQUATE LIGHTING SHALL BE PROVIDED WITHIN THE CABINETRY.
2. TYPICAL SHELF SHALL BE WALL MOUNTED AND 18" WIDE X 3" TALL X 4" DEPTH.
3. COORDINATE SIZE OF PLASTIC MOUNTING BRACKET WITH PROBE AND ANALYZER SIZES.
4. SEE EXHIBIT VII-1A FOR EXAMPLE pH AND FREE CHLORINE SAMPLE AND ANALYZER STATION.

pH AND FREE CHLORINE SAMPLE AND ANALYZER STATION
NTS

4

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WTP STANDARDS
SODIUM HYPOCHLORITE INJECTION AND
SAMPLE STATION DETAILS

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SCALE: NTS

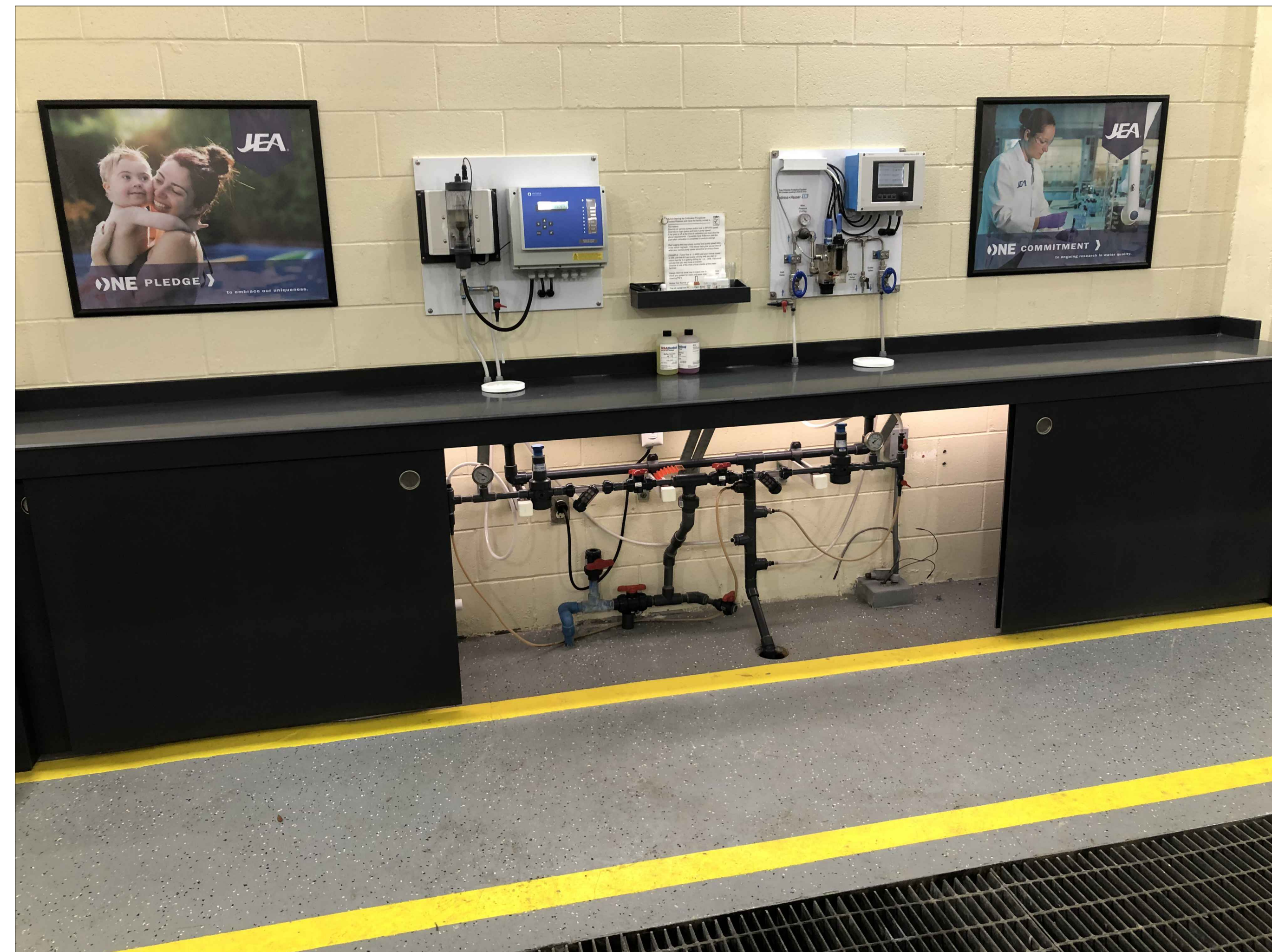


CHEMICAL FILL STATION PIPING



CHEMICAL FILL STATION
NTS

1

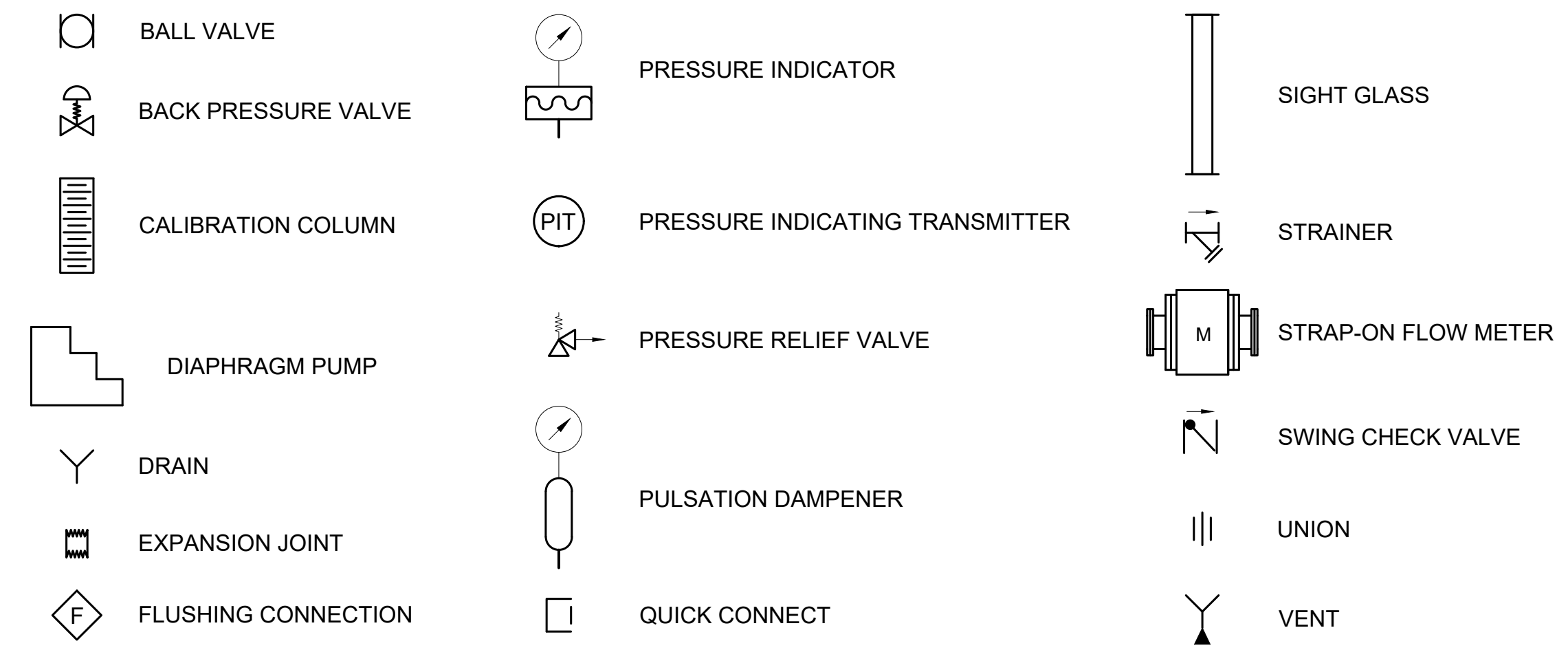


pH AND FREE CHLORINE SAMPLE AND ANALYZER STATION
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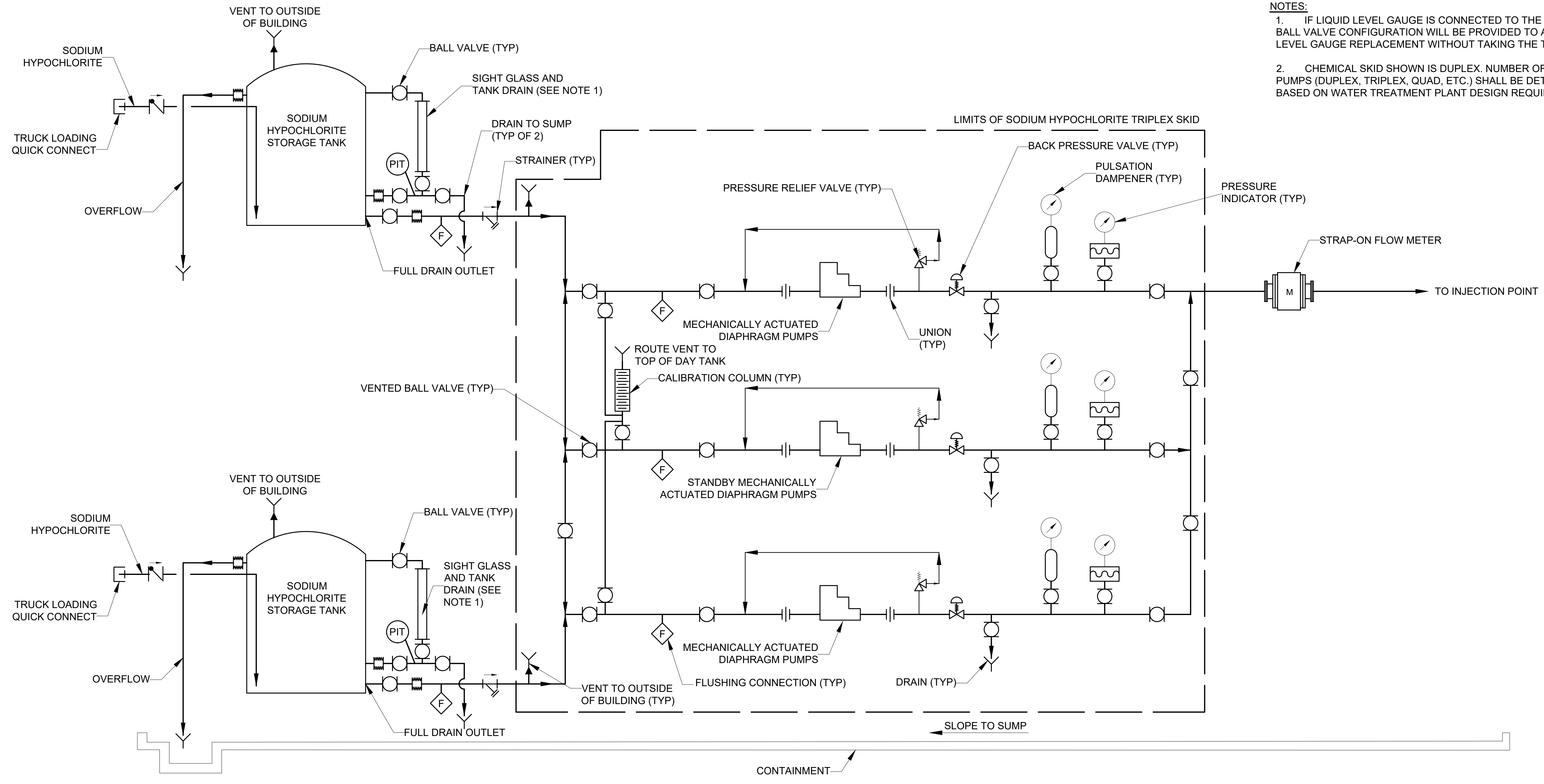
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JEA Building Community SM							
WTP STANDARDS SODIUM HYPOCHLORITE INJECTION AND SAMPLE STATION DETAILS							

LEGEND



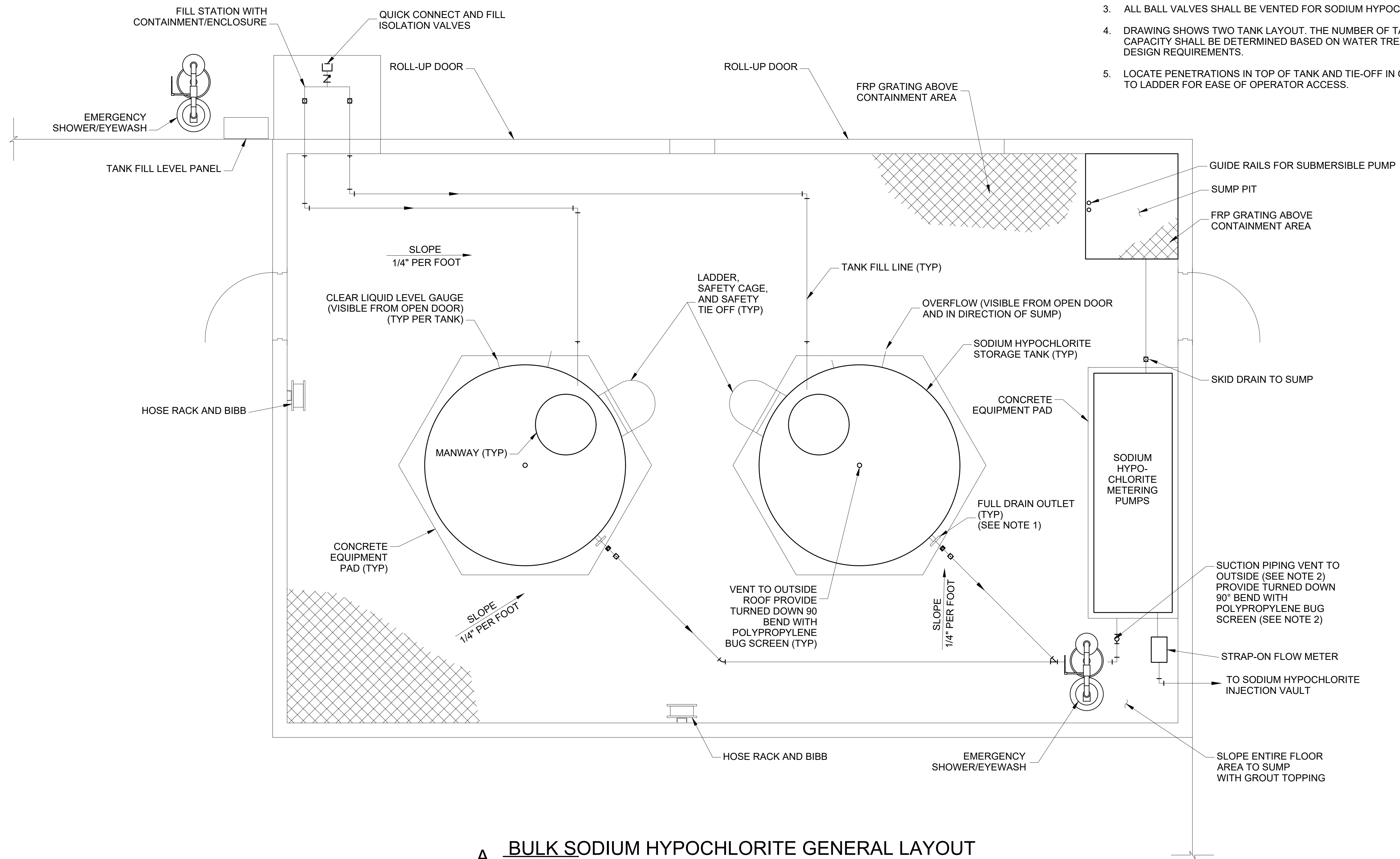
- NOTES:**
- IF LIQUID LEVEL GAUGE IS CONNECTED TO THE TANK OUTLET, BALL VALVE CONFIGURATION WILL BE PROVIDED TO ALLOW LIQUID LEVEL GAUGE REPLACEMENT WITHOUT TAKING THE TANK OFFLINE.
 - CHEMICAL SKID SHOWN IS DUPLEX. NUMBER OF CHEMICAL PUMPS (DUPLEX, TRIPLEX, QUAD, ETC.) SHALL BE DETERMINED BASED ON WATER TREATMENT PLANT DESIGN REQUIREMENTS.



