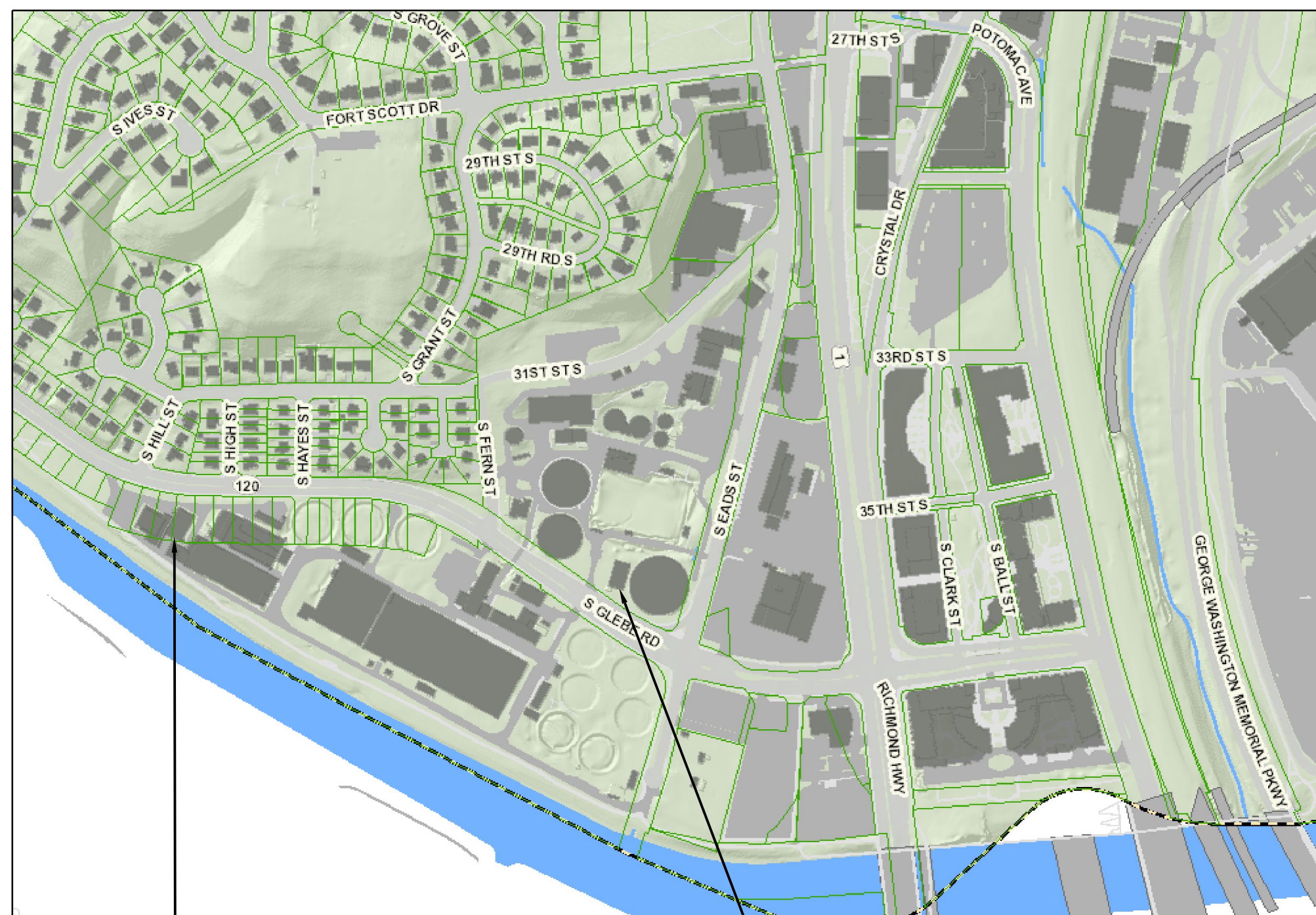


ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT

BID DOCUMENTS - VOLUME 2
SEPTEMBER 2023



3304 S GLEBE ROAD
ARLINGTON, VA 22202

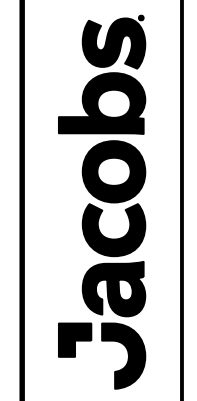
3165 S FERN ST
ARLINGTON, VA 22202

LOCATION MAP
NTS

FOR INFORMATION REGARDING THIS PROJECT
PLEASE CONTACT:
RYAN BERCAW, P.E.
2551 DULLES VIEW DRIVE
SUITE 700
HERNDON, VA 20171
703-817-4800

INDEX TO DRAWINGS

SHEET NO	DWG NO	TITLE	SHEET NO	DWG NO	TITLE
01 - GENERAL			20 - SODIUM HYPOCHLORITE FACILITY (SHF)		
1	01-G-001	COVER SHEET, VICINITY & LOCATION MAPS AND INDEX TO DRAWINGS	DEMOLITION		
2	01-G-002	ABBREVIATIONS AND GENERAL LEGEND	19	20-D-101	GROUND FLOOR PLAN
3	01-G-003	INSTRUMENTATION AND CONTROL LEGEND SHEET 1 OF 2	20	20-D-102	UPPER PLAN
4	01-G-004	INSTRUMENTATION AND CONTROL LEGEND SHEET 2 OF 2	21	20-D-103	SECTION
5	01-G-005	STRUCTURAL NOTES AND LEGEND	22	20-D-104	SECTIONS
6	01-G-006	PROCESS MECHANICAL LEGEND	ARCHITECTURAL/STRUCTURAL		
7	01-G-007	ELECTRICAL LEGEND SHEET 1 OF 2	23	20-AS-201	GROUND FLOOR PLAN
8	01-G-008	ELECTRICAL LEGEND AND ELECTRICAL ABBREVIATIONS SHEET 2 OF 2	24	20-AS-301	SECTION
9	01-G-009	CONSTRUCTION ACCESS PLAN AND TEMPORARY CONSTRUCTION FACILITIES	PROCESS MECHANICAL		
03 - INSTRUMENTATION AND CONTROL			25	20-M-201	GROUND FLOOR PLAN
10	03-I-001	P&ID: NORTH FERRIC FACILITY (NFF)	26	20-M-202	UPPER PLAN AND DETAIL
11	03-I-002	P&ID: SODIUM HYPOCHLORITE FACILITY (SHF)	27	20-M-301	SECTION
10 - NORTH FERRIC FACILITY (NFF)			28	20-M-302	SECTIONS AND TANK NOZZLE PLAN
DEMOLITION			29	20-M-303	SECTION
12	10-D-101	GROUND FLOOR PLAN	ELECTRICAL		
ARCHITECTURAL/STRUCTURAL			30	20-E-201	GROUND FLOOR PLAN
13	10-AS-201	GROUND FLOOR PLAN AND SECTION	31	20-E-601	CONTROL SCHEMATICS
PROCESS MECHANICAL			32	20-E-602	PANELBOARD SCHEDULE
14	10-M-201	GROUND FLOOR PLAN AND DETAIL	SD - STANDARD DETAILS		
15	10-M-301	SECTION AND TANK NOZZLE PLAN	33	SD-IME-501	INSTRUMENTATION AND CONTROL/ PROCESS MECHANICAL/ELECTRICAL
ELECTRICAL					
16	10-E-201	GROUND FLOOR PLAN			
17	10-E-601	CONTROL SCHEMATICS			
18	10-E-602	CONTROL SCHEMATICS AND PANELBOARD SCHEDULE			



GENERAL
VICINITY & LOCATION MAPS
AND INDEX TO DRAWINGS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-001
SHEET	1 of 33

BID DOCUMENTS

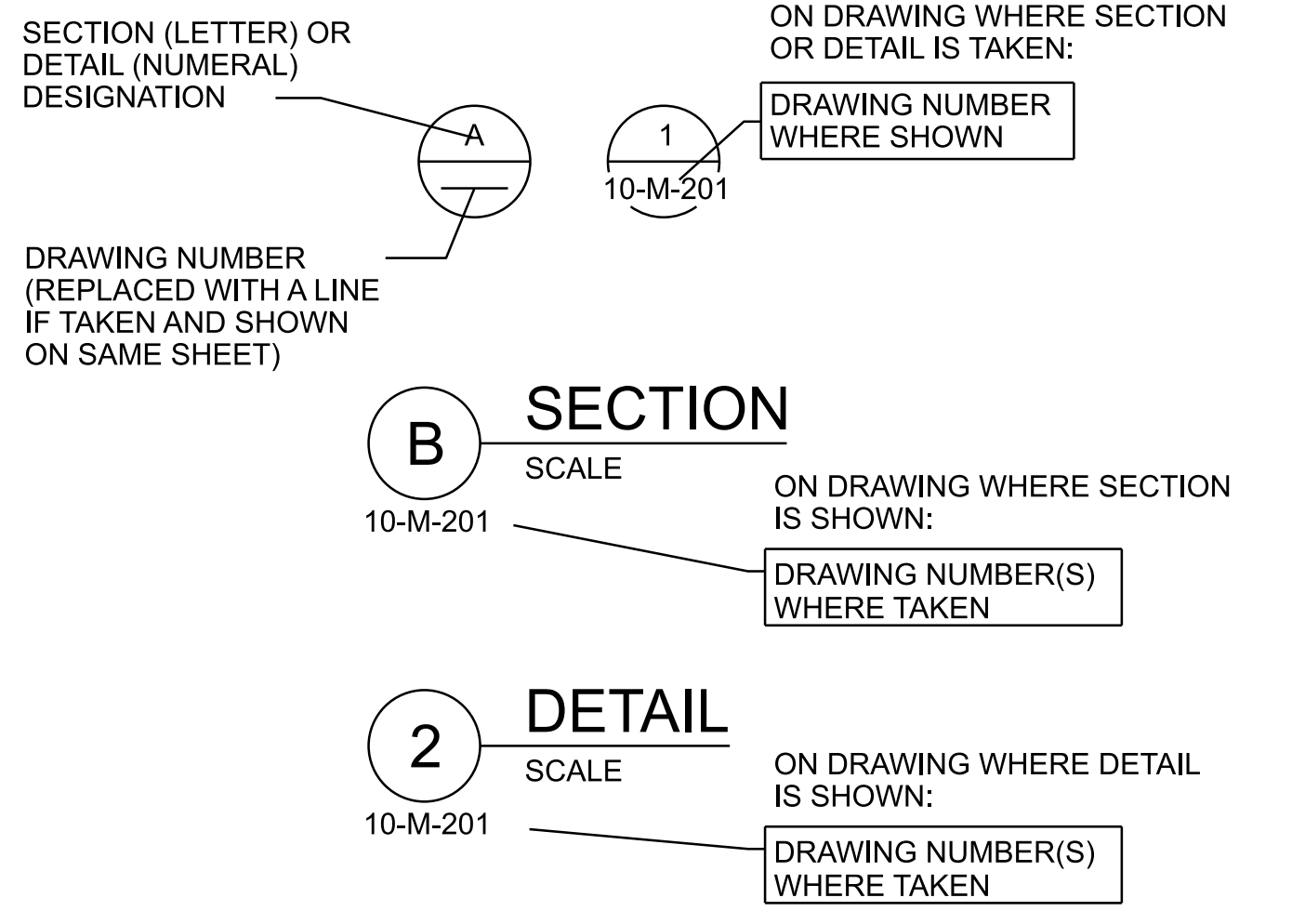
NO.	DATE	DR	REVISION	BY
			CHK	APVD
				APVD
				R. BERCAW

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

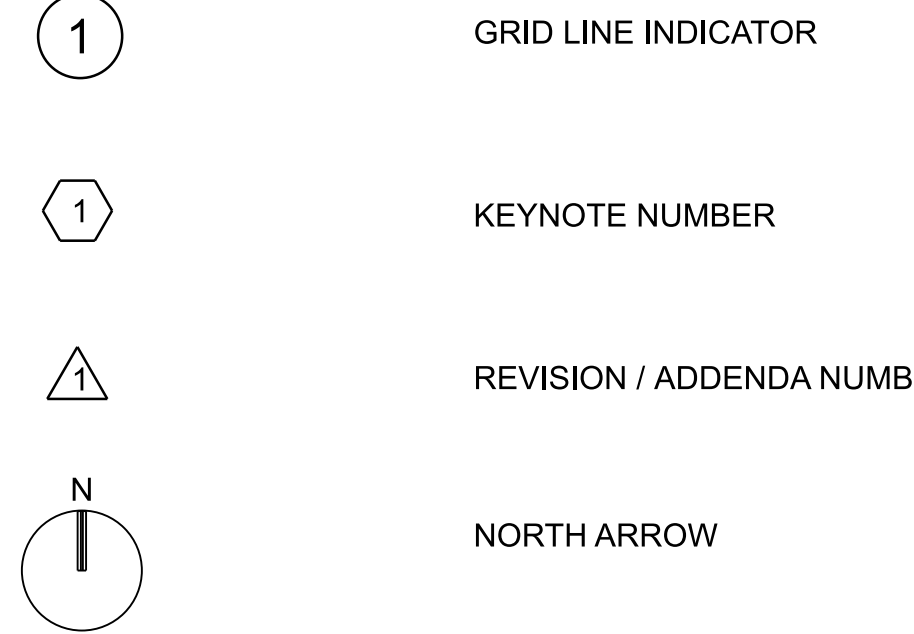
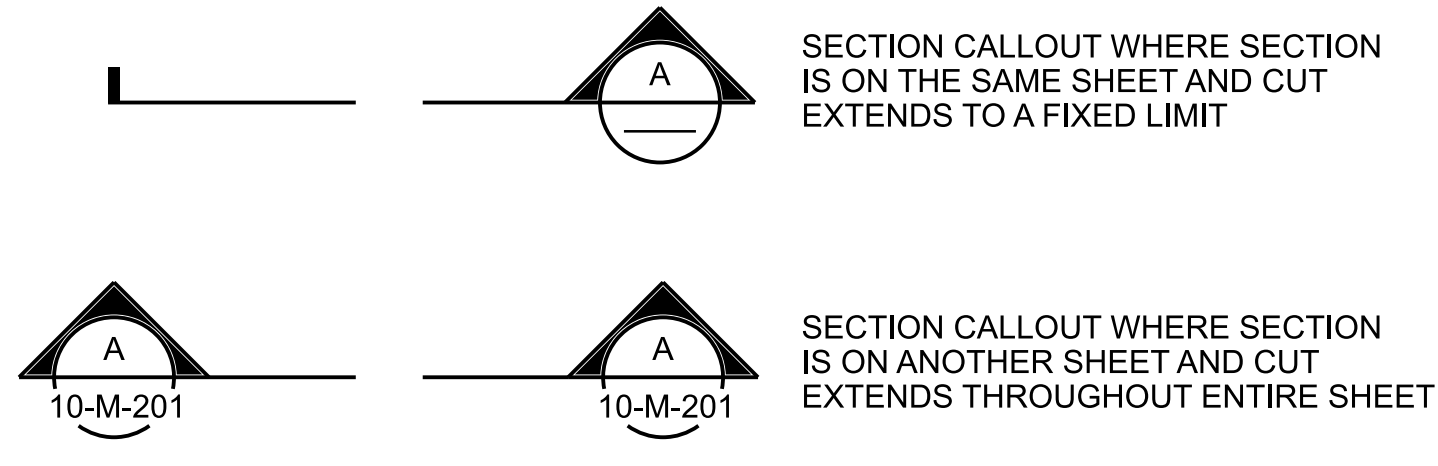
ABBREVIATIONS

ARV	AIR RELIEF VALVE
B.O.	BOTTOM OF
CL	CENTER LINE
DR	DRAIN
EL	ELEVATION
EW	EACH WAY
EXST	EXISTING
FL	FLANGE
FT	FOOT, FEET
HPT	HIGH POINT
HYPO	SODIUM HYPOCHLORITE
LPT	LOW POINT
NFF	NORTH FERRIC FACILITY
PEW	PLANT EFFLUENT WATER
PRV	PRESSURE RELIEF VALVE
PSI	POUNDS PER SQUARE INCH
RECIRC	RECIRCULATION
SHF	SODIUM HYPOCHLORITE FACILITY
SIM	SIMILAR
SQ	SQUARE
SUCT	SUCTION
T.O.	TOP OF
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VA	VIRGINIA
W/	WITH

SECTION / DETAIL DESIGNATIONS



DRAWING TITLE
SCALE ON DRAWING WHERE ONLY A TITLE IS REQUIRED WITH NO REFERENCE (eg: ELEVATIONS)

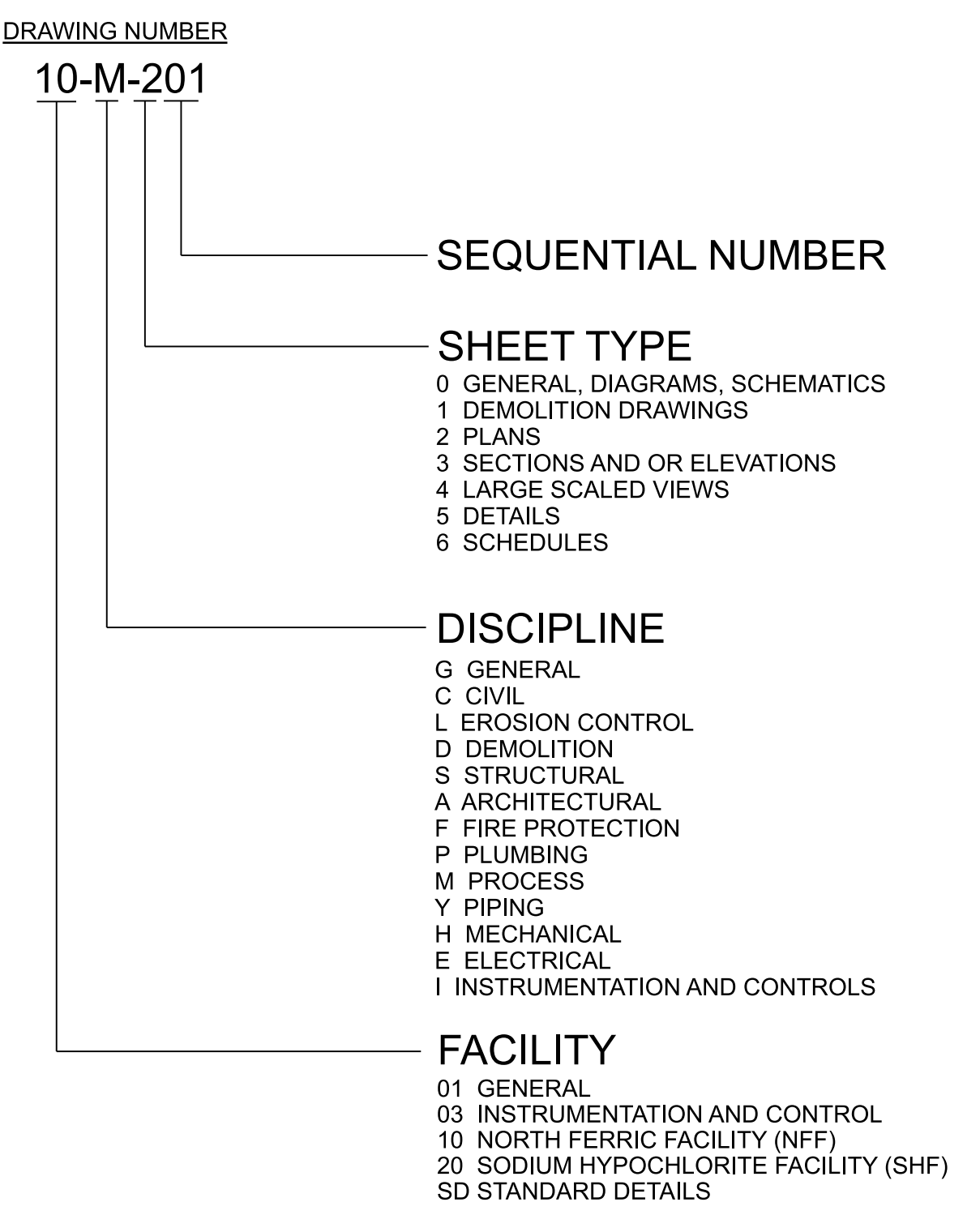


DESIGN DETAIL DESIGNATION

DESIGN DETAIL DESIGNATION (NUMERAL) SHOWN ON DESIGN DETAIL DRAWING(S) (1234-567)

- NOTES:**
1. ALL DESIGN DETAILS ARE TYPICAL AND MUST BE USED IF DESIGN DETAIL DESIGNATION IS NOT SHOWN
 2. THE TERM STANDARD DETAIL, OR A FORM OF IT, IS SYNONYMOUS WITH DESIGN DETAIL. THE DESIGN DETAILS REPRESENT THE CHARACTER AND NATURE OF THE WORK REQUIRED THROUGHOUT THE PROJECT. ALL ASSOCIATED WORK SHALL BE IN ACCORDANCE WITH THE DESIGN DETAILS SHOWN WHETHER THE DETAILS ARE SPECIFICALLY REFERENCED OR NOT.

DRAWING NUMBER DESIGNATION



Jacobs
GENERAL ABBREVIATIONS AND GENERAL LEGEND

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

NO.	DATE	REVISION	CHK	DR	SA KORCSMAROS	R BERCAW	R BERCAW

GENERAL NOTES:

1. THIS IS A STANDARD LEGEND SHEET. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.
2. CONTACT ENGINEER FOR ABBREVIATIONS USED BUT NOT SHOWN ON THIS DRAWING.

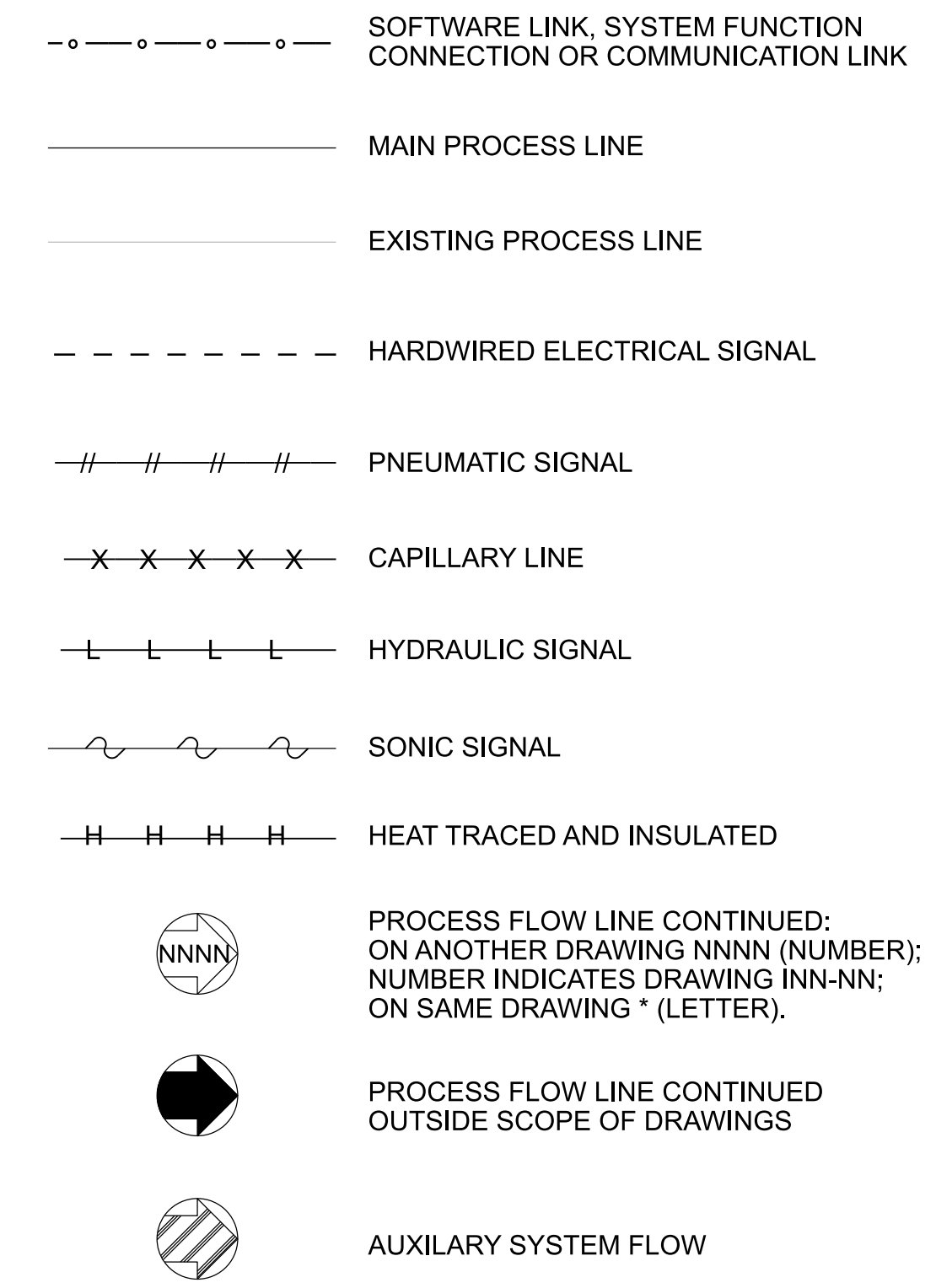
VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-002
SHEET	2 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

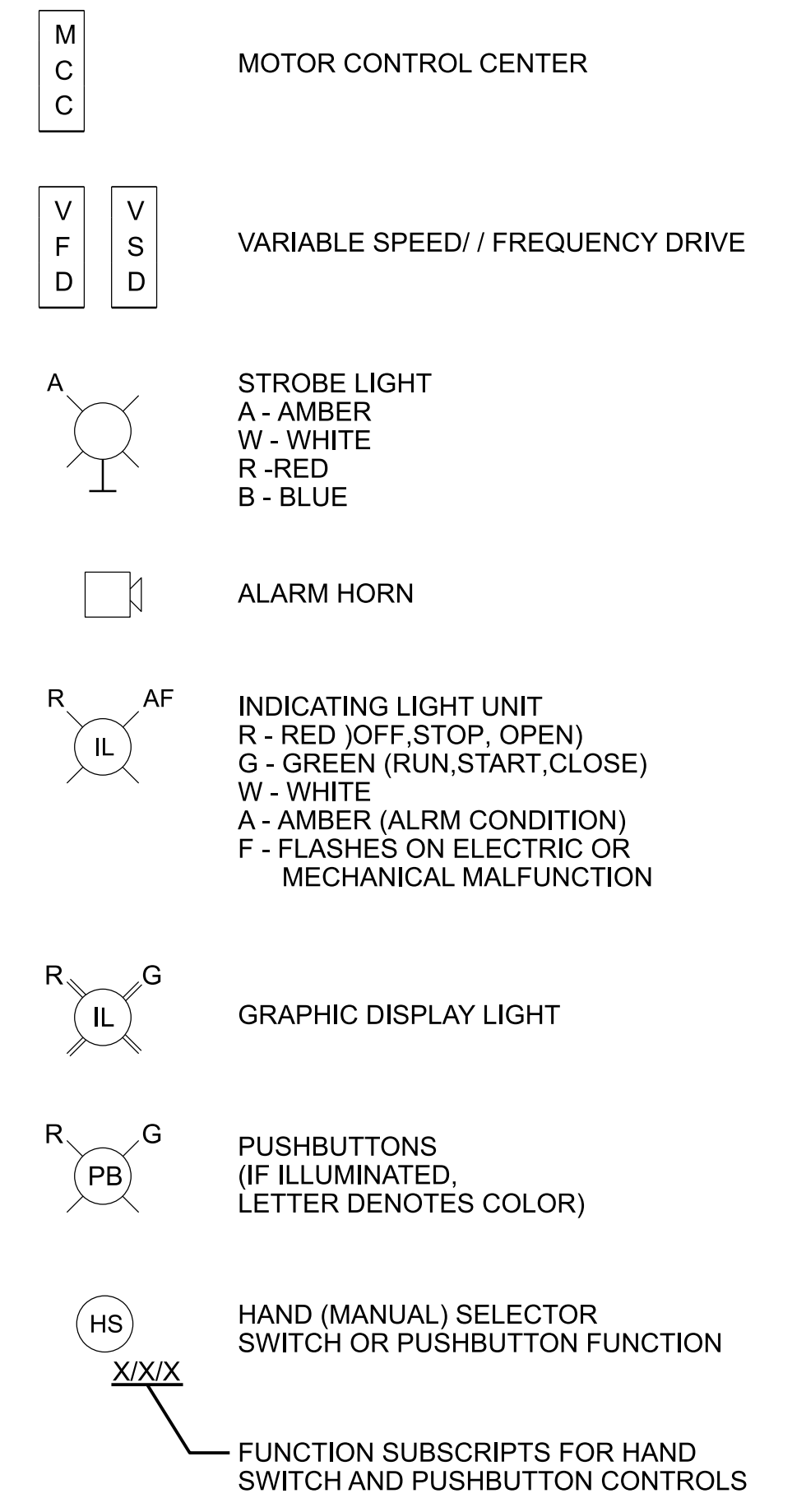
INSTRUMENT IDENTIFICATION LETTERS TABLE

LETTER	FIRST-LETTER		SUCCEEDING-LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		NOT USED	NOT USED	NOT USED
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSED
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING (DIMENSIONAL)		GLASS, GAUGE (UNCALIBRATED)		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTORIZED	MOMENTARY			MIDDLE, INTERMEDIATE
N	COMMAND		NOT USED	NOT USED	
O	NOT USED		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED, FREQUENCY/SAFETY			SWITCH	
T	TEMPERATURE			TRANSMIT	
U	UNIT ALARM		MULTI FUNCTION	MULTI FUNCTION	MULTI FUNCTION
V	VIBRATION			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT STATUS	Y AXIS		RELAY OR COMPUTE	
Z	POSITION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

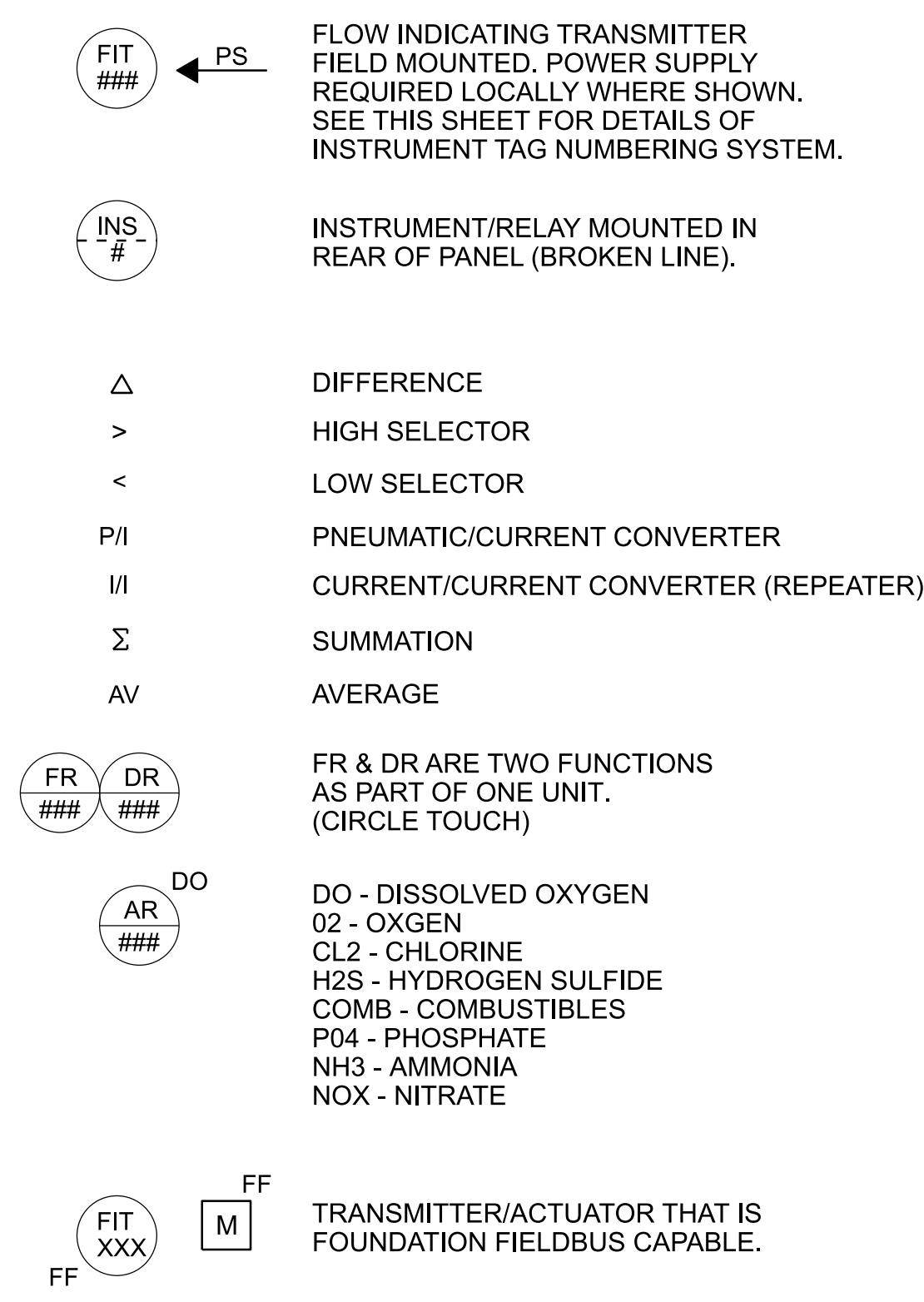
LINE LEGEND



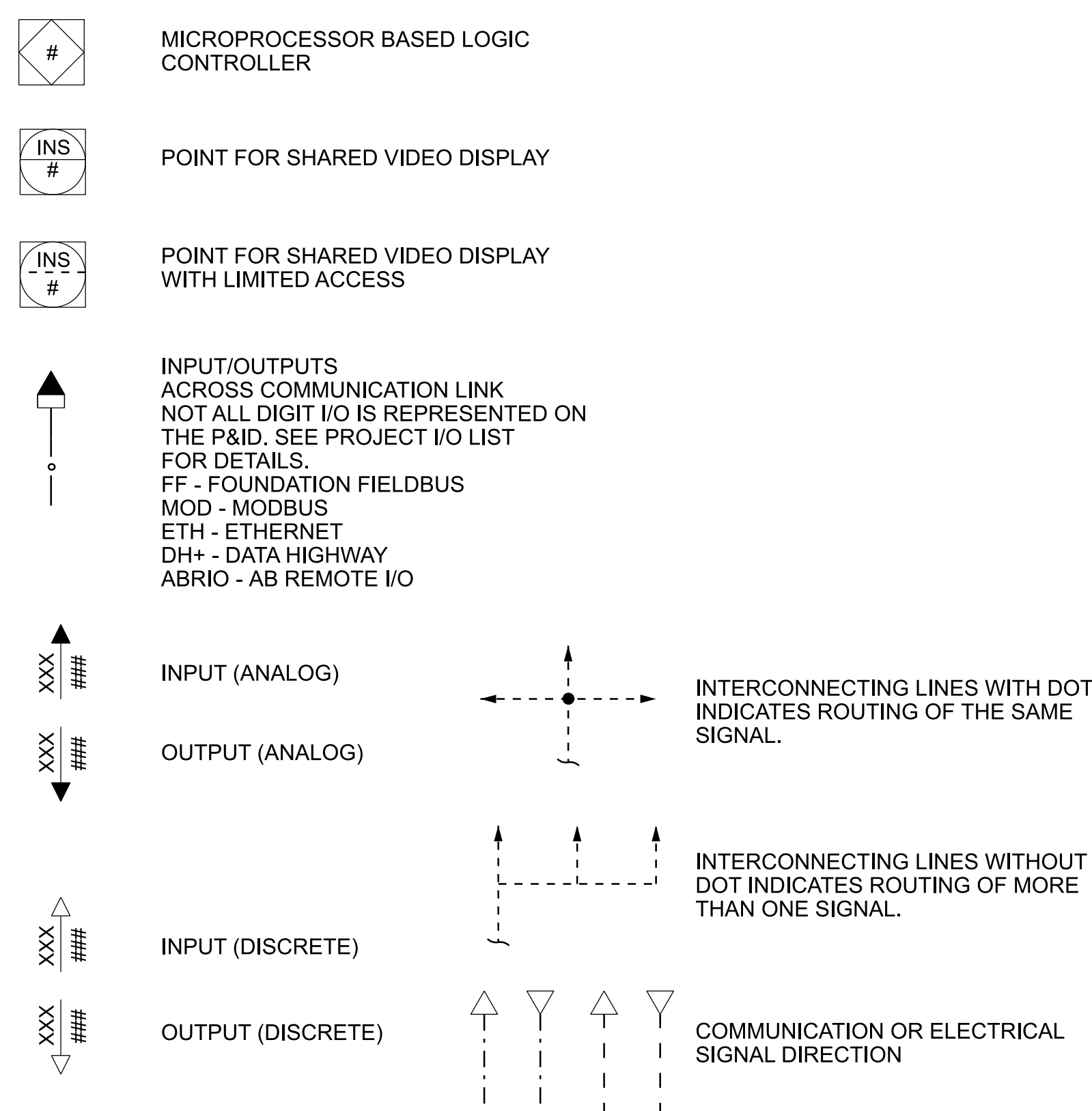
MOTOR/PANEL SYMBOLS



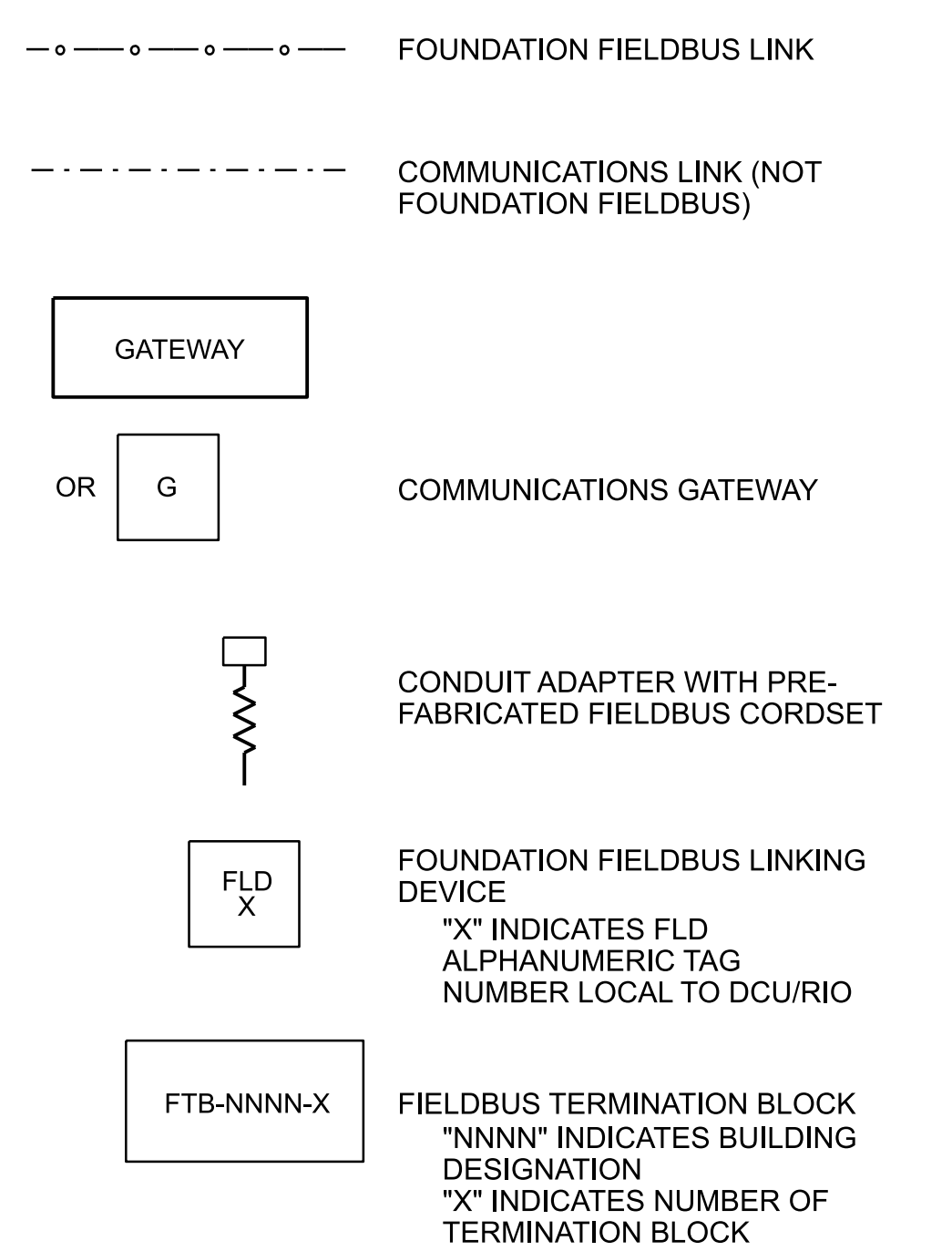
GENERAL SYMBOLS



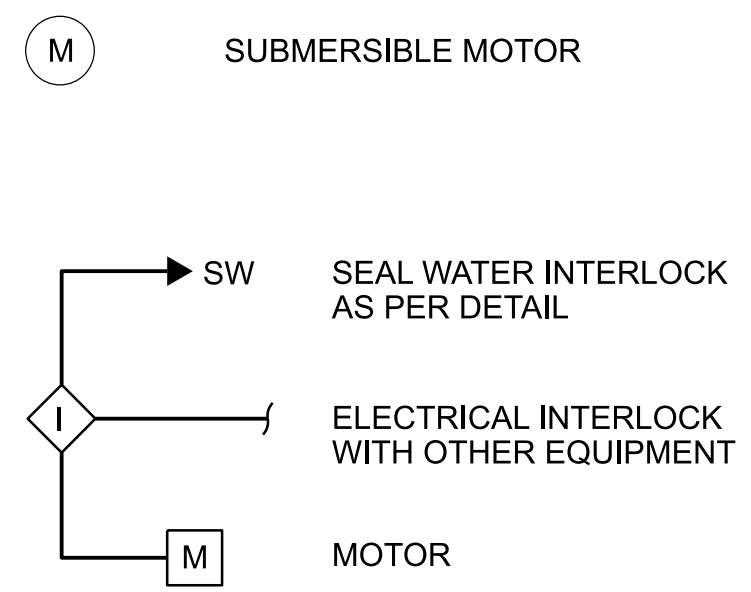
I/O SYMBOLS



FIELDBUS SYMBOLS



- H/O/A : HAND-OFF-AUTO
- H/O/SBY : HAND-OFF-STANDBY
- L/O/R : LOCAL-OFF-REMOTE
- M/A : MANUAL-AUTO
- O/C : OPEN-CLOSE
- O/C/A : OPEN-CLOSE-AUTO
- O/O : ON-OFF
- O/S/C : OPEN-STOP-CLOSE
- RS : RESET
- R/L : REMOTE-LOCAL
- R/O : RUN-OFF
- S/S : START-STOP
- S/SLO : START-STOP WITH LOCKOUT



