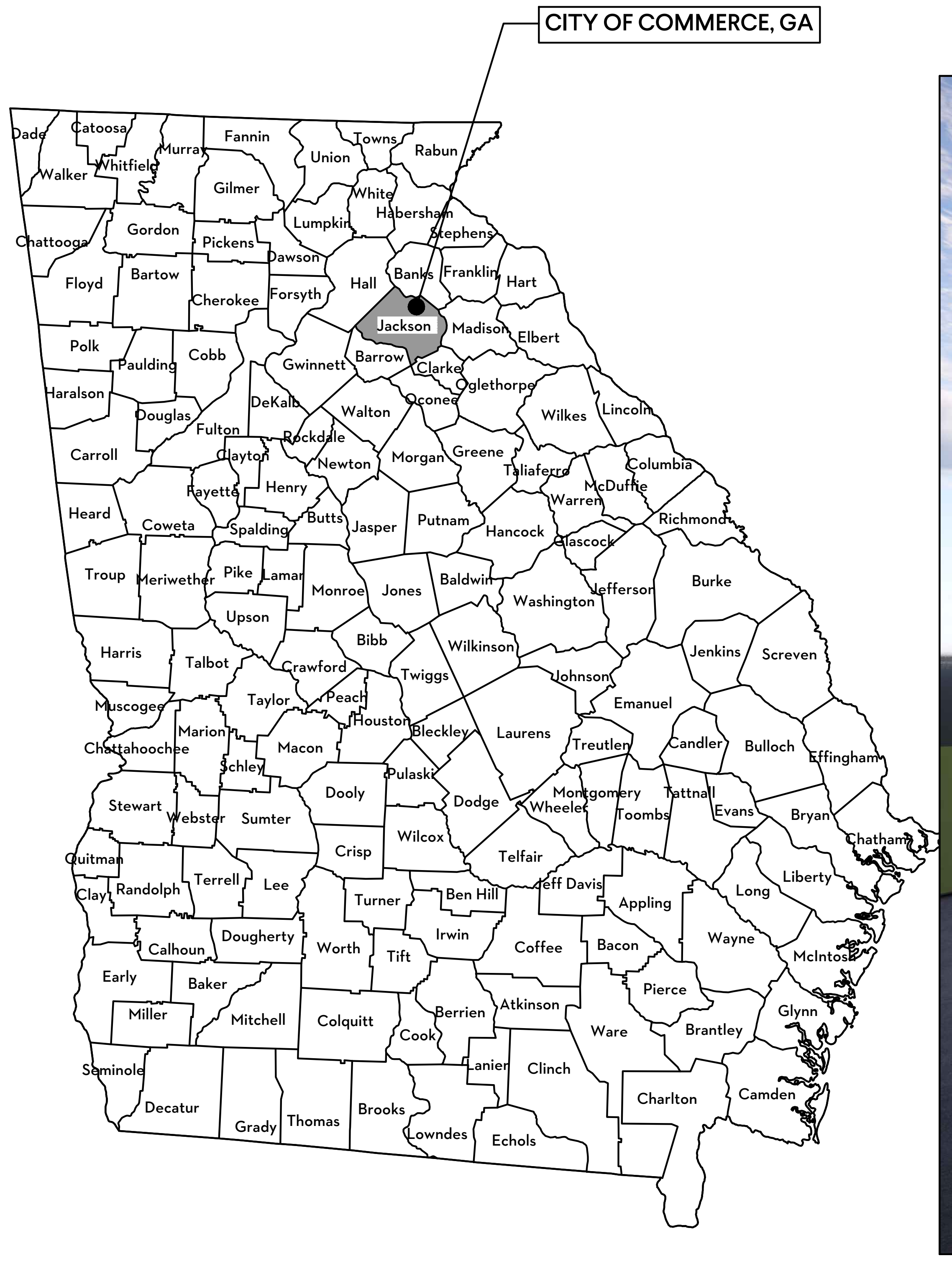
GROVE CREEK WPCP

CITY OF COMMERCE

CITY OF COMMERCE, GA
GMC PROJECT # CATL230033

CITY OF COMMERCE, GA



LOCATION MAP

MARCH 2025

BID SET

GEORGIA811
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CLIENT PROJECT TEAM

DR. J. CLARK HILL, III	MAYOR
KEITH BURCHETT	MAYOR PRO-TEM
MATTHEW HAILEY	CITY MANAGER
JOSH ALLISON	WATER & SEWER SUPERINTENDENT
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DESIGN PROJECT TEAM

GOODWYN MILLS CAWOOD, LLC	CIVIL, PROCESS, ARCHITECTURAL
BFIELD ENGINEERING	ELECTRICAL, MECHANICAL, PLUMBING
DAY STRUCTURES	STRUCTURAL

I CERTIFY THAT I HAVE BEEN IN RESPONSIBLE CHARGE OF THE DESIGN OF THIS PROJECT IN ACCORDANCE WITH THE RULES OF THE GEORGIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS. I FURTHER CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THESE PLANS AND SPECIFICATION WERE PREPARED IN ACCORDANCE WITH CURRENT STANDARD ENGINEERING PRACTICES AND ACCURATELY REFLECT THE DESIGN DEVELOPMENT REPORT (DDR) PREVIOUSLY REVIEWED AND CONCURRED IN BY EPD. I FURTHER CERTIFY THAT THE SYSTEM AS DESIGNED CAN REASONABLY BE EXPECTED TO CONSISTENTLY MEET ALL CURRENTLY APPLICABLE PERMIT LIMITS, CONDITIONS, AND REGULATORY REQUIREMENTS, PROVIDED THE FACILITY IS CONSTRUCTED AS DESIGNED AND PROPERLY OPERATED AND MAINTAINED.

ENGINEER'S SIGNATURE Graham S. Sizemore

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

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Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
3ROVE CREEK WPCP
'OMMERCE, GA

CATL230033

No. PE051452
PROFESSIONAL
03.19.2025
GRAHAM S. SIZEMORE

TITLE SHEET

G-001

GENERAL

SHT #	SHEET TITLE
G-001	TITLE SHEET
G-002	DRAWING INDEX
G-003	DRAWING INDEX
G-004	ABBREVIATIONS
G-005	GENERAL NOTES, LEGENDS, & SYMBOLS
G-006	PROCESS FLOW DIAGRAM
G-007	HYDRAULIC PROFILE (1 OF 2)
G-008	HYDRAULIC PROFILE (2 OF 2)
G-009	PROCESS PIPING SCHEDULE
G-011	PROCESS DESIGN CRITERIA

INSTRUMENTATION

SHT #	SHEET TITLE
I-001	P&ID ABBREVIATIONS & NOTES
I-002	P&ID LEGENDS
I-101	P&ID - INFLUENT PUMP STATION
I-102	P&ID - INFLUENT SCREENS
I-103	P&ID - GRIT REMOVAL
I-211	P&ID - EQUALIZATION BASIN
I-221	P&ID - FLOW CONTROL VALVE VAULT
I-301	P&ID - AERATION BASIN
I-401	P&ID - CLARIFIERS
I-402	P&ID - RAS/WAS PUMP STATION
I-501	P&ID - FILTERS
I-601	P&ID - UV DISINFECTION
I-602	P&ID - PLANT REUSE WATER PUMP STATION & POST AERATION
I-701	P&ID - AEROBIC DIGESTER
I-702	P&ID - DIGESTER BLOWERS
I-711	P&ID - BELT FILTER PRESS
I-801	P&ID - YARD DRAIN PUMP STATION
I-802	P&ID - CHEMICAL FEED - CAUSTIC SODA
I-803	P&ID - CHEMICAL FEED - POLYALUMINUM CHLORIDE
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I-901	INSTRUMENTATION DETAILS
I-902	INSTRUMENTATION DETAILS
I-911	INSTRUMENTATION SCHEDULE
I-912	INSTRUMENTATION SCHEDULE

DEMOLITION

SHT #	SHEET TITLE
X-101	CIVIL SITE PLAN - INFLUENT PUMP STATION DEMOLITION

GEOTECHNICAL

SHT #	SHEET TITLE
B-000	BORING PLAN
B-001	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-002	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-003	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-004	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-005	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-006	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-007	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-008	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-009	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-010	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-011	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-012	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-013	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-014	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-015	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-016	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION
B-017	CIVIL SITE PLAN GEOTECHNICAL EXPLORATION

CIVIL

SHT #	SHEET TITLE
C-001	CIVIL SITE PLAN - EXISTING CONDITIONS
C-101	CIVIL SITE PLAN - EXISTING CONDITIONS
C-102	CIVIL SITE PLAN - GEOMETRIC CONTROLS
C-103	CIVIL SITE PLAN - ENLARGED GEOMETRIC CONTROLS
C-104	CIVIL SITE PLAN - ENLARGED GEOMETRIC CONTROLS
C-201	CIVIL SITE PLAN - SITE LAYOUT
C-202	CIVIL SITE PLAN ALIGNMENT PLAN
C-203	CIVIL SITE PLAN - GRADING & DRAINAGE
C-204	PIPE AND STRUCTURE TABLE
C-301	CIVIL SITE PLAN - YARD PIPING
C-302	CIVIL SITE PLAN - ENLARGED YARD PIPING
C-303	CIVIL SITE PLAN - ENLARGED YARD PIPING
C-304	CIVIL SITE PLAN - ENLARGED YARD PIPING
C-601	CIVIL SITE PLAN - PHASE I - EROSION & SEDIMENT CONTROL PLAN
C-602	CIVIL SITE PLAN - PHASE II - EROSION & SEDIMENT CONTROL PLAN
C-603	CIVIL SITE PLAN - PHASE III - EROSION & SEDIMENT CONTROL PLAN
C-604	CIVIL SITE PLAN - PHASE IV - EROSION & SEDIMENT CONTROL PLAN
C-605	EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
C-606	ES & PC STANDARD DETAILS
C-607	ES & PC STANDARD DETAILS
C-608	ES & PC STANDARD DETAILS
C-609	ES & PC STANDARD DETAILS
C-610	ES & PC STANDARD DETAILS
C-611	ES & PC STANDARD DETAILS
C-612	ES & PC STANDARD DETAILS
C-613	ES & PC STANDARD DETAILS
C-614	ES & PC STANDARD DETAILS
C-615	COMPREHENSIVE MONITORING PROGRAM GENERAL NOTES
C-616	WATERSHED MAP, DRAINAGE AREA & MONITORING LOCATIONS
C-617	SOILS MAP
C-618	SOILS MAP
C-619	FEMA FLOODPLAIN MAP
C-620	FEMA FLOODPLAIN MAP
C-904	CIVIL - CIVIL SITE DETAILS
C-905	CIVIL - CIVIL SITE DETAILS
C-906	CIVIL - CIVIL SITE DETAILS
C-907	CIVIL - CIVIL SITE DETAILS
C-908	CIVIL - CIVIL SITE DETAILS
C-909	CIVIL - CIVIL SITE DETAILS
C-910	CIVIL - CIVIL SITE DETAILS
C-911	CIVIL - CIVIL SITE DETAILS
C-912	CIVIL - CIVIL SITE DETAILS
C-913	CIVIL - CIVIL SITE DETAILS
C-914	CIVIL - CIVIL SITE DETAILS

CIVIL UTILITIES

SHT #	SHEET TITLE
CU-201	CIVIL SITE PLAN - INFLUENT PUMP STATION GRADING PLAN
CU-311	CIVIL SITE PLAN - INFLUENT & EFFLUENT FORCE MAIN KEY
CU-312	CIVIL SITE PLAN - INFLUENT FORCE MAIN STATION 0+00 TO 10+00
CU-313	CIVIL SITE PLAN - INFLUENT FORCE MAIN STATION 10+00 TO 19+00
CU-314	CIVIL SITE PLAN - INFFLUENT FORCE MAIN STATION 0+00 TO 11+00
CU-315	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 11+00 TO 22+00
CU-316	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 22+00 TO 33+00
CU-317	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 33+00 TO 44+00
CU-318	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 44+00 TO 53+00
CU-319	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 53+00 TO 63+50
CU-320	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 63+50 TO 74+50
CU-321	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 74+50 TO 85+50
CU-322	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 85+50 TO 96+50
CU-323	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 96+50 TO 107+00
CU-324	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 95+50 TO 110+00
CU-325	CIVIL SITE PLAN - EFFLUENT FORCE MAIN STATION 114+21 TO HARDEN BRIDGE RD.
CU-401	WATER MAIN LAYOUT (HAGGARD RD.) STA. 0+00 TO 27+10
CU-605	EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
CU-606	ES & PC GENERAL NOTES, LEGENDS & SCHEDULE
CU-607	ES & PC STANDARD DETAILS
CU-608	ES & PC STANDARD DETAILS
CU-609	ES & PC STANDARD DETAILS
CU-610	ES & PC STANDARD DETAILS
CU-611	ES & PC STANDARD DETAILS
CU-612	ES & PC STANDARD DETAILS
CU-614	COMPREHENSIVE MONITORING PROGRAM GENERAL NOTES
CU-615	WATERSHED MAP, DRAINAGE AREA & MONITORING LOCATIONS
CU-616	SOILS MAP
CU-617	SOILS MAP
CU-618	FEMA FLOODPLAIN MAP
CU-619	FEMA FLOODPLAIN MAP
CU-901	STANDARD DETAILS
CU-902	STANDARD DETAILS
CU-903	STANDARD DETAILS
CU-904	STANDARD DETAILS

STRUCTURAL

SHT #	SHEET TITLE
S-001	STRUCTURAL NOTES & TYPICAL DETAILS
S-002	TYPICAL DETAILS
S-003	TYPICAL DETAILS
S-004	SCHEDULE OF STRUCTURAL SPECIAL INSPECTIONS
S-101	ADMINISTRATION & LAB BUILDING FOUNDATION PLAN
S-102	ADMINISTRATION & LAB BUILDING ROOF FRAMING PLAN
S-103	ADMINISTRATION & LAB BUILDING - SECTIONS
S-104	ADMINISTRATION & LAB BUILDING - SECTIONS
S-105	GENERATOR & ELECTRICAL BUILDING FOUNDATION - PLANS & SECTION
S-111	HEADWORKS PLAN
S-112	HEADWORKS - SECTIONS
S-113	HEADWORKS - SECTIONS
S-301	ORBAL AERATION - LOWER PLAN
S-302	ORBAL AERATION - UPPER PLAN
S-303	ORBAL AERATION - TROLLEY FRAME PLAN
S-304	ORBAL AERATION - ENLARGED PLANS
S-305	ORBAL AERATION - ENLARGED PLANS
S-306	ORBAL AERATION - SECTIONS
S-307	ORBAL AERATION - SECTIONS
S-308	ORBAL AERATION - SECTIONS
S-309	ORBAL AERATION - SECTIONS
S-310	ORBAL AERATION - SECTIONS
S-311	ORBAL AERATION - TROLLEY ELEVATIONS
S-401	CLARIFIERS & SPLITTER BOX - UPPER PLAN
S-402	CLARIFIERS - SECTIONS
S-403	CLARIFIERS & SPLITTER BOX - SECTIONS
S-501	TERTIARY FILTERS - PLANS
S-502	TERTIARY FILTERS - SECTIONS
S-503	TERTIARY FILTERS - SECTIONS
S-601	ULTRAVIOLET DISINFECTION - PLAN & SECTION
S-611	PLANT REUSE WATER PUMP STATION & POST AERATION - LOWER PLAN
S-612	PLANT REUSE WATER PUMP STATION & POST AERATION - UPPER PLAN
S-613	PLANT REUSE WATER PUMP STATION & POST AERATION - SECTIONS
S-614	PLANT REUSE WATER PUMP STATION & POST AERATION - SECTIONS
S-701	AEROBIC DIGESTERS - PLAN
S-702	AEROBIC DIGESTERS - SECTION
S-711	BLOWERS BUILDING - PLANS
S-712	BLOWERS BUILDING - SECTIONS
S-721	DEWATERIING BUILDING - FOUNDATION PLAN
S-722	DEWATERIING BUILDING - ROOF FRAMING PLAN
S-723	DEWATERIING BUILDING - SECTIONS
S-724	DEWATERIING BUILDING - SECTIONS
S-801	CHEMICAL TANK FARM - PLAN & SECTION
S-802	CHEMICAL TANK FARM - SECTIONS

ARCHITECTURAL

SHT #	SHEET TITLE
A-001	ARCHITECTURAL KEY PLAN
A-002	DEWATERING LIFE SAFETY PLAN
A-003	ADMINISTRATION & LAB BUILDING LIFE SAFETY PLAN
A-004	BLOWER BUILDING - LIFE SAFETY PLAN
A-101	ADMINISTRATION & LAB BUILDING - FLOOR PLAN
A-102	ADMINISTRATION & LAB BUILDING - DETAILED PLAN & REFLECTED CEILING PLAN
A-103	ADMINISTRATION & LAB BUILDING - ENLARGED FLOOR PLAN
A-104	ADMINISTRATION & LAB BUILDING - ENLARGED FLOOR PLAN
A-105	ADMINISTRATION & LAB BUILDING - EXTERIOR ELEVATIONS
A-106	ADMINISTRATION & LAB BUILDING - INTERIOR ELEVATIONS
A-107	ADMINISTRATION & LAB BUILDING - INTERIOR ELEVATIONS
A-108	ADMINISTRATION & LAB BUILDING - WALL SECTIONS
A-109	ADMINISTRATION & LAB BUILDING - WALL SECTIONS
A-110	ADMINISTRATION & LAB BUILDING - SCHEDULES
A-111	ADMINISTRATION & LAB BUILDING - DETAILS
A-711	BLOWER BUILDING - FLOOR & ROOF PLAN
A-712	BLOWER BUILDING - ELEVATION
A-713	BLOWER BUILDING - SECTIONS
A-714	BLOWER BUILDING - SCHEDULES
A-715	BLOWER BUILDING - DETAILS
A-721	DEWATERING BUILDING - PLAN
A-722	DEWATERING BUILDING - ROOF PLAN
A-723	DEWATERING BUILDING - ELEVATION
A-724	DEWATERING BUILDING - WALL SECTIONS
A-725	DEWATERING BUILDING - WALL SECTIONS
A-726	DEWATERING BUILDING - SECTIONS
A-727	DEWATERING BUILDING - SCHEDULES
A-728	DEWATERING BUILDING - DETAILS

PLUMBING

SHT #	SHEET TITLE
P-001	GENERAL
P-002	SCHEDULES
P-003	DETAILS
P-004	RISER DIAGRAMS
P-101	ADMIN BUILDING FLOOR PLAN - WASTE & VENT
P-102	ADMIN BUILDING FLOOR PLAN - WATER
P-103	DEWATERING BUILDING FLOOR PLAN - WASTE & VENT
P-104	DEWATERING BUILDING FLOOR PLAN - WATER

MECHANICAL

SHT #	SHEET TITLE
M-001	GENERAL
M-002	DETAILS
M-003	SCHEDULES
M-004	SCHEDULES
M-101	ADMIN BUILDING FLOOR PLAN
M-102	DEWATERING BUILDING FLOOR PLAN
M-103	CHEMICAL FEED FLOOR PLAN
M-104	BLOWER BUILDING FLOOR PLAN

PROCESS

SHT #	SHEET TITLE
D-001	PROCESS KEY SITE PLAN
D-101	INFLUENT PUMP STATION - PLAN
D-102	INFLUENT PUMP STATION - SECTION & DETAILS
D-111	INFLUENT FLOW METER VAULT - PLAN & SECTION
D-121	HEADWORKS - LOWER PLAN
D-122	HEADWORKS - UPPER PLAN
D-123	HEADWORKS - SECTIONS
D-124	HEADWORKS - SECTIONS
D-125	HEADWORKS - SECTIONS
D-201	EQUALIZATION BASIN - PLAN, SECTION, & DETAILS
D-211	FLOW CONTROL VAULT - PLAN & SECTION
D-301	ORBAL AERATION - LOWER PLAN
D-302	ORBAL AERATION - UPPER PLAN
D-303	ORBAL AERATION - CENTER ISLAND PLAN & SECTIONS
D-304	ORBAL AERATION - INFLUENT PIPING PLAN & SECTIONS
D-305	ORBAL AERATION - EFFLUENT PIPING PLAN & SECTIONS
D-306	ORBAL AERATION - RETURN SLUDGE PLAN & SECTIONS
D-307	AERATION BASIN - DRIVE PLAN & SECTIONS
D-308	ORBAL AERATION SECTIONS
D-401	CLARIFIERS - PLAN
D-402	CLARIFIERS - SPLITTER BOX DETAIL

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DRAWING INDEX

G-002

PROCESS	
SHT #	SHEET TITLE
D-403	CLARIFIERS - INFLUENT DETAIL
D-404	CLARIFIERS - EFFLUENT DETAIL
D-411	RAS WAS PUMP STATION - PLAN
D-412	RAS WAS PUMP STATION - SECTIONS
D-501	TERTIARY FILTERS - LOWER PLAN & ENLARGED PLAN
D-502	TERTIARY FILTERS - UPPER PLAN & ROOF PLAN
D-503	TERTIARY FILTERS - SECTIONS
D-504	TERTIARY FILTERS - SECTIONS
D-601	ULTRAVIOLET DISINFECTION - PLANS & SECTIONS
D-611	PLANT REUSE WATER PUMP STATION AND POST AERATION - LOWER PLAN
D-612	PLANT REUSE WATER PUMP STATION AND POST AERATION - UPPER PLAN
D-613	PLANT REUSE WATER PUMP STATION AND POST AERATION - PIPING DETAIL PLAN
D-614	PLANT REUSE WATER PUMP STATION AND POST AERATION - SECTIONS
D-615	PLANT REUSE WATER PUMP STATION AND POST AERATION - SECTIONS
D-701	AEROBIC DIGESTER - PLAN & SECTION
D-702	AEROBIC DIGESTER - UPPER PLAN & SECTION
D-703	AEROBIC DIGESTER - PIPING PLAN & SECTION
D-704	AEROBIC DIGESTER - SECTIONS
D-711	BLOWER BUILDING - PLAN & SECTIONS
D-721	DEWATERING BUILDING - PLAN
D-722	DEWATERING BUILDING - SECTIONS
D-723	DEWATERING BUILDING - SECTIONS
D-724	DEWATERING BUILDING - SECTIONS
D-801	YARD DRAIN PUMP STATION - PLANS
D-802	YARD DRAIN PUMP STATION - SECTIONS
D-811	CHEMICAL TANK FARM - PLAN & SECTION
D-812	CHEMICAL TANK FARM - SECTIONS
D-901	PROCESS PIPING PIPE PENETRATION DETAILS
D-902	PROCESS PIPE SUPPORT DETAILS
D-903	PROCESS PIPE SUPPORT DETAILS
D-904	PROCESS PIPE STRUCTURAL ATTACHMENTS DETAILS (1 OF 2)
D-905	PROCESS PIPE STRUCTURAL ATTACHMENTS DETAILS (2 OF 2)
D-906	PROCESS DETAILS (1 OF 2)
D-907	PROCESS DETAILS (2 OF 2)
D-911	GATE SCHEDULE & DETAILS ATTACHMENTS
D-921	VALVE SCHEDULE
D-922	VALVE SCHEDULE

ELECTRICAL	
SHT #	SHEET TITLE
E-001	ELECTRICAL NOTES & ABBREVIATIONS
E-002	ELECTRICAL SYMBOLS
E-003	ELECTRICAL DETAILS
E-004	ELECTRICAL DETAILS
E-005	ELECTRICAL DETAILS
E-006	ELECTRICAL DETAILS
E-007	POWER RISER DIAGRAMS
E-008	INFLUENT PUMP STATION SINGLE LINE DIAGRAM
E-009	TREATMENT PLANT SINGLE LINE DIAGRAM
E-010	TREATMENT PLANT SINGLE LINE DIAGRAM (CONT.)
E-011	OVERALL ELECTRICAL SITE PLAN
E-012	INFLUENT PUMP STATION ELECTRICAL SITE PLAN
E-013	TREATMENT PLANT ELECTRICAL SITE PLAN
E-014	ELECTRICAL DUCT BANK SCHEDULE
E-015	ELECTRICAL ELEVATIONS
E-016	ELECTRICAL PANEL SCHEDULES
E-017	ELECTRICAL PANEL SCHEDULES
E-101	INFLUENT PUMP STATION ELECTRICAL PLAN
E-102	INFLUENT PUMP STATION ELECTRICAL SCHEMATICS
E-111	DRUM SCREEN UPPER ELECTRICAL PLAN
E-112	DRUM SCREEN LOWER ELECTRICAL PLAN
E-113	GRIT REMOVAL ELECTRICAL PLAN
E-114	HEADWORKS LIGHTNING PROTECTION PLAN
E-115	DRUM SCREEN ELECTRICAL SCHEMATICS
E-116	GRIT REMOVAL ELECTRICAL SCHEMATICS
E-201	EQ BASIN & FLOW CONTROL VALVE ELECTRICAL PLANS
E-202	EQ BASIN & FLOW CONTROL VALVE ELECTRICAL SCHEMATIC
E-301	AERATION BASIN ELECTRICAL PLAN
E-302	AERATION BASIN ELECTRICAL SCHEMATIC
E-401	CLARIFIERS ELECTRICAL PLAN
E-402	CLARIFIERS ELECTRICAL SCHEMATIC
E-403	RAS/WAS PUMP STATION ELECTRICAL PLAN
E-404	RAS/WAS PUMP STATION ELECTRICAL SCHEMATIC
E-405	RAS/WAS PUMP STATION ELECTRICAL SCHEMATIC
E-501	FILTERS ELECTRICAL BOTTOM PLAN
E-502	FILTERS ELECTRICAL TOP PLAN
E-503	FILTERS ELECTRICAL SCHEMATIC
E-601	UV DISINFECTION ELECTRICAL PLAN
E-602	UV DISINFECTION ELECTRICAL SCHEMATICS
E-603	UV DISINFECTION ELECTRICAL SCHEMATICS
E-604	PLANT REUSE PS & POST AERATION ELECTRICAL PLAN
E-605	PLANT REUSE PS ELECTRICAL SCHEMATIC
E-606	POST AERATION ELECTRICAL SCHEMATIC
E-701	DIGESTERS ELECTRICAL PLAN
E-711	BLOWER BUILDING LIGHTING PLAN
E-712	BLOWER BUILDING ELECTRICAL PLAN
E-713	BLOWER BUILDING ELECTRICAL SCHEMATICS
E-721	DEWATERING BUILDING LIGHTING PLAN
E-722	DEWATERING BUILDING STORAGE ROOM ELECTRICAL PLAN
E-723	DEWATERING BUILDING DEWATERING ROOM ELECTRICAL PLAN
E-724	DEWATERING BUILDING ELECTRICAL SCHEMATIC
E-801	YARD DRAIN PUMP STATION ELECTRICAL PLAN
E-802	CHEMICAL TANK FARM ELECTRICAL PLAN
E-803	CHEMICAL TANK FARM ELECTRICAL SCHEMATIC
E-901	ADMIN BUILDING LIGHTING PLAN
E-902	ADMIN BUILDING ELECTRICLA PLAN
E-903	ADMIN BUILDING ELECTRICAL SCHEMATIC

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DRAWING INDEX

G-003

COMMON ABBREVIATIONS

A	AIR	DISTR	DISTRIBUTION	HP	HORSEPOWER	OD	OUTSIDE DIAMETER	RR	RAILROAD	VERT	VERTICAL
AB	ANCHOR BOLT	DL	DEAD LOAD	HR	HOUR	OF	OUTSIDE FACE OR OVERFLOW	RTN	RETURN	VP	VENT PIPE
AC	AIR CONDITIONING	DMJ	DUCTILE MECHANICAL JOINT	HS	HIGH STRENGTH	OPNG	OPENING	SALV	SALVAGE	VTR	VENT THROUGH ROOF
ACP	ASPHALTIC CONCRETE PAVING	DN	DOWN	HVAC	HEATING, VENTILATION, AIR CONDITIONING	OPP	OPPOSITE	SCFM	STANDARD CUBIC FEET PER MINUTE	W/	WITH
ADDL	ADDITIONAL	DWG	DRAWING	HW	HOT WATER	OPT	OPTIONAL	SCH	SCHEDULE	W/O	WITHOUT
ADDM	ADDENDUM	EA	EACH	HWL	HIGH WATER LEVEL	PC	POINT OF CURVE OF PORTLAND CEMENT	SCN	SCREENINGS	WC	WATER CLOSET
ADJ	ADJUSTABLE	ECC	ECCENTRIC	HWY	HIGHWAY	P&C	PIN AND CAP	SDR	STANDARD DIMENSION RATIO	WCO	WALL CLEANOUT
AFF	ABOVE FINISHED FLOOR	EF	EACH FACE OR ELECTRICAL FAN	HYD	HYDRANT	PCO	PRESSURE CLEAN OUT	SECT	SECTION	WD	WIDTH OR WOOD
AFS	AIR FLOW SWITCH	EJ	EXPANSION JOINT	ID	INSIDE DIAMETER	PCP	PROGRESSIVE CAVITY PUMP	SHLDR	SHOULDER	WDW	WINDOW
AHU	AIR HANDLING UNIT	EL	ELEVATION	IF	INSIDE FACE	PCR	POINT OF CURVE RETURN	SHT	SHEET	WF	WIDE FLANGE
AL	ALUMINUM	ELEC	ELECTRICAL	INCL	INCLUDED	PE	PLAIN END	SIM	SIMILAR	WH	WALL HYDRANT
ALT	ALTERNATE	ENGR	ENGINEER	INCR	INCREASER	PERM	PERMANENT	SOTE	STANDARD OXYGEN TRANSFER EFFICIENCY	WL	WIND LOAD
APPROX	APPROXIMATE	EOA	EDGE OF ASPHALT	INF	INFLUENT	PERP	PERPENDICULAR	SP	SPACE (ING)	WP	WEIR PLATE
ARCH	ARCHITECT(URAL)	EOP	EDGE OF PAVEMENT	INSTL	INSTALLATION	PI	POINT OF INTERSECTION	SPEC	SPECIFICATION	WS	WETTED SURFACE
ARV	AIR RELIEF VALVE	EQ	EQUAL	INSTR	INSTRUMENT	PL	PLATE OR PROPERTY LINE	SQ	SQUARE	WT	WEIGHT
ASME	AMERICAN SOCIETY MECHANICAL ENGINEERS	EQUIP	EQUIPMENT	INSUL	INSULATION	PLBG	PLUMBING	SQ FT	SQUARE FOOT	WWF	WELDED WIRE FABRIC
ASPH	ASPHALT	EQUIV	EQUIVALENT	INV	INVERT	PLYWD	PLYWOOD	SQ IN	SQUARE INCH	WWTP	WASTEWATER TREATMENT PLANT
ASSY	ASSEMBLY	ESMT	EASEMENT	INT	INTERIOR	PNT	PAINT	SQ YD	SQUARE YARD	X SECT	CROSS SECTION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	EST	ESTIMATE	INV EL	INVERT ELEVATION	POC	POINT ON VERTICAL CURVE	SRT	SOLIDS RETENTION TIME	XMR	TRANSFORMER
ATM	ATMOSPHERE	EUH	ELECTRIC UNIT HEATER	ISA	INSTRUMENT SOCIETY OF AMERICA	POLY	POLYETHYLENE	SST	STAINLESS STEEL	YCO	YARD CLEANOUT
ATS	AUTOMATIC TRANSFER SWITCH	EW	EACH WAY	JST	JOIST	PPM	PARTS PER MILLION	SST BT	STAINLESS STEEL BOLT	YH	YARD HYDRANT
AUTO	AUTOMATIC	EWS	EQUIPMENT WATER STATION	JTS	JOINTS	PREFAB	PREFABRICATED	ST	STREET		
AVS	AUTOMATIC VALVE STATION	EXP JT	EXPANSION JOINT	KO	KNOCKOUT	PREFIN	PREFINISHED	STA	STATION		
AWG	AMERICAN WIRE GAGE	EXST	EXISTING	KWY	KEYWAY	PRELIM	PRELIMINARY	STD	STANDARD		
BE	BELL END	EXST GR	EXISTING GRADE	L	LEFT OR LITER	PREP	PREPARATION	STL	STEEL		
BF	BOTTOM FACE	EXT	EXTERIOR	LAB	LABORATORY	PROJ	PROJECT	STL JST	STEEL JOIST		
BFD	BUTTERFLY DAMPER	F/F	FACE TO FACE	LAV	LAVATORY	PROP	PROPERTY	STL PL	STEEL PLATE		
BFV	BUTTERFLY VALVE	FA	FOUL AIR	LB(S)	POUND(S)	PRS	PRESSURE REDUCING STATION	STRUCT	STRUCTURAL		
BLDG	BUILDING	FAD	FOUL AIR DUCT	LEL	LOW EXPLOSIVE LIMIT	PRV	PRESS. REDUCING VALVE OR PRESS. RELIEF VALVE	SV	SOLENOID VALVE		
BLK	BLOCK	FCA	FLANGE COUPLING ADAPTER	LF	LINEAR FOOT	PS	PIPE SUPPORT	SVC	SERVICE		
BLM	BUREAU OF LAND MANAGEMENT	FCS	FLUSH CONTROL STATION	LL	LIVE LOAD OR LOOSE LINTEL	PSF	POUNDS PER SQUARE FOOT	SWD	SIDE WATER DEPTH		
BM	BENCH MARK	FD	FLOOR DRAIN	LOC	LOCATION	PSI	POUNDS PER SQUARE INCH	SYMM	SYMMETRICAL		
BOD	BIOCHEMICAL OXYGEN DEMAND	FDN	FOUNDATION	LP	LOW PRESSURE OR LIGHT POLE	PSIA	POUNDS PER SQUARE INCH ABSOLUTE	SYS	SYSTEM		
BOT	BOTTOM	FES	FLARED END SECTION	LR	LONG RADIUS	PSIG	POUNDS PER SQUARE INCH GAGE	T&B	TOP AND BOTTOM		
BU	BELL UP	FF EL	FINISH FLOOR ELEVATION	LS	LICENSED SURVEYOR	PSV	PRESSURE SUSTAINING VALVE	T&G	TONGUE AND GROOVE		
BV	BALL VALVE	FH	FIRE HYDRANT	LT	LIGHT	PT	POINT OR POINT OF TANGENCY	T&P	TEMPERATURE AND PRESSURE		
C/C	CENTER TO CENTER	FIN	FINISH	LT WT	LIGHTWEIGHT	PV	PLUG VALVE	T	TEE		
CCP	CONCRETE CYLINDER PIPE	FIN FL	FINISH FLOOR	LWL	LOW WATER LEVEL	PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVE	TB	TOP OF BEAM		
CCW	COUNTER CLOCKWISE	FIN GR	FINISH GRADE	MAINT	MAINTENANCE	PVG	PAVING	TBM	TEMPORARY BENCH MARK		
CFM	CUBIC FEET PER MINUTE	FL	FLANGE	MAN	MANUAL	PVI	POINT OF VERTICAL CURVE INTERSECTION	TE	TOP ELEVATION		
CHKV	CHECK VALVE	FLR	FLOOR	MATL	MATERIAL	PVMT	PAVEMENT	TEMP	TEMPORARY		
CIP	CAST IRON PIPE	FPM	FEET PER MINUTE	MAX	MAXIMUM	Q AVG	AVERAGE DAILY FLOW	TFA	TO FLOOR ABOVE		
CISP	CAST IRON SOIL PIPE	FPS	FEET PER SECOND	MCC	MOTOR CONTROL CENTER	Q MAX	MAXIMUM DAILY FLOW	TFB	TO FLOOR BELOW		
CJ	CONSTRUCTION JOINT	FRP	FIBERGLASS REINFORCED PLASTIC	MECH	MECHANICAL	Q PEAK	PEAK HOUR FLOW	TFF	TOP OF FINISH FLOOW		
CL	CENTER LINE OR CHAIN LINK	FT	FEET	MED	MEDIUM	QTR	QUARTER	TH	TEST HOLE		
CLR	CLEAR	FTG	FOOTING OR FITTING	MFM	MAGNETIC FLOW METER	QTY	QUANTITY	THD	THREAD (ED)		
CMP	CORRUGATED METAL PIPE	G	GAS	MFR	MANUFACTURER	RAD	RADIUS	THK	THICK		
CMU	CONCRETE MASONRY UNIT	GA	GAUGE	MG	MILLION GALLONS OR MILLIGRAMS	RC	REINFORCED CONCRETE	TJ	TOP OF JOIST		
CO	CLEAN OUT	GAL	GALLON	MGD	MILLION GALLONS PER DAY	RCP	REINFORCED CONCRETE PIPE	TOA	TOP OF ASPHALT		
CONC	CONCRETE	GALV	GALVANIZED	MGMT	MANAGEMENT	RD	ROOF DRAIN	TOC	TOP OF CONCRETE OR TOP OF CURB		
CONN	CONNECTION	GND	GROUND	MH	MANHOLE	RECT	RECTANGULAR	TOE	THREADED ONE END		
CONSTR	CONSTRUCTION	GPD	GALLONS PER DAY	MIN	MINIMUM	RED	REDUCER	TOF	TOP OF FOOTING		
CONT	CONTINUOUS(ATION)	GPM	GALONS PER MINUTE	MISC	MISCELLANEOUS	RE:	REFER TO	TOS	TOP OF STEEL		
COR	CORNER	GR	GRIT	MJ	MECHANICAL JOINT	REF	REFERENCE	TOW	TOP OF WALL		
CPLG	COUPLING	GRC	GALVANIZED RIGID CONDUIT	MNPT	MALE NATIONAL PIPE THREAD	REHAB	REHABILITATION	TP	TOP OF PAVEMENT		
CPVC	CHLORINATED POLYVINYL CHLORIDE	GSP	GALVANIZED STEEL PIPE	MO	MASONRY OPENING	REINF	REINFORCE (D) (ING) (MENT)	TSL	TOP OF SLAB		
CTR	CENTER	GV	GATE VALVE	MRGB	MOISTURE RESISTANT GYPSUM WALL BOARD	REQD	REQUIRED	TSS	TOTAL SUSPENDED SOLIDS		
CV	CHECK VALVE	GW	GROUNDWATER	MTG	MOUNTING	RESIL	RESILIENT	TYP	TYPICAL		
CW	COLD WATER	GWB	GYPSUM WALL BOARD	NA	NOT APPLICABLE	RFCA	RESTRAINED FLANGED COUPLING ADAPTER	UBC	UNIFORM BUILDING CODE		
CY	CUBIC YARDS	GYP	GYPSUM	NIC	NOT IN CONTRACT	RH	RIGHT HAND	UGE	UNDERGROUND ELECTRIC		
DBIO	DEWATERED BIOSOLIDS	HB	HOSE BIBB	NPL	NAMEPLATE	RM	ROOM	ULT	ULTIMATE		
DEMO	DEMOLITION	HDWL	HEADWALL	NPT	NATIONAL PIPE THREAD	RO	ROUGH OPENING	UN	UNION		
DIA	DIAMETER	HNDRL	HAND RAIL	NRS	NON-RISING STEM	ROW	RIGHT OF WAY	UNGD	UNDERGROUND		
DIM	DIMENSION	HNDWL	HAND WHEEL	NTS	NOT TO SCALE	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER	VB	VALVE BOX		
DIP	DUCTILE IRON PIPE	HORIZ	HORIZONTAL	OC	ON CENTER	RPM	REVOLUTIONS PER MINUTE	VCP	VITRIFIED CLAY PIPE		

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

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Bid Set	03.19.2025

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Engineer: GS
Designer: GS
Drawn By:

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

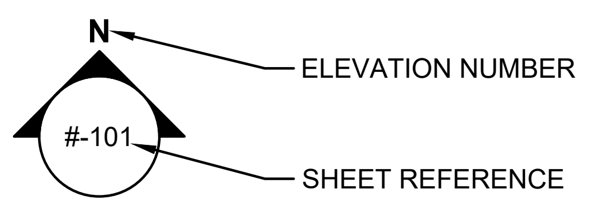
No. PE051452
Graham S. Sizemore
03.19.2025
GRAHAM S. SIZEMORE

ABBREVIATIONS

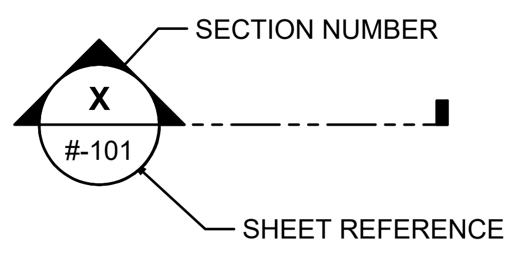
G-004

GRAPHICS LEGEND

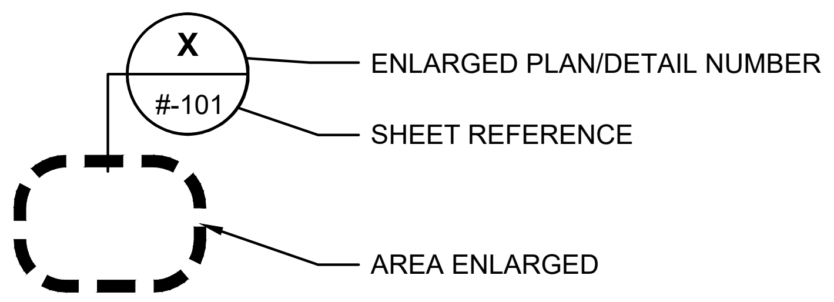
ELEVATION INDICATOR



SECTION INDICATOR



ENLARGED PLAN/DETAIL INDICATOR



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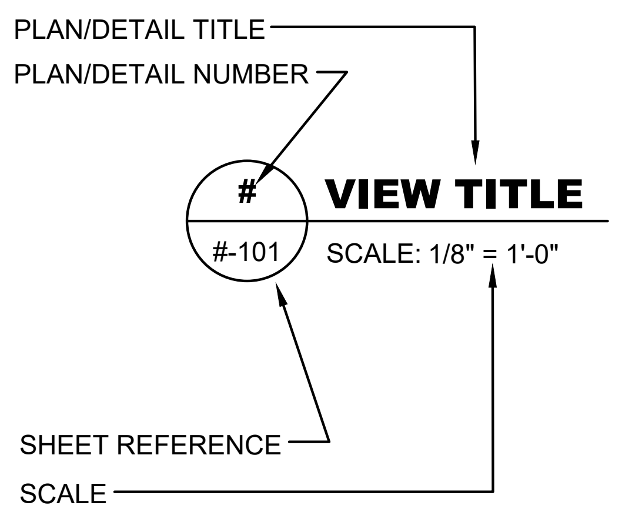
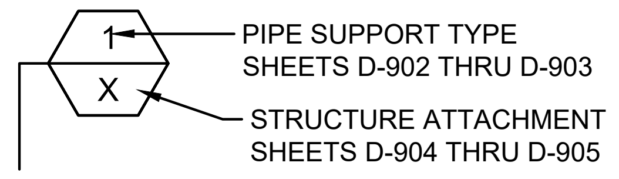
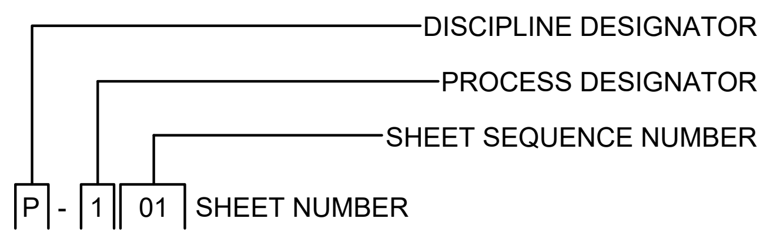


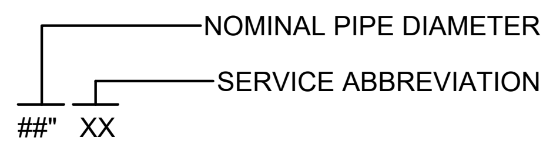
PIPE SUPPORT INDICATOR



SHEET NUMBERING



PIPE LINE IDENTIFICATION



PROCESS DESIGNATORS

PROCESS SHEETS (WASTEWATER)	DESIGNATOR
NOTES, LEGEND, ABBREVIATIONS, DEMOLITION, EXISTING CONDITIONS, ETC.	0
PRELIMINARY TREATMENT	1
PRIMARY TREATMENT	2
BIOLOGICAL TREATMENT	3
SECONDARY TREATMENT	4
TERTIARY TREATMENT	5
DISINFECTION AND EFFLUENT PUMPING	6
SLUDGE STORAGE AND PROCESSING	7
MISCELLANEOUS SYSTEMS	8
DETAILS / SCHEDULES	9

CIVIL DESIGNATORS

CIVIL	DESIGNATOR
NOTES, LEGEND, ABBREVIATIONS, DEMOLITION, EXISTING CONDITIONS, ETC.	0
SITE PLAN AND GEOMETRIC CONTROLS	1
GRADING AND DRAINAGE	2
UTILITIES/YARD PIPING	3
ROAD PLAN AND PROFILES (IF REQUIRED)	4
ROAD CROSS SECTIONS (IF REQUIRED)	5
SEDIMENT AND EROSION CONTROL	6
RESERVED	7
RESERVED	8
DETAILS / SCHEDULES	9

OWNER

DESCRIPTION	NAME	PHONE NUMBER	EMAIL ADDRESS
CITY MANAGER	MATTHEW HAILEY	706.423.5125	MHAILEY@COMMERCEGA.GOV
WWTP SUPERINTENDENT	TAD EDMONSON	770.374.3288	TEDMONSON@COMMERCEGA.GOV

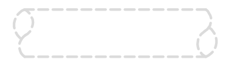
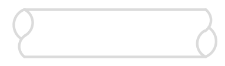
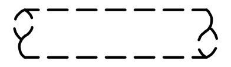
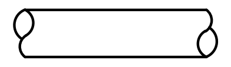
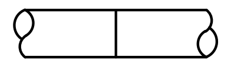
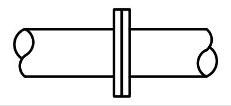
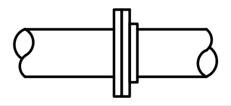
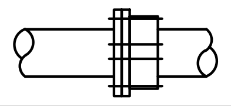
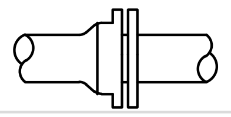
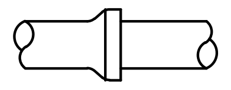
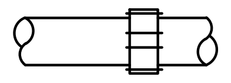
CONTRACTOR

DESCRIPTION	NAME	PHONE NUMBER	EMAIL ADDRESS
PROJECT MANAGER	TBD		
SUPERINTENDENT	TBD		

ENGINEER

DESCRIPTION	NAME	PHONE NUMBER	EMAIL ADDRESS
PROJECT MANAGER	CHARLES WELCH	770.952.2481 EXT. 103	CHARLES.WELCH@GMCNETWORK.COM
ENGINEER	GRAHAM SIZEMORE, PE	770.952.2481 EXT. 143	GRAHAM.SIZEMORE@GMCNETWORK.COM
INSPECTOR	TONY VAN DE RYT	770.952.2481 EXT. 110	TONY.VANDERYT@GMCNETWORK.COM

PIPE SYMBOLS

DESCRIPTION	SINGLE LINE	DOUBLE LINE
EXISTING BURIED PIPE	┈┈┈	
EXISTING ABOVE GRADE PIPE	───	
NEW BURIED PIPE	- - - - - -	
NEW ABOVE GRADE PIPE	────	
WELDED JOINT	╳	
FLANGED JOINT	╳	
FLANGED ADAPTOR	╳	
FLANGED COUPLING	╳	
MECHANICAL JOINT	╳	
JOINT	╳	
EXPANSION JOINT	╳	

HATCHING LEGEND

DESCRIPTION	EXISTING	PROPOSED
ASPHALT PAVING (PLAN)	▨	▩
ALUMINUM GRATING	▦	▦
CONCRETE (ELEVATION)	▨	▩
CONCRETE (PLAN)	▨	▩
CONCRETE (SECTION)	▨	▩
CRUSHED STONE (SECTION)	╳	▩
EARTH OR BACKFILL (SECTION)	╳	▩
GRAVEL DRIVE (PLAN)	▨	▩
GROUT FILL (PLAN & SECTION)	▨	▩
LAKE, RIVER OR POND (PLAN)	▨	╳
REMOVAL OR DEMOLITION (PLAN & SECTION)	╳	▩
UNPAVED DRIVE (PLAN)	▨	▩

DISCIPLINE DESIGNATORS

DISCIPLINE	DESIGNATOR
GENERAL	G
HAZARDOUS MATERIALS	H
INSTRUMENTATION	I
DEMOLITION	X
SURVEY/MAPPING	V
GEOTECHNICAL	B
CIVIL	C
LANDSCAPE	L
STRUCTURAL	S
ARCHITECTURAL	A
FIRE PROTECTION	F
MECHANICAL	M
PLUMBING	P
PROCESS	D
ELECTRICAL	E

GENERAL NOTES

1. THE CONTRACTOR IS EXPECTED TO CAREFULLY EXAMINE THE PLANS, PROPOSAL AND SITE OF THE WORK. THEREFORE, IT WILL BE ASSUMED THAT THE BIDDER HAS SATISFIED HIMSELF AS TO THE CONDITIONS TO BE ENCOUNTERED IN REGARDS TO THE CHARACTER, QUALITY, AND QUANTITIES OF WORK TO BE PERFORMED AND MATERIALS TO BE FURNISHED, AND AS TO THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS AND CONTRACT. THE SUBMISSION OF A PROPOSAL BY A BIDDER WILL BE CONSIDERED PRIMA FACIE EVIDENCE THAT THE BIDDER HAS MADE SUCH AN EXAMINATION.

2. THE CONTRACTOR IS REQUIRED TO MAINTAIN AN AS-BUILT SET OF DRAWINGS DURING PROJECT CONSTRUCTION. THE COMPLETE AS-BUILT MAP WILL CONTAIN ALL INSTALLED ELECTRICAL, STRUCTURAL ENTITIES, LINES, VALVES, METERS, AND CONNECTIONS WITH REFERENCE DISTANCES TO PERMANENT ABOVE GROUND STRUCTURES.

3. ALL EXISTING UTILITIES SHOWN ABOVE AND BELOW GROUND ARE APPROXIMATE AND ARE NOT NECESSARILY ALL THAT EXIST. THE DETERMINATION OF THE EXISTENCE, LOCATION, AND DEPTH OF ALL UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED BY CONTRACTOR FOR ONE YEAR AFTER ACCEPTANCE BY THE OWNER PER SPECIFICATION 1030.

5. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE CIVIL DRAWINGS AND THE ARCHITECTURAL/STRUCTURAL DRAWINGS, THE ARCHITECTURAL/STRUCTURAL DRAWINGS SHALL HAVE PRECEDENCE. THE CONTRACTOR SHALL ADVISE THE ENGINEER OF ANY CONFLICT IN THE PLANS/SPECS FOR CLARIFICATION PRIOR TO BID. SHOULD CONFLICTING DOCUMENTS NOT BE CLARIFIED AT THE REQUEST OF THE BIDDING CONTRACTOR, THE MORE COSTLY ALTERNATIVE AS IDENTIFIED IN THE PLAN & SPECS SHALL BE INCLUDED IN THE PRICE BID.