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	EXHIBIT V-3							2
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	SCALE: NTS							



**WTP STANDARDS
SODIUM HYPOCHLORITE SYSTEM
SCHEMATIC**



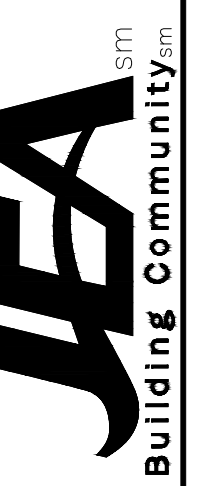
- NOTES:**
1. TANK EQUIPMENT PAD WILL BE CONSTRUCTED TO ACCOMMODATE FULL DRAIN OUTLET.
 2. SKID VENT ELEVATIONS, INCLUDING CALIBRATION COLUMN VENTS, WILL BE HIGHER THAN THE TOP OF THE TANK DOME TO ENSURE NO CHEMICAL OVERFLOWS OCCUR THROUGH THE VENTS.
 3. ALL BALL VALVES SHALL BE VENTED FOR SODIUM HYPOCHLORITE SERVICE.
 4. DRAWING SHOWS TWO TANK LAYOUT. THE NUMBER OF TANKS AND TANK CAPACITY SHALL BE DETERMINED BASED ON WATER TREATMENT PLANT DESIGN REQUIREMENTS.
 5. LOCATE PENETRATIONS IN TOP OF TANK AND TIE-OFF IN CLOSE PROXIMITY TO LADDER FOR EASE OF OPERATOR ACCESS.

A BULK SODIUM HYPOCHLORITE GENERAL LAYOUT
SCALE: NTS

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DESIGNER:
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DATE:
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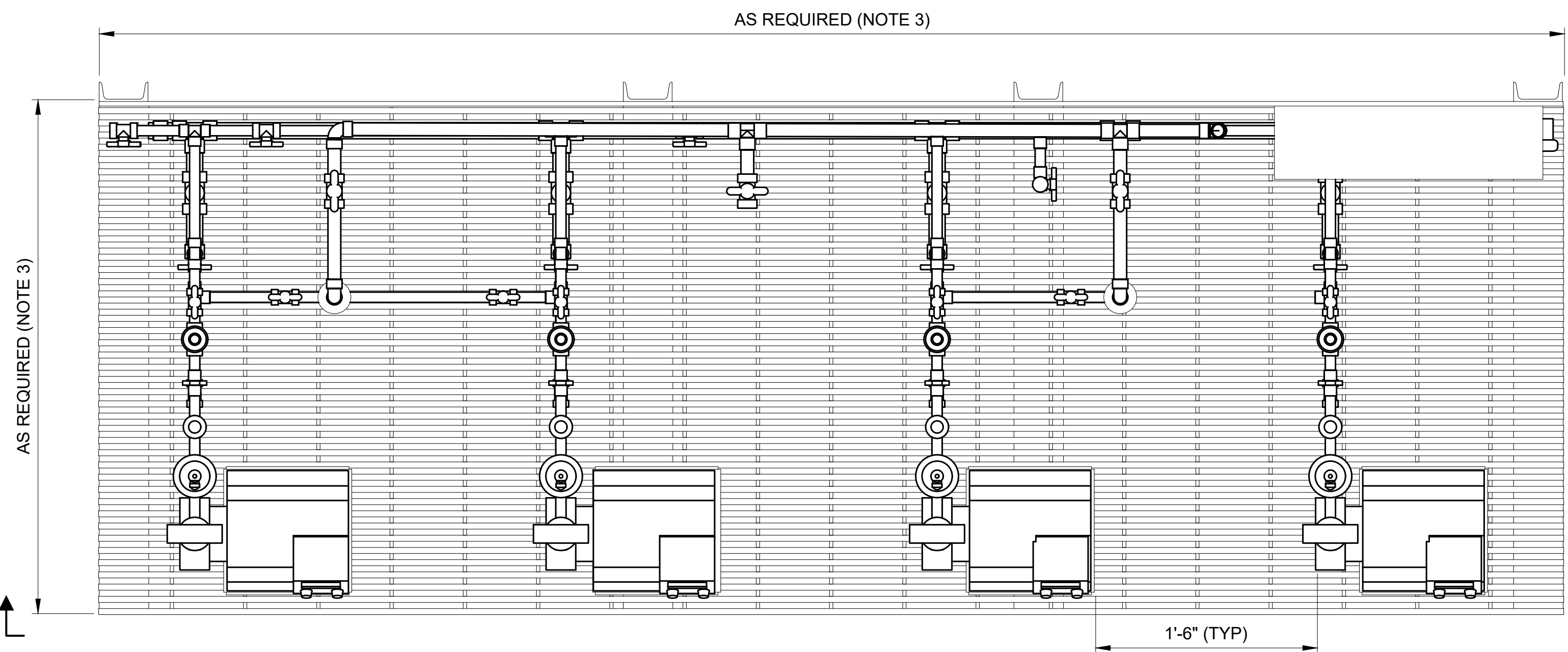
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FLORIDA REGISTRATION NO.



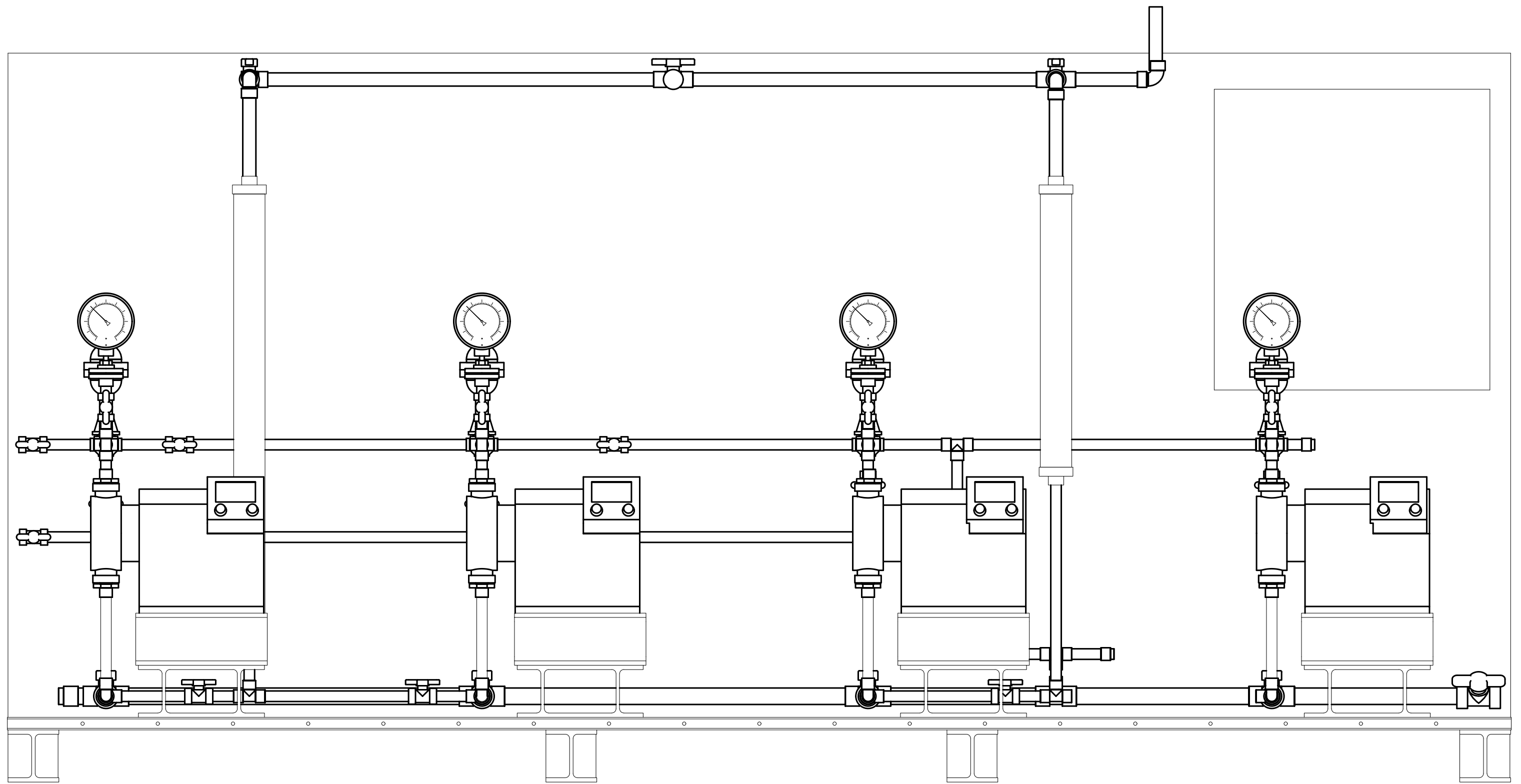
WTP STANDARDS
GENERAL LAYOUT OF SODIUM HYPOCHLORITE
STORAGE AND METERING FACILITY

NO. SHEETS
SHEET NO.
DRAWING NO.
EXHIBIT V1-4

PROJ. NO. 10557K00
DATE: OCTOBER 2020
SCALE: NTS



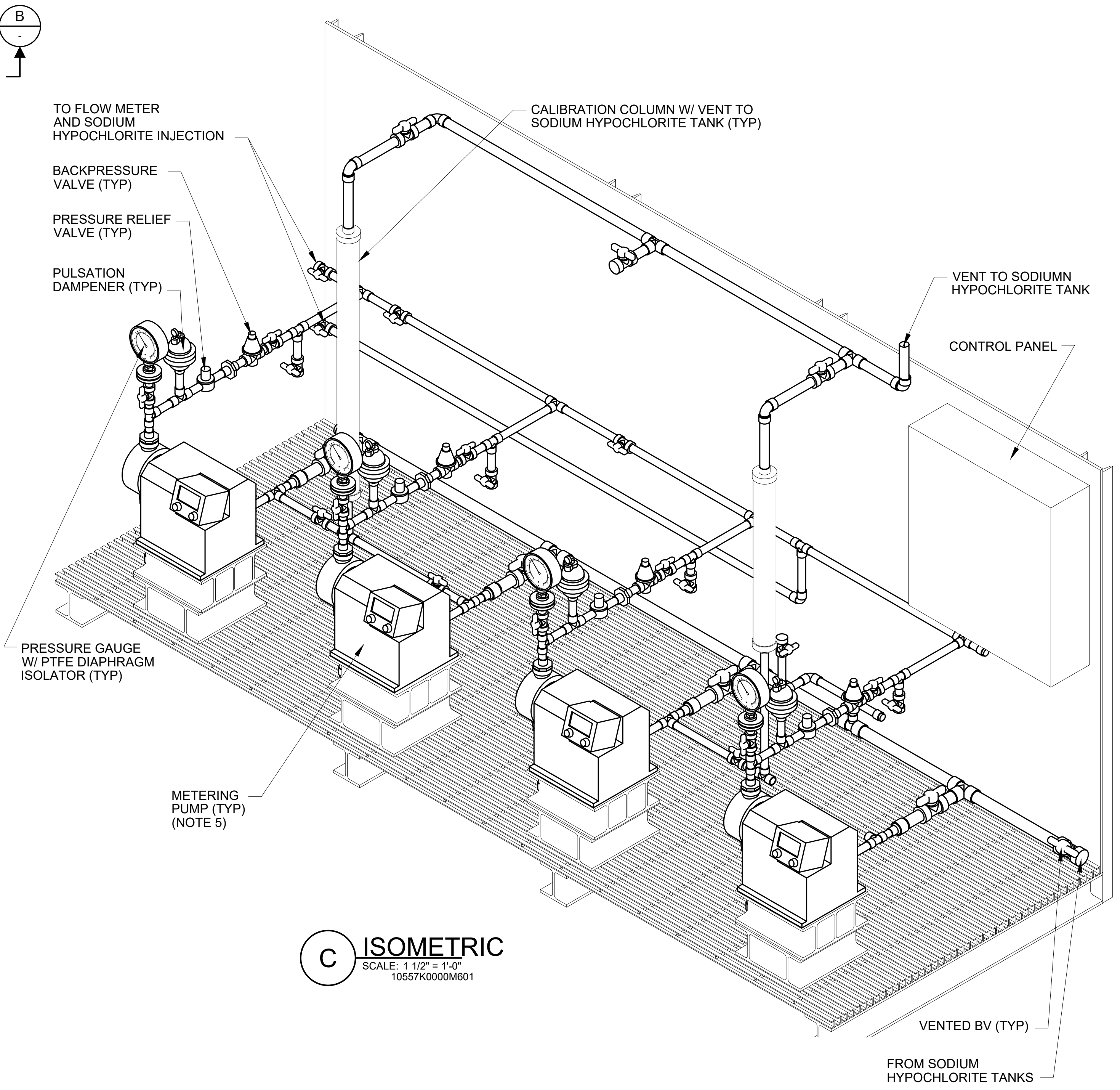
A PLAN
SCALE: 1 1/2" = 1'-0"
10557K0000M101