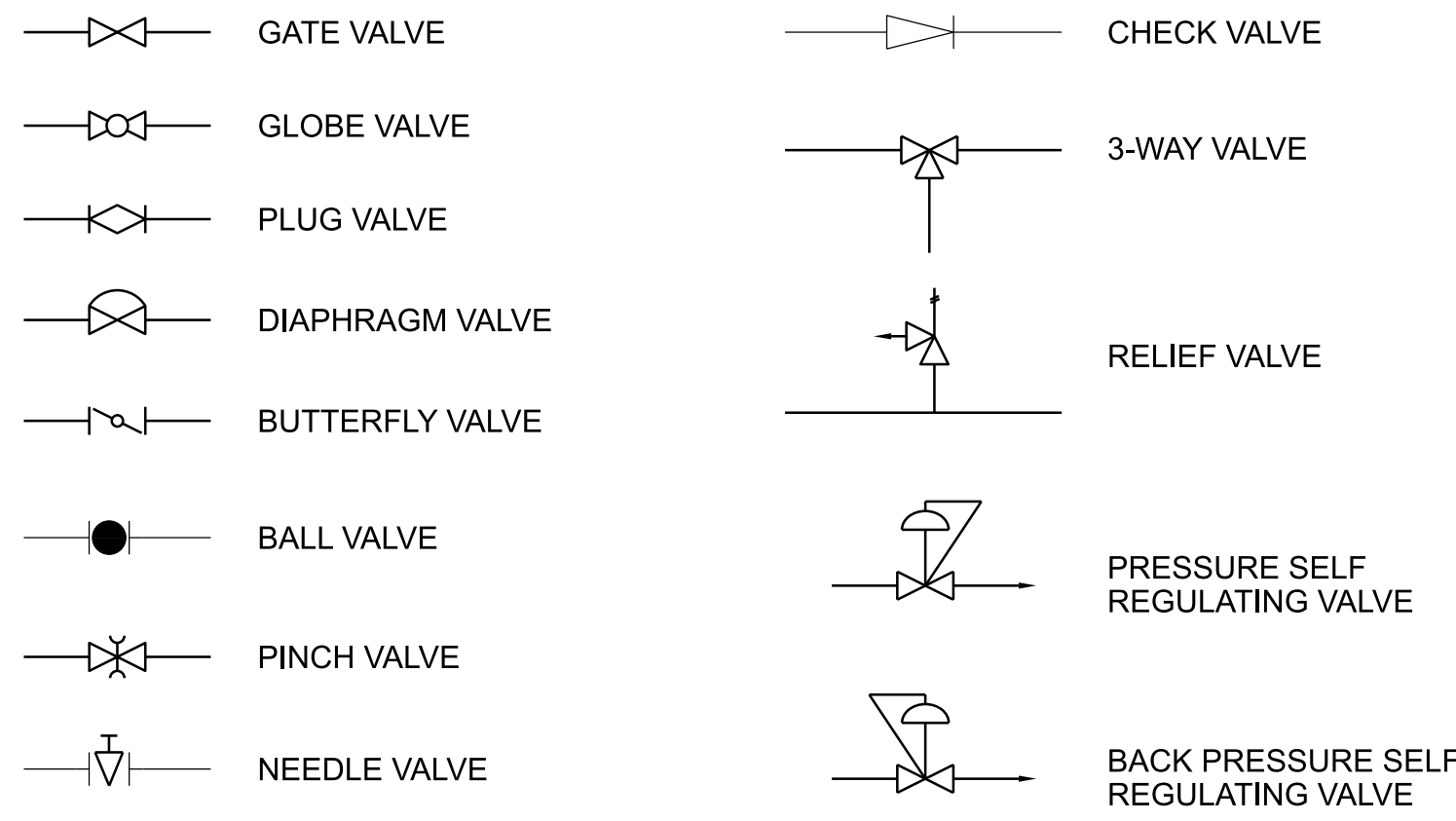
Jacobs

GENERAL INSTRUMENTATION AND CONTROL LEGEND SHEET 1 OF 2

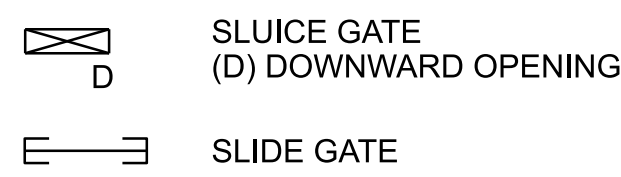
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-003
SHEET	3 of 33

ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT
 REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.
 © JACOBS 2020. ALL RIGHTS RESERVED.

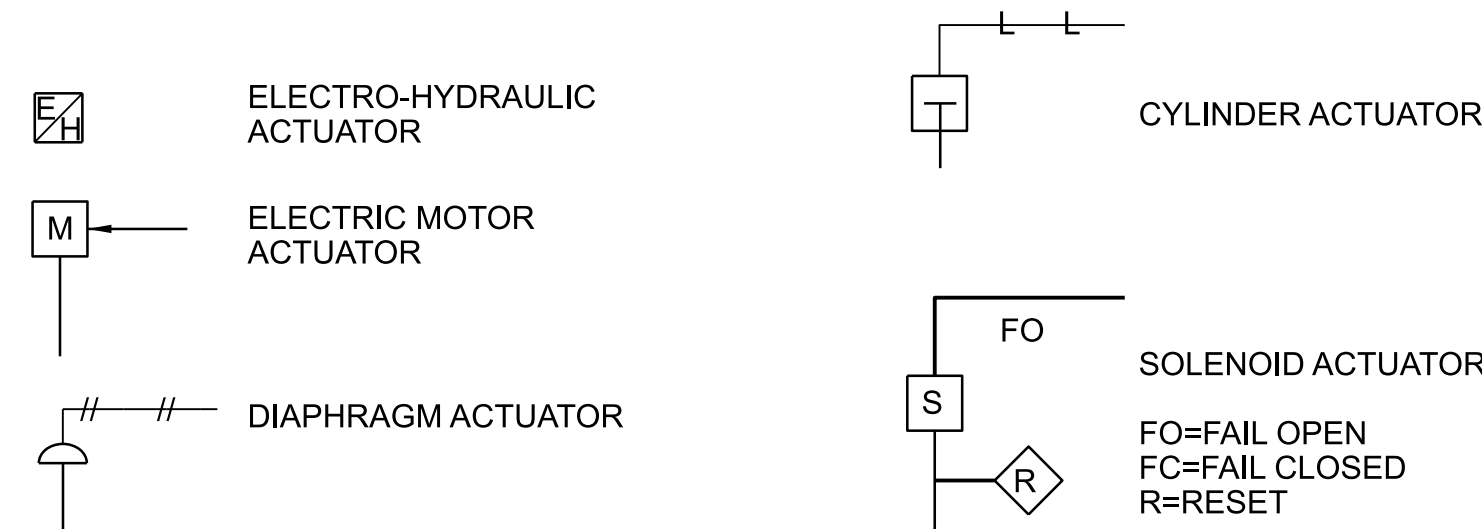
VALVE SYMBOLS



GATE SYMBOLS

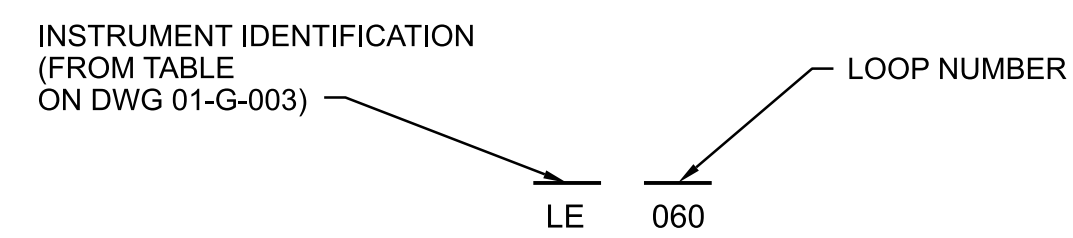


ACTUATOR SYMBOLS



INSTRUMENT TAG NUMBERING SYSTEM

SYMBOLS AND TAG NUMBERS FOLLOW ISA (THE INSTRUMENTATION, SYSTEMS AND AUTOMATION SOCIETY) STANDARD INSTRUMENT TAG NUMBER DETAILS.

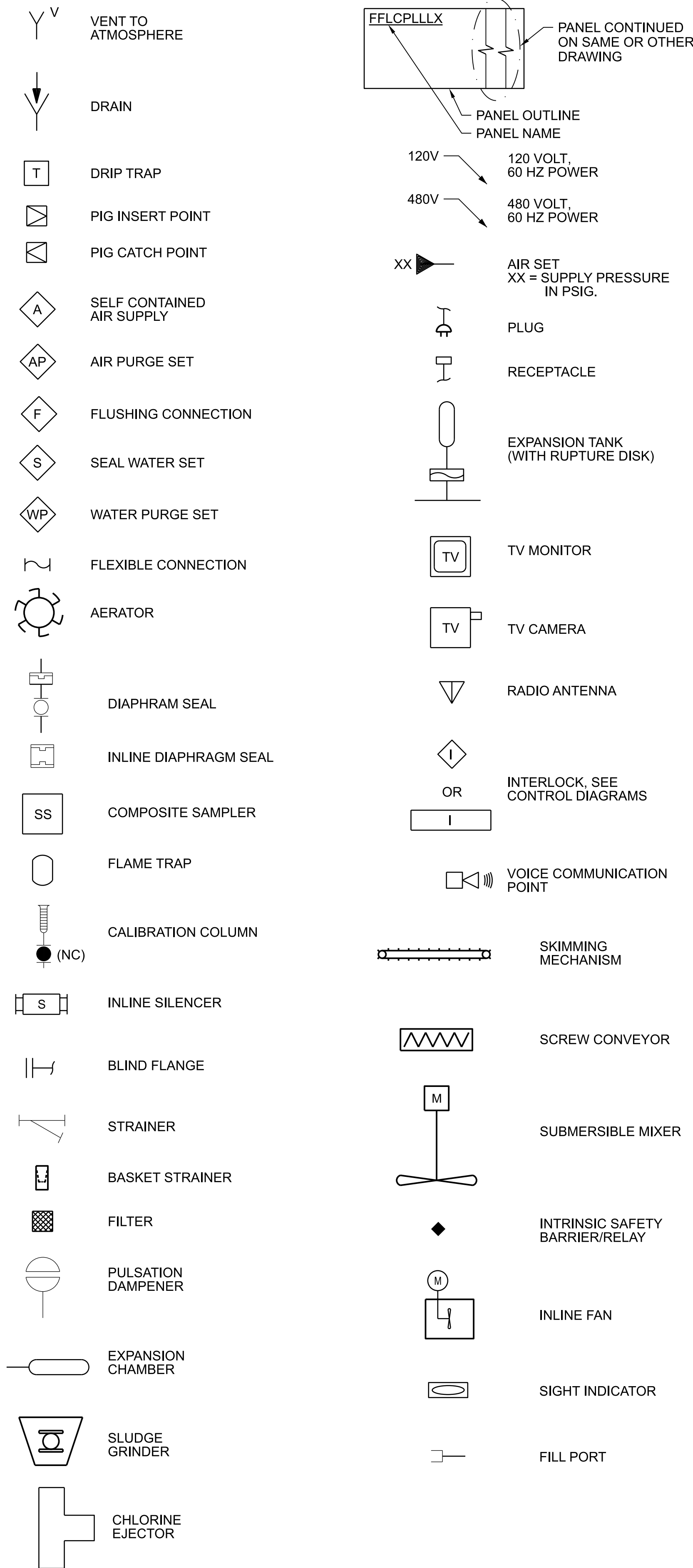


NOTE:
1. TAG NUMBER DOES NOT CHANGE IF SIGNAL IS BROUGHT TO ANOTHER CONTRACT AREA.

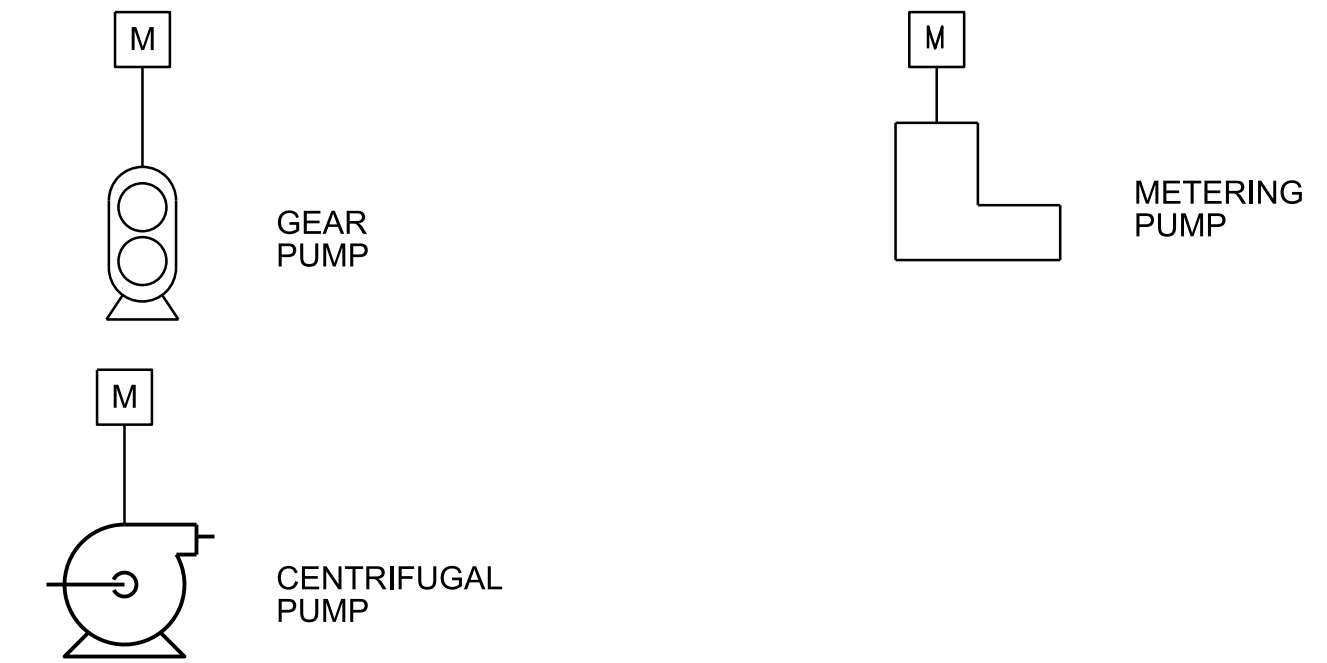
FLOW STREAM IDENTIFICATION

DR DRAIN
HYPO SODIUM HYPOCHLORITE
PEW PLANT EFFLUENT WATER

MISCELLANEOUS SYMBOLS



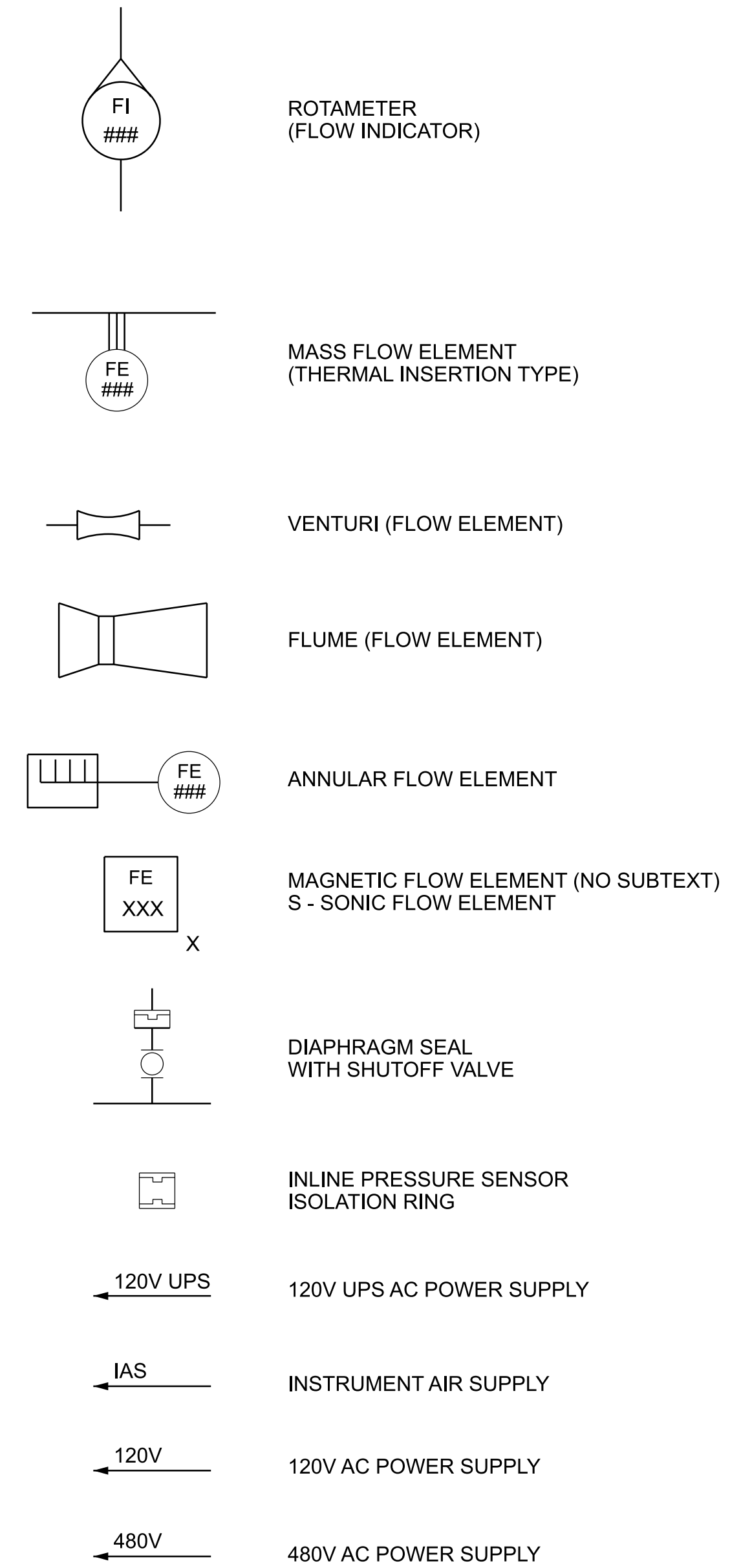
PUMP AND COMPRESSOR SYMBOLS



AREA DESIGNATIONS

NFF NORTH FERRIC/ODOR CONTROL FACILITY
SHF SODIUM HYPOCHLORITE FACILITY

PRIMARY ELEMENT SYMBOLS



Jacobs
GENERAL
INSTRUMENTATION AND
CONTROL LEGEND
SHEET 2 OF 2

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-004
SHEET	4 of 33

J. BROSNAN SA KORCSMAROS R. BERCAW
 DR REVISION BY APVD
 NO. DATE DSGN CHK
 ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT
 REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.
 © JACOBS 2020. ALL RIGHTS RESERVED.

DESIGN CRITERIA

- APPLICABLE CODE: 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE, PART I, VIRGINIA CONSTRUCTION CODE. THE 2018 VIRGINIA CONSTRUCTION CODE ADOPTS AND MODIFIES THE 2018 INTERNATIONAL BUILDING CODE (IBC).
- REFER TO THE DRAWINGS FOR ADDITIONAL AND SPECIFIC STRUCTURE LOADINGS AND REQUIREMENTS.
- SEISMIC LOADS:
 MAPPED SPECTRAL RESPONSE ACCELERATIONS
 $S_s = 0.133g$
 $S_1 = 0.043g$
 DESIGN SPECTRAL RESPONSE ACCELERATIONS
 $S_{DS} = 0.213g$
 $S_{D1} = 0.121g$
 SITE CLASS = E
 RISK CATEGORY = III
 SEISMIC DESIGN CATEGORY = B
 IMPORTANCE FACTOR, $I_e = 1.25$

GENERAL INFORMATION

- FOR ABBREVIATIONS NOT LISTED, SEE ASME Y14.38 "ABBREVIATIONS AND ACRONYMS: PUBLICATION AS DISTRIBUTED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
- DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT.
- VERIFY FINAL OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION OF THESE ELEMENTS.
- FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS, SEE OTHER DISCIPLINE DRAWINGS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS. COORDINATE PIPING OPENINGS WITH OTHER DISCIPLINE DRAWINGS.
- DO NOT CUT OR MODIFY STRUCTURAL MEMBERS FOR PIPES, DUCTS, ETC., UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
- VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT ENGINEER IS GUARANTOR OF CONSTRUCTOR'S WORK, NOR RESPONSIBLE FOR THE COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, OR SAFETY AT THE JOB SITE.
- INFORMATION (DETAILING, DIMENSIONS, CONFIGURATIONS, AND ELEVATIONS, ETC.) OF EXISTING CONSTRUCTION SHOWN REFLECTS AVAILABLE EXISTING DESIGN DOCUMENTS, AND DOES NOT NECESSARILY REPRESENT THE AS-CONSTRUCTED CONDITIONS. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND DETAILING OF THE EXISTING STRUCTURES PRIOR TO UNDERTAKING ANY WORK THAT IS AFFECTED BY THE EXISTING STRUCTURE. NOTIFY ENGINEER IF CONDITIONS VARY FROM THAT SHOWN PRIOR TO STARTING WORK.

INSPECTION AND TESTING

- SPECIFIED LABORATORY TEST MIXES AND SIMILAR TEST RESULTS TO VERIFY MATERIAL QUALITY AND CONFORMANCE TO SPECIFICATIONS, AND SUBMITTED FOR REVIEW PRIOR TO ACCEPTANCE FOR USE ON THE PROJECT, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSPECTION AND/OR TESTING OF THE FOLLOW PORTIONS OF THE STRUCTURAL WORK SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION AND TESTING AGENCY RETAINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER:
 CONCRETE TESTING
 INSPECTION OF POST-INSTALLED CONCRETE AND MASONRY ANCHOR INSTALLATION
 INSPECTION OF POST-INSTALLED ADHESIVE DOWEL INSTALLATION

CONCRETE REINFORCING

- REINFORCING STEEL: ASTM A615, GRADE 60
- FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
- CONCRETE COVER FOR REINFORCING, UNLESS SHOWN OTHERWISE, SHALL BE:
 WHEN CAST AGAINST EARTH: 3"
 ALL OTHER CONCRETE SURFACES: 2"
- 90 DEGREE BENDS, UNLESS OTHERWISE SHOWN, SHALL BE ACI 318 STANDARD HOOKS.
- REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

CONCRETE DESIGN STRENGTH = 4,000 PSI MIN AT 28 DAYS ³ GRADE 60 REINFORCING STEEL										
BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11	
LAP SPLICE LENGTH										
SPACING = 3"	TOP BAR ²	1'-4"	1'-8"	2'-1"	3'-0"	5'-2"	6'-8"	8'-6"	10'-10"	13'-4"
	OTHER BAR	1'-4"	1'-4"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
SPACING = 4"	TOP BAR ²	1'-4"	1'-8"	2'-0"	2'-5"	3'-10"	5'-0"	6'-5"	8'-1"	10'-0"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	3'-0"	3'-11"	4'-11"	6'-3"	7'-8"
SPACING ≥ 6"	TOP BAR ²	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	7'-5"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
EMBEDMENT LENGTH										
SPACING = 3"	TOP BAR ²	1'-0"	1'-3"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-10"	3'-1"	4'-0"	5'-1"	6'-5"	7'-11"
SPACING = 4"	TOP BAR ²	1'-0"	1'-3"	1'-7"	1'-10"	3'-0"	3'-11"	4'-11"	6'-3"	7'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-4"	3'-0"	3'-10"	4'-10"	5'-11"
SPACING ≥ 6"	TOP BAR ²	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-1"	2'-5"	3'-0"	3'-8"	4'-5"

- LAP LENGTHS ARE BASED ON MINIMUM CONCRETE COVER OF 2". LONGER LENGTHS ARE REQUIRED FOR CONCRETE COVER LESS THAN 2".
- TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.
- WHERE 3000 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 16 PERCENT. WHERE 3500 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 7 PERCENT.

CAST IN PLACE CONCRETE

- MINIMUM 28-DAY COMPRESSIVE STRENGTH: 4500 PSI U.N.O.
- CONSTRUCTION JOINTS INDICATED ARE SUGGESTED LOCATIONS. CONTRACTOR MAY REVISE LOCATION OF JOINTS, SUBJECT TO SPECIFIED REQUIREMENTS. LAYOUT SHOWING ALL CONSTRUCTION JOINT LOCATIONS SHALL BE SUBMITTED FOR REVIEW BY ENGINEER.
- ROUGHEN AND CLEAN CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
- COORDINATE PLACEMENT OF OPENINGS, PIPE PENETRATIONS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
- NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.

WELDING

- WELDS SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS):
 D1.1, STRUCTURAL WELDING CODE STEEL
 D1.2, STRUCTURAL WELDING CODE ALUMINUM
 D1.3, STRUCTURAL WELDING CODE SHEET STEEL
 D1.4, STRUCTURAL WELDING CODE REINFORCING STEEL
 D1.6, STRUCTURAL WELDING CODE STAINLESS STEEL
- REPAIR WELDS FOUND DEFECTIVE IN ACCORDANCE WITH AWS D1.1 SECTION 5.26.
- USE INTERMITTENT WELDS AT FIELD WELDS OF EMBED PLATES AND ANGLES TO AVOID SPALLING OR CRACKING OF THE EXISTING CONCRETE.
- BUTT JOINT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) UNLESS INDICATED OTHERWISE.

STRUCTURAL STEEL AND METAL FABRICATIONS

- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:
 W-SHAPES A992
 MISCELLANEOUS SHAPES INCLUDING ANGLES, CHANNELS, PLATES, ETC. A36
 MOMENT CONNECTION CONTINUITY PLATES A572, GRADE 50
 HOLLOW STRUCTURAL SECTIONS (HSS) A500, GRADE B
 STEEL PIPE A53, GRADE B
 STAINLESS STEEL SHAPES A276
- ALUMINUM SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:
 STRUCTURAL SHAPES B308
 PLATES B209
- STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION, AND CURRENT OSHA STANDARDS.
- FASTENERS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING ASTM STANDARDS EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE:
 UNLESS SHOWN OTHERWISE A325-N
 SLIP CRITICAL A325-SC
 DIRECT TENSION INDICATORS OR LOAD INDICATOR WASHERS ASTM F959
 TENSION CONTROL (TC) BOLTS ASTM A325 AND ASTM F1852
 ANCHOR BOLTS (AB) F593, AISI TYPE 316, CONDITION CW
 STEEL OR GALVANIZED STEEL F1554, GR 36 / A153
 MACHINE BOLTS (MB) F593, AISI TYPE 316, CONDITION CW
 STAINLESS STEEL A307 / A153
 STEEL OR GALVANIZED STEEL
- ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.
- NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL STEEL IS PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

DEFERRED SUBMITTALS

- DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE PERMITTING AGENCY FOR ACCEPTANCE PRIOR TO INSTALLATION OF THAT PORTION OF THE WORK OR ARE REQUIRED TO BE SUBMITTED FOR REVIEW ONLY BY THE ENGINEER.
- WHERE DEFERRED SUBMITTALS INCLUDE ADDITIONAL MATERIALS, INSTALLATION, ANCHORAGE, OR CERTIFICATION OF COMPONENTS THAT REQUIRE SPECIAL INSPECTION AND/OR STRUCTURAL OBSERVATION TO MEET CODE REQUIREMENTS, THE DEFERRED SUBMITTAL SHALL INCLUDE SPECIFIC LINE ITEMS TO BE ADDED TO THE APPROPRIATE TABLES IN THE PROJECT'S STATEMENT OF SPECIAL INSPECTIONS PLAN IF THEY ARE NOT ALREADY IDENTIFIED.
- THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS PER SECTION 107.3.4.1 OF 2018 IBC THAT ARE EXPECTED TO CONTAIN STRUCTURAL CALCULATIONS OR SAFETY RELATED SYSTEM INFORMATION FOR REVIEW TO MEET BUILDING PERMITTING REQUIREMENTS FOR DESIGNED SYSTEMS. PRIOR TO INSTALLATION OF THE INDICATED STRUCTURAL ELEMENT, EQUIPMENT, DISTRIBUTION SYSTEM, OR COMPONENT OR ITS ANCHORAGE, THE CONTRACTOR SHALL SUBMIT THE REQUIRED CALCULATIONS AND SUPPORTING DATA AND DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER. ADDITIONALLY, ACCEPTANCE INDICATED ON THE ENGINEER'S COMMENT FORM, ALONG WITH THE COMPLETED, FINAL SUBMITTAL SHALL THEN BE SUBMITTED BY THE CONTRACTOR TO THE PERMITTING AGENCY AND APPROVED PRIOR TO INSTALLATION OF THESE ITEMS.