6. ALL HAZARDOUS SUBSTANCES USED FOR THIS PROJECT, INCLUDING, BUT NOT LIMITED TO, PAINT, OIL, GREASE, AND OTHER PETROLEUM PRODUCTS SHALL BE STORED IN ACCORDANCE WITH "SPILL PREVENTION, CONTROL & COUNTERMEASURE" REGULATIONS. THESE SUBSTANCES SHALL BE STORED AWAY FROM STORM DRAINS, DITCHES, AND GUTTERS IN WATERTIGHT CONTAINERS. DISPOSAL OF THESE SUBSTANCES SHALL BE IN ACCORDANCE WITH STATE & FEDERAL AGENCY REGULATIONS. CONTRACTOR SHALL PROVIDE ADEQUATE TRASH CONTAINERS ON SITE FOR THE DISPOSAL OF CONSTRUCTION MATERIALS WASTE. CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING ANY TRASH OR OTHER POLLUTANTS FROM ENTERING STORM DRAINS & WATERS OF THE STATE.

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GOODWYN MILLS CAWOOD, LLC
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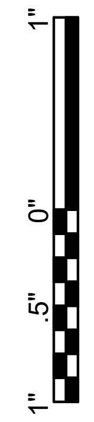

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Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

No. PE051452
Graham S. Sizemore
03.19.2025
GRAHAM S. SIZEMORE

GENERAL NOTES,
LEGENDS, & SYMBOLS

G-005

ABBREVIATIONS

A	AMP(S)
A/C	AIR CONDITIONING
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AR	ALARM RELAY
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER CONDUCTOR
BKR	BREAKER
C	CONDUIT/CONDUCTOR/CONTACTOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CONC	CONCRETE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
DB	DUCT BANK
DC	DIRECT CURRENT
DIA	DIAMETER
DP	DISTRIBUTION PANEL
DPSH	DIFFERENTIAL PRESSURE SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EL	ELEVATION
ELEC	ELECTRIC(AL)
EM	EMERGENCY
EMH	ELECTRICAL MANHOLE
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE/ENCLOSED
EQUIP	EQUIPMENT
ES	EMERGENCY STOP SWITCH
EX	EXISTING OR EXAMPLE
FC	FLOW CONTROLLER
FDR	FEEDER
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METAL CONDUIT
FOR	FORWARD-OFF-REVERSE
FPP	FIBER OPTIC PATCH PANEL
FS	FLOW SWITCH
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G, GND	GROUND
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFR	GROUND FAULT RELAY
GRC	GROUNDING ELECTRODE CONDUCTOR
GRS	GALVANIZED RIGID STEEL CONDUIT
HH	HAND HOLE
HOA	HAND-OFF-AUTOMATIC SWITCH
HS	HAND SWITCH (STATION)
HTR	MOTOR SPACE HEATER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
I/O	INPUT/OUTPUT
IG	INSIDE DIAMETER
IMC	INTERMEDIATE METAL CONDUIT
INST	INSTANTANEOUS
INT	INTERLOCK
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT-AMPS
KVAR	KILOVOLT-AMPS REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
LA	LIGHTNING ARRESTOR
LC	LIGHTING CONTACTOR
LCP	LOCAL CONTROL PANEL
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LOR	LOCAL-OFF-REMOTE
LP	LIGHTING PANELBOARD
LRA	LOCK ROTOR AMPS
LSC	LIMIT SWITCH CLOSED
LSH	LIMIT SWITCH HIGH
LSL	LIMIT SWITCH LOW
LSO	LIMIT SWITCH OPEN
LTG	LIGHTING
LV	LOW VOLTAGE
M	MOTOR CONTACTOR
MA	MILLIAMP(S)
MC	METAL CLAD CABLE/MECHANICAL CONTACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	THOUSANDS OF CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTION
MFR	MANUFACTURE(R)
MH	MANHOLE
MHC	MECHANICALLY HELD CONTACTOR
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOP	MOTOR OPERATOR PANEL
MOV	MOTOR OPERATED VALVE
MPR	MOTOR PROTECTION RELAY
MSC	MANUFACTURER SUPPLIED CABLE
MTR	MOTOR
N	NEUTRAL
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN OR NUMBER
NOM	NOMINAL
NP	NAME PLATE
NTS	NOT TO SCALE
P	POLE
PB	PUSH BUTTON, PANIC BUTTON OR PULL BOX
PE	PHOTOELECTRIC CELL
PF	POWER FACTOR
PFR	PHASE FAILURE / PHASE REVERSAL RELAY
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PRI	PRIMARY
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QSH	SHEAR PIN LIMIT SWITCH
QTY	QUANTITY
RAC	RIGID ALUMINUM CONDUIT
RCT	REACTOR
REC	RECEPTACLE
REF	REFERENCE
REQD	REQUIRED
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARED
RNC	RIGID NON-METALLIC CONDUIT
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TERMINAL UNIT
SCH	SCHEDULE
SEC	SECONDARY
SHH	SIGNAL HAND HOLE
SP	SPARE
SPB	SIGNAL PULL BOX
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SS	STAINLESS STEEL
SV	SOLENOID OPERATED VALVE
SW	SWITCH
SYM	SYMMETRICAL
SYS	SYSTEM
TB	TERMINAL BOX
TBB	TELEPHONE BACKBOARD
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TH	THERMOSTAT
TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
TR	TIMED RELAY
TSH	TEMPERATURE SWITCH HIGH
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDER GROUND
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORY
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VA	VOLT-AMPERE
VAR	VOLT-AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VIS	VIBRATION SWITCH
VPS	VACUUM PRESSURE SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT OR WIRE
WH	WATER HEATER
WP	WEATHERPROOF OR WATERPROOF
XFMR	TRANSFORMER
XH	WARNING HORN
XL	WARNING LIGHT
XP	EXPLOSION PROOF
XX	ITEM IDENTIFIER NUMBER PLACEHOLDER
ZS	POSITION LIMIT SWITCH
ZSC	POSITION LIMIT SWITCH CLOSED
ZSO	POSITION LIMITS SWITCH OPEN
ZT	POSITION TRANSMITTER

GENERAL ELECTRICAL NOTES

NOTES:

1. ALL ELECTRICAL WORK BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NFPA 70, NATIONAL ELECTRICAL CODE (NEC), NFPA 101 LIFE SAFETY CODE, NFPA 820, STANDARDS FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES AND LOCAL AUTHORITIES HAVING JURISDICTION.
2. ELECTRICAL SYMBOLS, ABBREVIATIONS, AND NOTATIONS USED ON THE DRAWINGS WILL BE AS PER THE PROVIDED LEGEND, SHEET E-002.
3. ALL ELECTRICAL EQUIPMENT AND MATERIALS WILL BE LISTED AND APPROVED FOR THEIR INTENDED USE.
4. CONDUIT AND DEVICE LOCATIONS ARE SHOWN ON THE DRAWINGS SCHEMATICALLY. THE CONTRACTOR MUST FIELD LOCATE THE DEVICES AND ROUTE THE CABLES AND CONDUITS AS REQUIRED.
5. THE ELECTRICAL CONTRACTOR WILL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION AND AVOID CONFLICTS. ELECTRICAL CONTRACTOR WILL WORK CLOSELY WITH GENERAL CONTRACTOR AND VERIFY EXACT TYPES OF EQUIPMENT AND DIMENSIONS TO BE INSTALLED WHICH MAY AFFECT THE EXACT PLACEMENT OF ELECTRICAL WORK.
6. APPRAISE ALL TRADES OF ELECTRICAL EQUIPMENT THAT AFFECTS WALL THICKNESSES, PLUMBING, MECHANICAL, ETC.
7. VERIFY THE EXACT LOCATION OF ALL MOTORS AND EQUIPMENT BEFORE ROUGHING IN.
8. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS. THE OWNER WILL NOT COVER THE COST OF MINOR WIRING ADJUSTMENTS NEEDED TO COMPLY WITH THE MANUFACTURER'S INSTALLATION DETAILS.
9. CONTRACTOR TO VERIFY MECHANICAL EQUIPMENT REQUIREMENTS FROM MANUFACTURER PRIOR TO ROUGHING IN CONDUITS. ADJUST CONDUIT, WIRE, AND CIRCUIT PROTECTION SIZE ACCORDINGLY. NOTIFY ENGINEER IF REQUIREMENTS EXCEED THOSE DEPICTED ON THE ELECTRICAL PLANS.
10. ANY DEVIATIONS FROM THE APPROVED ELECTRICAL PLAN WILL BE COMMUNICATED AND APPROVED BY THE ENGINEER OF RECORD. ALL SUBSTITUTIONS TO MATERIALS OR EQUIPMENT MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
11. THE CONTRACTOR WILL CHECK ALL LIGHTING FIXTURES FOR EXACT TYPE AND MOUNTING BEFORE ROUGHING IN.
12. ELECTRICAL PANELS AND DISTRIBUTION EQUIPMENT WILL HAVE CLEAR ACCESS AND MAINTAIN THE REQUIRED WORKING CLEARANCES AS PER THE NEC.
13. EMERGENCY SHUT-OFF SWITCHES WILL BE PROVIDED AT DESIGNATED LOCATIONS FOR THE SAFETY OF PERSONNEL IN CASE OF ELECTRICAL EMERGENCIES.
14. ALL CONDUITS AND CABLES WILL BE ADEQUATELY SUPPORTED AND SECURELY FASTENED AS PER NEC REQUIREMENTS. ALL SUPPORTING AND FASTENING DEVICES SHALL BE STAINLESS STEEL.
15. ALL EXTERIOR ELECTRICAL ENCLOSURES SHALL BE NEMA 4X STAINLESS STEEL UNLESS OTHERWISE NOTED.
16. GROUNDING AND BONDING WILL BE INSTALLED IN ACCORDANCE WITH NEC REGULATIONS TO ENSURE ELECTRICAL SAFETY. ALL CONNECTIONS TO THE GROUNDING ELECTRODE WILL BE MADE USING AN EXOTHERMAL PROCESS, CADWELD OR EQUAL.
17. ALL EQUIPMENT WILL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NEC.
18. ELECTRICAL SERVICE ENTRANCE EQUIPMENT WILL BE INSTALLED AND SIZED IN ACCORDANCE WITH THE UTILITY COMPANY'S REQUIREMENTS.
19. ALL NEW OR MODIFIED INSTRUMENTS, UTILIZATION EQUIPMENT, CONTROL DEVICES, PANELS, ETC., WILL BE CLEARLY LABELED FOR EASY IDENTIFICATION, PER SPECIFICATION REQUIREMENTS.
20. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND INSTALL APPROPRIATE WARNING AND SAFETY SIGNAGE AS REQUIRED BY LOCAL REGULATIONS.
21. THE ELECTRICAL CONTRACTOR WILL PROVIDE AS-BUILT DRAWINGS REFLECTING ANY CHANGES MADE DURING CONSTRUCTION.
22. ALL INDICATING TRANSMITTER DEVICES IN EXTERIOR ENVIRONMENTS MUST BE INSTALLED WITHIN SUN/RAIN SHIELDS AS DETAILED. CONTRACTOR TO PROVIDE SUN/RAIN SHIELDS AND COORDINATE WITH INSTRUMENT SUPPLIERS BEFORE SUBMITTING SHOP DRAWINGS.
23. CONTRACTOR RESPONSIBLE FOR PROVIDING 120V AND ANALOG SURGE PROTECTION DEVICES FOR ALL INSTRUMENTS IN EXTERIOR ENVIRONMENTS. SURGE PROTECTION DEVICES MUST MEET SPECIFIED REQUIREMENTS.
25. CONTROL AND POWER CONDUITS SHALL BE SEPARATED BY 1FT AND SHALL BE IN SEPARATE JUNCTION BOXES AND DUCT BANKS. MAINTAIN 1FT SEPARATION BETWEEN DUCT BANKS. POWER AND CONTROL RACEWAYS MAY ONLY BE COMBINED IN THE SAME RACEWAY WHEN EXPLICITLY INDICATED ON THE PROJECT DRAWINGS.
26. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MOUNTING ALL INSTRUMENTATION DEVICES, EXCLUDING THOSE PRE-INSTALLED ON SKIDS BY THE MANUFACTURER. COORDINATE REQUIREMENTS WITH SUPPLIERS BEFORE ROUGH-IN.
27. CONTRACTOR MUST VISIT THE WORK SITE(S) BEFORE SUBMITTING A BID TO ASSESS LOCAL CONDITIONS AND POTENTIAL CHALLENGES. ANY DISCREPANCIES BETWEEN PLANS AND EXISTING CONDITIONS MUST BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
28. NEW CONDUITS ARE REQUIRED FOR NEW CIRCUIT HOMERUNS. EXISTING OR SPARE CONDUITS MEETING PROJECT REQUIREMENTS MAY BE UTILIZED IF THEY ARE IN SERVICEABLE CONDITION.
29. DEMOLISH/REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND WIRING MADE OBSOLETE BY THIS RENOVATION AND RETURN TO THE OWNER OR DISPOSE OF AS DIRECTED BY THE ENGINEER.
30. CONTRACTOR TO PROVIDE ALL MATERIALS AND LABOR REQUIRED TO EXTEND CIRCUITS AND MAKE RECONNECTIONS TO ACTIVE ELECTRICAL DEVICES AS SHOWN ON THE DRAWINGS.
31. THE ELECTRICAL CONTRACTOR WILL OBTAIN ALL NECESSARY PERMITS AND APPROVALS BEFORE COMMENCING WORK. CONTRACTOR SHALL PAY ALL FEES ASSESSED BY ELECTRICAL UTILITY CO.
32. THE ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION OF THE ELECTRICAL SERVICE WITH THE LOCAL UTILITY COMPANY (COMMERCE GEROGIA), CONTRACTOR, AND OWNER TO ENSURE TIMELY AVAILABILITY OF ELECTRIC POWER AS NEEDED.
33. THE ELECTRICAL CONTRACTOR WILL CONDUCT THOROUGH TESTING AND COMMISSIONING OF ALL ELECTRICAL SYSTEMS BEFORE FINAL HANDOVER.

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE		
OA	○◁	LED SITE LIGHT	COOPER LIGHTING - LUMARK / PRV-C60-D-UNV-T4-SA-BZ LITHONIA LIGHTING / ESX1 LED P4 40K R3 MVOLT UPA BLS DDBXD M2	164	20,000	4000K	70	LED	277V	1
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	2
OC	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	6
A	⊤	LOW-PROFILE ARCHITECTURAL LED WALL PACK	COOPER LIGHTING - LUMARK / XTOR6B-W BZ LITHONIA LIGHTING / WPX2 LED 40K MVOLT DDBXD	58	6,133	4000K	70	LED	277V	-
B	○	LED CANOPY LIGHT	COOPER LIGHTING - LUMARK / RPGC25S LITHONIA LIGHTING / VVCPG LED V4 P4 40K 70CRI T5M PM	63	7,811	4000K	70	LED	120V	3
C	○	LED ROUND HIGH BAY W/ SELECTABLE CCT & LUMEN	COOPER LIGHTING / UHBS-2436-MV-L84050 LITHONIA LIGHTING / JEBL 24L	147	23,607	4000K	82	LED	120V	4
D	▭	LED WRAP AROUND W/ SELECTABLE CCT & LUMEN	COOPER LIGHTING - METALUX / 4NWS3CMS-UNV-HI LITHONIA LIGHTING / FML4W 48 5000LM 840 ZT	39	4,851	3500K	82	LED	120V	-
E	▭	2' X 4' LED TROFFER GENERAL RECESSED	COOPER LIGHTING - METALUX / 24 GR LD5 64 L835 LITHONIA LIGHTING / 2GTL 4 4' 60L LP835	48	6,462	3500K	80	LED	120V	5
F	□	2' X 2' LED TROFFER GENERAL RECESSED	COOPER LIGHTING - METALUX / 22 GR LD5 40 L835 LITHONIA LIGHTING / 2GTL 2 2' 40L LP835	39	4,098	3500K	80	LED	120V	-
EM	△△	LED EMERGENCY LIGHT	COOPER LIGHTING - SURE-LITES / SELM60 LITHONIA LIGHTING / TCU 350L M4	5	309	-	-	LED	120V	-
EX	⊗	DIE CAST AL. LED EXIT LIGHT	COOPER LIGHTING SURE-LITES / TPX LITHONIA LIGHTING / LE S1R	1.0	-	-	-	LED	120V	-

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 20' TALL SQUARE STEEL POLE POWDER COAT BLACK.
2. ALUMINUM POLE W/ TELESCOPING RAIL MOUNT. (SEE DETAIL SHT. E-005)
3. PENDANT MOUNT BY CONTRACTOR.
4. LIGHT FIXTURE WILL BE IP 65, NEMA 4X RATED.
5. PROVIDE DRYWALL MOUNTING KIT FOR FIXTURES LOCATED IN THE BATHROOMS. PROVIDE DIMMING DRIVERS AND SWITCH FOR LAB ROOM.
6. 12' FIXED ALUMINUM POLE MOUNT.

SHEET INDEX

SHEET NUMBER	SHEET TITLE
ELECTRICAL	
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E-003	ELECTRICAL DETAILS
E-004	ELECTRICAL DETAILS
E-005	ELECTRICAL DETAILS
E-006	E-005 ELECTRICAL DETAILS
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E-013	TREATMENT PLANT ELECTRICAL SITE PLAN
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E-015	ELECTRICAL ELEVATIONS
E-016	ELECTRICAL PANEL SCHEDULES
E-017	ELECTRICAL PANEL SCHEDULES
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E-112	DRUM SCREEN LOWER ELECTRICAL PLAN
E-113	GRIT REMOVAL ELECTRICAL PLAN
E-114	HEADWORKS LIGHTNING PROTECTION PLAN
E-115	DRUM SCREEN ELECTRICAL SCHEMATICS
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E-201	EQ BASIN & FLOW CONTROL VALVE ELECTRICAL PLANS
E-202	EQ BASIN & FLOW CONTROL VALVE ELECTRICAL SCHEMATICS
E-301	AERATION BASIN ELECTRICAL PLAN
E-302	AERATION BASIN ELECTRICAL SCHEMATIC
E-401	CLARIFIERS ELECTRICAL PLAN
E-402	CLARIFIERS ELECTRICAL SCHEMATIC
E-403	RAS WAS PUMP STATION ELECTRICAL PLAN
E-404	RAS WAS PUMP STATION ELECTRICAL SCHEMATIC
E-405	RAS WAS PUMP STATION ELECTRICAL SCHEMATIC
E-501	FILTERS ELECTRICAL BOTTOM PLAN
E-502	FILTERS ELECTRICAL TOP PLAN
E-503	FILTERS ELECTRICAL SCHEMATIC
E-601	UV DISINFECTION ELECTRICAL PLAN
E-602	UV DISINFECTION ELECTRICAL SCHEMATICS
E-603	UV DISINFECTION ELECTRICAL SCHEMATICS
E-604	PLANT REUSE PS & POST AERATION ELECTRICAL PLAN
E-605	PLANT REUSE PUMP STATION ELECTRICAL SCHEMATIC
E-606	POST AERATION ELECTRICAL SCHEMATIC
E-701	DIGESTERS ELECTRICAL PLAN
E-711	BLOWER BUILDING LIGHTING PLAN
E-712	BLOWER BUILDING ELECTRICAL PLAN
E-713	BLOWER BUILDING ELECTRICAL SCHEMATICS
E-721	DEWATERING BUILDING LIGHTING PLAN
E-722	DEWATERING BUILDING STORAGE ROOM ELECTRICAL PLAN
E-723	DEWATERING BUILDING DEWATERING ROOM ELECTRICAL PLAN
E-724	DEWATERING BUILDING ELECTRICAL SCHEMATIC
E-801	YARD DRAIN PUMP STATION ELECTRICAL PLAN
E-802	CHEMICAL TANK FARM ELECTRICAL PLAN
E-803	CHEMICAL TANK FARM ELECTRICAL SCHEMATIC
E-901	ADMIN BUILDING LIGHTING PLAN
E-902	ADMIN BUILDING ELECTRICAL PLAN
E-903	ADMIN BUILDING ELECTRICAL SCHEMATIC

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STATE OF GEORGIA CERTIFICATE OF AUTHORIZATION
GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

ISSUE	DATE
30% Submittal	05.30.2024
60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

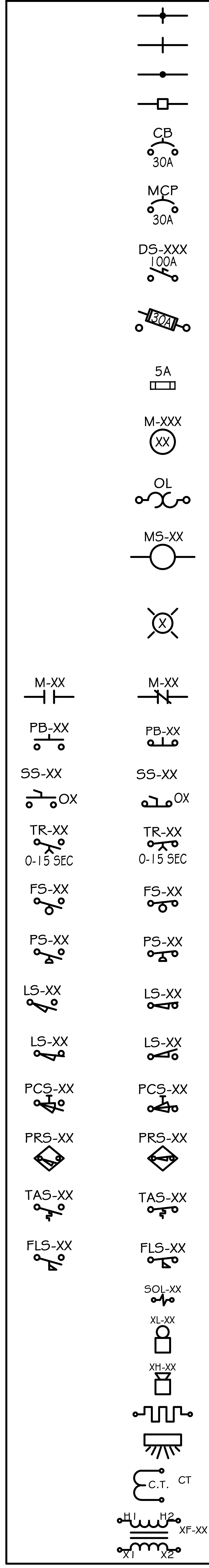
CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

ELECTRICAL NOTES &
ABBREVIATIONS

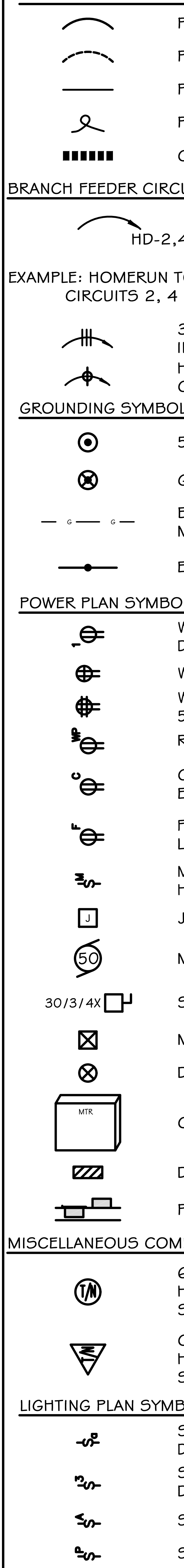
E-001

CONTROL SCHEMATIC SYMBOLS



		CONDUCTORS CONNECTED
		CONDUCTORS NOT CONNECTED
		CONNECTION POINT
		TERMINAL POINT
	CB 30A	MOLDED CASE CIRCUIT BREAKER, THERMAL MAGNETIC UNLESS NOTED OTHERWISE, TRIP SIZE & NUMBER OF POLES AS INDICATED
	MCP 30A	MOTOR CIRCUIT PROTECTION, TRIP SIZE AS INDICATED
	DS-XXX 100A	DISCONNECT SWITCH, ID DS-XXX, CONTINUOUS RATING AS INDICATED, 600V MINIMUM UNLESS NOTED OTHERWISE
	30A	FUSED DISCONNECT, CONTINUOUS RATING AS INDICATED, 600V MINIMUM UNLESS NOTED OTHERWISE
	5A	FUSE CONTINUOUS RATING AS INDICATED
	M-XXX XX	MOTOR ID M-XXXX HORSE POWER AS INDICATED
	OL	MOTOR OVERLOADS, THERMAL UNLESS NOTED OTHERWISE
	MS-XX	MOTOR STARTER COIL
	X	INDICATOR LIGHT X = LENS COLOR R = RED G = GREEN A = AMBER W = WHITE B = BLUE
M-XX	M-XX	MOTOR / RELAY CONTACT
PB-XX	PB-XX	PUSH BUTTON NORMALLY OPEN & CLOSED
SS-XX OX	SS-XX OX	SELECTOR SWITCH NORMALLY OPEN & CLOSED
TR-XX 0-15 SEC	TR-XX 0-15 SEC	TIME DELAY SWITCH NORMALLY OPEN & CLOSED TIME TO CLOSE/OPEN
FS-XX	FS-XX	FLOAT SWITCH NORMALLY OPEN & CLOSED
PS-XX	PS-XX	PRESSURE/VACUUM SWITCH NORMALLY OPEN & CLOSED
LS-XX	LS-XX	LIMIT SWITCH NORMALLY OPEN & CLOSED
LS-XX	LS-XX	LIMIT SWITCH NORMALLY OPEN HELD CLOSED & NORMALLY CLOSED HELD OPEN
PCS-XX	PCS-XX	PULLCORD SWITCH NORMALLY OPEN & CLOSED
PRS-XX	PRS-XX	PROXIMITY SWITCH NORMALLY OPEN & CLOSED
TAS-XX	TAS-XX	TEMPERATURE SWITCH NORMALLY OPEN & CLOSED
FLS-XX	FLS-XX	FLOW SWITCH NORMALLY OPEN & CLOSED
	SOL-XX	SOLENOID VALVE
	XL-XX	ALARM LIGHT
	XH-XX	ALARM HORN
		MOTOR / PANEL HEATER
		PANEL LIGHT
	C.T. CT	CURRENT TRANSFORMER
	H1 H2 XF-XX X1 X2	CONTROL POWER TRANSFORMER, SIZE AS INDICATED OR SPECIFIED

PLAN SYMBOLS



CIRCUIT AND RACEWAY SYMBOLS

	PROVIDE RACEWAY, CONCEALED IN CEILING OR WALL.
	PROVIDE RACEWAY, CONCEALED IN FLOOR OR UNDERGROUND.
	PROVIDE RACEWAY, EXPOSED.
	PROVIDE RACEWAY, FLEXIBLE.
	CONCRETE ENCASED DUCT BANK

BRANCH FEEDER CIRCUIT / HOMERUN

HD-2,4,6

EXAMPLE: HOMERUN TO PANEL D
CIRCUITS 2, 4 & 6

2#12 & 1#12G UNLESS NOTED OTHERWISE

	3#12 & 1#12G UNO (TICK MARKS INDICATE CONDUCTOR QTY NOT INCLUDING GROUND WIRE)
	HOMERUN WITH 2/C SHIELDED, TWISTED NO. 16 SIGNAL CABLE IN 3/4" C.

GROUNDING SYMBOLS

	5/8"X10' COPPERCLAD GROUND ROD DRIVEN FULL DEPTH INTO EARTH
	GROUND ROD & WELL
	BARE COPPER GROUNDING CONDUCTOR - #2/0 UNO INSTALLED A MINIMUM 30" BELOW GRADE
	EXOTHERMIC (CADWELD) CONNECTION TO GROUND

POWER PLAN SYMBOLS

	WALL OUTLET, DUPLEX RECEPTACLE, 20A, 125V, NEMA 5-20R, NUMBER DESIGNATES CIRCUIT IDENTIFICATION
	WALL OUTLET, DUPLEX GFCI RECEPTACLE, 20A, 125V, NEMA 5-20R
	WALL OUTLET, QUADRUPLEX RECEPTACLE, TWO - 20A, 125V, 3W, NEMA 5-20R
	RECEPTACLE AS INDICATED W/ WEATHER-PROOF, IN-USE, COVER
C	COUNTER OUTLET, ALUMINUM NOZZLE COUNTER MOUNTED LEW ELECTRIC FDN-300-A
F	FLOOR OUTLET, RECEPTACLE AS INDICATED, BRASS POP UP FLOOR PLATE LEW ELECTRIC PUFF-BD
	MOTOR RATED SWITCH OUTLET, A.C. TYPE, 30A, 600V. HUBBLE CAT. NO. HBL7832FWMD
J	JUNCTION BOX
50	MOTOR HORSE POWER AS INDICATED
30/3/4X	SAFETY SWITCH, AMPS / POLES / ENCLOSURE NEMA RATING
	MOTOR STARTER, STAND ALONE
	DEVICE - SENSOR, TRANSDUCER, CONTROL SWITCH ETC.
MTR	CONTROL PANEL
	DISTRIBUTION PANEL
	PANELBOARD FLUSH OR SURFACE MOUNTED.

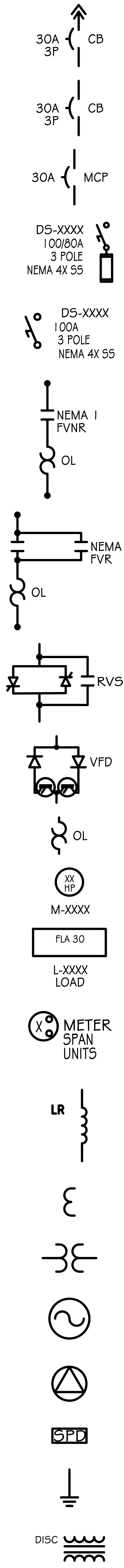
MISCELLANEOUS COMMUNICATIONS SYMBOLS

T/N	6" BRASS POP UP FLOOR PLATE LEW ELECTRIC PUFF-BC, 3/4"C. HOMERUN CAT6E TO THE TELEPHONE BACKBOARD OR NETWORK SWITCH, (T=TELEPHONE, F=FAX, N=NETWORK)
	COMMUNICATION OUTLET WITH BUSHED COVER PLATE, 3/4"C. HOMERUN CAT6E TO THE TELEPHONE BACKBOARD OR NETWORK SWITCH, (T=TELEPHONE, F=FAX, N=NETWORK, A=ALL)

LIGHTING PLAN SYMBOLS

	SWITCH A.C. TYPE, SINGLE POLE, 15A, 125/277V, LOWER CASE LETTER DESIGNATES SWITCHING
	SWITCH OUTLET, A.C. TYPE, THREE / FOUR WAY, 15A, 125/277V. (3, DENOTES THREE WAY, 4 DENOTES FOUR WAY)
	SWITCH OUTLET W/ PASSIVE INFRARED OCCUPANCY SENSOR & NIGHT LIGHT
	SWITCH OUTLET W/ PILOT LIGHT

SINGLE LINE DIAGRAM SYMBOLS



30A 3P CB	LOW VOLTAGE POWER CIRCUIT AND BREAKER DRAW OUT TYPE, TRIP SIZE & NUMBER OF POLES AS INDICATED
30A 3P CB	MOLDED CASE CIRCUIT BREAKER, THERMAL MAGNETIC UNLESS NOTED OTHERWISE, TRIP SIZE & NUMBER OF POLES AS INDICATED
30A MCP	MOTOR CIRCUIT PROTECTION, TRIP SIZE AS INDICATED
DS-XXXX 100/80A 3 POLE NEMA 4X SS	FUSED DISCONNECT ID DS-XXXX DISCONNECT / FUSE CONTINUOUS RATING NUMBER OF POLES NEMA ENCLOSURE RATING
DS-XXXX 100A 3 POLE NEMA 4X SS	DISCONNECT ID CONTINUOUS RATING NUMBER OF POLES NEMA ENCLOSURE RATING
NEMA 1 FVNR OL	FULL VOLTAGE NON-REVERSING MOTOR STARTER NEMA SIZE AS INDICATED
NEMA I FVR OL	FULL VOLTAGE REVERSING MOTOR STARTER NEMA SIZE AS INDICATED
RVSS	REDUCED VOLTAGE SOLID STATE STARTER SOFT STARTER
VFD	VARIABLE FREQUENCY DRIVE SEE SPECIFICATIONS FOR DETAILS
OL	MOTOR OVERLOADS SOLID STATE UNLESS OTHERWISE NOTED
XX HP M-XXXX	MOTOR HORSE POWER AS INDICATED MOTOR IDENTIFICATION M-XXXX
FLA 30 L-XXXX LOAD	MISCELLANEOUS LOAD, FLA AS SHOWN
X METER SPAN UNITS	METER: A - AMMETER V - VOLTMETER VAR - VAR METER
LR	LINE REACTOR
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	GENERATOR
	GENERATOR RECEPTACLE
SPD	SURGE PROTECTIVE DEVICE
	GROUND
DISC	UTILITY TRANSFORMER

TYPICAL CONDUCTOR / CABLE DESIGNATIONS

2 SETS OF 4#600KCM , 1#250KCM(G) - 4"C.

CONDUIT SIZE
QUANTITY & GAUGE OF GROUND CONDUCTORS
QUANTITY & GAUGE OF PHASE/NEUTRAL CONDUCTORS
QUANTITY OF PARALLEL SETS OF PHASE/NEUTRAL/GROUND CONDUCTORS & CONDUITS INDICATED

2 TSP #16 IN 3/4" C.

CONDUIT SIZE
WIRE GUAGE
QUANTITY TWISTED SHIELDED PAIR CABLES

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Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

REGISTERED
03/19/2025
NO. 31217
PROFESSIONAL ENGINEER
CHARLES K. BUTTERFIELD

ELECTRICAL SYMBOLS

E-002

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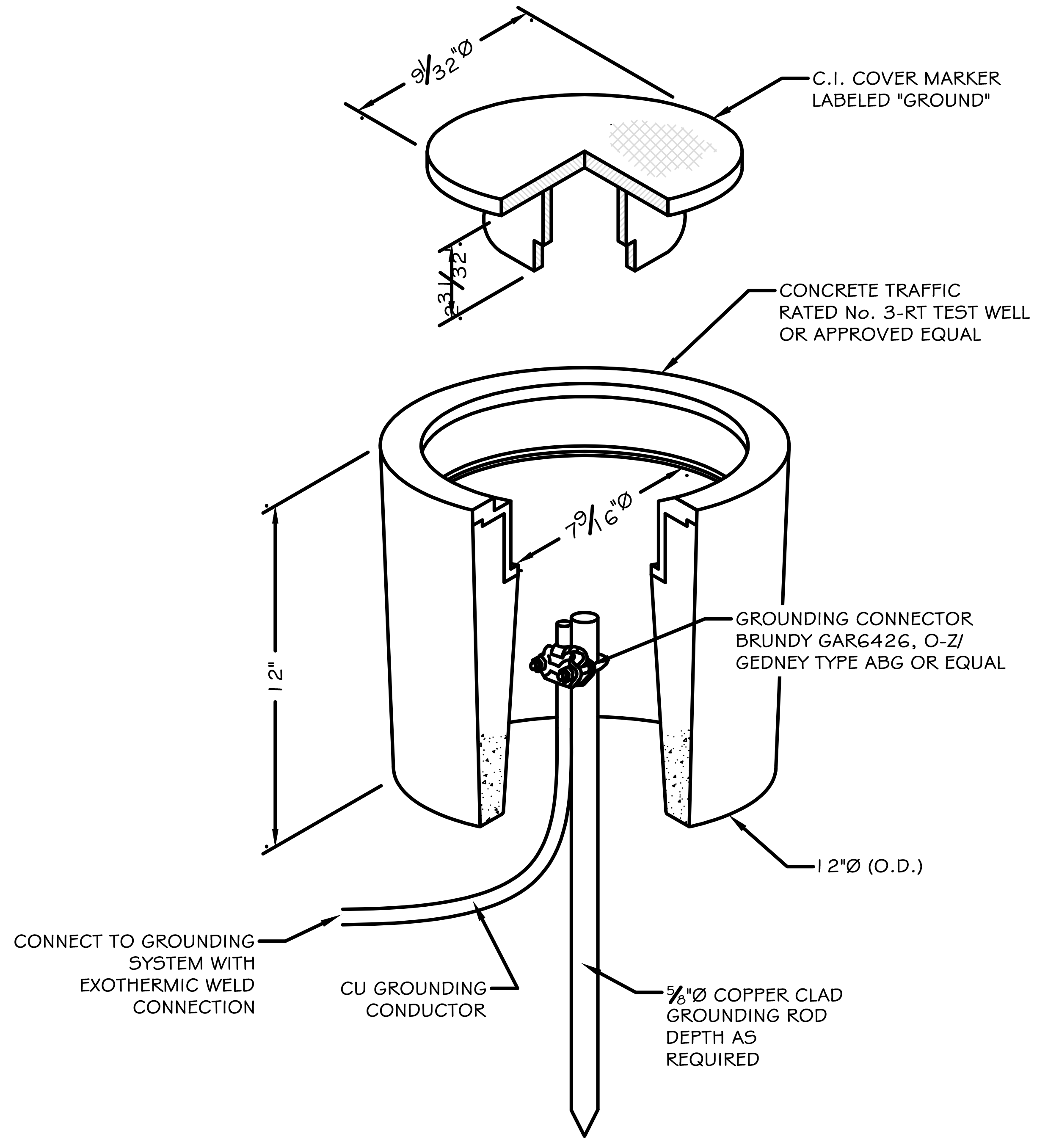
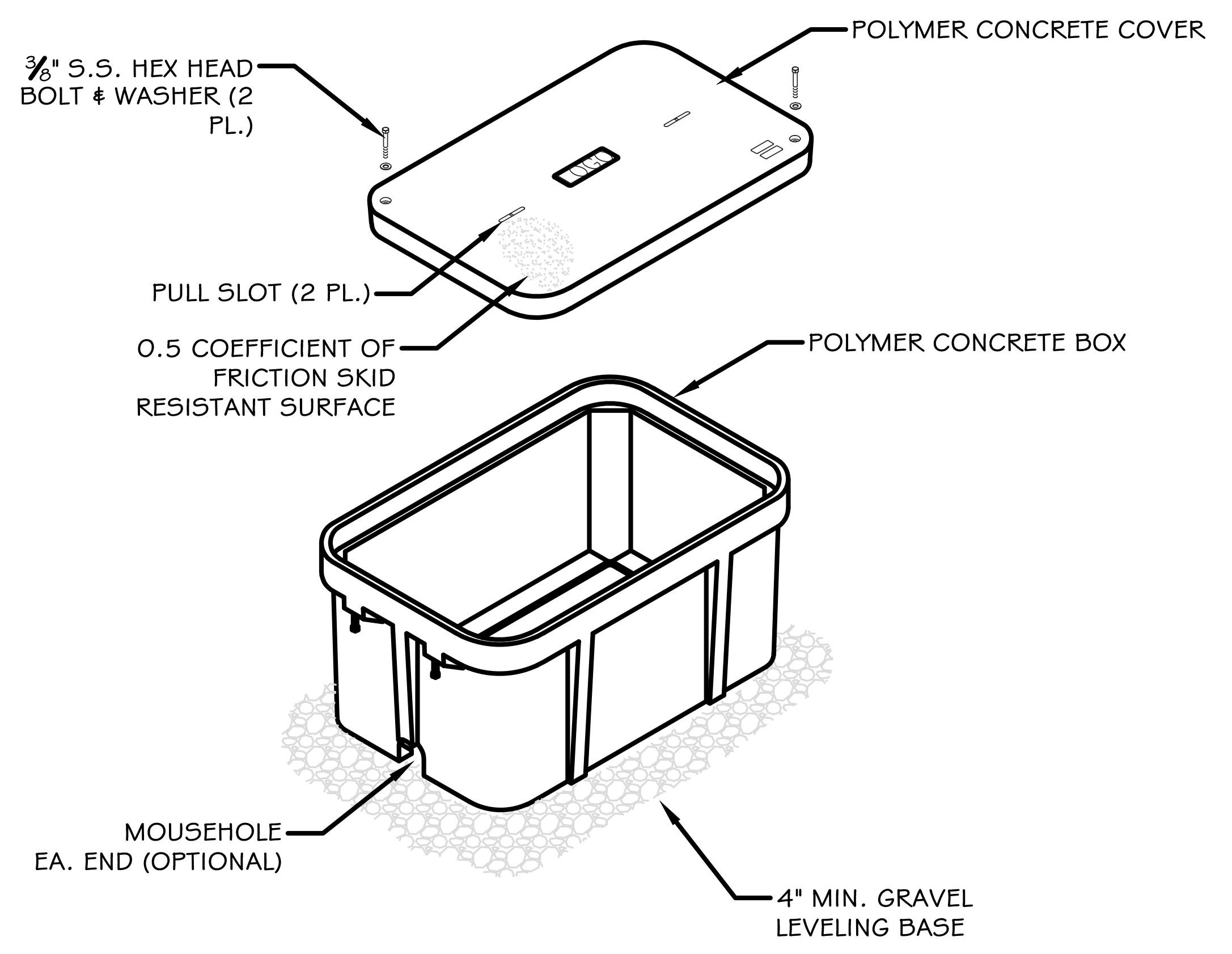

9/32"Ø
C.I. COVER MARKER LABELED "GROUND"
2 31/32"
CONCRETE TRAFFIC RATED No. 3-RT TEST WELL OR APPROVED EQUAL
7 9/16"Ø
12"
GROUNDING CONNECTOR BRUNDY GAR6426, O-Z/GEDNEY TYPE ABG OR EQUAL
12"Ø (O.D.)
CONNECT TO GROUNDING SYSTEM WITH EXOTHERMIC WELD CONNECTION
CU GROUNDING CONDUCTOR
5/8"Ø COPPER CLAD GROUNDING ROD DEPTH AS REQUIRED

1 GROUND TEST WELL

E-003

SCALE: NOT TO SCALE

⊗ SYMBOL


3/8" S.S. HEX HEAD BOLT & WASHER (2 PL.)
POLYMER CONCRETE COVER
PULL SLOT (2 PL.)
0.5 COEFFICIENT OF FRICTION SKID RESISTANT SURFACE
POLYMER CONCRETE BOX
MOUSEHOLE EA. END (OPTIONAL)
4" MIN. GRAVEL LEVELING BASE

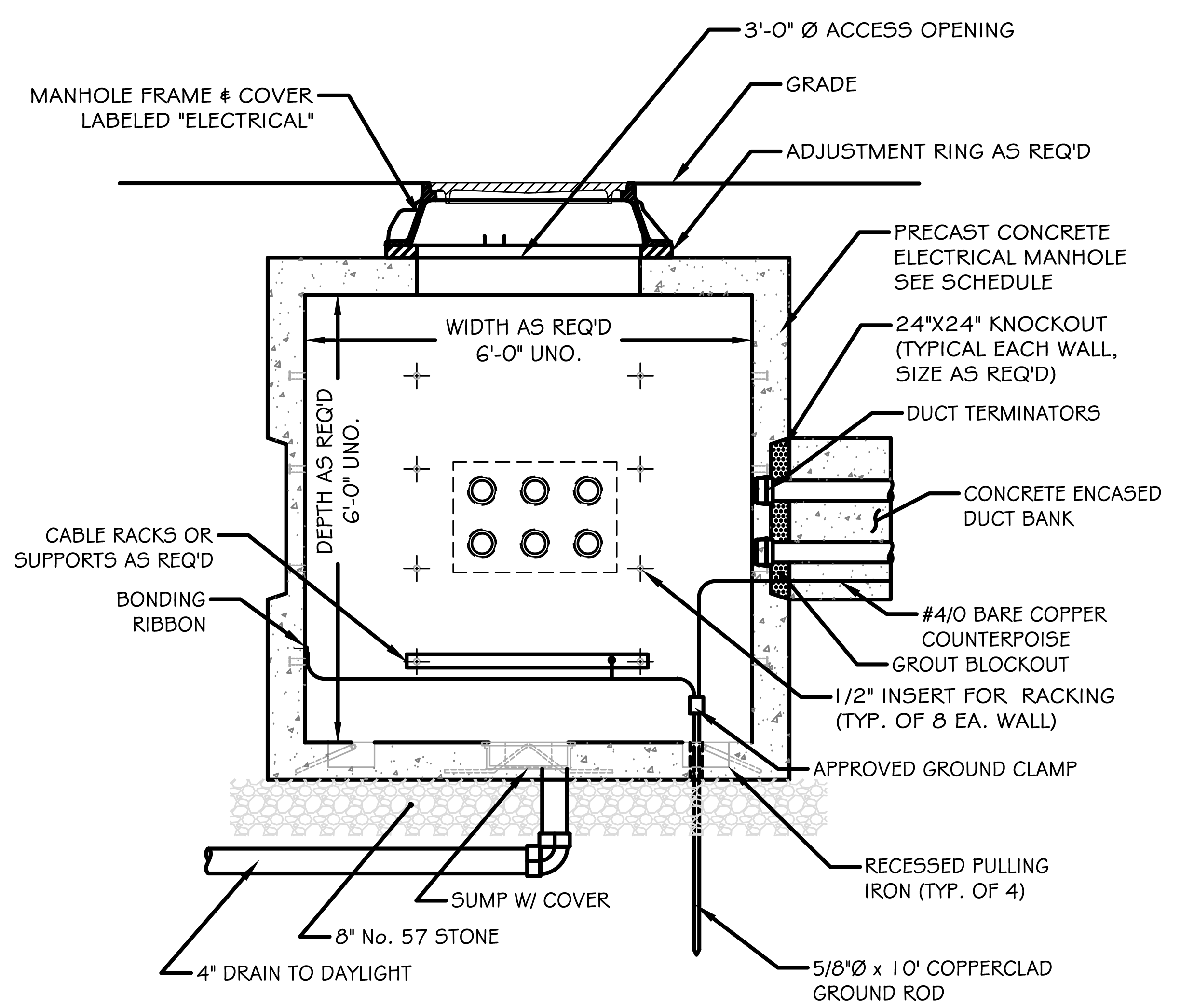
NOTES:
1) HANDHOLE TO BE POLYMER CONCRETE HUBBLE QUARTZITE OR EQUAL.
2) HANDHOLE DIMENSIONS AS REQUIRED PER THE QUANTITY AND SIZE OF CONDUCTORS & CONDUITS PER THE DUCT BANK SCHEDULE.
3) PROVIDE KNOCKOUTS OR LONG RADIUS CONDUIT BENDS UNDER BOX AS REQUIRED.
4) PROVIDE TRAFFIC RATED HANDHOLE AND COVER FOR HANDHOLES LOCATED IN ASPHALT OR CONCRETE PAVEMENT.
5) ALL REQUIRED SPLICES MADE IN THE PULL/JUNCTION BOXES SHALL BE MADE WATER TIGHT WITH HEAT SHRINKABLE INSULATORS WITH INTERNAL ADHESIVE SEALANT EQUAL TO "SHRINK-KON", 3M OR EQUAL.
6) INSTALL 5/8" x 10' COPPERCLAD GROUND ROD IN HAND HOLE, CONNECT ALL GROUNDING CONDUCTORS AND #4/0 COUNTERPOISE TOGETHER & BOND W/ EXOTHERMIC WELD.

2 ELECTRICAL HANDHOLE DETAIL

E-003

SCALE: NOT TO SCALE

HH-XX ☐ SYMBOL


3'-0" Ø ACCESS OPENING
MANHOLE FRAME & COVER LABELED "ELECTRICAL"
GRADE
ADJUSTMENT RING AS REQ'D
PRECAST CONCRETE ELECTRICAL MANHOLE SEE SCHEDULE
WIDTH AS REQ'D 6'-0" UNO.
24"X24" KNOCKOUT (TYPICAL EACH WALL, SIZE AS REQ'D)
DEPTH AS REQ'D 6'-0" UNO.
DUCT TERMINATORS
CONCRETE ENCASED DUCT BANK
CABLE RACKS OR SUPPORTS AS REQ'D
BONDING RIBBON
#4/0 BARE COPPER COUNTERPOISE
GROUT BLOCKOUT
1/2" INSERT FOR RACKING (TYP. OF 8 EA. WALL)
APPROVED GROUND CLAMP
RECESSED PULLING IRON (TYP. OF 4)
SUMP W/ COVER
8" No. 57 STONE
4" DRAIN TO DAYLIGHT
5/8"Ø x 10' COPPERCLAD GROUND ROD

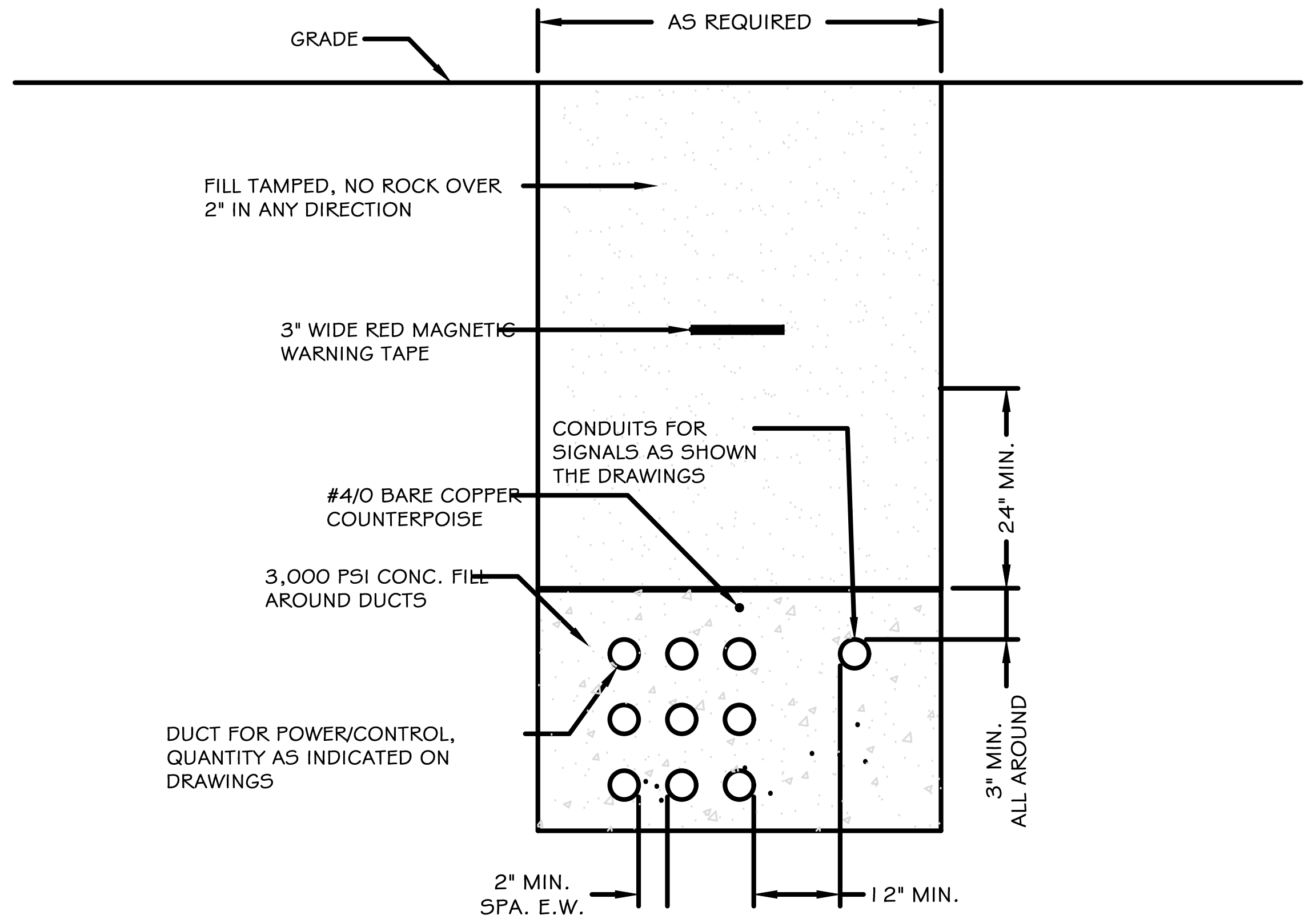
NOTES:
1) CONCRETE: 5,000 PSI MIN @ 28 DAYS.
2) MANUFACTURED PER ASTM C-858.
3) BOND ALL METAL PARTS PER NEC LATEST EDITION.