B SECTION
SCALE: 1 1/2" = 1'-0"
10557K0000M301

NOTES:

1. PUMP SUCTION ELEVATION SHALL BE BELOW THE BOTTOM OF THE SODIUM HYPOCHLORITE TANK SUCH THAT THE ENTIRE VOLUME OF THE TANK CAN BE PUMPED.
2. PROVIDE APPROPRIATE PIPE SUPPORTS AND CLAMPS AS REQUIRED AND DESCRIBED IN SECTION VII.
3. SKID DIMENSIONS SHALL BE AS REQUIRED TO MAINTAIN SEPARATION BETWEEN PUMPS FOR EASE OF ACCESS TO EQUIPMENT, PIPING, VALVES, AND INSTRUMENTS.
4. THIS SODIUM HYPOCHLORITE PUMP SKID ASSEMBLY IS INTENDED TO BE GENERIC AND TO SHOW THE MINIMUM REQUIRED COMPONENTS AND GENERAL ARRANGEMENT. ACTUAL PUMP SKID ASSEMBLIES SHALL BE BASED ON SITE SPECIFIC REQUIREMENTS.
5. ACTUAL NUMBER OF METERING PUMPS SHALL BE BASED ON SITE SPECIFIC REQUIREMENTS.
6. FOR OUTDOOR INSTALLATIONS, THE SODIUM HYPOCHLORITE PUMP SKID SHALL INCLUDE A WEATHERPROOF ENCLOSURE. REFER TO SECTION VII FOR ADDITIONAL REQUIREMENTS.
7. CHEMICAL SKID SHOWN IS QUAD. NUMBER OF CHEMICAL PUMPS (DUPLEX, TRIPLEX, QUAD, ETC.) SHALL BE DETERMINED BASED ON WATER TREATMENT PLANT DESIGN REQUIREMENTS.

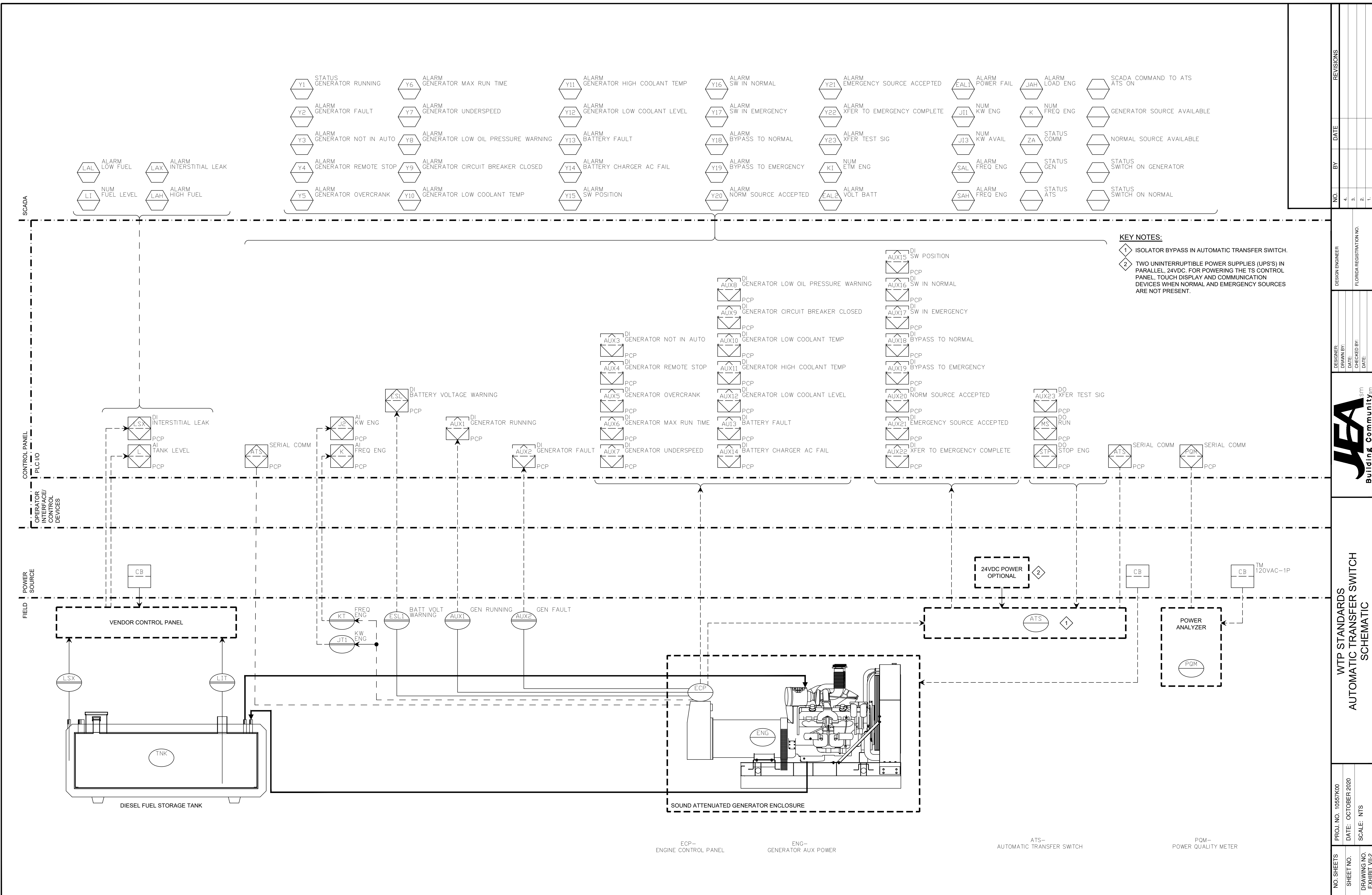


C ISOMETRIC
SCALE: 1 1/2" = 1'-0"
10557K0000M601

NO. SHEETS	SHEET NO.	DRAWING NO. EXHIBIT Y15	PROJ. NO.	DATE: OCTOBER 2020	SCALE: NTS	DESIGNER:	DRAWN BY:	CHECKED BY:	DATE:	DESIGN ENGINEER:	FLORIDA REGISTRATION NO.:	REVISIONS			
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WTP STANDARDS
TYPICAL SODIUM HYPOCHLORITE METERING
PUMP SKID ASSEMBLY





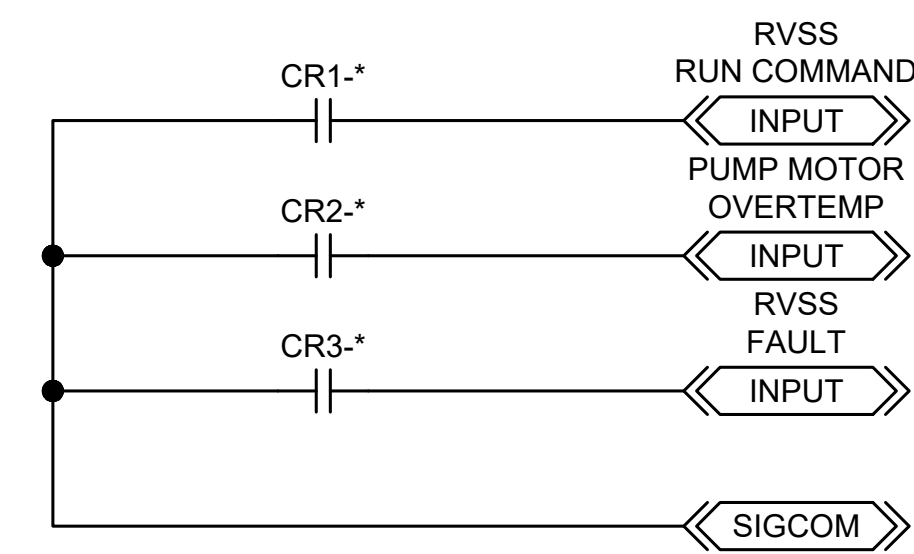
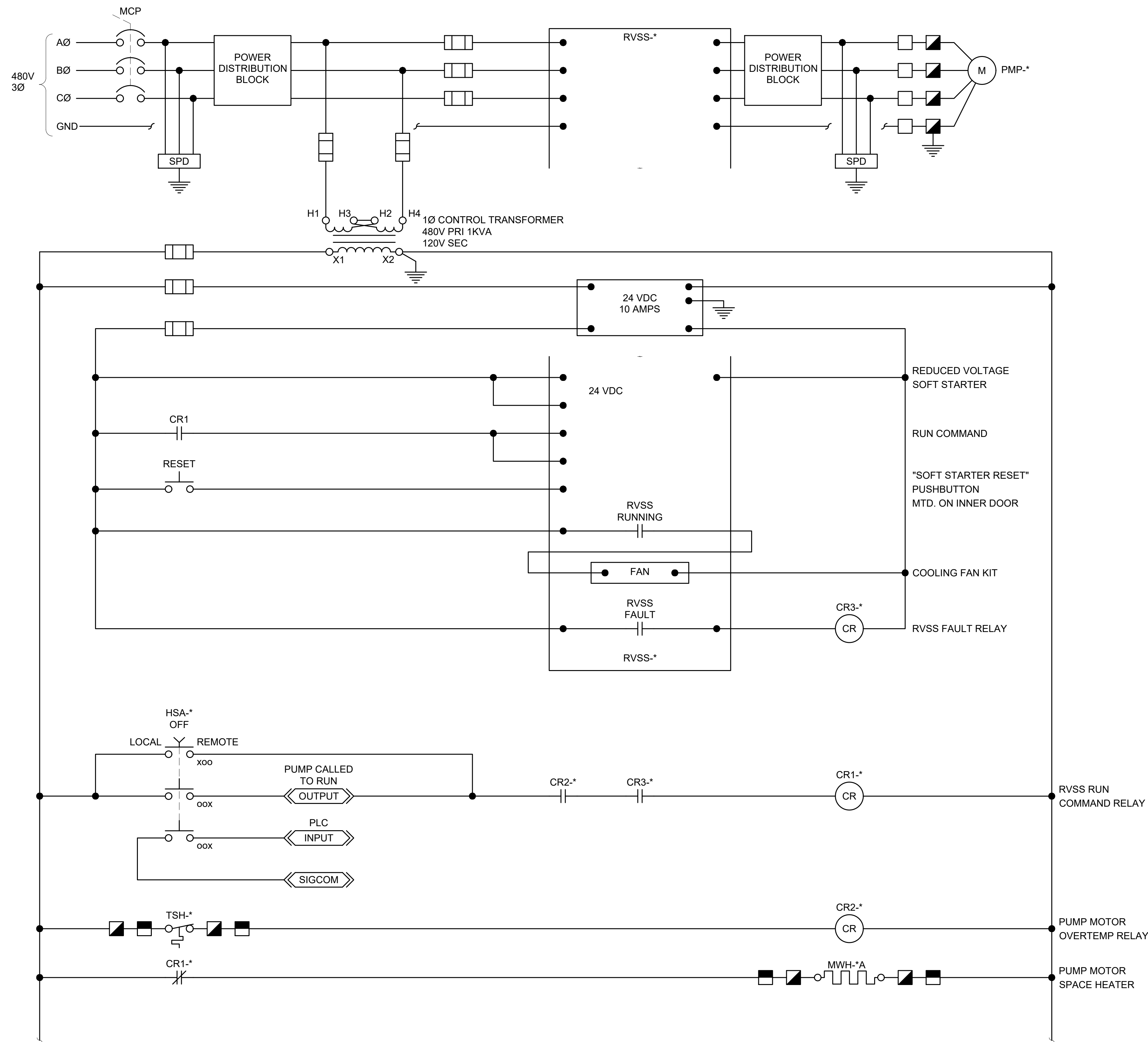
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DATE:	FLORIDA REGISTRATION NO.
CHECKED BY:	
DATE:	



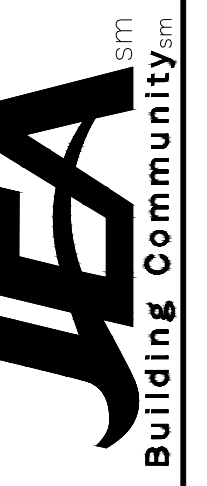
WTP STANDARDS
AUTOMATIC TRANSFER SWITCH
SCHEMATIC