SPECIFICATION SECTION	CODE REQUIRED DEFERRED SUBMITTALS FOR REVIEW BY PERMITTING AGENCY
01 88 15	ANCHORAGE AND BRACING
06 82 00	GLASS-FIBER-REINFORCED PLASTIC
40 05 15	PIPING SUPPORT SYSTEMS
43 40 02	FIBERGLASS REINFORCED PLASTIC TANK
OTHER	ANY EQUIPMENT OR COMPONENT IN WHICH A TECHNICAL SPECIFICATION REQUIRES SUBMITTAL OF EQUIPMENT OR ANCHORAGE SYSTEM CALCULATIONS

STRUCTURAL LEGEND

SYMBOL	LEGEND
	GROUT
	EARTH OR FINISH GRADE
	CONCRETE
	STEEL
	SPOT ELEVATION INDICATOR (IN FEET)
	DIRECTION OF SLOPE DOWN

ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT

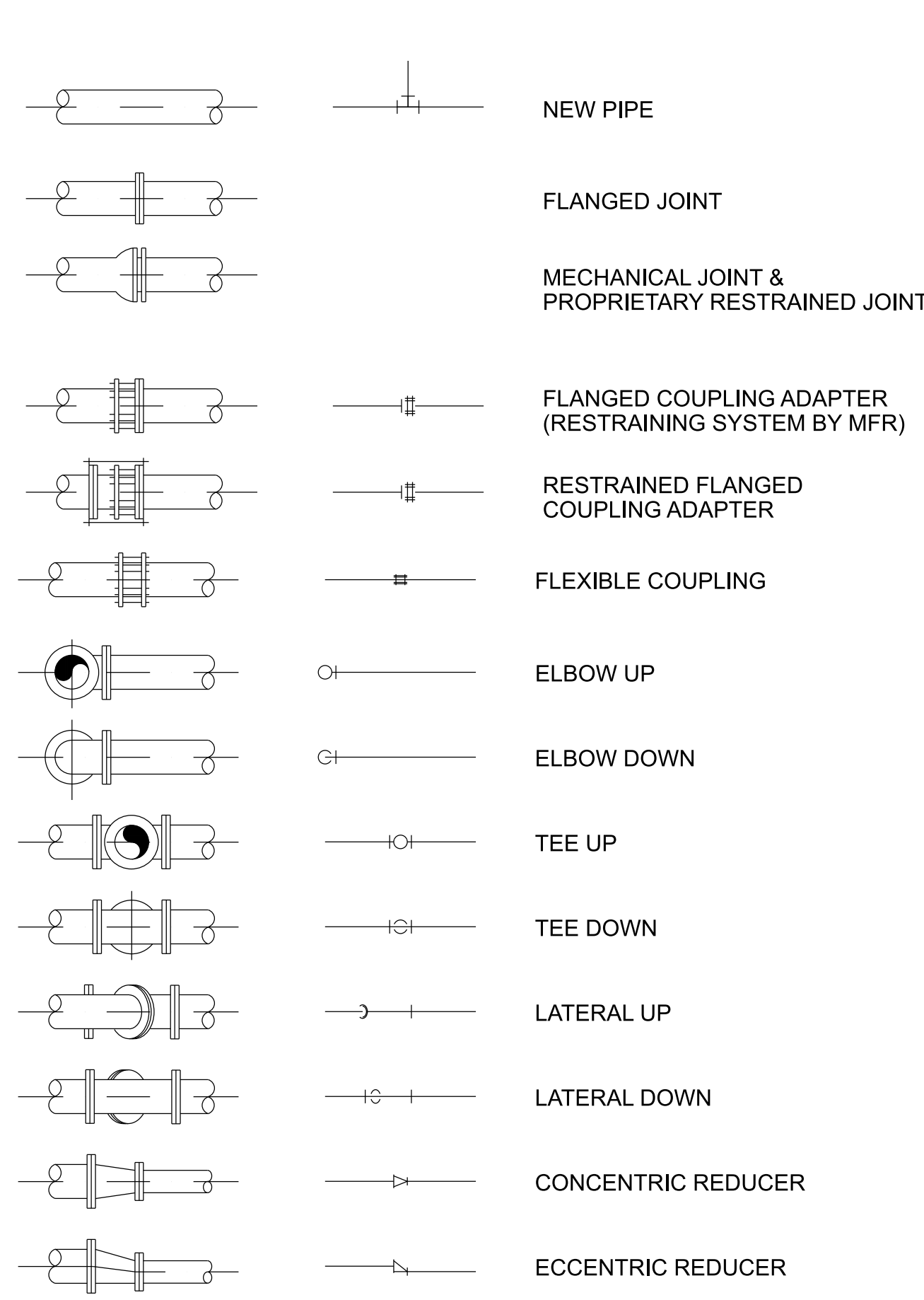
GENERAL
 STRUCTURAL NOTES AND LEGEND

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-005
SHEET	5 of 33



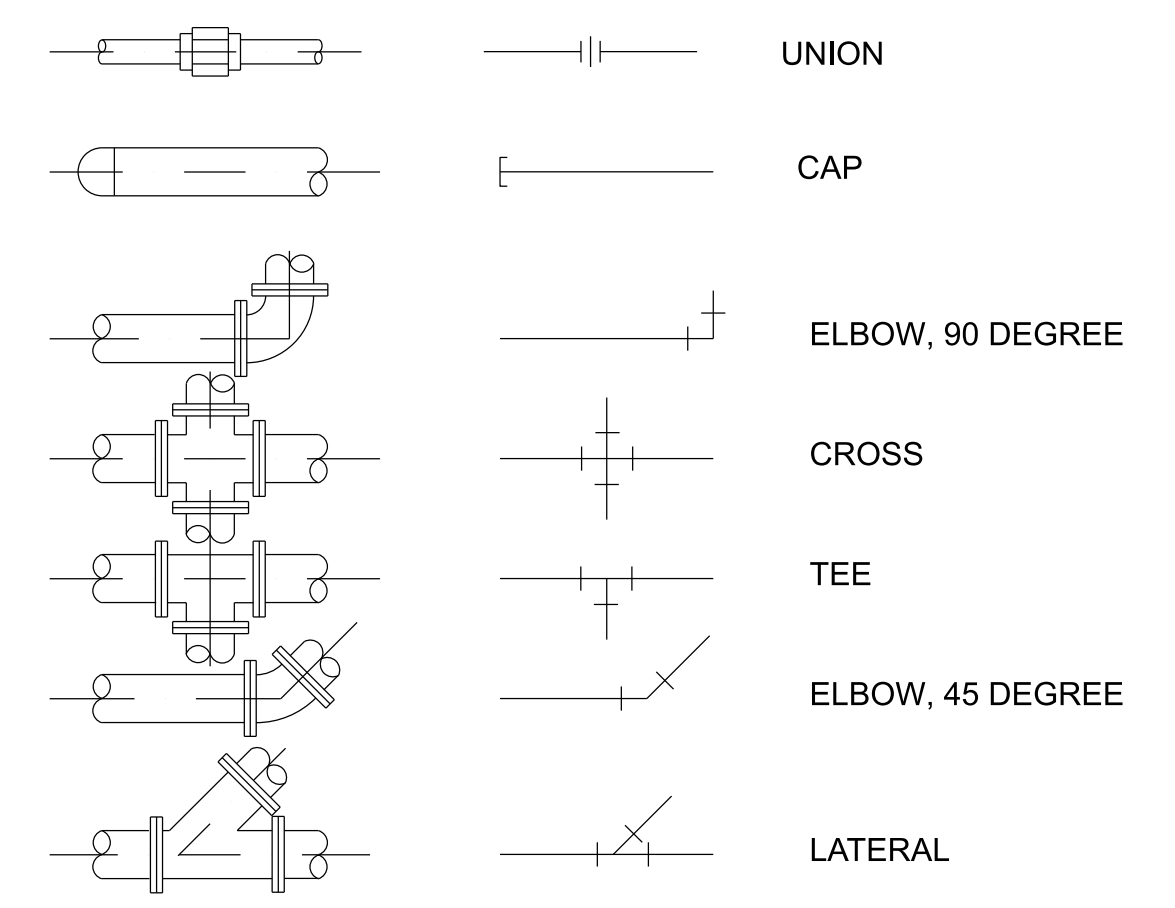
PIPE AND FITTING SYMBOLS

DOUBLE LINE **SINGLE LINE**



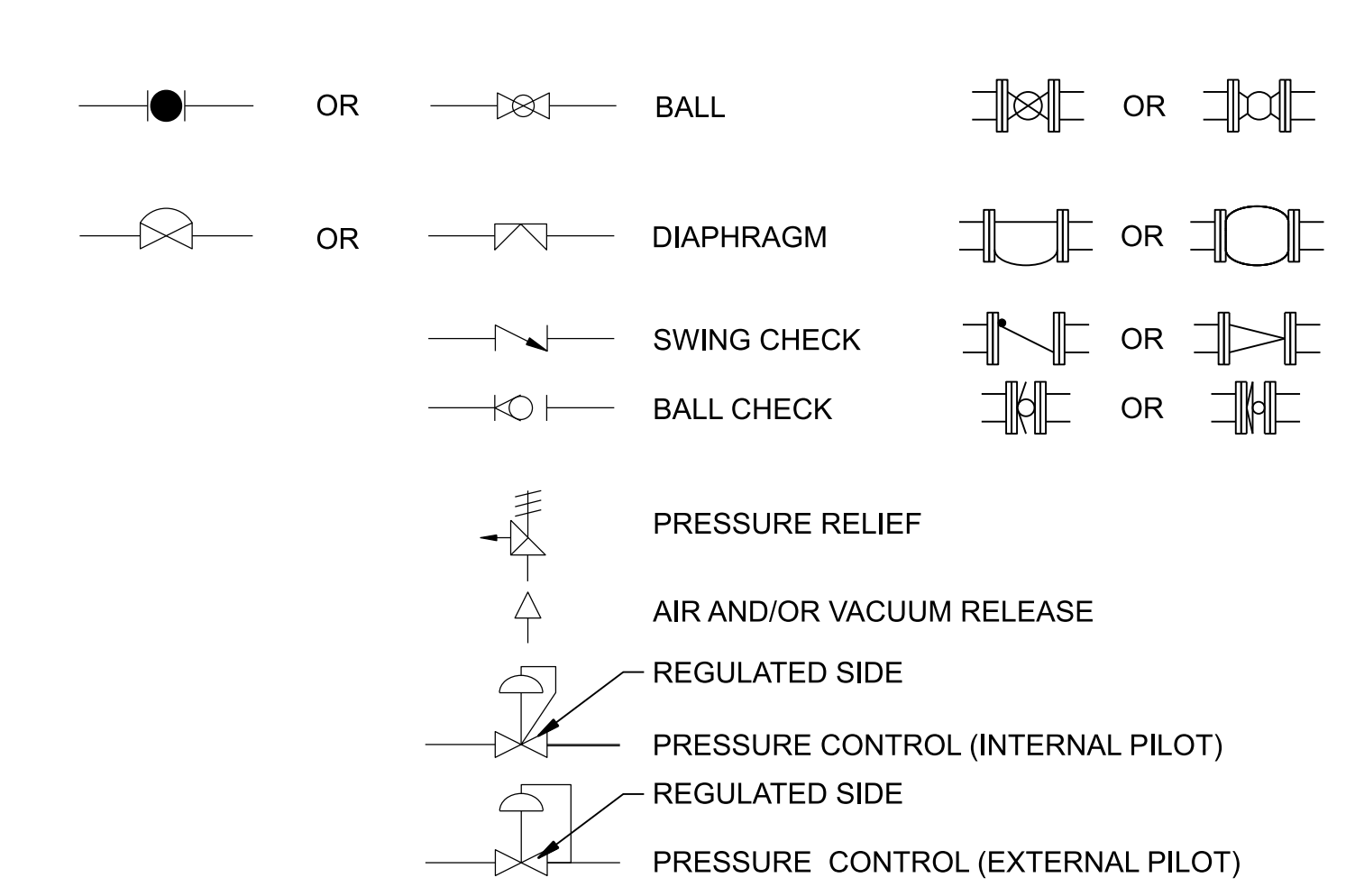
- NOTES:**
1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS.
 2. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.
 3. EXISTING PIPE AND EQUIPMENT IS SHOWN LIGHT-LINED AND/OR SCREENED. NEW PIPING AND EQUIPMENT IS SHOWN HEAVY-LINED.

DOUBLE LINE **SINGLE LINE**



VALVE SYMBOLS

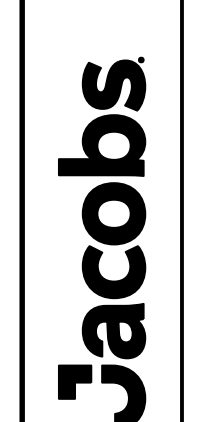
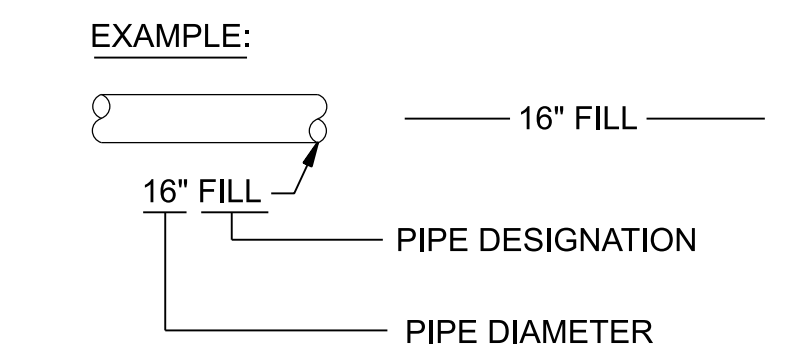
SINGLE LINE **DOUBLE LINE**



GENERAL PIPING NOTES

1. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
2. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. CONTRACTOR SHALL DESIGN SUPPORTS AS SPECIFIED.
3. ALL JOINTS SHALL BE WATERTIGHT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL.
4. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
5. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.

PIPING DESIGNATION



GENERAL
MECHANICAL LEGEND

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

NO.	DATE	DR	SA KORCSMAROS	REVISION	BY	APVD
				CHK		R BERCAW

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-006
SHEET	6 of 33

BID DOCUMENTS

SYMBOL	DESCRIPTION
ONE LINE DIAGRAM	
	DRAWOUT AIR CIRCUIT BREAKER, LOW VOLTAGE
	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE, UNO
	CIRCUIT BREAKER, STATIC TRIP UNIT, SENSOR AMP TRIP AND FRAME RATINGS SHOWN, 3 POLE, UNO
	CIRCUIT BREAKER, MAGNETIC TRIP ONLY, TRIP RATING SHOWN, 3 POLE, UNO
	CIRCUIT BREAKER WITH CURRENT LIMITING FUSES, TRIP AND FUSE RATING INDICATED, 3 POLE, UNO
	FUSED SWITCH, SWITCH AND FUSE CURRENT RATING INDICATED, 3 POLE, UNO
	SWITCH, CURRENT RATING INDICATED, 3 POLE, UNO
	FUSE, CURRENT RATING AND QUANTITY INDICATED
	MAGNETIC STARTER WITH OVERLOAD, NEMA SIZE INDICATED, FVNR UNO
	ELECTRONIC STARTER/SPEED CONTROL RVSS = REDUCED VOLTAGE SOFT STARTER AFD = AC ADJUSTABLE FREQUENCY DRIVE DC = DC ADJUSTABLE SPEED DRIVE RVAT = REDUCED VOLTAGE AUTO TRANSFORMER TYPE RVRT = REDUCED VOLTAGE REACTOR TYPE
	CABLE OR BUS CONNECTION POINT
	KEY INTERLOCK
	SURGE ARRESTER (GAP TYPE)
	CAPACITOR - KVAR INDICATED, 3 PHASE
	AC MOTOR, SQUIRREL CAGE INDUCTION - HORSEPOWER INDICATED
	GENERATOR, KW/KVA RATING SHOWN
	ANALOG METER WITH SWITCH - SCALE RANGE SHOWN V = VOLTAGE KW = KILOWATTS A = AMPERAGE KVAR = KILOVAR PF = POWER FACTOR
	DIGITAL POWER METER (MULTIFUNCTION)
	UTILITY REVENUE METER
	GROUND
	TRANSFORMER, SIZE, VOLTAGE RATINGS, AND PHASE INDICATED
	SHIELDED ISOLATION TRANSFORMER
	POTENTIAL TRANSFORMER, VOLTAGE RATING AND QUANTITY INDICATED
	CURRENT TRANSFORMER, RATIO(100:5) AND QUANTITY INDICATED (3)
	CONNECTION POINT TO EQUIPMENT SPECIFIED IN OTHER DIVISIONS, RACEWAY, CONDUCTOR AND CONNECTION IN THIS DIVISION
	TRANSIENT VOLTAGE SURGE SUPPRESSOR

SYMBOL	DESCRIPTION
ONE LINE DIAGRAM	
	DRAWOUT POWER CIRCUIT BREAKER, MEDIUM VOLTAGE
	NON DRAWOUT FUSED SWITCH, MEDIUM VOLTAGE
	DRAWOUT FUSED SWITCH AND CONTACTOR, MEDIUM VOLTAGE
	DRAWOUT FUSED SWITCH AND VACUUM CONTACTOR, MEDIUM VOLTAGE
	DRAWOUT VACUUM CONTACTOR, MEDIUM VOLTAGE
	MEDIUM VOLTAGE CABLE STRESS CONE TYPE TERMINATION, OPEN TERMINATOR OR ELBOW
	SWITCH - LOAD BREAK, GROUP OPERATED, MEDIUM VOLTAGE
	SWITCH W/ARCING HORNS, MEDIUM VOLTAGE
	DISCONNECTING FUSE - SOLID MATERIAL, MEDIUM VOLTAGE
	SWITCH - HOOK STICK OPERATED, SINGLE POLE, MEDIUM VOLTAGE
	FUSE - EXPULSION, HOOK STICK OPERATED, SINGLE POLE, MEDIUM VOLTAGE
	GROUND SWITCH, GANG OPERATED
	TERMINAL BLOCK LUG
	DELTA CONNECTION
	WYE GROUNDED CONNECTION, SOLID GROUND
	WYE NEUTRAL GROUND RESISTOR OR IMPEDANCE CONNECTION
	RELAY OR DEVICE, FUNCTION NUMBER AS INDICATED
	CURRENT TRANSFORMER, ZERO SEQUENCE, RATIO AND QUANTITY INDICATED
	BUSHING CURRENT TRANSFORMER, MULTI-RATIO AND QUANTITY INDICATED
	MOTOR OPERATOR, BREAKER OR SWITCH
	ENERGY MONITORING UNIT
	MOTOR PROTECTION RELAY
	PAD MOUNTED TRANSFORMER WITH PRIMARY SWITCH

SYMBOL	DESCRIPTION															
CONTROL DIAGRAM																
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY OPEN															
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED															
	PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH MECHANICAL INTERLOCK															
	3 POSITION SELECTOR SWITCH MAINTAINED CONTACT															
	SELECTOR SWITCH - MAINTAINED CONTACT - CHART IDENTIFIES OPERATION WHEN NEEDED FOR CLARITY:															
	<table border="1"> <thead> <tr> <th rowspan="2">CKT</th> <th colspan="3">POSITION</th> </tr> <tr> <th>HAND</th> <th>OFF</th> <th>REMOTE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>X</td> <td>O</td> <td>O</td> </tr> <tr> <td>2</td> <td>O</td> <td>O</td> <td>X</td> </tr> </tbody> </table>	CKT	POSITION			HAND	OFF	REMOTE	1	X	O	O	2	O	O	X
CKT	POSITION															
	HAND	OFF	REMOTE													
1	X	O	O													
2	O	O	X													
	TOGGLE SWITCH, ON-OFF TYPE															
	SELECTOR SWITCH, ON-OFF TYPE															
	MUSHROOM HEAD PUSHBUTTON SWITCH															
	INDICATING LIGHT, PUSH-TO-TEST, LETTER INDICATES COLOR															
	INDICATING LIGHT - LETTER INDICATES COLOR A - AMBER G - GREEN S - STROBE B - BLUE R - RED C - CLEAR W - WHITE															
	ELAPSED TIME METER															
	MOTOR STARTER CONTACTOR COIL															
	CONTROL RELAY, X INDICATES NUMERICAL ORDER IN CIRCUIT															
	TIME DELAY RELAY, X INDICATES NUMERICAL ORDER IN CIRCUIT															
	SOLENOID VALVE, X INDICATES NUMERICAL ORDER IN CIRCUIT															
	CONTACT - NORMALLY OPEN															
	CONTACT - NORMALLY CLOSED															
	REMOTE DEVICE															
	TIME DELAY RELAY CONTACT, NORMALLY OPEN, CLOSSES WHEN ENERGIZED AND TIMED OUT															
	TIME DELAY RELAY CONTACT, NORMALLY CLOSED, OPENS WHEN ENERGIZED AND TIMED OUT															
	TIME DELAY RELAY CONTACT, CLOSSES WHEN ENERGIZED, OPENS WHEN DE-ENERGIZED AND TIMED OUT															
	TIME DELAY RELAY CONTACT, OPENS WHEN ENERGIZED, CLOSSES WHEN DE-ENERGIZED AND TIMED OUT															
	MOTOR SPACE HEATER															
	TERMINAL BLOCK, REMOTE															
	TERMINAL BLOCK, INTERNAL															
	FUSED TERMINAL BLOCK															
	FUSE, RATING INDICATED															
	TRANSFORMER, CONTROL POWER															
	THERMOCOUPLE															

GENERAL NOTES	
1.	THESE ARE STANDARD LEGEND SHEETS. SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THE LEGEND AND NOT ON THE DRAWINGS.
2.	FOR ADDITIONAL ABBREVIATIONS OF OTHER DIVISIONS (HVAC, MECHANICAL, AND STRUCTURAL/ARCHITECTURAL) SEE OTHER LEGENDS.

JACOBS	
GENERAL ELECTRICAL LEGEND SHEET 1 OF 2	
ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT	
NO.	DATE
DR	CHK
REVISION	BY
APVD	APVD
R. BERCAW	

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS

SYMBOL	DESCRIPTION
POWER SYSTEM PLAN	
	CONNECTION POINT TO EQUIPMENT SPECIFIED IN OTHER DIVISIONS. RACEWAY, CONDUCTOR, TERMINATION AND CONNECTION IN THIS DIVISION.
	MAJOR ELECTRICAL COMPONENT OR DEVICE - NAME OR IDENTIFYING SYMBOL AS SHOWN.
	PANELBOARD - SURFACE MOUNTED
	PANELBOARD - FLUSH MOUNTED
	TERMINAL JUNCTION BOX
	MOTOR, SQUIRREL CAGE INDUCTION
	GENERATOR, VOLTAGE AND SIZE AS INDICATED.
	HOME RUN - DESTINATION SHOWN
	EXPOSED CONDUIT AND CONDUCTORS*
	CONCEALED CONDUIT AND CONDUCTORS*
NOTE: ALL UNMARKED CONDUIT RUNS CONSIST OF TWO NO. 12, ONE NO. 12 GROUND CONDUCTORS IN 3/4" CONDUIT. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF NO. 12 CONDUCTORS. CROSSHATCH WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE.	
	CROSSHATCHES WITH BAR INDICATE NO.10 CONDUCTOR. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.
	CONDUIT AND CONDUCTOR CALLOUT, SEE LEGEND.
	CONDUIT DOWN
	CONDUIT UP
	CONDUIT, STUBBED AND CAPPED
	CONDUIT TERMINATION AT CABLE TRAY
	EXISTING CONDUIT/ DUCT BANK
	BUS DUCT - SEE SPECIFICATIONS
	CONCRETE ENCASED, DUCT BANK. KEY NOTE INDICATES ARRANGEMENT, SIZE AND QUANTITY.
	DIRECT BURIED DUCT BANK
	FIBER OPTIC CONDUIT
	CONCEALED CONDUIT ROUTING AREA
	CONDUIT ROUTING AREA
	CABLE TRAY
	GENERAL CONTROL OR WIRING DEVICE. LETTER SYMBOLS OR ABBREVIATIONS INDICATE TYPE OF DEVICE
	CONTROL STATION. SEE CONTROL DIAGRAMS FOR CONTROL DEVICE(S) REQUIRED.
	NONFUSED DISCONNECT SWITCH, CURRENT RATING INDICATED, 3 POLE
	FUSED DISCONNECT SWITCH, CURRENT RATING INDICATED (60/40, 60=SWITCH RATING / 40=FUZE RATING) 3 POLE
	COMBINATION CIRCUIT BREAKER AND MAGNETIC STARTER, NEMA SIZE INDICATED

SYMBOL	DESCRIPTION
POWER SYSTEM PLAN	
	BREAKER, SEPARATELY MOUNTED, CURRENT RATING INDICATED (100/40, 100 = FRAME SIZE; 40 = TRIP RATING) 3 POLE
	CONTACTOR, MAGNETIC, NEMA SIZE INDICATED
	LIGHTING CONTACTOR, CURRENT RATING INDICATED
	STARTER, MAGNETIC NEMA SIZE INDICATED
	CONVENIENCE RECEPTACLE - DUPLEX UNLESS NOTED OTHERWISE WP - WEATHERPROOF C - CLOCK HANGER TL - TWIST LOCK CRE - CORROSION RESISTANT GFCI - GROUND FAULT CIRCUIT INTERRUPTER EX - EXPLOSION PROOF SUBSCRIPT NUMBER AT RECEPTACLE INDICATES CIRCUIT
	240V RECEPTACLE
	CONVENIENCE RECEPTACLE - QUADRUPLEX
	MULTI OUTLET ASSEMBLY
	DUPLEX CONVENIENCE RECEPTACLE - FLUSH IN FLOOR
	CONVENIENCE RECEPTACLE, PEDESTAL, DUPLEX SINGLE FACE UNLESS INDICATED OTHERWISE
	RECEPTACLE, SPECIAL PURPOSE-NEMA CONFIGURATION AND AMPERAGE INDICATED
	THERMOSTAT
	UTILITY REVENUE METERING FACILITY
	UTILITY POLE
LIGHTING SYSTEM PLAN	
	LUMINAIRE, SEE SCHEDULE
	LUMINAIRE, SEE SCHEDULE
	STRIP LUMINAIRE, SEE SCHEDULE
	LUMINAIRE AND POLE, SEE SCHEDULE
	WALL MOUNTED LUMINAIRE, SEE SCHEDULE
	FLOOD LIGHTS - AIM IN THE DIRECTION SHOWN
	STANDBY LIGHTING UNIT, SURFACE MOUNTED, SEE SCHEDULE
	EXIT LIGHTS - FILLED SECTION INDICATES LIGHTED FACE, ARROW INDICATES EGRESS DIRECTIONAL INDICATORS, XX = FIXTURE NUMBER, SEE SCHEDULE
	SMALL LETTER SUBSCRIPT AT SWITCH AND LUMINAIRE INDICATES SWITCHING. SUBSCRIPT NUMBER AT LUMINAIRE INDICATES CIRCUIT
	WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT 3- THREE WAY K- KEY OPERATED 4- FOUR WAY D- DIMMER WP- WEATHERPROOF CRE- CORROSION RESISTANT EX- EXPLOSION PROOF L- MOMENTARY 3-WAY M- MOTOR RATED MS- MANUAL STARTER Mc- MOMENTARY CONTACT-SPRING RETURN TO CENTER
	SINGLE PHASE EQUIPMENT DISCONNECT SWITCH
	OCCUPANCY SENSOR
	LIGHTING CONTACTOR
	MOTION DETECTOR
	PHOTOCELL

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ABBREVIATIONS					
A	AMPERE, AUTOMATIC	G	GROUND	O	OPEN
AC	ALTERNATING CURRENT	GALV	GALVANIZED	OCA	OPEN-CLOSE-AUTO
ACB	AIR-CIRCUIT BREAKER	GEN	GENERATOR	OCB	OIL CIRCUIT BREAKER
ACSR	ALUMINUM CONDUCTOR STEEL-REINFORCED	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	OCR	OVER CURRENT RELAY
ADJ	ADJUSTABLE	GFR	GROUND FAULT RELAY	OH	OVERHEAD
AF	AMPERE FRAME	GND	GROUND	OHM	OHMMETER
AFD	ADJUSTABLE FREQUENCY DRIVE	GPR	GENERATOR PROTECTOR RELAY	OL	OVERLOAD RELAY
AFF	ABOVE FINISHED FLOOR	GRS	GALVANIZED RIGID STEEL CONDUIT	OO	ON-OFF
AFG	ABOVE FINISHED GRADE	H	HIGH SPEED	OOA	ON-OFF-AUTO
AHM	AMPERE-HOUR METER	HGT	HEIGHT	OOR	ON-OFF-REMOTE
AHU	AIR HANDLING UNIT	HH	HANDHOLE	OS	OCCUPANCY SENSOR
AL	ALUMINUM	HID	HIGH INTENSITY DISCHARGE	PB	PULL BOX
AM	AMMETER	HMI	HUMAN-MACHINE INTERFACE	PC	PHOTOCCELL
ANT	ANTENNA	HOA	HAND-OFF-AUTO	PCC	POINT OF COMMON COUPLING
APPROX	APPROXIMATE	HOR	HAND-OFF-REMOTE	PCB	POWER CIRCUIT BREAKER
AS	AMMETER SWITCH, AMPERE SENSOR	HP	HORSEPOWER	PF	POWER FACTOR
ATO	AUTOMATIC THROWOVER	HPS	HIGH PRESSURE SODIUM	PH	PHASE
AT	AMPERE TRIP	HS	HAND SWITCH	PLC	PROGRAMMABLE LOGIC CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH	HV	HIGH VOLTAGE	PNL	PANEL
AUTO	AUTOMATIC	HVAC	HEATING, VENTILATING & AIR CONDITIONING	POT	POTENTIOMETER
AUX	AUXILIARY	HZ	HERTZ	PP	POWER PACK
AWG	AMERICAN WIRE GAGE	I	IN ACCORDANCE WITH	PS	PRESSURE SWITCH
BAT	BATTERY	IAW	IN ACCORDANCE WITH	PT	PROGRAMMED START
BC	BARE COPPER	IC	INTERRUPTING CAPACITY	PT	POTENTIAL TRANSFORMER
BIL	BASIC IMPULSE LEVEL	I & C	INSTRUMENTATION AND CONTROL	PVC	POLYVINYL CHLORIDE
BKR, BRKR	BREAKER	IMC	INTERMEDIATE METALLIC CONDUIT	PWR	POWER
BLDG	BUILDING	INCAND	INCANDESCENT	R	RELAY, REVERSE, RUN, RAISE
C	CONDUIT, CONTACTOR, CONDUCTOR, CLOSE, CENTIGRADE	INST	INSTANTANEOUS	RCPT	RECEPTACLE
CB	CIRCUIT BREAKER	INT	INTERRUPTING	REF	REFERENCE
CC	CONTROL CABLE	ISR	INTRINSICALLY SAFE RELAY	REM	REMOTE
CKT	CIRCUIT	J,JB	JUNCTION BOX	RGS	RIGID GALVANIZED STEEL CONDUIT
CLF	CURRENT LIMITING FUSE	K	KEY INTERLOCK	RIO	REMOTE INPUT/OUTPUT
CONT	CONTINUE	KA	KILOAMPERES	RMS	ROOT MEAN SQUARE
CP	CONTROL PANEL	KAIC	KILOAMPERES INTERRUPTING CAPACITY	RPM	REVOLUTIONS PER MINUTE
CPT	CONTROL POWER TRANSFORMER	KCM	THOUSAND CIRCULAR MILS	RTU	REMOTE TELEMETRY UNIT
CPU	CENTRAL PROCESSING UNIT	KV	KILOVOLTS	RTD	RESISTANCE TEMPERATURE DETECTOR
CR	CONTROL RELAY	KVA	KILOVOLT AMPERES	RVNR	REDUCED VOLTAGE NON-REVERSING
CS	CONTROL STATION; C=CLOSE, T=TRIP	KW	KILOWATTS	RVR	REDUCED VOLTAGE REVERSING
CT	CURRENT TRANSFORMER, CABLE TRAY	KWH	KILOWATT HOURS	SA	SURGE ARRESTER
CU	COPPER	KWHD	KILOWATT HOURS DEMAND	SC	SPEED CONTROL
DB	DIRECT BURIED	L	LIGHTING CONTACTOR, LOW SPEED, LOWER	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM
DC	DIRECT CURRENT	LC	LIGHTING CONTROLLER, LATCH COIL	SCU	SPEED CONTROL UNIT
DIV	DIVISION	LCP	LOCAL CONTROL PANEL	SF	SUPPLY FAN
DN	DOWN	LE	LEVEL ELEMENT	SH	SPACE HEATER
DP	DISTRIBUTION PANEL	LIT	LEVEL INDICATING TRANSMITTER	S/N	SOLID NEUTRAL
DPDT	DOUBLE-POLE DOUBLE-THROW	LOR	LOCAL-OFF-REMOTE	SOL	SOLENOID
DPST	DOUBLE-POLE SINGLE-THROW	LP	LIGHTING PANEL	SP	SPARE
DS	DISCONNECT SWITCH	LPS	LOW PRESSURE SODIUM	SPD	SPEED
E	EMPTY	LR	LOCAL/REMOTE	SS	START STOP
EA	EACH	LS	LIMIT SWITCH, LEVEL SWITCH	SST	STAINLESS STEEL
EDH	ELECTRIC DUCT HEATER	LT	LEVEL TRANSMITTER	ST	SHUNT TRIP
EF	EXHAUST FAN	LT FLEX	LIQUID-TIGHT FLEX CONDUIT	SUB	SUBSTATION
EG	ENGINE GENERATOR	M	MAGNETIC CONTACTOR COIL, MOTOR, MANUAL	SV	SOLENOID VALVE
EL	ELEVATION	MA	MILLIAMPERE	SW	SWITCH
ELEC	ELECTRIC	MAN	MANUAL	SWBD	SWITCHBOARD
ELEM	ELEMENTARY	MAU	MAKE-UP AIR UNIT	SWGR	SWITCHGEAR
EMER	EMERGENCY	MAX	MAXIMUM	SYMM	SYMMETRICAL
EMS	ENERGY MONITORING SYSTEM	MCB	MAIN CIRCUIT BREAKER	T	THERMOSTAT, TRANSFORMER
EMT	ELECTRICAL METALLIC TUBING	MCC	MOTOR CONTROL CENTER	TB	TERMINAL BOARD, TEST BLOCK
EMU	ENERGY MONITORING UNIT	MDC	MOTORIZED DAMPER CONTROL	TD	TEMPERATURE DETECTOR, TIME DELAY
ENCL	ENCLOSURE	MECH	MECHANICAL	TDC	TIME-DELAY CLOSING
EO	ELECTRIC OPERATED, ELECTRIC OPERATOR	MFR	MANUFACTURER	TDQ	TIME-DELAY OPENING
EP	EXPLOSION-PROOF	MH	MANHOLE, METAL HALIDE, MOUNTING HEIGHT	TDR	TIME DELAY RELAY
ETM	ELAPSED TIME METER	MIN	MINIMUM	TEL	TELEPHONE
EUH	ELECTRIC UNIT HEATER	MO	MOTOR OPERATOR	TEMP	TEMPERATURE
EX	EXHAUST	MOP	MOTOR OPERATED POTENTIOMETER	TJB	TERMINAL JUNCTION BOX
EXST	EXISTING	MOV	METAL OXIDE VERISTOR, MOTOR OPERATED VALVE	TSP	TWISTED SHIELDED PAIR
F	FORWARD, FREQ	MPR	MOTOR PROTECTION RELAY	TST	TWISTED SHIELDED TRIAD
FA	FIRE ALARM	MRCT	MULTI RATIO CURRENT TRANSFORMER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
FACP	FIRE ALARM CONTROL PANEL	MS	MOTOR STARTER	TYP	TYPICAL
FDR	FEEDER	MSC	MANUFACTURER SUPPLIED CABLE	UC	UNLATCH COIL
FF	FINISHED FLOOR	MT	MOUNT	UH	UNIT HEATER
FI	FLOW INDICATOR	MTD	MOUNTED	UO	UNLESS NOTED OTHERWISE
FLEX	FLEXIBLE CONDUIT	MTS	MANUAL TRANSFER SWITCH	UPS	UNINTERRUPTIBLE POWER SUPPLY
FLR	FLOOR	MV	MEDIUM VOLTAGE	UVR	UNDER VOLTAGE RELAY
FLUOR	FLUORESCENT	MVA	MEGA-VOLT AMPERES	V	VOLTAGE, VOLTS
FPR	FEEDER PROTECTOR RELAY	N	NEUTRAL, NORMAL	VCB	VACUUM CIRCUIT BREAKER
FO	FIBER OPTIC	NA	NON-AUTOMATIC	VFD	VARIABLE FREQUENCY DRIVE
FP	FIELD PANEL	NC	NORMALLY CLOSED	VIB	VIBRATION
FREQ	FREQUENCY	NEC	NATIONAL ELECTRICAL CODE	VM	VOLTMETER
FS	FLOAT SWITCH	NESC	NATIONAL ELECTRICAL SAFETY CODE	VR	VOLTAGE REGULATOR
FU	FUSE	NEUT	NEUTRAL	VS	VOLTMETER SWITCH
FVNR	FULL VOLTAGE NON-REVERSING	NIC	NOT IN CONTRACT	W	WATTS
FVR	FULL VOLTAGE REVERSING	N.O.	NORMALLY OPEN	WHD	WATT HOUR DEMAND METER
FWD	FORWARD	NP	NAMEPLATE	WM	WATTMETER
		NTS	NOT TO SCALE	WP	WEATHERPROOF
				XD	TRANSDUCER
				XFMR	TRANSFORMER
				XPDR	TRANSFORMER
				Z	IMPEDANCE
				ZS	POSITION SWITCH

JACOBS

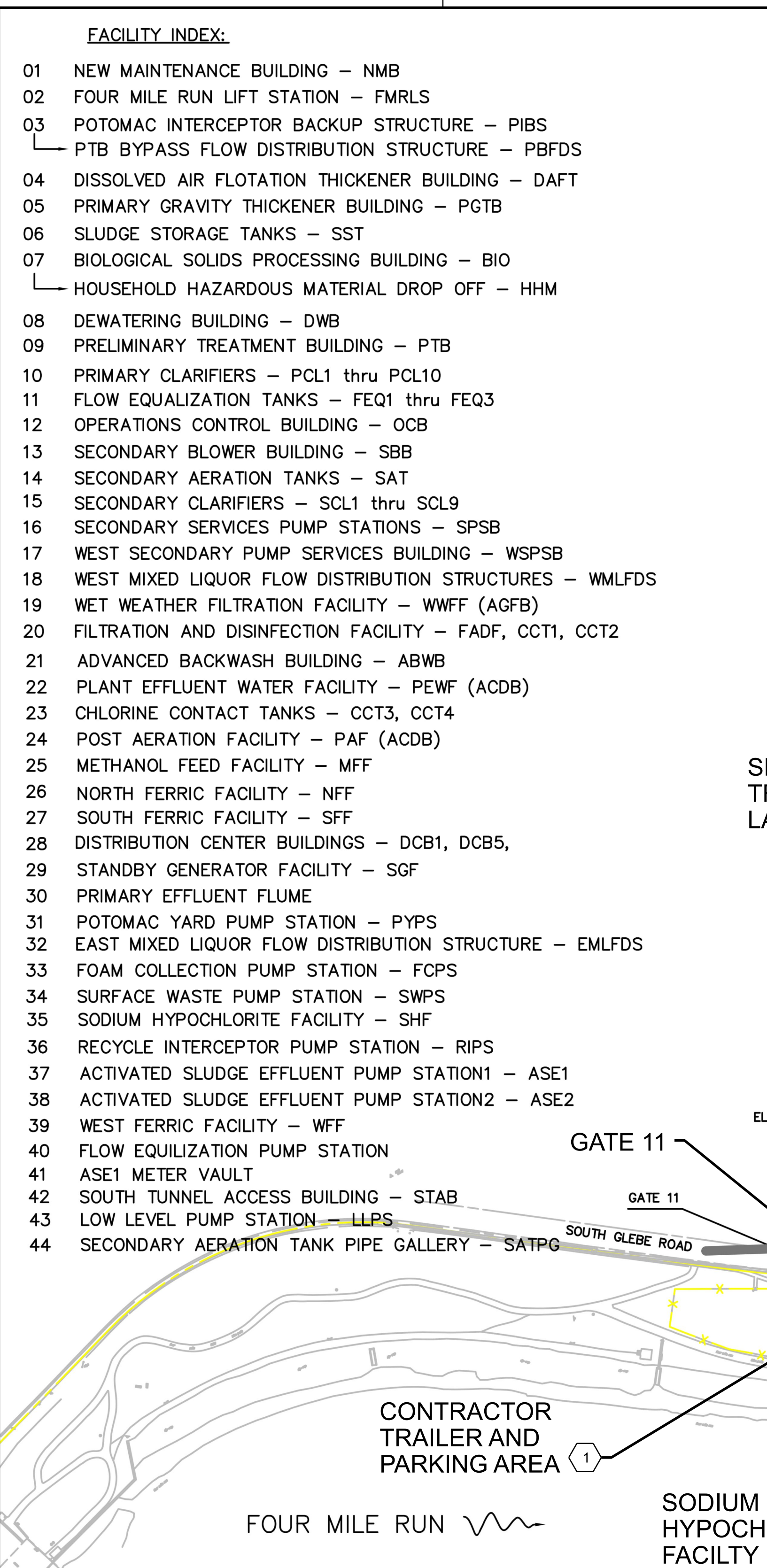
ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

**ELECTRICAL LEGEND
AND ELECTRICAL ABBREVIATIONS
SHEET 2 OF 2**

GENERAL

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	01-G-008
SHEET	8 of 33

R. BERCAW
SA. KORCSMAROS
J. BROSNAN
DR
NO. DATE
REVISION
CHK
APVD

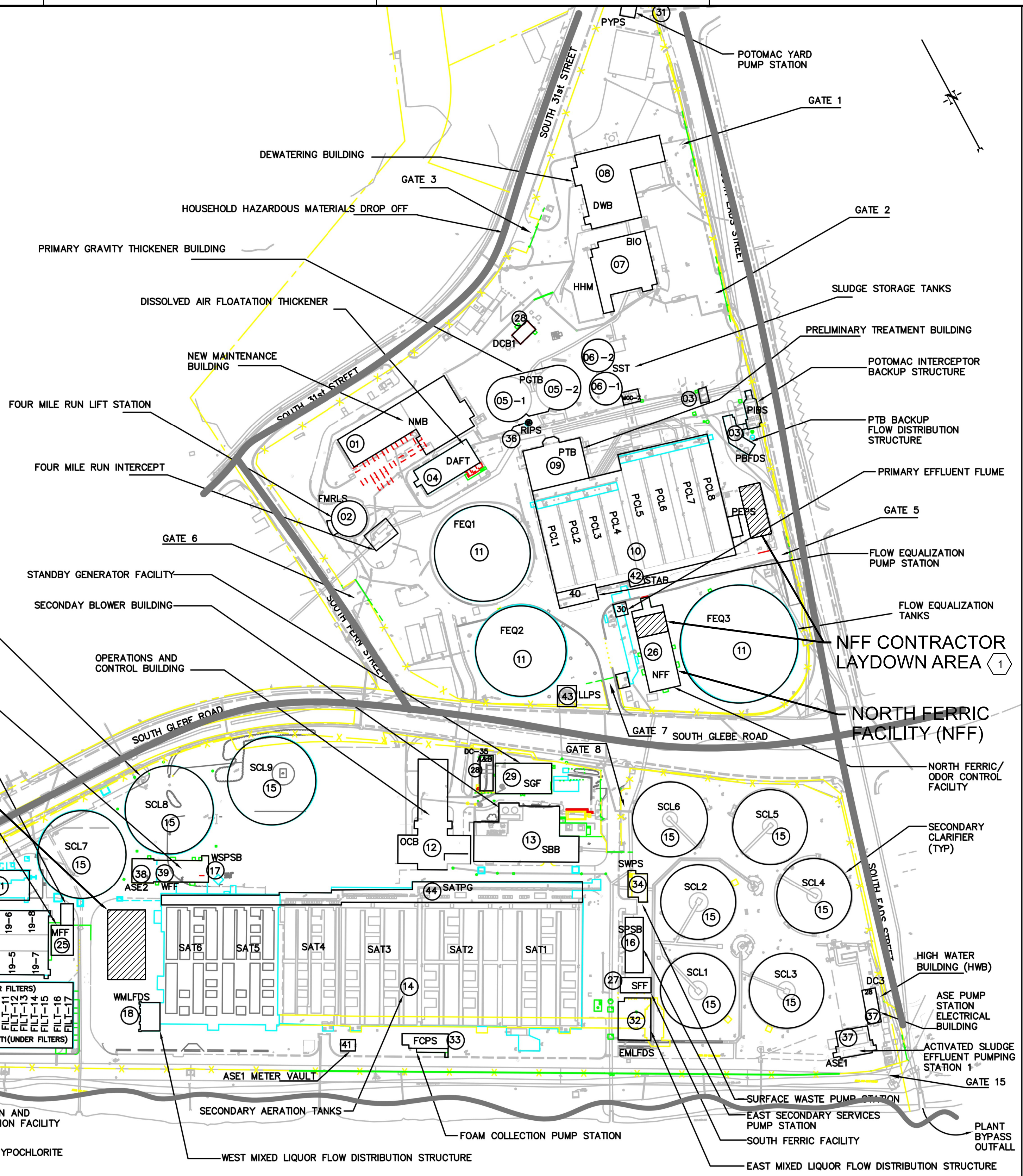


GENERAL SHEET NOTES

- LAYDOWN AND TRAILER AREAS LIMITS SHOWN ARE APPROXIMATE. FINAL TRAILER LOCATIONS AND LAYDOWN AREAS SHALL BE COORDINATED AND APPROVED BY THE OWNER.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE EROSION AND SEDIMENT CONTROL HANDBOOK.
- CONTRACTOR SHALL INSTALL SILT FENCES, INLET AND OUTLET PROTECTION AND OTHER TEMPORARY CONTROL AS NEEDED TO CONTROL SURFACE RUNOFF FROM LAYDOWN AREAS.