3 ELECTRICAL MANHOLE DETAIL

E-003

SCALE: NOT TO SCALE

MH-XX ☐ SYMBOL


GRADE
AS REQUIRED
FILL TAMPED, NO ROCK OVER 2" IN ANY DIRECTION
3" WIDE RED MAGNETIC WARNING TAPE
CONDUITS FOR SIGNALS AS SHOWN THE DRAWINGS
#4/0 BARE COPPER COUNTERPOISE
24" MIN.
3,000 PSI CONC. FILL AROUND DUCTS
DUCT FOR POWER/CONTROL, QUANTITY AS INDICATED ON DRAWINGS
3" MIN. ALL AROUND
2" MIN. SPA. E.W.
12" MIN.

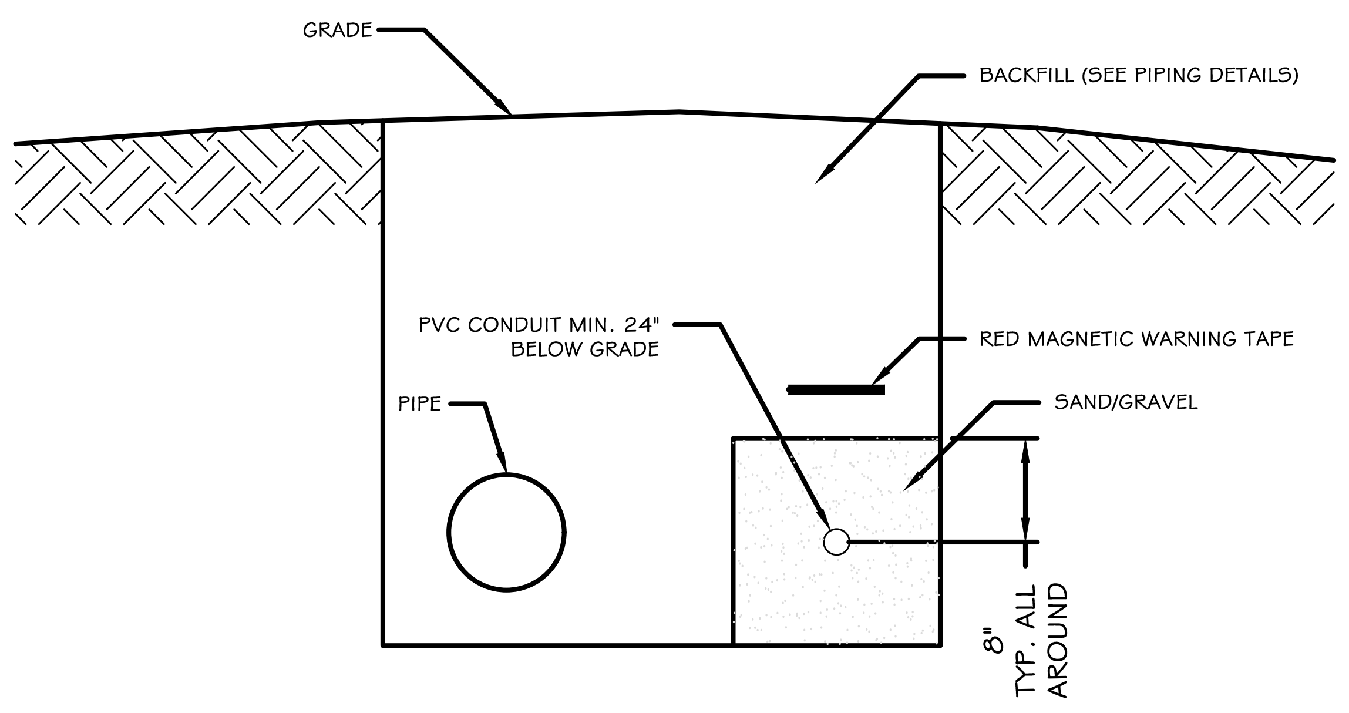
NOTES:
1) SIGNAL RACEWAY MUST BE POSITIONED AT LEAST ONE (1) FOOT AWAY FROM POWER AND CONTROL RACEWAY. EACH PVC DUCT SHALL INCLUDE A MINIMUM #10 AWG GREEN GROUNDING CONDUCTOR. POWER AND CONTROL RACEWAYS MAY ONLY BE COMBINED IN THE SAME RACEWAY WHEN EXPLICITLY INDICATED ON THE PROJECT DRAWINGS.

4 DUCTBANK INSTALLATION DETAILS

E-003

SCALE: NOT TO SCALE

DB-XX SYMBOL


GRADE
BACKFILL (SEE PIPING DETAILS)
PVC CONDUIT MIN. 24" BELOW GRADE
RED MAGNETIC WARNING TAPE
PIPE
SAND/GRAVEL
8" TYP. ALL AROUND

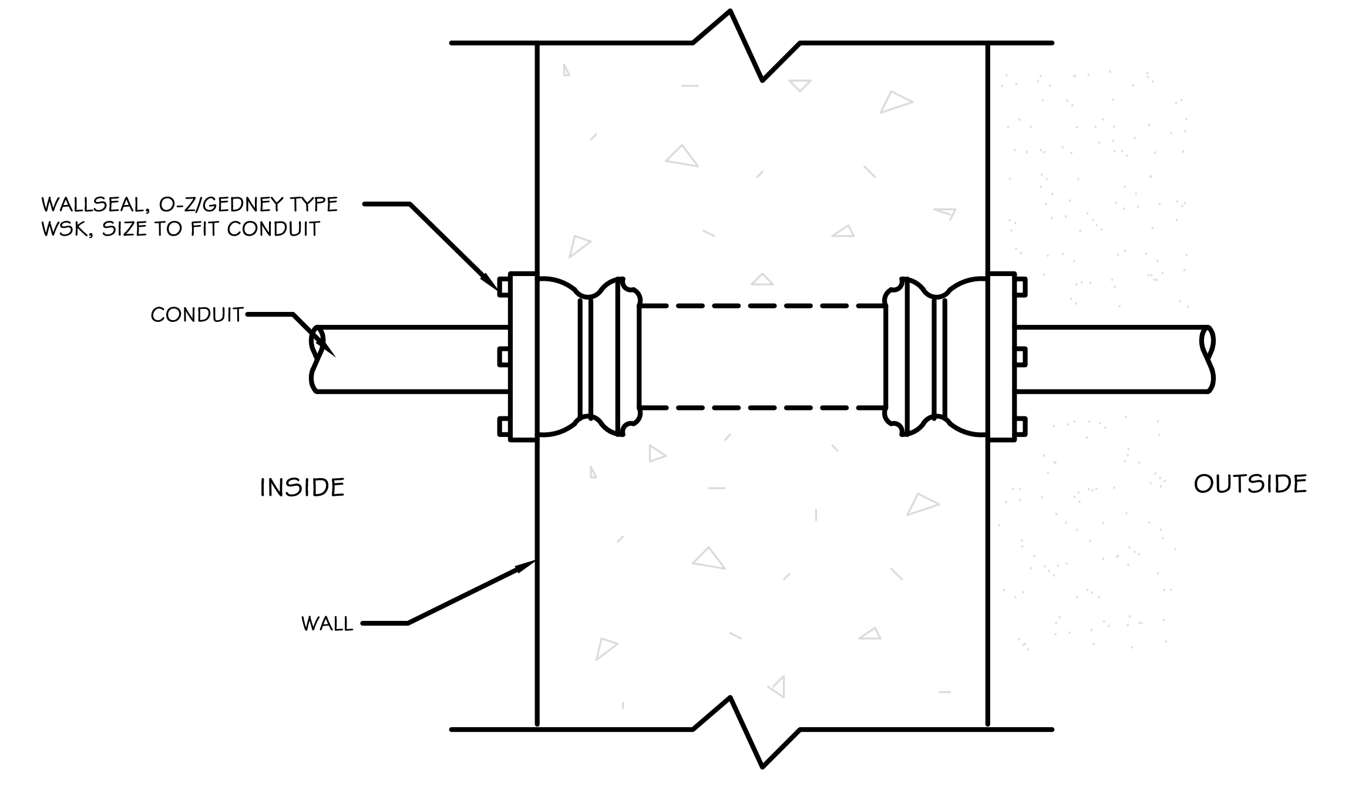
NOTES:
1) CONDUIT ROUTING DETAIL MAY BE APPLIED FOR ROUTING TWO (2) OR FEWER CONDUITS NOT LOCATED UNDER ROADWAYS; REFER TO DUCT BANK SCHEDULE FOR SPECIFIC REQUIREMENTS.
2) SIGNAL RACEWAY MUST BE POSITIONED AT LEAST ONE (1) FOOT AWAY FROM POWER AND CONTROL RACEWAY. EACH PVC DUCT SHALL INCLUDE A MINIMUM #10 AWG GREEN GROUNDING CONDUCTOR. POWER AND CONTROL RACEWAYS MAY ONLY BE COMBINED IN THE SAME RACEWAY WHEN EXPLICITLY INDICATED ON THE PROJECT DRAWINGS.

5 CONDUIT ROUTING DETAIL

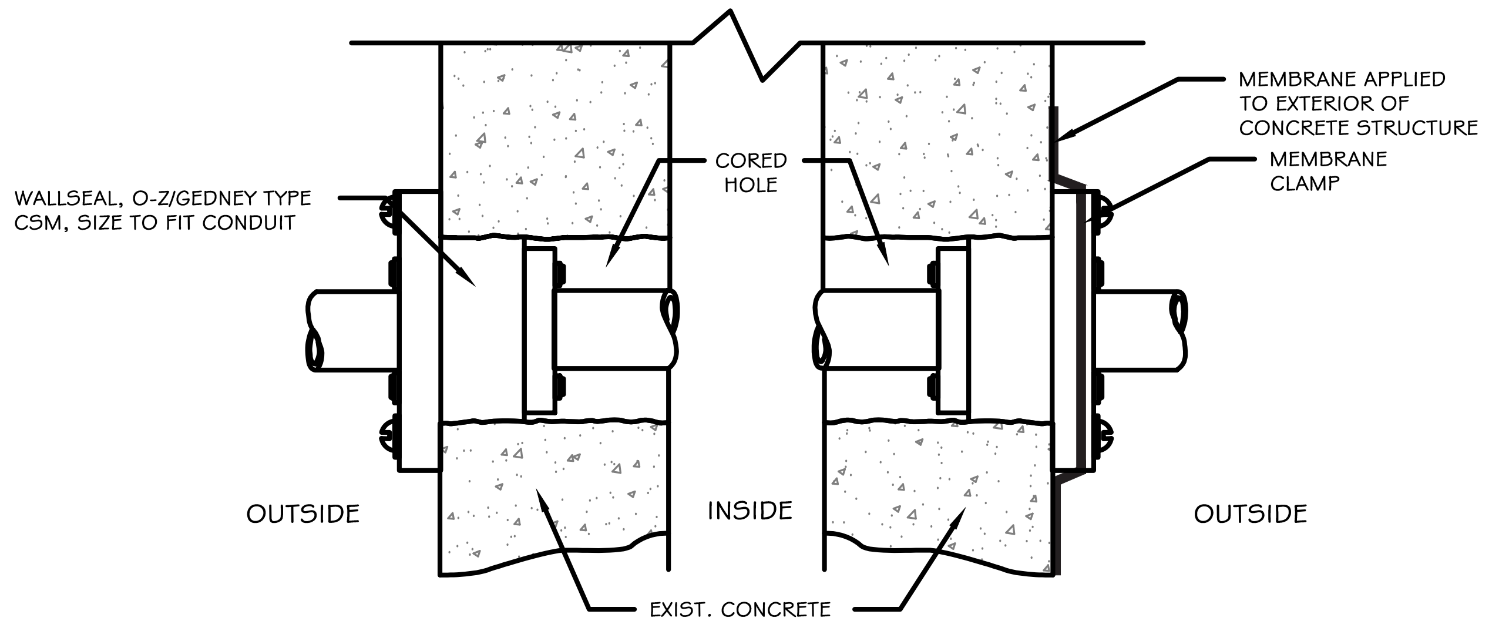
E-003

SCALE: NOT TO SCALE

DB-XX SYMBOL



NEW CONSTRUCTION APPLICATION


WALLSEAL, O-Z/GEDNEY TYPE CSM, SIZE TO FIT CONDUIT
CORED HOLE
MEMBRANE APPLIED TO EXTERIOR OF CONCRETE STRUCTURE
MEMBRANE CLAMP
OUTSIDE
INSIDE
OUTSIDE
EXIST. CONCRETE

CORED-HOLE APPLICATION

6 TYPICAL THROUGH WALL CONDUIT SEAL

E-003

SCALE: NOT TO SCALE

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E-003

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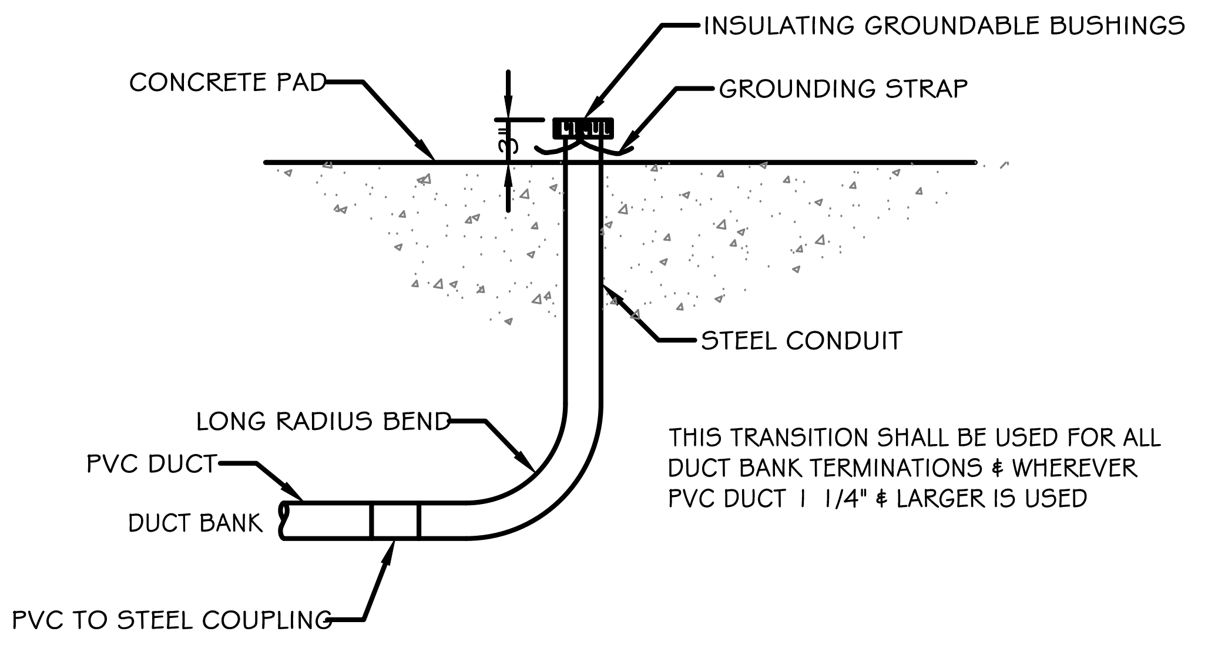
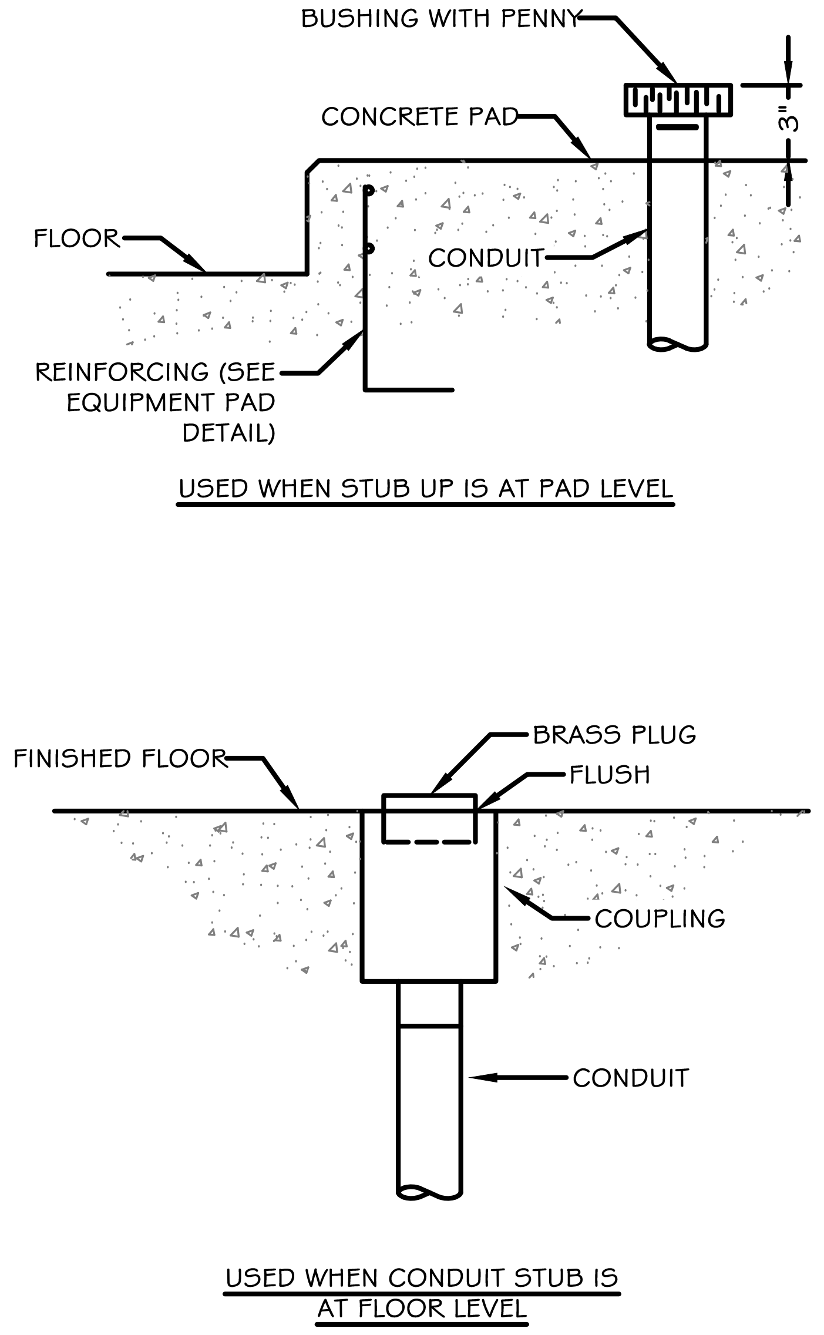
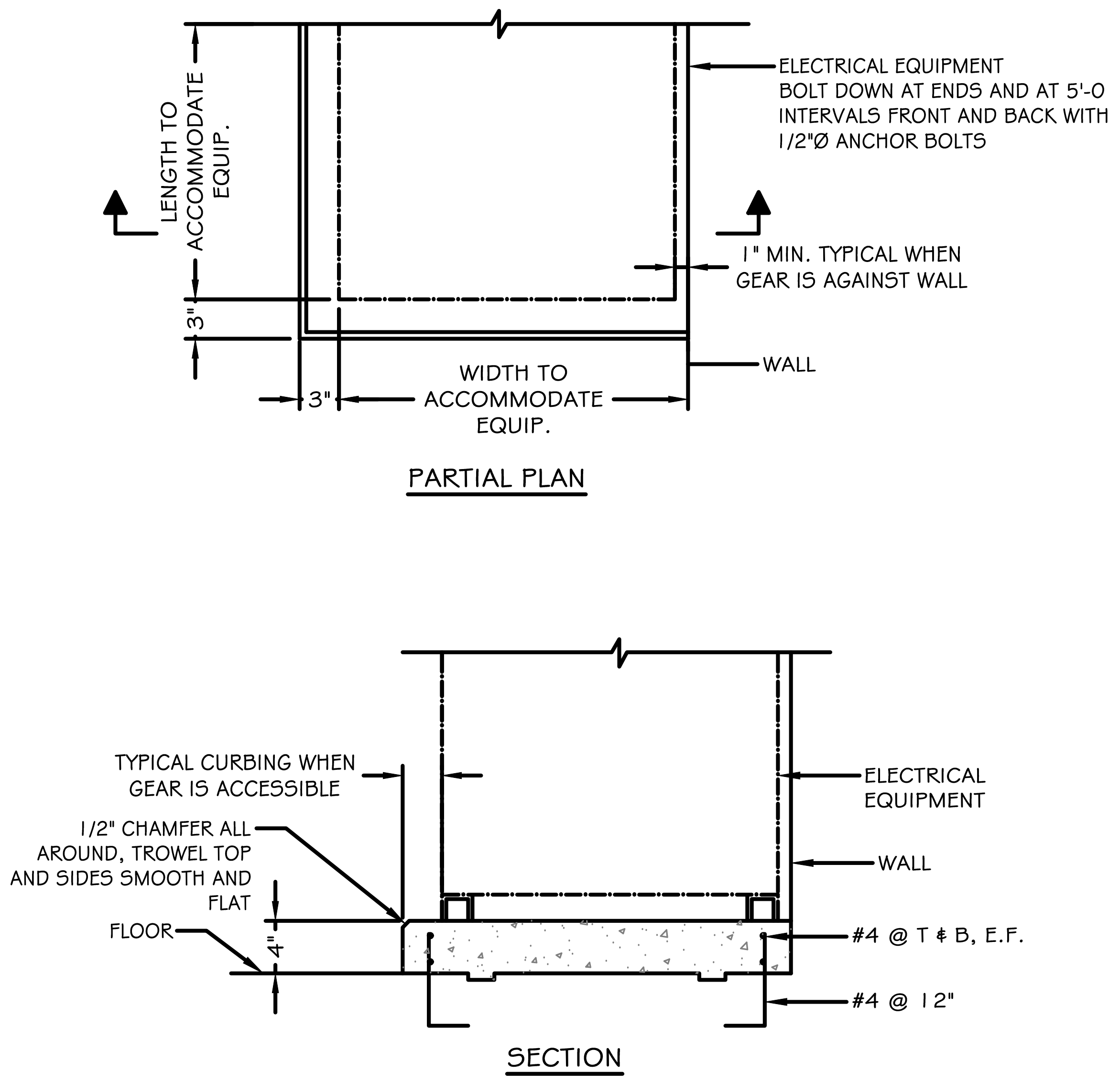


THIS TRANSITION SHALL BE USED FOR ALL DUCT BANK TERMINATIONS & WHEREVER PVC DUCT 1 1/4" & LARGER IS USED

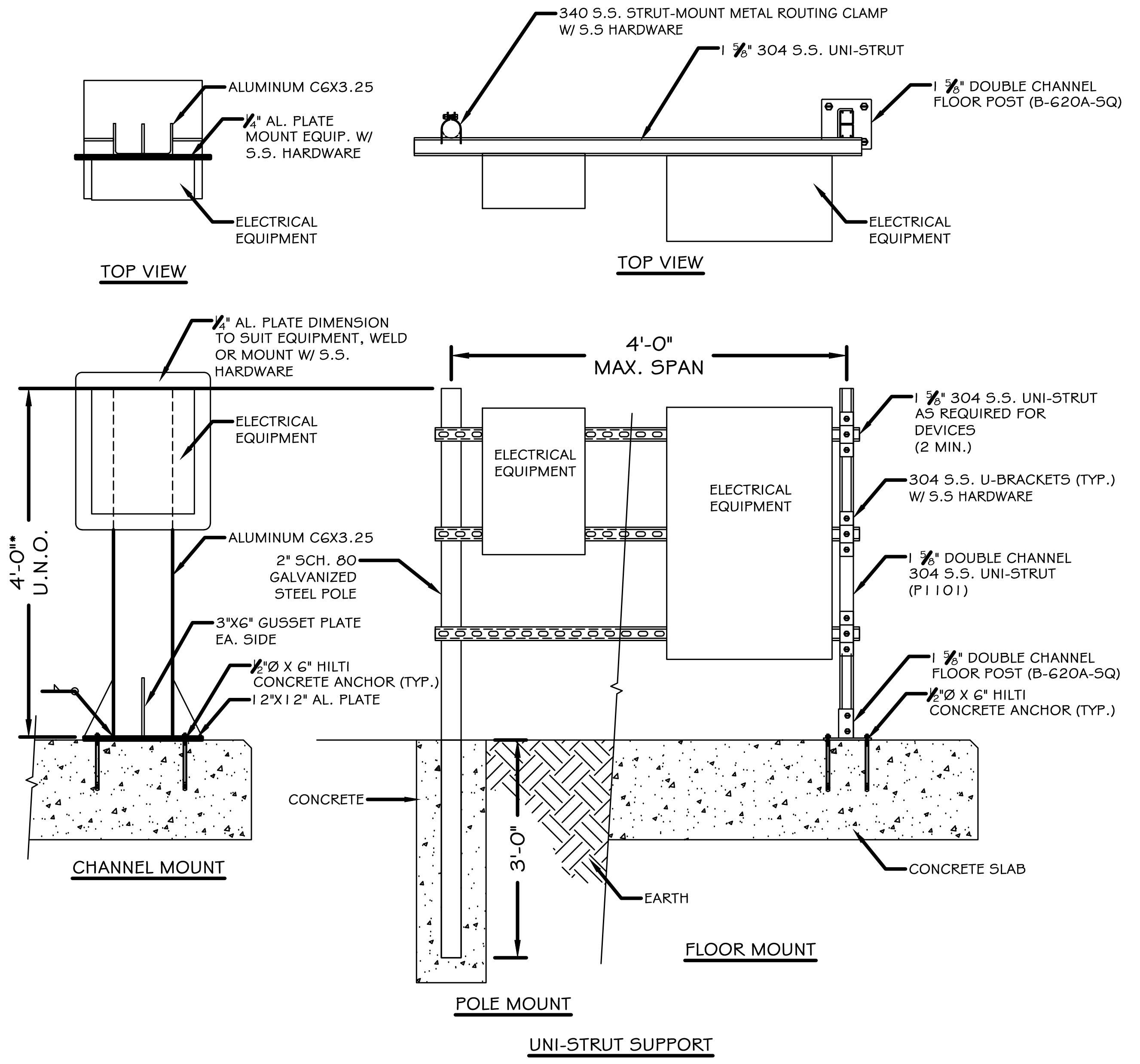
1 TYPICAL DUCTBANK TO SWITCH GEAR TRANSITION
E-004 SCALE: NOT TO SCALE


BUSHING WITH PENNY
CONCRETE PAD
3"
FLOOR
CONDUIT
REINFORCING (SEE EQUIPMENT PAD DETAIL)
USED WHEN STUB UP IS AT PAD LEVEL
FINISHED FLOOR
BRASS PLUG
FLUSH
COUPLING
CONDUIT
USED WHEN CONDUIT STUB IS AT FLOOR LEVEL

2 TYPICAL STUB-UP DETAILS
E-004 SCALE: NOT TO SCALE

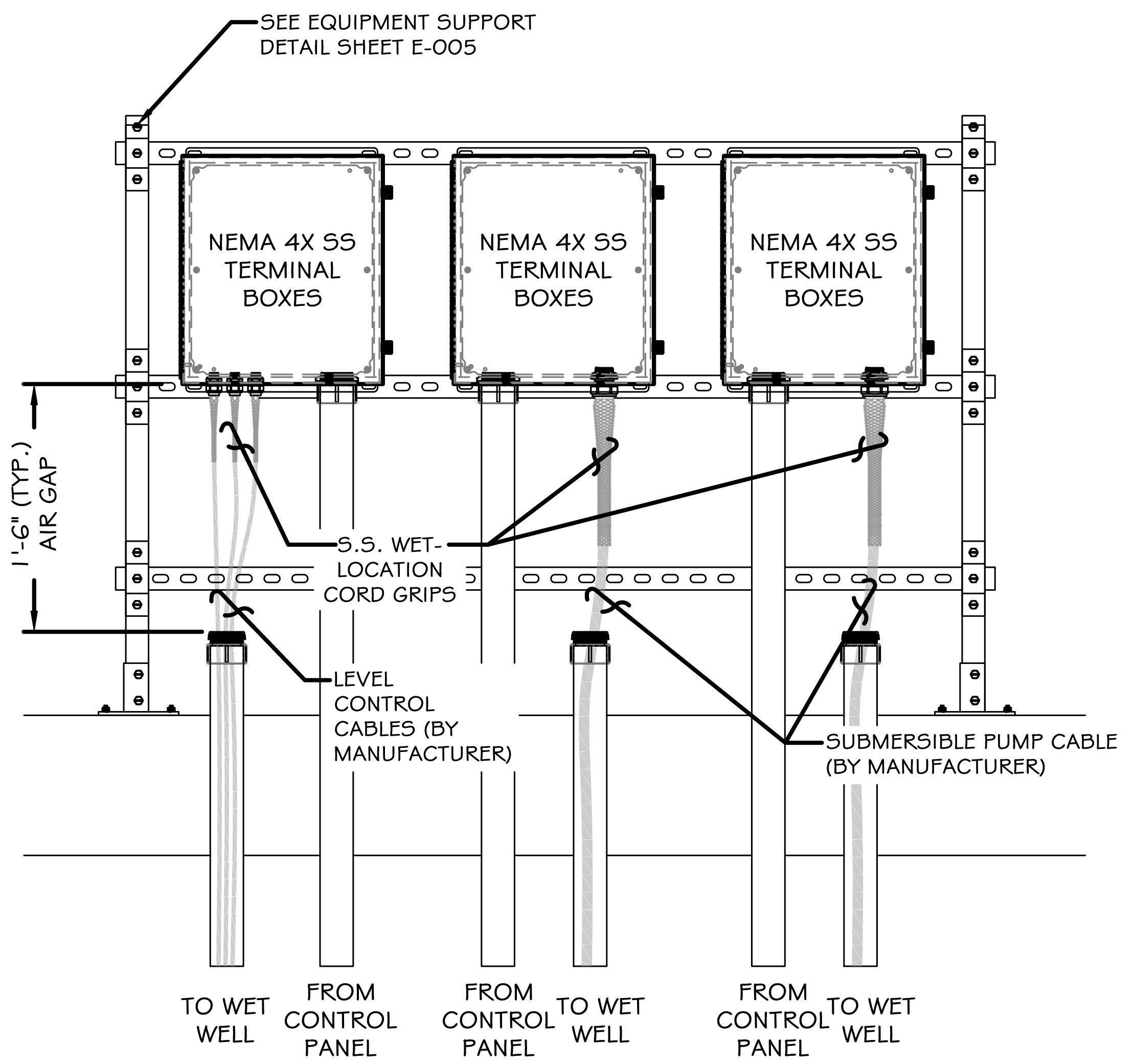

LENGTH TO ACCOMMODATE EQUIP.
ELECTRICAL EQUIPMENT BOLT DOWN AT ENDS AND AT 5'-0 INTERVALS FRONT AND BACK WITH 1/2"Ø ANCHOR BOLTS
1" MIN. TYPICAL WHEN GEAR IS AGAINST WALL
3"
3"
WIDTH TO ACCOMMODATE EQUIP.
WALL
PARTIAL PLAN
TYPICAL CURBING WHEN GEAR IS ACCESSIBLE
1/2" CHAMFER ALL AROUND, TROWEL TOP AND SIDES SMOOTH AND FLAT
FLOOR
4"
ELECTRICAL EQUIPMENT
WALL
#4 @ T & B, E.F.
#4 @ 12"
SECTION

3 ELECTRICAL EQUIPMENT PAD
E-004 SCALE: NOT TO SCALE


ALUMINUM C6X3.25
1/4" AL. PLATE MOUNT EQUIP. W/ S.S. HARDWARE
ELECTRICAL EQUIPMENT
TOP VIEW
340 S.S. STRUT-MOUNT METAL ROUTING CLAMP W/ S.S HARDWARE
1 5/8" 304 S.S. UNI-STRUT
1 5/8" DOUBLE CHANNEL FLOOR POST (B-620A-SQ)
ELECTRICAL EQUIPMENT
TOP VIEW
1/4" AL. PLATE DIMENSION TO SUIT EQUIPMENT, WELD OR MOUNT W/ S.S. HARDWARE
ELECTRICAL EQUIPMENT
4'-0"* U.N.O.
ALUMINUM C6X3.25
3"X6" GUSSET PLATE EA. SIDE
1/2"Ø X 6" HILTI CONCRETE ANCHOR (TYP.)
12"X12" AL. PLATE
CHANNEL MOUNT
4'-0" MAX. SPAN
2" SCH. 80 GALVANIZED STEEL POLE
ELECTRICAL EQUIPMENT
ELECTRICAL EQUIPMENT
1 5/8" 304 S.S. UNI-STRUT AS REQUIRED FOR DEVICES (2 MIN.)
304 S.S. U-BRACKETS (TYP.) W/ S.S HARDWARE
1 5/8" DOUBLE CHANNEL 304 S.S. UNI-STRUT (P1101)
1 5/8" DOUBLE CHANNEL FLOOR POST (B-620A-SQ)
1/2"Ø X 6" HILTI CONCRETE ANCHOR (TYP.)
CONCRETE
3'-0"
EARTH
CONCRETE SLAB
POLE MOUNT
FLOOR MOUNT
UNI-STRUT SUPPORT

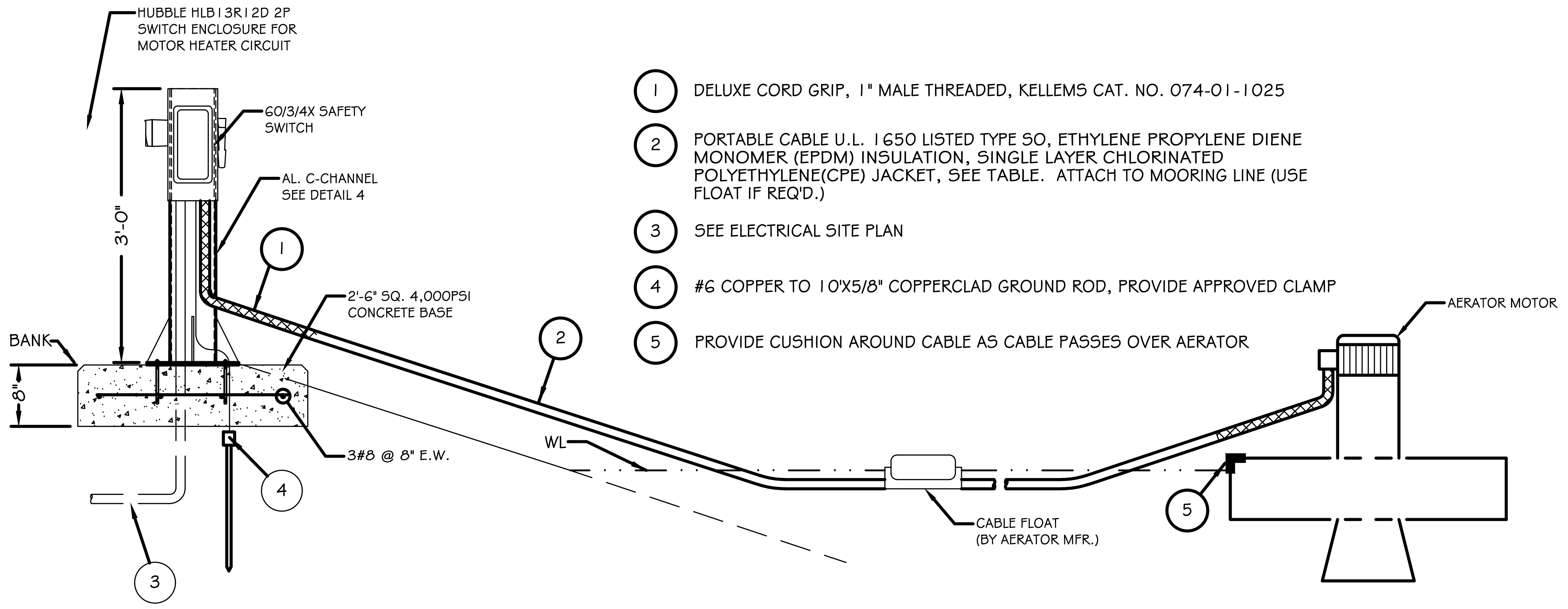
NOTES:
1) IF EQUIPMENT RACK EXCEEDS MAXIMUM SPAN PROVIDE ADDITIONAL SUPPORT MEMBERS.
2) USE POLE MOUNT SUPPORTS IN CONCRETE SIDEWALKS/DRIVES. IF REQUIRED, THICKEN SLABS UNDER FLOOR POST SUPPORT TO MINIMUM 12".
3) *MAXIMUM SUPPORT HEIGHT IS 5'-0".
4) COAT ALUMINUM IN CONTACT W/ CONCRETE WITH AN ASPHALT OR BITUMINOUS COATING.

4 EQUIPMENT SUPPORT DETAIL
E-004 SCALE: NOT TO SCALE


SEE EQUIPMENT SUPPORT DETAIL SHEET E-005
NEMA 4X SS TERMINAL BOXES
NEMA 4X SS TERMINAL BOXES
NEMA 4X SS TERMINAL BOXES
1'-6" (TYP.) AIR GAP
S.S. WET-LOCATION CORD GRIPS
LEVEL CONTROL CABLES (BY MANUFACTURER)
SUBMERSIBLE PUMP CABLE (BY MANUFACTURER)
TO WET WELL
FROM CONTROL PANEL
FROM CONTROL PANEL
TO WET WELL
FROM CONTROL PANEL
TO WET WELL

NOTES:
1) DIAGRAM TYPICAL FOR DUPLEX PUMP STATIONS. SUPPLY ADDITIONAL TERMINAL BOXES AS REQUIRED FOR THE NUMBER OF SUBMERSIBLE PUMPS SUPPLIED.
2) INSTALL INSULATING BUSHINGS AND DUCT SEAL IN CONDUITS ENTERING WET WELL.
3) SUPPORT CABLES IN WETWELL WITH STAINLESS STEEL CORD GRIPS HUNG FROM STAINLESS STEEL CABLE HOLDER.
4) TERMINAL BOXES SHALL BE STAINLESS STEEL HINGE FRONT, SIZED PER NEC REQUIREMENTS.
5) PROVIDE BURNDY / NSI POLARIS IN-LINE SPLICE KITS AS REQUIRED.
6) SEE SINGLE LINE DIAGRAM FOR CABLE & CONDUIT SIZING.

5 PUMP CABLE INSTALLATION DETAIL
E-004 SCALE: NOT TO SCALE


HUBBLE HLB13R12D 2P SWITCH ENCLOSURE FOR MOTOR HEATER CIRCUIT
60/3/4X SAFETY SWITCH
AL. C-CHANNEL SEE DETAIL 4
3'-0"
1
2'-6" SQ. 4,000PSI CONCRETE BASE
BANK
8"
2
3#8 @ 8" E.W.
4
3
WL
CABLE FLOAT (BY AERATOR MFR.)
5
AERATOR MOTOR

① DELUXE CORD GRIP, 1" MALE THREADED, KELLEMS CAT. NO. 074-01-1025

② PORTABLE CABLE U.L. 1650 LISTED TYPE SO, ETHYLENE PROPYLENE DIENE MONOMER (EPDM) INSULATION, SINGLE LAYER CHLORINATED POLYETHYLENE(CPE) JACKET, SEE TABLE. ATTACH TO MOORING LINE (USE FLOAT IF REQ'D.)

③ SEE ELECTRICAL SITE PLAN

④ #6 COPPER TO 10'X5/8" COPPERCLAD GROUND ROD, PROVIDE APPROVED CLAMP

⑤ PROVIDE CUSHION AROUND CABLE AS CABLE PASSES OVER AERATOR

NOTE:
1) LEAVE SUFFICIENT SLACK FOR VERTICAL & HORIZONTAL MOVEMENT OF AERATOR TO PREVENT PUTTING ANY TENSION ON CABLE.
2) CABLE SCHEDULE FOR REFERENCE, CABLE TO BE PROVIDED BY MANUFACTURER, SIZED AS SHOWN ON THE CABLE & CONDUIT SCHEDULE FOR VOLTAGE DROP WITH CONDUCTORS TO POWER 120V MOTOR HEATER & MOTOR TEMPERATURE PROTECTION CKT.

PORTABLE CABLE SCHEDULE

AWG	CONDUCTOR SIZE & QTY
8	3#8, 4#14(C), 1#10 (G)

6 SURFACE AERATOR CABLE DETAIL
E-004 SCALE: NOT TO SCALE

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E-004

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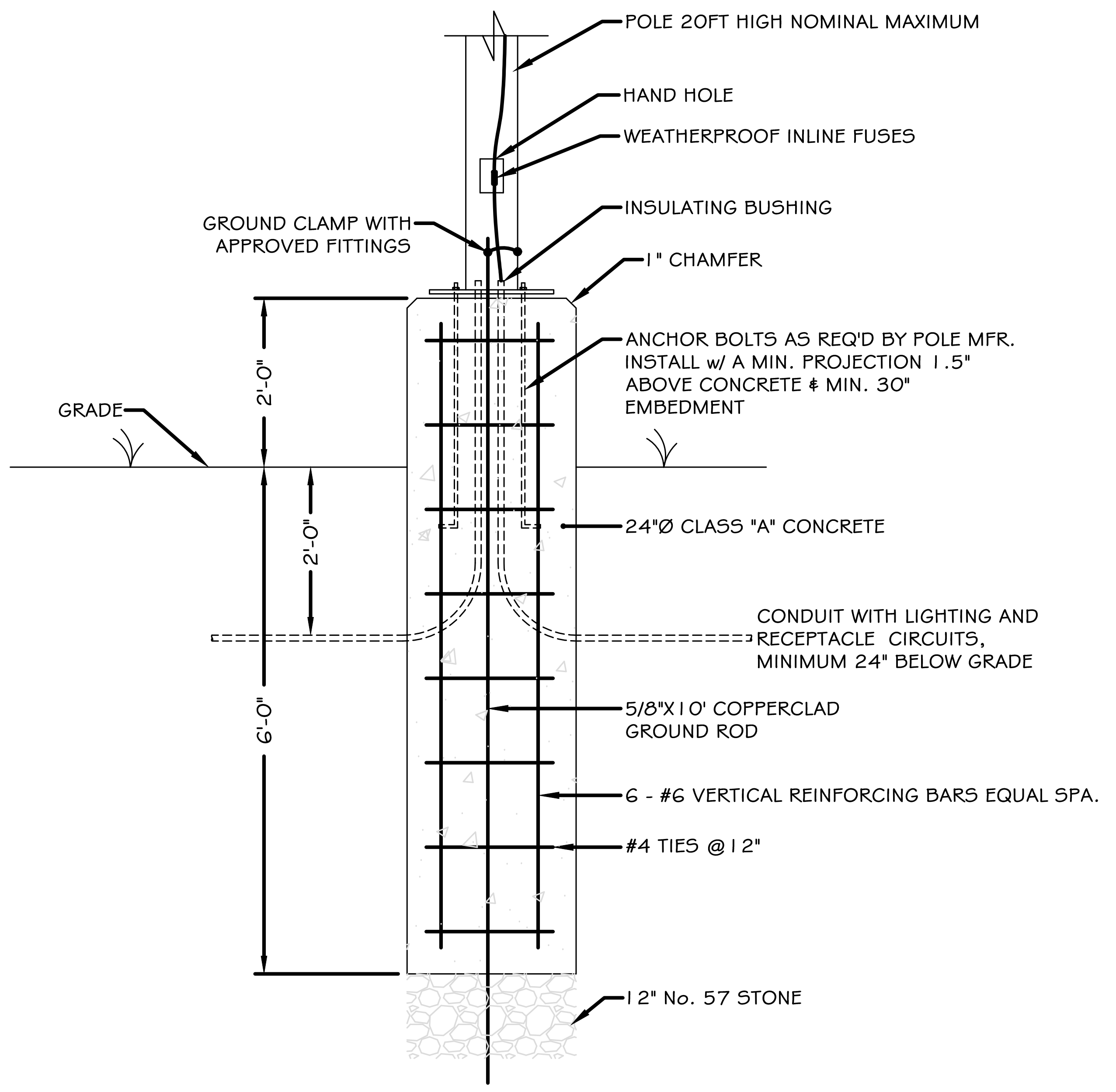
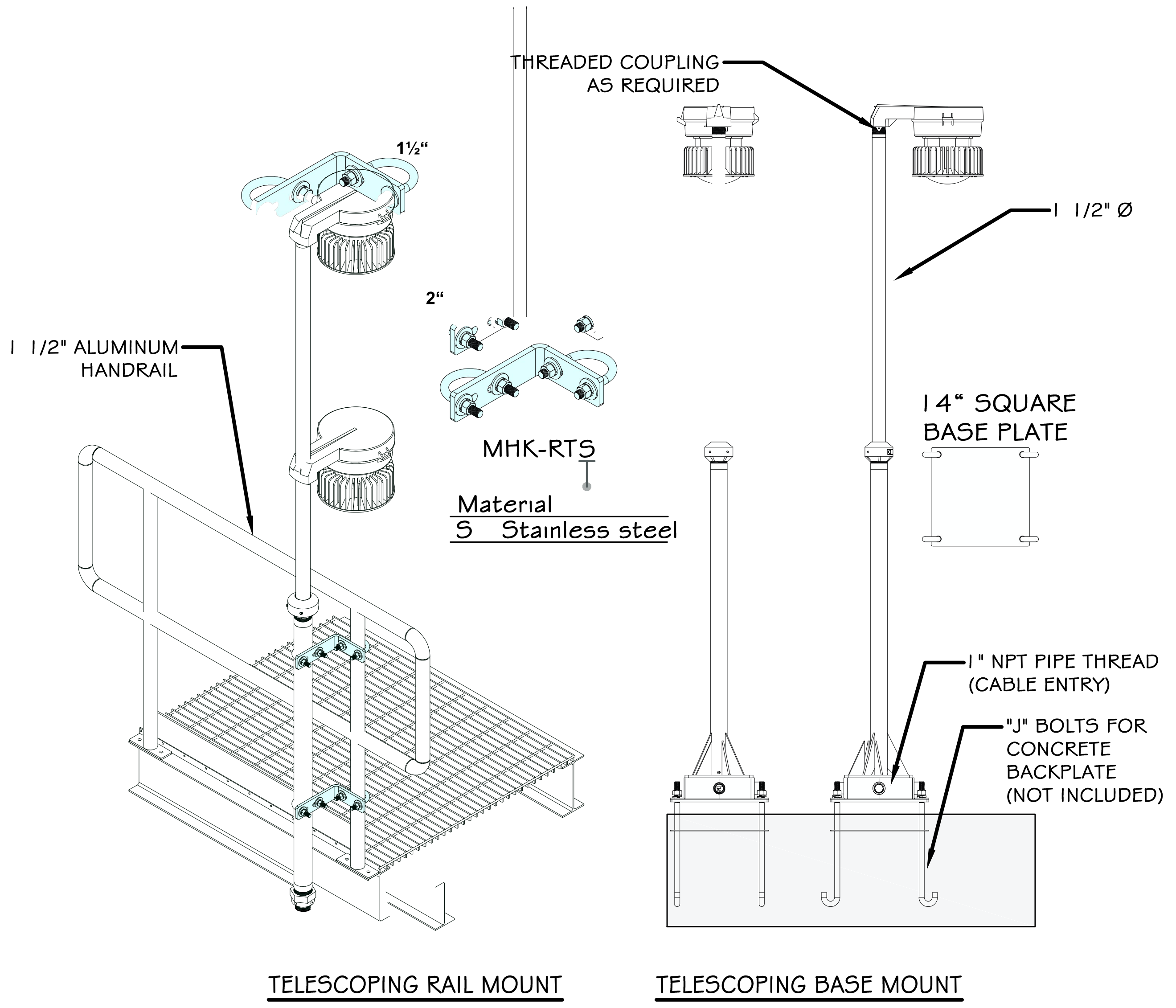


POLE 20FT HIGH NOMINAL MAXIMUM
HAND HOLE
WEATHERPROOF INLINE FUSES
INSULATING BUSHING
GROUND CLAMP WITH APPROVED FITTINGS
1" CHAMFER
ANCHOR BOLTS AS REQ'D BY POLE MFR. INSTALL w/ A MIN. PROJECTION 1.5" ABOVE CONCRETE & MIN. 30" EMBEDMENT
GRADE
2'-0"
2'-0"
6'-0"
24"Ø CLASS "A" CONCRETE
CONDUIT WITH LIGHTING AND RECEPTACLE CIRCUITS, MINIMUM 24" BELOW GRADE
5/8"X10' COPPERCLAD GROUND ROD
6 - #6 VERTICAL REINFORCING BARS EQUAL SPA.
#4 TIES @ 12"
12" No. 57 STONE