PROJ. NO. 10557000
DATE: OCTOBER 2020
SCALE: NTS
NO. SHEETS
SHEET NO.
DRAWING NO. EXHIBIT VII-2



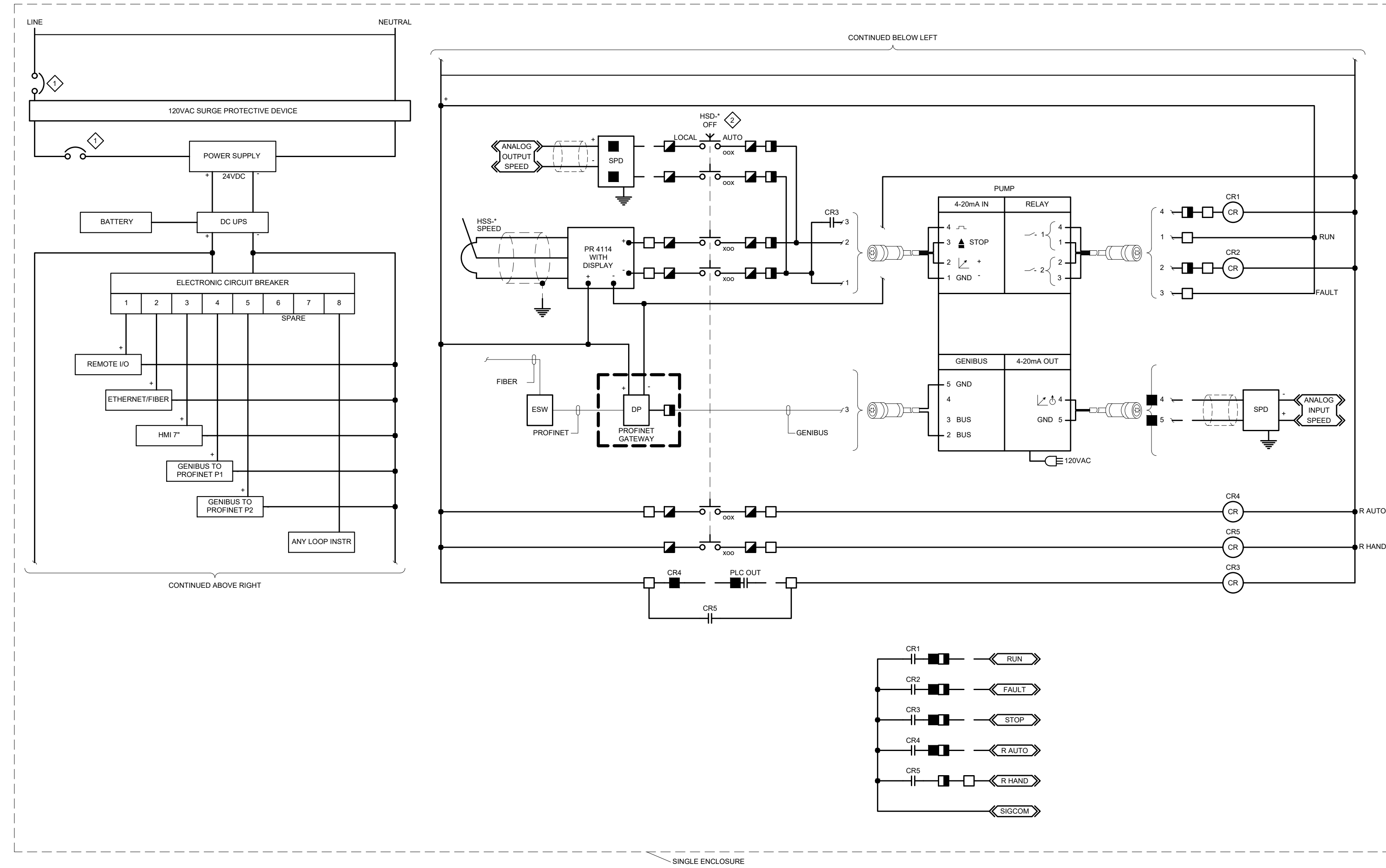
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WTP STANDARDS
SOFT START TYPICAL
SCHEMATIC

NO. SHEETS	PROJ. NO. 10557K00
SHEET NO.	DATE: OCTOBER 2020
DRAWING NO.	SCALE: NTS
EXHIBIT V1-3	

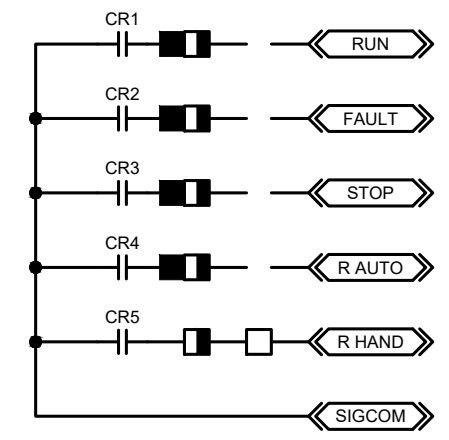


KEY NOTES:

- ◇ SIZE BASED ON PROTECTION REQUIREMENT FOR THE LOAD(S) SERVED.
- ◇ FOR LOW VOLTAGE, LOW AMPERAGE SIGNALS, UTILIZE LOW VOLTAGE RATED RELAY CONTACTS THROUGH SELECTOR SWITCH CONTACTS.

TERMINAL BLOCK LEGEND

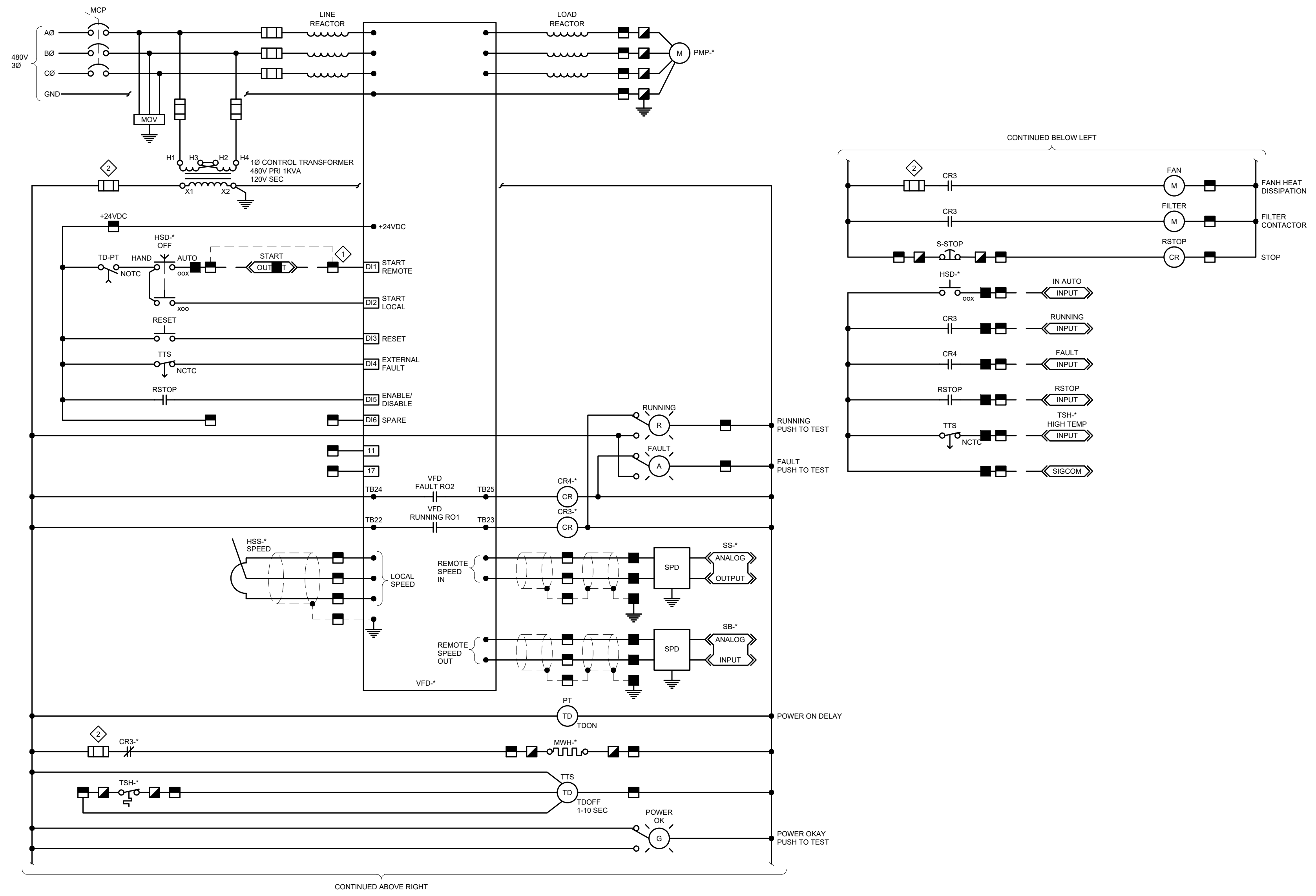
- PLOPCM
- MOTOR CONTROL CENTER
- ▣ FIELD DEVICE
- FIELD PANEL



NO. SHEETS	PROJ. NO.	DESIGNER	DATE	BY	REVISIONS
	SHEET NO.				
DRAWING NO.	DATE: OCTOBER 2020	DESIGN ENGINEER			
EXHIBIT VIII.2	SCALE: NTS	FLORIDA REGISTRATION NO.			

WTP STANDARDS
SODIUM HYPOCHLORITE SYSTEM
TYPICAL SCHEMATIC





GENERAL NOTES:

1. SCHEMATIC TO BE REVIEWED FOR SPECIFIC PROJECT REQUIREMENTS AND APPROVED BY JEA PRIOR TO FABRICATION OF ANY KIND.
2. VFD CIRCUIT BOARD SHALL HAVE CONFORMAL COATING.

KEY NOTES:

- ◇ JUMPER IS NEEDED IF COMMUNICATION CONTROL IS SELECTED BY USER.
- ◇ SIZE BASED ON PROTECTION REQUIREMENT FOR LOAD(S) SERVED.

TERMINAL BLOCK LEGEND

- MOTOR CONTROL CENTER
- ▣ FIELD DEVICE
- ▩ FIELD PANEL
- LOCAL STARTER CONTROL PANEL / VFD

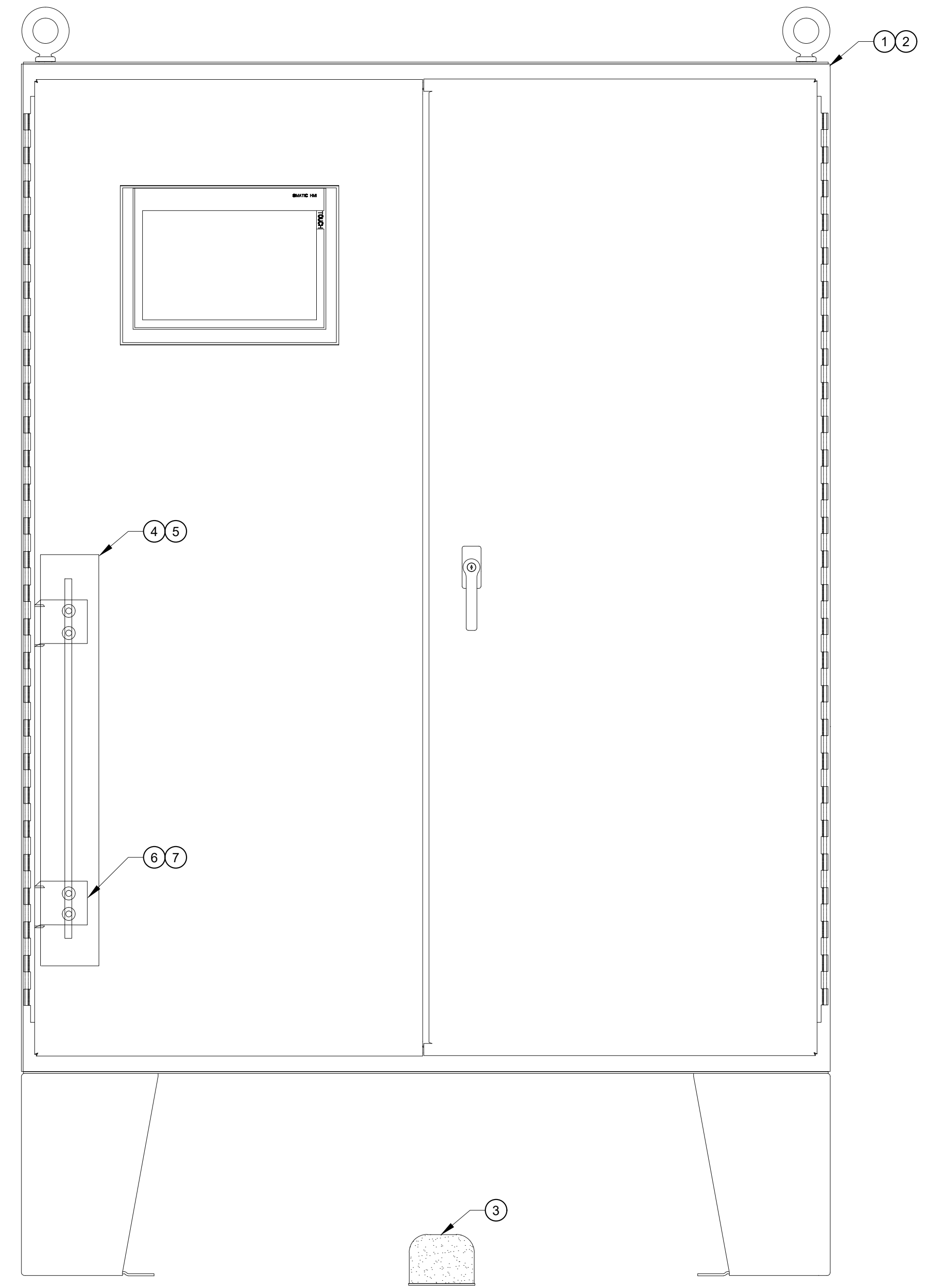
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DRAWING NO. EXHIBIT V1P3	SCALE: NTS	FLORIDA REGISTRATION NO.	CHECKED BY	3.
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**WTP STANDARDS
HSPS STARTER VFD TYPICAL
SCHEMATIC**

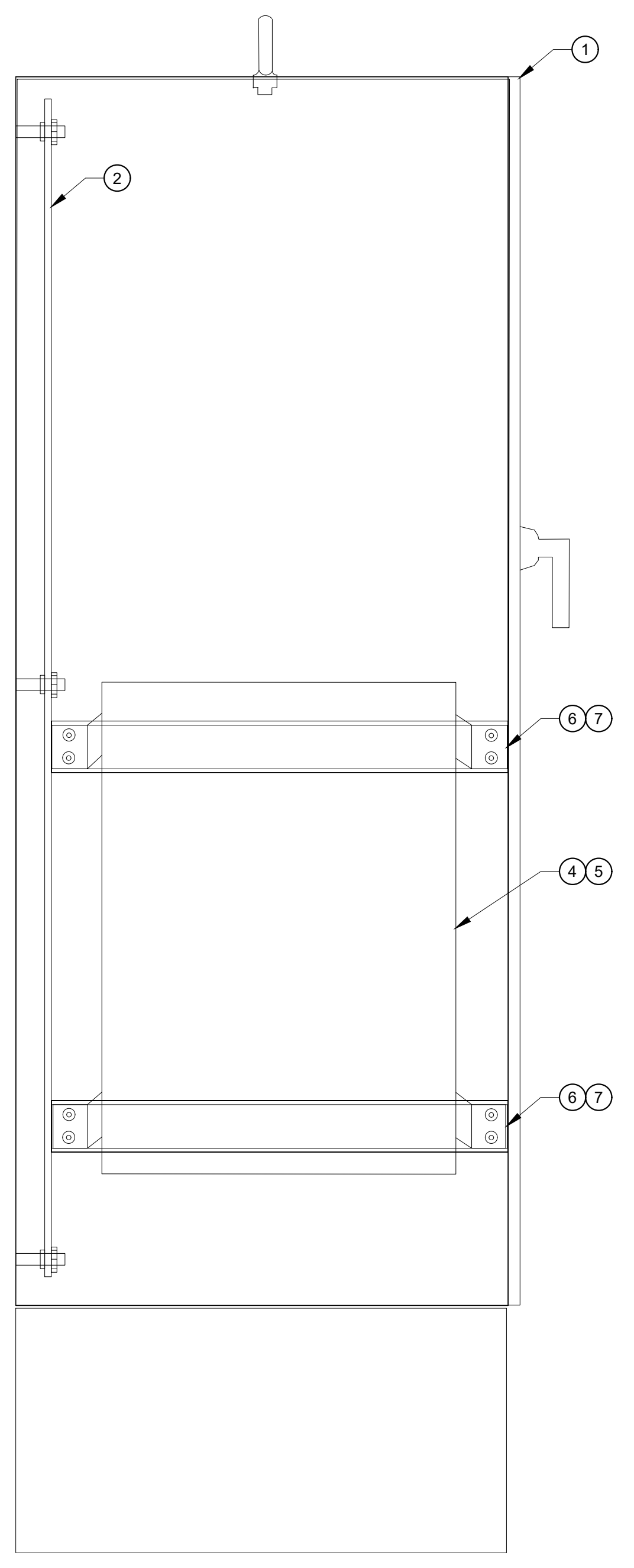
JEA Building Community

GENERAL NOTES:

- (60"H x 48"W x 20"D) NEMA 12 RATED, FABRICATED FROM TYPE 304 STAINLESS STEEL. ENCLOSURE IS MOUNTED ON 12" TYPE 304 STAINLESS STEEL FLOOR STANDS. OUTER DOORS HAVE 3-POINT LATCHING ASSEMBLY WITH PADLOCKABLE HANDLE.