SHEET KEYNOTES

- WITHIN ALL TEMPORARY LAYDOWN, CONSTRUCTION TRAILER AND CONSTRUCTION WORK PARKING AREAS, VERIFY THE LOCATION OF ALL EXISTING UTILITY LINES AND RELATED VALVES AND MANHOLES. UTILIZE SILT FENCE TO ESTABLISH A CLEAR PERIMETER AND PREVENT RUNOFF FROM TEMPORARY AREAS. INSTALL ALL SILT FENCING AND EROSION AND SEDIMENT CONTROL MEASURES AWAY FROM/AROUND ALL PLANT VALVES AND MANHOLES TO ALLOW OWNER ACCESS AND PROTECT FROM ANY DAMAGE. INSTALL 6" THICK GRAVEL SURFACING WITHIN LAYDOWN FOOTPRINT. GRAVEL SURFACING SHALL BE REMOVED AT THE END OF CONSTRUCTION AND THE AREA RESTORED WITH GRASS AS SPECIFIED.



DESIGNED	DSBY	HORIZONTAL DATUM IS REFERENCED TO VIRGINIA STATE GRID, NORTH AMERICAN DATUM 1983 (NAD 83)
DRAWN	DRBY	
CHECKED	CHKBY	
PROJ. ENGR.	PROJENG	VERTICAL DATUM IS REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29)
CAD REF. NO.	###	
APPROVED		

MALCOLM PIRNIE
Independent Environmental Engineers, Scientists & Consultants
1101 Wilson Boulevard Suite 1400
Arlington, VA 22209

ARLINGTON COUNTY WATER POLLUTION CONTROL PLANT

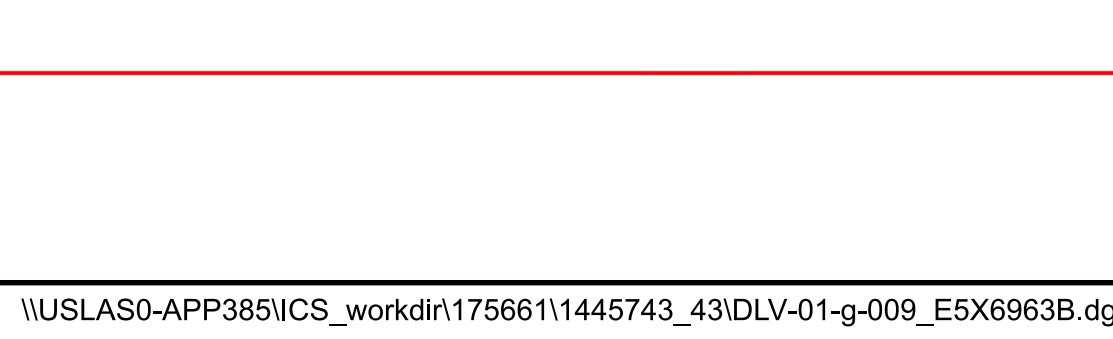
FACILITY MAP

NOTES:
PLANT ACRONYMS ARE FOUND IN MP2 EQUIPMENT TAG NUMBERS

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.

DATE: DECEMBER 2005
DRAWING NUMBER: DWG
SHEET NO. OF: 9

NO.	BLDG LOCATION/INDEX/ABBR.	ISSUED FOR	DATE	BY	APPROVED
01	BLDG LOCATION/INDEX/ABBR.		22JUL14	ATT	



ARLINGTON COUNTY WATER POLLUTION CONTROL PLANT

FACILITY MAP

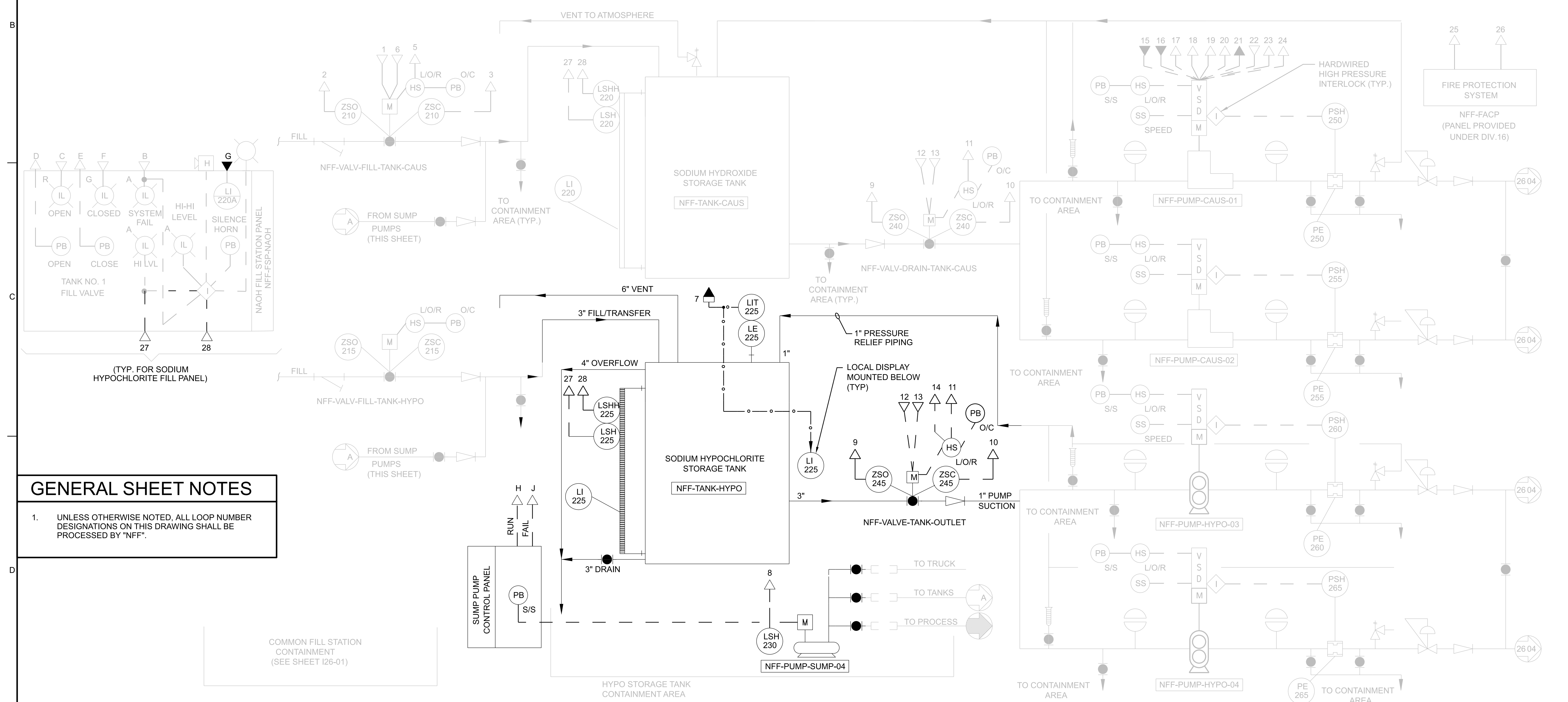
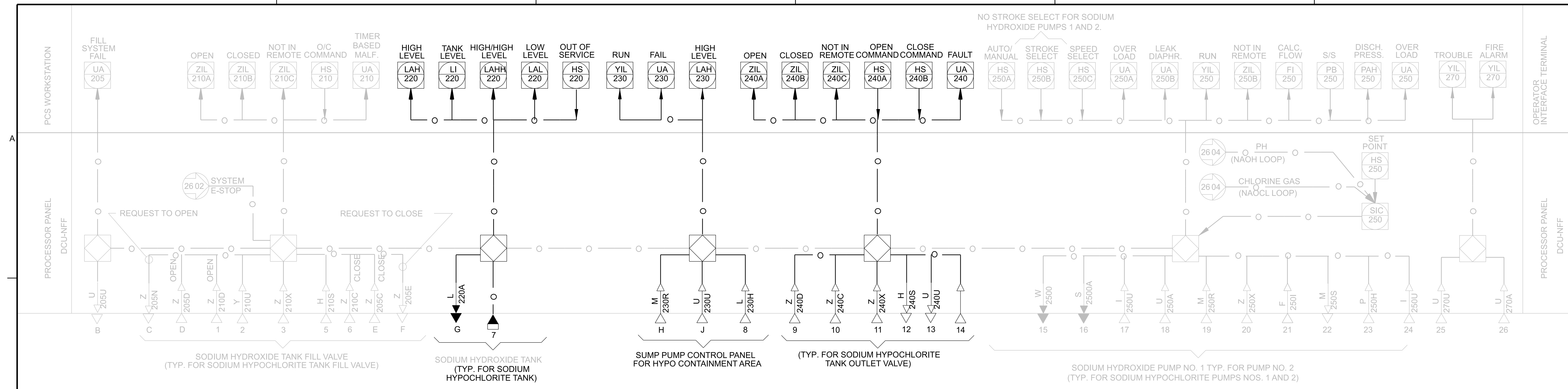
NOTES:
PLANT ACRONYMS ARE FOUND IN MP2 EQUIPMENT TAG NUMBERS

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.

DATE: DECEMBER 2005
DRAWING NUMBER: DWG
SHEET NO. OF: 9

GENERAL	ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT	NO.	DATE	DR	SA KORCSMAROS	REVISION	CHK	APVD	R. BERCAW
GENERAL	CONSTRUCTION ACCESS PLAN AND TEMPORARY CONSTRUCTION FACILITIES								
VERIFY SCALE		BAR IS ONE INCH ON ORIGINAL DRAWING.							
DATE	SEPTEMBER 2023	PROJ	E5X6963B	DWG	01-G-009	SHEET	9 of 33		

BID DOCUMENTS



GENERAL SHEET NOTES

1. UNLESS OTHERWISE NOTED, ALL LOOP NUMBER DESIGNATIONS ON THIS DRAWING SHALL BE PROCESSED BY "NFF".

ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT		INSTRUMENTATION AND CONTROL P&ID NORTH FERRIC FACILITY (NFF)	
NO.	DATE	DR	APVD
REVISION	CHK	SA KORCSMAROS	R BERCAW
BY	APVD		

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

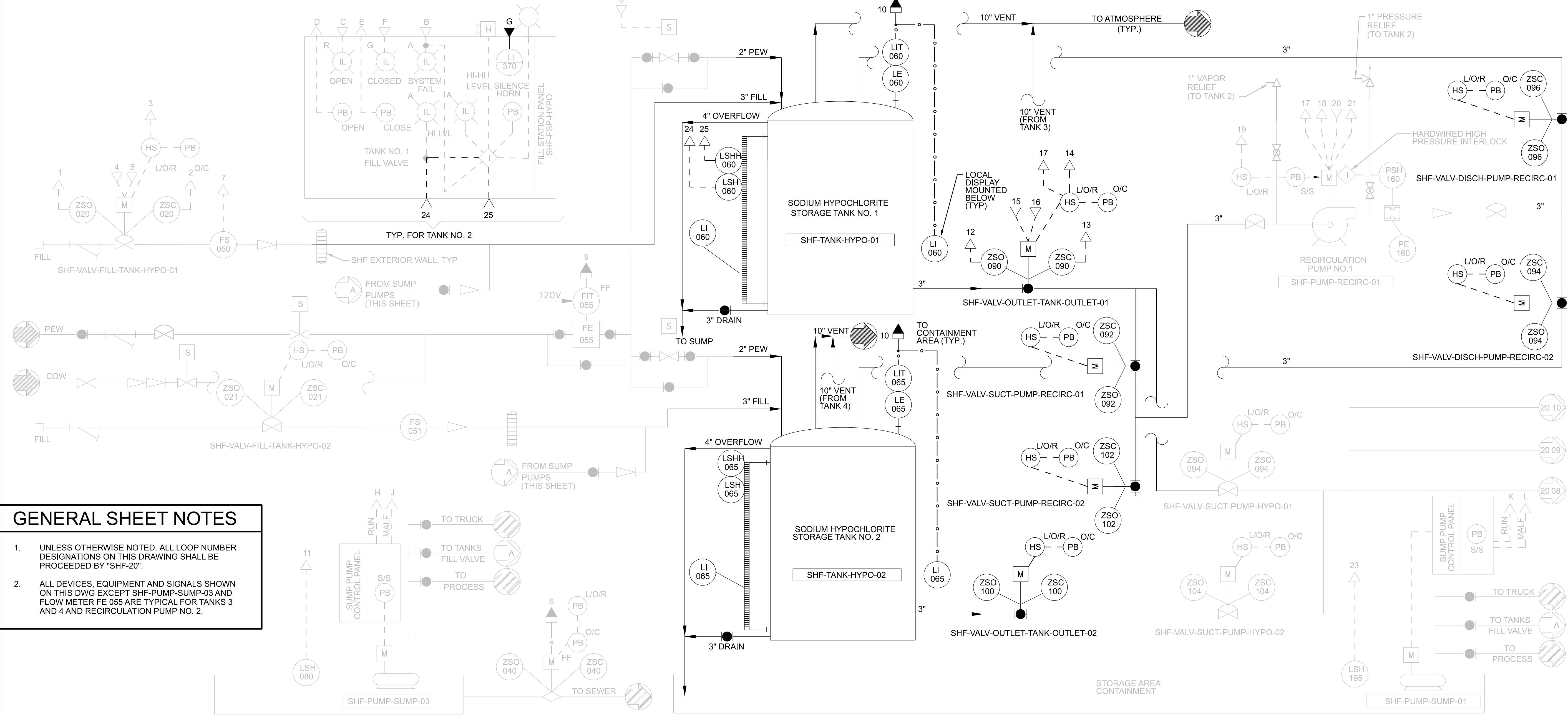
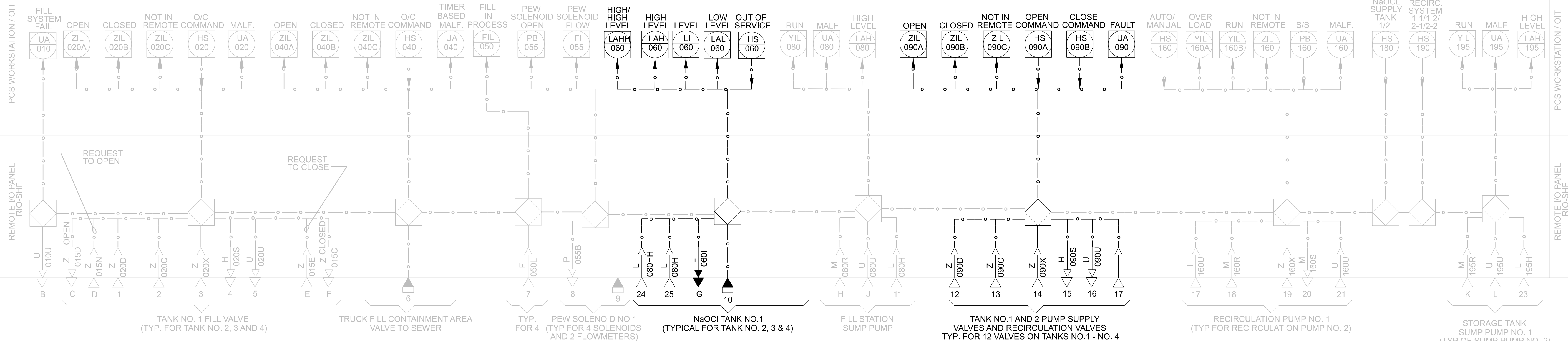
DATE SEPTEMBER 2023
PROJ E5X6963B
DWG 03-1-001
SHEET 10 of 33

FILENAME: DLV-01-n-001_E5X6963B.dgn PLOT DATE: 9/19/2023 PLOT TIME: 11:59:57 AM

SPWURL \\\USLAS0-APP385\ICS_workdir\175661\1445743_29\DLV-01-n-001_E5X6963B.dgn

BID DOCUMENTS

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.



GENERAL SHEET NOTES

- UNLESS OTHERWISE NOTED, ALL LOOP NUMBER DESIGNATIONS ON THIS DRAWING SHALL BE PROCEEDED BY "SHF-20".
- ALL DEVICES, EQUIPMENT AND SIGNALS SHOWN ON THIS DWG EXCEPT SHF-PUMP-SUMP-03 AND FLOW METER FE 055 ARE TYPICAL FOR TANKS 3 AND 4 AND RECIRCULATION PUMP NO. 2.

PCS WORKSTATION / OIT		PCS WORKSTATION / OIT	
REVISION	BY	APVD	CHK
NO.	DATE	DR	DGNS
ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT		SA KORCSMAROS J. BRONMAN	
JACOBS			
INSTRUMENTATION AND CONTROL P&ID SODIUM HYPOCHLORITE FACILITY (SHF)			
VERIFY SCALE			
BAR IS ONE INCH ON ORIGINAL DRAWING.			
DATE	SEPTEMBER 2023		
PROJ	E5X6963B		
DWG	03-I-002		
SHEET	11 of 33		

1 2 3 4 5 6

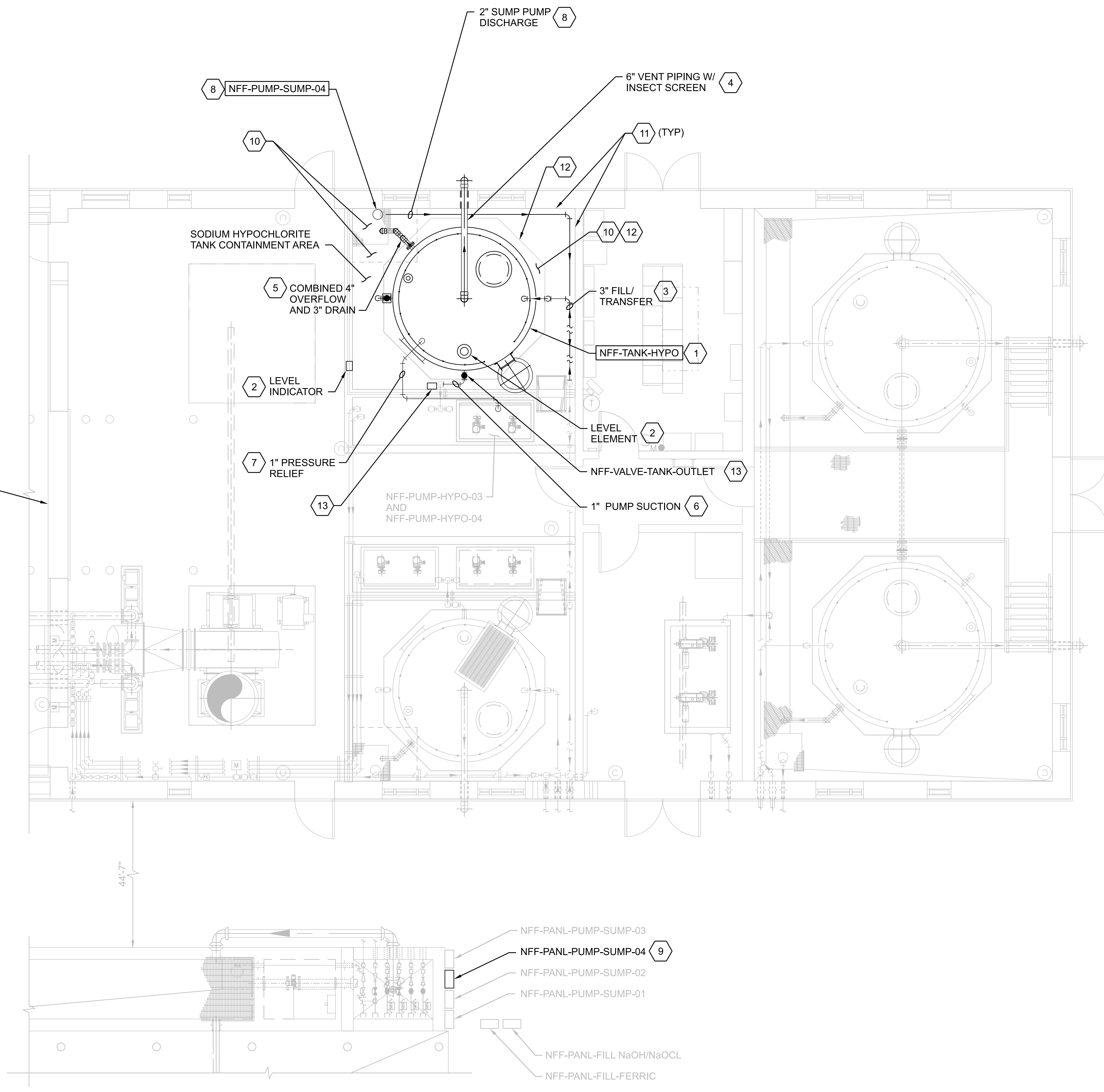
A
B
C
D

GENERAL SHEET NOTES

- ITEMS SHOWN BOLD TO BE DEMOLISHED.

SHEET KEYNOTES

- DEMOLISH SODIUM HYPOCHLORITE TANK (NFF-TANK-HYPO) AND ASSOCIATED SIGHT GLASS, LADDER AND TOP GUARDRAIL.
- DEMOLISH LEVEL ELEMENT (LE-225), INDICATOR, AND ASSOCIATED TRANSMITTER (LIT-225), CONDUIT AND WIRING UP TO SOURCE.
- DEMOLISH 3" TANK FILL/TRANSFER PIPING AND VALVE WITHIN CONTAINMENT AREA.
- DEMOLISH 6" VENT PIPING.
- DEMOLISH COMBINED 4" OVERFLOW AND 3" DRAIN PIPING.
- DEMOLISH 1" PUMP SUCTION PIPING AND VALVES WITHIN CONTAINMENT AREA.
- DEMOLISH 1" PUMP SKID PRESSURE RELIEF PIPING WITHIN THE CONTAINMENT AREA.
- DEMOLISH SUMP PUMP (NFF-PUMP-SUMP-04) AND ASSOCIATED CONDUIT AND WIRING UP TO SOURCE. DEMOLISH 2" SUMP PUMP DISCHARGE WITHIN CONTAINMENT AREA.
- DEMOLISH NFF-PANL-SUMP-04 AND ASSOCIATED CONDUIT AND WIRING TO SOURCE.
- REMOVE PROTECTIVE CONCRETE COATING FROM SODIUM HYPOCHLORITE TANK CONTAINMENT AREA FLOOR SLAB, TANK PAD, AND SUMP.
- REMOVE PROTECTIVE CONCRETE COATING FROM LOWER PORTION (3'-0"± HEIGHT) OF SODIUM HYPOCHLORITE TANK CONTAINMENT AREA WALLS.
- FOLLOWING DEMOLITION OF SODIUM HYPOCHLORITE TANK, FIELD VERIFY CONCRETE TANK PAD IS IN GOOD CONDITION AND REQUIRES NO SURFACE REPAIRS OTHER THAN CRACK REPAIRS. NOTIFY ENGINEER OF ANY SPALLS OR SIMILAR DAMAGED SURFACES THAT ARE ENCOUNTERED.
- DEMOLISH EXISTING TANK OUTLET VALVE, ACTUATOR AND ASSOCIATED LOCAL CONTROL PANEL/HAND STATION. REMOVE CONDUIT AND WIRING UP TO SOURCE.



NO.	DATE	REVISION	CHK	APVD

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
NORTH FERRIC FACILITY (NFF)
**DEMOLITION
GROUND FLOOR PLAN**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	10-D-101
SHEET	12 of 33

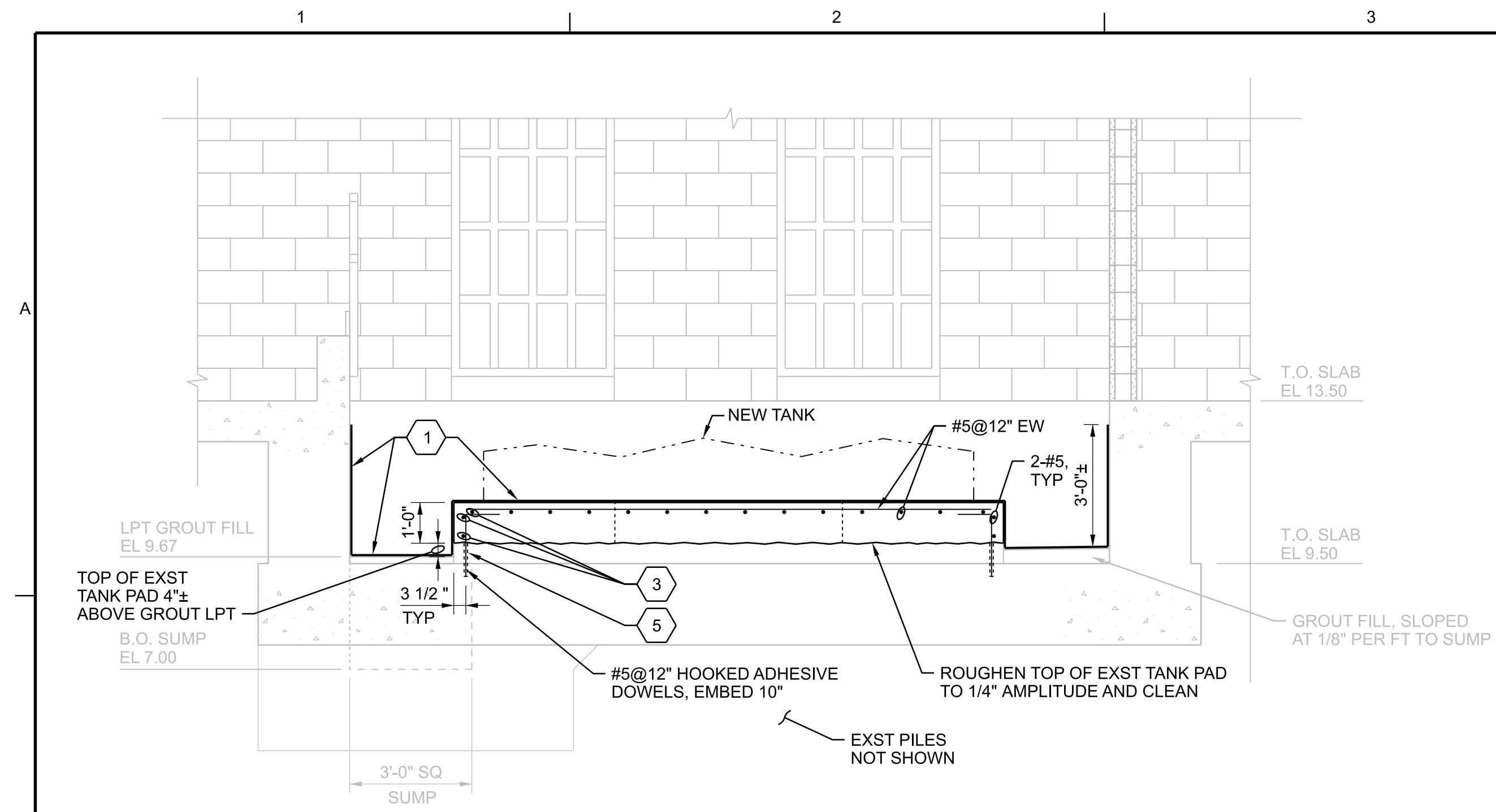
GROUND FLOOR PLAN
3/16"=1'-0"

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

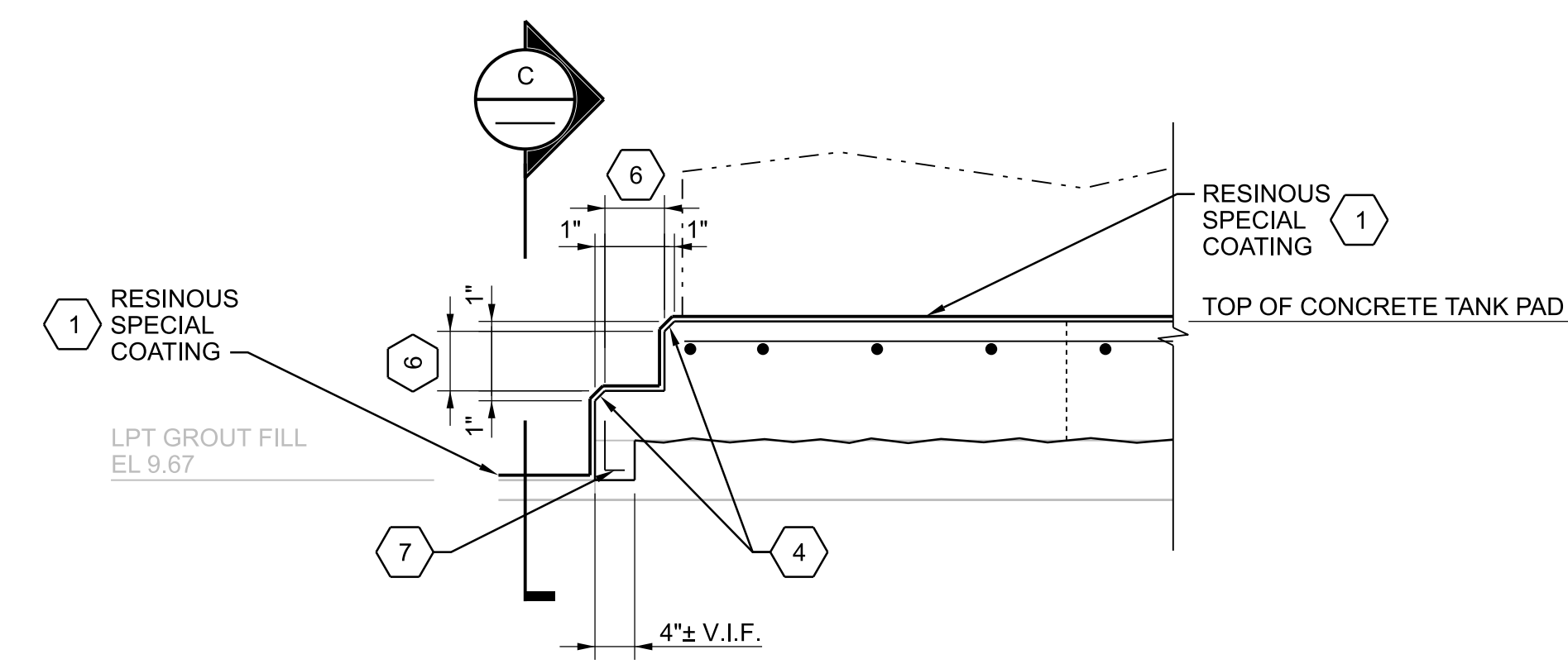
BID DOCUMENTS

SHEET KEYNOTES

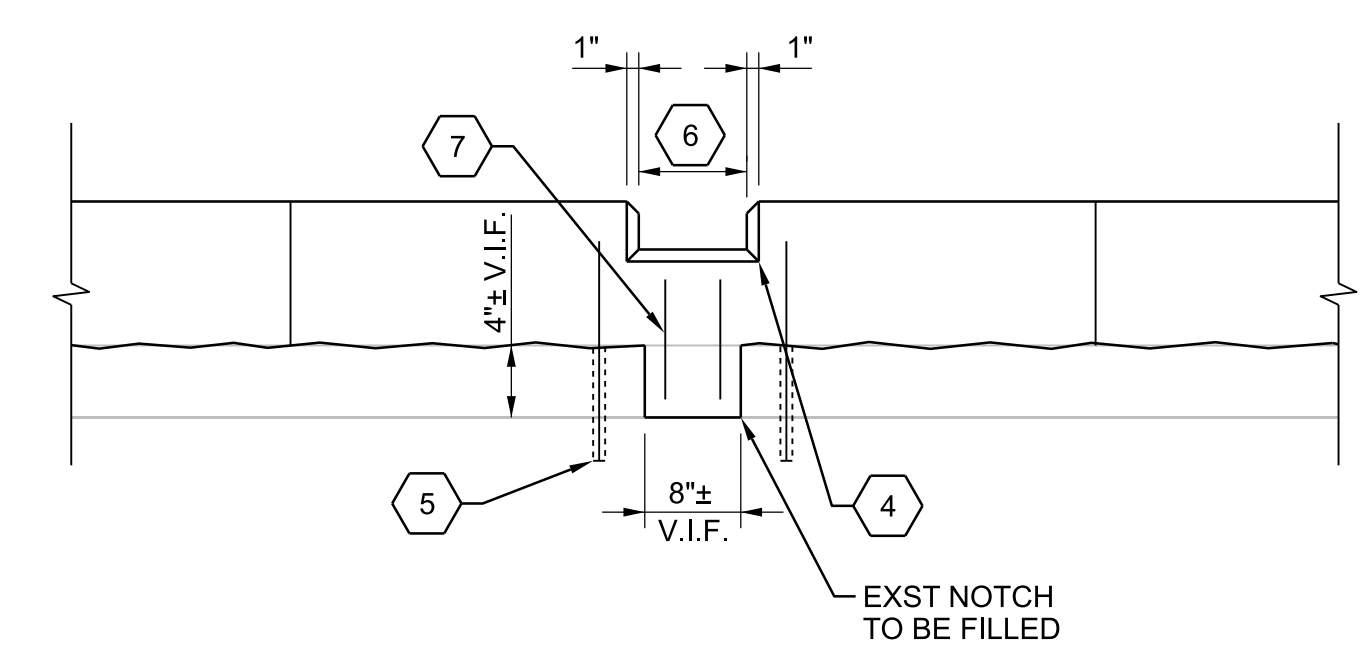
- INSTALL RESINOUS SPECIAL COATING AS SPECIFIED TO THE FOLLOWING SURFACES OF THE SODIUM HYPOCHLORITE TANK CONTAINMENT AREA: FLOOR SLAB, TANK PAD, SUMP, AND LOWER PORTION OF WALLS (3'-0"± HEIGHT TO MATCH HEIGHT OF REMOVED COATING). COATING MANUFACTURER TO REPAIR EXISTING CRACKS IN HORIZONTAL AND VERTICAL CONCRETE SUBSTRATES PRIOR TO INSTALLING COATING. ANY CRACK REPAIRS NOT COVERED BY THE COATING MANUFACTURER'S WORK SHALL BE REPAIRED BY CONTRACTOR USING EPOXY INJECTION. EPOXY-INJECTED CRACKS SHALL BE FINISHED TO BE FLUSH WITH ADJACENT CONCRETE SURFACES.
- RAISE CONCRETE TANK PAD, SEE SECTION **A**
- PROVIDE TOP AND SIDE BENT BARS AS REQUIRED AROUND NOTCH.
- PROVIDE 1" 45 DEGREE CHAMFER AT EACH EDGE OF NOTCH.
- ADJUST DWEL SPACING FOR NEW PAD AT NOTCH TO MAINTAIN REQUIRED REBAR CLEAR COVER.
- CONTRACTOR TO COORDINATE REQUIRED DIMENSIONS OF NOTCH WITH TANK MANUFACTURER PRIOR TO CONSTRUCTION.
- PROVIDE (2) ADDITIONAL #5 L BARS @ CENTERED ON EXISTING NOTCH, SPACED 4" APART. FILL EXISTING NOTCH MONOLITHICALLY WITH CONCRETE PAD ABOVE. ROUGHEN SURFACE OF EXISTING NOTCH PRIOR TO POUR.