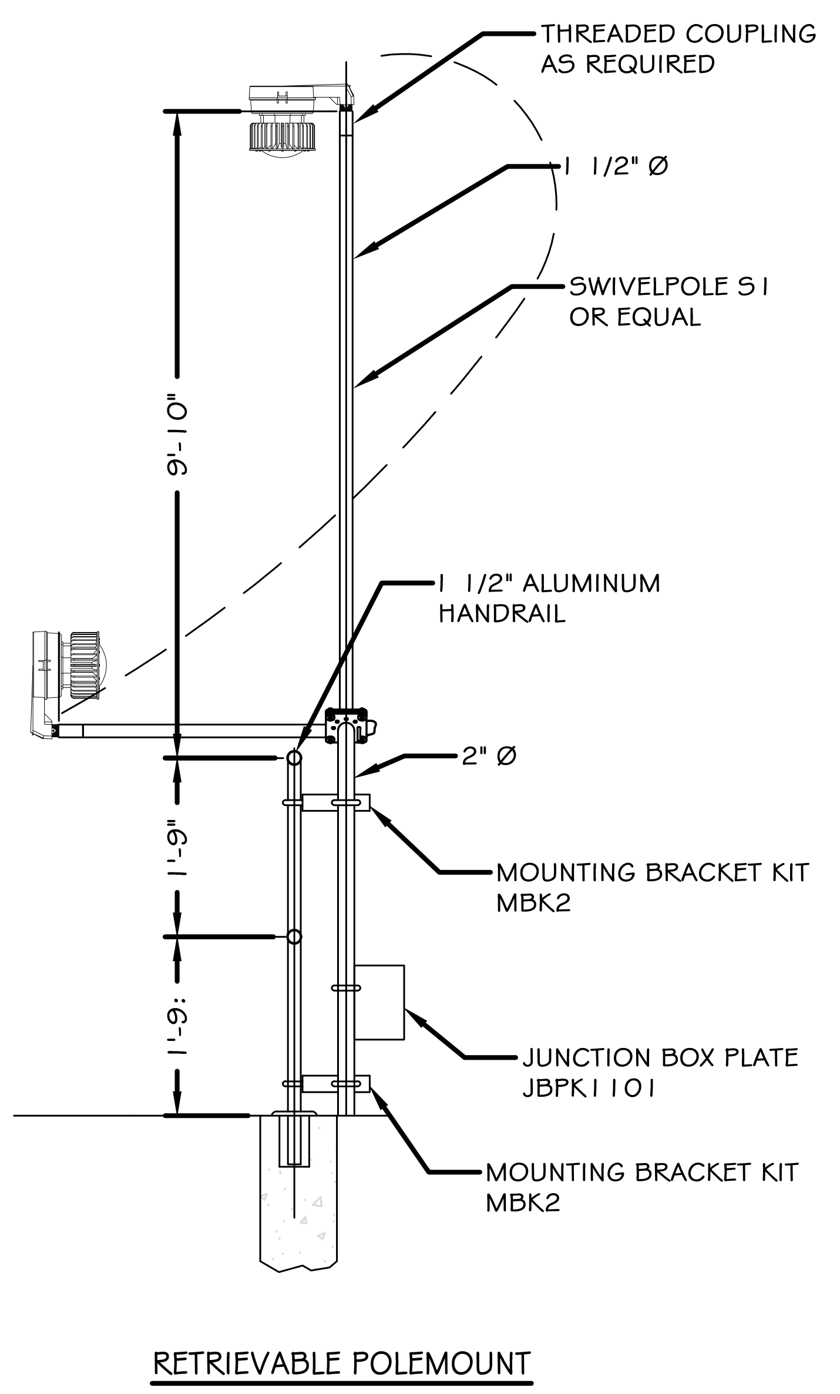
1 TYPICAL LIGHT POLE BASE

E-005 SCALE: NOT TO SCALE



2 SAFETY LIGHT POLE DETAIL (STANDARD)

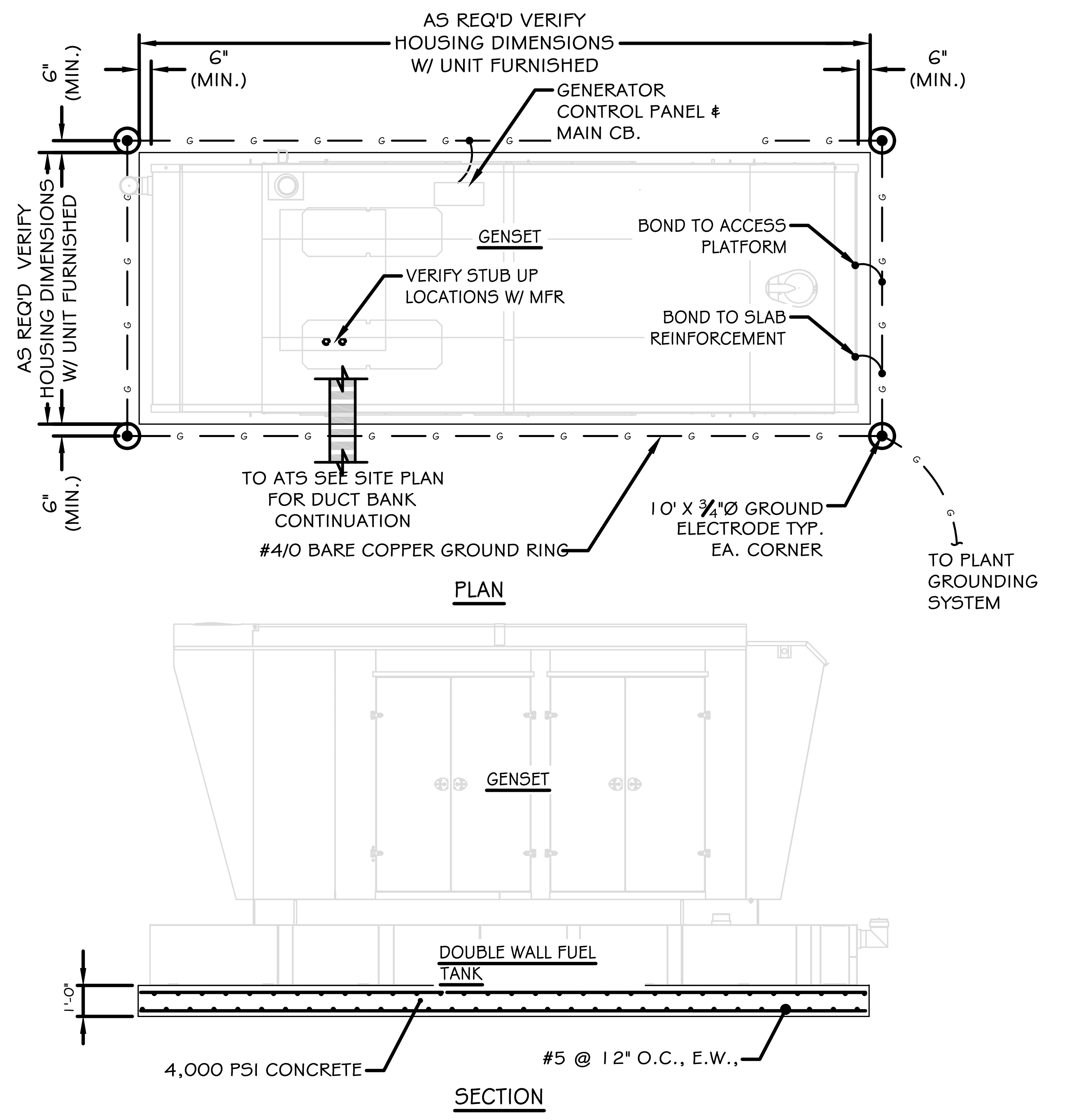
E-005 SCALE: NOT TO SCALE



THREADED COUPLING AS REQUIRED
1 1/2" Ø
SWIVELPOLE 51 OR EQUAL
9'-10"
1 1/2" ALUMINUM HANDRAIL
2" Ø
1'-9"
1'-9"
MOUNTING BRACKET KIT MBK2
JUNCTION BOX PLATE JBPK1101
MOUNTING BRACKET KIT MBK2
RETRIEVABLE POLEMOUNT

3 SAFETY LIGHT POLE DETAIL (ALTERNATE)

E-005 SCALE: NOT TO SCALE

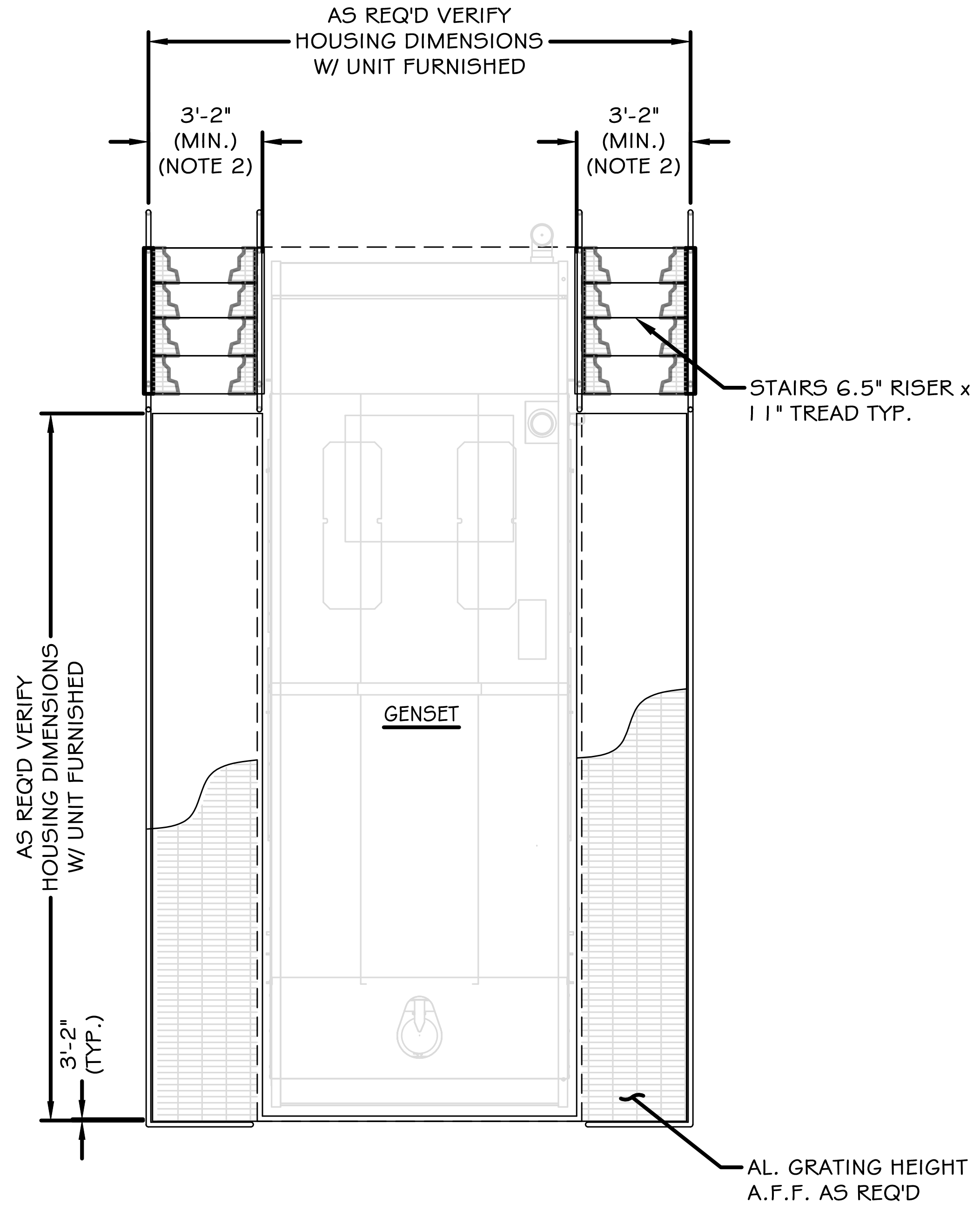


AS REQ'D VERIFY HOUSING DIMENSIONS W/ UNIT FURNISHED
6" (MIN.)
6" (MIN.)
6" (MIN.)
6" (MIN.)
GENERATOR CONTROL PANEL & MAIN CB.
GENSET
BOND TO ACCESS PLATFORM
VERIFY STUB UP LOCATIONS W/ MFR
BOND TO SLAB REINFORCEMENT
AS REQ'D VERIFY HOUSING DIMENSIONS W/ UNIT FURNISHED
TO ATS SEE SITE PLAN FOR DUCT BANK CONTINUATION
10' X ¾"Ø GROUND ELECTRODE TYP. EA. CORNER
#4/0 BARE COPPER GROUND RING
TO PLANT GROUNDING SYSTEM
PLAN
GENSET
DOUBLE WALL FUEL TANK
1'-0"
4,000 PSI CONCRETE
#5 @ 12" O.C., E.W.
SECTION

NOTES:
1) ALL GROUND CONNECTIONS SHALL BE MADE WITH EXOTHERMIC WELD CONNECTIONS.

4 DIESEL ENGINE GENERATOR DETAIL

E-005 SCALE: NOT TO SCALE



AS REQ'D VERIFY HOUSING DIMENSIONS W/ UNIT FURNISHED
3'-2" (MIN.) (NOTE 2)
3'-2" (MIN.) (NOTE 2)
STAIRS 6.5" RISER x 11" TREAD TYP.
AS REQ'D VERIFY HOUSING DIMENSIONS W/ UNIT FURNISHED
GENSET
3'-2" (TYP.)
AL. GRATING HEIGHT A.F.F. AS REQ'D

NOTES:
1) GENERATOR ACCESS PLATFORM PROVIDED & DESIGNED BY GENSET MANUFACTURER, TO MEET LATEST OSHA STANDARDS 1910.25 & 1910.29.
2) PLATFORM WIDTH TO ACCOMMODATE GENERATOR DOOR SWING AS REQ'D, 3'-2" MIN.

5 GENERATOR ACCESS PLATFORM DETAIL

E-005 SCALE: NOT TO SCALE

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E-005

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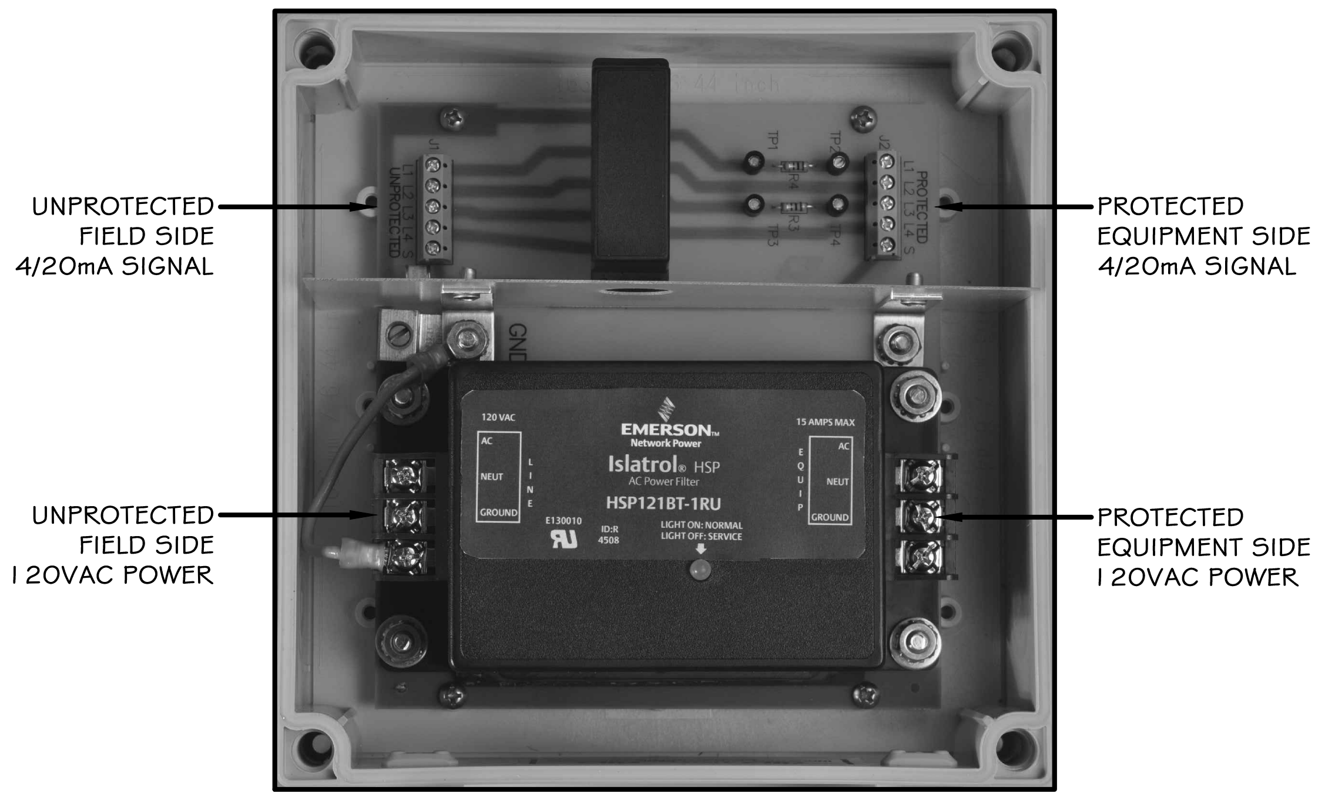


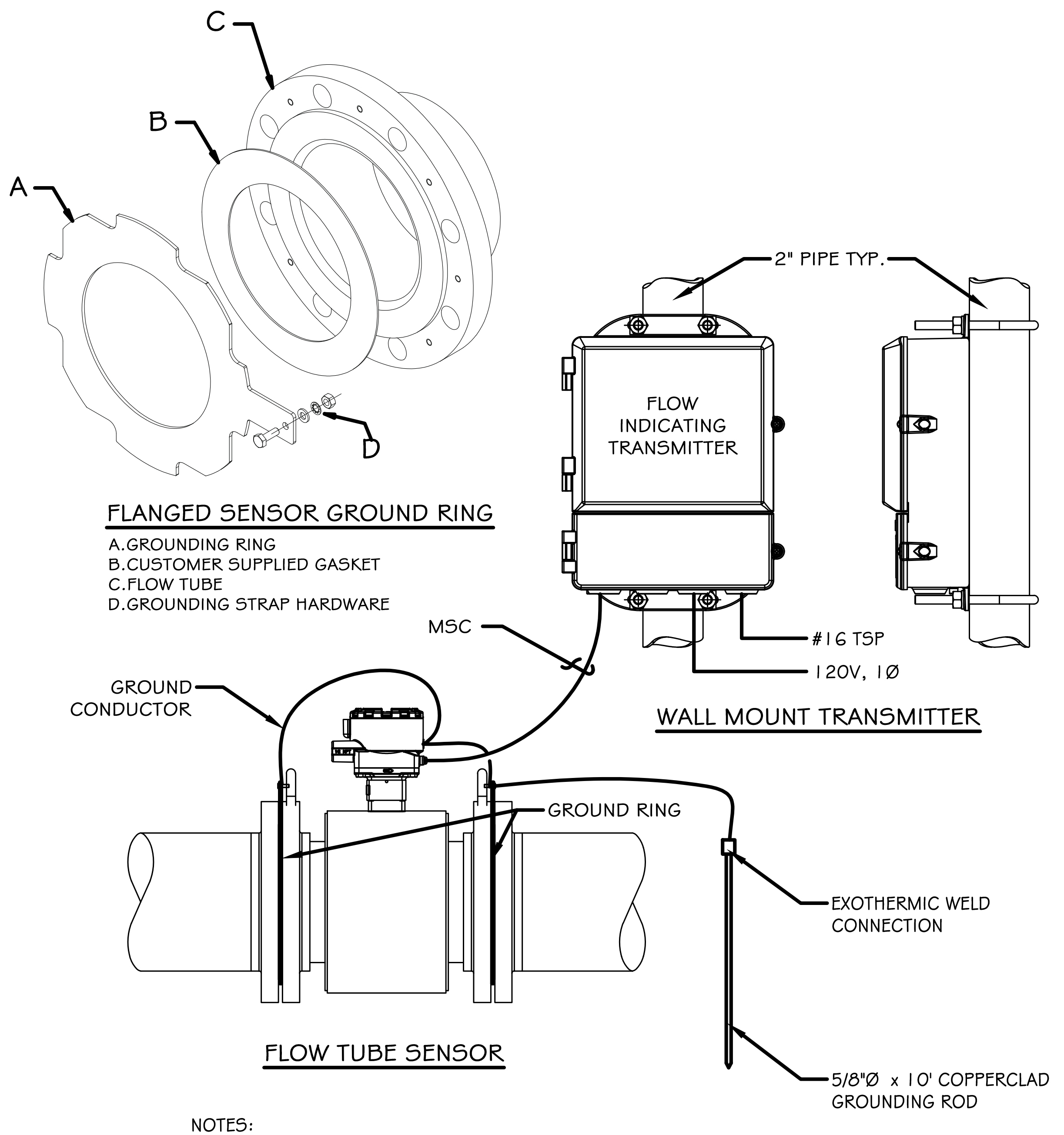
NOTES:

1) SURGE SUPPRESSOR EMERSON EDCO SLAC SERIES AC POWER/SIGNAL SURGE PROTECTOR MODEL NUMBER SLAC-22036 OR EQUAL. SUPPRESSOR SHALL BE PROVIDE IN A NEMA 4X STAINLESS STEEL ENCLOSURE.
2) PROVIDE SURGE SUPPRESSOR FOR ALL 4/20mA FIELD INSTRUMENTS; FLOW, LEVEL, DO/ORP TRANSMITTERS ETC.
3) CONNECT GROUND TERMINAL TO LOCAL GROUND USING #12 AWG WIRE MINIMUM.
4) KEEP 120 VAC POWER FEED SEPARATE FROM LOW VOLTAGE 4/20mA FEED.

1 INSTRUMENT SURGE SUPPRESSOR

E-006

SCALE: NOT TO SCALE



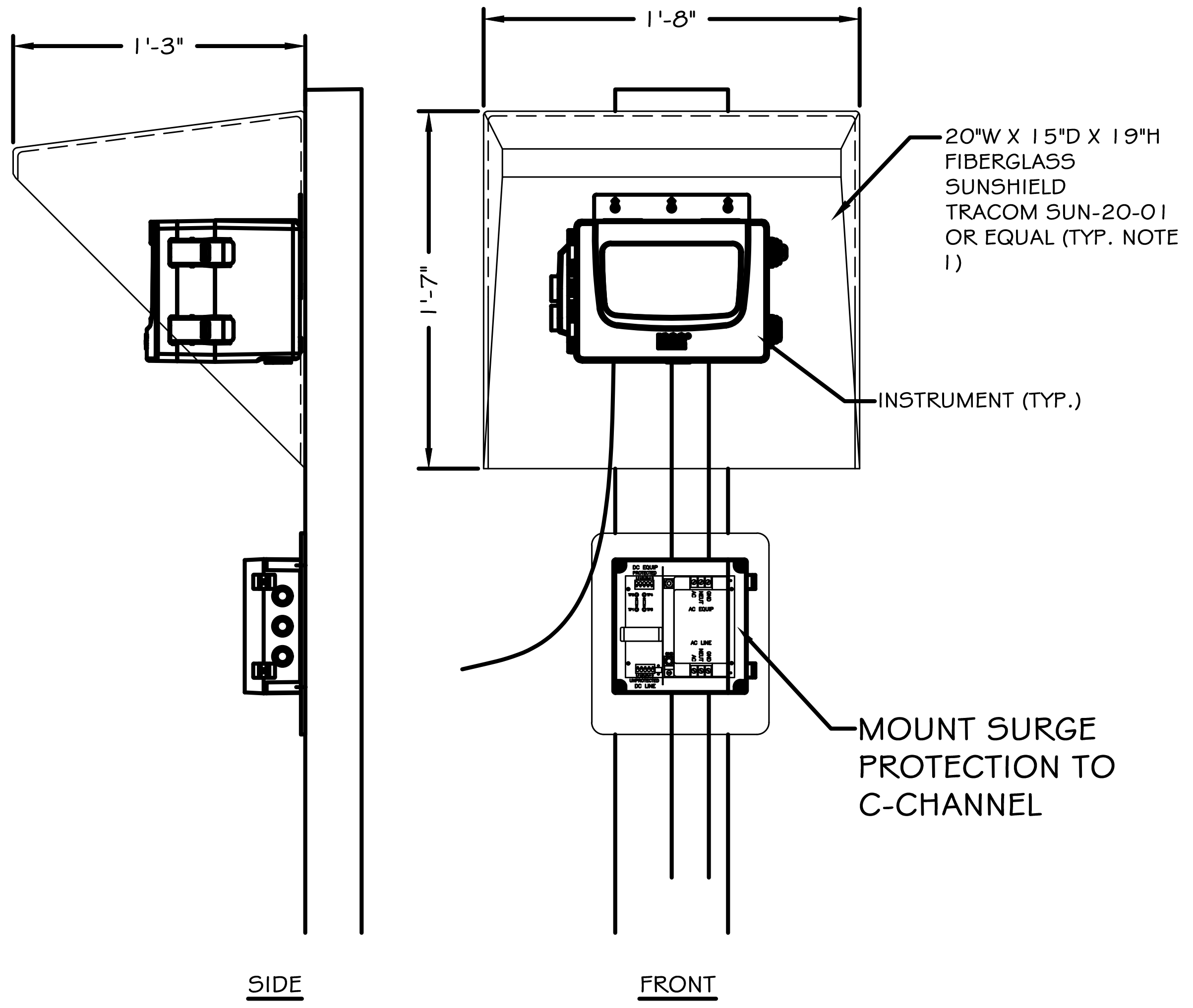
NOTES:

1) MOUNT ELECTRODE WITHIN 45 DEGREES FROM HORIZONTAL.
2) PROVIDE GROUNDING RINGS FOR ON NON-METALLIC OR LINED CONDUCTIVE PIPE BOTH ENDS.
3) METER INSTALLATION SHALL ALLOW FOR AT LEAST FIVE PIPE DIAMETERS UPSTREAM AND TWO PIPE DIAMETERS DOWN STREAM.

2 MAGNET FLOW METER INSTALLATION

E-006

SCALE: NOT TO SCALE



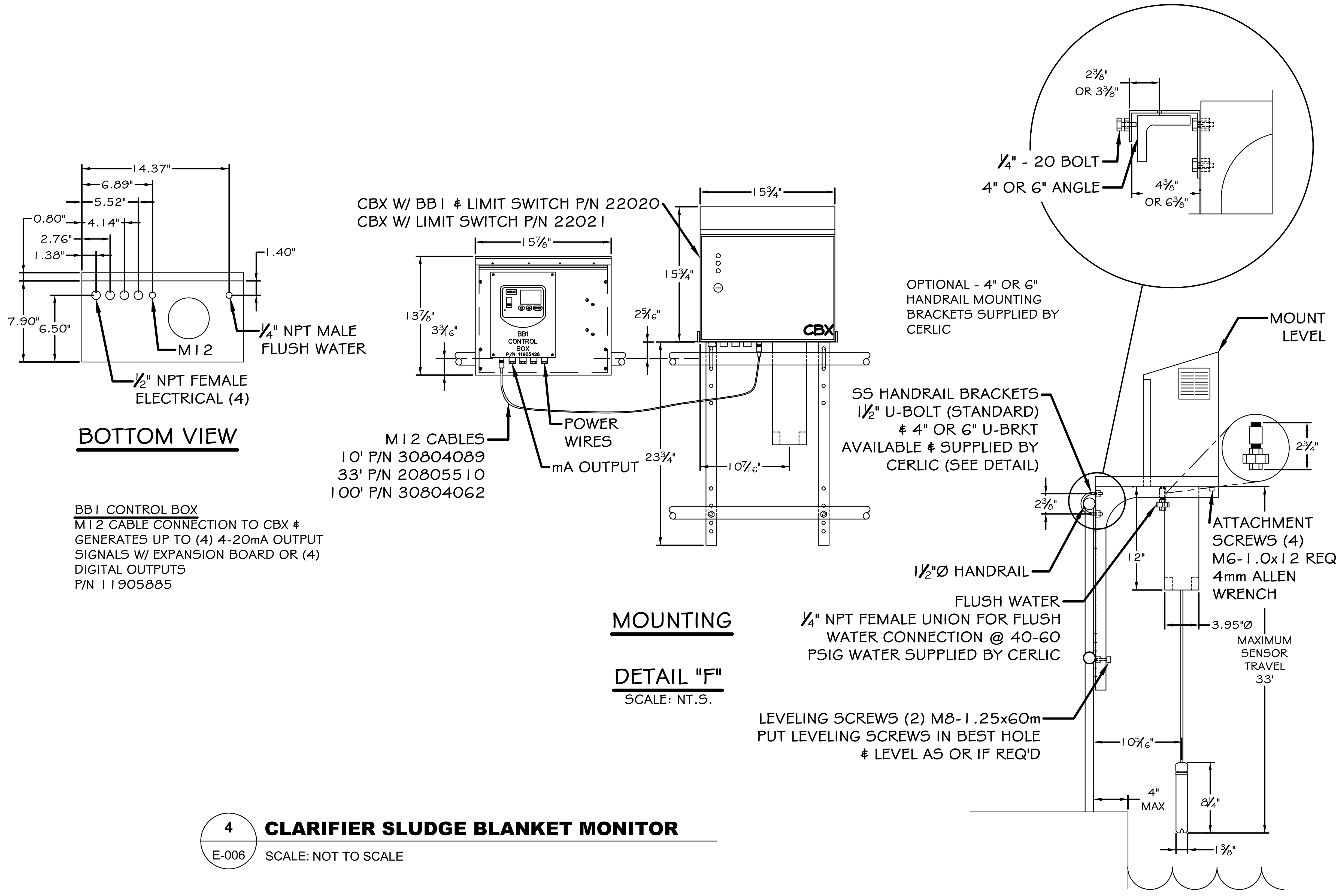
NOTES:

1) SUNSHIELD SHALL BE FIBERGLASS OR 10 GAUGE ALUMINUM, DIMENSIONS TO SUIT EQUIPMENT PROVIDED (ANALYZER, SURGE PROTECTION, POWER SUPPLY).
2) PROVIDE SUNSHIELD FOR ALL OUTDOOR INSTRUMENTS, FLOW, LEVEL, ORP/DO ANALYZERS ETC.
3) CONTRACTOR TO PROVIDE ALUMINUM CHANNEL AS SHOWN OR UNISTRUT SUPPORT STRUCTURE AS REQUIRED FOR INSTALLATION (SEE EQUIPMENT SUPPORT DETAIL THIS SHEET).
4) SUPPORTS MAY BE MOUNTED TO HANDRAILS OR PROVIDED WITH FLOOR PLATES FOR FREE STANDING INSTALLATIONS. WHERE PRACTICABLE DEVICES MAY BE WALL MOUNTED WITH STAINLESS STEEL HARDWARE.
5) WHERE MOUNTED TO HANDRAILS, PROVIDE OFFSET MOUNTS SO SUNSHIELD DOESN'T INTERFERE WITH WALKWAY PATH OF TRAVEL.
5) DETAILS TYPICAL FOR HACH INSTRUMENTS, INSTALL DEVICES PER MANUFACTURER'S REQUIREMENTS.

3 INSTRUMENT SUN SHIELD DETAIL

E-006

SCALE: NOT TO SCALE



BB1 CONTROL BOX
M12 CABLE CONNECTION TO CBX & GENERATES UP TO (4) 4-20mA OUTPUT SIGNALS W/ EXPANSION BOARD OR (4) DIGITAL OUTPUTS
P/N 11905885

4 CLARIFIER SLUDGE BLANKET MONITOR

E-006

SCALE: NOT TO SCALE

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

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Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

E-005 ELECTRICAL
DETAILS

E-006

BFIELD ENGINEERING, LLC
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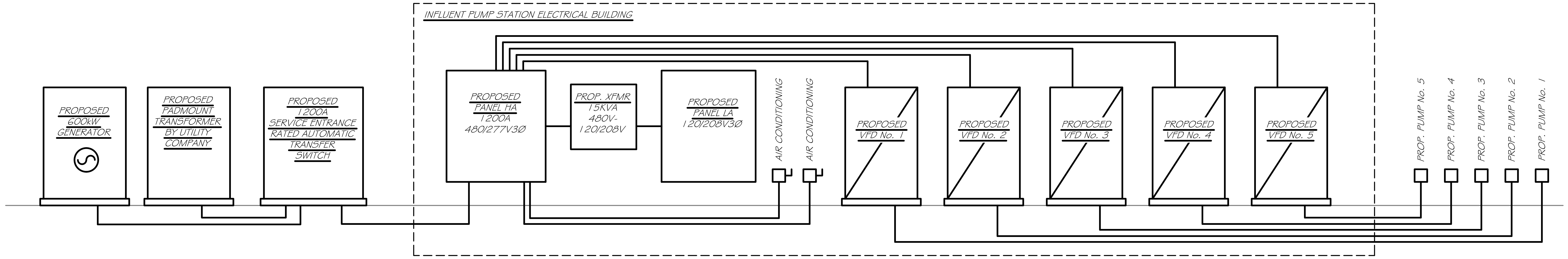
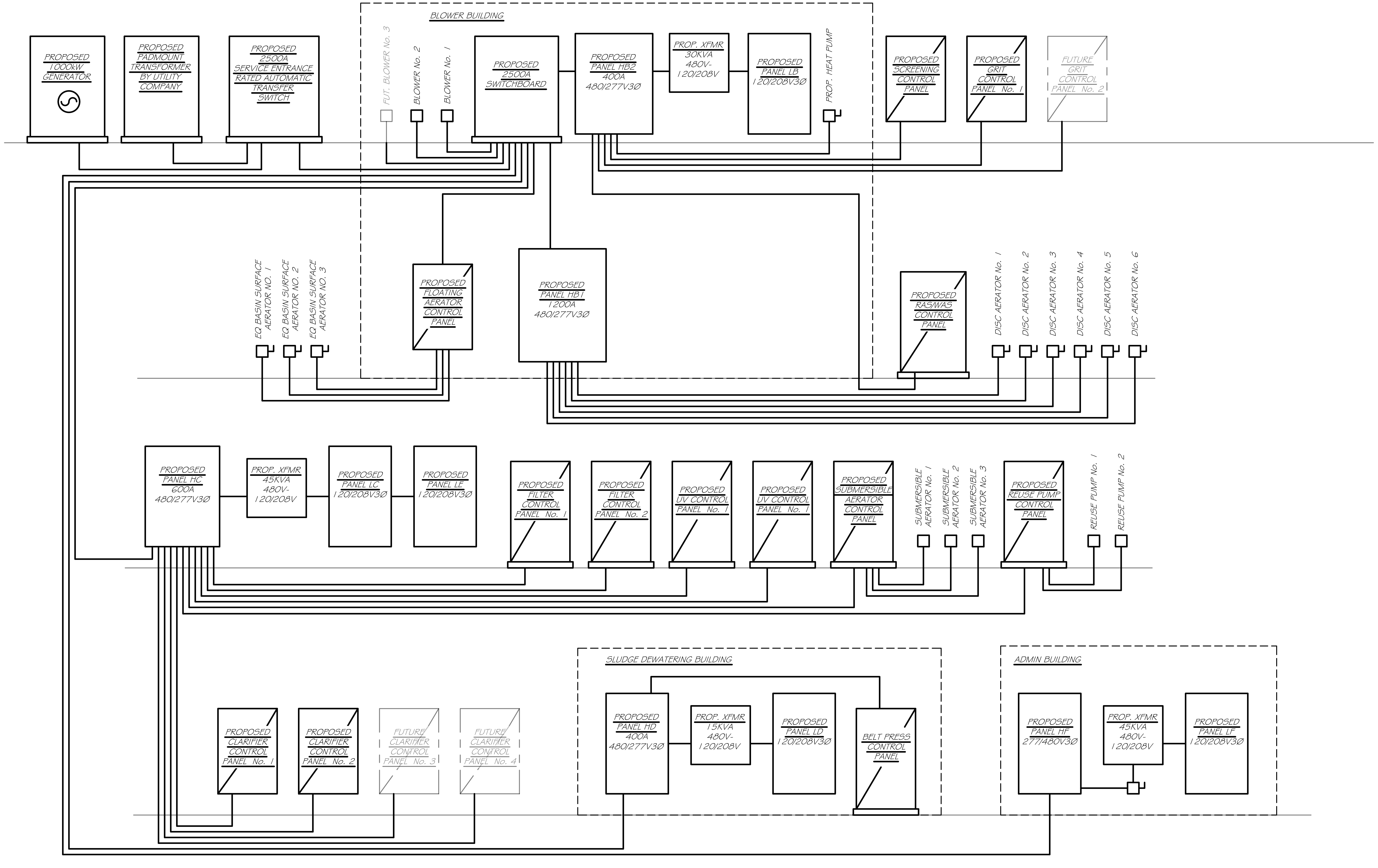

INFLUENT PUMP STATION ELECTRICAL BUILDING
PROPOSED 600kW GENERATOR
PROPOSED PADMOUNT TRANSFORMER BY UTILITY COMPANY
PROPOSED 1200A SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH
PROPOSED PANEL HA 1200A 480/277V3Ø
PROP. XFMR 15KVA 480V-120/208V
PROPOSED PANEL LA 120/208V3Ø
AIR CONDITIONING
AIR CONDITIONING
PROPOSED VFD No. 1
PROPOSED VFD No. 2
PROPOSED VFD No. 3
PROPOSED VFD No. 4
PROPOSED VFD No. 5
PROP. PUMP No. 5
PROP. PUMP No. 4
PROP. PUMP No. 3
PROP. PUMP No. 2
PROP. PUMP No. 1

INFLUENT PUMP STATION POWER RISER DIAGRAM


BLOWER BUILDING
PROPOSED 1000kW GENERATOR
PROPOSED PADMOUNT TRANSFORMER BY UTILITY COMPANY
PROPOSED 2500A SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH
FUT. BLOWER No. 3
BLOWER No. 2
BLOWER No. 1
PROPOSED 2500A SWITCHBOARD
PROPOSED PANEL HB2 400A 480/277V3Ø
PROP. XFMR 30KVA 480V-120/208V
PROPOSED PANEL LB 120/208V3Ø
PROP. HEAT PUMP
PROPOSED SCREENING CONTROL PANEL
PROPOSED GRIT CONTROL PANEL No. 1
FUTURE GRIT CONTROL PANEL No. 2
EQ BASIN SURFACE AERATOR NO. 1
EQ BASIN SURFACE AERATOR NO. 2
EQ BASIN SURFACE AERATOR NO. 3
PROPOSED FLOATING AERATOR CONTROL PANEL
PROPOSED PANEL HB1 1200A 480/277V3Ø
PROPOSED RAS/WAS CONTROL PANEL
DISC AERATOR No. 1
DISC AERATOR No. 2
DISC AERATOR No. 3
DISC AERATOR No. 4
DISC AERATOR No. 5
DISC AERATOR No. 6
PROPOSED PANEL HC 600A 480/277V3Ø
PROP. XFMR 45KVA 480V-120/208V
PROPOSED PANEL LC 120/208V3Ø
PROPOSED PANEL LE 120/208V3Ø
PROPOSED FILTER CONTROL PANEL No. 1
PROPOSED FILTER CONTROL PANEL No. 2
PROPOSED UV CONTROL PANEL No. 1
PROPOSED UV CONTROL PANEL No. 1
PROPOSED SUBMERSIBLE AERATOR CONTROL PANEL
SUBMERSIBLE AERATOR No. 1
SUBMERSIBLE AERATOR No. 2
SUBMERSIBLE AERATOR No. 3
PROPOSED REUSE PUMP CONTROL PANEL
REUSE PUMP No. 1
REUSE PUMP No. 2
PROPOSED CLARIFIER CONTROL PANEL No. 1
PROPOSED CLARIFIER CONTROL PANEL No. 2
FUTURE CLARIFIER CONTROL PANEL No. 3
FUTURE CLARIFIER CONTROL PANEL No. 4
SLUDGE DEWATERING BUILDING
PROPOSED PANEL HD 400A 480/277V3Ø
PROP. XFMR 15KVA 480V-120/208V
PROPOSED PANEL LD 120/208V3Ø
BELT PRESS CONTROL PANEL
ADMIN BUILDING
PROPOSED PANEL HF 277/480V3Ø
PROP. XFMR 45KVA 480V-120/208V
PROPOSED PANEL LF 120/208V3Ø

TREATMENT PLANT POWER RISER DIAGRAM

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

POWER RISER
DIAGRAMS

E-007

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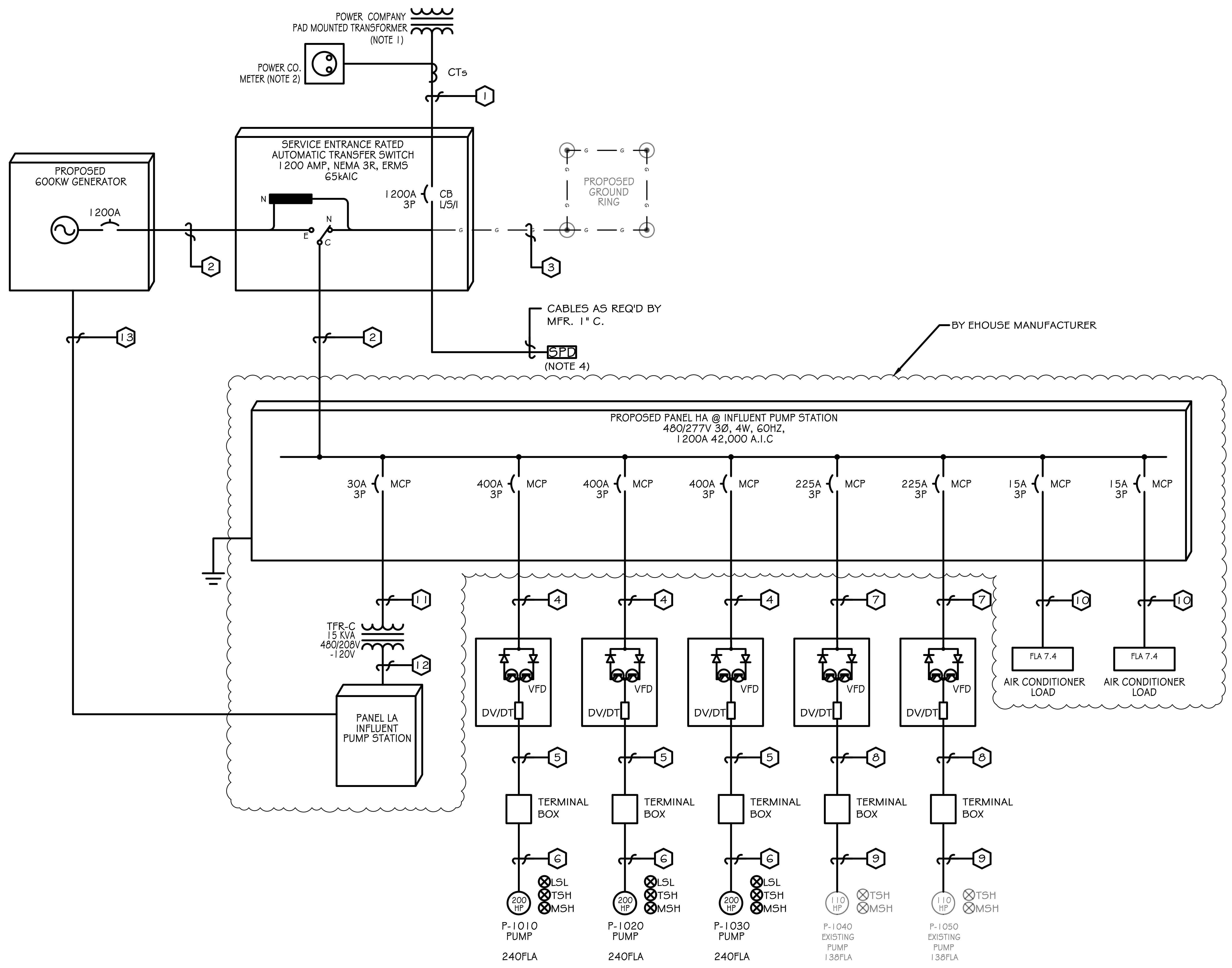

INFLUENT PUMP STATION SINGLE LINE DIAGRAM

CABLE & CONDUIT SCHEDULE	
1	4 SETS OF 4#350KCM - 3" C.
2	4 SETS OF 4#350KCM, 1#3/0(G) - 3" C.
3	1#3/0(G) - 1" C.
4	2 SETS OF 3#3/0, 1#3(G) - 2.5" C.
5	3#350KCM 1#1(G) VFD CABLE - 3" C.
6	MSC - 4" C.
7	3#4/0, 1#4(G) - 2.5" C.
8	3#3/0, 1#3(G) VFD CABLE - 2" C.
9	MSC - 2.5" C.
10	3#12, 1#12(G) - 3/4" C.
11	3#10, 1#10(G) - 1" C.
12	4#4, 1#10(G) - 1.25" C.
13	2#10, 2#12, 2#12(G) - 1.25" C.

NOTES:

1. UTILITY COMPANY PAD MOUNT TRANSFORMER 480/277V, 3PHASE, 4WIRE. CONTRACTOR SHALL COORDINATE THE LOCATION WITH THE LOCAL UTILITY COMPANY, COMMERCE, GA.
2. UTILITY COMPANY TO PROVIDE METER FOR INSTALLATION BY CONTRACTOR. INSTALL ON SERVICE POLE FOR OVERHEAD TRANSFORMER OR PROVIDE EQUIPMENT RACK FOR PAD MOUNT TRANSFORMERS.
3. PROVIDE GROUND RING, FOUR 5/8"Ø X 10'-0" COPPER CLAD GROUNDING ELECTRODES WHERE SHOWN ON DRAWINGS MIN. #2/0 BARE COPPER CONDUCTORS WITH CADWELD OR EQUIVALENT EXOTHERMIC CONNECTION.
4. INTERMATIC PANELGUARD OR EQUAL H20S13Y2DG1 SURGE PROTECTIVE DEVICE, 7-MODE, 277/480. NEMA 4X ENCLOSURE, UL 1449, TYPE 1 SURGE PROTECTION, SURGE CURRENT RATING 200KA.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL A SUBMERSIBLE PUMP STATION CONTROL PANEL IN A NEMA 1 ENCLOSURE, SEE SPECIFICATIONS FOR DETAILS.
6. COORDINATE PANEL HA CIRCUIT BREAKERS SIZES WITH VFD MANUFACTURER.
7. COORDINATE CONDUIT STUB UP LOCATIONS W/ EQUIPMENT MANUFACTURER SEE GENERAL NOTES 4,5 & 6 SHEET E-001.
8. REFER TO SHEET E-001 FOR GENERAL ELECTRICAL NOTES.
9. SEE SPECIFICATIONS FOR DETAILS REGARDING RACEWAYS & CONDUCTORS.

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CHARLES K. BUTTERFIELD

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

INFLUENT PUMP
STATION SINGLE LINE
DIAGRAM

E-008

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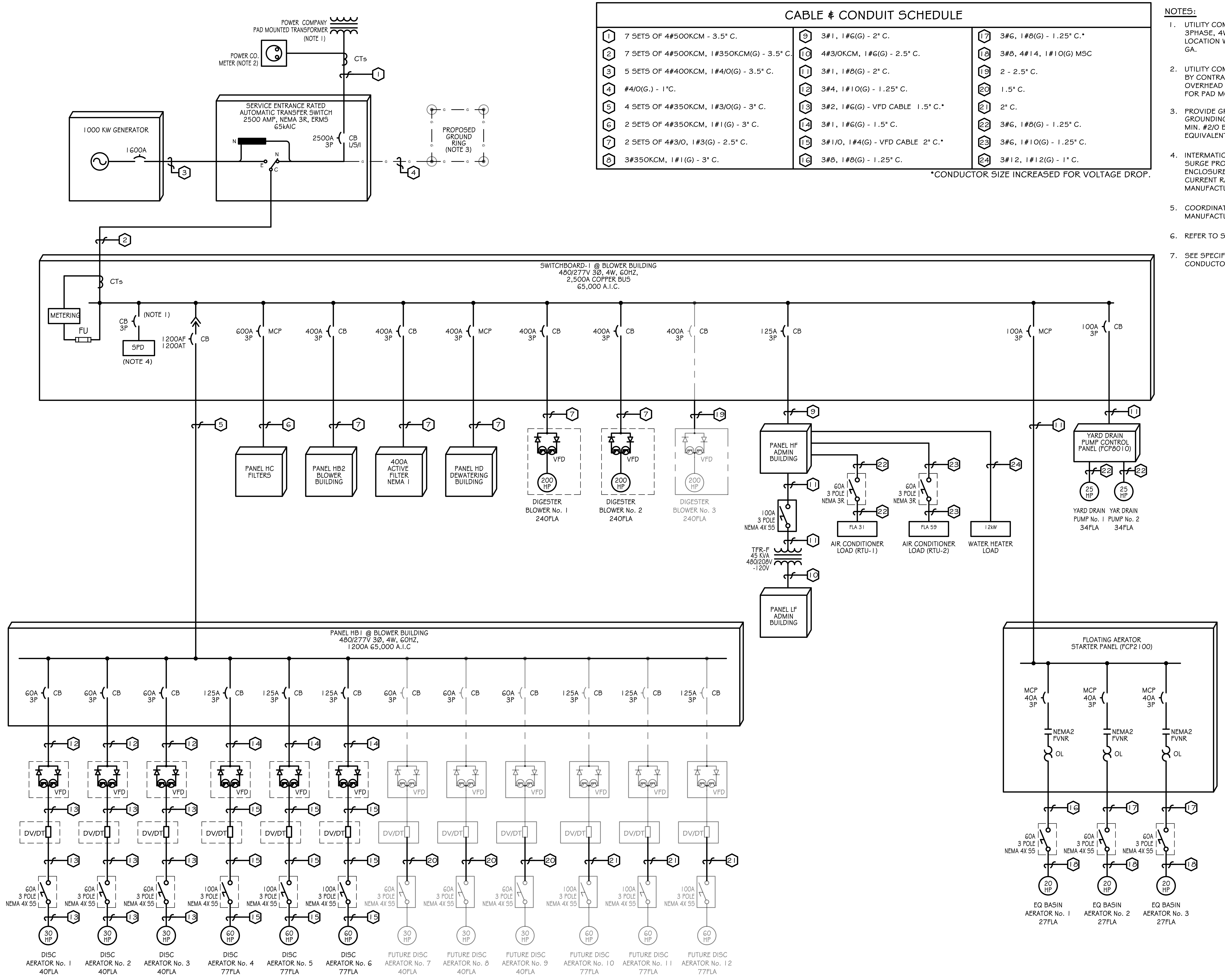
POWER COMPANY PAD MOUNTED TRANSFORMER (NOTE 1)
POWER CO. METER (NOTE 2)
CTs
1
1000 KW GENERATOR
1600A
3
SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH 2500 AMP, NEMA 3R, ERMS 65kAIC
N
E
C
2500A 3P
CB L/S/I
G
4
PROPOSED GROUND RING (NOTE 3)
2
SWITCHBOARD-1 @ BLOWER BUILDING 480/277V 3Ø, 4W, 60HZ, 2,500A COPPER BUS 65,000 A.I.C.
CTs
METERING
FU
CB 3P
(NOTE 1)
SPD
(NOTE 4)
1200AF 1200AT
CB
600A 3P MCP
400A 3P CB
400A 3P CB
400A 3P MCP
400A 3P CB
400A 3P CB
400A 3P CB
125A 3P CB
100A 3P MCP
100A 3P CB
5
6
7
7
7
7
7
19
9
11
11
PANEL HC FILTERS
PANEL HB2 BLOWER BUILDING
400A ACTIVE FILTER NEMA 1
PANEL HD DEWATERING BUILDING
VFD
200 HP
DIGESTER BLOWER No. 1 240FLA
DIGESTER BLOWER No. 2 240FLA
DIGESTER BLOWER No. 3 240FLA
PANEL HF ADMIN BUILDING
100A 3 POLE NEMA 4X SS
TFR-F 45 KVA 480/208V -120V
10
PANEL LF ADMIN BUILDING
60A 3 POLE NEMA 3R
22
23
24
FLA 31
FLA 59
12kW
AIR CONDITIONER LOAD (RTU-1)
AIR CONDITIONER LOAD (RTU-2)
WATER HEATER LOAD
YARD DRAIN PUMP CONTROL PANEL (FCP8010)
25 HP
YARD DRAIN PUMP No. 1 34FLA
YAR DRAIN PUMP No. 2 34FLA
PANEL HB1 @ BLOWER BUILDING 480/277V 3Ø, 4W, 60HZ, 1200A 65,000 A.I.C
60A 3P CB
125A 3P CB
12
13
14
15
20
21
DV/DT
60A 3 POLE NEMA 4X SS
100A 3 POLE NEMA 4X SS
30 HP
60 HP
DISC AERATOR No. 1 40FLA
DISC AERATOR No. 2 40FLA
DISC AERATOR No. 3 40FLA
DISC AERATOR No. 4 77FLA
DISC AERATOR No. 5 77FLA
DISC AERATOR No. 6 77FLA
FUTURE DISC AERATOR No. 7 40FLA
FUTURE DISC AERATOR No. 8 40FLA
FUTURE DISC AERATOR No. 9 40FLA
FUTURE DISC AERATOR No. 10 77FLA
FUTURE DISC AERATOR No. 11 77FLA
FUTURE DISC AERATOR No. 12 77FLA
FLOATING AERATOR STARTER PANEL (FCP2100)
MCP 40A 3P
NEMA2 FVNR
OL
16
17
18
60A 3 POLE NEMA 4X SS
20 HP
EQ BASIN AERATOR No. 1 27FLA
EQ BASIN AERATOR No. 2 27FLA
EQ BASIN AERATOR No. 3 27FLA

CABLE & CONDUIT SCHEDULE

1	7 SETS OF 4#500KCM - 3.5" C.	9	3#1, 1#6(G) - 2" C.	17	3#6, 1#8(G) - 1.25" C.*
2	7 SETS OF 4#500KCM, 1#350KCM(G) - 3.5" C.	10	4#3/0KCM, 1#6(G) - 2.5" C.	18	3#8, 4#14, 1#10(G) MSC
3	5 SETS OF 4#400KCM, 1#4/0(G) - 3.5" C.	11	3#1, 1#8(G) - 2" C.	19	2 - 2.5" C.
4	#4/0(G.) - 1"C.	12	3#4, 1#10(G) - 1.25" C.	20	1.5" C.
5	4 SETS OF 4#350KCM, 1#3/0(G) - 3" C.	13	3#2, 1#6(G) - VFD CABLE 1.5" C.*	21	2" C.
6	2 SETS OF 4#350KCM, 1#1(G) - 3" C.	14	3#1, 1#6(G) - 1.5" C.	22	3#6, 1#8(G) - 1.25" C.
7	2 SETS OF 4#3/0, 1#3(G) - 2.5" C.	15	3#1/0, 1#4(G) - VFD CABLE 2" C.*	23	3#6, 1#10(G) - 1.25" C.
8	3#350KCM, 1#1(G) - 3" C.	16	3#8, 1#8(G) - 1.25" C.	24	3#12, 1#12(G) - 1" C.