FRONT VIEW




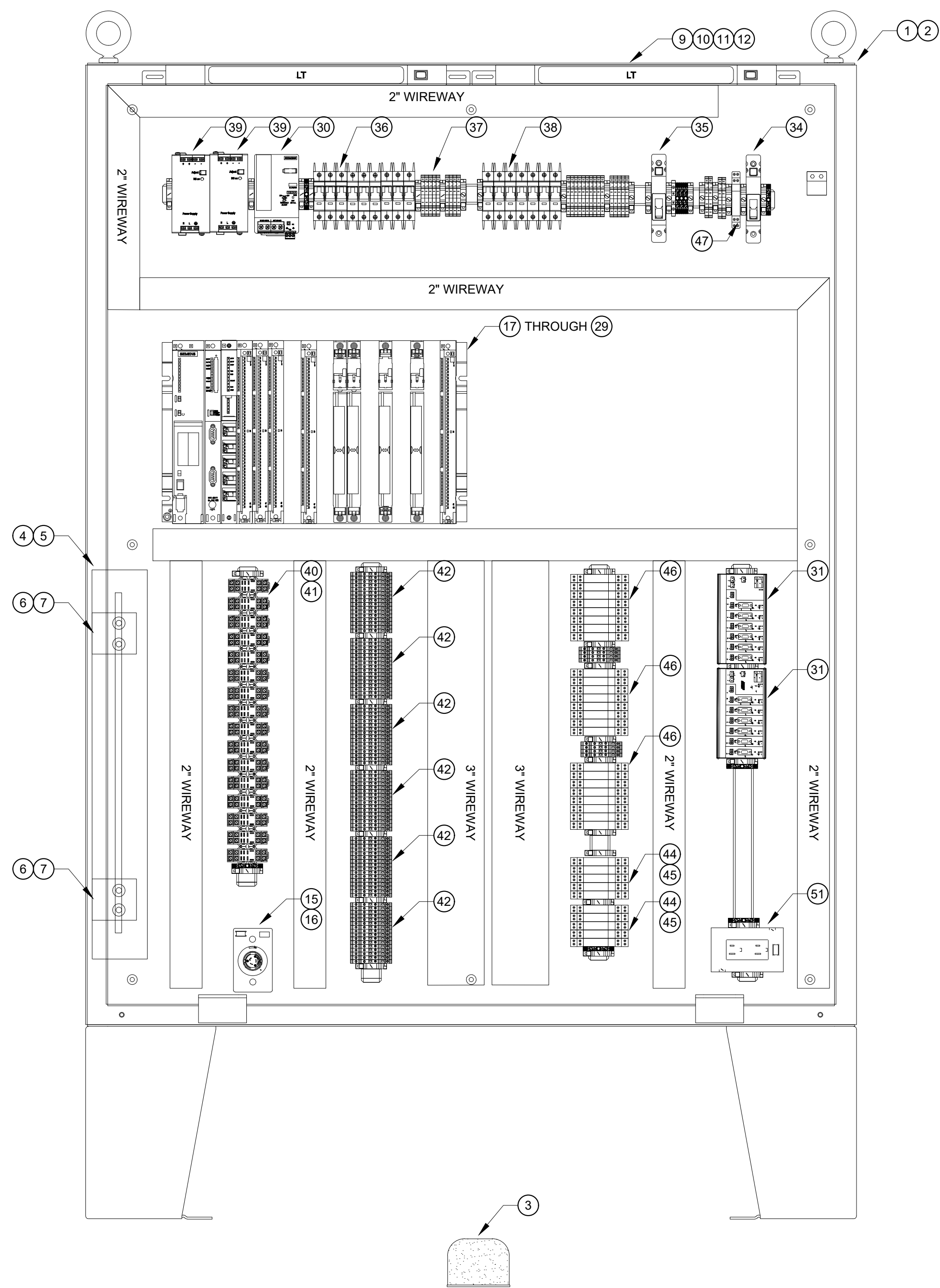
SIDE VIEW

MAJOR EQUIPMENT SCHEDULE	
ITEM	DESCRIPTION
1	2-DOOR TYPE 12 W/ 3-POINT LATCH
2	BACK PLATE
3	INDUSTRIAL CORROSION INHIBITOR
4	TOWER STYLE UPS
5	RELAY CARD
6	STRUT SLOTTED CHANNEL 1 5/8" X 1 5/8" WHITE
7	SPRING NUTS FOR STRUT
8	HMI TP 1200 COMFORT PANEL, 12" TOUCH SCREEN

NO. SHEETS	PROJ. NO. 10557000	DESIGNER	DATE	BY	DATE	NO.	REVISIONS
	SHEET NO.						
DRAWING NO.	SCALE: NTS	DRAWN BY: AVR	CHECKED BY:				
EXHIBIT VIII-4							

WTP STANDARDS
SCADA PANEL ELEVATION
TYPICAL





FRONT VIEW

MAJOR EQUIPMENT SCHEDULE	
ITEM	DESCRIPTION
1	2-DOOR W/ 3-POINT LATCH; 60"x48"x24"
2	BACK PLATE
3	INDUSTRIAL CORROSION INHIBITOR
4	TOWER STYLE UPS
5	RELAY CARD
6	STRUT SLOTTED CHANNEL 1 5/8"x1 5/8" WHITE
7	SPRING NUTS FOR STRUT
8	HMI TP 1200 COMFORT PANEL, 12" TOUCH SCREEN
9	15" FLUORESCENT FIXTURE
10	FLUORESCENT LAMP
11	FIXTURE POWER CABLE W/ LEADS
12	FIXTURE GANGING CABLE
13	NEMA L5-20 TWIST-LOCK MALE PLUG
14	POWER CORD
15	L5-20 TWIST-LOCK MALE PLUG
16	ELECTRICAL BOX 1-GANG ALUMINIUM
17	SIEMENS PLC
18	POWER SUPPLY
19	BACK-UP BATTERY
20	SIEMENS CPU
21	RAM MEMORY CARD
22	COMMUNICATION PROCESSOR
23	DIGITAL INPUT
24	DIGITAL INPUT
25	DIGITAL OUTPUT
26	ANALOG INPUT
27	ANALOG OUTPUT
28	FRONT CONNECTOR FOR SIGNAL MODULES
29	BLANK MODULE COVERS FOR RACK
30	REDUNDANT DC POWER SUPPLY MODULE
31	PROFIBUS HUB
32	PROFIBUS CONNECTOR W/ DIAGNOSTICS LED'S 45° ANGLE
33	PROFIBUS CONNECTOR W/ DIAGNOSTICS LED'S 90° ANGLE
34	BREAKER
35	BREAKER
36	BRANCH CIRCUIT BREAKER
37	BRANCH CIRCUIT BREAKER
38	BRANCH CIRCUIT BREAKER
39	DC POWER SUPPLY
40	RELAY
41	RELAY BASE
42	SURGE PROTECTOR FOR 120VAC SIGNALS
43	SURGE PROTECTOR FOR 24 VDC SIGNALS
44	SURGE PROTECTOR FOR RS-485/PROFIBUS CONNECTIONS
45	SURGE PROTECTOR BASE
46	SURGE PROTECTOR FOR 24V 4-20 MA SIGNALS
47	SURGE PROTECTOR FOR 120V SIGNALS
48	TERMINAL 1 CIRCUIT
49	GROUNDING TERMINAL GREEN YELLOW
50	TERMINAL END CLAMP
51	GFCI DUPLEX RECEPTACLE
52	GROUNDING LUG, DOUBLE

GENERAL NOTES:

- (60"H x 48"W x 20"D) NEMA 12 RATED, FABRICATED FROM TYPE 304 STAINLESS STEEL. ENCLOSURE IS MOUNTED ON 12" TYPE 304 STAINLESS STEEL FLOOR STANDS. OUTER DOORS HAVE 3-POINT LATCHING ASSEMBLY WITH PADLOCKABLE HANDLE.
- ENCLOSURE BACK PANEL FABRICATED FROM CARBON STEEL WITH INDUSTRIAL GRADE WHITE ENAMEL FINISH.

NO. SHEETS
SHEET NO.
DRAWING NO.
EXHIBIT V.II.5

PROJ. NO. 10557000
DATE: JANUARY, 2020
SCALE: NTS

WTP STANDARDS
SCADA PANEL INTERNAL ELEVATION
TYPICAL



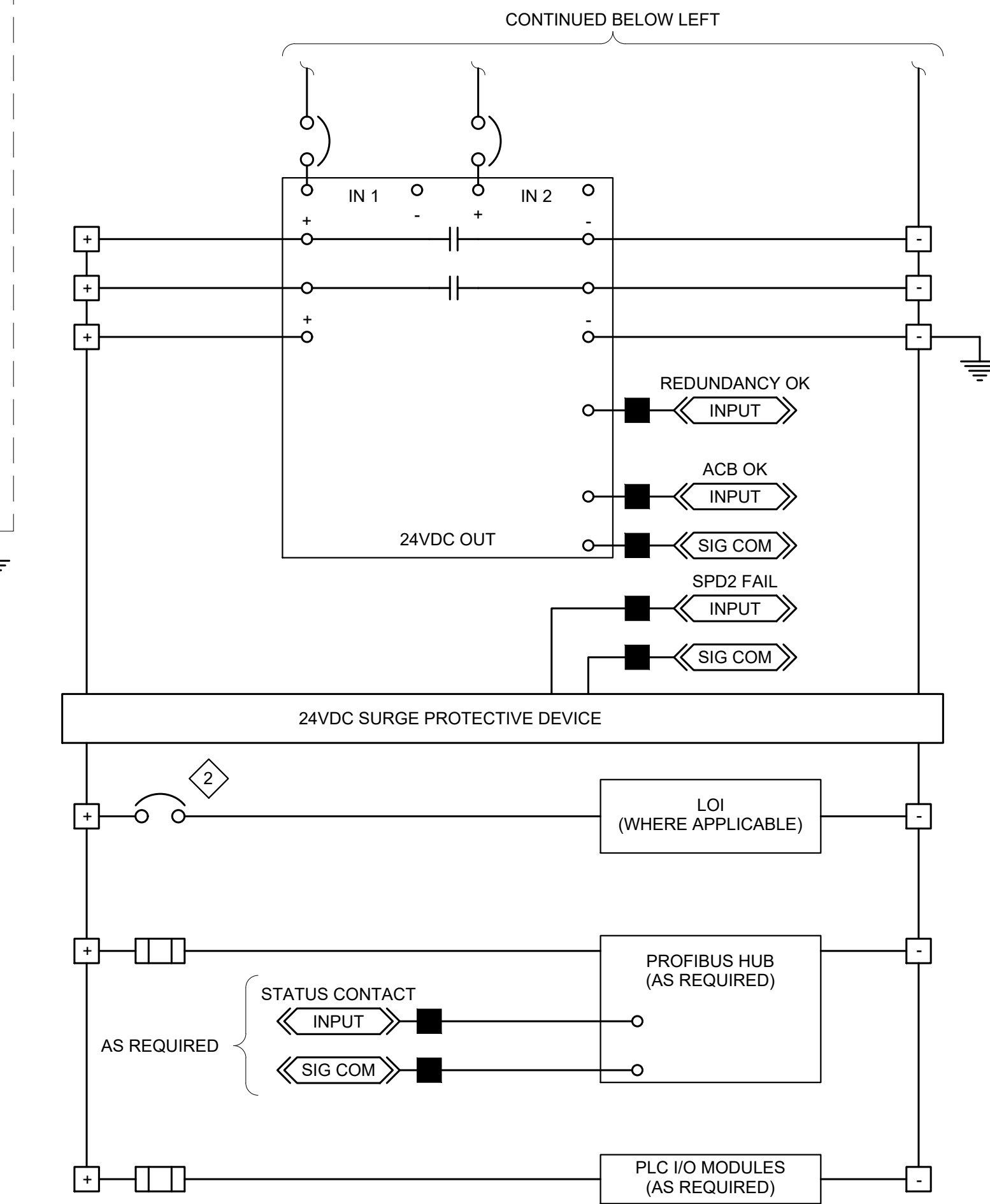
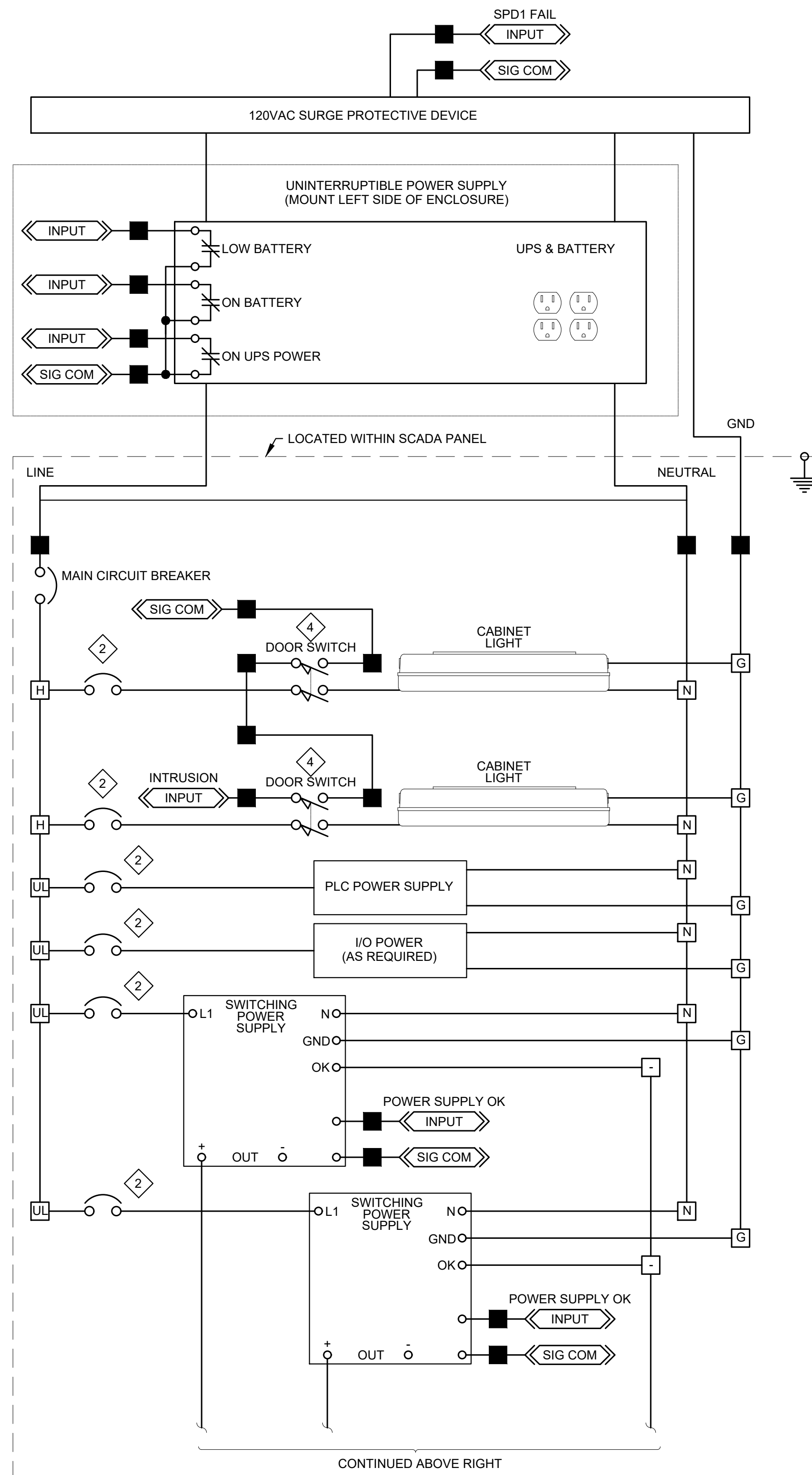
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DATE:

DESIGN ENGINEER
FLORIDA REGISTRATION NO.

NO. BY DATE

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GENERAL NOTES:

1. SCHEMATIC ILLUSTRATES DESIGN INTENT ONLY. PROVIDE ALL NECESSARY COMPONENTS TO MEET PROJECT REQUIREMENTS.

KEY NOTES:

- 1. SIZE UPS AND BATTERY BASED ON UPS SPECIFICATION REQUIREMENTS.
- 2. SIZE BASED ON PROTECTION NEEDS.
- 3. VERIFY LOADS BASED ON TEMPERATURE CALCULATIONS. PROVIDE ADDITIONAL CIRCUIT IF REQUIRED.
- 4. INTEGRAL SWITCH WITH LIGHT.
- 5. SIZE BASED ON LOAD REQUIREMENT.
- 6. PROVIDE QUANTITY REQUIRED PER SPECIFICATIONS. SIZE RECEPTACLE FOR LAPTOP.
- 7. PROVIDE HARDWIRED CONNECTIONS OR RECEPTACLE/PLUG AS REQUIRED BY MAINTENANCE BYPASS SWITCH.
- 8. SIZE BASED ON PROTECTION NEEDS. PROVIDE SEPARATE CIRCUIT BREAKERS FOR EACH INSTRUMENT POWERED FROM THE PCM CABINET.

TERMINAL BLOCK LEGEND

- SCADA PANEL
- [H] 120VAC
- [N] NEUTRAL
- [G] GROUND
- [UL] UPS 120VAC
- [+] 24VDC (+)
- [-] 24VDC (-)

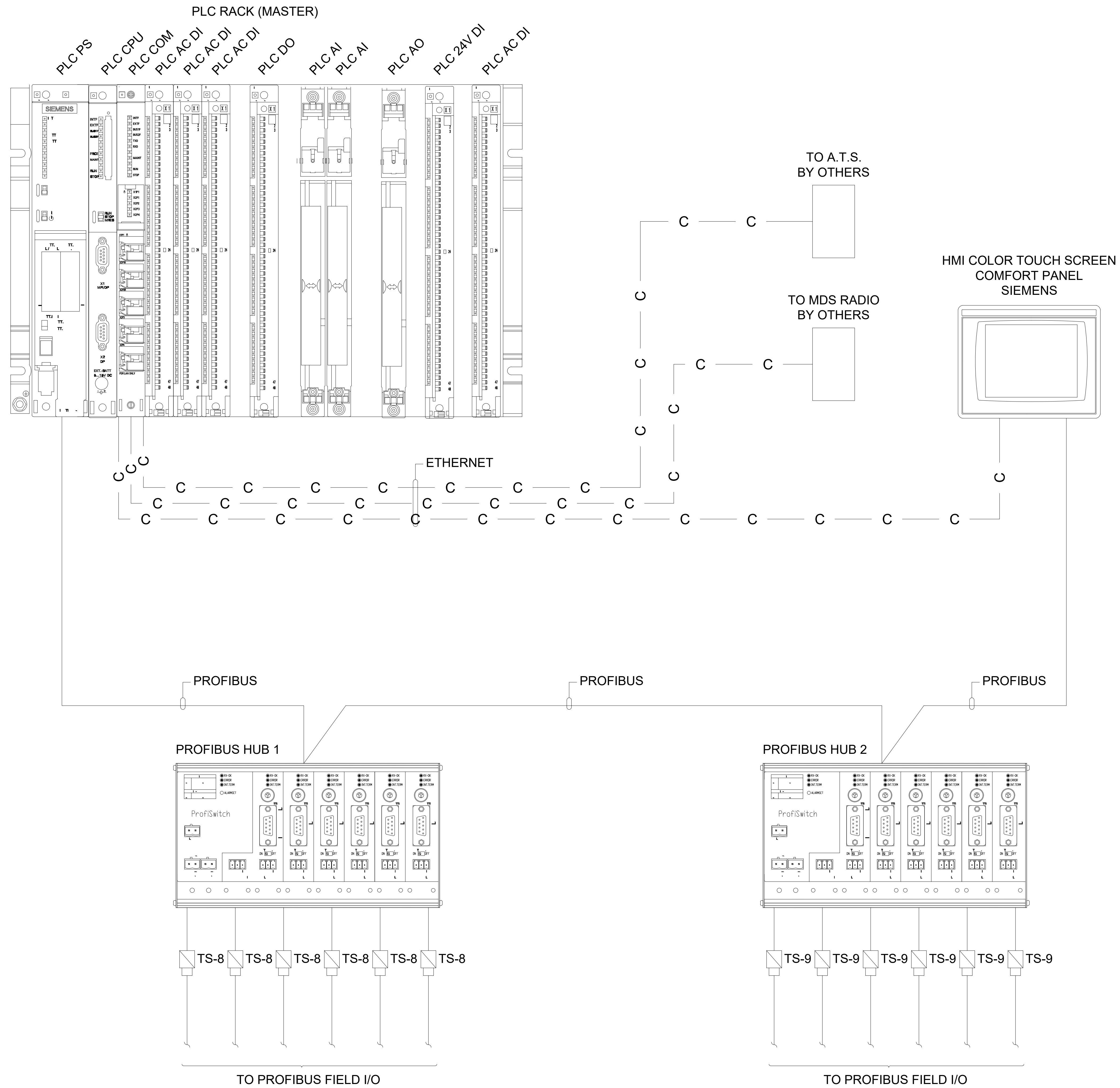
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	FLORIDA REGISTRATION NO.



WTP STANDARDS
SCADA PANEL POWER
TYPICAL SCHEMATIC

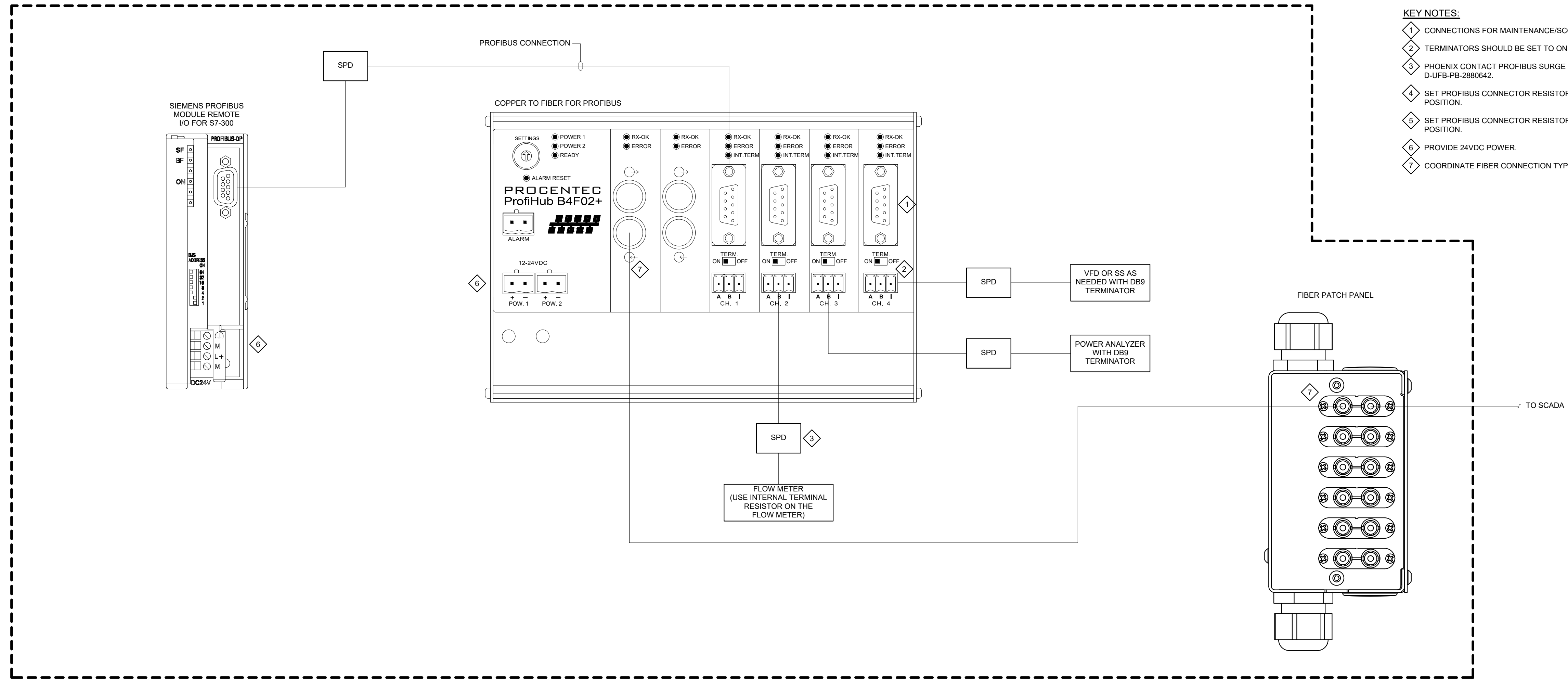
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SHEET NO.	DATE: JANUARY, 2020
DRAWING NO.	SCALE: NTS
EXHIBIT	



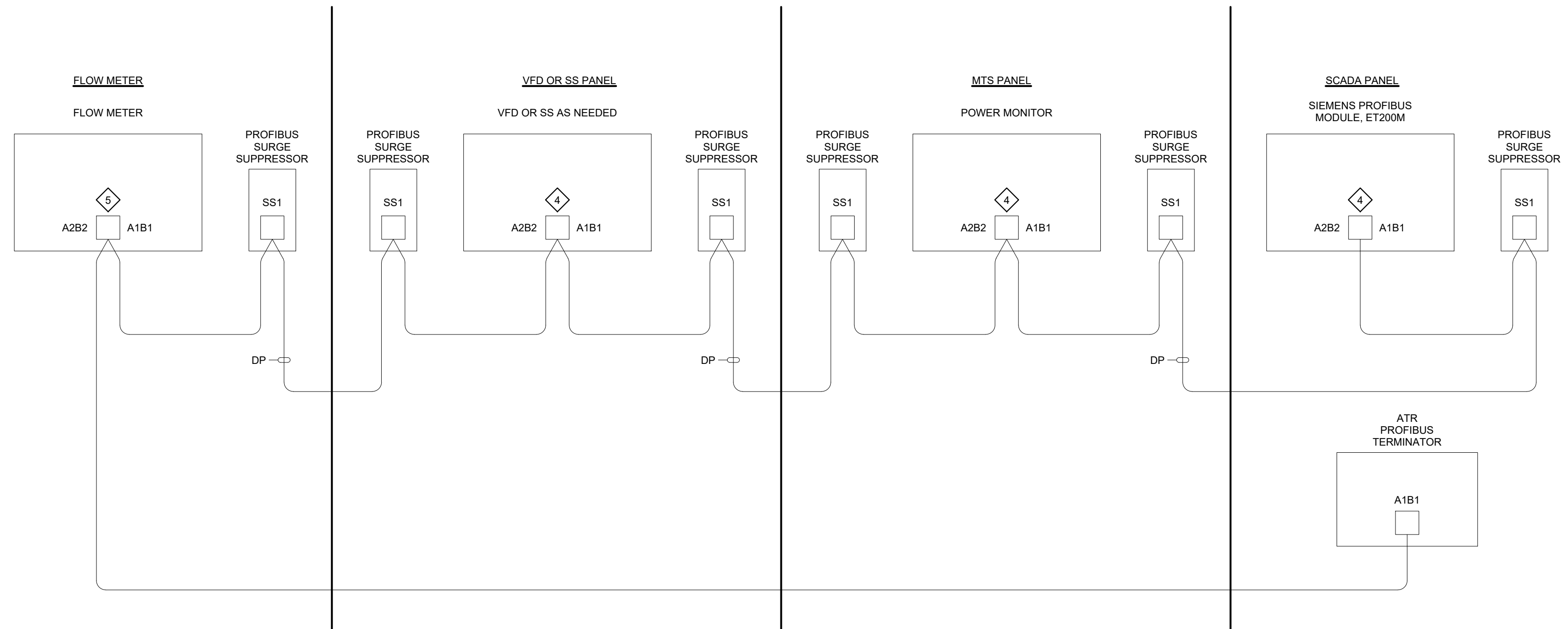
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EXHIBIT VII/7	SCALE: NTS		2.			1.	