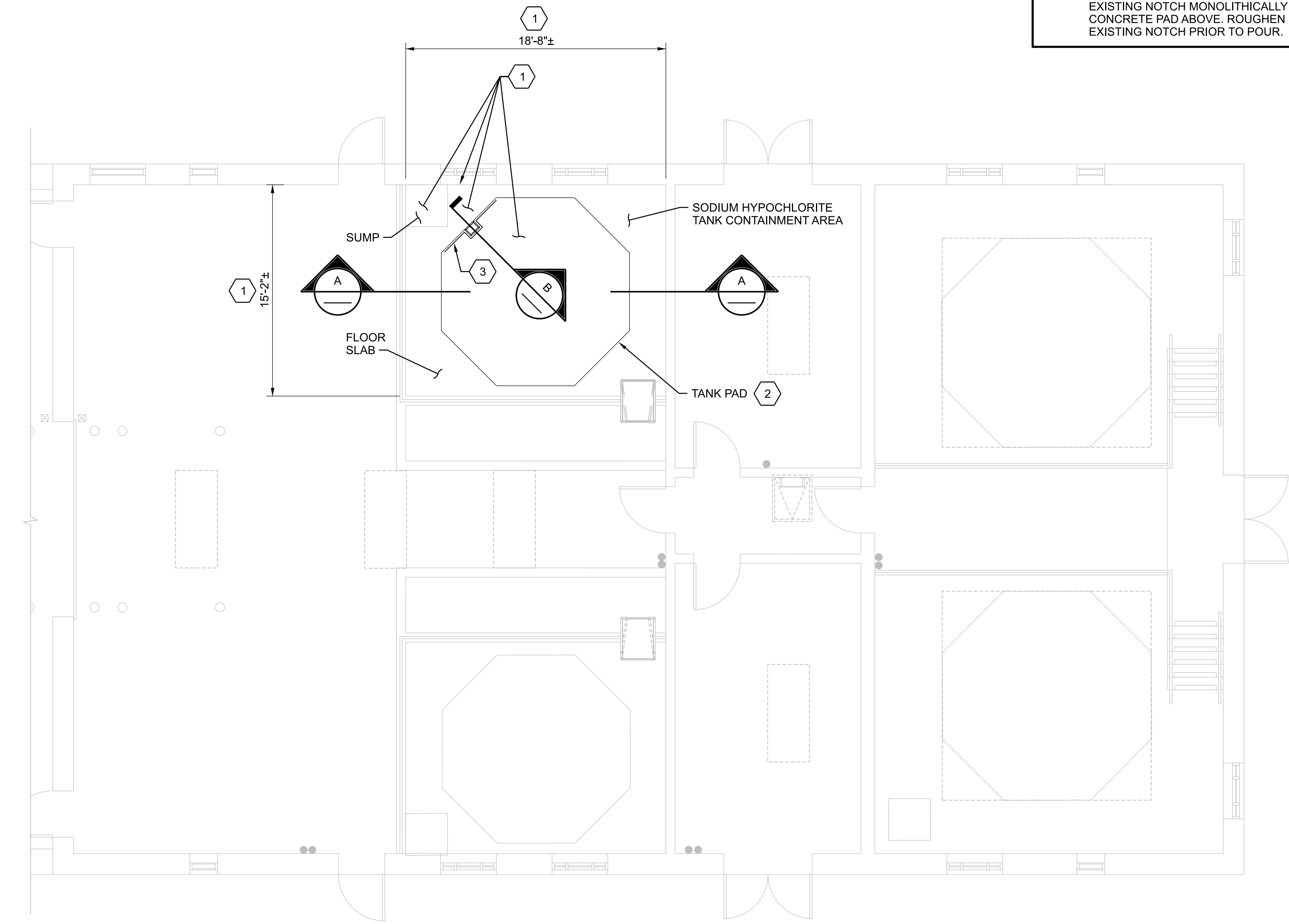
A SECTION
3/8"=1'-0"



B SECTION
3/4"=1'-0"



C SECTION
3/4"=1'-0"



GROUND FLOOR PLAN
3/16"=1'-0"

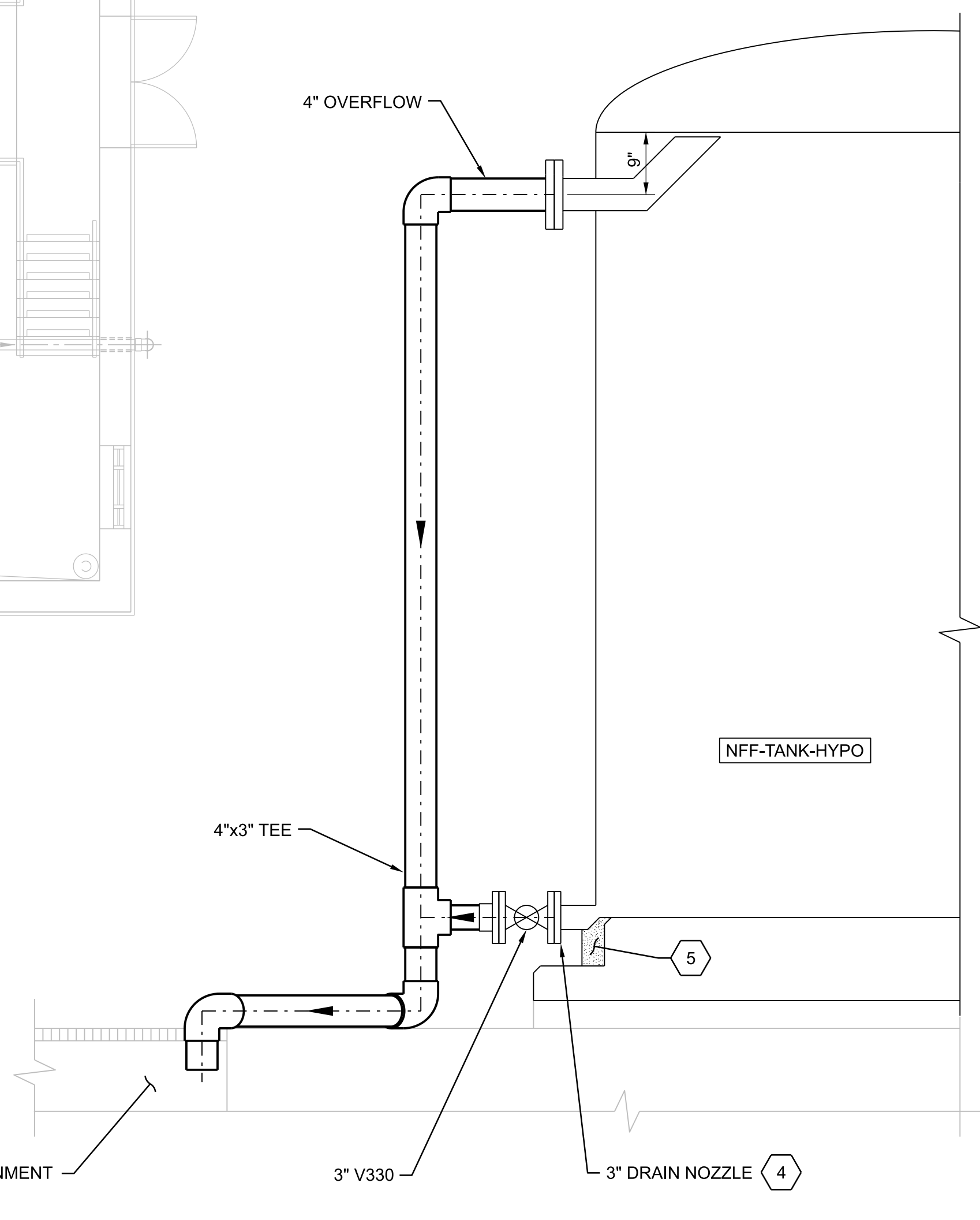
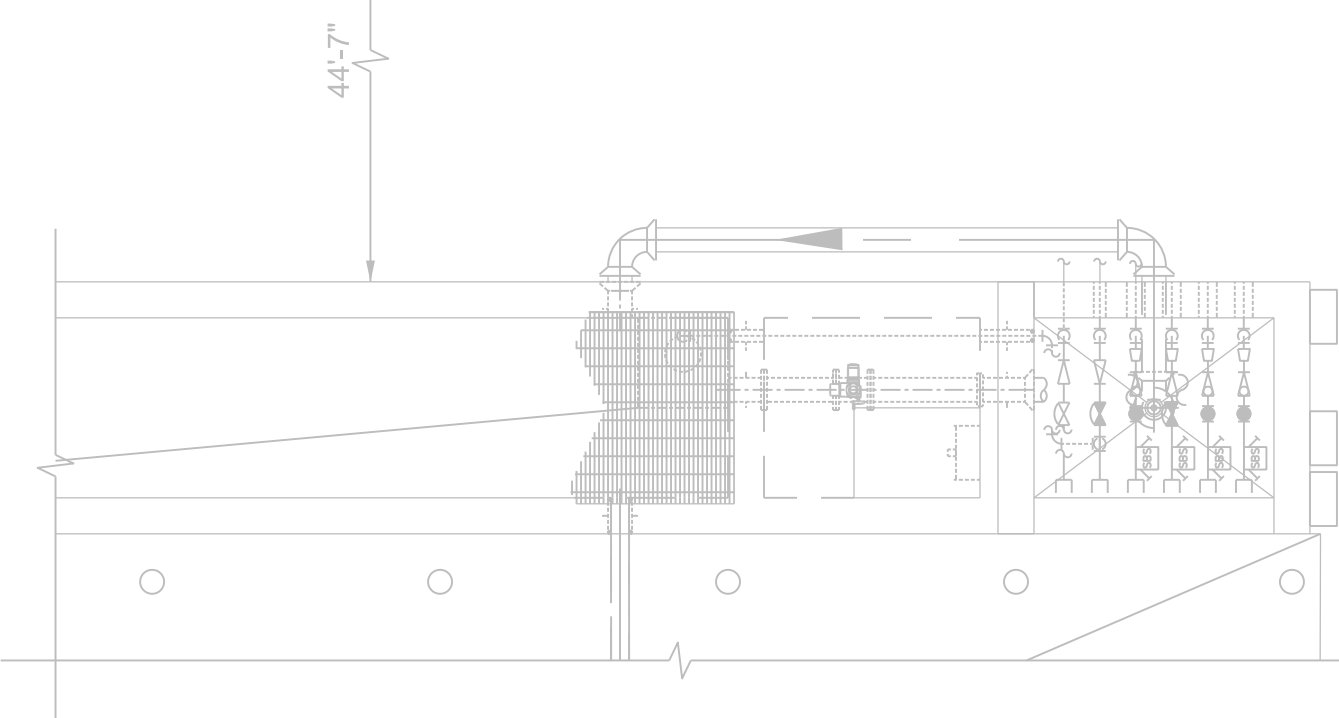
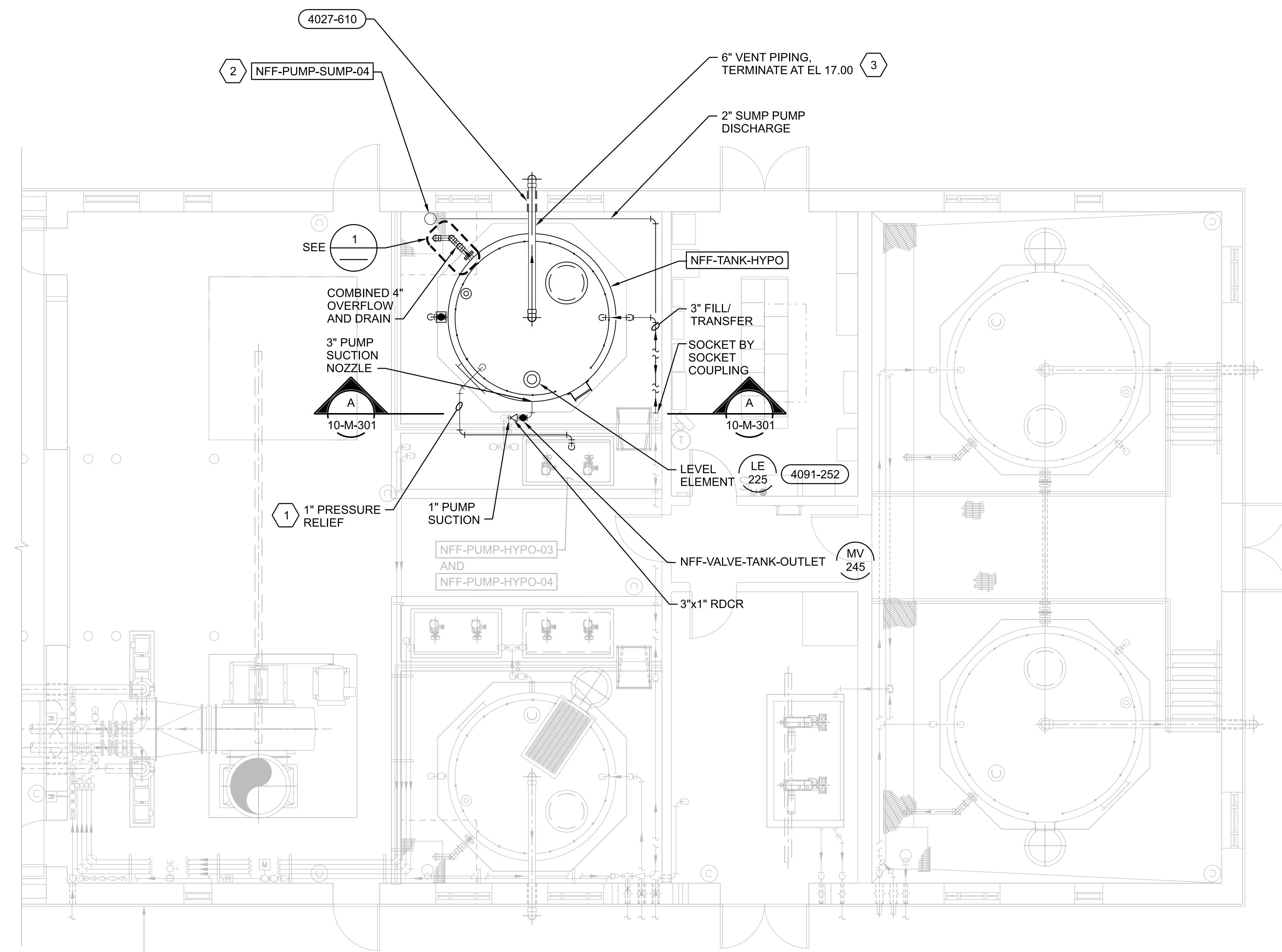
ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
NORTH FERRIC FACILITY (NFF)
ARCHITECTURAL/STRUCTURAL
GROUND FLOOR PLAN
AND SECTION

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	10-AS-201
SHEET	13 of 33

BID DOCUMENTS

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.



GENERAL SHEET NOTES

1. FIELD VERIFY DIMENSIONS AND ELEVATIONS.
1. CONTRACTOR TO ROUTE 1" PRESSURE RELIEF PIPING TO THE NFF-PUMP-HYPO-03 AND 04 PUMP SKID AND CONNECT LINES TO EXISTING 1" VACCUUM AND PRESSURE RELIEF PIPING.
2. INSTALL NFF-PUMP-SUMP-04 IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS. INSTALL REDUCERS AND TRANSITION COUPLINGS AS NECESSARY TO CONNECT SUMP PUMP TO 2" SUMP PUMP DISCHARGE.
3. INSTALL 6" CPVC COATED INSECT SCREEN OR BLIND FLANGE WITH HOLES ON THE END OF THE 6" VENT.
4. LOCATE DRAIN NOZZLE AS LOW AS POSSIBLE.
5. GROUT NOTCH AFTER TANK IS SET. COORDINATE WITH TANK MANUFACTURER AND COATING INSTALLATION.

SHEET KEYNOTES

NO.	DATE	DR	CHK	REVISION	BY	APVD

ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT

Jacobs
 NORTH FERRIC FACILITY (NFF)
 PROCESS MECHANICAL
 GROUND FLOOR PLAN
 AND DETAIL

VERIFY SCALE	DATE	SEPTEMBER 2023
BAR IS ONE INCH ON ORIGINAL DRAWING.	PROJ	E5X6963B
0 1"	DWG	10-M-201
	SHEET	14 of 33

GROUND FLOOR PLAN
 3/16"=1'-0"

SECTION 1 DETAIL
 NTS

1 2 3 4 5 6

A
B
C
D

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

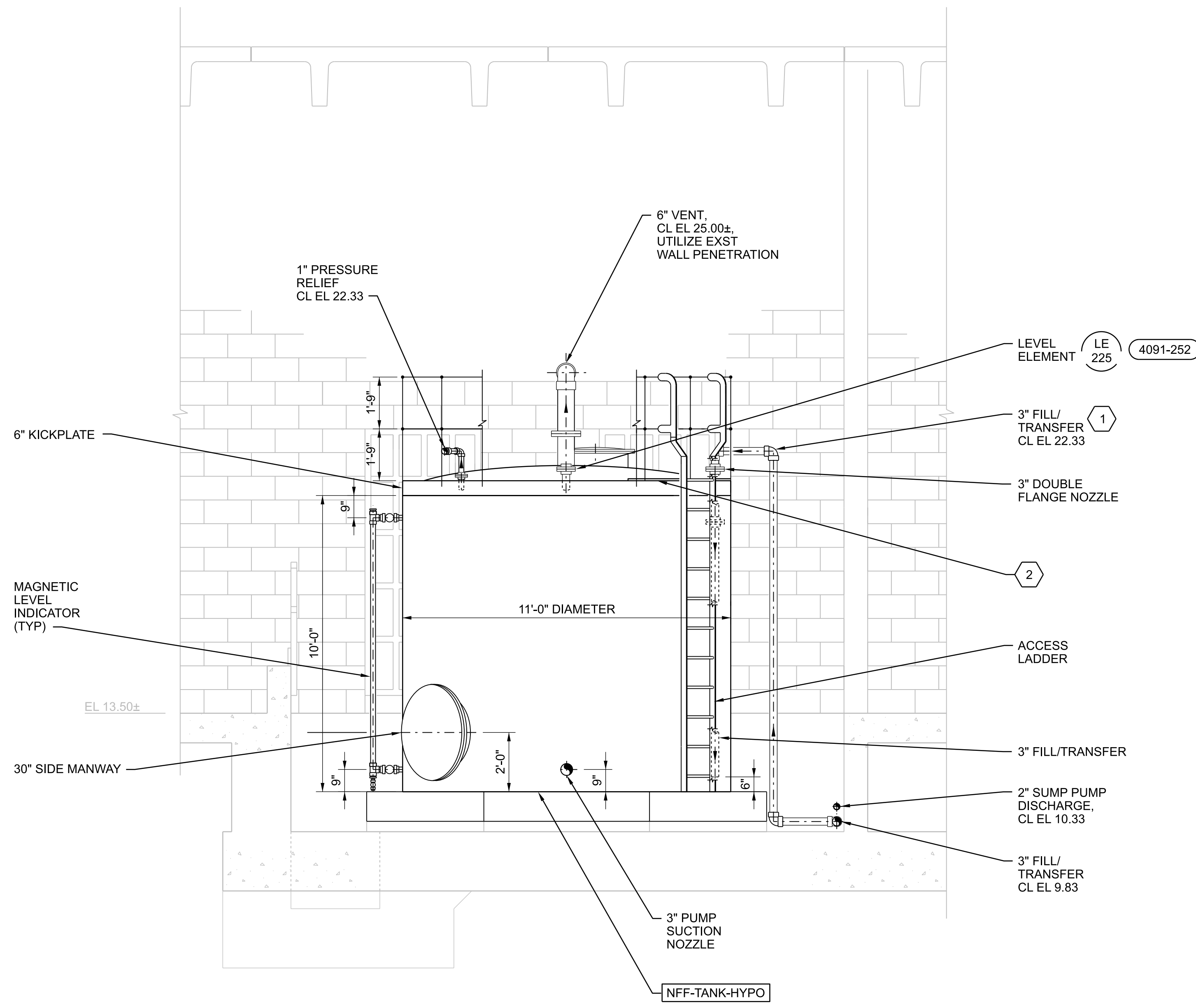
BID DOCUMENTS

GENERAL SHEET NOTES

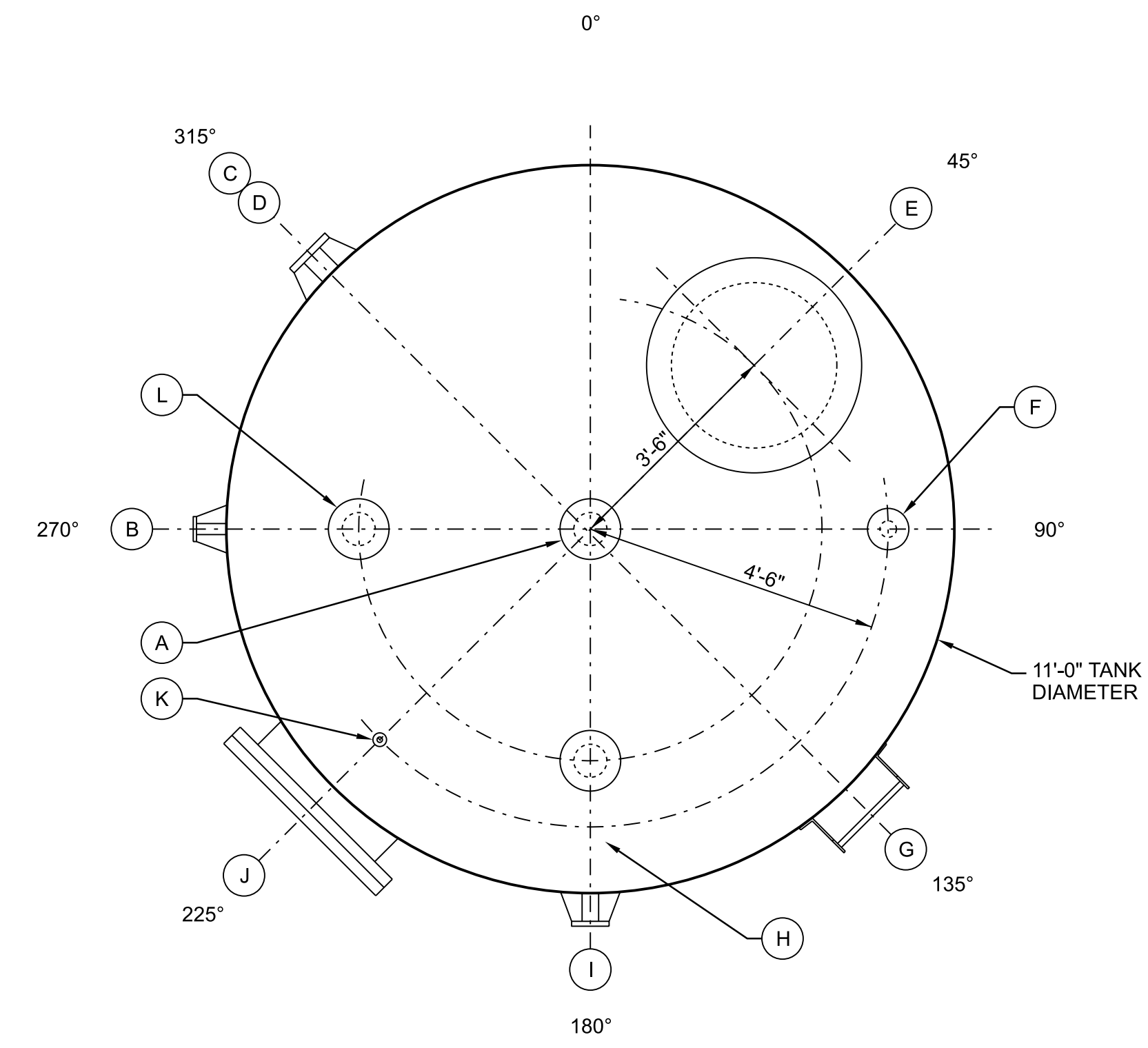
- FIELD VERIFY DIMENSIONS AND ELEVATIONS.
- TANK IS BELOW GRADE AND REQUIRES AN ACCESS LADDER FOR ENTRY AND EXIT OF THE TANK CONTAINMENT AREA.

SHEET KEYNOTES

- PROVIDE INTEGRAL FRP PIPE SUPPORTS INSIDE AND OUTSIDE TANK TO SUPPORT VERTICAL PIPING ON TANK.
- FRP STEP-OFF PLATFORM INTEGRALLY MOLDED INTO TANK DOME. 1/4" THICK, NON-SKID SURFACE. LEVEL WITH TOP LADDER RUNG.



A SECTION
3/8"=1'-0"
10-M-201



NOZZLE AND EQUIPMENT SCHEDULE			
ITEM	# REQUIRED	SIZE	DESCRIPTION
A	1	6"	VENT
B	2	2"	SIGHT GLASS/LEVEL STRIP NOZZLE
C	1	4"	OVERFLOW
D	1	3"	DRAIN
E	1	30"	TOP MANWAY
F	1	3"	FILL/TRANSFER - DOUBLE NOZZLE
G	1	-	LADDER
H	1	6"	LEVEL ELEMENT
I	1	3"	PUMP SUCTION
J	1	30"	SIDE MANWAY
K	1	1"	PRESSURE RELIEF
L	1	6"	SPARE

TANK NOZZLE PLAN

NTS

Jacobs
NORTH FERRIC FACILITY (NFF)
PROCESS MECHANICAL
SECTION AND
TANK NOZZLE PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	10-M-301
SHEET	15 of 33

NO.	DATE	DR	CHK	BY	APVD
		JEIDSON	SA KORCSMAROS		R BERCAW

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS

1

2

3

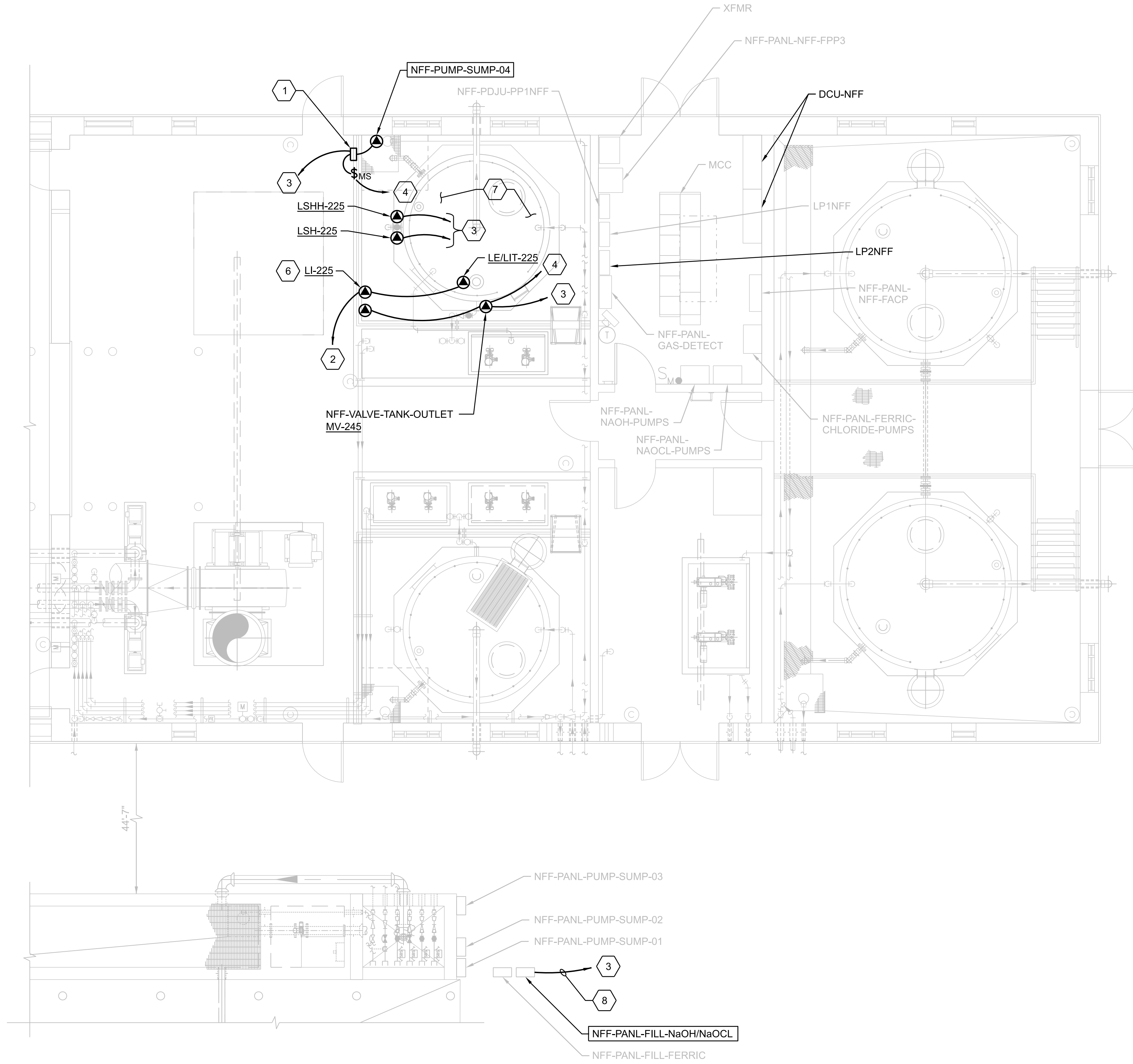
4

5

6

SHEET KEYNOTES

- SUMP PUMP CONTROL PANEL. INSTALL ON HANDRAIL ABOVE CONTAINMENT AREA.
- 24V DC INSTRUMENTATION WIRING TO DCU-NFF.
- 120V AC, #14 CONTROL WIRING TO DCU-NFF.
- 120V AC TO LIGHTING PANELBOARD LP2NFF.
- OUTLET VALVE LOCAL CONTROL STATION. MOUNT ON HANDRAIL ABOVE CONTAINMENT AREA WHERE ACCESSIBLE.
- TANK LEVEL LOCAL DISPLAY. MOUNT ON HANDRAIL ABOVE CONTAINMENT AREA WHERE ACCESSIBLE.
- CONDUITS SHALL NOT BE INSTALLED ABOVE THE TANK AND THEY SHALL NOT INTERFERE WITH THE REMOVAL/MAINTENANCE OF THE TANK AND ANY OTHER EQUIPMENT.
- REMOVE EXISTING WIRING FROM EXISTING CONDUIT AND INSTALL NEW WIRING IN EXISTING CONDUIT.



GROUND FLOOR PLAN
3/16"=1'-0"

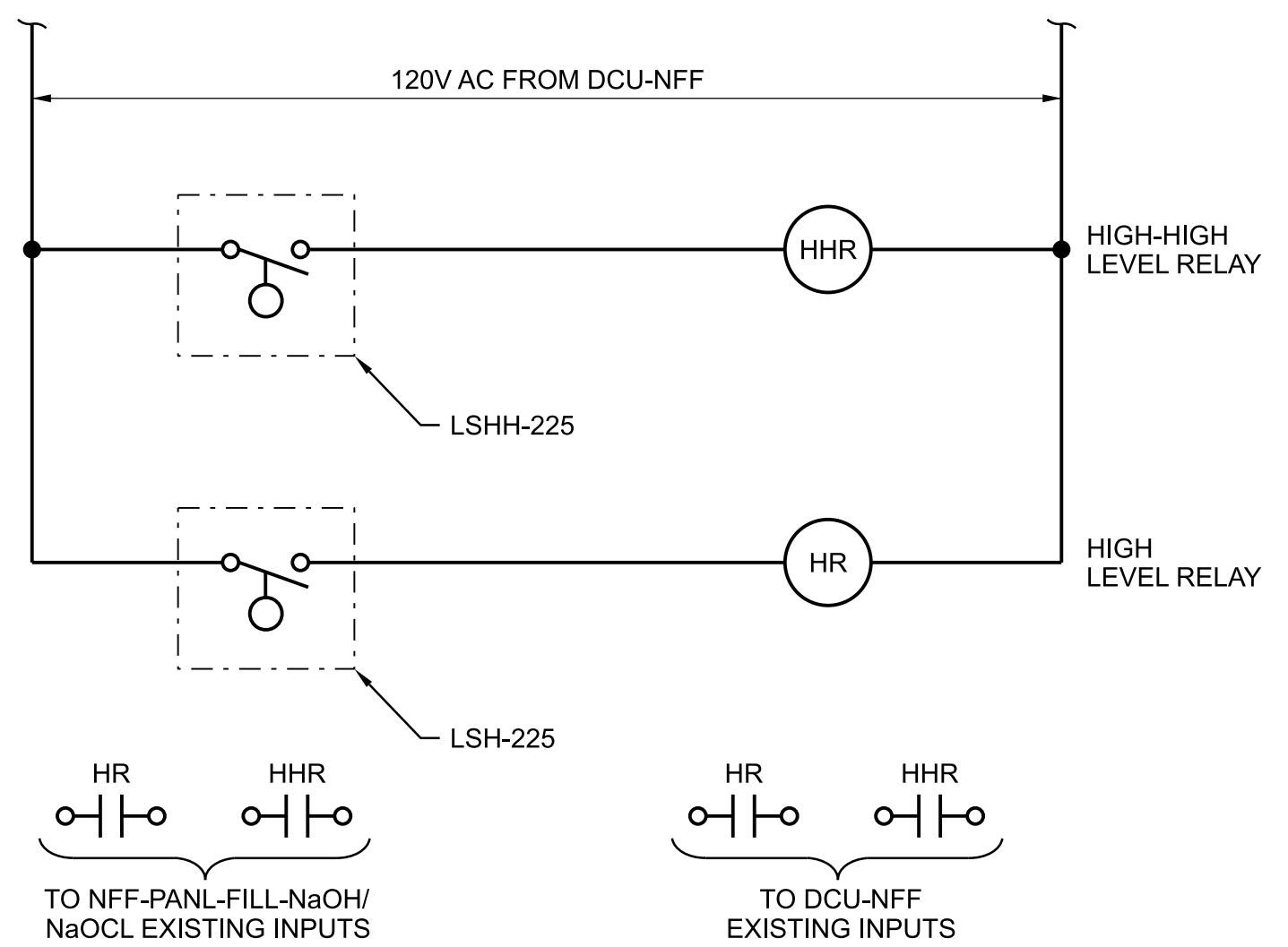
ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
NORTH FERRIC FACILITY (NFF)
ELECTRICAL
GROUND FLOOR PLAN

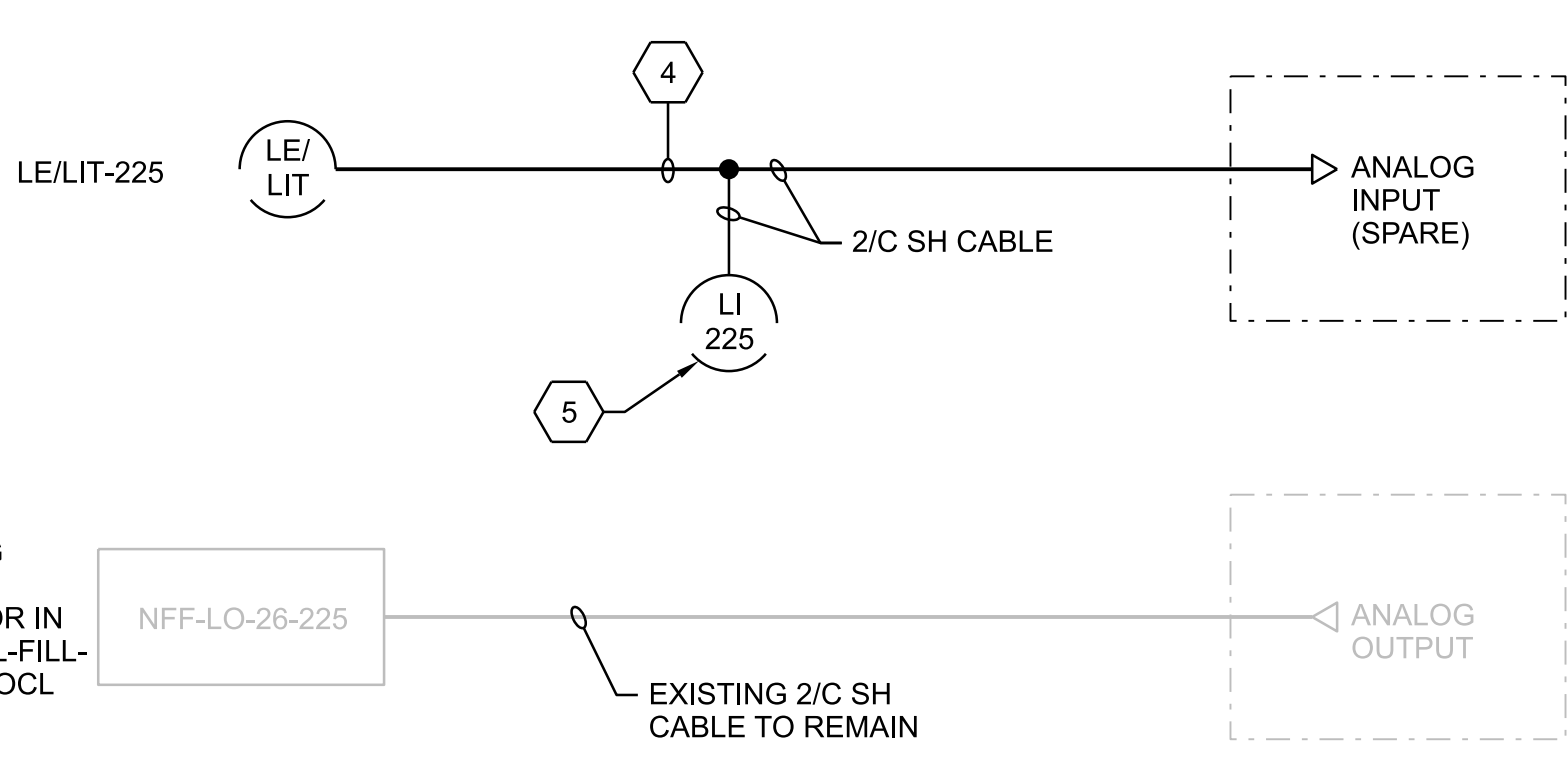
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	10-E-201
SHEET	16 of 33