*CONDUCTOR SIZE INCREASED FOR VOLTAGE DROP.

NOTES:

1. UTILITY COMPANY PAD MOUNT TRANSFORMER 480/277V, 3PHASE, 4WIRE. CONTRACTOR SHALL COORDINATE THE LOCATION WITH THE LOCAL UTILITY COMPANY, COMMERCE, GA.
2. UTILITY COMPANY TO PROVIDE METER FOR INSTALLATION BY CONTRACTOR. INSTALL ON SERVICE POLE FOR OVERHEAD TRANSFORMER OR PROVIDE EQUIPMENT RACK FOR PAD MOUNT TRANSFORMERS.
3. PROVIDE GROUND RING, FOUR 5/8"Ø X 10'-0" COPPER CLAD GROUNDING ELECTRODES WHERE SHOWN ON DRAWINGS MIN. #2/0 BARE COPPER CONDUCTORS WITH CADWELD OR EQUIVALENT EXOTHERMIC CONNECTION.
4. INTERMATIC PANELGUARD OR EQUAL H20S13Y2DG1 SURGE PROTECTIVE DEVICE, 7-MODE, 277/480. NEMA 4X ENCLOSURE, UL 1449, TYPE 1 SURGE PROTECTION, SURGE CURRENT RATING 200KA. CIRCUIT BAKER SIZED BY MANUFACTURE RECOMMENDATION.
5. COORDINATE CONDUIT STUB UP LOCATIONS W/ EQUIPMENT MANUFACTURER SEE GENERAL NOTES 4,5 & 6 SHEET E-001.
6. REFER TO SHEET E-001 FOR GENERAL ELECTRICAL NOTES.
7. SEE SPECIFICATIONS FOR DETAILS REGARDING RACEWAYS & CONDUCTORS.

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GOODWYN MILLS CAWOOD, LLC
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1" .5" 0" 1"

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

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NO. 31217
CHARLES K. BUTTERFIELD

TREATMENT PLANT SINGLE LINE DIAGRAM

E-009

BFIELD ENGINEERING, LLC
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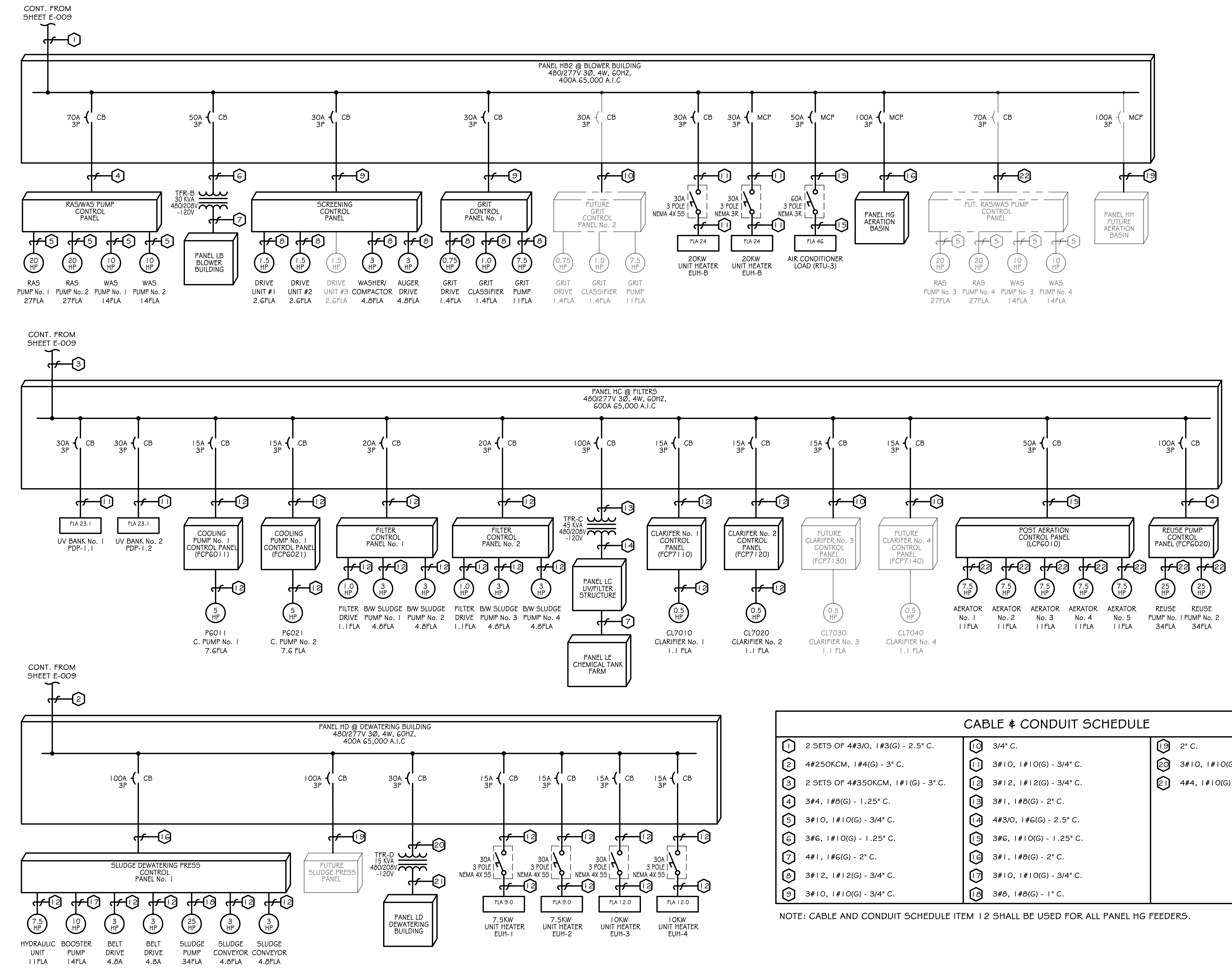

CABLE & CONDUIT SCHEDULE

1	2 SETS OF 4#3/0, 1#3(G) - 2.5" C.	10	3/4" C.	19	2" C.
2	4#250KCM, 1#4(G) - 3" C.	11	3#10, 1#10(G) - 3/4" C.	20	3#10, 1#10(G) - 3/4" C.
3	2 SETS OF 4#350KCM, 1#1(G) - 3" C.	12	3#12, 1#12(G) - 3/4" C.	21	4#4, 1#10(G) - 1.25" C.
4	3#4, 1#8(G) - 1.25" C.	13	3#1, 1#8(G) - 2" C.		
5	3#10, 1#10(G) - 3/4" C.	14	4#3/0, 1#6(G) - 2.5" C.		
6	3#6, 1#10(G) - 1.25" C.	15	3#6, 1#10(G) - 1.25" C.		
7	4#1, 1#6(G) - 2" C.	16	3#1, 1#8(G) - 2" C.		
8	3#12, 1#12(G) - 3/4" C.	17	3#10, 1#10(G) - 3/4" C.		
9	3#10, 1#10(G) - 3/4" C.	18	3#8, 1#8(G) - 1" C.		

NOTE: CABLE AND CONDUIT SCHEDULE ITEM 12 SHALL BE USED FOR ALL PANEL HG FEEDERS.

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STATE OF GEORGIA CERTIFICATE OF AUTHORIZATION
GOODWYN MILLS CAWOOD, LLC
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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
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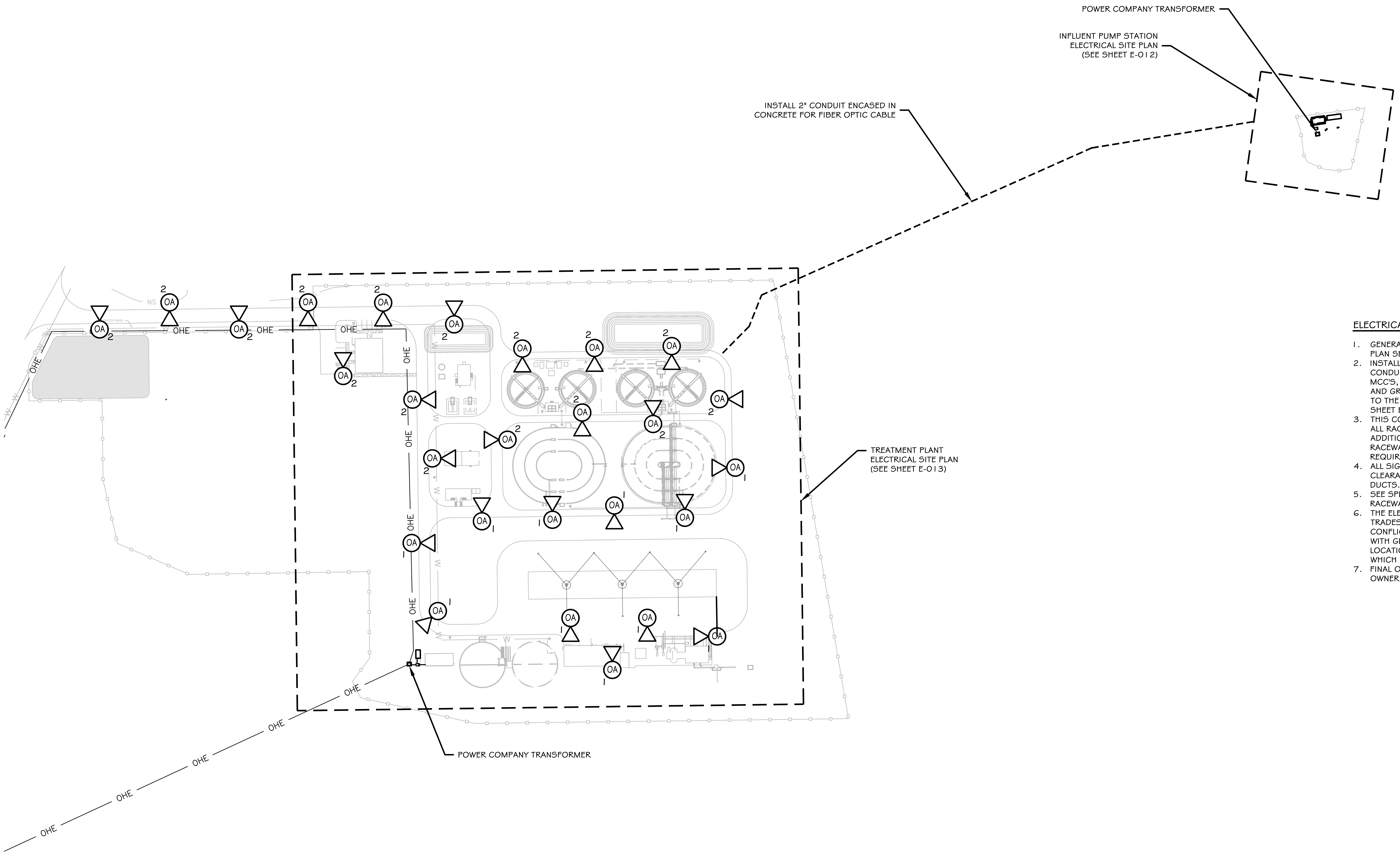
CHARLES K. BUTTERFIELD

TREATMENT PLANT
SINGLE LINE DIAGRAM
(CONT.)

E-010


POWER COMPANY TRANSFORMER
INFLUENT PUMP STATION ELECTRICAL SITE PLAN (SEE SHEET E-012)
INSTALL 2" CONDUIT ENCASED IN CONCRETE FOR FIBER OPTIC CABLE
TREATMENT PLANT ELECTRICAL SITE PLAN (SEE SHEET E-013)
POWER COMPANY TRANSFORMER
OHE
OA
NS

1 / **E-011** **OVERALL ELECTRICAL SITE PLAN**

SCALE: 1" = 100'

ELECTRICAL SITE PLAN NOTES

1. GENERAL ELECTRIC NOTES APPLY TO THE ELECTRICAL SITE PLAN SEE SHEET E-001.
2. INSTALL 20% SPARE CONTROL CONDUCTORS (MIN. 2 CONDUCTORS) IN ALL RACEWAYS BETWEEN STRUCTURES, MCC'S, CP'S, SAME SIZE & LABELED "SPARE". ALL INDIVIDUAL AND GROUPED CONDUITS SHALL BE INSTALLED ACCORDING TO THE DUCT BANK DETAILS. SEE DUCTBANK SCHEDULE SHEET E-014.
3. THIS CONDUIT/DUCT BANK LAYOUT IS FOR GUIDANCE, ROUTE ALL RACEWAYS IN THE INDICATED CORRIDORS. ANY ADDITIONAL DUCTS OR CONDUITS SHALL BE INSTALLED FOR RACEWAYS FOR POWER, CONTROL AND SIGNAL CIRCUITS AS REQUIRED.
4. ALL SIGNAL CONDUITS SHALL MAINTAIN AT LEAST 1' CLEARANCE FROM POWER AND CONTROL CONDUITS AND DUCTS.
5. SEE SPECIFICATIONS FOR GREATER DETAILS REGARDING RACEWAYS.
6. THE ELECTRICAL CONTRACTOR WILL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION AND AVOID CONFLICTS. ELECTRICAL CONTRACTOR WILL WORK CLOSELY WITH GENERAL CONTRACTOR AND VERIFY EXACT TYPES AND LOCATIONS OF EQUIPMENT AND PIPING TO BE INSTALLED WHICH MAY AFFECT THE PLACEMENT OF ELECTRICAL WORK.
7. FINAL OVERHEAD POWER ROUTE TO BE COORDINATED WITH OWNER AND UTILITY.

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Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

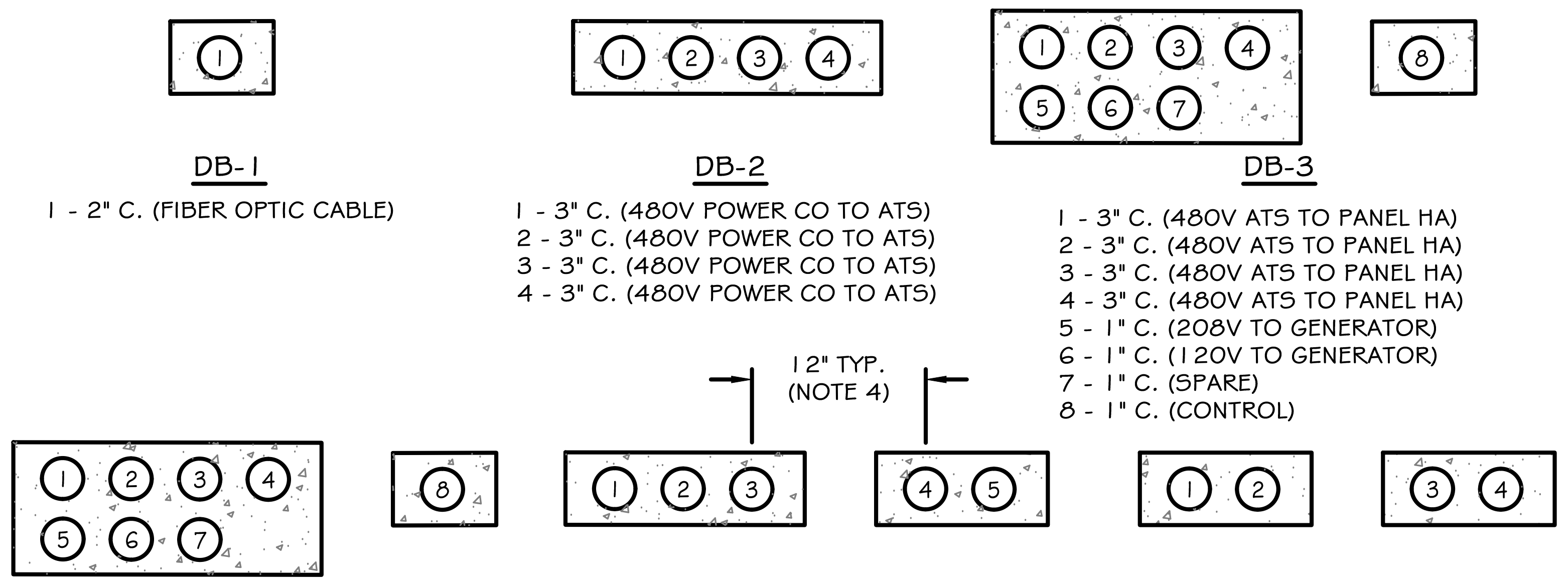
CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

OVERALL ELECTRICAL
SITE PLAN

E-011

DRAWING FILE: G:\Shared drives\BFIELD\Commerce\Drawings\E-007-CATL230033-Electrical Site Plan.dwg
PLOTTED: Mar 19, 2025 - 10:21am



DB-1

1 - 2" C. (FIBER OPTIC CABLE)

DB-2

1 - 3" C. (480V POWER CO TO ATS)
2 - 3" C. (480V POWER CO TO ATS)
3 - 3" C. (480V POWER CO TO ATS)
4 - 3" C. (480V POWER CO TO ATS)

DB-3

1 - 3" C. (480V ATS TO PANEL HA)
2 - 3" C. (480V ATS TO PANEL HA)
3 - 3" C. (480V ATS TO PANEL HA)
4 - 3" C. (480V ATS TO PANEL HA)
5 - 1" C. (208V TO GENERATOR)
6 - 1" C. (120V TO GENERATOR)
7 - 1" C. (SPARE)
8 - 1" C. (CONTROL)

DB-4

1 - 3" C. (480V GENERATOR TO ATS)
2 - 3" C. (480V GENERATOR TO ATS)
3 - 3" C. (480V GENERATOR TO ATS)
4 - 3" C. (480V GENERATOR TO ATS)
5 - 1" C. (208V TO GENERATOR)
6 - 1" C. (120V TO GENERATOR)
7 - 1" C. (SPARE)
8 - 1" C. (CONTROL)

DB-5

1 - 2.5" C. (480V TO PUMP P1010)
2 - 2.5" C. (480V TO PUMP P1020)
3 - 2.5" C. (480V TO PUMP P1030)
4 - 1" C. (CONTROL)
5 - 1" C. RGS (SIGNAL)

DB-6

1 - 2" C. (480V TO PUMP P1040)
2 - 2" C. (480V TO PUMP P1050)
3 - 1" C. (CONTROL)
4 - 1" C. RGS (SIGNAL)

NOTES:

1. POWER CIRCUIT CONDUITS SHALL BE SCHEDULE 40 RIGID PVC.

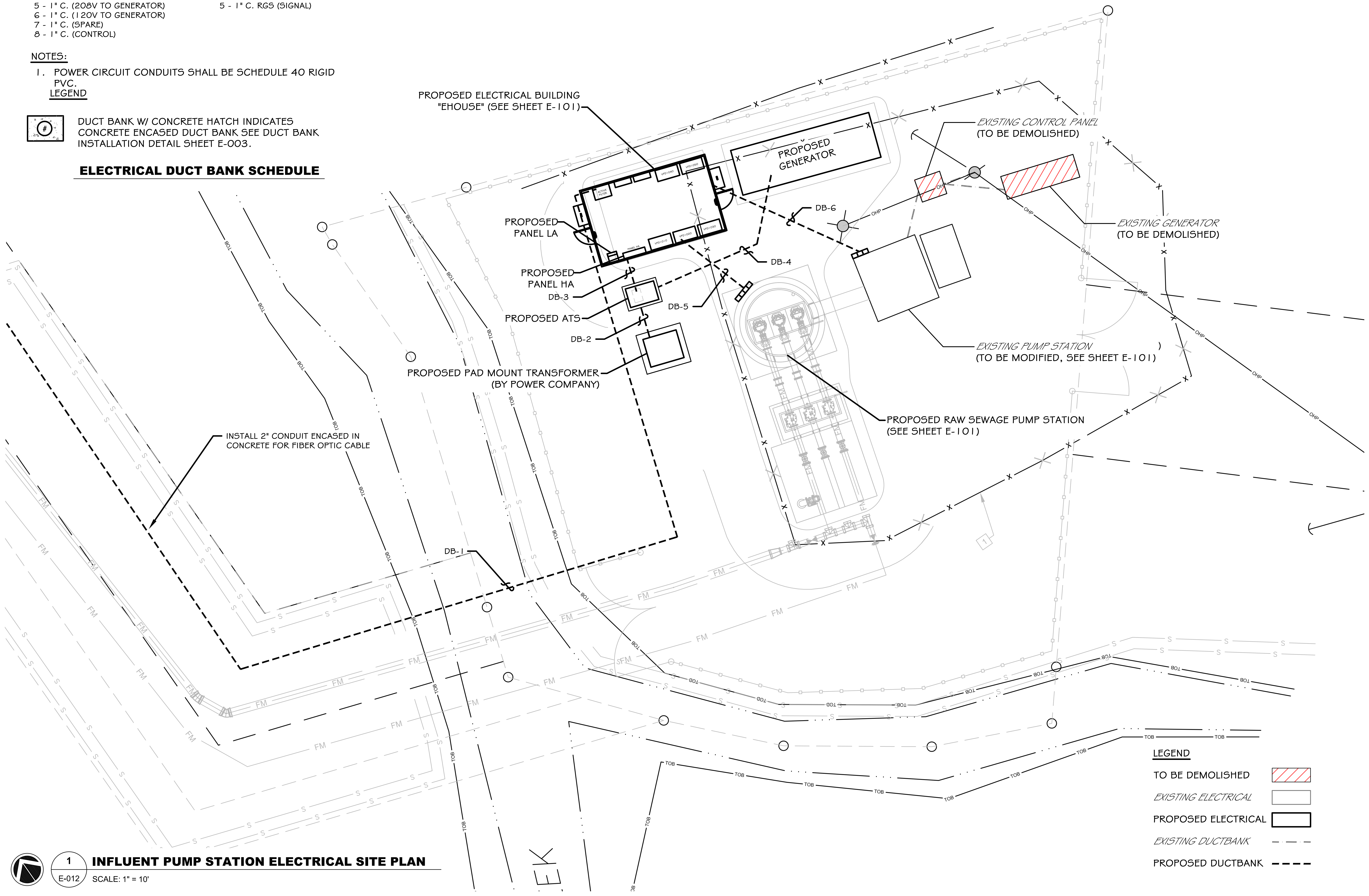
LEGEND

#	DUCT BANK W/ CONCRETE HATCH INDICATES CONCRETE ENCASED DUCT BANK SEE DUCT BANK INSTALLATION DETAIL SHEET E-003.

ELECTRICAL DUCT BANK SCHEDULE

NOTES

1. INSTALL 20% SPARE CONTROL CONDUCTORS (MIN. 2 CONDUCTORS) IN ALL RACEWAYS BETWEEN STRUCTURES, MCC'S, CP'S, SAME SIZE AND LABELED "SPARE". ALL INDIVIDUAL AND GROUPED CONDUITS SHALL BE INSTALLED ACCORDING TO THE DUCTBANK DETAILS. ALL SIGNAL CONDUITS SHALL MAINTAIN AT LEAST 1' CLEARANCE FROM POWER AND CONTROL CONDUITS AND DUCTS.
2. EXIST. CONDUIT / DUCTBANK ROUTING UNKNOWN, ANY DEPICTION OF EXISTING SYSTEM ID FOR REFERENCE. CONTACTOR TO TAKE CARE NOT TO DAMAGE EXISTING CABLE / CONDUIT DURING CONSTRUCTION. CONTACTOR SHALL REPAIR ANY DAMAGE TO THE EXIST ELECTRICAL SYSTEM AT NO COST TO THE OWNER.
3. THIS CONDUIT/DUCTBANK LAYOUT IS FOR GUIDANCE, ROUTE ALL RACEWAYS IN THE INDICATED CORRIDORS. ANY ADDITIONAL DUCTS OR CONDUITS SHALL BE INSTALLED FOR RACEWAYS FOR POWER, CONTROL AND SIGNAL CIRCUITS AS REQUIRED.
4. SPACE POWER & SIGNAL DUCTS MIN. 12" SEE DUCT BANK INSTALLATION DETAIL SHEET E-003. DUCT BANKS ARE NOT DRAWN TO SCALE, 12" SPACING IS EXAGGERATED.
5. COORDINATE TRANSFORMER LOCATION WITH OWNER & UTILITY.


PROPOSED ELECTRICAL BUILDING "EHOUSE" (SEE SHEET E-101)
PROPOSED GENERATOR
ACTIVE FILTER
VFD1040
VFD1050
VFD1010
VFD1020
VFD1030
PANEL HA
PROPOSED PANEL LA
PROPOSED PANEL HA
DB-3
PROPOSED ATS
DB-2
PROPOSED PAD MOUNT TRANSFORMER (BY POWER COMPANY)
DB-6
DB-4
DB-5
EXISTING CONTROL PANEL (TO BE DEMOLISHED)
EXISTING GENERATOR (TO BE DEMOLISHED)
EXISTING PUMP STATION (TO BE MODIFIED, SEE SHEET E-101)
PROPOSED RAW SEWAGE PUMP STATION (SEE SHEET E-101)
INSTALL 2" CONDUIT ENCASED IN CONCRETE FOR FIBER OPTIC CABLE
DB-1
OHP
TOB
FM
S
EK

LEGEND

TO BE DEMOLISHED	▨
EXISTING ELECTRICAL	☐
PROPOSED ELECTRICAL	☐
EXISTING DUCTBANK	— — —
PROPOSED DUCTBANK	- - - -

1
E-012

INFLUENT PUMP STATION ELECTRICAL SITE PLAN

SCALE: 1" = 10'

BFIELD ENGINEERING, LLC
4180 Providence Road, Suite 325
Marietta, GA 30062
Phone: (678) 650-0732

6120 Powers Ferry Road NW, Suite 200
Atlanta, GA 30339
T 770.952.2481

GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

ISSUE	DATE
30% Submittal	05.30.2024
60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

INFLUENT PUMP
STATION ELECTRICAL
SITE PLAN

E-012

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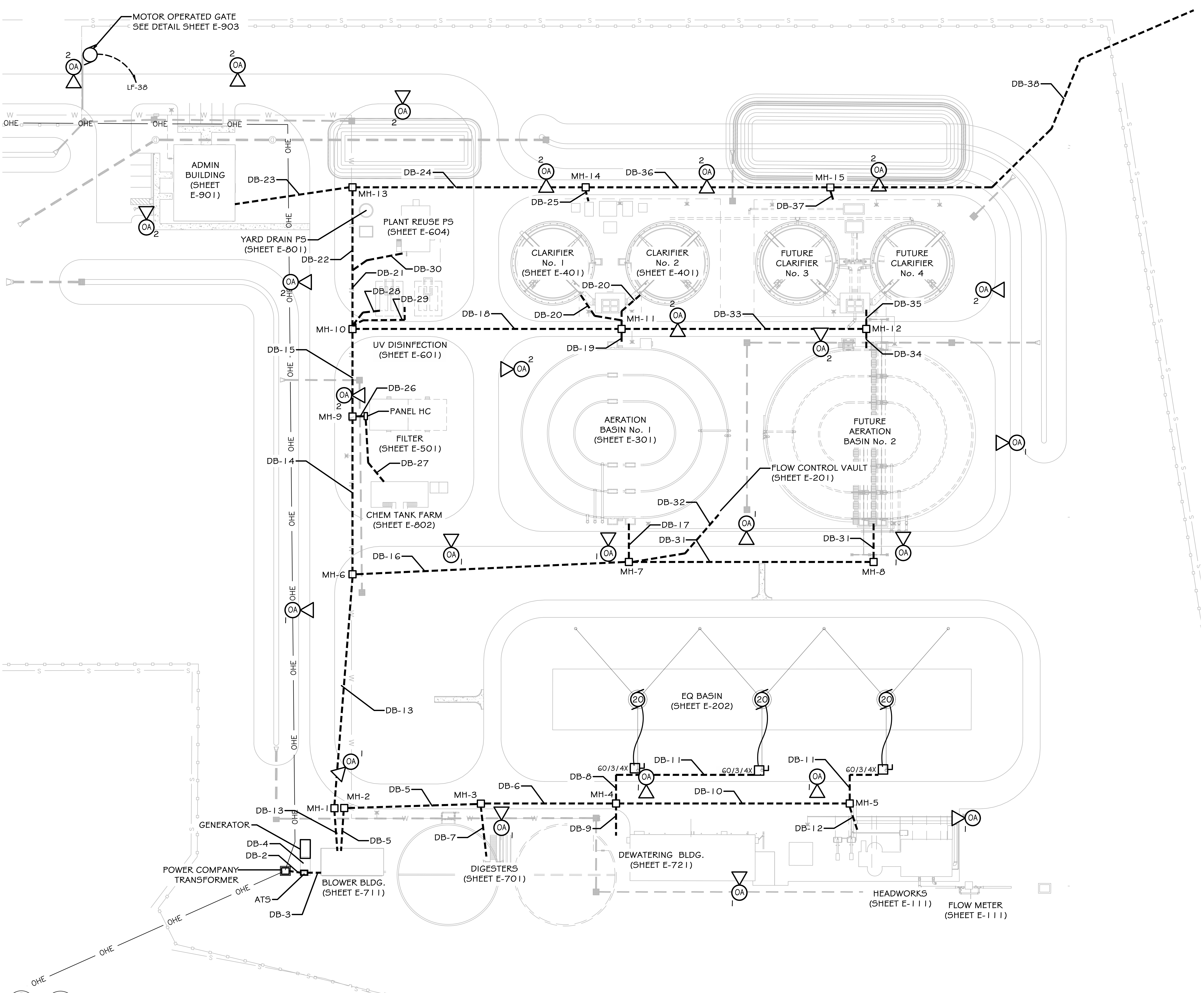
PLOTTED: Mar 19, 2025 - 10:21am



1
E-013

TREATMENT PLANT ELECTRICAL SITE PLAN

SCALE: 1" = 40'

NOTES

1. GENERAL ELECTRIC NOTES APPLY TO THE ELECTRICAL SITE PLAN SEE SHEET E-001.
2. INSTALL 20% SPARE CONTROL CONDUCTORS (MIN. 2 CONDUCTORS) IN ALL RACEWAYS BETWEEN STRUCTURES, MCC'S, CP'S, SAME SIZE & LABELED "SPARE". ALL INDIVIDUAL AND GROUPED CONDUITS SHALL BE INSTALLED ACCORDING TO THE DUCT BANK DETAILS. SEE DUCTBANK SCHEDULE SHEET E-014.
3. THIS CONDUIT/DUCT BANK LAYOUT IS FOR GUIDANCE, ROUTE ALL RACEWAYS IN THE INDICATED CORRIDORS. ANY ADDITIONAL DUCTS OR CONDUITS SHALL BE INSTALLED FOR RACEWAYS FOR POWER, CONTROL AND SIGNAL CIRCUITS AS REQUIRED.
4. ALL SIGNAL CONDUITS SHALL MAINTAIN AT LEAST 1' CLEARANCE FROM POWER AND CONTROL CONDUITS AND DUCTS.
5. SEE SPECIFICATIONS FOR GREATER DETAILS REGARDING RACEWAYS.
6. SITE LIGHTING CIRCUIT SHALL BE 277V 30A, WITH 2#8, 1 #8(G) - 1"C. LIGHTING CKT NOT SHOWN FOR CLARITY. ROUTE CONDUIT IN MOST EFFICIENT MANNER. LIGHTING FIXTURES DESIGNATED WITH THE NUMBER "1" WILL HOME RUN TO OLCP CONTACTOR No. 1 AND FIXTURES DESIGNATED WITH A "2" SHALL HOME RUN TO OLCP CONTACTOR No. 2. SEE DETAIL SHEET E-903. CONCRETE ENCASED CONDUIT IS NOT REQUIRED FOR SITE LIGHTING. SEE CONDUIT ROUTING DETAIL SHEET E-004.
5. THE ELECTRICAL CONTRACTOR WILL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION AND AVOID CONFLICTS. ELECTRICAL CONTRACTOR WILL WORK CLOSELY WITH GENERAL CONTRACTOR AND VERIFY EXACT TYPES AND LOCATIONS OF EQUIPMENT AND PIPING TO BE INSTALLED WHICH MAY AFFECT THE PLACEMENT OF ELECTRICAL WORK.

GMC
6120 Powers Ferry Road NW, Suite 200
Atlanta, GA 30339
T 770.952.2481

Exp.06.30.2026

1" .5" 0"

ISSUE	DATE
30% Submittal	05.30.2024
60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

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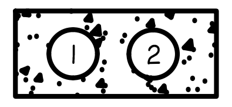
03/19/2025
NO. 31217
K. BUTTERFIELD

BFIELD ENGINEERING, LLC
4180 Providence Road, Suite 325
Marietta, GA 30062
Phone: (678) 650-0732

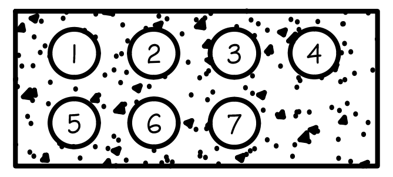
TREATMENT PLANT
ELECTRICAL SITE PLAN

E-013



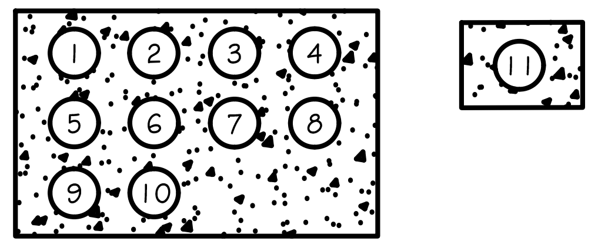
DB-1

1 - 4" C. (POWER COMPANY FEEDERS)
2 - 4" C. (POWER COMPANY FEEDERS)



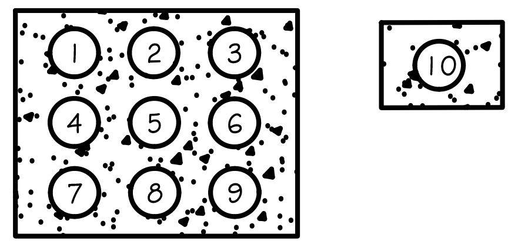
DB-2

1 - 3.5" C. (480V POWER CO TO ATS)
2 - 3.5" C. (480V POWER CO TO ATS)
3 - 3.5" C. (480V POWER CO TO ATS)
4 - 3.5" C. (480V POWER CO TO ATS)
5 - 3.5" C. (480V POWER CO TO ATS)
6 - 3.5" C. (480V POWER CO TO ATS)
7 - 3.5" C. (480V POWER CO TO ATS)



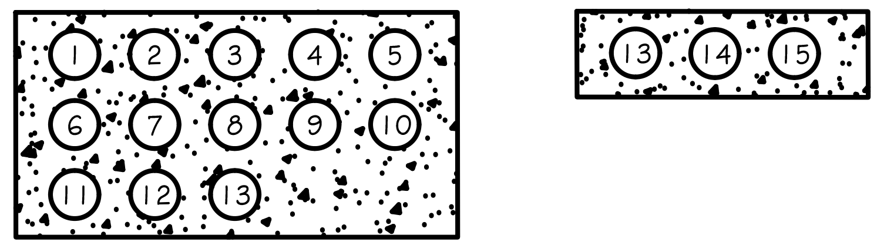
DB-3

1 - 3.5" C. (480V ATS TO SWITCHBOARD)
2 - 3.5" C. (480V ATS TO SWITCHBOARD)
3 - 3.5" C. (480V ATS TO SWITCHBOARD)
4 - 3.5" C. (480V ATS TO SWITCHBOARD)
5 - 3.5" C. (480V ATS TO SWITCHBOARD)
6 - 3.5" C. (480V ATS TO SWITCHBOARD)
7 - 3.5" C. (480V ATS TO SWITCHBOARD)
8 - 1" C. (208V TO GENERATOR)
9 - 1" C. (120V TO GENERATOR)
10 - 1" C. (SPARE)
11- 1" C. (CONTROL)



DB-4

1 - 3.5" C. (480V GENERATOR TO ATS)
2 - 3.5" C. (480V GENERATOR TO ATS)
3 - 3.5" C. (480V GENERATOR TO ATS)
4 - 3.5" C. (480V GENERATOR TO ATS)
5 - 3.5" C. (480V GENERATOR TO ATS)
6 - 3.5" C. (SPARE)
7 - 1" C. (208V TO GENERATOR)
8 - 1" C. (120V TO GENERATOR)
9 - 1" C. (SPARE)
10 - 1" C. (CONTROL)



DB-5&6

1 - 3/4" C. (480V TO SCREENING PANEL No. 1)
2 - 3/4" C. (480V TO SCREENING PANEL No. 2)
3 - 3/4" C. (480V TO CONVEYOR PANEL)
4 - 3/4" C. (FUT. SCREENING PANEL No. 3)
5 - 3/4" C. (480V TO GRIT REMOVAL CONTROL PANEL)
6 - 3/4" C. (FUT. GRIT REMOVAL PANEL)
7 - 1.5" C. (120V CKTS.)
8 - 1.5" C. (SPARE)
9 - 1.25" C. (480V TO EQ. AERATOR 1)
10 - 1.25" C. (480V TO EQ. AERATOR 2)
11 - 1.25" C. (480V TO EQ. AERATOR 3)
12 - 2.5" C. (480V TO PANEL HD)
13 - 2.5" C. (480V TO PANEL HD)
14 - 1.5" C. (CONTROL)
15 - 1.5" C. RGS (SIGNAL)
16 - 1.5" C. (SPARE)

NOTES:

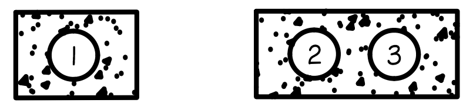
1. SPACE POWER & SIGNAL DUCTS MIN. 12" SEE DUCT BANK INSTALLATION DETAIL SHEET E-003. DUCT BANKS ARE NOT DRAWN TO SCALE, 12" SPACING IS EXAGGERATED.
2. 480V, 208V AND 120V POWER CIRCUIT CONDUITS SHALL BE SCHEDULE 40 RIGID PVC.
3. SIGNAL CIRCUIT CONDUITS SHALL BE GALVANIZED RIGID CONDUIT (GRC).

LEGEND

PROPOSED

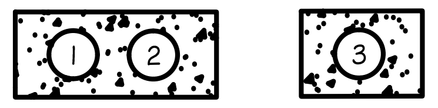
▨ # DUCT BANK W/ CONCRETE HATCH INDICATES CONCRETE ENCASED DUCT BANK SEE DUCT BANK INSTALLATION DETAIL SHEET E-003. SHADED DUCTS TO BE MODIFIED.

■ # DUCT BANK W/ SOLID HATCH INDICATES SAND ENCASED CONDUITS SEE CONDUIT ROUTING DETAIL SHEET E-003.



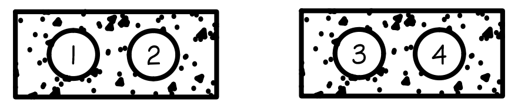
DB-7

1 - 1" C. (120V CKTS.)
2 - 1" C. RGS (CONTROL)
3 - 3/4" C. (CONTROL)



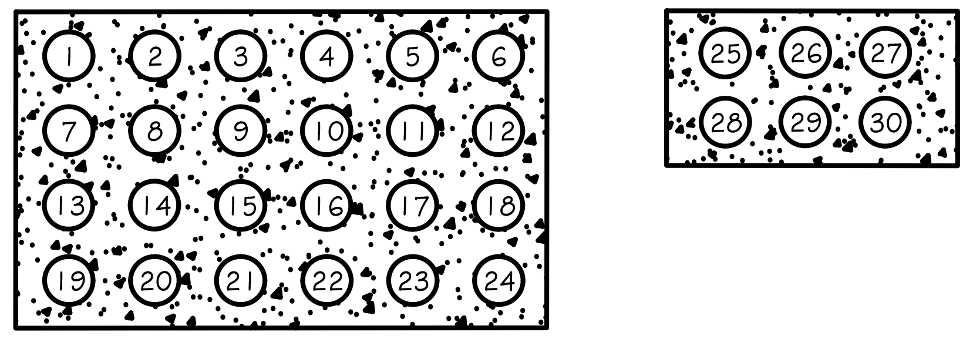
DB-8

1 - 1.25" C. (480V TO EQ. AERATOR 1)
2 - 1.25" C. (480V TO EQ. AERATOR 2)
3 - 3/4" C. (CONTROL)



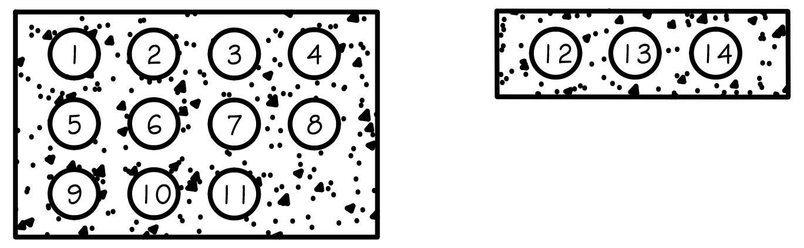
DB-9

1 - 2.5" C. (480V TO PANEL HD)
2 - 2.5" C. (480V TO PANEL HD)
3 - 1" C. (CONTROL)
4 - 1" C. RGS (SIGNAL)



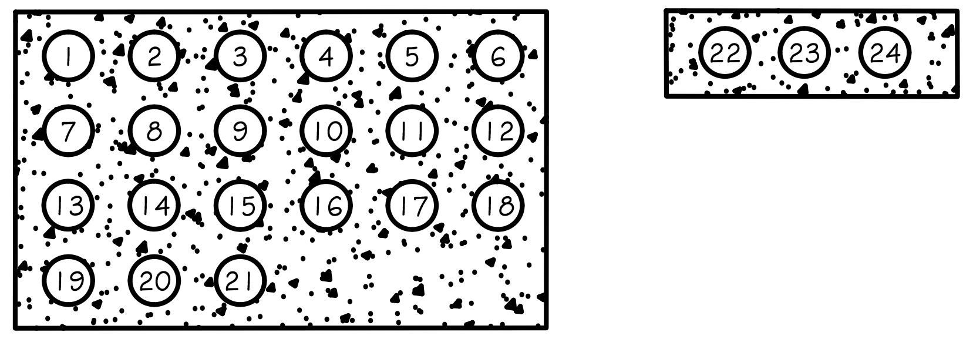
DB-13

1 - 3" C. (480V TO PANEL HC)
2 - 3" C. (480V TO PANEL HC)
3 - 1.5" C. (480V TO AERATOR RA3102)
4 - 1.5" C. (480V TO FUT. AERATOR)
5 - 1.25" C. (480V TO RAS/WAS FCP8010)
6 - 1.25" C. (480V TO FUTURE RAS/WAS)
7 - 2" C. (480V TO TRANSFORMER F)
8 - 1" C. (480V TO VALVE V2202)
9 - 1"C. (SITE LIGHTING)
10 - 1.5" C. (120V CKTS.)
11 - 2" (SPARE)
12 - 2" C. (480V TO AERATOR RA3101)
13 - 2" C. (480V TO AERATOR RA3103)
14 - 1.5" C. (480V TO AERATOR RA3104)
15 - 2" C. (480V TO AERATOR RA3105)
16 - 1.5" C. (480V TO AERATOR RA3106)
17 - 2" C. (480 TO PANEL HF)
18 - 2" C. (FUTURE AERATOR)
19 - 2" C. (FUTURE AERATOR)
20 - 1.5" C. (FUTURE AERATOR)
21 - 1.5" C. (FUTURE AERATOR)
22 - 2" C. (FUTURE AERATOR)
23 - 2" C. (FUTURE PANEL HH)
24 - 1.5 " C. (120V CKTS.)
25 - 1.5" C. (CONTROL)
26 - 1.5" C. RGS (SIGNAL)
27 - 2" C. (FIBER OPTIC CABLE)
28 - 1.5" C. (CONTROL)
29 - 1" C. RGS (SIGNAL)
30 - 1.5" C. (SPARE)



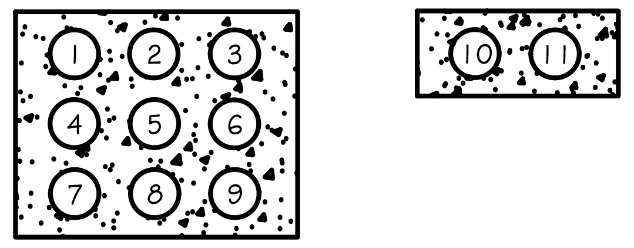
DB-14

1 - 3" C. (480V TO PANEL HC)
2 - 3" C. (480V TO PANEL HC)
3 - 1.5" C. (480V TO AERATOR RA3102)
4 - 1.5" C. (480V TO FUT. AERATOR)
5 - 1.25" C. (480V TO RAS/WAS FCP8010)
6 - 1.25" C. (480V TO FUTURE RAS/WAS)
7 - 2" C. (480V TO TRANSFORMER F)
8 - 1"C. (SITE LIGHTING)
9 - 1.5" C. (120V CKTS.)
10 - 2" (SPARE)
11 - 2" (SPARE)
12 - 1.5" C. (CONTROL)
13 - 1.5" C. RGS (SIGNAL)
14 - 2" C. (FIBER OPTIC CABLE)



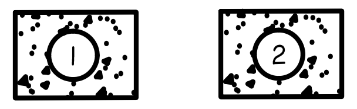
DB-15

1 - ¾" C. (480V TO CLARIFIER No. 1)
2 - ¾" C. (480V TO CLARIFIER No. 2)
3 - ¾" C. (480V TO FUT. CLARIFIER No. 3)
4 - ¾" C. (480V TO FUT. CLARIFIER No. 4)
5 - 1.5" C. (480V TO AERATOR RA3102)
6 - 1.5" C. (480V TO FUT. AERATOR)
7 - 1.25" C. (480V TO RAS/WAS FCP8010)
8 - 1.25" C. (480V TO FUTURE RAS/WAS)
9 - 2" C. (480V TO TRANSFORMER F)
10 - 1.25" C. (480V TO REUSE CONTROL PANEL)
11 - 1.25" C. (480V TO POST AERATION CONTROL PANEL)
12 - 3/4" C. (480V TO UV REACTOR 1)
13 - 3/4" C. (480V TO COOLING PUMP 1)
14 - 3/4" C. (120V TO UV REACTOR 1)
15 - 3/4" C. (120V TO UV LIGHTING)
16 - 3/4" C. (480V TO UV REACTOR 2)
17 - 3/4" C. (480V TO COOLING PUMP 2)
18 - 3/4" C. (120V TO UV REACTOR 2)
19 - 1"C. (SITE LIGHTING)
20 - 1.5" C. (120V CKTS.)
21 - 1.5" (SPARE)
22 - 1.5" C. (CONTROL)
23 - 1.5" C. RGS (SIGNAL)
24 - 2" C. (FIBER OPTIC CABLE)



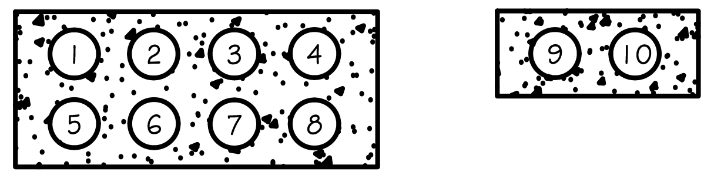
DB-10

1 - 3/4" C. (480V TO SCREENING PANEL No. 1)
2 - 3/4" C. (480V TO SCREENING PANEL No. 2)
3 - 3/4" C. (480V TO CONVEYOR PANEL)
4 - 3/4" C. (FUT. SCREENING PANEL No. 3)
5 - 3/4" C. (480V TO GRIT REMOVAL CONTROL PANEL)
6 - 3/4" C. (FUT. GRIT REMOVAL PANEL)
7 - 1" C. (120V CKTS.)
8 - 1.5" C. (SPARE)
9 - 1.25" C. (480V TO EQ. AERATOR 3)
10 - 1" C. (CONTROL)
11 - 1" C. RGS (SIGNAL)



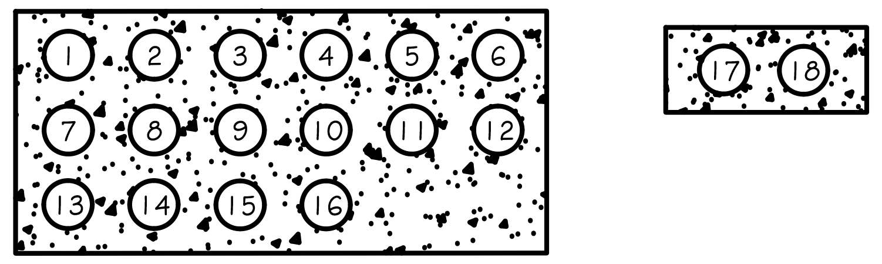
DB-11

1 - 1.25" C. (480V TO EQ. AERATOR)
2 - 3/4" C. (CONTROL)



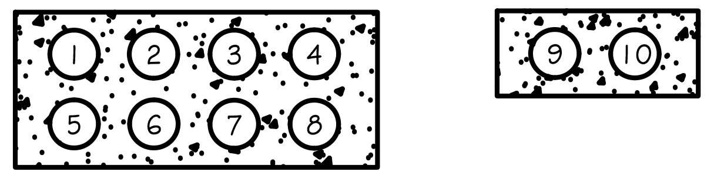
DB-12

1 - 3/4" C. (480V TO SCREENING PANEL No. 1)
2 - 3/4" C. (480V TO SCREENING PANEL No. 2)
3 - 3/4" C. (480V TO CONVEYOR PANEL)
4 - 3/4" C. (FUT. SCREENING PANEL No. 3)
5 - 3/4" C. (480V TO GRIT REMOVAL CONTROL PANEL)
6 - 3/4" C. (FUT. GRIT REMOVAL PANEL)
7 - 1" C. (120V CKTS.)
8 - 1.5" C. (SPARE)
9 - 1" C. (CONTROL)
10 - 1" C. RGS (SIGNAL)