WTP STANDARDS
RTU TYPICAL



- KEY NOTES:**
- 1 CONNECTIONS FOR MAINTENANCE/SCOPING.
 - 2 TERMINATORS SHOULD BE SET TO ON.
 - 3 PHOENIX CONTACT PROFIBUS SURGE SUPPRESSOR D-UFB-PB-2880642.
 - 4 SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "ON" POSITION.
 - 5 SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "OFF" POSITION.
 - 6 PROVIDE 24VDC POWER.
 - 7 COORDINATE FIBER CONNECTION TYPE.



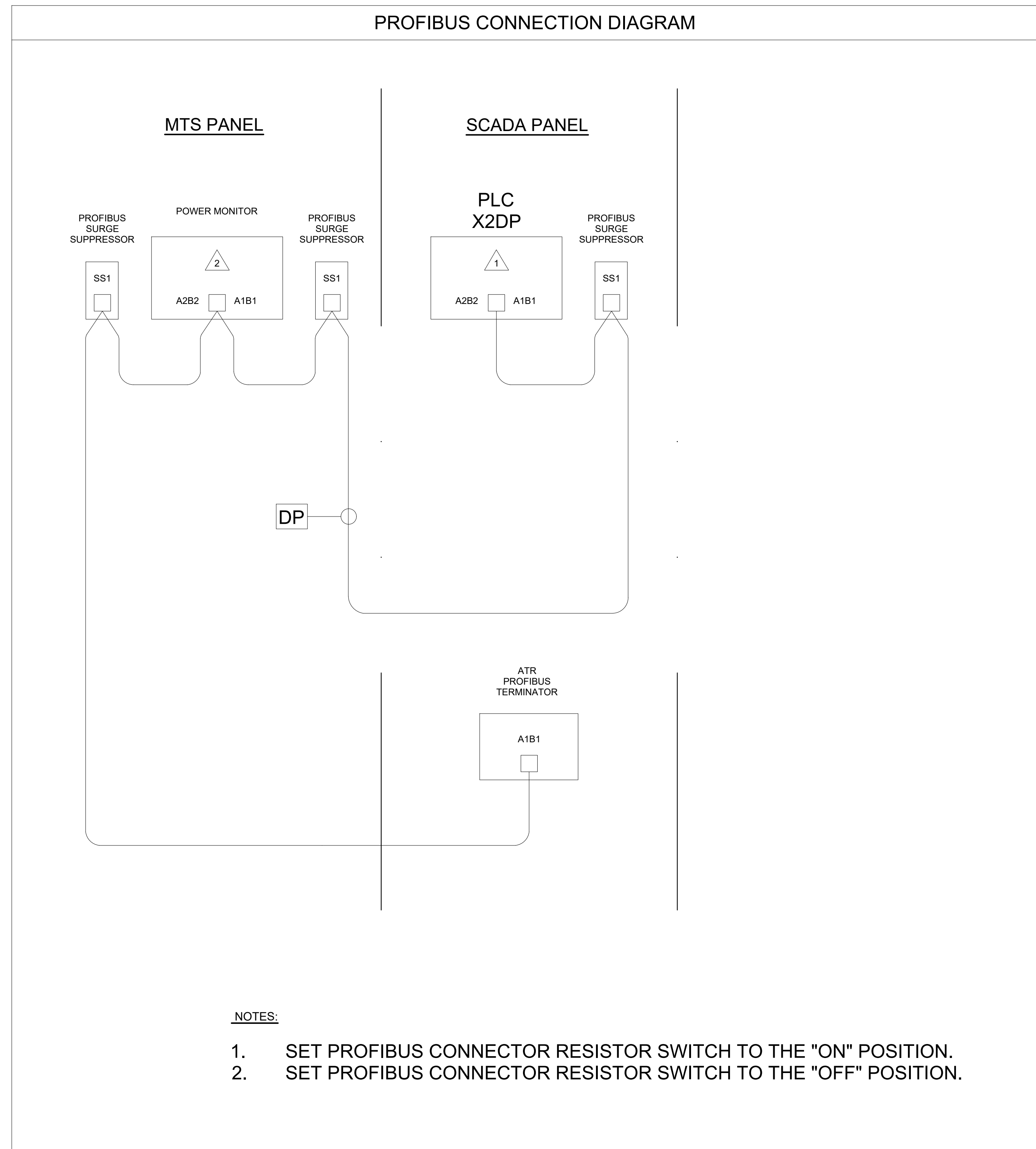
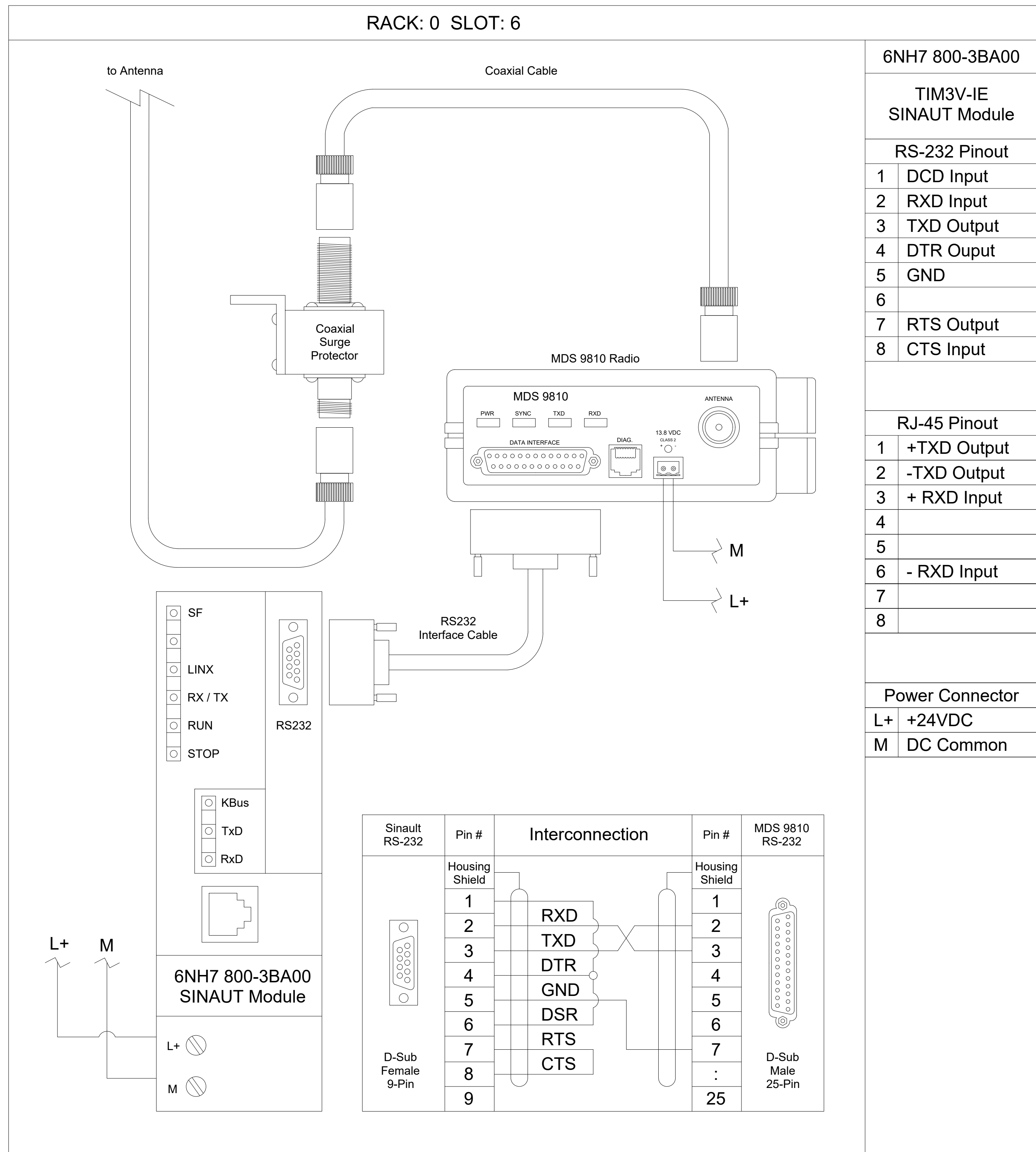
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WTP STANDARDS
FIBER CONNECTED PROFIBUS WELL
PANEL TYPICAL

NO. SHEETS	PROJ. NO. 10557003
SHEET NO.	DATE: JANUARY, 2020
DRAWING NO.	SCALE: NTS
EXHIBIT VIII-6	



6NH7 800-3BA00

TIM3V-IE
SINAUT Module

RS-232 Pinout

- 1 DCD Input
- 2 RXD Input
- 3 TXD Output
- 4 DTR Output
- 5 GND
- 6
- 7 RTS Output
- 8 CTS Input

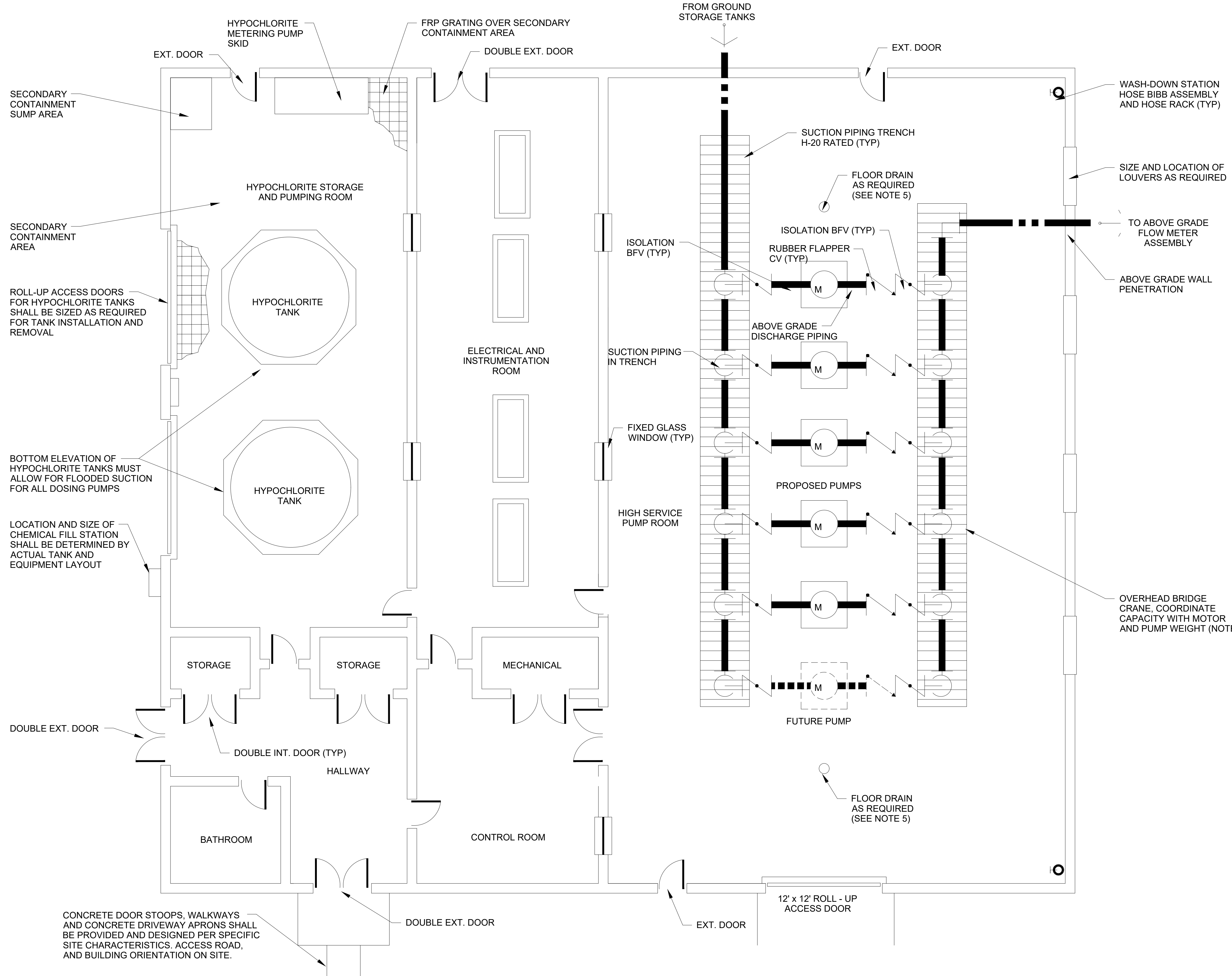
RJ-45 Pinout

- 1 +TXD Output
- 2 -TXD Output
- 3 +RXD Input
- 4
- 5
- 6 -RXD Input
- 7
- 8

Power Connector

- L+ +24VDC
- M DC Common

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SHEET NO.	PROJ. NO. 10557000	DRAWN BY: AVR	DATE: JANUARY, 2020	DESIGN ENGINEER	FLORIDA REGISTRATION NO.	CHECKED BY:	DATE:	4.	1.
DRAWING NO. EXHIBIT V11-9	SCALE: NTS	JEA Building Community sm		WTP STANDARDS RADIO CONNECTED PROFIBUS WELL PANEL TYPICAL		5.	2.	6.	1.