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

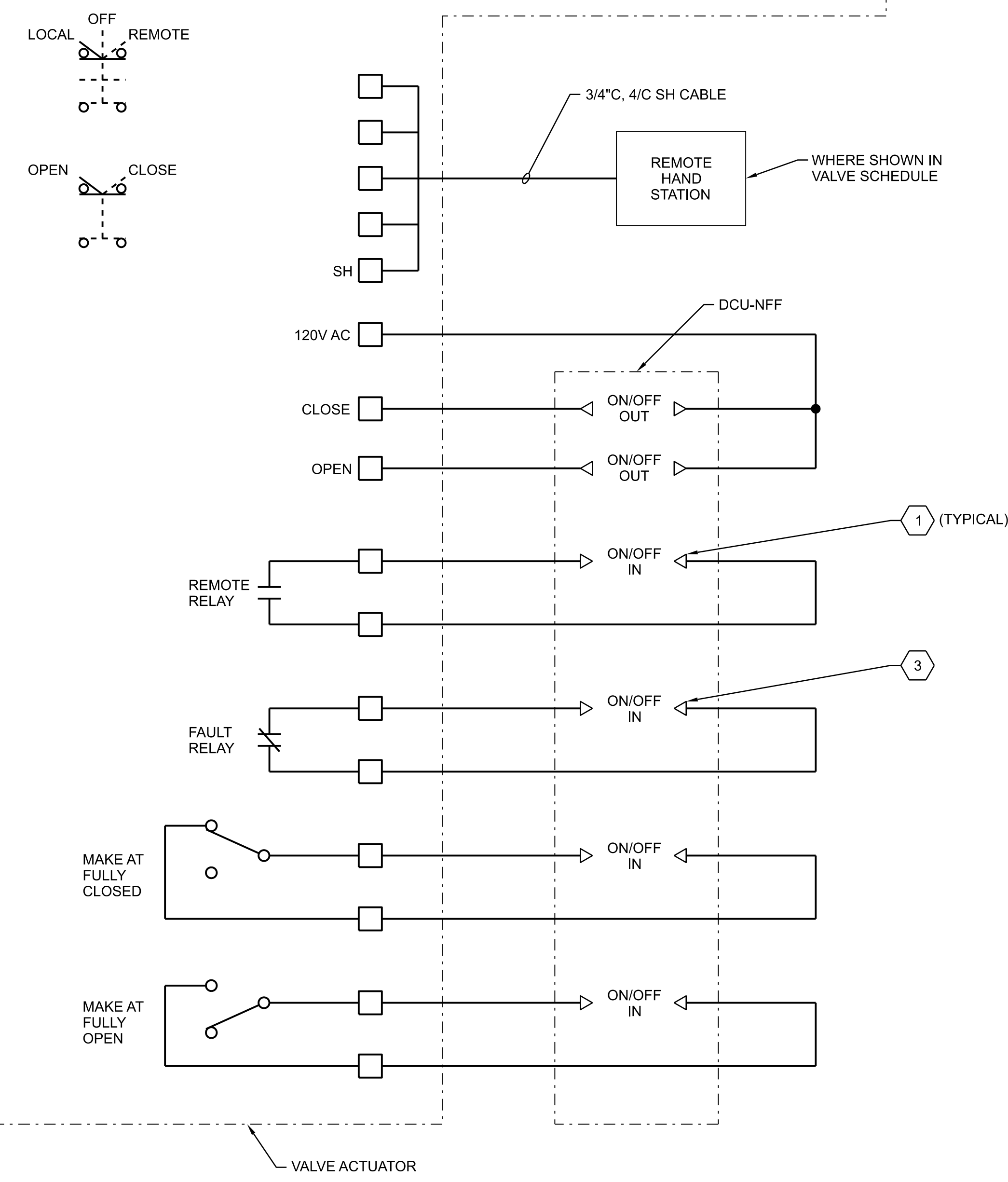
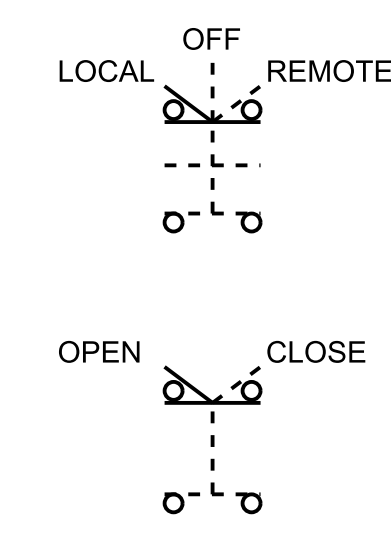
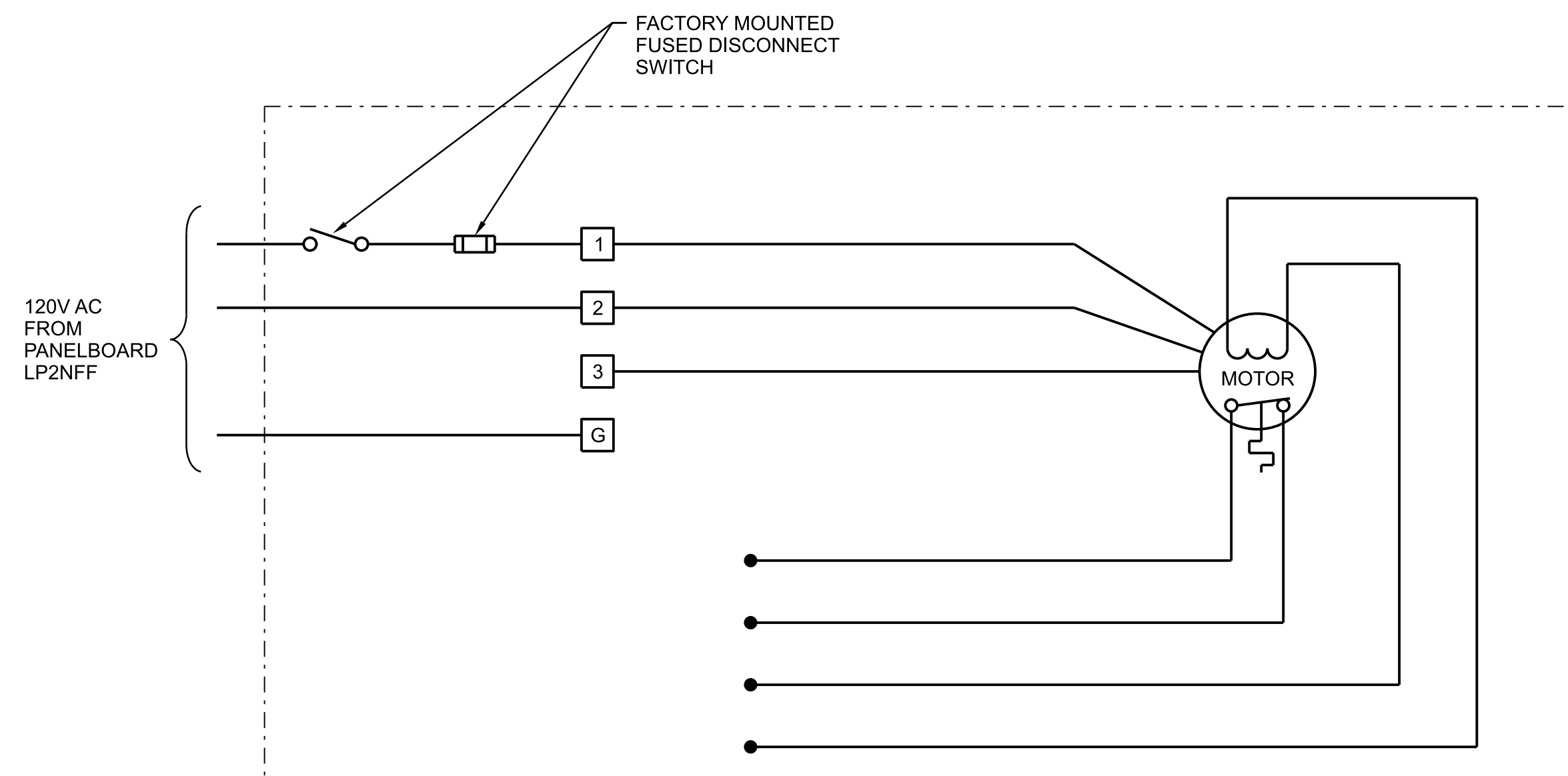
BID DOCUMENTS



NFF LEVEL SWITCH CONTROL SCHEMATIC
1-THUS; ALL CONTROLS ARE IN DCU-NFF UNLESS NOTED OTHERWISE.



NFF ANALOG INPUTS AND OUTPUTS SCHEMATIC
1-THUS; ALL CONTROLS ARE IN DCU-NFF UNLESS NOTED OTHERWISE.



OPEN/CLOSE VALVE ACTUATOR SCHEMATIC
1-THUS; NFF TANK OUTLET VALVE

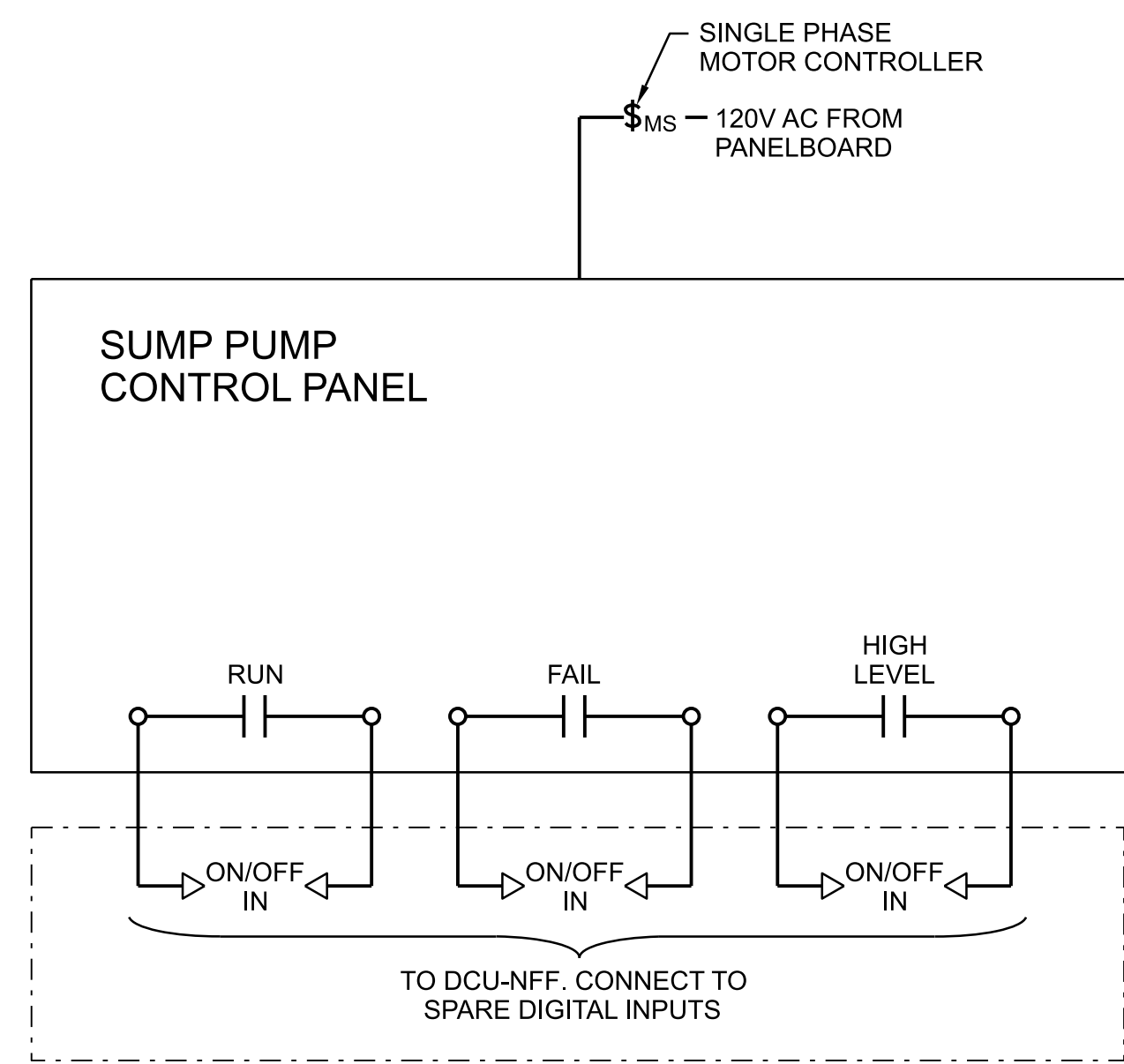
- SHEET KEYNOTES**
- EXISTING PLC INPUTS TO DCU-NFF ARE 120V AC RATED. CONNECT TO EXISTING TERMINAL BLOCKS IN DCU-NFF.
 - EXISTING PLC OUTPUTS ARE 120V AC RATED. CONNECT TO EXISTING TERMINAL BLOCKS IN DCU-NFF.
 - CONNECT TO SPARE PLC INPUT FOR FAULT INPUT. ALL OTHERS ARE EXISTING.
 - PROVIDE NEW 24V DC REDUNDANT POWER SUPPLY FOR ANALOG I/O.
 - LOOP POWERED LOCAL DISPLAY MOUNTED BELOW.

ARLINGTON COUNTY, VIRGINIA WATER POLLUTION CONTROL PLANT FRP HYPO TANK REPLACEMENT		J. BROSNAN DR		SA. KORCSMAROS CHK		R. BERCAW APVD	
NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
DATE: SEPTEMBER 2023		PROJ: E5X6963B		DWG: 10-E-601		SHEET: 17 of 33	

Jacobs
NORTH FERRIC FACILITY (NFF)
ELECTRICAL
CONTROL SCHEMATICS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE: SEPTEMBER 2023
PROJ: E5X6963B
DWG: 10-E-601
SHEET: 17 of 33

BID DOCUMENTS



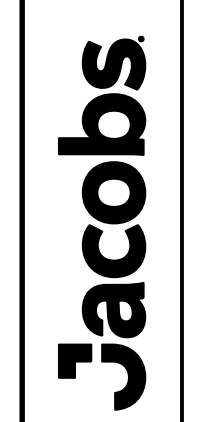
SUMP PUMP CONTROL SCHEMATIC
 1-THUS; ALL CONTROLS AT SUMP PUMP CONTROL PANEL UNLESS NOTED OTHERWISE.

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	KVA PER PHASE			LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
				A	B	C				
1	20	AIT-565 METHANE DETECTORS	.5	1			.5	AIT-565 METHANE DETECTORS	20	2
3	20	AIT-575 H2S DETECTORS	.5		1		.5	-	20	4
5	20	AIT-580 % OXYGEN DETECTORS	.5			1	.5	ATC PANEL	20	6
7	20	SPARE	0	1.2			1.2	SUMP PUMP CP	20	8
9	20	AIT-416, DPIT-412, LIT-414	.5		0.86		0.86	MV-245	20	10
11	20	AIT-436, DPIT-432, LIT-434	.5			1	.5	MV-560, FIT-570	20	12
13	20	MV-446, AIT-436	.5	.5			-	-	20	14
15	20	PIT-510, PIT-530	.5		.5		-	-	20	16
17	20	AIT-440, AIT-450	-				-	SPARE	20	18
19	20	EUH-4	1.9	-			1.9	EUH-1	20	20
21	2P	EUH-4	1.9		-		1.9	EUH-1	2P	22
23	20	EUH-5	1.9				1.9	EUH-2	20	24
25	2P	EUH-5	1.9	-			1.9	EUH-2	2P	26
27	20	EUH-6	1.9		-		1.9	EUH-3	20	28
29	2P	EUH-6	1.9			-	1.9	EUH-3	2P	30
31	20	USED	-	-			-	USED	20	32
33	20	USED	-		-		-	USED	20	34
35	20	USED	-			-	-	USED	20	36
37	20	USED	-	-			-	USED	20	38
39	20	USED	-		-		-	USED	20	40
41	20	USED	-			-	-	USED	20	42

LIGHTING PANEL LP2NFF LOCATION: NFF FACILITY BUILDING	TOTAL KVA 1.7 2.4 2	SERVICE CHARACTERISTICS: 120/208 VOLT - 3 PHASE - 4 WIRE - 60HZ PROVIDE 100A MAIN BREAKER & SOLID NEUTRAL & GROUND BUS 10,000 AMP INTERRUPTING RATING
GRAND CONNECTED TOTAL KVA	6.1	

1 CONNECT TO EXISTING CIRCUIT BREAKER. INSTALL 3-#12 IN 3/4" CONDUIT FROM EACH 20 AMP BREAKER TO THE LOAD.

PANELBOARD LP2NFF

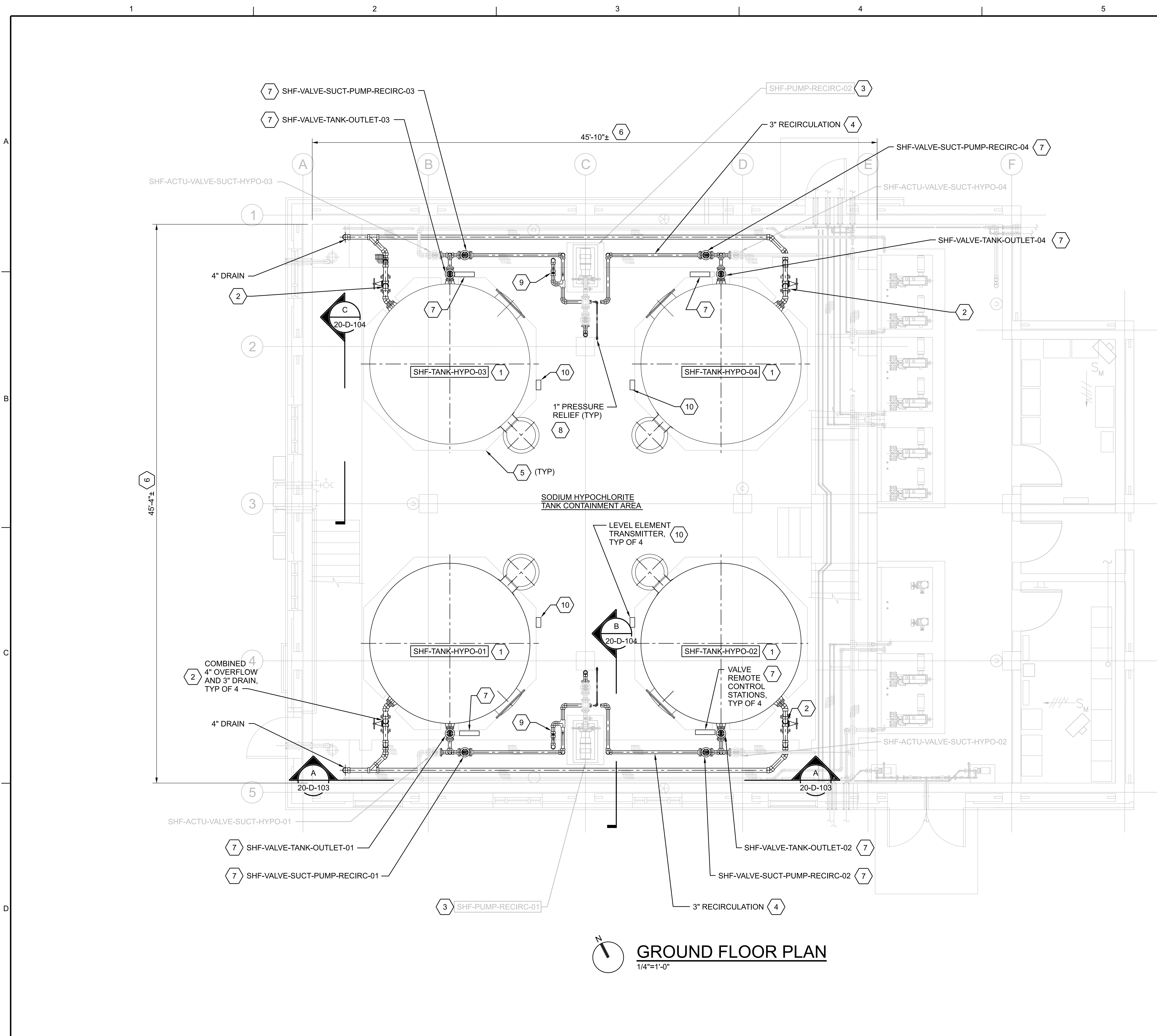


NORTH FERRIC FACILITY (NFF)
ELECTRICAL CONTROL SCHEMATICS AND PANELBOARD SCHEDULE
 ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE: SEPTEMBER 2023
PROJ: E5X6963B
DWG: 10-E-602
SHEET: 18 of 33

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS



GENERAL SHEET NOTES

- ITEMS SHOWN BOLD TO BE DEMOLISHED.
- SHF-SUCT-HYPO-0X VALVES, ACTUATORS, REMOTE CONTROL STATIONS AND CONDUIT AND WIRING TO REMAIN.

SHEET KEYNOTES

- DEMOLISH SODIUM HYPOCHLORITE TANK (SHF-TANK-HYPO-0X) AND ASSOCIATED SIGHT GLASS, LADDER AND TOP GUARDRAIL.
- DEMOLISH COMBINED 4" OVERFLOW AND 3" DRAIN PIPING.
- EXISTING RECIRCULATION PUMPS AND ASSOCIATED DISCHARGE RELIEF VALVE, CHECK VALVE, PRESSURE SWITCH AND DIAPHRAGM VALVE TO REMAIN.
- DEMOLISH 3" RECIRCULATION PUMP SUCTION PIPING AND VALVES.
- FOLLOWING DEMOLITION OF SODIUM HYPOCHLORITE TANKS, FIELD VERIFY CONCRETE TANK PADS ARE IN GOOD CONDITION AND REQUIRE NO SURFACE REPAIRS OTHER THAN CRACK REPAIRS. NOTIFY ENGINEER OF ANY SPALLS OR SIMILAR DAMAGED SURFACES THAT ARE ENCOUNTERED.
- REMOVE PROTECTIVE CONCRETE COATING FROM ALL CONCRETE SURFACES AT OR BELOW ELEVATION 9.54± IN 45'-10"± x 45'-4"± SODIUM HYPOCHLORITE CONTAINMENT AREA, INCLUDING WALLS, COLUMNS, FLOOR SLAB, TANK PADS, EQUIPMENT PADS, PIPE TRENCHES, SUMPS, CONCRETE STAIRS, AND CONCRETE WALKWAY.
- DEMOLISH VALVE, ACTUATOR, REMOTE CONTROL STATION AND ASSOCIATED CONDUIT AND WIRING UP TO SOURCE.
- DEMOLISH 1" PRESSURE RELIEF ASSOCIATED WITH THE RECIRCULATION PUMP.
- DEMOLISH 2" DRAIN PIPING.
- DEMOLISH LEVEL ELEMENT TRANSMITTER, LOCAL INDICATOR AND ASSOCIATED CONDUIT AND WIRING UP TO SOURCE.

NO.	DATE	DSGN	DR	CHK	BY	APVD
1						
2						
3						
4						
5						
6						

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
DEMOLITION
GROUND FLOOR PLAN

DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-D-101
SHEET	19 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.

BID DOCUMENTS

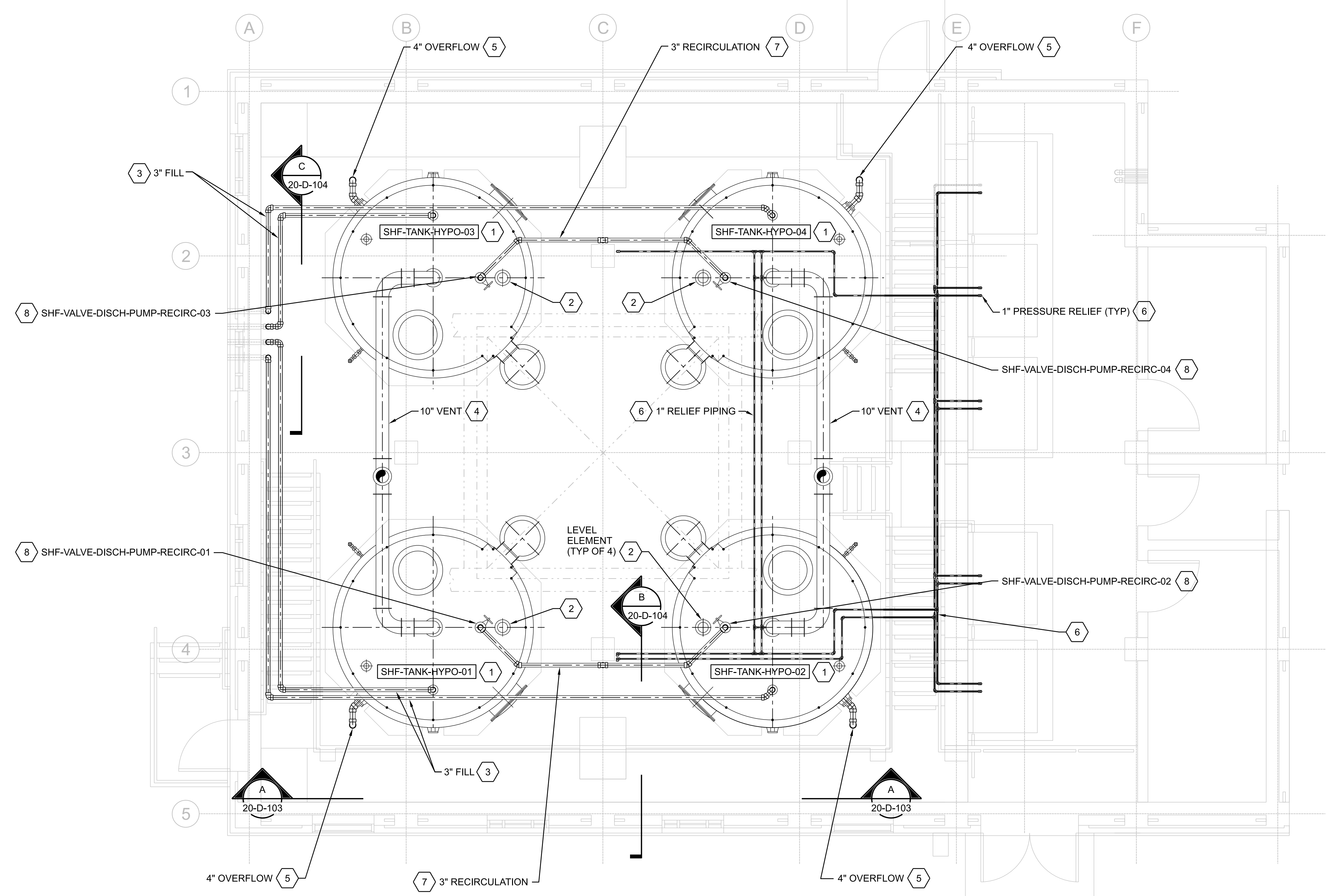
GROUND FLOOR PLAN
1/4"=1'-0"

GENERAL SHEET NOTES

- 1. ITEMS SHOWN BOLD TO BE DEMOLISHED.

SHEET KEYNOTES

- 1. DEMOLISH SODIUM HYPOCHLORITE TANK (SHF-TANK-HYPO-0X) AND ASSOCIATED SIGHT GLASS, LADDER AND TOP GUARDRAIL.
- 2. DEMOLISH LEVEL ELEMENT AND ASSOCIATED TRANSMITTER, LOCAL INDICATOR (WITH DISPLAY SCREEN), CONDUIT AND WIRING UP TO SOURCE.
- 3. DEMOLISH 3" TANK FILL PIPING WITHIN BUILDING.
- 4. DEMOLISH 10" FRP VENT PIPING.
- 5. DEMOLISH COMBINED 4" OVERFLOW AND 3" DRAIN PIPING.
- 6. DEMOLISH 1" PRESSURE RELIEF PIPING TO PUMP SKID.
- 7. DEMOLISH 3" RECIRCULATION PUMP PIPING AND VALVES. DEMOLISH 3" RECIRCULATION PUMP PIPING AND VALVES DOWNSTREAM OF EXISTING DIAPHRAGM ISOLATION VALVE.
- 8. DEMOLISH VALVE, ACTUATOR AND ASSOCIATED CONDUIT AND WIRING UP TO SOURCE.



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

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
DEMOLITION
UPPER PLAN

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-D-102
SHEET	20 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.
 SA KORCSMAROS
 J.EIDSON
 DR
 NO. DATE DSGN
 REVISION
 CHECK
 APVD
 BY APVD
 R.BERCAW
 © JACOBS 2023. ALL RIGHTS RESERVED.

BID DOCUMENTS

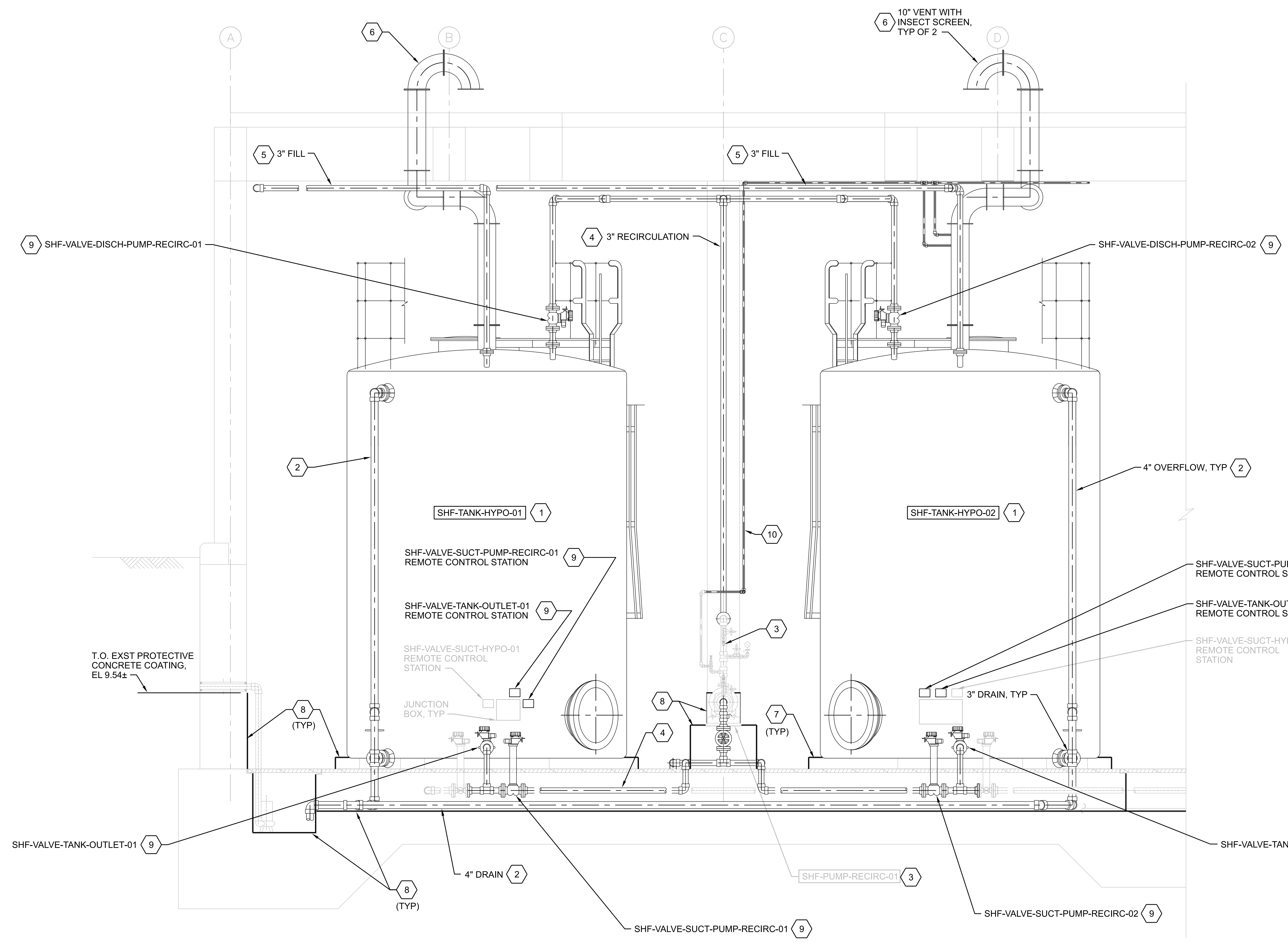
1 2 3 4 5 6

GENERAL SHEET NOTES

- ITEMS SHOWN BOLD TO BE DEMOLISHED.
- SECTION A OF TANKS 1 AND 2 IS SIMILAR TO TANKS 3 AND 4 ON THE OTHER SIDE OF BUILDING SHF.

SHEET KEYNOTES

- DEMOLISH SODIUM HYPOCHLORITE TANK (SHF-TANK-HYPO-0X) AND ASSOCIATED SIGHT GLASS, LADDER AND TOP GUARDRAIL.
- DEMOLISH COMBINED 4" OVERFLOW AND 3" DRAIN PIPING.
- EXISTING RECIRCULATION PUMPS AND ASSOCIATED DISCHARGE RELIEF VALVE, CHECK VALVE, PRESSURE SWITCH AND DIAPHRAGM VALVE TO REMAIN.
- DEMOLISH 3" RECIRCULATION PUMP PIPING AND VALVES.
- DEMOLISH 3" TANK FILL PIPING WITHIN BUILDING.
- DEMOLISH 10" FRP VENT PIPING.
- FOLLOWING DEMOLITION OF SODIUM HYPOCHLORITE TANKS, FIELD VERIFY CONCRETE TANK PADS ARE IN GOOD CONDITION AND REQUIRE NO SURFACE REPAIRS OTHER THAN CRACK REPAIRS. NOTIFY ENGINEER OF ANY SPALLS OR SIMILAR DAMAGED SURFACES THAT ARE ENCOUNTERED.
- REMOVE PROTECTIVE CONCRETE COATING FROM ALL CONCRETE SURFACES AT OR BELOW ELEVATION 9.54± IN 45'-10"± x 45'-4"± SODIUM HYPOCHLORITE CONTAINMENT AREA, INCLUDING WALLS, COLUMNS, FLOOR SLAB, TANK PADS, EQUIPMENT PADS, PIPE TRENCHES, SUMPS, CONCRETE STAIRS, AND CONCRETE WALKWAY.
- DEMOLISH VALVE, ACTUATOR, REMOTE CONTROL STATION AND ASSOCIATED CONDUIT AND WIRING UP TO SOURCE.
- DEMOLISH 1" PRESSURE RELIEF PIPING FROM RECIRCULATION PIPING TO TANK. TYPICAL FOR BOTH RECIRCULATION PUMPS.



A SECTION
3/8"=1'-0"
20-D-101
20-D-102

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
DEMOLITION
SECTION

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-D-103
SHEET	21 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS

GENERAL SHEET NOTES

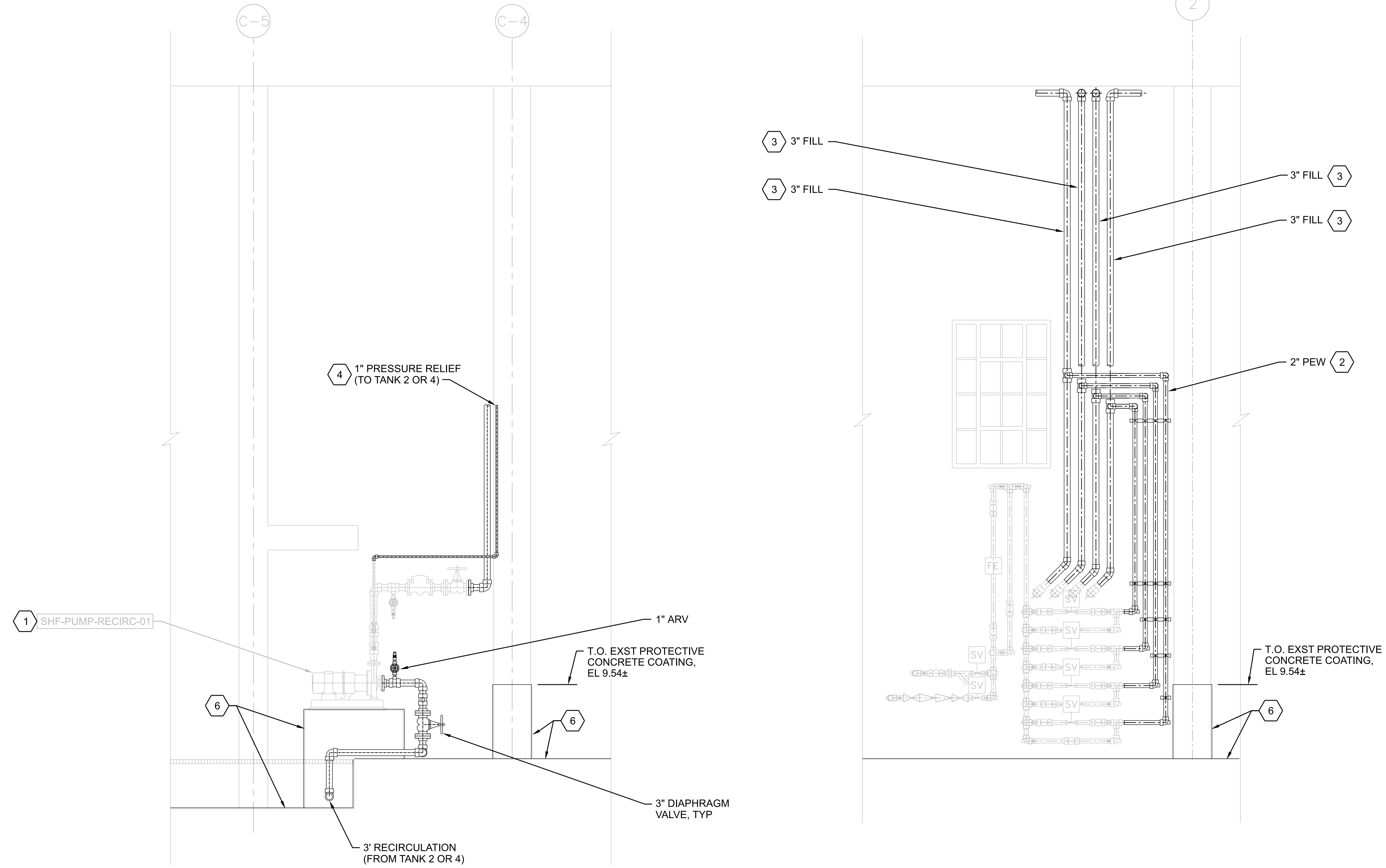
1. ITEMS SHOWN BOLD TO BE DEMOLISHED.