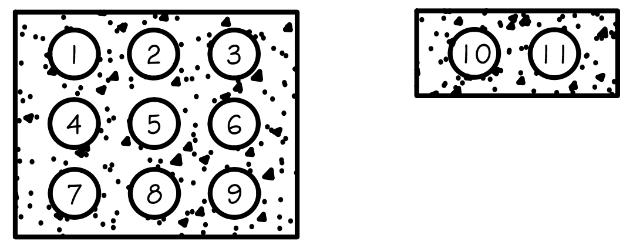
DB-16

1 - 2" C. (480V TO AERATOR RA3101)
2 - 2" C. (480V TO AERATOR RA3103)
3 - 1.5" C. (480V TO AERATOR RA3104)
4 - 2" C. (480V TO AERATOR RA3105)
5 - 1.5" C. (480V TO AERATOR RA3106)
6 - 2" C. (480 TO PANEL HG)
7 - 1.5" C. (FUTURE AERATOR)
8 - 1.5" C. (FUTURE AERATOR)
9 - 1.25" C. (FUTURE AERATOR)
10 - 1.5" C. (FUTURE AERATOR)
11 - 1.25" C. (FUTURE AERATOR)
12 - 2" C. (FUTURE PANEL HH)
13 - 1" C. (480V TO VALVE V2202)
14 - 1.5 " C. (120V CKTS.)
15 - 1.5" (SPARE)
16 - 1" C. (SITE LIGHTING)
17 - 1.5" C. (CONTROL)
18- 1" C. RGS (SIGNAL)



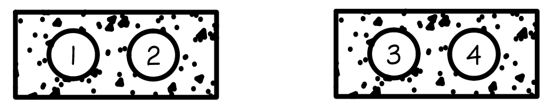
DB-17

1 - 2" C. (480V TO AERATOR RA3101)
2 - 2" C. (480V TO AERATOR RA3103)
3 - 1.5" C. (480V TO AERATOR RA3104)
4 - 2" C. (480V TO AERATOR RA3105)
5 - 1.5" C. (480V TO AERATOR RA3106)
6 - 2" C. (480 TO PANEL HG)
7 - 1" C. (120V CKTS.)
8 - 1.5" (SPARE)
9 - 1.5" C. (CONTROL)
10 - 1" C. RGS (SIGNAL)



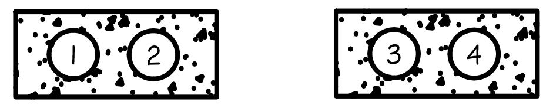
DB-18

1 - ¾" C. (480V TO CLARIFIER No. 1)
2 - ¾" C. (480V TO CLARIFIER No. 2)
3 - ¾" C. (480V TO FUT. CLARIFIER No. 3)
4 - ¾" C. (480V TO FUT. CLARIFIER No. 4)
5 - 1.5" C. (480V TO AERATOR RA3102)
6 - 1.25" C. (480V TO FUT. AERATOR)
7 - 1.5" C. (120V CKTS.)
8 - 1" C. (SITE LIGHTING)
9 - 1.5" (SPARE)
10 - 1.5" C. (CONTROL)
11 - 1.5" C. RGS (SIGNAL)



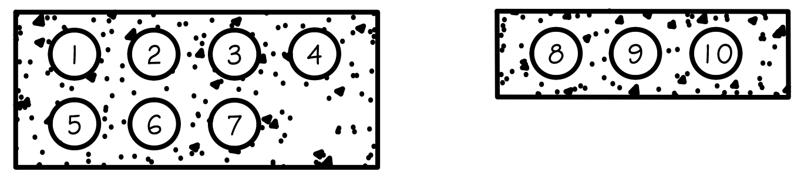
DB-19

1 - 1.5" C. (480V TO AERATOR RA3102)
2 - 1" C. (120V CKTS.)
3 - 1" C. (CONTROL)
4 - 1" C. RGS (SIGNAL)



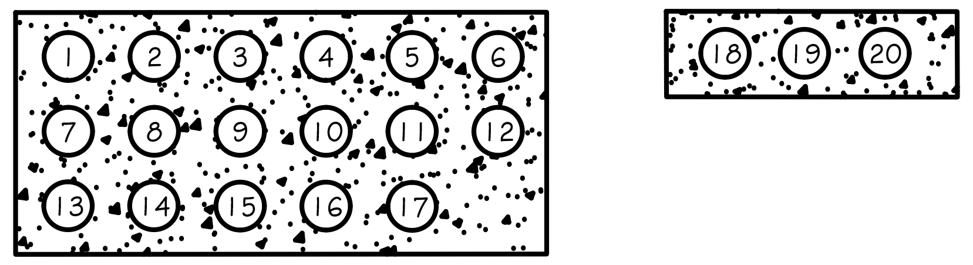
DB-20

1 - 3/4" C. (480V TO CLARIFIER CONTROL PANEL)
2 - 3/4" C. (120V CKTS.)
3 - 1" C. (CONTROL)
4 - 1" C. RGS (SIGNAL)



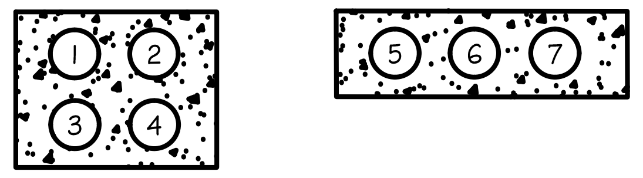
DB-21

1 - 1.25" C. (480V TO RAS/WAS FCP8010)
2 - 1.25" C. (480V TO FUTURE RAS/WAS)
3 - 2" C. (480V TO TRANSFORMER F)
4 - 3/4" C. (480V TO REUSE CONTROL PANEL)
5 - 3/4" C. (480V TO POST AERATION CONTROL PANEL)
6 - 1" C. (120V CKTS.)
7 - 1"C. (SITE LIGHTING)
8 - 1" C. (CONTROL)
9 - 1" C. RGS (SIGNAL)
10 - 2" C. (FIBER OPTIC CABLE)



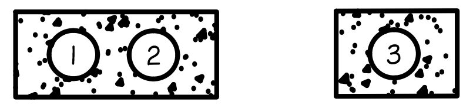
DB-26

1 - 3" C. (480V TO PANEL HC)
2 - 3" C. (480V TO PANEL HC)
3 - 3/4" C. (480V TO CLARIFIER No. 1)
4 - 3/4" C. (480V TO CLARIFIER No. 2)
5 - 3/4" C. (480V TO FUT. CLARIFIER No. 3)
6 - 3/4" C. (480V TO FUT. CLARIFIER No. 4)
7 - 3/4" C. (480V TO REUSE CONTROL PANEL)
8 - 3/4" C. (480V TO POST AERATION CONTROL PANEL)
9 - 3/4" C. (480V TO UV REACTOR 1)
10 - 3/4" C. (480V TO COOLING PUMP 1)
11 - 3/4" C. (120V TO UV REACTOR 1)
12 - 3/4" C. (120V TO UV LIGHTING)
13 - 3/4" C. (480V TO UV REACTOR 2)
14 - 3/4" C. (480V TO COOLING PUMP 2)
15 - 3/4" C. (120V TO UV REACTOR 2)
16 - 1" C. (120V CKTS.)
17 - 2" C. (SPARE)
18 - 1" C. (CONTROL)
19 - 1" C. RGS (SIGNAL)
20 - 2" C. (FIBER OPTIC CABLE)



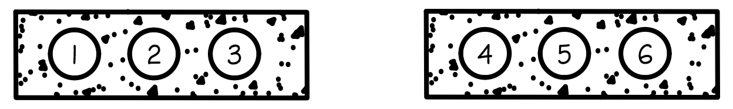
DB-22

1 - 1.25" C. (480V TO RAS/WAS FCP8010)
2 - 1.25" C. (480V TO FUTURE RAS/WAS)
3 - 2" C. (480V TO TRANSFORMER F)
4 - 1"C. (SITE LIGHTING)
5 - 1" C. (CONTROL)
6 - 1" C. RGS (SIGNAL)
7 - 2" C. (FIBER OPTIC CABLE)



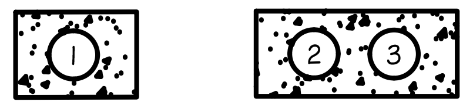
DB-23

1 - 2" C. (480V TO TRANSFORMER F)
2 - 1" C. (SITE LIGHTING)
3 - 2" C. (FIBER OPTIC CABLE)



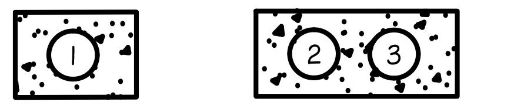
DB-24

1 - 1.25" C. (480V TO RAS/WAS FCP8010)
2 - 1.25" C. (480V TO FUTURE RAS/WAS)
3 - 1"C. (SITE LIGHTING)
4 - 1" C. (CONTROL)
5 - 1" C. RGS (SIGNAL)
6 - 2" C. (FIBER OPTIC CABLE)



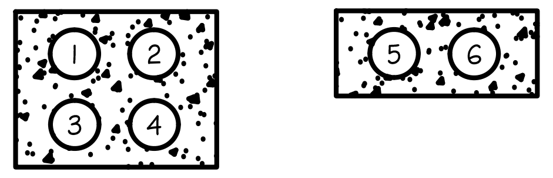
DB-25

1 - 1.25" C. (480V TO RAS/WAS CP8010)
2 - 1" C. (CONTROL FROM CP8010)
3 - 1" C. RGS (SIGNAL FROM CP8010)



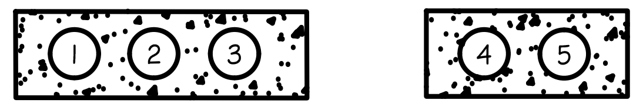
DB-27

1 - 2" C. (208V TO PANEL LE)
2 - 1.5" C. (CONTROL)
3 - 1.5" C. RGS (SIGNAL)



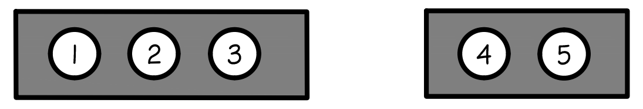
DB-28

1 - 3/4" C. (480V TO UV REACTOR 1)
2 - 3/4" C. (480V TO COOLING PUMP 1)
3 - 3/4" C. (120V TO UV REACTOR 1)
4 - 3/4" C. (120V TO UV LIGHTING)
5 - 1" C. (CONTROL FROM FCP6010)
6 - 1" C. RGS (SIGNAL FROM FCP6010)



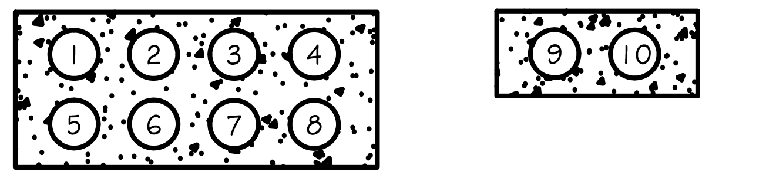
DB-29

1 - 3/4" C. (480V TO UV REACTOR 2)
2 - 3/4" C. (480V TO COOLING PUMP 2)
3 - 3/4" C. (120V TO UV REACTOR 2)
4 - 1" C. (CONTROL FROM FCP6020)
5 - 1" C. RGS (SIGNAL FROM FCP6020)



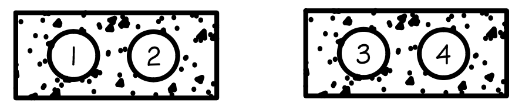
DB-30

1 - 3/4" C. (480V TO REUSE CONTROL PANEL)
2 - 3/4" C. (480V TO POST AERATION CONTROL PANEL)
3 - 1" C. (120V CKTS.)
4 - 1" C. (CONTROL)
5 - 1" C. RGS (SIGNAL)



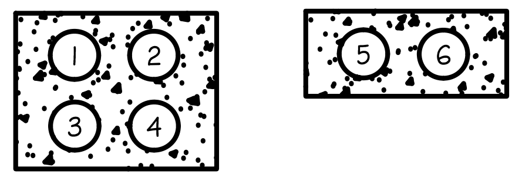
DB-31

1 - 2" C. (480V TO AERATOR RA3101)
2 - 2" C. (480V TO AERATOR RA3103)
3 - 1.5" C. (480V TO AERATOR RA3104)
4 - 2" C. (480V TO AERATOR RA3105)
5 - 1.5" C. (480V TO AERATOR RA3106)
6 - 2" C. (480 TO PANEL HG)
7 - 1" C. (120V CKTS.)
8 - 1.5" (SPARE)
9 - 1.5" C. (CONTROL)
10 - 1" C. RGS (SIGNAL)



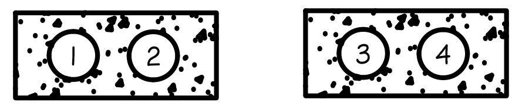
DB-32

1 - 1" C. (480V TO VALVE V2202)
2 - 1" C. (120V CKTS.)
3 - 1" C. (CONTROL)
4 - 1" C. RGS (FUTURE SIGNAL)



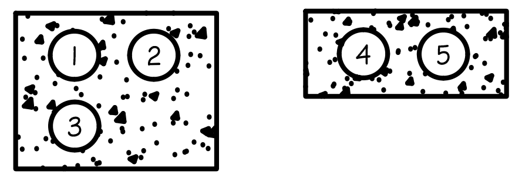
DB-33

1 - 1.5" C. (FUTURE AERATOR)
2 - 1" C. (FUTURE 120V CKTS.)
3 - ¾" C. (480V TO FUT. CLRF. No. 3)
4 - ¾" C. (480V TO FUT. CLRF. No. 4)
5 - 1" C. (CONTROL)
6 - 1" C. RGS (FUTURE SIGNAL)



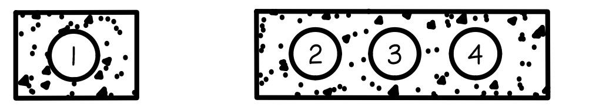
DB-34

1 - 1.5" C. (FUTURE AERATOR)
2 - 1" C. (FUTURE 120V CKTS.)
3 - 1" C. (CONTROL)
4 - 1" C. RGS (FUTURE SIGNAL)



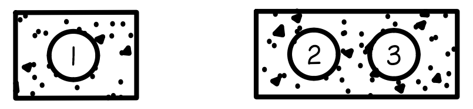
DB-35

1 - 1" C. (FUTURE 120V CKTS.)
2 - ¾" C. (480V TO FUT. CLRF. No. 3)
3 - ¾" C. (480V TO FUT. CLRF. No. 4)
4 - 1" C. (CONTROL)
5 - 1" C. RGS (FUTURE SIGNAL)



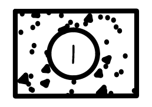
DB-36

1 - 1.25" C. (FUTURE RAS/WAS)
2 - 1" C. (CONTROL)
3 - 1" C. RGS (SIGNAL)
4 - 2" C. (FIBER OPTIC CABLE)



DB-37

1 - 2" C. (STUB UP FUTURE RAS/WAS)
2 - 1" C. (STUB UP CONTROL)
3 - 1" C. RGS (STUB UP SIGNAL)



DB-38

1 - 2" C. (FIBER OPTIC CABLE)

BFIELD ENGINEERING, LLC
4180 Providence Road, Suite 325
Marietta, GA 30062
Phone: (678) 650-0732

GMC
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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

ISSUE	DATE
30% Submittal	05.30.2024
60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

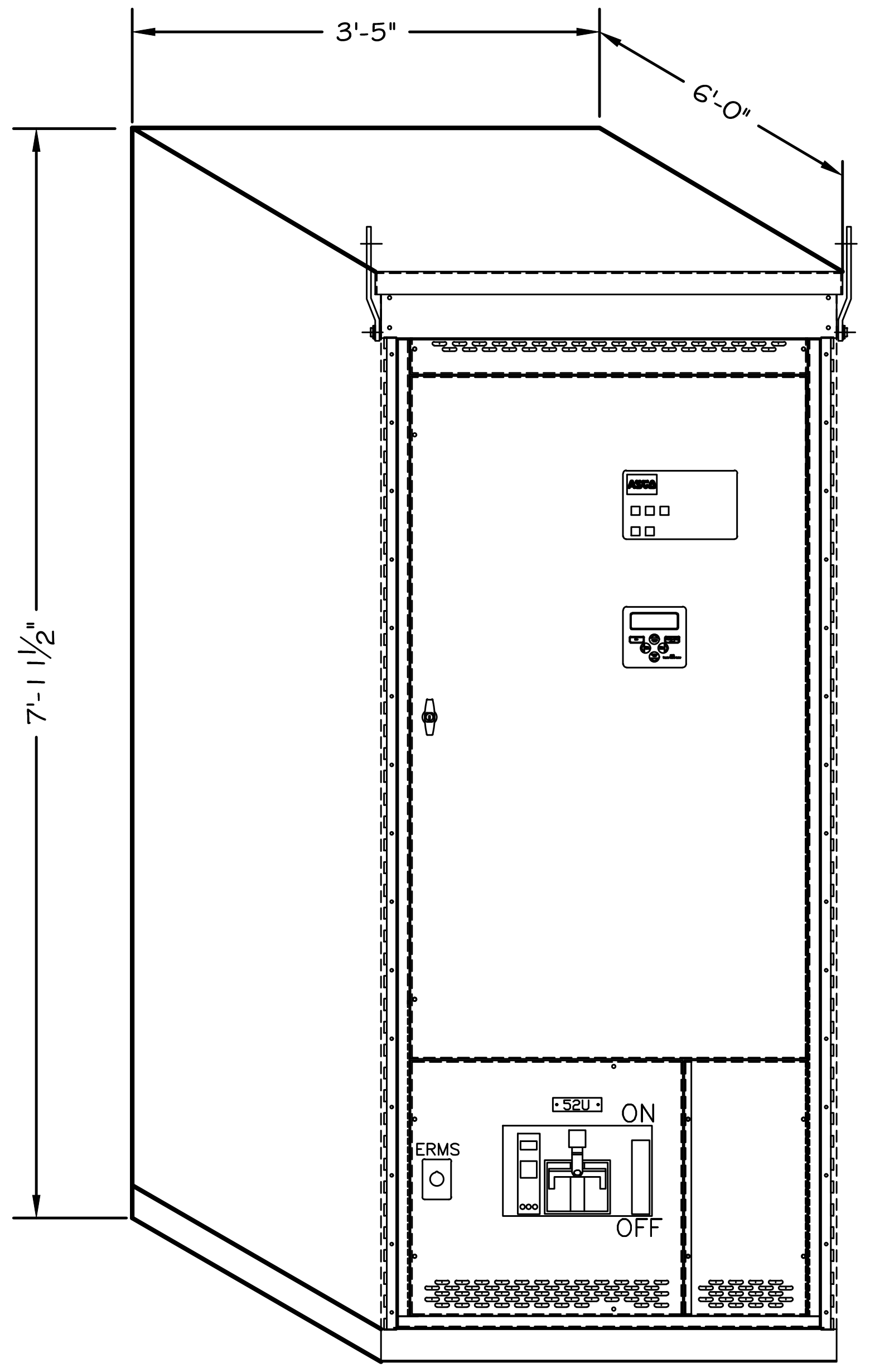
ELECTRICAL DUCT BANK SCHEDULE

E-014

DRAWING FILE: G:\Shared drives\BFIELD\Commerce\Drawings\E-001 CATL230033 Single Line Diagram.dwg
PLOTTED: Mar 19, 2025 - 10:22am

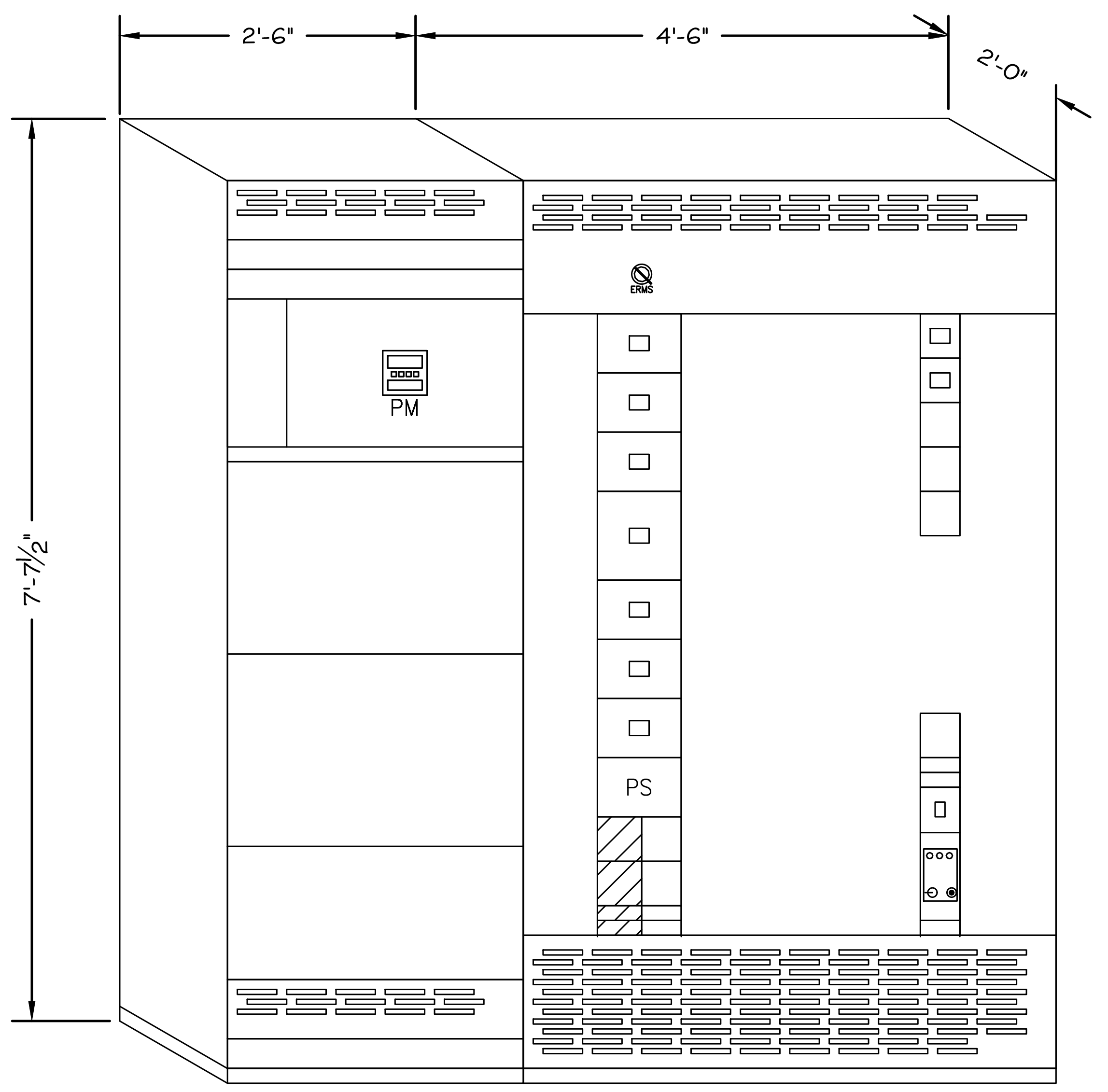
NOTES:

1. PRELIMINARY DIMENSIONS SHOWN FOR REFERENCE, DIMENSIONS VERY BY MANUFACTURER, COORDINATE EXACT MEASUREMENTS WITH GEAR MANUFACTURER & NOTIFY ENGINEER OF ANY DISCREPANCIES.



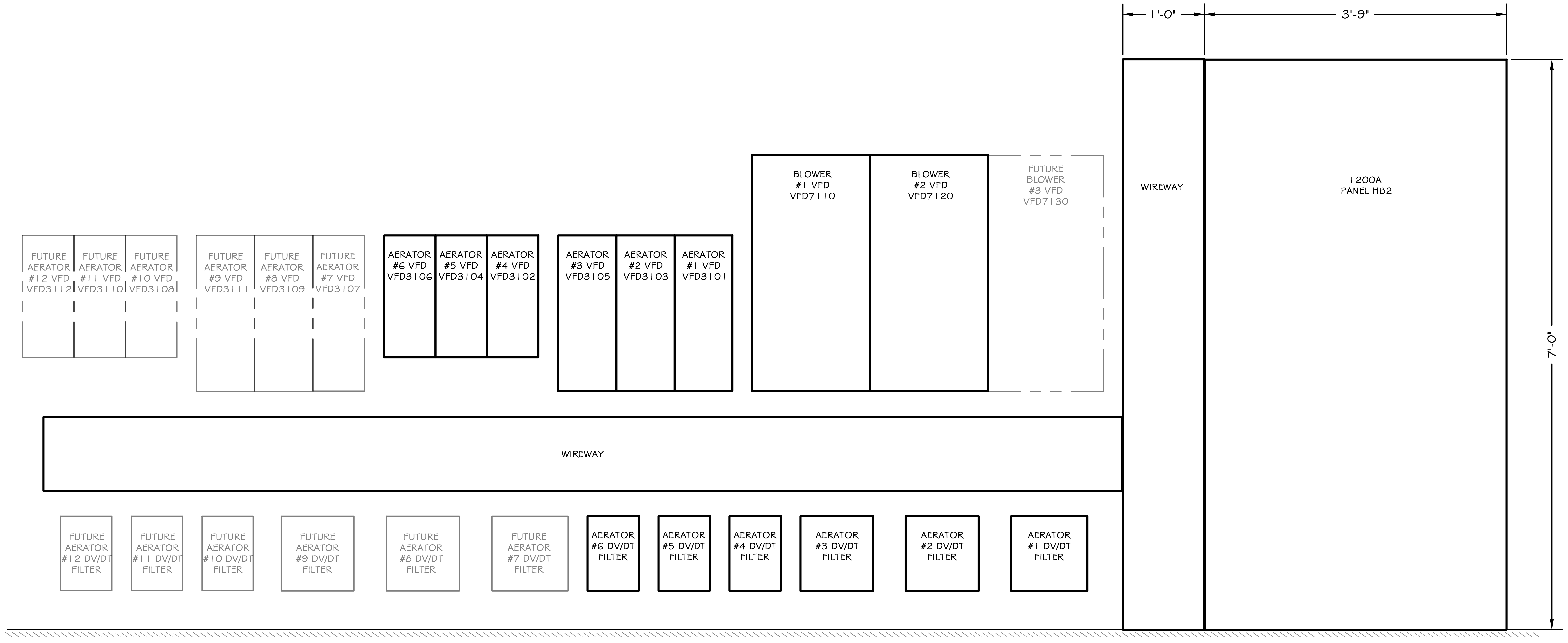
1 E-015 **2500A AUTOMATIC TRANSFER SWITCH**

SCALE: NOT TO SCALE



2 E-015 **2500A SWITCHBOARD**

SCALE: NOT TO SCALE


1'-0"
3'-9"
7'-0"
FUTURE AERATOR #12 VFD VFD3112
FUTURE AERATOR #11 VFD VFD3110
FUTURE AERATOR #10 VFD VFD3108
FUTURE AERATOR #9 VFD VFD3111
FUTURE AERATOR #8 VFD VFD3109
FUTURE AERATOR #7 VFD VFD3107
AERATOR #6 VFD VFD3106
AERATOR #5 VFD VFD3104
AERATOR #4 VFD VFD3102
AERATOR #3 VFD VFD3105
AERATOR #2 VFD VFD3103
AERATOR #1 VFD VFD3101
BLOWER #1 VFD VFD7110
BLOWER #2 VFD VFD7120
FUTURE BLOWER #3 VFD VFD7130
WIREWAY
1200A PANEL HB2
WIREWAY
FUTURE AERATOR #12 DV/DT FILTER
FUTURE AERATOR #11 DV/DT FILTER
FUTURE AERATOR #10 DV/DT FILTER
FUTURE AERATOR #9 DV/DT FILTER
FUTURE AERATOR #8 DV/DT FILTER
FUTURE AERATOR #7 DV/DT FILTER
AERATOR #6 DV/DT FILTER
AERATOR #5 DV/DT FILTER
AERATOR #4 DV/DT FILTER
AERATOR #3 DV/DT FILTER
AERATOR #2 DV/DT FILTER
AERATOR #1 DV/DT FILTER

3 E-015 **ELECTRICAL BUILDING ELEVATION A**

SCALE: NOT TO SCALE

DRAWING FILE: G:\Shared drives\BFIELD\Commerce\Drawings\E-001 CATL230033 Single Line Diagram.dwg
PLOTTED: Mar 19, 2025 - 10:22am

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

ISSUE	DATE
30% Submittal	05.30.2024
60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

ELECTRICAL
ELEVATIONS

E-015

PROPOSED SINGLE PHASE PANEL SCHEDULE "PANEL HA" LOCATION: INFLUENT PS

VOLTAGE, PHASE & AMPS:277/480Y—3Ø 4W. 1200AMP MLO A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 1 CONNECTED KVA OTHER:

CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	PUMP P-1010	400/	67	2.1					15/	HEAT PUMP	2
3	|	/			67	2.1			/	|	4
5	|	/3					67	2.1	/3	|	6
7	PUMP P-1020	400/	67	2.1					15/	HEAT PUMP	8
9	|	/			67	2.1			/	|	10
11	|	/3					67	2.1	/3	|	12
13	PUMP P-1030	400/	66.5	3.5					30/	PANEL-LA	14
15	|	/			66.5	1.2			/	|	16
17	|	/3					66.5	2.6	/3	|	18
19	PUMP P-1040	225/	38.2	-					/	SPACE	20
21	|	/			38.2	-			/	|	22
23	|	/3					38.2	-	/3	|	24
25	PUMP P-1050	225/	38.2	-					/	SPACE	26
27	|	/			38.2	-			/	|	28
29	|	/3					38.2	-	/3	|	30
31	SPACE	/	-	-					/	SPACE	32
33	|	/			-	-			/	|	34
35	|	/3					-	-	/3	|	36
37	SPACE	/	-	-					/	SPACE	38
39	|	/			-	-			/	|	40
41	|	/3					-	-	/3	|	42

PROPOSED THREE PHASE PANEL SCHEDULE "PANEL LA" LOCATION: INFLUENT PS

VOLTAGE, PHASE & AMPS: 120/208Y—3Ø 4W. 60AMP MCB A.I.C. RATING: 10kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 1 CONNECTED KVA OTHER:

CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	LIGHTING	20/1	0.3	0.7					20/1	RECEPTACLES	2
3	OUTDOOR LIGHTING	20/1			0.2	0.5			20/1	SCADA PANEL (RTU-5)	4
5	GENERATOR HEATER	30/					2.5	0.1	20/1	GENERATOR CHARGER	6
7	|	/2	2.5	-					20/1	SPARE	8
9	PUMP CONTROL PANEL FCP1000	20/1			0.5	-			20/1	SPARE	10
11	SPARE	20/1					-	-	20/1	SPARE	12
13	SPARE	20/1	-	-					20/1	SPACE	14
15	SPACE	20/1			-	-			20/1	SPACE	16
17	SPACE	20/1					-	-	20/1	SPACE	18
19	SPACE	20/1	-	-					20/1	SPACE	20
21	SPACE	20/1			-	-			20/1	SPACE	22
23	SPACE	20/1					-	-	20/1	SPACE	24

NOTES:

1. PANELS HA & LA TO BE PROVIDED WITH "E-HOUSE"

PROPOSED THREE PHASE POWER PANEL SCHEDULE "PANEL HB1" LOCATION: BLOWER BUILDING

VOLTAGE, PHASE & AMPS:277/480Y—3Ø 4W. 1200AMP MLO A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 1 CONNECTED KVA OTHER: FEED-THRU LUGS

CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	DISC AERATOR No. 1	60/	11.1	11.1					60/	DISC AERATOR No. 2	2
3	|	/			11.1	11.1			/	|	4
5	|	/3					11.1	11.1	/3	|	6
7	DISC AERATOR No. 3	60/	11.1	21.3					125/	DISC AERATOR No. 4	8
9	|	/			11.1	21.3			/	|	10
11	|	/3					11.1	21.3	/3	|	12
13	DISC AERATOR No. 5	125/	21.3	21.3					125/	DISC AERATOR No. 6	14
15	|	/			21.3	21.3			/	|	16
17	|	/3					21.3	21.3	/3	|	18
19	FUTURE DISC AERATOR No. 7	60/	11.1	11.1					60/	FUTURE DISC AERATOR No. 8	20
21	|	/			11.1	11.1			/	|	22
23	|	/3					11.1	11.1	/3	|	24
25	FUTURE DISC AERATOR No. 9	60/	11.1	21.3					125/	FUTURE DISC AERATOR No. 10	26
27	|	/			11.1	21.3			/	|	28
29	|	/3					11.1	21.3	/3	|	30
31	FUTURE DISC AERATOR No. 11	125/	21.3	21.3					125/	FUTURE DISC AERATOR No. 12	32
33	|	/			21.3	21.3			/	|	34
35	|	/3					21.3	21.3	/3	|	36
37	SPACE	/	-	-					/	SPACE	38
39	|	/			-	-			/	|	40
41	|	/3					-	-	/3	|	42

PROPOSED THREE PHASE PANEL SCHEDULE "PANEL LB" LOCATION: BLOWER BUILDING

VOLTAGE, PHASE & AMPS: 120/208Y—3Ø 4W. 125AMP MCB A.I.C. RATING: 10kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 1 CONNECTED KVA OTHER:

CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	OUTDOOR LIGHTING	20/1	1.1	0.4					20/1	RECEPTACLES	2
3	BLOWER BUILDIING LIGHTING	20/1			1.1	0.5			20/1	RECEPTACLES	4
5	BLOWER BUILDIING EMERGENCY LIGHTING	20/1					0.2	-	20/1	SPARE	6
7	BLOWER BUILDING EF-1	20/1	0.9	-					20/1	SPARE	8
9	BLOWER BUILDING EF-2	20/1			0.9	0.7			20/1	SCREEN/GRIT RECEPTACLES	10
11	INFLUENT SAMPLER	20/1					0.5	0.7	20/1	SCREEN/GRIT LIGHTING	12
13	SCREEN WASH HEAT TRACE	20/1	1.0	0.7					20/1	SCREEN/GRIT RECEPTACLES	14
15	GRIT FLUIDIZING HEAT TRACE	20/1			1.0	0.7			20/1	SCREEN/GRIT LIGHTING	16
17	WASHER/COMPACTOR HEAT TRACE	20/1					1.0	0.5	20/1	DIGESTER DO ANALYZER (AIT7010)	18
19	AERATION CONTROL PANEL (FCP3100)	20/1	1.0	0.5					20/1	AERATION BASIN ANALYZER (AIT3101)	20
21	RAS FLOW METER No. 1	20/1			0.5	1.0			20/1	NAOH FEED HEAT TRACE	22
23	FUTURE RAS FLOW METER	20/1					0.5	1.0	20/1	NAOH FEED HEAT TRACE	24
25	SCADA (RTU-2)	20/1	0.5	-					20/1	SPARE	26
27	EXHAUST FAN	20			0.0	-			20/1	SPARE	28
29	|	/2					0.7	-	20/1	SPARE	30
31	INFLUENT FLOW METER (FIT1040)	20/1	0.3	-					20/1	SPARE	32
33	EQ FLOW METER (FIT2201)	20/1			0.3	-			20/1	SPARE	34
35	SPACE	20/1					-	-	20/1	SPACE	36
37	SPACE	20/1	-	-					20/1	SPACE	38
39	SPACE	20/1			-	-			20/1	SPACE	40
41	SPACE	20/1					-	-	20/1	SPACE	42

PROPOSED THREE PHASE POWER PANEL SCHEDULE "PANEL HB2" LOCATION: BLOWER BUILDING

VOLTAGE, PHASE & AMPS:277/480Y—3Ø 4W. 400AMP MLO A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 1 CONNECTED KVA OTHER: FEED-THRU LUGS

CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	RAS/WAS CONTROL PANEL	70/	11.4	9.9					50/	PANEL LB	2
3	|	/			11.4	7.5			/	|	4
5	|	/3					12.8	8.6	/3	|	6
7	SCREENINGS CONTROL PANEL (FCP1110)	30/	3.5	3.9					/	FUTURE GRIT CONTROL PANEL (FCP1220)	8
9	|	/			3.5	3.9			/	|	10
11	|	/3					3.5	3.9	/3	|	12
13	GRIT CONTROL PANEL (FCP1210)	30/	3.9	11.4					/	FUT. RAS/WAS CONTROL PANEL	14
15	|	/			3.9	11.4			/	|	16
17	|	/3					3.9	12.8	/3	|	18
19	ROOF TOP UNIT (RTU-3)	50/	12.7	0.3					15/	FLOW CONTORL VALVE (V2202)	20
21	|	/			12.7	0.3			/	|	22
23	|	/3					12.7	0.3	/3	|	24
25	BLOWER BUILDING UNIT HEATER EUH-B	30/	6.7	4.8					100/	PANEL HG	26
27	|	/			6.7	4.8			/	|	28
29	|	/3					6.7	4.8	/3	|	30
31	BLOWER BUILDING UNIT HEATER EUH-B	30/	6.7	1.8					30/1	SITE LIGHTING (OLCP1)	32
33	|	/			6.7	-			-	-	34
35	|	/3					6.7	-	-	-	36
37	FUTURE PANEL HH	/	-	-					/	SPACE	38
39	|	/			-	-			/	|	40
41	|	/3					-	-	/3	|	42

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STATE OF GEORGIA CERTIFICATE OF AUTHORIZATION
GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

ISSUE	DATE
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60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

ELECTRICAL PANEL
SCHEDULES

E-016

PROPOSED THREE PHASE POWER PANEL SCHEDULE "PANEL HC" LOCATION: UV / FILTER STRUCTURE

VOLTAGE, PHASE ⱡ AMPS: 277/480Y—3Ø 4W. 600AMP MCB A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER: FEED-THRU LUGS		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	UV BANK #1 (PDP-1.1)	30/	6.4	6.4					30/	UV BANK # 2 (PDP-2.1)	2
3	|	/			6.4	6.4			/	|	4
5	|	/3					6.4	6.4	/3	|	6
7	COOLING PUMP #1 (FCP6011)	15/	6.3	6.3					15/	COOLING PUMP #2 (FCP6021)	8
9	|	/			6.3	6.3			/	|	10
11	|	/3					6.3	6.3	/3	|	12
13	FILTER No. 1 (FCP5010)	15/	3.0	3.0					15/	FILTER No. 2 (FCP5020)	14
15	|	/			3.0	3.0			/	|	16
17	|	/3					4.4	4.5	/3	|	18
19	CLARIFIER No. 1	15/	0.5	0.5					15/	FUTURE CLARIFIER No. 3	20
21	|	/			0.5	0.5			/	|	22
23	|	/3					0.5	0.5	/3	|	24
25	CLARIFIER No. 2	15/	0.5	0.5					15/	FUTURE CLARIFIER No. 4	26
27	|	/			0.5	0.5			/	|	28
29	|	/3					0.5	0.5	/3	|	30
31	POST AIR CONTROL PANEL	50/	9.1	14.8					100/	PANEL-LC	32
33	|	/			9.1	12.8			/	|	34
35	|	/3					10.6	12.2	/3	|	36
37	REUSE WATER CONTROL PANEL	100/	18.8	1.8					30/1	SITE LIGHTING (OLCP2)	38
39	|	/			18.8	0.0			-	-	40
41	|	/3					20.3	0.0	-	-	42

PROPOSED THREE PHASE PANEL SCHEDULE "PANEL HD" LOCATION: SLUDGE DEWATERING BUILDING

VOLTAGE, PHASE ⱡ AMPS: 277/480Y—3Ø 3W. 400AMP MLO A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER:		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	SLUDGE PRESS (FCP7100)	100/	12.6	7.1					30/	PANEL LD	2
3	|	/			12.6	7.4			/	|	4
5	|	/3					14.0	-	/3	|	6
1	EUH-A	15/	1.7	3.5					15/	EUH-A	8
9	|	/			1.7	3.8			/	|	10
11	|	/3					1.7	1.7	/3	|	12
13	EUH-A	15/	1.7	1.7					15/	EUH-A	14
15	|	/			1.7	1.7			/	|	16
17	|	/3					1.7	1.7	/3	|	18
19	FUTURE SLUDGE PRESS (FCP7200)	100/	12.6	-					/	SPACE	20
21	|	/			12.6	-			/	|	22
23	|	/3					12.6	-	/3	|	24
25	SPACE	/	-	-					/	SPACE	26
27	|	/			-	-			/	|	28
29	|	/3					-	-	/3	|	30
31	SPACE	/	-	-					/	SPACE	32
33	|	/			-	-			/	|	34
35	|	/3					-	-	/3	|	36

PROPOSED THREE PHASE LOAD CENTER SCHEDULE "PANEL HG" LOCATION: AERATION BASIN

VOLTAGE, PHASE ⱡ AMPS: 277/480Y—3Ø 3W. 100AMP MCB A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER:		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	AERATION HOIST No. 1	15/	1.3	1.3					15/	AERATION HOIST No. 2	2
3	|	/			1.3	1.3			/	|	4
5	|	/3					1.3	1.3	/3	|	6
7	AERATION HOIST No. 3	15/	1.3	0.3					/	VALVE V3113	8
9	|	/			1.3	0.3			/	|	10
11	|	/3					1.3	0.3	/3	|	12
13	VALVE V3114	/	0.3	0.3					/	VALVE V3115	14
15	|	/			0.3	0.3			/	|	16
17	|	/3					0.3	0.3	/3	|	18
19	SPACE	/	-	-					/	SPACE	20
21	|	/			-	-			/	|	22
23	|	/3					-	-	/3	|	24
25	SPACE	/	-	-					/	SPACE	26
27	|	/			-	-			/	|	28
29	|	/3					-	-	/3	|	30

PROPOSED THREE PHASE PANEL SCHEDULE "PANEL LC" LOCATION: UV / FILTER STRUCTURE

VOLTAGE, PHASE ⱡ AMPS: 120/208Y—3Ø 4W. 200AMP MCB A.I.C. RATING: 10kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER: FEED-THRU LUGS		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	UV LIGHTS	20/1	0.5	0.5					20/1	UV-1 CONTROL PANEL (fCP6010)	2
3	UV RECEPTACLES	20/1			0.5	0.5			20/1	POWER DISCONNECT PANEL (PDP-1.1)	4
5	FILTER LIGHTS	20/1					0.5	0.5	20/1	PUMP-1 CONTROL PANEL (FCP6011)	6
7	FILTER RECEPTACLES	20/1	0.5	0.5					20/1	UV-2 CONTROL PANEL (FCP6020)	8
9	EFFLUENT FLOW METER	20/1			0.5	0.5			20/1	POWER DISCONNECT PANEL (PDP-2.1)	10
11	EFFLUENT SAMPLER	20/1					0.5	0.5	20/1	PUMP-2 CONTROL PANEL (FCP6021)	12
13	CLARIFIER No. 1 LIGHTING	20/1	0.2	0.2					20/1	CLARIFIER No. 3 LIGHTING	14
15	CLARIFIER No. 2 LIGHTING	20/1			0.2	0.2			20/1	CLARIFIER No. 4 LIGHTING	16
17	PANEL LE	125/					8.4	0.5	20/1	SCADA PANEL (RTU-3)	18
19	|	/	10.6	0.5					20/1	AERATION BASIN No. 1 DO/ORP ANALYZER	20
21	|	/3			8.4	0.5			20/1	FUT. A.B. No. 2 DO/ORP ANALYZER	22
23	SLUDGE BLANKET ANALYZER (AIT4010)	20/1					0.5	0.3	20/1	AERATION BASIN LIGTHING	24
25	SLUDGE BLANKET ANALYZER (AIT4020)	20/1	0.5	0.3					20/1	FUTURE AERATION BASIN LITHGING	26
27	SLUDGE FLOW METER (FIT3210/3220)	20/1			0.0	-			20/1	SPARE	28
29	SLUDGE FLOW METER (FIT4340)	20/1					0.5	-	20/1	SPARE	30
31	SLUDGE FLOW METER (FIT4350)	20/1	0.5	-					20/1	SPARE	32
33	YARD DRAIN PS FLOW METER (FIT8030)	20/1			0.5	-			20/1	SPARE	34
35	SPARE	20/1					-	-	20/1	SPARE	36
37	SPARE	20/1	-	-					20/1	SPARE	38
39	SPARE	20/1			-	-			20/1	SPARE	40
41	SPARE	20/1					-	-	20/1	SPARE	42

PROPOSED THREE PHASE PANEL SCHEDULE "PANEL LD" LOCATION: SLUDGE DEWATERING BUILDING

VOLTAGE, PHASE ⱡ AMPS: 120/208Y—3Ø 4W. 60AMP MCB A.I.C. RATING: 10kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER:		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	WATER HEATER	20/1	1.5	0.9					15/	EXHAUST FAN-5	2
3	WATER HEATER	20/1			1.5	0.9			/2	|	4
5	EMERGENCY LIGHTING	20/1					0.3	0.2	20/1	EXHAUST FAN-4	6
7	LIGHTING	20/1	0.6	2.3					30/	WATER HEATER (WH-1)	8
9	LIGHTING	20/1			1.1	2.3			/2	|	10
11	RECEPTACLES	20/1					0.9	0.4	20/1	MOTORIZED LOUVER	12
13	RECEPTACLES	20/1	0.9	0.9					20/1	RECEPTACLES	14
15	RECEPTACLES	20/1			0.9	0.7			20/1	POLYMER PANEL	16
17	FLOW METER (FIT7220)	20/1					0.3	0.2	20/1	EXHAUST FAN-3	18
19	SPACE	20/1	-	-					20/1	SPACE	20
21	SPACE	20/1			-	-			20/1	SPACE	22
23	SPACE	20/1					-	-	20/1	SPACE	24
25	SPACE	20/1	-	-					20/1	SPACE	26
27	SPACE	20/1			-	-			20/1	SPACE	28
29	SPACE	20/1					-	-	20/1	SPACE	30

PROPOSED THREE PHASE LOAD CENTER SCHEDULE "PANEL LE" LOCATION: CHEMICAL FEED AREA

VOLTAGE, PHASE ⱡ AMPS: 120/208Y—3Ø 4W. 125AMP MCB A.I.C. RATING: 10kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER:		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	CHEMICAL FEED AREA RECEPTACLES	20/1	0.7	0.9					20/1	CHEMICAL FEED AREA LIGHTING	2
3	CHEMICAL FEED HEATER EUH-1	20/			1.7	1.0			20/	CHEMCIAL FEED PANEL No. 1	4
5	|	/2					1.7	1.0	/2	|	6
7	TANK HEATER	20/	1.9	1.0					20/	CHEMCIAL FEED PANEL No. 2	8
9	|	/2			1.9	1.0			/2	|	10
11	TANK HEATER	20/					1.9	1.0	20/1	CHEMCIAL FEED PANEL No. 3	12
13	|	/2	1.9	1.0					20/1	|	14
15	HEAT TRACE RECEPTACLES	20/1			1.5	0.3			20/1	LEVEL TRANSDUCER	16
17	HEAT TRACE RECEPTACLES	20/1					1.5	0.3	20/1	LEVEL TRANSDUCER	18
19	HEAT TRACE RECEPTACLES	20/1	1.5	0.7					20/1	EXHAUST FAN (EF-6)	20
21	UNIT HEATER (EUH-1)	15/			1.1	-			20/1	SPARE	22
23	|	/					1.1	-	20/1	SPARE	24
25	|	/3	1.1	-					20/1	SPARE	26
27	SPACE	20/1			-	-			20/1	SPACE	28
29	SPACE	20/1					-	-	20/1	SPACE	30
31	SPACE	20/1	-	-					20/1	SPACE	32
33	SPACE	20/1			-	-			20/1	SPACE	34
35	SPACE	20/1					-	-	20/1	SPACE	36

PROPOSED THREE PHASE LOAD CENTER SCHEDULE "PANEL HF" LOCATION: ADMIN BUILDING

VOLTAGE, PHASE ⱡ AMPS: 277/480Y—3Ø 3W. 200AMP MCB A.I.C. RATING: 42kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 3R			CONNECTED KVA						OTHER:		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	ROOF TOP UNIT (RTU-1)	40/	8.6	10.7					100/	PANEL-LF	2
3	|	/			8.6	10.8			/	|	4
5	|	/3					8.6	10.4	/3	|	6
7	ROOF TOP UNIT (RTU-2)	60/	16.4	-					/	SPACE	8
9	|	/			16.4	-			/	|	10
11	|	/3					16.4	-	/3	|	12
13	WATER HEATER	20/	4.0	-					/	SPACE	14
15	|	/			4.0	-			/	|	16
17	|	/3					4.0	-	/3	|	18
19	SPACE	/	-	-					/	SPACE	20
21	|	/			-	-			/	|	22
23	|	/3					-	-	/3	|	24
25	SPACE	/	0.0	0.0					/	SPACE	26
27	|	/			0.0	0.0			/	|	28
29	|	/3					0.0	0.0	/3	|	30

PROPOSED THREE PHASE PANEL SCHEDULE "PANEL LF" LOCATION: ADMIN BUILDING

VOLTAGE, PHASE ⱡ AMPS: 120/208Y—3Ø 4W. 200AMP MCB A.I.C. RATING: 10kAIC

MOUNTING: SURFACE ENCLOSURE: NEMA 1			CONNECTED KVA						OTHER: SUB-FEED LUGS		
CKT	DESCRIPTION	CB/P	PHASE A		PHASE B		PHASE C		CB/P	DESCRIPTION	CKT
1	LIGHTING	20/1	0.5	0.7					20/1	RECEPTACLES	2
3	LIGHTING	20/1			1.0	0.9			20/1	RECEPTACLES	4
5	LIGHTING	20/1					1.4	0.9	20/1	RECEPTACLES	6
7	EMERGENCY LIGHTING / EXIT SIGNS	20/1	0.3	0.9					20/1	RECEPTACLES	8
9	OUTDOOR LIGHTING	20/1			0.4	1.3			20/1	RECEPTACLES	10
11	FIRE ALARM PANEL	30/1					2.4	1.1	20/1	RECEPTACLES	12
13	RECEPTACLES	20/1	0.7	0.7					20/1	RECEPTACLES	14
15	RECEPTACLES	20/1			0.7	0.7			20/1	RECEPTACLES	16
17	REFRIGERATOR	20/1					1.0	0.7	20/1	RECEPTACLES	18
19	INCUBATOR	20/1	1.0	0.6					20/	FUME HOOD	20
21	AUTOCLAVE	20/1			1.0	0.6			/2	|	22
23	OVEN	20/1					1.0	1.2	20/1	DISHWASHER	24
25	REFRIGERATOR	20/1	1.0	0.2					20/1	EF-1	26
27	WALL HEATER (EWH-1)	15/			0.8	0.2			20/1	EF-2	28
29	|	/2					0.8	1.2	20/1	LEF-1	30
31	SCADA (RTU-1)	20/1	1.0	1.0					20/1	GATE OPERATOR	32
33	BOTTLE WASHER	20/1			1.2	0.0			20/1	SPARE	34
35	WASHER	20/1					1.2	0.0	20/1	SPARE	36
37	DRYER	30/	2.0	-					20/1	SPARE	38
39	|	/2			2.0	-			20/1	SPARE	40
41	SPARE	20/1					-	-	20/1	SPARE	42