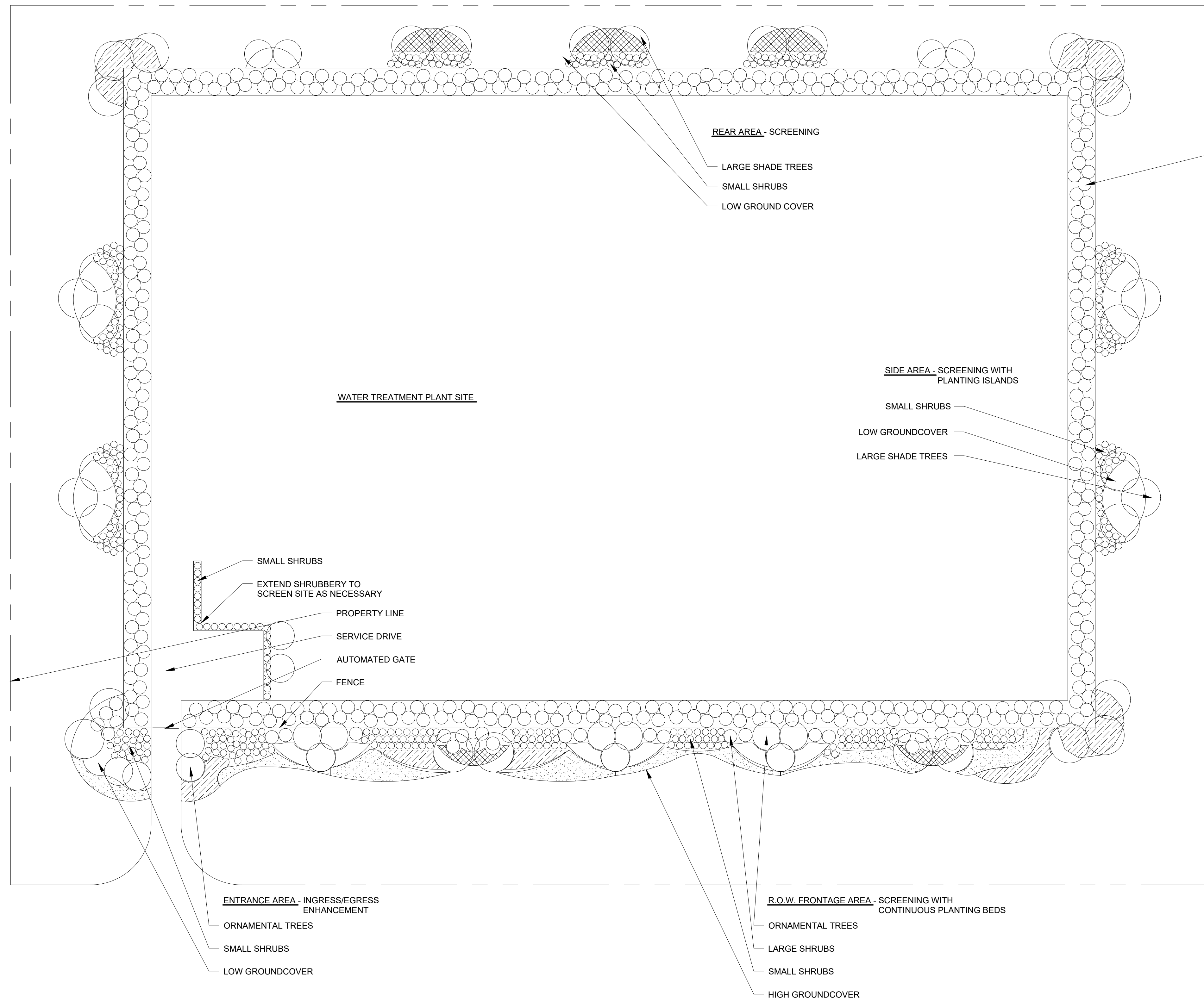
FLOOR PLAN
SCALE: NTS

- NOTES:**
- DESIGN OF FACILITY BUILDING SHALL INCLUDE A COMPLETE HVAC SYSTEM(S) AS REQUIRED INCLUDING LOUVERS AND EXHAUST FANS IN THE HIGH SERVICE PUMP AREA.
 - DESIGN OF FACILITY BUILDING SHALL INCLUDE A COMPLETE ELECTRICAL SYSTEM INCLUDING LIGHTING.
 - BUILDING LAYOUT IS INTENDED TO BE GENERIC AND WILL NEED TO BE SITE SPECIFIC FOR EACH PROJECT.
 - THE NUMBER OF HIGH SERVICE PUMPS, INCLUDING FUTURE PUMPS, SHALL BE DETERMINED ON A CASE BY CASE BASIS.
 - QUANTITY AND LOCATION OF DRAINS SHALL BE PROVIDED SUCH THAT DRAIN AND ARV DISCHARGE PIPING SHALL BE MINIMAL PIPE LENGTHS.
 - BRIDGE CRANE SYSTEM SHALL BE DESIGNED AND SPACE SHALL BE PROVIDED SUCH THAT VALVES AND PUMP COMPONENTS CAN BE REMOVED AND LOADED ONTO A TRUCK BED INSIDE OF THE HIGH SERVICE PUMP ROOM.

NO. SHEETS	SHEET NO.	DRAWING NO. EXHIBIT X-F-1	PROJ. NO.	DATE: OCTOBER 2020	SCALE: NTS	DESIGNER:	DRAWN BY: AVR	DATE:	CHECKED BY:	DATE:	DESIGN ENGINEER:	FLORIDA REGISTRATION NO.:	NO.	BY	DATE	REVISIONS
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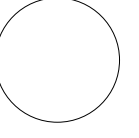
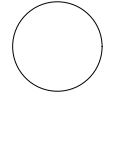
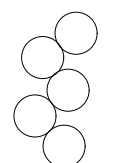
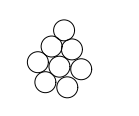
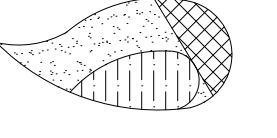



WTP STANDARDS
CHEMICAL AND HIGH SERVICE PUMP
STATION BUILDING TYPICAL LAYOUT



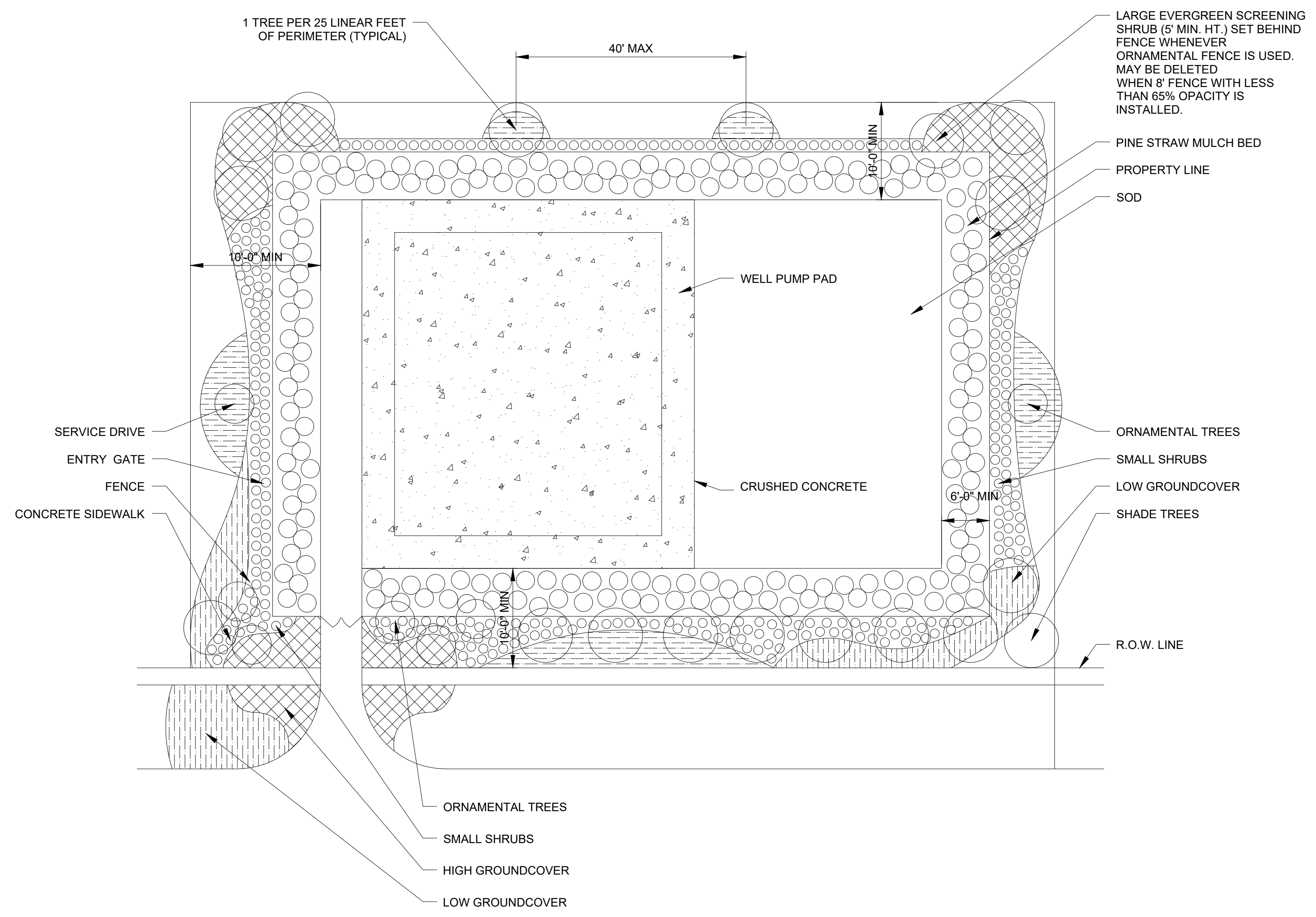
LARGE EVERGREEN SCREENING SHRUB (5' MIN. HT.) SET BEHIND FENCE WHENEVER ORNAMENTAL FENCE IS USED.

PLANT KEY

-  **LARGE SHADE TREES**
LIVE OAK
ACER RUBRUM
DRAKE ELM
RED CEDAR
-  **ORNAMENTAL TREES**
CRAPE MYRTLE
LIGUSTRUM
YAUPON HOLLY
BRADFORD PEAR
EAST PALATKA HOLLY
-  **LARGE SHRUBS**
VIBURNUM
SAW PALMETTO
BUTTERFLY BUSH
OLEANDER
FLORIDA ANISE
AZALEA
BURFORD HOLLY
PITTOSPORUM
-  **SMALL SHRUBS**
DWARF INDIAN HAWTHORN
DWARF YAUPON HOLLY
-  **HIGH GROUNDCOVER**
EVERGREEN GIANT LIRIOPE
FOUNTAIN GRASS
DAYLILY
AMERICAN CRINUM
MUHLY GRASS
AZTEC GRASS
AFRICAN GRASS
CORD GRASS
-  **LOW GROUNDCOVER**
JUNIPER
ASIATIC JASMINE

NOTE:
1. THIS PLAN CONSTITUTES A CONCEPTUAL REPRESENTATION OF A LANDSCAPE PLANNING SCHEME FOR A THEORETICAL UTILITY SITE. ACTUAL LAYOUT AND CONFIGURATION OF A PARTICULAR SUBSTATION OR TREATMENT PLANT WILL VARY GREATLY DEPENDING ON THE CONDITIONS EXISTING AT EACH FACILITY. IT IS IN NO WAY INTENDED THAT THIS GRAPHIC BE UTILIZED IN A BONAFIDE PLANTING PLAN FROM WHICH A PERSON OR PERSONS MAY EXECUTE THE DESIGN IN THE FIELD. IT SHOULD BE UNDERSTOOD THAT LOCAL LANDSCAPE CODE WILL ULTIMATELY DETERMINE THE BASIC REQUIREMENTS FOR THE FINAL PLAN.

NO. SHEETS	SHEET NO.	DRAWING NO. EXHIBIT X/2	PROJ. NO.	DATE: OCTOBER 2020	DESIGN ENGINEER	FLORIDA REGISTRATION NO.	NO.	BY	DATE	REVISIONS
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- PLANT KEY**
- LARGE SHADE TREES
LIVE OAK
ACER RUBRUM
DRAKE ELM
 - ORNAMENTAL TREES
CRAPE MYRTLE
WAS MYRTLE
LIGUSTRUM
YAUPON HOLLY
BRADFORD PEAR
EAST PALATKA HOLLY
 - LARGE SHRUBS
SAW PALMETTO
BUTTERFLY BUSH
OLEANDER
FLORIDA ANISE
AZALEA
BURFORD HOLLY
VIBURNUM
PITTSOPORUM
 - SMALL SHRUBS
DWARF INDIAN HAWTHORN
DWARF YAUPON HOLLY
 - HIGH GROUNDCOVER
EVERGREEN GIANT LIRIOPE
FOUNTAIN GRASS
DAYLILY
AMERICAN CRINUM
MUHLY GRASS
AZTEC GRASS
AFRICAN IRIS
VIRGINIA SWEETSPIRE
 - LOW GROUNDCOVER
JUNIPER
ASIATIC JASMINE
BIG BLUE LIRIOPE
FLORIDA GAMMA GRASS

NOTE:

1. THIS PLAN CONSTITUTES A CONCEPTUAL REPRESENTATION OF A LANDSCAPE PLANNING SCHEME FOR A THEORETICAL UTILITY SITE. ACTUAL LAYOUT AND CONFIGURATION OF A PARTICULAR WELL SITE WILL VARY GREATLY DEPENDING ON THE CONDITIONS EXISTING AT EACH FACILITY. IT IS NOT INTENDED TO BE USED AS A PLANTING PLAN, BUT AS A GENERIC GUIDELINE. LOCAL LANDSCAPE CODE WILL ULTIMATELY DETERMINE THE BASIC REQUIREMENTS FOR THE FINAL PLAN.

NO. SHEETS	SHEET NO.	DRAWING NO. EXHIBIT X/3	PROJ. NO.	DATE: OCTOBER 2020	DESIGN ENGINEER	NO.	BY	DATE	REVISIONS
			SCALE: NTS	FLORIDA REGISTRATION NO.					
					DESIGNER:				
					DRAWN BY:				
					DATE:				
					CHECKED BY:				
					DATE:				



WTP STANDARDS
WELL SITE CONCEPTUAL
LANDSCAPING PLAN