SHEET KEYNOTES

- EXISTING RECIRCULATION PUMP AND ASSOCIATED CONDUIT AND WIRING TO REMAIN. DEMOLISH RECIRCULATION PIPING AND VALVES AS SHOWN.
- DEMOLISH 2" PEW PIPING.
- DEMOLISH 3" FILL PIPING.
- DEMOLISH 1" PRESSURE RELIEF PIPING.
- SECTION B IS TYPICAL FOR BOTH SHF-PUMP-RECIRC-01 AND SHF-PUMP-RECIRC-02.
- REMOVE PROTECTIVE CONCRETE COATING FROM ALL CONCRETE SURFACES AT OR BELOW ELEVATION 9.54± IN 45'-10"± x 45'-4"± SODIUM HYPOCHLORITE CONTAINMENT AREA, INCLUDING WALLS, COLUMNS, FLOOR SLAB, TANK PADS, EQUIPMENT PADS, PIPE TRENCHES, SUMPS, CONCRETE STAIRS, AND CONCRETE WALKWAY.

1 2 3 4 5 6

A
B
C
D



B SECTION
3/8"=1'-0"
20-D-101
20-D-102

C SECTION
3/8"=1'-0"
20-D-101
20-D-102

NO.	DATE	DSGN	DR	REVISION	CHK	BY	APVD

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
DEMOLITION
SECTIONS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-D-104
SHEET	22 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

1

2

3

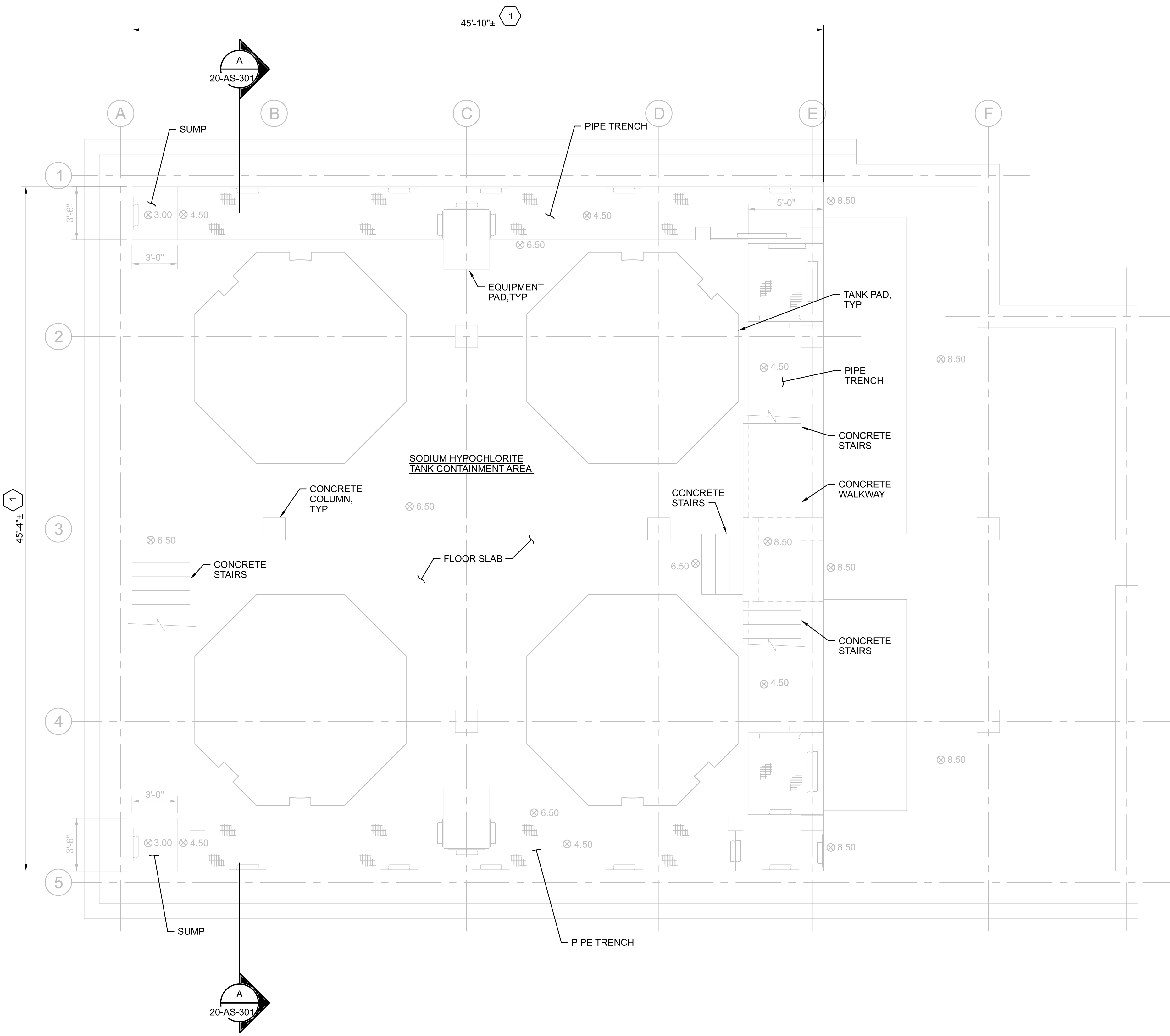
4

5

6

SHEET KEYNOTES

- INSTALL RESINOUS SPECIAL COATING AS SPECIFIED TO ALL CONCRETE SURFACES AT OR BELOW ELEVATION 9.54± IN 45'-10"± x 45'-4"± SODIUM HYPOCHLORITE CONTAINMENT AREA, INCLUDING WALLS, COLUMNS, FLOOR SLAB, TANK PADS, EQUIPMENT PADS, PIPE TRENCHES, SUMPS, CONCRETE STAIRS, AND CONCRETE WALKWAY. TOP ELEVATION OF COATING TO MATCH TOP ELEVATION OF REMOVED COATING. ELEVATION 9.54±. COATING MANUFACTURER TO REPAIR EXISTING CRACKS IN HORIZONTAL AND VERTICAL CONCRETE SUBSTRATES PRIOR TO INSTALLING COATING. ANY CRACK REPAIRS NOT COVERED BY THE COATING MANUFACTURER'S WORK SHALL BE REPAIRED BY CONTRACTOR USING EPOXY INJECTION. EPOXY-INJECTED CRACKS SHALL BE FINISHED TO BE FLUSH WITH ADJACENT CONCRETE SURFACES.



GROUND FLOOR PLAN
1/4"=1'-0"

NO.	DATE	DR	CHK	REVISION	BY	APVD

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

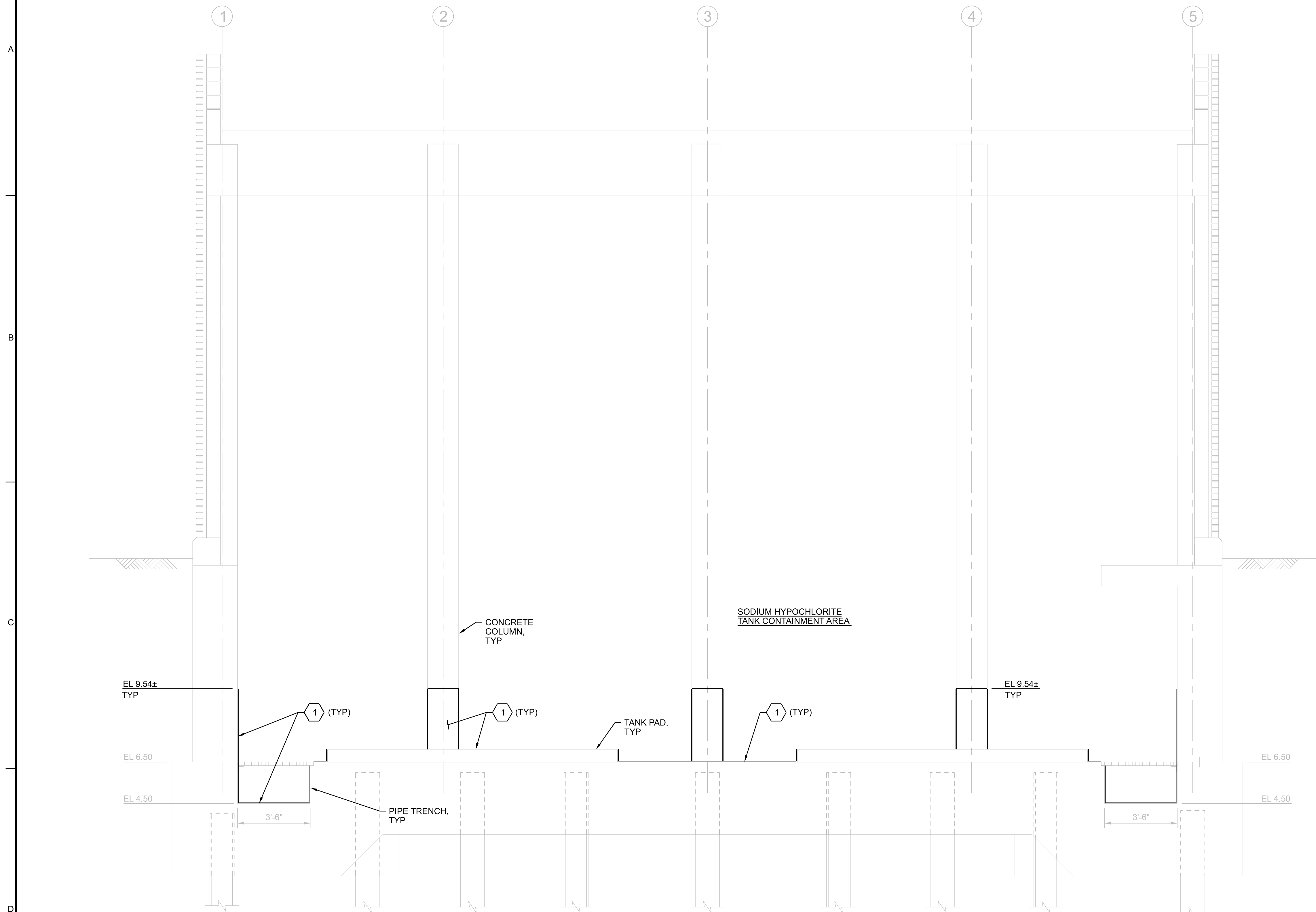
Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
ARCHITECTURAL/STRUCTURAL
GROUND FLOOR PLAN

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-AS-201
SHEET	23 of 33

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

SHEET KEYNOTES

- INSTALL RESINOUS SPECIAL COATING AS SPECIFIED TO ALL CONCRETE SURFACES AT OR BELOW ELEVATION 9.54± IN 45'-10"± x 45'-4"± SODIUM HYPOCHLORITE CONTAINMENT AREA, INCLUDING WALLS, COLUMNS, FLOOR SLAB, TANK PADS, EQUIPMENT PADS, PIPE TRENCHES, SUMPS, CONCRETE STAIRS, AND CONCRETE WALKWAY. TOP ELEVATION OF COATING TO MATCH TOP ELEVATION OF REMOVED COATING, ELEVATION 9.54±. COATING MANUFACTURER TO REPAIR EXISTING CRACKS IN HORIZONTAL AND VERTICAL CONCRETE SUBSTRATES PRIOR TO INSTALLING COATING. ANY CRACK REPAIRS NOT COVERED BY THE COATING MANUFACTURER'S WORK SHALL BE REPAIRED BY CONTRACTOR USING EPOXY INJECTION. EPOXY-INJECTED CRACKS SHALL BE FINISHED TO BE FLUSH WITH ADJACENT CONCRETE SURFACES.



SECTION
 3/8" = 1'-0"
 20-AS-201

ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT

Jacobs
 SODIUM HYPOCHLORITE FACILITY (SHF)
 ARCHITECTURAL/STRUCTURAL
 SECTION

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-AS-301
SHEET	24 of 33

NO.	DATE	DR	SA KORCSMAROS	CHK	L ZHANG	APVD	R BERCAW

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

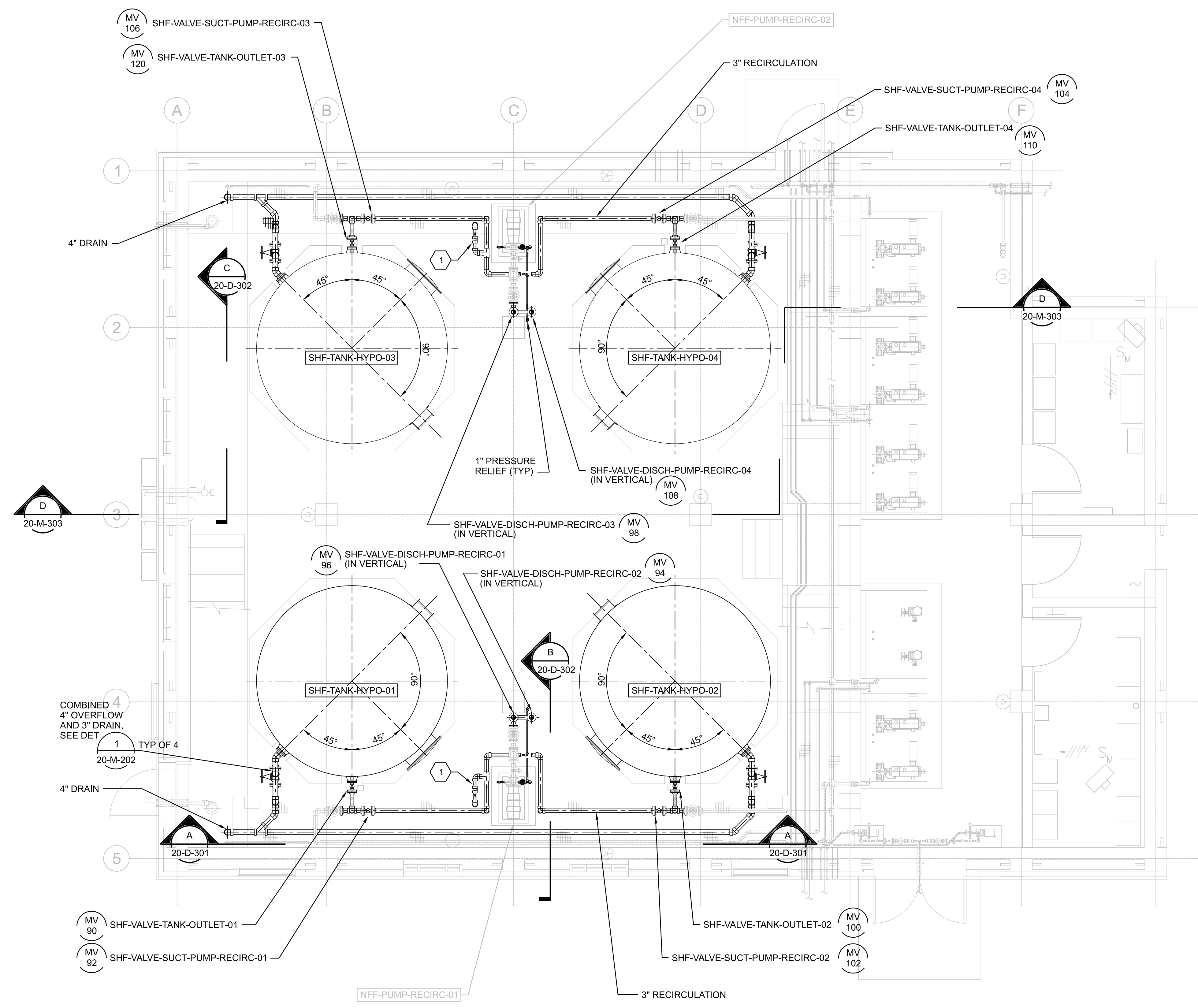
BID DOCUMENTS

GENERAL SHEET NOTES

1. FIELD VERIFY DIMENSIONS AND ELEVATIONS.

SHEET KEYNOTES

1. INSTALL 2" DRAIN PIPING FROM PUMP SUCTION PIPING TO TRENCH DRAIN.



GROUND FLOOR PLAN
1/4"=1'-0"

NO.	DATE	DR	CHK	APVD	BY	APVD
		J. EIDSON	SA KORCSMAROS			R. BERCAW

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
PROCESS MECHANICAL
GROUND FLOOR PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-M-201
SHEET	25 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

GENERAL SHEET NOTES

- FIELD VERIFY DIMENSIONS AND ELEVATIONS.

SHEET KEYNOTES

- GROUT CONCRETE TANK PAD NOTCH UNDER NOZZLE AFTER TANK IS SET. COORDINATE WITH TANK MANUFACTURER AND COATING INSTALLATION.
- LOCATE DRAIN NOZZLE AS LOW AS POSSIBLE.

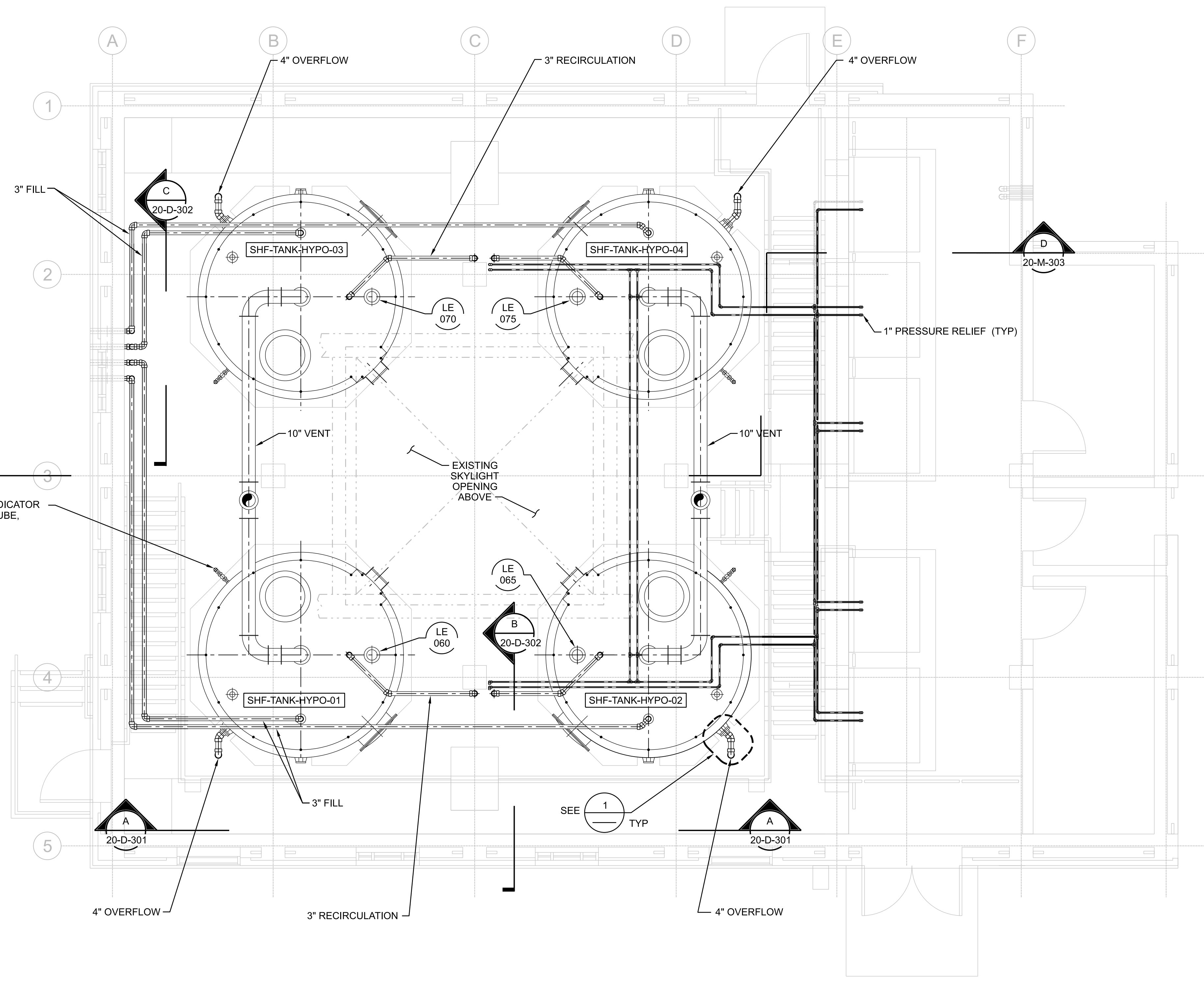
NO.	DATE	DR	CHK	BY	APVD
		J. EIDSON	SA KORCSMAROS		R. BERCAW

ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT

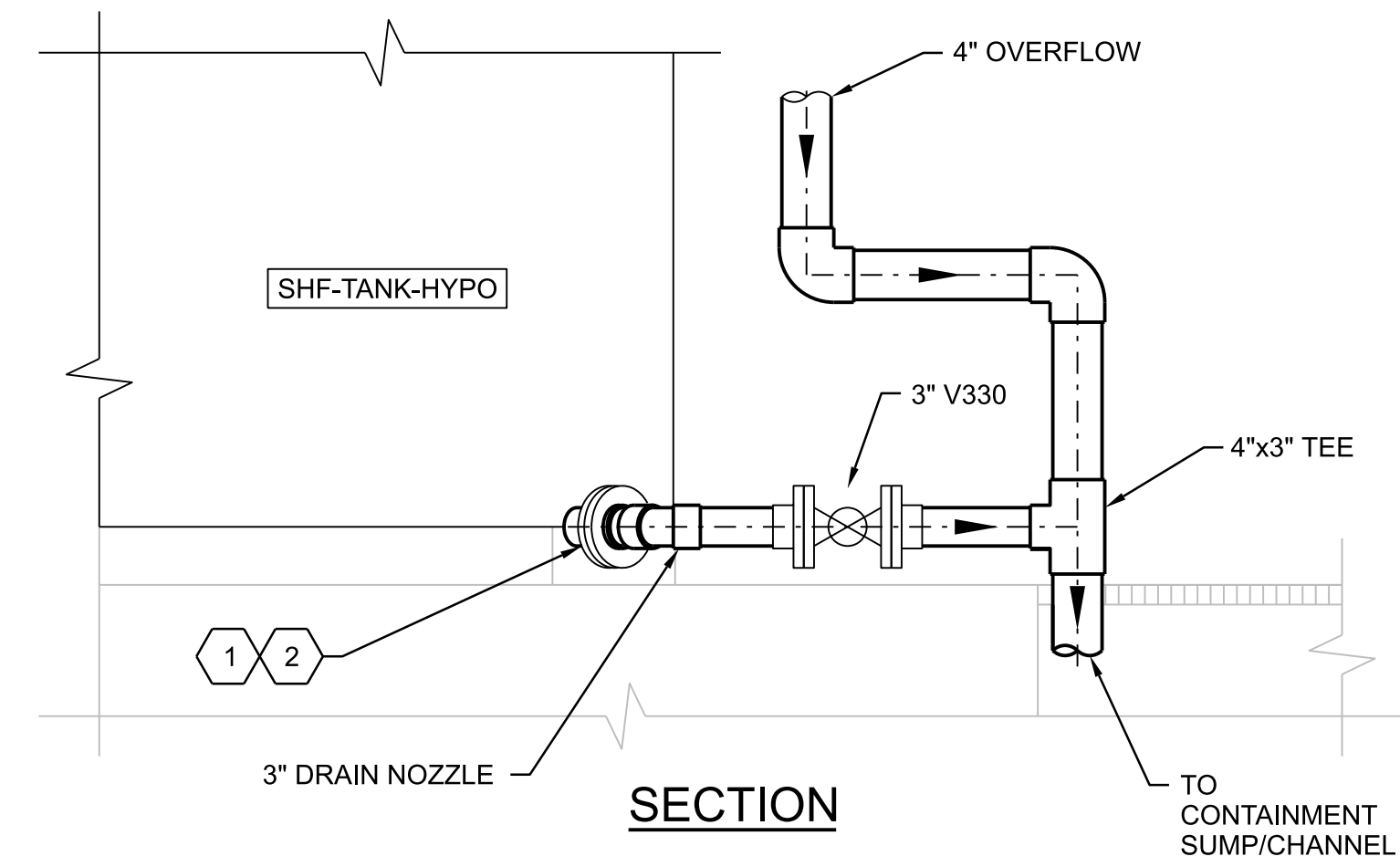
Jacobs
 SODIUM HYPOCHLORITE FACILITY (SHF)
 PROCESS MECHANICAL
 UPPER PLAN
 AND DETAIL

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	1"
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-M-202
SHEET	26 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.



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



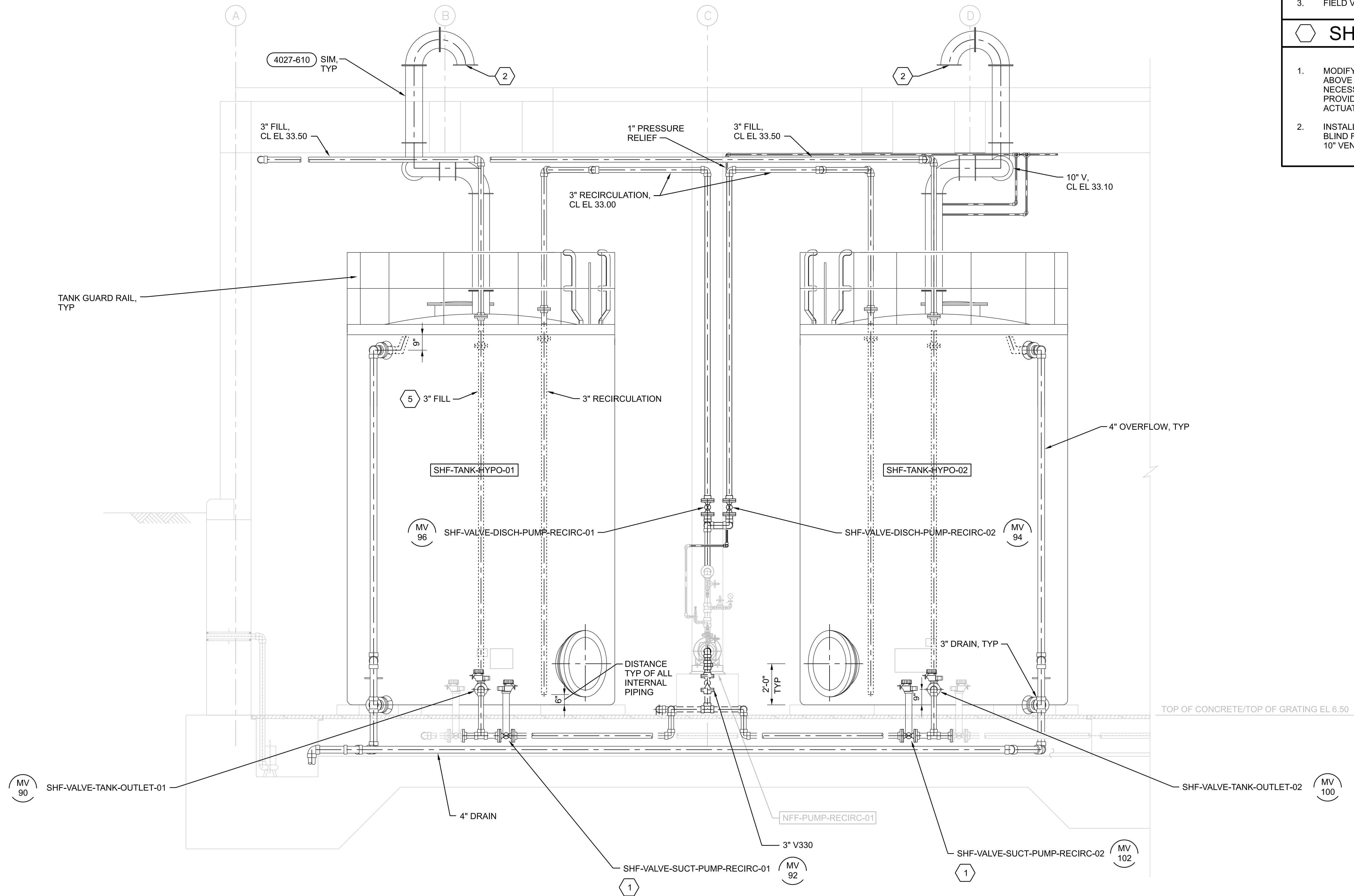
SECTION
1 DETAIL
 NTS

GENERAL SHEET NOTES

- SECTION A OF TANKS 1 AND 2 IS SIMILAR TO TANKS 3 AND 4 ON THE OTHER SIDE OF BUILDING SHF.
- PROVIDE INTEGRAL FRP PIPE SUPPORTS INSIDE AND OUTSIDE TANK TO SUPPORT VERTICAL PIPING ON TANK. TYPICAL FOR ALL FOUR TANKS.
- FIELD VERIFY DIMENSIONS AND ELEVATIONS.

SHEET KEYNOTES

- MODIFY EXISTING OPENINGS IN THE GRATING ABOVE SHF-VALVE-SUCTION-PUMP-RECIRC-0X AS NECESSARY TO INSTALL NEW VALVE ACTUATORS. PROVIDE EXTENSIONS AS NECESSARY SO ACTUATORS ARE ACCESSIBLE ABOVE GRATING.
- INSTALL 10" CPVC COATED INSECT SCREEN OR BLIND FLANGE WITH HOLES ON THE END OF THE 10" VENT.



A SECTION

3/8"=1'-0"

20-M-201
20-M-202

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
PROCESS MECHANICAL
SECTION

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-M-301
SHEET	27 of 33

BID DOCUMENTS

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.
© JACOBS 2020. ALL RIGHTS RESERVED.

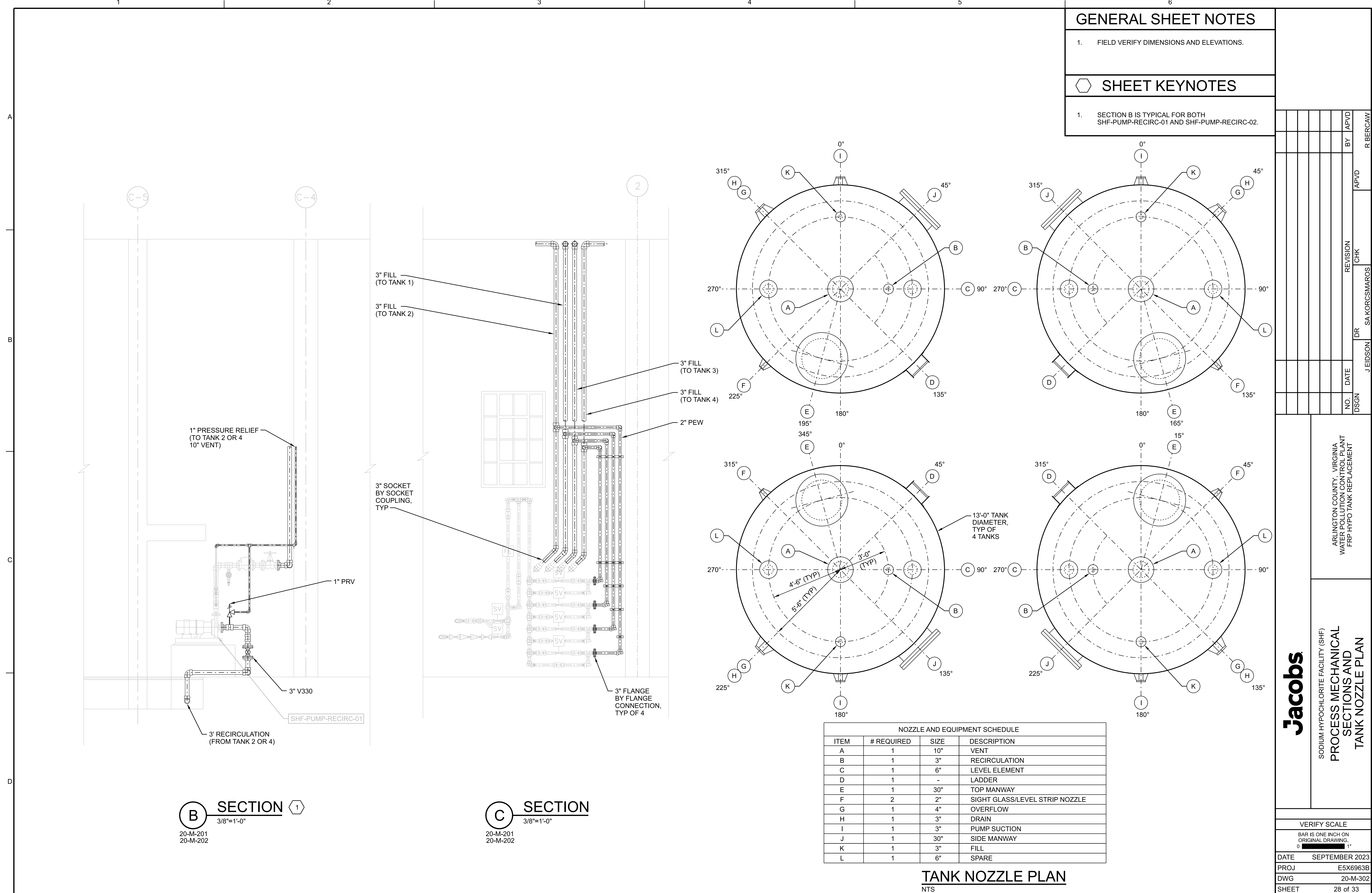
NO.	DATE	DR	CHK	BY	APVD
		J. EIDSON	SA KORCSMAROS		R. BERCAW

GENERAL SHEET NOTES

1. FIELD VERIFY DIMENSIONS AND ELEVATIONS.

SHEET KEYNOTES

1. SECTION B IS TYPICAL FOR BOTH SHF-PUMP-RECIRC-01 AND SHF-PUMP-RECIRC-02.



B SECTION 1
3/8"=1'-0"
20-M-201
20-M-202

C SECTION 1
3/8"=1'-0"
20-M-201
20-M-202

NOZZLE AND EQUIPMENT SCHEDULE			
ITEM	# REQUIRED	SIZE	DESCRIPTION
A	1	10"	VENT
B	1	3"	RECIRCULATION
C	1	6"	LEVEL ELEMENT
D	1	-	LADDER
E	1	30"	TOP MANWAY
F	2	2"	SIGHT GLASS/LEVEL STRIP NOZZLE
G	1	4"	OVERFLOW
H	1	3"	DRAIN
I	1	3"	PUMP SUCTION
J	1	30"	SIDE MANWAY
K	1	3"	FILL
L	1	6"	SPARE

TANK NOZZLE PLAN
NTS

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

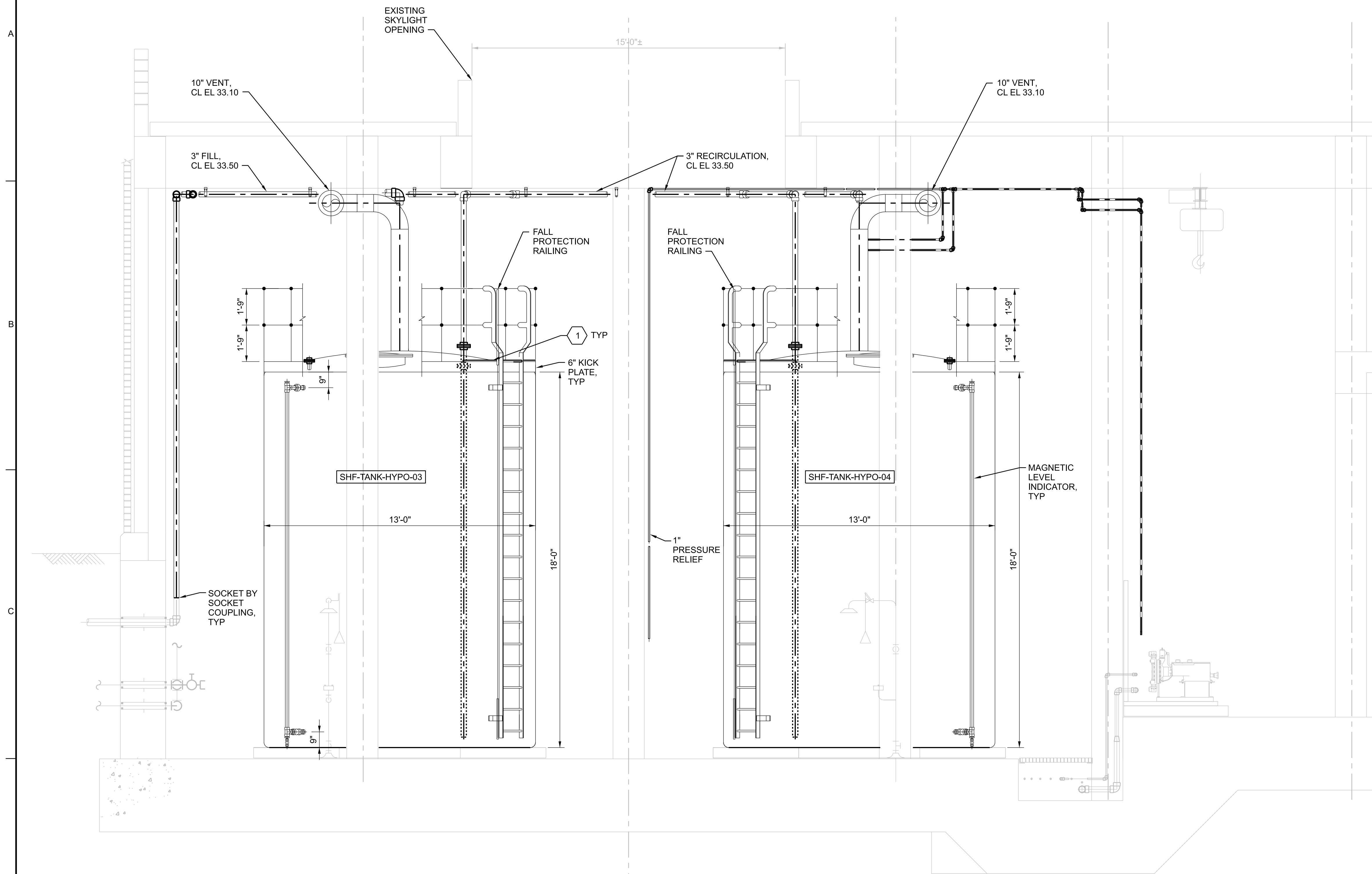
Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
PROCESS MECHANICAL
SECTIONS AND
TANK NOZZLE PLAN

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-M-302
SHEET	28 of 33

BID DOCUMENTS

SHEET KEYNOTES

- FRP STEP-OFF PLATFORM INTEGRALLY MOLDED INTO TANK DOME. 1/4" THICK, NON-SKID SURFACE. LEVEL WITH TOP LADDER RUNG.