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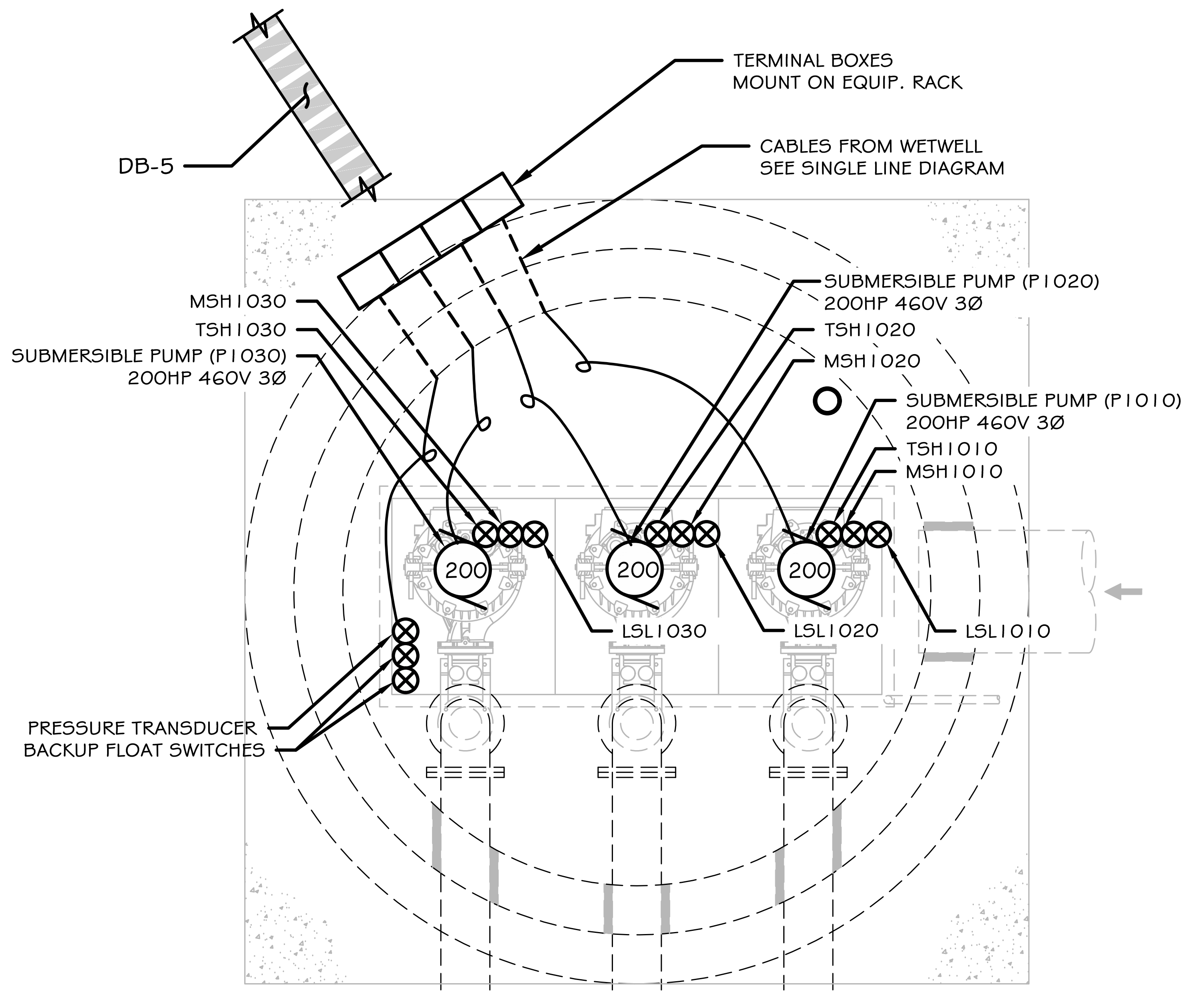
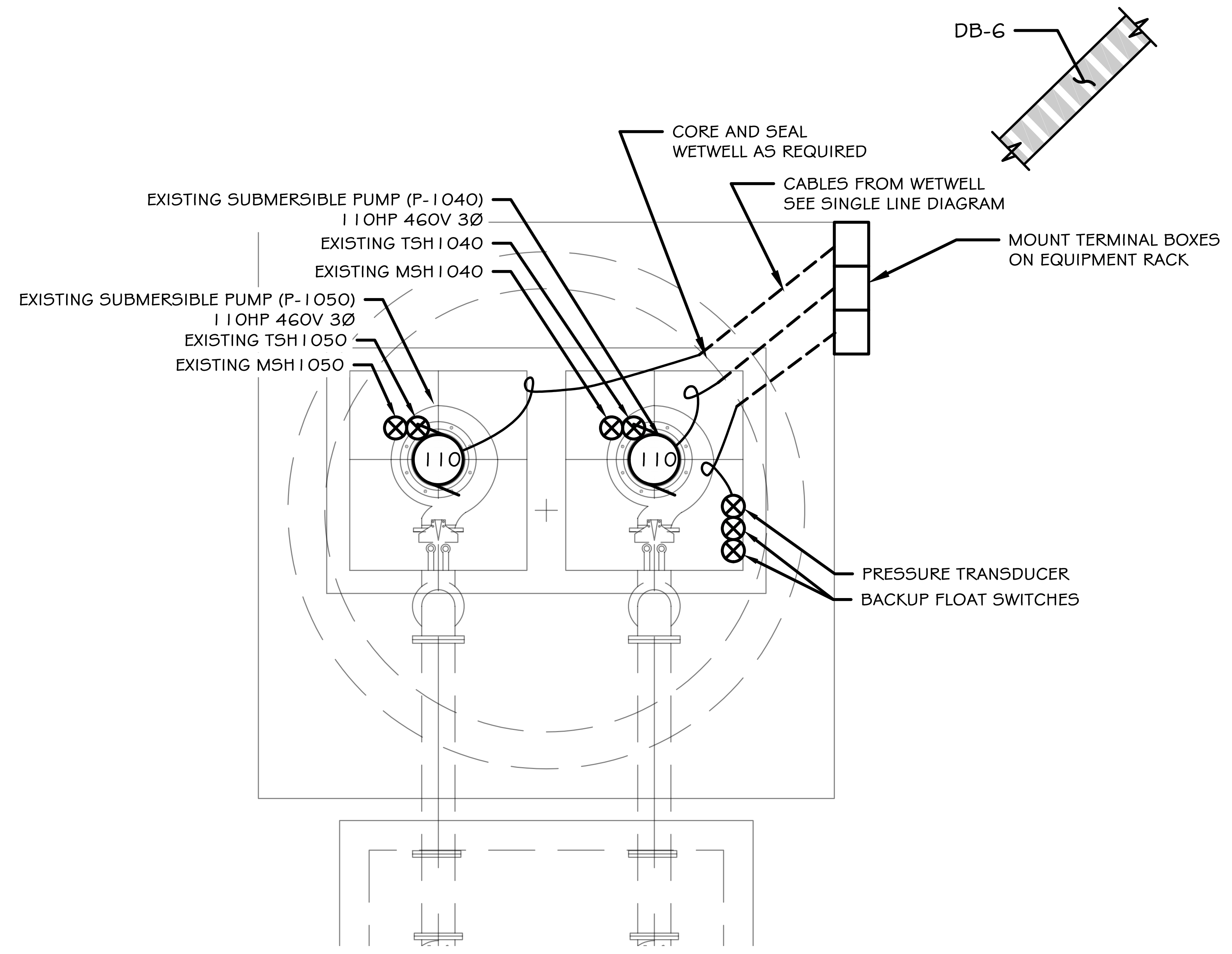


1 E-101 **INFLUENT PUMP STATION ELECTRICAL PLAN**

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

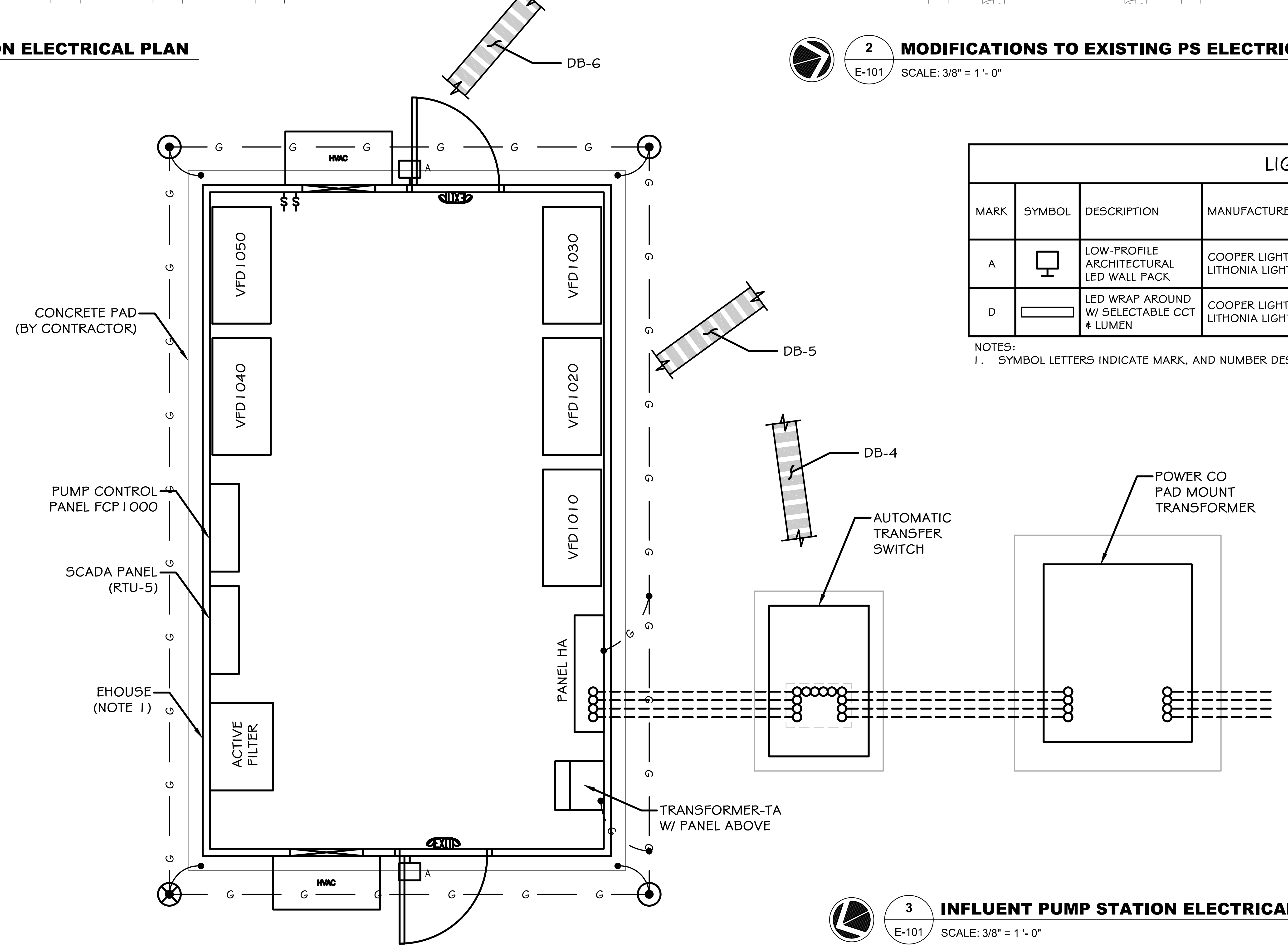


2 E-101 **MODIFICATIONS TO EXISTING PS ELECTRICAL PLAN**

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

NOTES:

1. EHOUSE TO COME PREWIRED WITH THE FOLLOWING EQUIPMENT:
   - 1.1. HVAC
   - 1.2. LIGHTING
   - 1.3. PANEL HA (480V 3PHASE)
   - 1.4. 3-200 HP 6 PULSE VFDS W/ DV/DT FILTER
   - 1.5. 2-110 HP 6 PULSE VFDS W/ DV/DT FILTER
   - 1.6. 15KVA TRANSFORMER 480/208V 3PHASE
   - 1.7. PANEL LA (208V 3 PHASE)
   - 1.8. ACTIVE FITLER
2. PUMP CONTROL PANEL (BY PUMP MANUFACTURER) AND SCADA PANEL (BY INTEGRATOR) TO BE INSTALLED BY CONTRACTOR.
3. GROUND RING &CONNECTIONS BY CONTRACTOR.



3 E-101 **INFLUENT PUMP STATION ELECTRICAL BUILDING PLAN**

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

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS
				WATTS	LUMENS	TEMP	CRI	TYPE	
A	🖵	LOW-PROFILE ARCHITECTURAL LED WALL PACK	COOPER LIGHTING - LUMARK / XTOR6B-W BZ LITHONIA LIGHTING / WPX2 LED 40K MVOLT DDBXD	58	6,133	4000K	70	LED	120V
D	▭	LED WRAP AROUND W/ SELECTABLE CCT & LUMEN	COOPER LIGHTING - METALUX / 4NWS3CMS-UNV-HI LITHONIA LIGHTING / FML4W 48 5000LM 840 ZT	39	4,851	3500K	82	LED	120V

NOTES:

1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

ISSUE	DATE
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60% Submittal	08.29.2024
90% Submittal	11.27.2024
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Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

INFLUENT PUMP
STATION ELECTRICAL
PLAN

E-101

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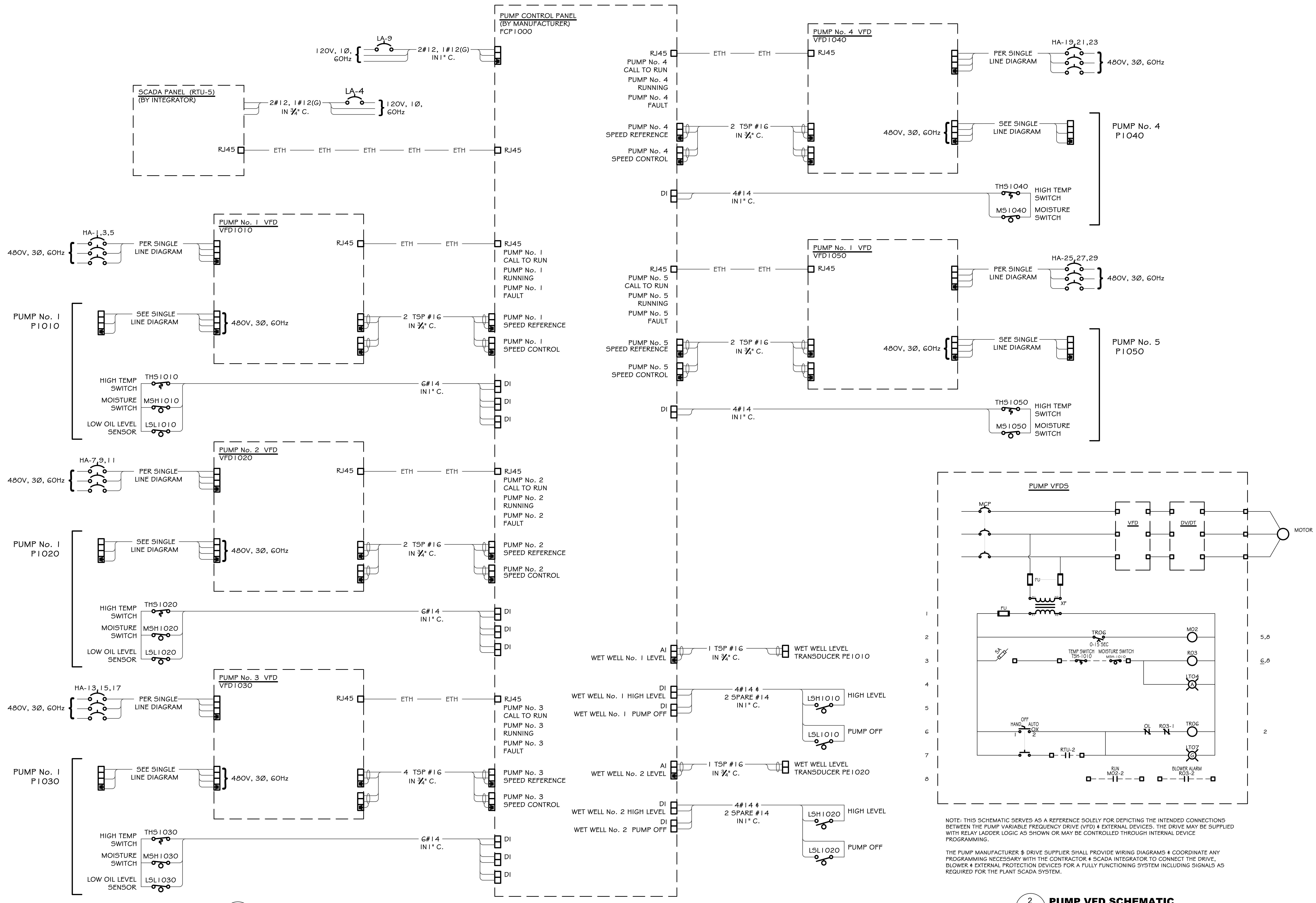

1 E-102 **INFLUENT PUMP STATION SCHEMATIC**
SCALE: N.T.S.

NOTE: THIS SCHEMATIC SERVES AS A REFERENCE SOLELY FOR DEPICTING THE INTENDED CONNECTIONS BETWEEN THE PUMP VARIABLE FREQUENCY DRIVE (VFD) & EXTERNAL DEVICES. THE DRIVE MAY BE SUPPLIED WITH RELAY LADDER LOGIC AS SHOWN OR MAY BE CONTROLLED THROUGH INTERNAL DEVICE PROGRAMMING.

THE PUMP MANUFACTURER $ DRIVE SUPPLIER SHALL PROVIDE WIRING DIAGRAMS & COORDINATE ANY PROGRAMMING NECESSARY WITH THE CONTRACTOR & SCADA INTEGRATOR TO CONNECT THE DRIVE, BLOWER & EXTERNAL PROTECTION DEVICES FOR A FULLY FUNCTIONING SYSTEM INCLUDING SIGNALS AS REQUIRED FOR THE PLANT SCADA SYSTEM.

2 E-102 **PUMP VFD SCHEMATIC**
SCALE: N.T.S.

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GROVE CREEK WPCP
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03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

INFLUENT PUMP STATION ELECTRICAL SCHEMATICS

E-102

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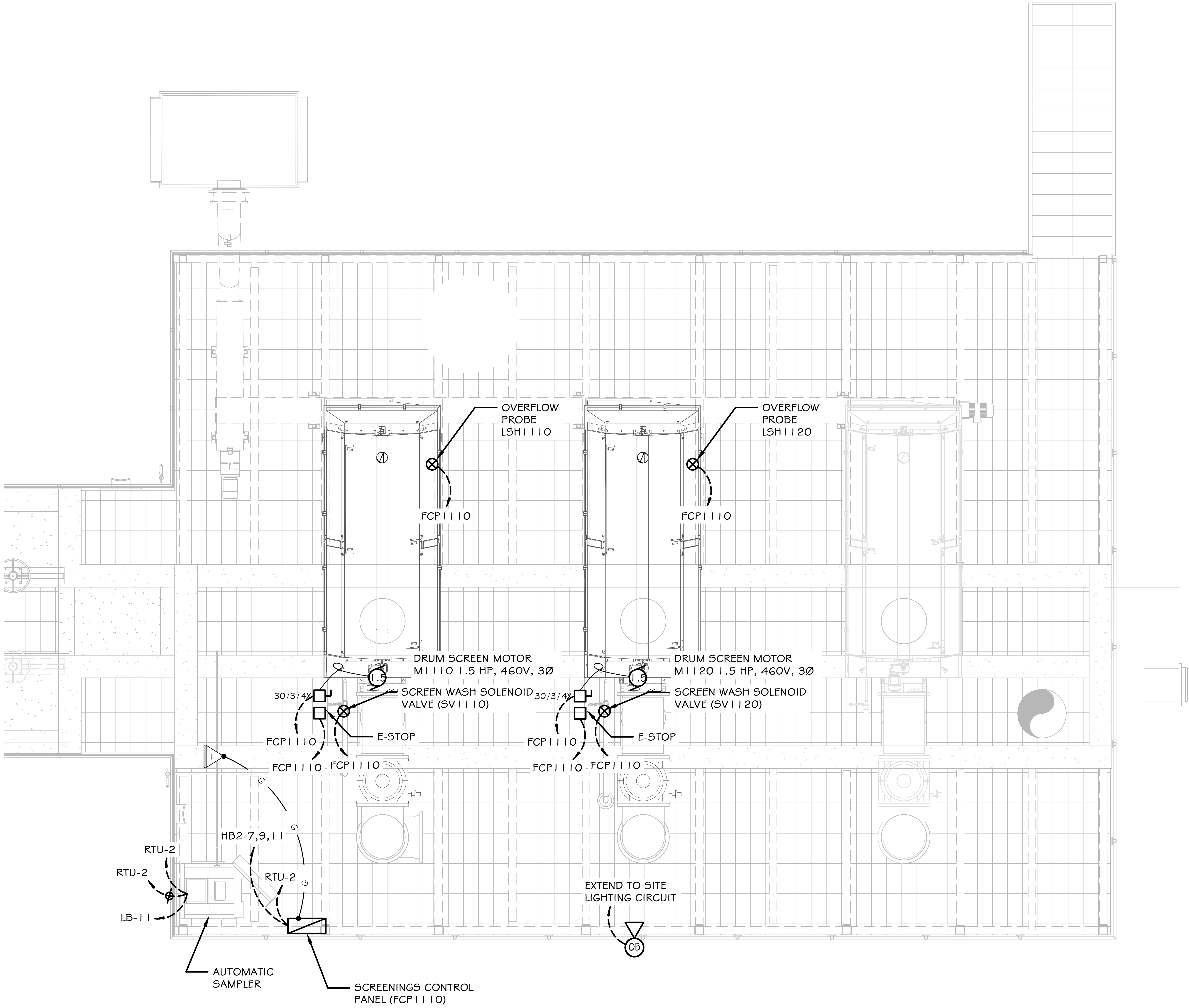
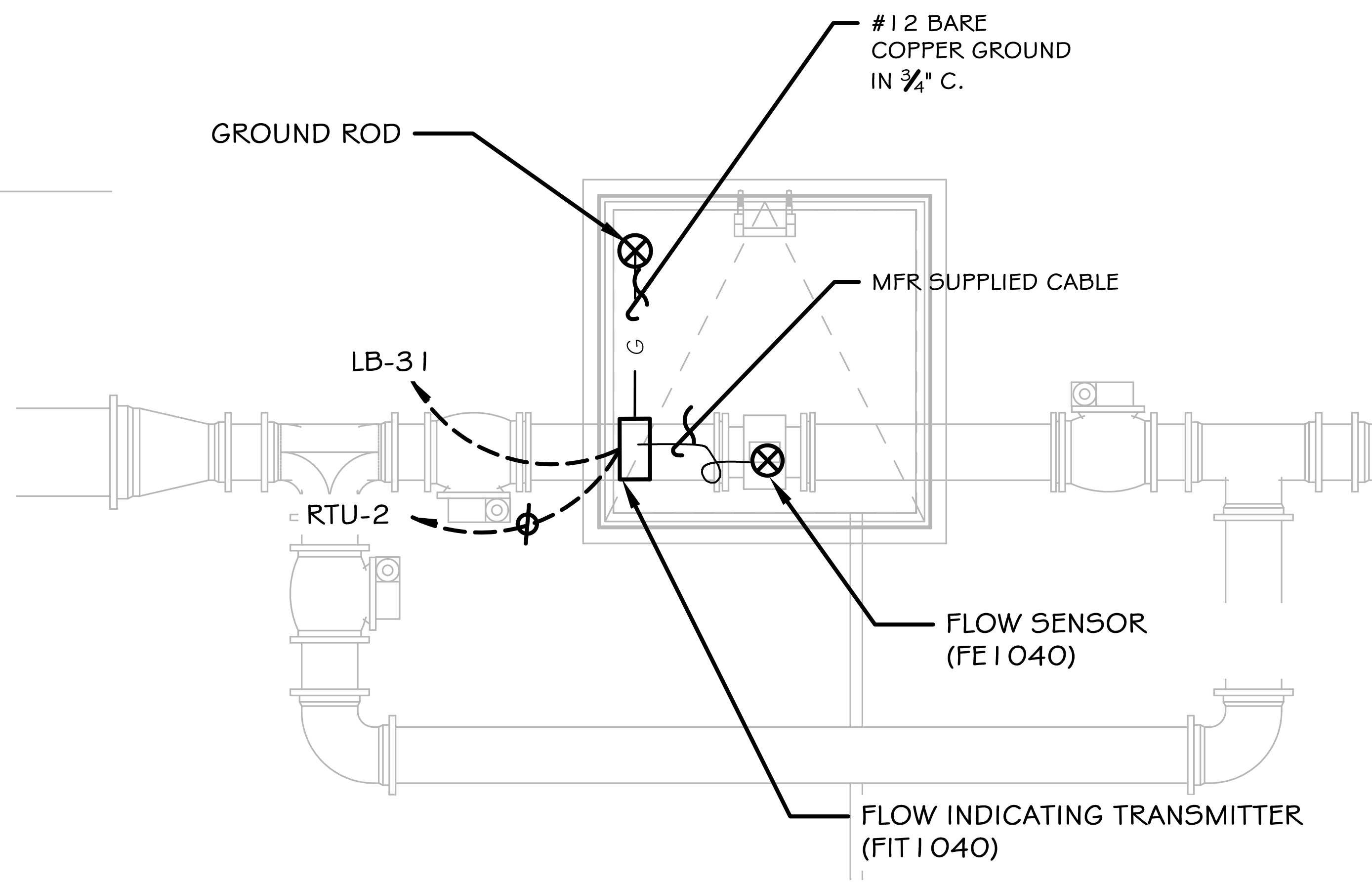
KEYED NOTES:

1. BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (OVERFLOW PROBE, SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONTRACTOR SHALL PROVIDE A NEC SIZED NEMA 4X STAINLESS STEEL JUNCTION BOXES FOR EACH 120V POWER CIRCUITS, SIGNAL CABLING & CONTROL WIRES TO TRANSITION FROM INDIVIDUAL DEVICE CONDUITS TO COMBINED CONDUITS IN THE DUCT BANKS. JUNCTION BOXES SHALL BE MOUNTED APPROXIMATELY 24" ABOVE GRADE ON UNI-STRUT SUPPORTS W/ STAINLESS STEEL HARDWARE.
3. CONDUITS SHALL BE INSTALLED WITHIN THE CONCRETE WALLS WHERE PRACTICABLE. WHERE EXPOSED CONDUITS ARE REQUIRED THE CONDUIT SHALL BE PVC COATED RIGID STEEL CONDUIT.


OVERFLOW PROBE LSH1110
OVERFLOW PROBE LSH1120
FCP1110
FCP1110
DRUM SCREEN MOTOR M1110 1.5 HP, 460V, 3Ø
DRUM SCREEN MOTOR M1120 1.5 HP, 460V, 3Ø
1.5
1.5
30/3/4X
30/3/4X
SCREEN WASH SOLENOID VALVE (SV1110)
SCREEN WASH SOLENOID VALVE (SV1120)
E-STOP
E-STOP
FCP1110
FCP1110
FCP1110
FCP1110
FCP1110
FCP1110
1
G
G
G
HB2-7,9,11
RTU-2
RTU-2
RTU-2
LB-11
EXTEND TO SITE LIGHTING CIRCUIT
OB
AUTOMATIC SAMPLER
SCREENINGS CONTROL PANEL (FCP1110)


GROUND ROD
#12 BARE COPPER GROUND IN 3/4" C.
MFR SUPPLIED CABLE
G
LB-31
RTU-2
FLOW SENSOR (FE1040)
FLOW INDICATING TRANSMITTER (FIT1040)

2 E-111 INFLUENT FLOW METER ELECTRICAL PLAN

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

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	TELESCOPING RAIL MOUNT	2

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 20' TALL SQUARE STEEL POLE POWDER COAT BLACK.
2. ALUMINUM POLE W/ TELESCOPING RAIL MOUNT. (SEE DETAIL SHT. E-005)

1 E-111 HEADWORKS ELECTRICAL PLAN

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

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Designer:	GS
Drawn By:	

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GROVE CREEK WPCP
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CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

DRUM SCREEN UPPER
ELECTRICAL PLAN

E-111

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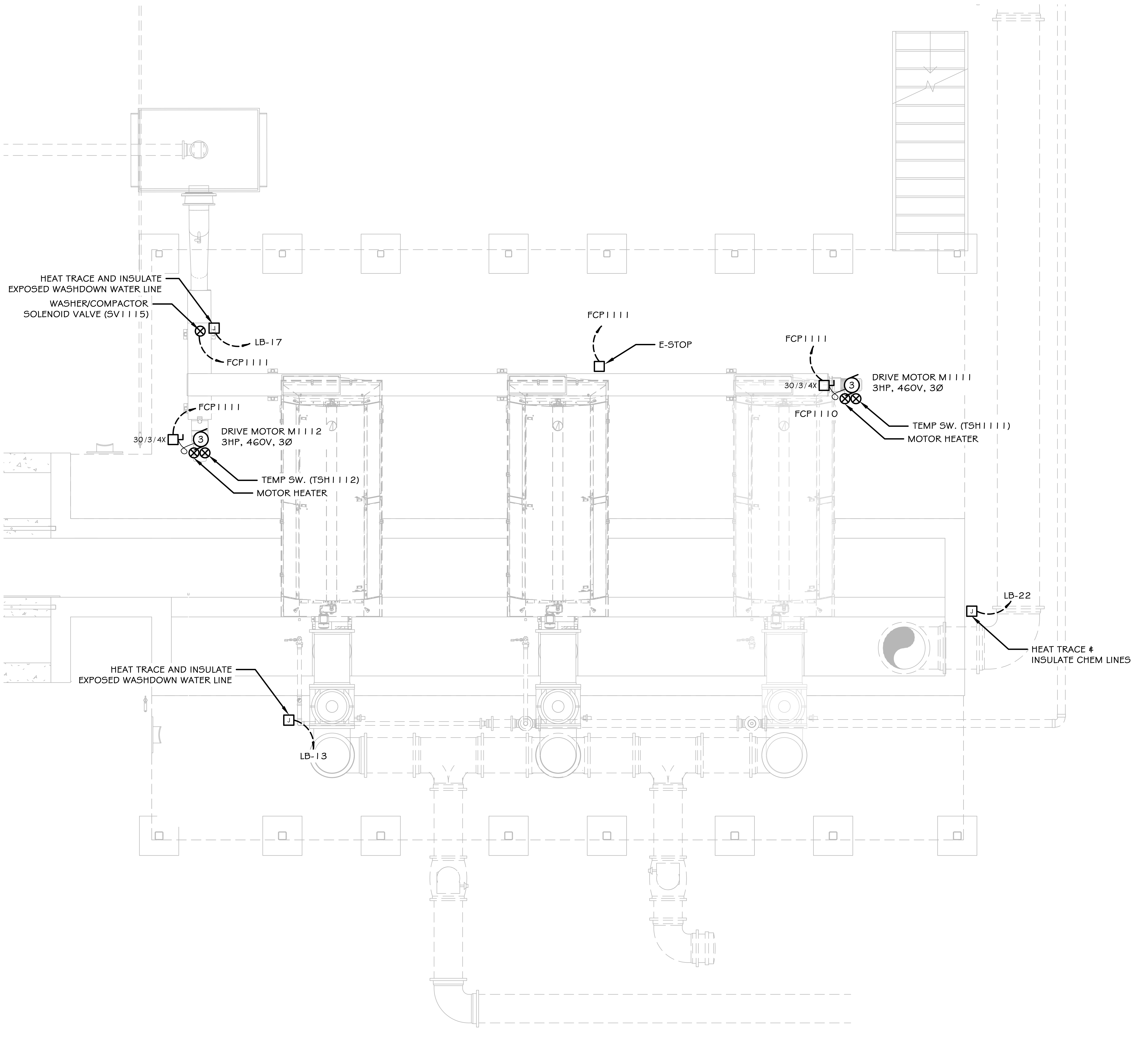

1 E-112 **HEADWORKS ELECTRICAL PLAN**
SCALE: 3/8" = 1 '- 0"

KEYED NOTES:

1 BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONTRACTOR SHALL PROVIDE A NEC SIZED NEMA 4X STAINLESS STEEL JUNCTION BOXES FOR EACH 120V POWER CIRCUITS, SIGNAL CABLING & CONTROL WIRES TO TRANSITION FROM INDIVIDUAL DEVICE CONDUITS TO COMBINED CONDUITS IN THE DUCT BANKS. JUNCTION BOXES SHALL BE MOUNTED APPROXIMATELY 24" ABOVE GRADE ON UNI-STRUT SUPPORTS W/ STAINLESS STEEL HARDWARE.
3. CONDUITS SHALL BE INSTALLED WITHIN THE CONCRETE WALLS WHERE PRACTICABLE. WHERE EXPOSED CONDUITS ARE REQUIRED THE CONDUIT SHALL BE PVC COATED RIGID STEEL CONDUIT.

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DRUM SCREEN LOWER
ELECTRICAL PLAN

E-112

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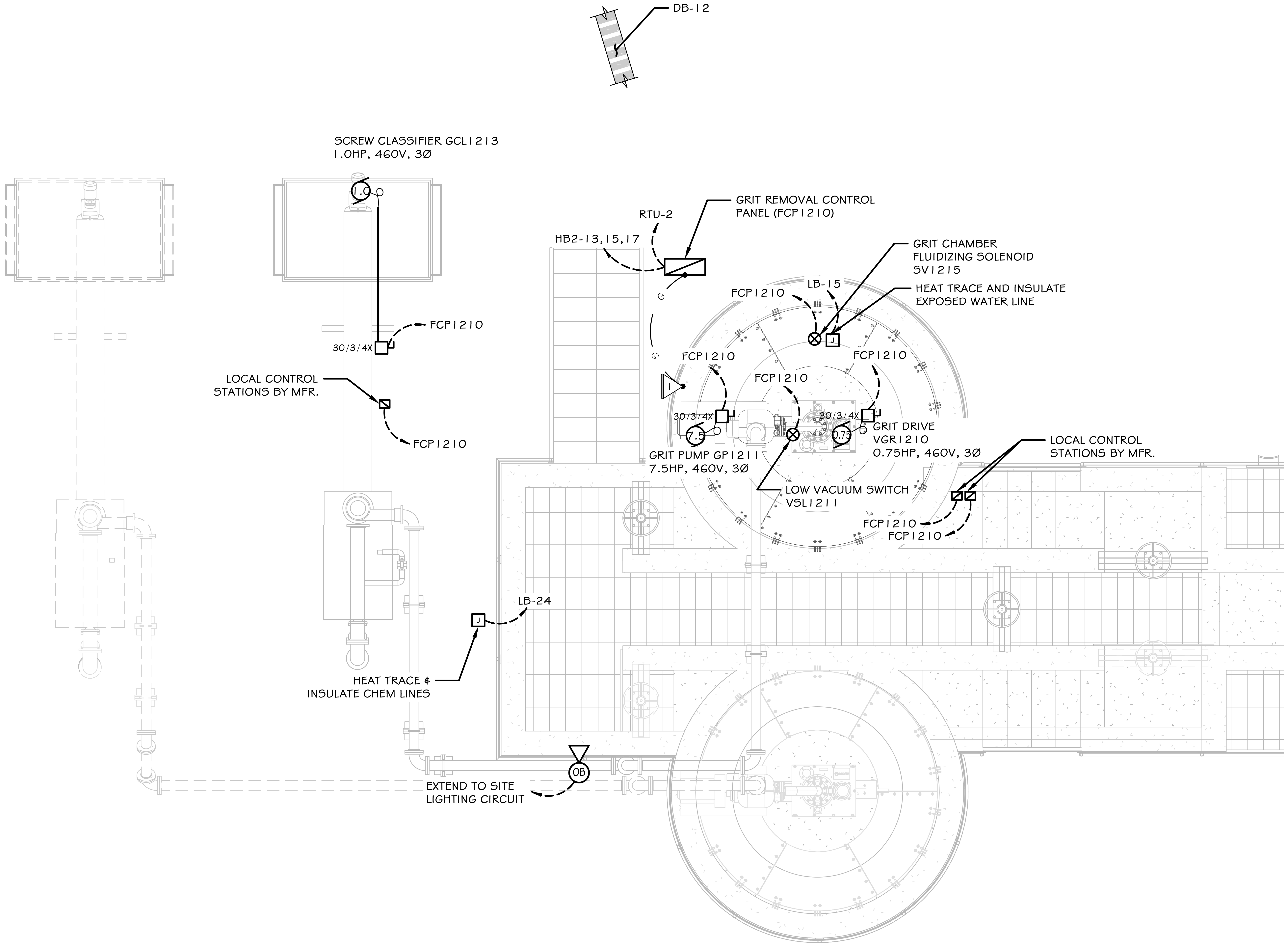
KEYED NOTES:

1. BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (VACUUM SWITCH, SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONTRACTOR SHALL PROVIDE A NEC SIZED NEMA 4X STAINLESS STEEL JUNCTION BOXES FOR EACH 120V POWER CIRCUITS, SIGNAL CABLING & CONTROL WIRES TO TRANSITION FROM INDIVIDUAL DEVICE CONDUITS TO COMBINED CONDUITS IN THE DUCT BANKS. JUNCTION BOXES SHALL BE MOUNTED APPROXIMATELY 24" ABOVE GRADE ON UNI-STRUT SUPPORTS W/ STAINLESS STEEL HARDWARE.
3. CONDUITS SHALL BE INSTALLED WITHIN THE CONCRETE WALLS WHERE PRACTICABLE. WHERE EXPOSED CONDUITS ARE REQUIRED THE CONDUIT SHALL BE PVC COATED RIGID STEEL CONDUIT.



LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	TELESCOPING RAIL MOUNT	2

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 20' TALL SQUARE STEEL POLE POWDER COAT BLACK.
2. ALUMINUM POLE W/ TELESCOPING RAIL MOUNT. (SEE DETAIL SHT. E-005)

1
E-113
HEADWORKS ELECTRICAL PLAN
SCALE: 3/8" = 1'-0"

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Drawn By:	

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GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

GRIT REMOVAL
ELECTRICAL PLAN

E-113

BFIELD ENGINEERING, LLC
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NOTES

1. FACILITY IS A CLASS CLASS I STRUCTURE.
2. PROVIDE A UL MASTER LABEL LIGHTNING PROTECTION SYSTEM WHICH COMPLIES WITH NFPA 780-97, 70-99 AND UL 96-94 AND 96A-94.
3. ALL MATERIAL BELOW GRADE SHALL BE OF COPPER.
4. PROVIDE DOWN LEAD EVERY 100'-0".

KEYED NOTES:

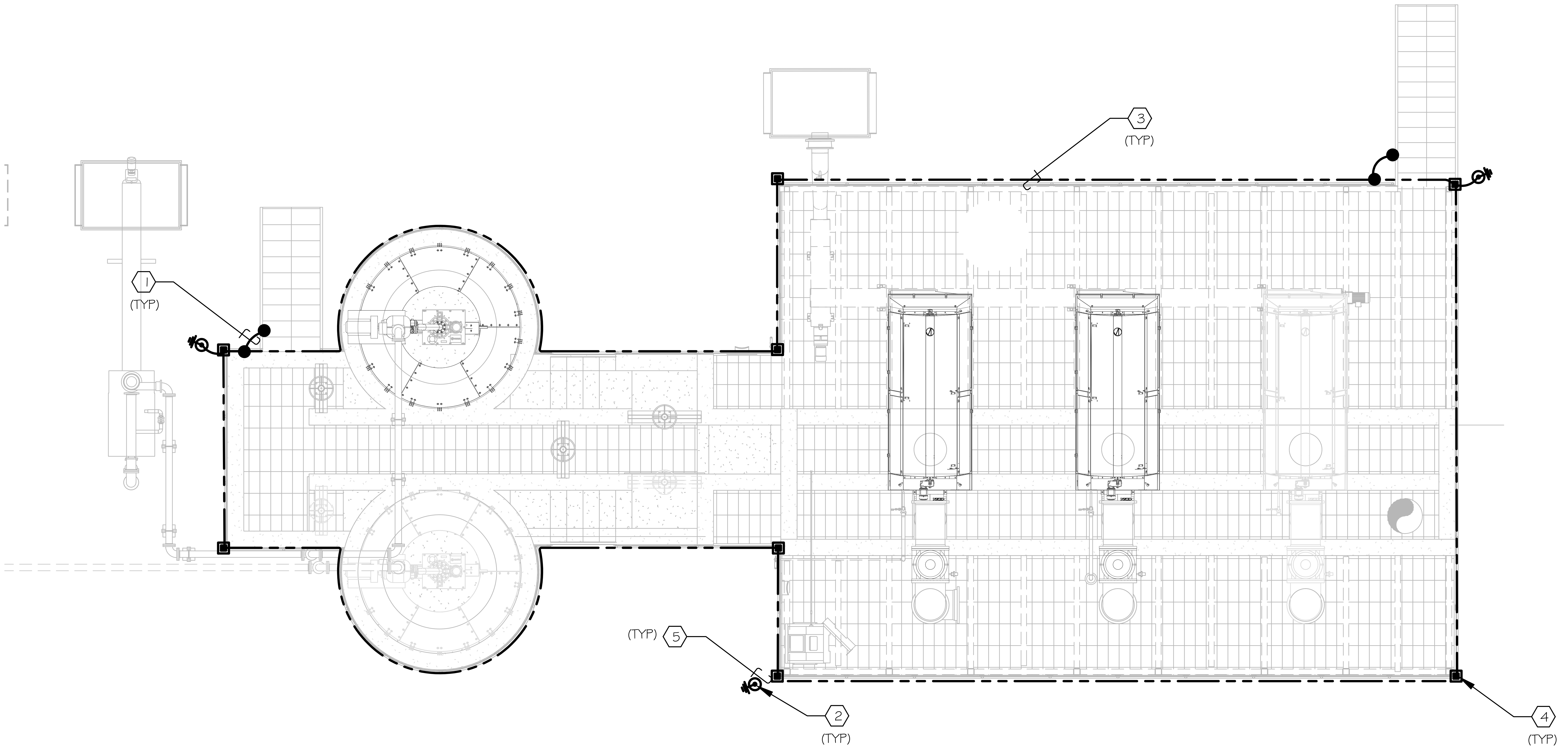
① BOND HANDRAIL TO LIGHTNING PROTECTION MAIN CONDUCTOR.

② 5/8" DIA 10'-0" LONG SOLID COPPER CLAD STEEL GROUND ROD. BOND LIGHTNING PROTECTION DOWN LEAD WITH EXOTHERMIC WELD. SEE DETAIL 2.

③ ROOF CURB MOUNTED MAIN CONDUCTOR CABLE MEETING CLASS I CONSTRUCTION REQUIREMENTS AND REQUIRED BENDS MUST HAVE A MINIMUM 36 INCH RADIUS. STRANDED, ALUMINUM LIGHTNING PROTECTIONS CABLE. MATCH CABLE WITH EXISTING.

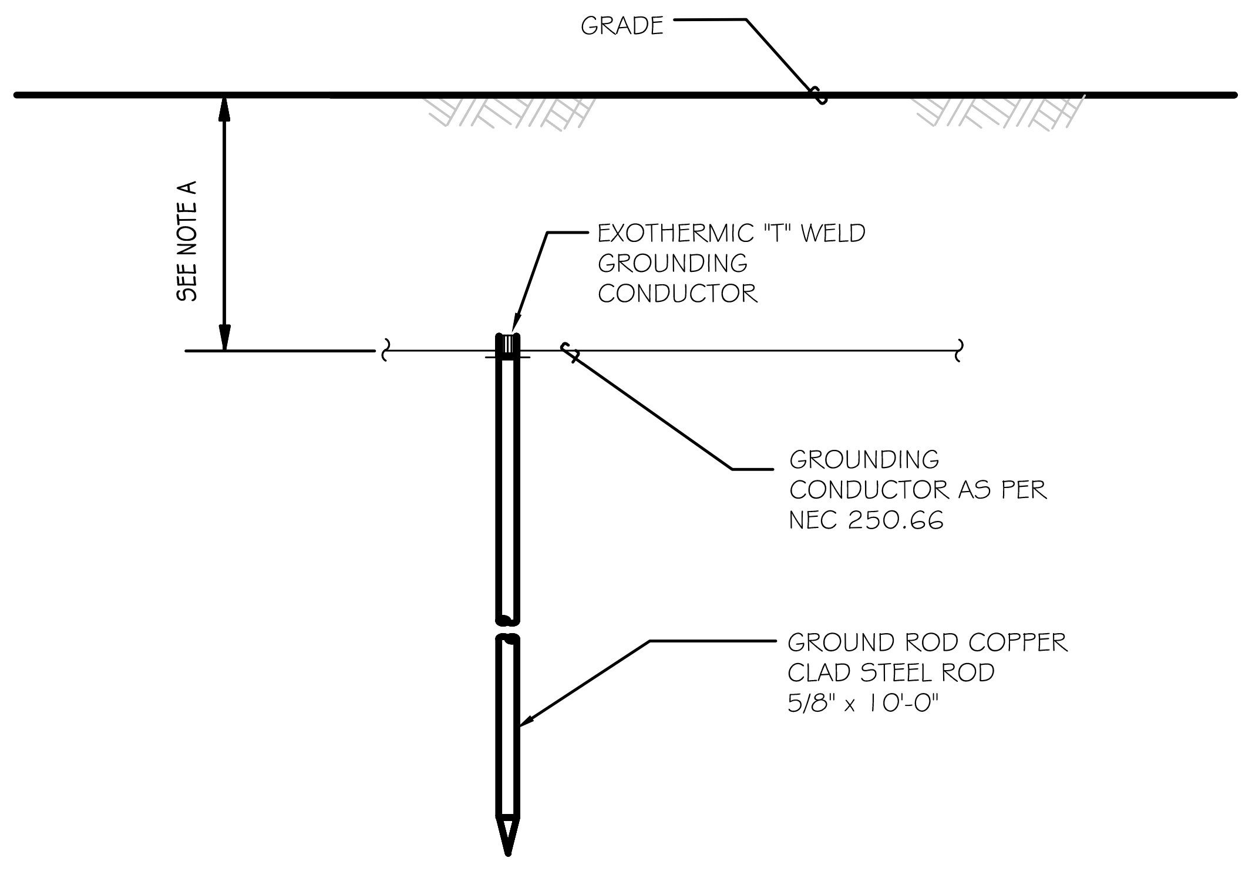
④ AIR TERMINAL MEETING CLASS I CONSTRUCTION REQUIREMENTS. INSTALL 20'-0" IN PART IN PERIMETER OF THE ROOF. REFER TO DETAIL DRAWING 3.

⑤ ALUMINUM LIGHTNING PROTECTION DOWNLEAD CONDUCTOR BONDED TO GROUND RING VIA EXOTHERMIC WELD. DOWNLEAD CONDUCTOR TO BE TRANSITION TO COPPER CONDUCTOR 2 FEET ABOVE FINISH GRADE TO BELOW FINISH GRADE. NO ALUMINUM CONDUCTOR ALLOWED BELOW FINISH GRADE. PROVIDE LIGHTNING PROTECTION DOWNLEAD EVERY LESS THAN 100'-0" ALONG PERIMETER OF MAIN CONDUCTOR. CONTRACTOR TO FIELD VERIFY FOR EXACT REQUIREMENTS.