D SECTION
3/8"=1'-0"

20-M-201
20-M-202

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

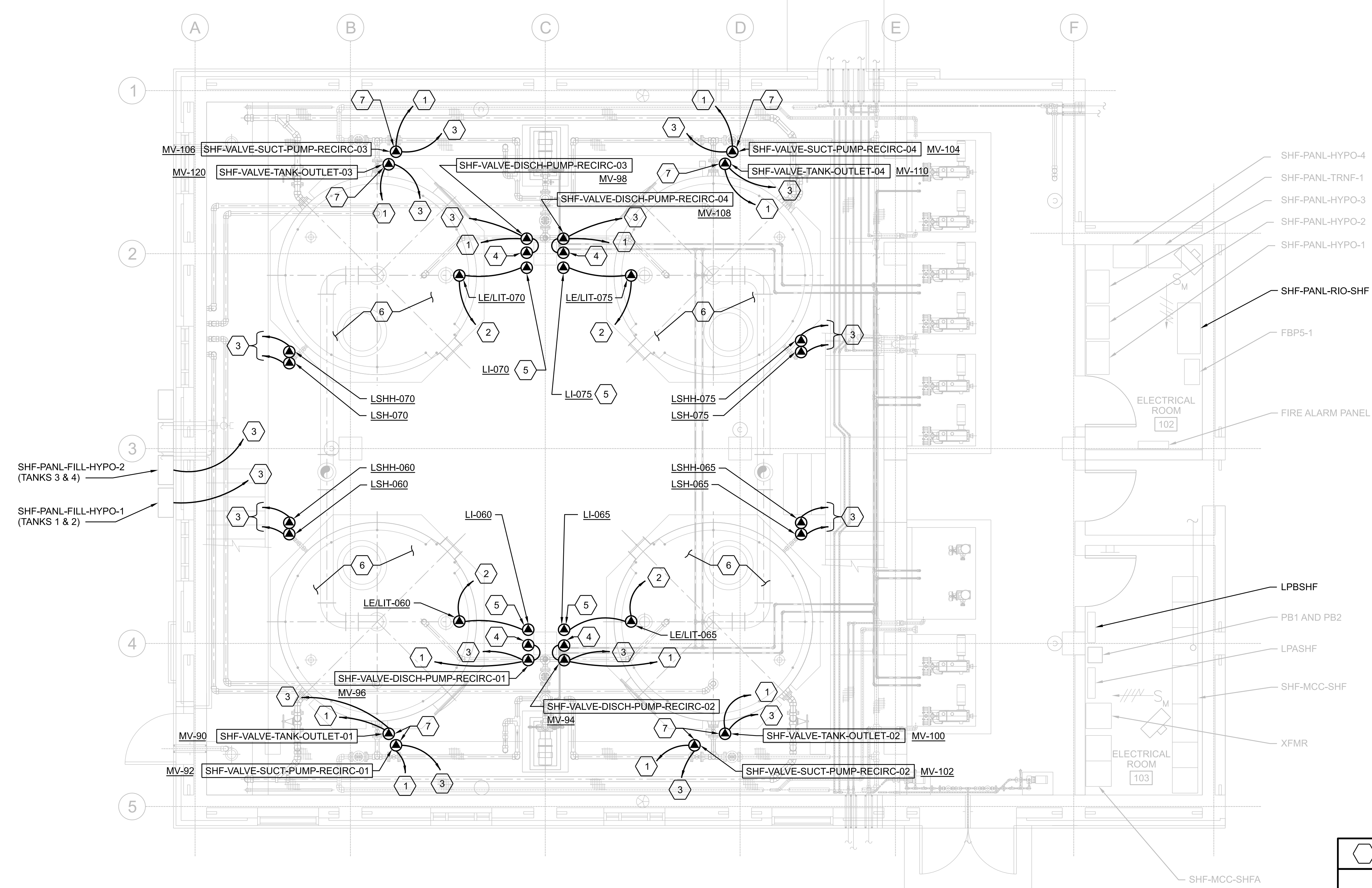
Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
PROCESS MECHANICAL
SECTION

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-M-303
SHEET	29 of 33

NO.	DATE	DR	REVISION	BY	APVD
		J.EIDSON	CHK	APVD	R.BERCAW
			DR		
			SA KORCSMAROS		

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS



GROUND FLOOR PLAN
1/4"=1'-0"

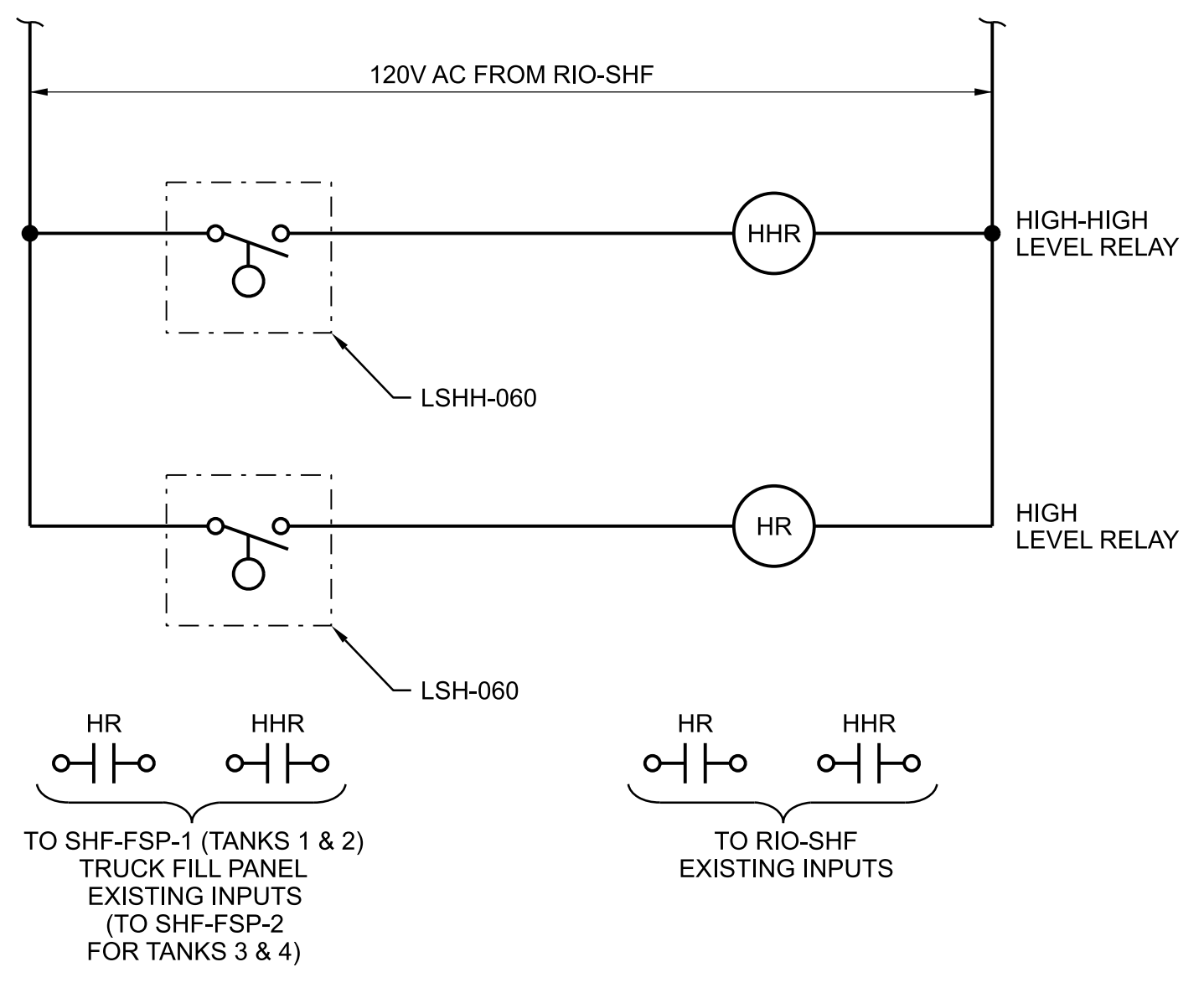
- SHEET KEYNOTES**
- 120V AC TO LIGHTING PANELBOARD LPBSHF.
 - 24V DC INSTRUMENTATION WIRING TO RIO-SHF.
 - 120V AC, #14 CONTROL WIRING TO RIO-SHF.
 - OUTLET VALVE LOCAL CONTROL STATION. MOUNT ON COLUMN.
 - TANK LEVEL LOCAL DISPLAY. MOUNT ON COLUMN.
 - CONDUITS SHALL NOT BE INSTALLED ABOVE THE TANK OR BELOW SKYLIGHT AND THEY SHALL NOT INTERFERE WITH THE REMOVAL/MAINTENANCE OF THE TANK AND ANY OTHER EQUIPMENT.
 - INSTALL CONDUITS TO THE ACTUATORS DOWN THE WALL AND UNDER THE GRATING THEN UP TO THE ACTUATOR.

NO.	DATE	DR	REVISION	BY	APVD
		J. BROSNAN	CHK		R. BERCAW
		SA KORCSMAROS			

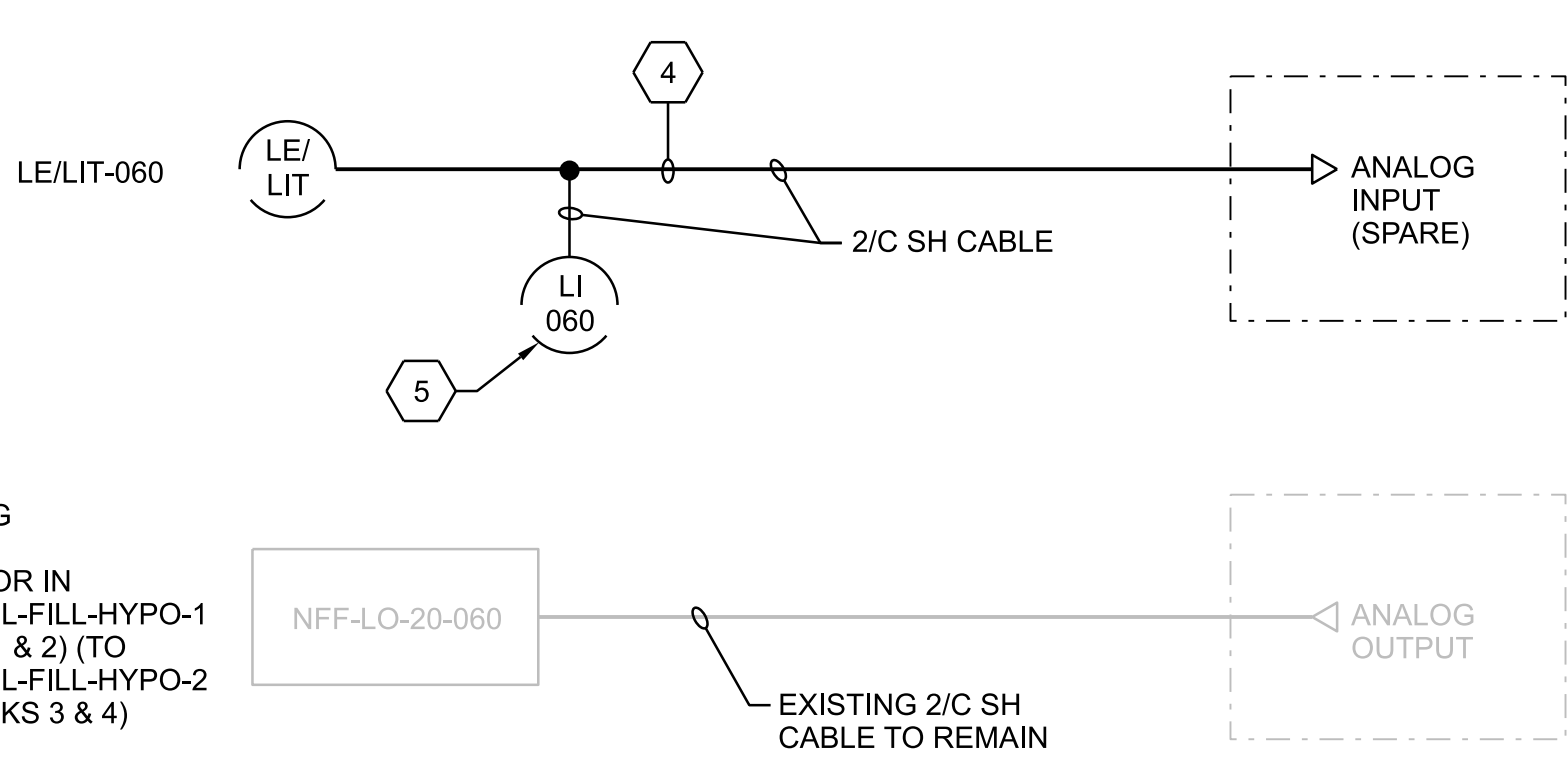
ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
SODIUM HYPOCHLORITE FACILITY (SHF)
**ELECTRICAL
GROUND FLOOR PLAN**

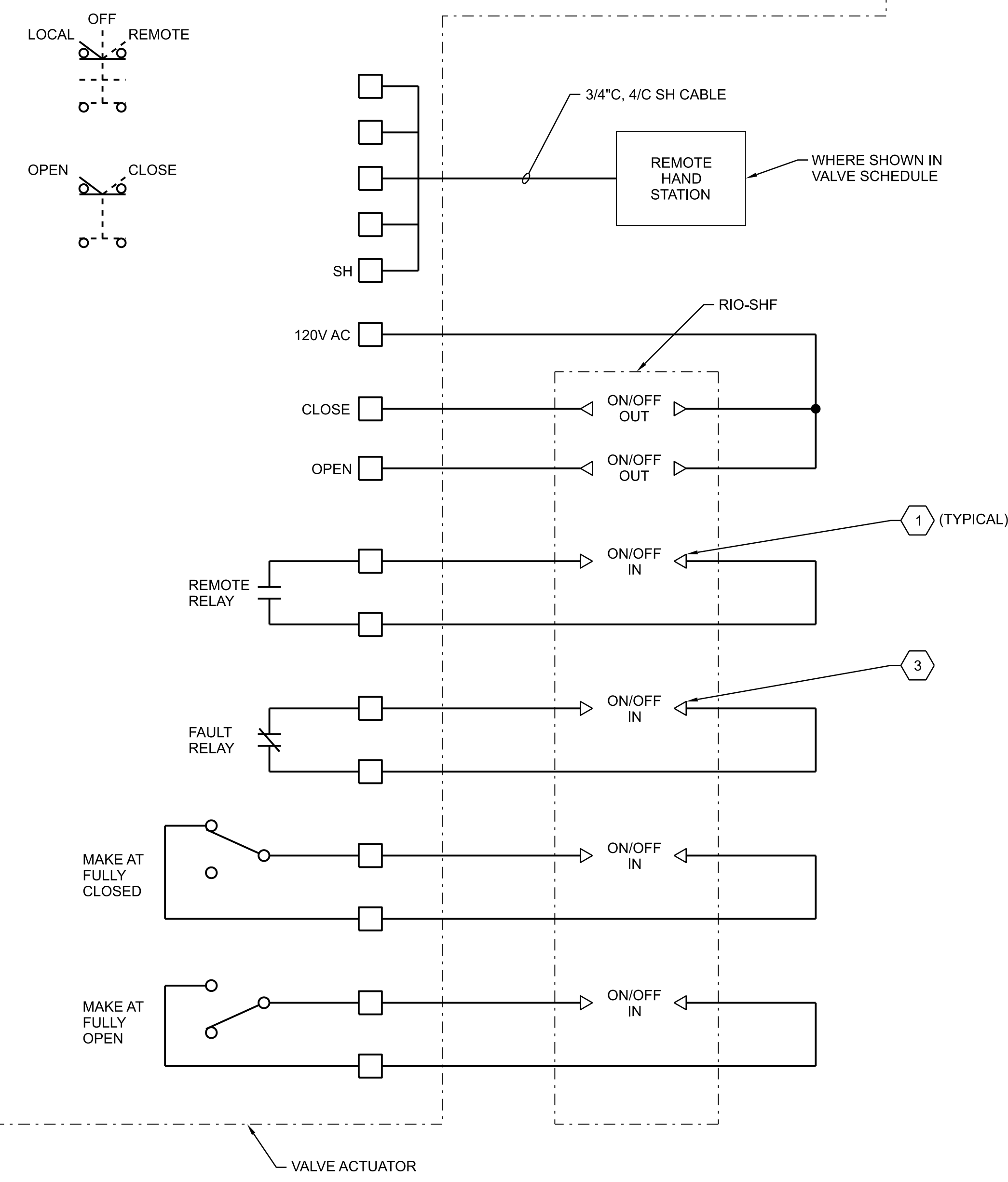
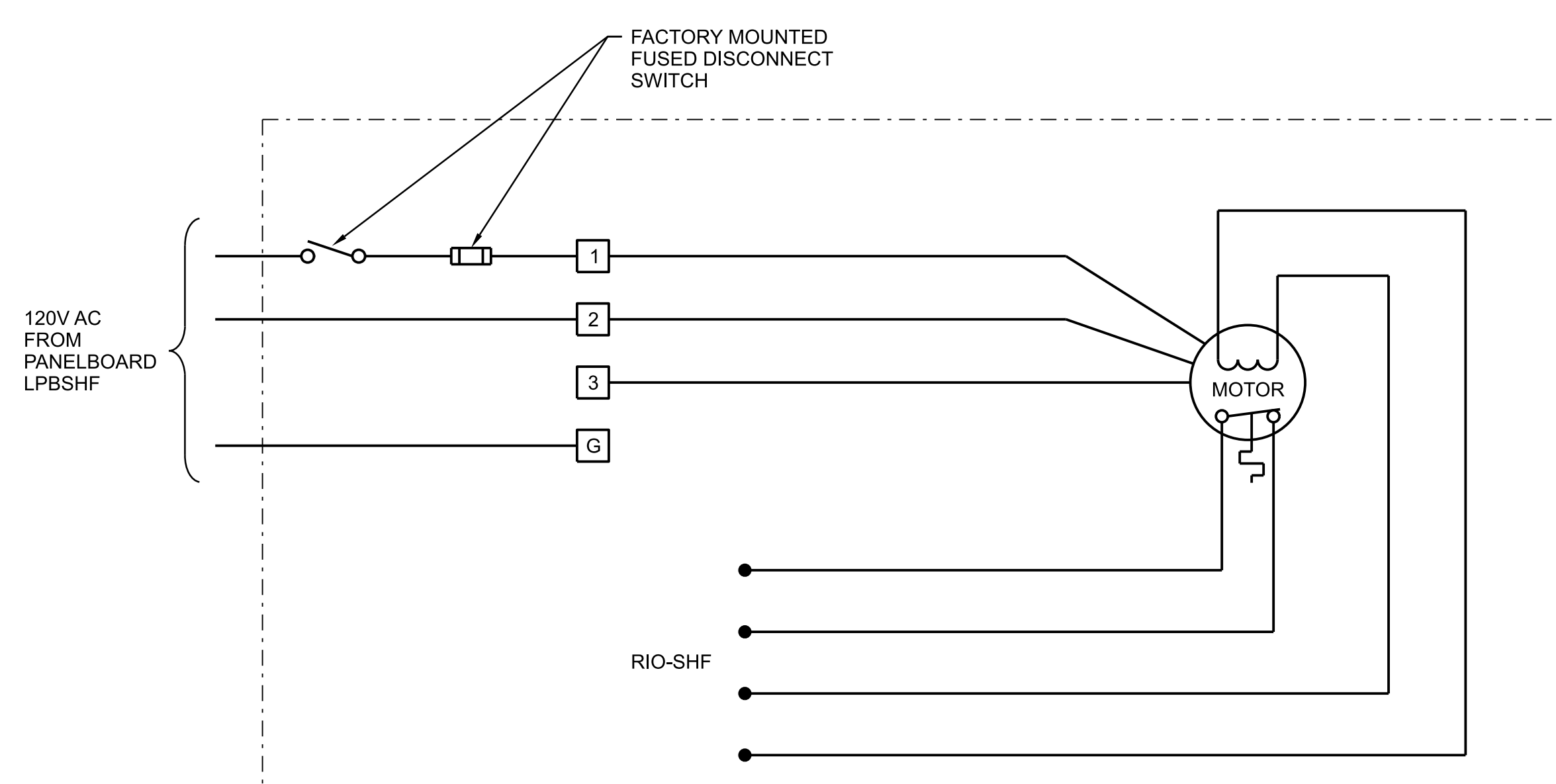
VERIFY SCALE	DATE	SEPTEMBER 2023
BAR IS ONE INCH ON ORIGINAL DRAWING.	PROJ	E5X6963B
	DWG	20-E-201
	SHEET	30 of 33



SHF LEVEL SWITCH CONTROL SCHEMATIC
 4-TUS; ALL CONTROLS ARE IN RIO-SHF UNLESS NOTED OTHERWISE.
 (SHOWN FOR TANK 1; TAG 060; OTHER THREE ARE SIMILAR.)



SHF ANALOG INPUTS AND OUTPUTS SCHEMATIC
 4-TUS; ALL CONTROLS ARE IN RIO-SHF UNLESS NOTED OTHERWISE.
 (SHOWN FOR TANK 1; TAG 060; OTHER THREE ARE SIMILAR.)



OPEN/CLOSE VALVE ACTUATOR SCHEMATIC
 12-TUS; SHF TANK OUTLET VALVES AND RECIRCULATION.

- SHEET KEYNOTES**
- EXISTING PLC INPUTS TO RIO-SHF ARE 120V AC RATED. CONNECT TO EXISTING TERMINAL BLOCKS IN RIO-SHF.
 - EXISTING PLC OUTPUTS ARE 120V AC RATED. CONNECT TO EXISTING TERMINAL BLOCKS IN RIO-SHF.
 - CONNECT TO SPARE PLC INPUT FOR FAULT INPUT. ALL OTHERS ARE EXISTING.
 - PROVIDE NEW 24V DC REDUNDANT POWER SUPPLY FOR ANALOG I/O.
 - LOOP POWERED LOCAL DISPLAY MOUNTED BELOW.

NO.	DATE	DR	CHK	BY	APVD
		J. BROSNAN	SA. KORCSMAROS		R. BERCAW
DSGN					

ARLINGTON COUNTY, VIRGINIA
 WATER POLLUTION CONTROL PLANT
 FRP HYPO TANK REPLACEMENT

Jacobs
 SODIUM HYPOCHLORITE FACILITY (SHF)
 ELECTRICAL
 CONTROL SCHEMATICS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-E-601
SHEET	31 of 33

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS

A
B
C
D

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	KVA PER PHASE			LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
				A	B	C				
1	20	SUMP PUMP PANEL 01	1.0	1.0			-	SPARE	20	2
3	20	SUMP PUMP PANEL 02	1.0		1.0		-	SPARE	20	4
5	20	SUMP PUMP PANEL 03	1.0			1.0	-	SPARE	20	6
7	20	SUMP PUMP 580	1.0	1.0			-	SPARE	20	8
9	20	FIT-580	0.1		0.1		-	SPARE	20	10
11	20	VAULT LIGHTING	0.1			0.1	-	SPARE	20	12
13	30	SAMPLE PUMP 1	1.6	3.2			1.6	SAMPLE PUMP 3	30	14
15	30	SAMPLE PUMP 2	1.6		3.2		1.6	SAMPLE PUMP 4	30	16
17	20	SPARE	-				-	SPARE	20	18
19	20	SPARE	-				-	SPARE	20	20
21	20	SPARE	-				-	SPARE	20	22
23	20	SPARE	-				-	SPARE	20	24
25	20	SPARE	-				-	SPARE	20	26
27	-	BLANK	-				1.0	MV-120, MV-106, MV-98	20	28
29	-	BLANK	-				1.0	MV-110, MV-104, MV-108	20	30
31	20	BLANK	-				-	BLANK	-	32
33	20	MV-90, MV-92, MV-96	1.0				-	BLANK	-	34
35	20	MV-100, MV-102, MV-94	1.0				-	BLANK	-	36
37	-	BLANK	-				-	BLANK	-	38
39	-	BLANK	-				-	BLANK	-	40
41	-	BLANK	-				-	BLANK	-	42

LIGHTING PANEL LPBSHF LOCATION: ELECTRIC ROOM BUILDING SHF	TOTAL KVA	6.2	5.3	2.1	SERVICE CHARACTERISTICS: 120/208 VOLT - 3 PHASE - 4 WIRE - 60HZ PROVIDE 100A MAIN BREAKER & SOLID NEUTRAL & GROUND BUS 10,000 AMP INTERRUPTING RATING
	GRAND CONNECTED TOTAL KVA	13.6			

1 CONNECT TO EXISTING CIRCUIT BREAKER. INSTALL IN 3/4" C WITH 3-#12 WIRING FROM EACH 20 AMP BREAKER TO THE LOAD.

PANELBOARD LPBSHF



ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

SODIUM HYPOCHLORITE FACILITY (SHF)
ELECTRICAL
PANELBOARD SCHEDULE

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	20-E-602
SHEET	32 of 33

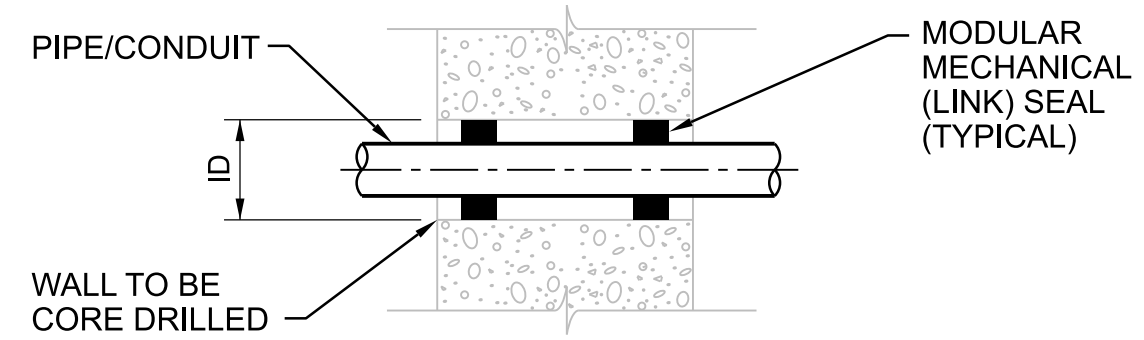
NO.	DATE	DR	SA KORCSMAROS	REVISION	BY	APVD
DSGN		J BRONMAN	CHK		R BERCAW	

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

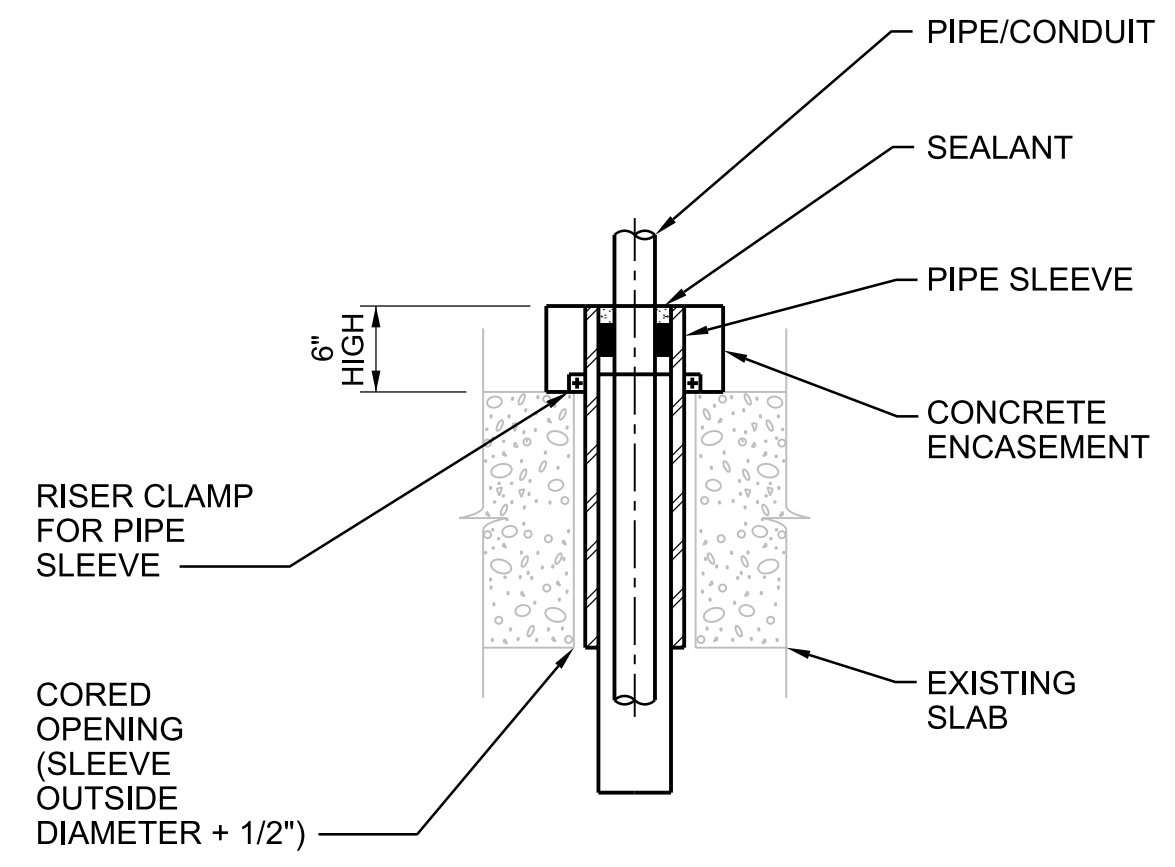
BID DOCUMENTS

1 2 3 4 5 6

A
B
C
D



EXISTING WALL



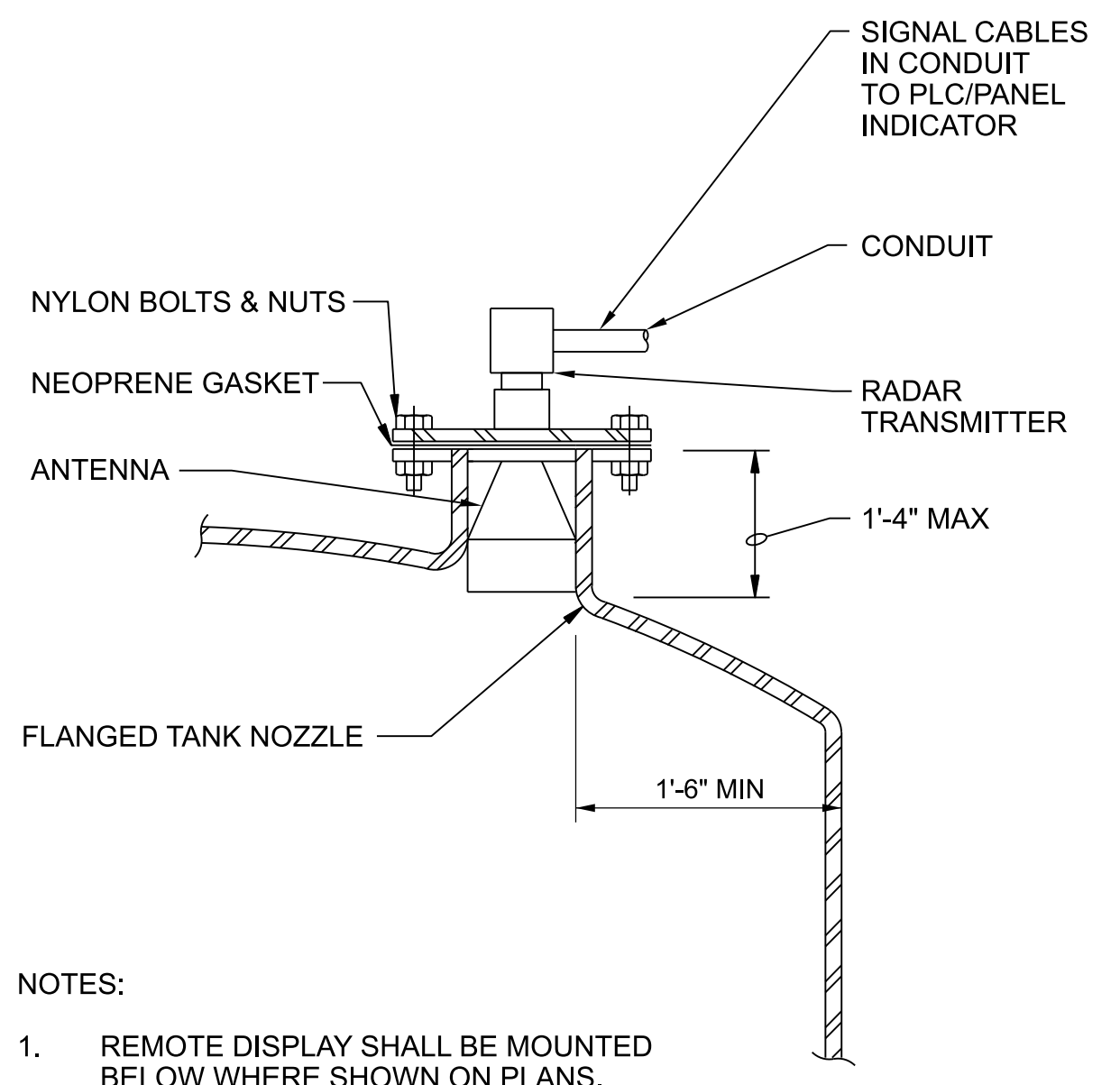
EXISTING SLAB

- CORE OR SLEEVE ID (UNLESS NOTED OTHERWISE):**
1. FOR FLANGED PIPE:
FLANGE OUTSIDE DIAMETER PLUS 2" UNLESS APPROVED OTHERWISE BY THE ENGINEER DUE TO SPACE CONSTRAINTS.
 2. FOR OTHER PIPE AND CONDUITS:
 - A. WHERE MODULAR MECHANICAL SEALS ARE CALLED FOR:
AS RECOMMENDED BY SEAL MANUFACTURER.
 - B. OTHER LOCATIONS: PIPE OUTSIDE DIAMETER PLUS 4" UNLESS APPROVED OTHERWISE BY THE ENGINEER DUE TO SPACE CONSTRAINTS.

- NOTES:**
1. MAINTAIN A MINIMUM OF 6" CLEARANCE BETWEEN OUTSIDE DIAMETERS OF CORED HOLES FOR ADJACENT PIPING/CONDUITS.
 2. SCHEDULE 40 STEEL PIPE SLEEVE HOT-DIP GALVANIZED AFTER FABRICATION. SLEEVE LENGTH SHALL BE APPROXIMATELY 1" LONGER THAN WALL THICKNESS.
 3. MODULAR MECHANICAL SEAL (LINK SEAL) EACH FACE.

PIPE AND CONDUIT PENETRATIONS THROUGH CONCRETE
NTS

4027-610



- NOTES:**
1. REMOTE DISPLAY SHALL BE MOUNTED BELOW WHERE SHOWN ON PLANS.

RADAR LEVEL ELEMENT - TANK MOUNTED
NTS

4091-252

NO.	DATE	DR	REVISION	BY
		J. BROSNAN	CHK	APVD
		SA. KORCSMAROS		APVD
				R. BERCAW

ARLINGTON COUNTY, VIRGINIA
WATER POLLUTION CONTROL PLANT
FRP HYPO TANK REPLACEMENT

Jacobs
STANDARD DETAILS
**INSTRUMENTATION AND CONTROL/
MECHANICAL/ ELECTRICAL**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	SEPTEMBER 2023
PROJ	E5X6963B
DWG	SD-IME-501
SHEET	33 of 33

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS. © JACOBS 2020. ALL RIGHTS RESERVED.

BID DOCUMENTS