1 E-114 **HEADWORKS LIGHTNING PROTECTION PLAN**

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


GRADE
SEE NOTE A
EXOTHERMIC "T" WELD GROUNDING CONDUCTOR
GROUNDING CONDUCTOR AS PER NEC 250.66
GROUND ROD COPPER CLAD STEEL ROD 5/8" x 10'-0"

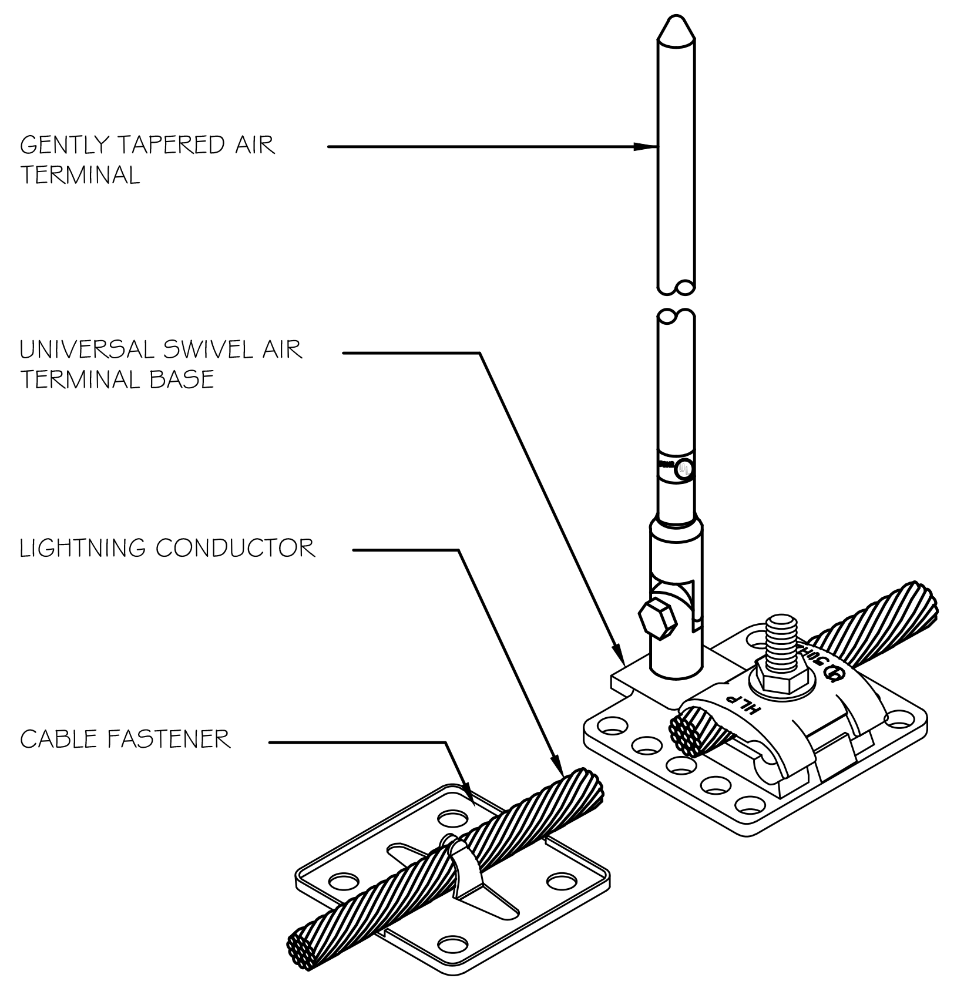
NOTES:

A. GROUND LINE TO BE A MIN. OF 30" OR BELOW FROST LINE, WHICHEVER IS DEEPER.

B. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

2 E-114 **GROUNDING ROD DETAIL**

SCALE: NOT TO SCALE


GENTLY TAPERED AIR TERMINAL
UNIVERSAL SWIVEL AIR TERMINAL BASE
LIGHTNING CONDUCTOR
CABLE FASTENER

3 E-114 **FLAT ROOF MOUNTED AIR TERMINAL**

SCALE: NOT TO SCALE

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No.PEF007898
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Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

HEADWORKS
LIGHTNING
PROTECTION PLAN

E-114

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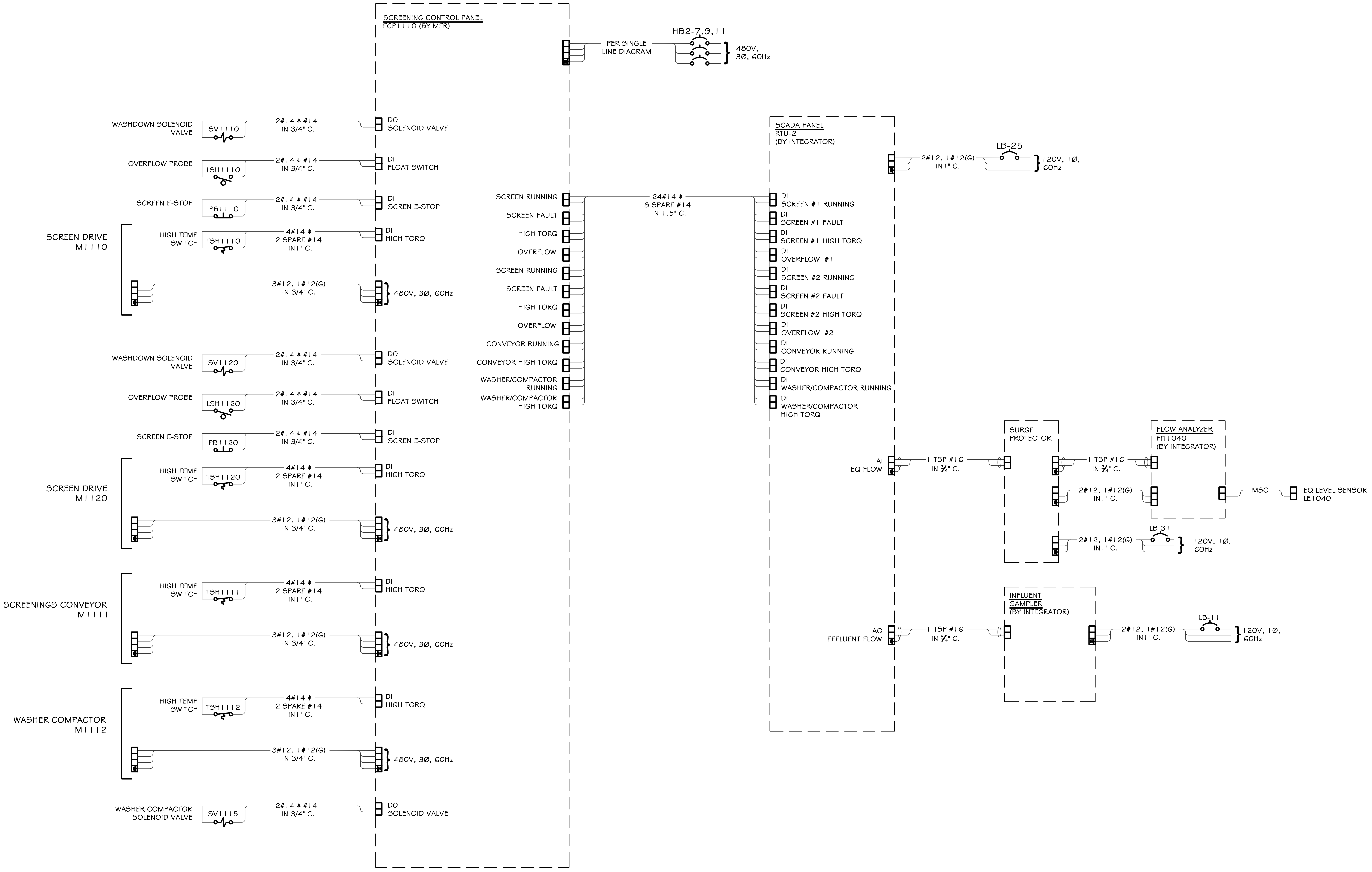

1
E-115

SCREENING ELECTRICAL SCHEMATICS

SCALE: N.T.S.

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Designer:	GS
Drawn By:	

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GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

DRUM SCREEN
ELECTRICAL
SCHEMATICS

E-115

BFIELD ENGINEERING, LLC
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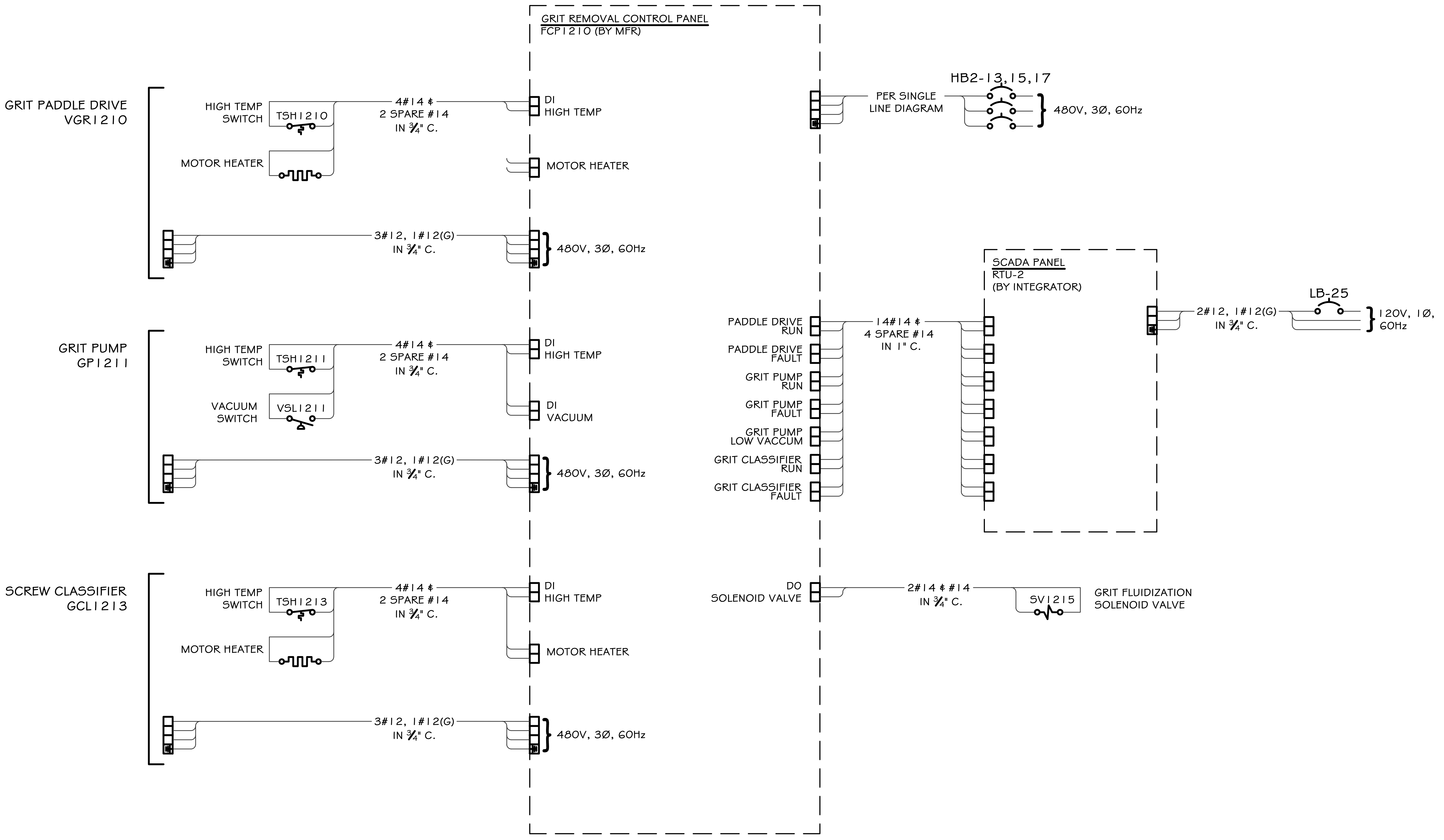

1
E-116

GRIT REMOVAL ELECTRICAL SCHEMATIC

SCALE: N.T.S.

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STATE OF GEORGIA
GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026
CERTIFICATE OF AUTHORIZATION

0" .5" 1"

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

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GRIT REMOVAL
ELECTRICAL
SCHEMATICS

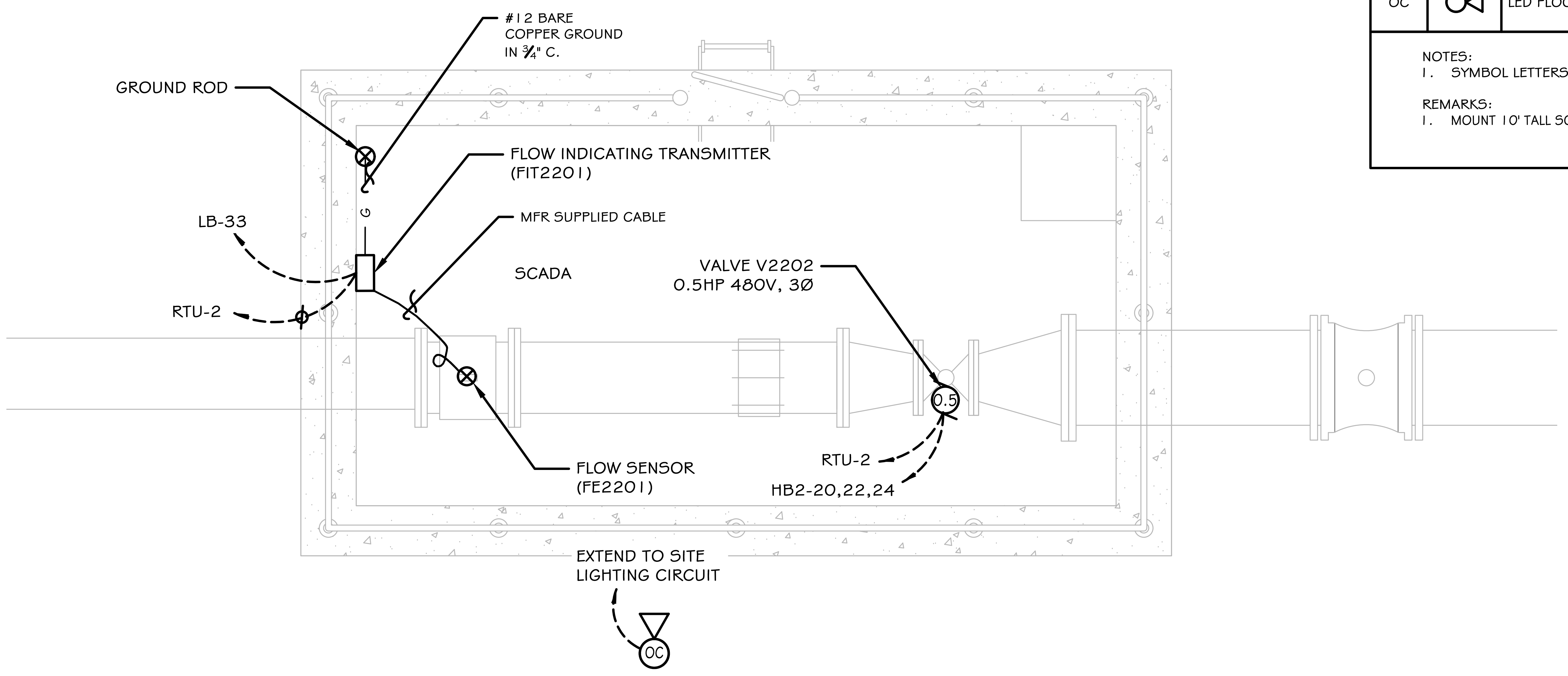
E-116

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OC	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	POLE MOUNT	1

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

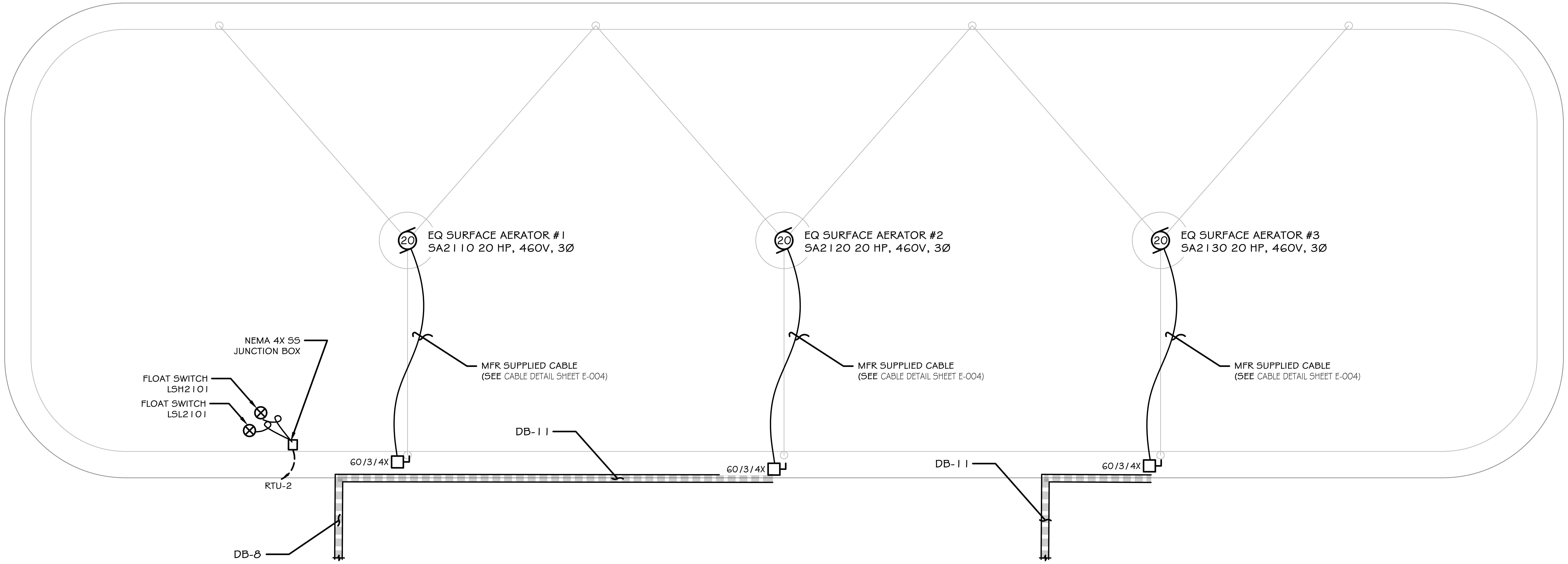
REMARKS:
1. MOUNT 10' TALL SQUARE STEEL POLE POWDER COAT BLACK.



1
E-201

FLOW CONTROL VALVE ELECTRICAL PLAN

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



2
E-201

EQ BASIN ELECTRICAL PLAN

SCALE: 1" = 200'- 0"

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COMMERCE 2.0 MGD
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COMMERCE, GA

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03/19/2025
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EQ BASIN & FLOW
CONTROL VALVE
ELECTRICAL PLANS

E-201

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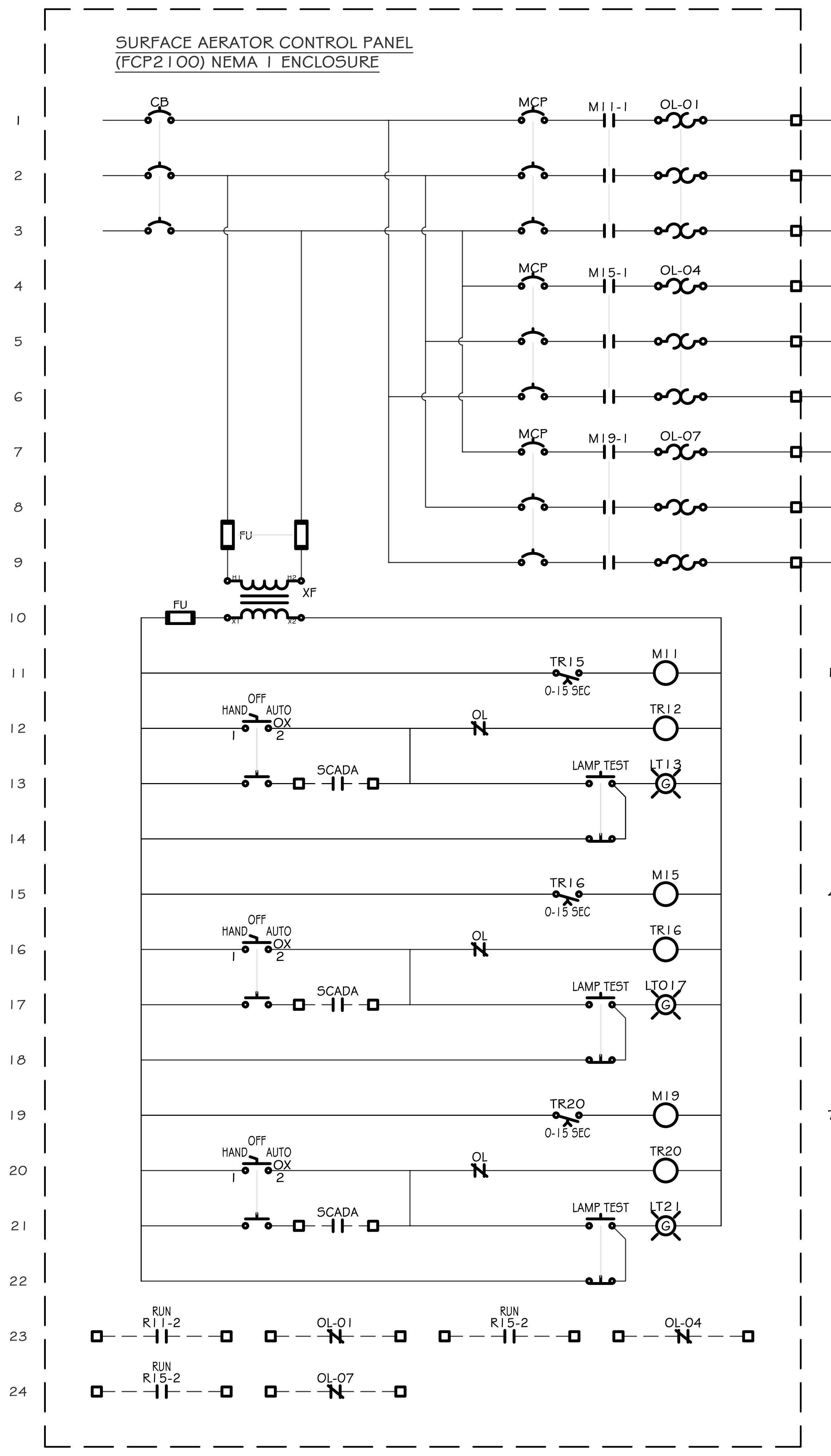


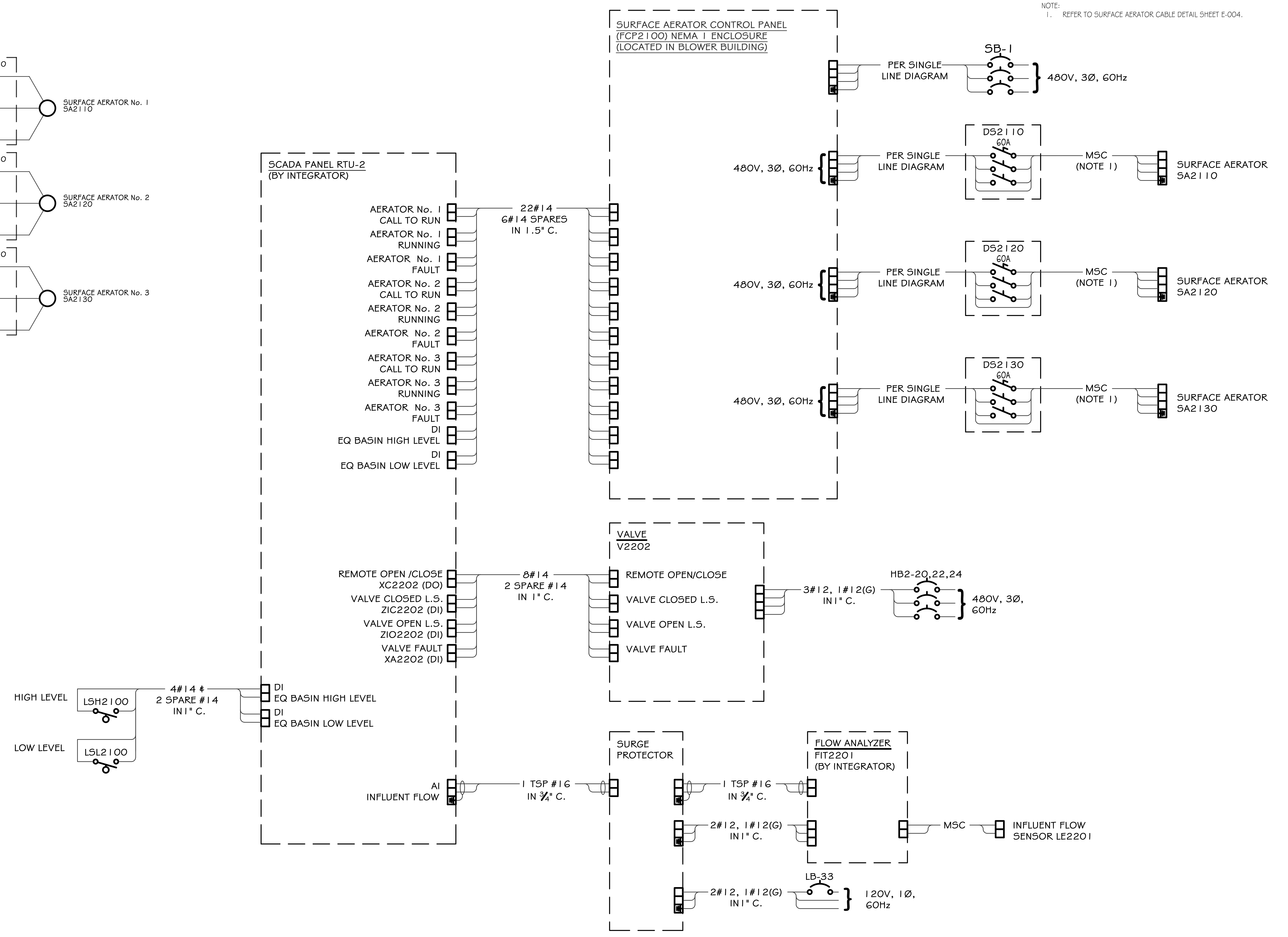
NOTE:

1) THE CONTRACTOR SHALL PROVIDE WIRING DIAGRAM DRAWINGS, A BILL OF MATERIALS, & A LAYOUT PLAN FOR THE CONTROL PANEL AND ALL ASSOCIATED COMPONENTS. THESE DOCUMENTS MUST BE SUBMITTED FOR THE ENGINEER'S REVIEW & APPROVAL PRIOR TO FABRICATION.

1 / E-202 SURFACE AERATOR CONTROL PANEL SCHEMATIC

SCALE: N.T.S.

NOTE:
1. REFER TO SURFACE AERATOR CABLE DETAIL SHEET E-004.



2 / E-202 EQ BASIN & FLOW METER ELECTRICAL SCHEMATIC

SCALE: N.T.S.

SURFACE AERATOR CONTROL PANEL

A. SCOPE OF WORK
   1. CONTRACTOR SHALL PROVIDE ONE PANEL TO POWER AND CONTROL THE THREE (3) PROPOSED 20HP FLOATING AERATORS.
   2. THE POWER SERVICE FOR EACH AERATOR WILL BE 480VOLTS, 3-PHASE, 60 HERTZ.
   3. THE CONTROL PANEL LIST OF DEVICES IS DESCRIBED BELOW. THE EQUIPMENT LISTED BELOW IS A GUIDE AND DOES NOT RELIEVE THE CONTROLLER MANUFACTURER FROM SUPPLYING A SYSTEM THAT WILL FUNCTION AS REQUIRED.
B. ENCLOSURE
   1. THE ENCLOSURE SHALL BE A NEMA 1. THE ENCLOSURE SHALL ADEQUATELY HOUSE ALL OF THE COMPONENTS. THE DOOR GASKET SHALL BE RUBBER COMPOSITION WITH A RETAINER TO ASSURE A POSITIVE SEAL.
   2. BACK PLATE
   1. THE BACK PLATE SHALL BE MANUFACTURED OF 12 GAUGE SHEET STEEL AND BE FINISHED WITH A PRIMER COAT AND TWO (2) COATS OF BAKED ON WHITE ENAMEL. ALL HARDWARE MOUNTED TO THE SUBPANEL SHALL BE ACCOMPLISHED WITH MACHINE THREAD TAPPED HOLES. SHEET METAL SCREWS ARE NOT ACCEPTABLE. ALL DEVICES SHALL BE PERMANENTLY IDENTIFIED.
D. PILOT DEVICES
   1. ALL PILOT DEVICES SHALL BE 30MM SIEMENS CLASS 52 OR EQUAL.
   2. FOR NEMA 4X ENCLOSURES, ALL PILOT DEVICES SHALL BE MOUNTED ON THE INNER DEAD FRONT DOOR FOR UNLESS OTHERWISE NOTED.
   3. THE CONTROL PANEL SHALL INCLUDE THE FOLLOWING FOR EACH AERATOR:
      a. RUNNING LIGHT
      b. ALARM LIGHT
      c. HOA SELECTOR SWITCHES
      d. ELAPSED TIME METER
E. MAIN DISCONNECT, CIRCUIT BREAKERS, LIGHTNING PROTECTION
   1. THE CONTROL PANEL SHALL HAVE A MAIN CIRCUIT BREAKER DISCONNECT.
   2. EACH CONSTANT SPEED MOTOR STARTER SHALL HAVE CIRCUIT BREAKERS THAT ARE HEAVY DUTY THERMAL MAGNETIC OR MOTOR CIRCUIT PROTECTORS SIMILAR AND EQUAL TO SIEMENS. EACH BREAKER SHALL BE SIZED TO MEET THE PUMP MOTOR OPERATING CHARACTERISTICS AND SHALL HAVE A MINIMUM OF 22,000 AMPS INTERRUPTING CAPACITY AT 480 VAC.
   3. CIRCUIT BREAKERS SHALL BE INDICATING TYPE PROVIDING "ON-OFF-TRIP" POSITIONS OF THE OPERATING HANDLE WHEN THE BREAKER IS TRIPPED AUTOMATICALLY, THE HANDLE SHALL ASSUME A MIDDLE POSITION INDICATING "TRIP".
F. MOTOR STARTERS
   1. MAGNETIC MOTOR STARTERS SHALL BE FURNISHED FOR EACH AERATOR MOTOR. STARTERS OF NEMA SIZE 1 AND ABOVE SHALL BE DESIGNED FOR ADDITION OF AT LEAST TWO AUXILIARY CONTACTS. STARTERS RATED "0", "00", OR FRACTIONAL SIZE ARE NOT ACCEPTABLE. POWER CONTACTS SHALL BE DOUBLE-BREAK AND MADE OF CADMIUM OXIDE SILVER. ALL MOTOR STARTERS SHALL BE EQUIPPED TO PROVIDE UNDER-VOLTAGE RELEASE AND OVERLOAD PROTECTION ON ALL THREE PHASES. PROVIDE SOLID STATE OVERLOADS, BIMETALLIC TYPE THERMAL OVERLOADS ARE NOT ACCEPTABLE. STARTERS SHALL BE EQUAL TO SIEMENS CLASS 14.
G. TRANSFORMER
   1. THE 3KVA CONTROL TRANSFORMER, IF REQUIRED, SHALL BE LARGE ENOUGH TO PROVIDE 120 VAC FOR CONTROL CIRCUITS AND SEPARATE DUPLEX CONTROL POWER RECEPTACLE. THE TRANSFORMER SHALL UTILIZE CONTROL FUSES ON THE PRIMARY AND SECONDARY CIRCUITS. ONE LEG OF THE SECONDARY SHALL BE GROUNDED.
H. LOCAL & REMOTE ALARMS
   1. INDIVIDUAL CONTROL RELAYS SHALL BE USED FOR REMOTE ALARMS. RELAYS SHALL HAVE ISOLATED NO & NC CONTACTS WIRED TO TERMINAL BLOCKS FOR FIELD INTERFACE.
J. ANCILLARY EQUIPMENT
   1. THE ANCILLARY EQUIPMENT LISTED BELOW SHALL BE INCLUDED WITH THE CONTROL PANEL.
      a. PHASE MONITOR FOR MONITORING INCOMING POWER.
      b. 120V POWERED CIRCUIT FOR MOTOR SPACE HEATERS, APPROXIMATELY 25W, VERIFY WITH EQUIPMENT SUPPLIER.
K. MISCELLANEOUS
   1. PANEL MARKINGS
      a. ALL COMPONENT PARTS IN THE CONTROL PANEL SHALL BE PERMANENTLY MARKED AND IDENTIFIED AS THEY ARE INDICATED ON THE DRAWING. MARKING SHALL BE ON THE BACK PLATE ADJACENT TO THE COMPONENT. ALL CONTROL CONDUCTORS AND TERMINALS SHALL BE IDENTIFIED WITH HEAT SHRINK TYPE, NON-ADHESIVE WIRE MARKERS.
   2. TESTING
      a. ALL PANELS SHALL BE TESTED TO THE POWER REQUIREMENTS AS SHOWN ON THE PLANS TO ASSURE PROPER OPERATION OF ALL THE COMPONENTS. EACH CONTROL FUNCTION SHALL BE ACTIVATED TO CHECK FOR PROPER OPERATION AND INDICATION.
      b. FIELD COMMISSIONING AND STARTUP. THE PANEL SHALL BE TESTED IN THE FIELD BY AN AUTHORIZED STARTUP TECHNICIAN ASSURING ALL CONTROL DEVICES FUNCTION PROPERLY AND SEQUENCE OF OPERATION IS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
   3. WARRANTY
      a. ALL EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. THE GUARANTEE SHALL BE EFFECTIVE AGAINST ALL DEFECTS IN WORKMANSHIP OR DEFECTIVE COMPONENTS.
   4. MANUFACTURER
      a. THE CONTROL PANEL MANUFACTURER SHALL BE A UL508 LISTED SHOP FOR INDUSTRIAL CONTROL SYSTEMS SHALL PROVIDE EVIDENCE OF SUCH ON REQUEST FROM THE ENGINEER OR USING AUTHORITY. THE PANEL SHALL BE PROVIDED WITH A UL LABEL. THE PANEL SHOP SHALL HAVE BUILT UL508 CONTROL PANELS FOR NO LESS THAN 5 YEARS. PANEL SHALL BE PROVIDED BY GLOBAL CONTROL SYSTEMS (678) 888-2838, APPLIED INDUSTRIAL CONTROLS (770) 614-7022 OR EQUAL.

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

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Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

EQ BASIN & FLOW CONTROL VALVE ELECTRICAL SCHEMATICS

E-202

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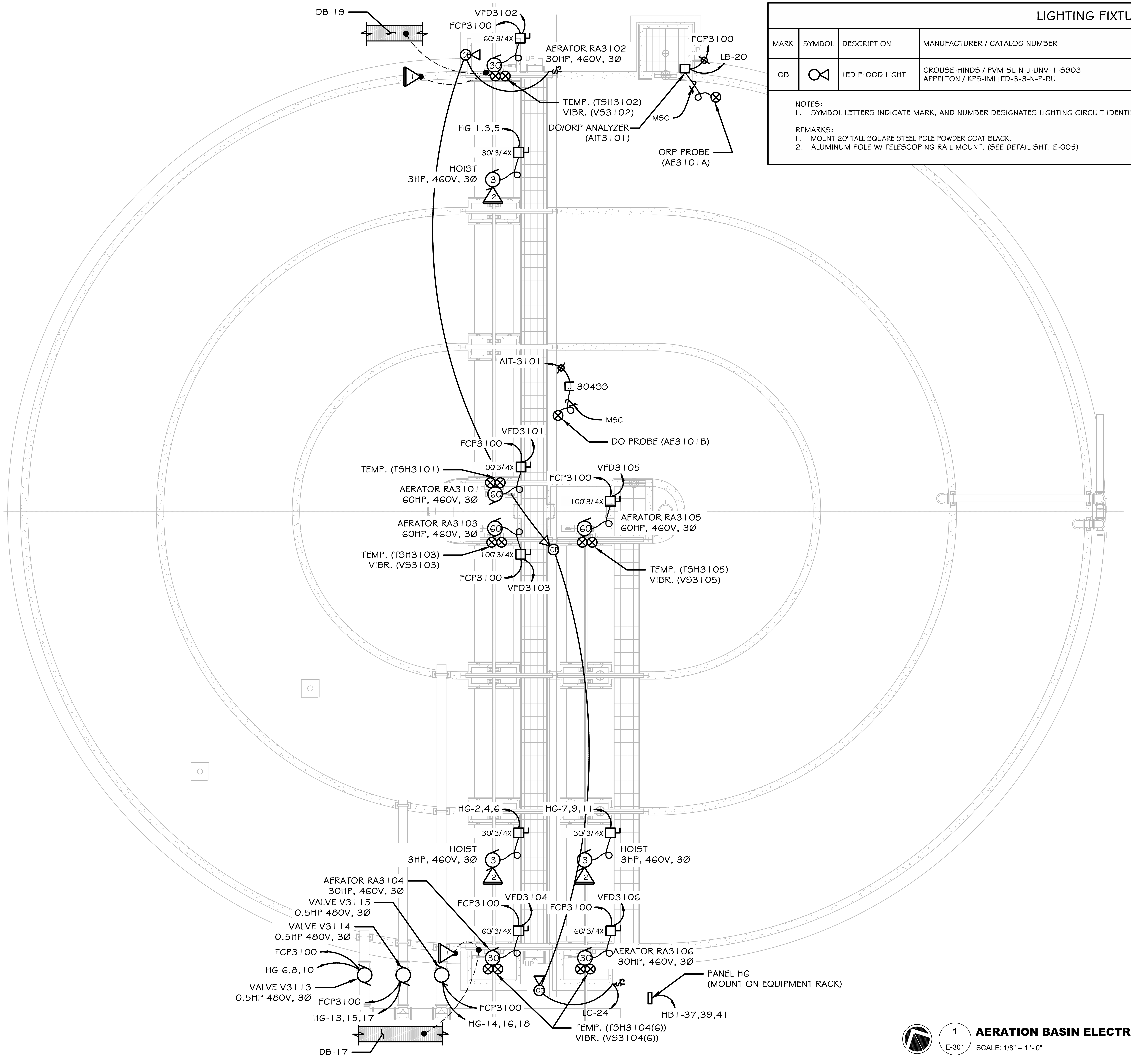

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	TELESCOPING RAIL MOUNT	2

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 20' TALL SQUARE STEEL POLE POWDER COAT BLACK.
2. ALUMINUM POLE W/ TELESCOPING RAIL MOUNT. (SEE DETAIL SHT. E-005)

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (DO & ORP PROBES & ANALYZERS, FLOW CONTROL GATES, MIXERS & AERATORS ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONTRACTOR SHALL PROVIDE A NEC SIZED NEMA 4X STAINLESS STEEL JUNCTION BOXES FOR EACH 120V POWER CIRCUITS, SIGNAL CABLING $ CONTROL WIRES TO TRANSITION FROM INDIVIDUAL DEVICE CONDUITS TO COMBINED CONDUITS IN THE DUCT BANKS. JUNCTION BOXES SHALL BE MOUNTED APPROXIMATELY 24" ABOVE GRADE ON UNI-STRUT SUPPORTS W/ STAINLESS STEEL HARDWARE.
3. EXPOSED CONDUITS SHALL BE RIGID ALUMINUM. ALUMINUM THAT COMES IN CONTACT WITH CONCRETE SHALL BE PANTED WITH PROTECTIVE ASPHALTIC COATING.

KEYED NOTES:

1 BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.

2 LOCATE HOISTS PER AERATOR MANUFACTURERS RECOMMENDATION, PROVIDE & INSTALL ALL ANCILLARY EQUIPMENT WIRING, JUNCTION BOXES, CONTROL BOXES AS REQUIRED PER THE SPECIFICATIONS / HOIST SUPPLIERS INSTALLATION INSTRUCTIONS. HOIST SHALL BE RATED FOR THE ENVIRONMENT. INSTALL FESTOONING WIRE SYSTEM FOR HOIST AND CONTROL BOX.

1
E-301

AERATION BASIN ELECTRICAL PLAN

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

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COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

AERATION BASIN
ELECTRICAL PLAN

E-301

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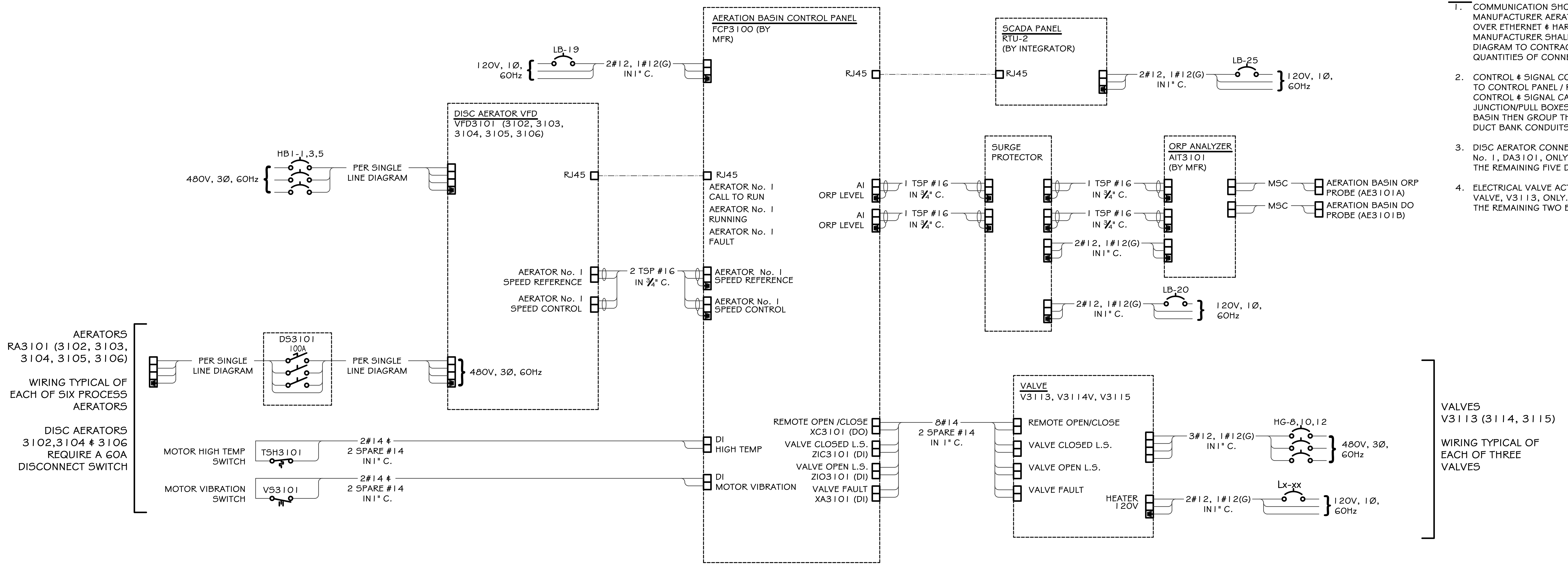


AERATORS
RA3101 (3102, 3103, 3104, 3105, 3106)

WIRING TYPICAL OF EACH OF SIX PROCESS AERATORS

DISC AERATORS 3102,3104 & 3106 REQUIRE A 60A DISCONNECT SWITCH

VALVES
V3113 (3114, 3115)

WIRING TYPICAL OF EACH OF THREE VALVES

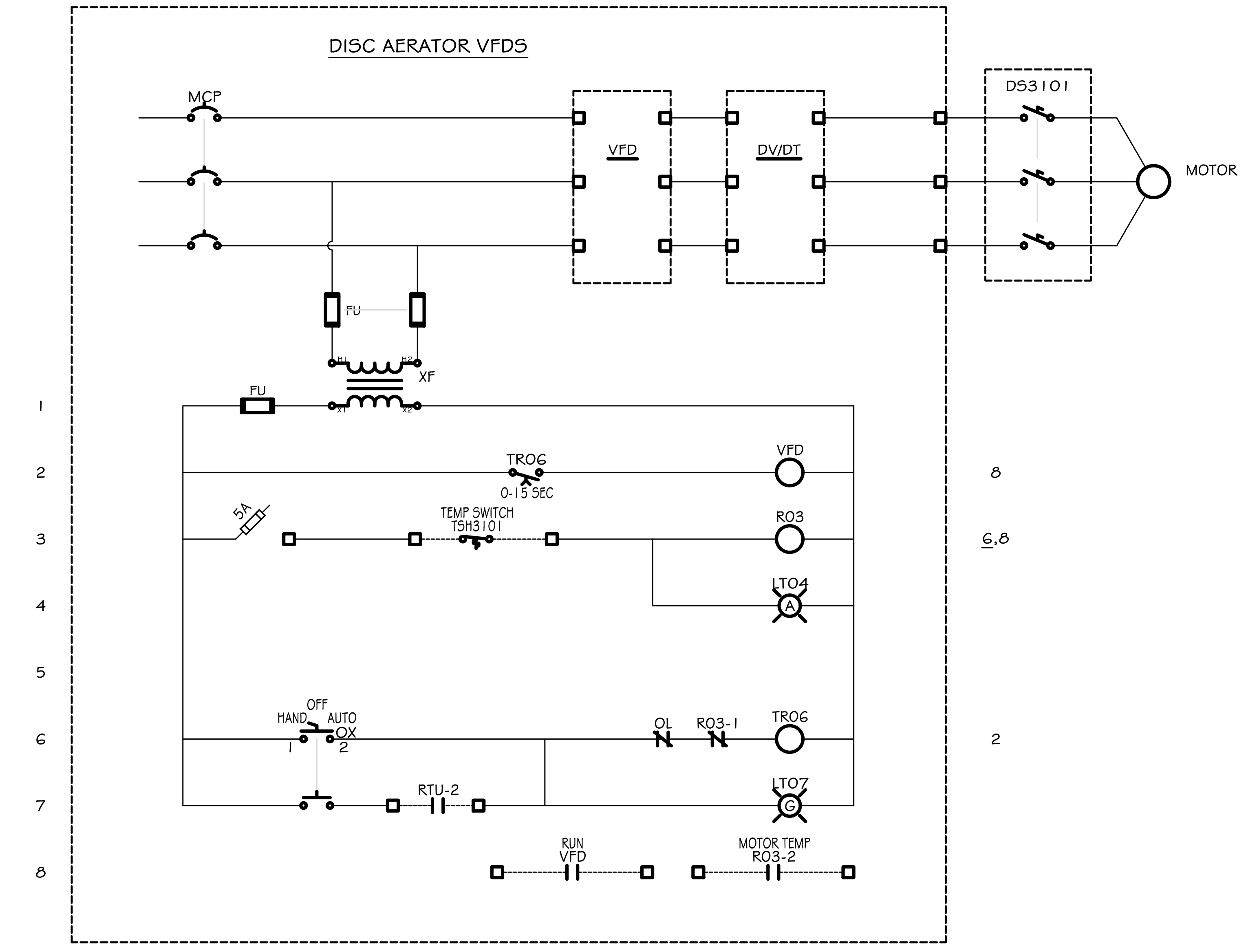
1
E-302

AERATION BASIN ELECTRICAL SCHEMATIC

SCALE: N.T.S.

NOTE:

1. COMMUNICATION SHOWN BETWEEN ORBAL MANUFACTURER AERATION CONTROL PANEL (FCP3100) OVER ETHERNET & HARD WIRED CONNECTIONS. MANUFACTURER SHALL PROVIDE INTERCONNECTION DIAGRAM TO CONTRACTOR WITH THE EXACT TYPE & QUANTITIES OF CONNECTIONS REQUIRED.
2. CONTROL & SIGNAL CONNECTIONS SHOWN FROM DEVICE TO CONTROL PANEL / RTU. CONTRACTOR TO GROUP CONTROL & SIGNAL CABLES IN NEMA 4X STAINLESS STEEL JUNCTION/PULL BOXES AT THE SIDE OF THE AERATION BASIN THEN GROUP THE CONTROL & SIGNAL CABLES INTO DUCT BANK CONDUITS.
3. DISC AERATOR CONNECTIONS SHOWN FOR DISC AERATOR No. 1, DA3101, ONLY. CONNECTIONS ARE THE SAME FOR THE REMAINING FIVE DISC AERATORS.
4. ELECTRICAL VALVE ACTUATOR CONNECTIONS SHOWN FOR VALVE, V3113, ONLY. CONNECTIONS ARE THE SAME FOR THE REMAINING TWO ELECTRIC VALVE ACTUATORS.



NOTE: THIS SCHEMATIC SERVES AS A REFERENCE SOLELY FOR DEPICTING THE INTENDED CONNECTIONS BETWEEN THE DISC AERATOR VARIABLE FREQUENCY DRIVE (VFD) & EXTERNAL DEVICES. THE DRIVE MAY BE SUPPLIED WITH RELAY LADDER LOGIC AS SHOWN OR MAY BE CONTROLLED THROUGH INTERNAL DEVICE PROGRAMMING.

THE DISC AERATOR MANUFACTURER $ DRIVE SUPPLIER SHALL PROVIDE WIRING DIAGRAMS & COORDINATE ANY PROGRAMMING NECESSARY WITH THE CONTRACTOR & SCADA INTEGRATOR TO CONNECT THE DRIVE, DISC AERATORS & EXTERNAL PROTECTION DEVICES FOR A FULLY FUNCTIONING SYSTEM INCLUDING SIGNALS AS REQUIRED FOR THE PLANT SCADA SYSTEM.

2
E-302

DISC AERATOR VFD SCHEMATIC

SCALE: N.T.S.

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Designer:	GS
Drawn By:	

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COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

AERATION BASIN
ELECTRICAL SCHEMATIC

E-302

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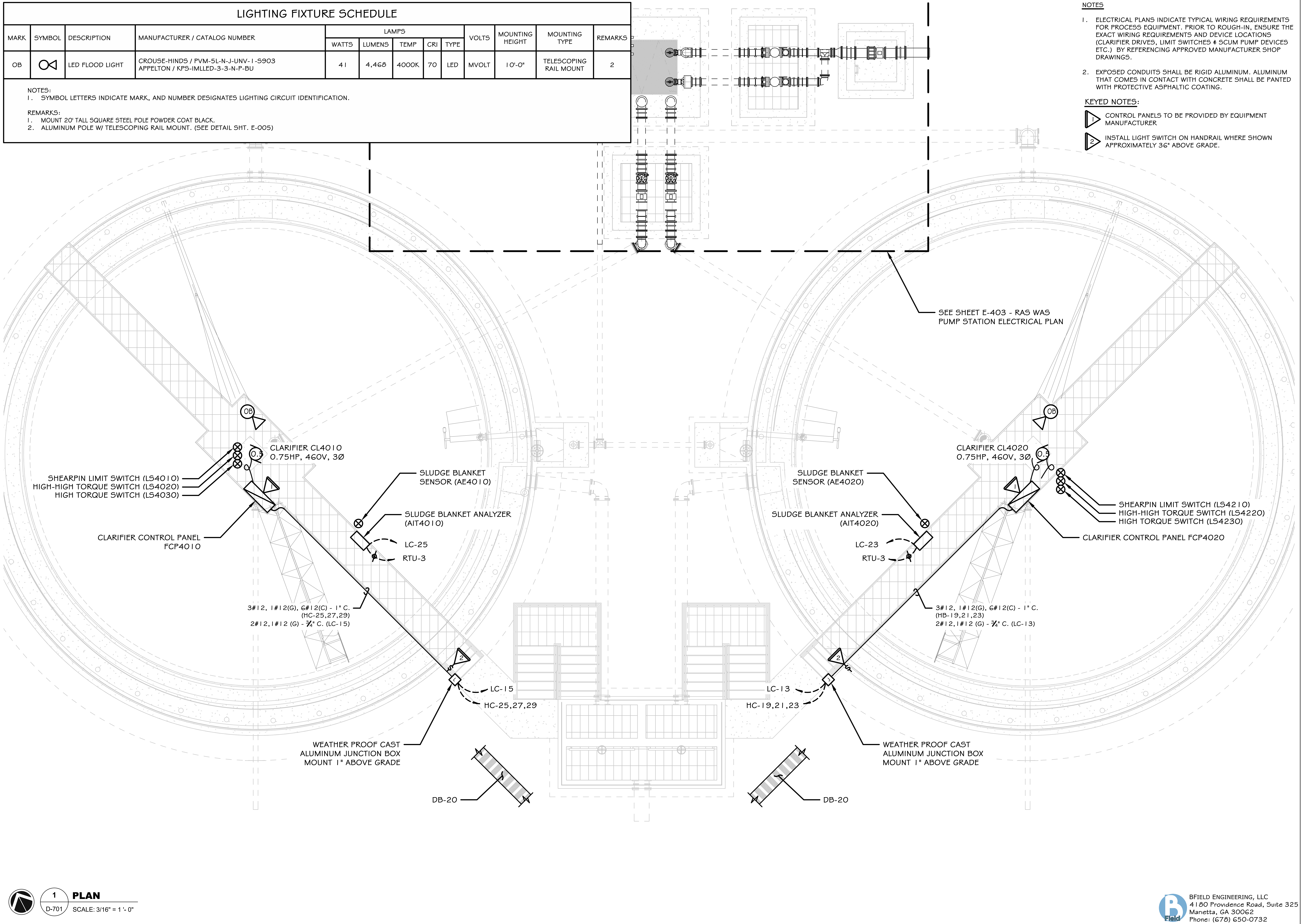

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SEE SHEET E-403 - RAS WAS PUMP STATION ELECTRICAL PLAN
OB
CLARIFIER CL4010 0.75HP, 460V, 3Ø
0.5
SHEARPIN LIMIT SWITCH (LS4010)
HIGH-HIGH TORQUE SWITCH (LS4020)
HIGH TORQUE SWITCH (LS4030)
1
SLUDGE BLANKET SENSOR (AE4010)
SLUDGE BLANKET ANALYZER (AIT4010)
CLARIFIER CONTROL PANEL FCP4010
LC-25
RTU-3
3#12, 1#12(G), 6#12(C) - 1" C. (HC-25,27,29)
2#12,1#12 (G) - ¾" C. (LC-15)
2
LC-15
HC-25,27,29
WEATHER PROOF CAST ALUMINUM JUNCTION BOX MOUNT 1" ABOVE GRADE
DB-20
OB
CLARIFIER CL4020 0.75HP, 460V, 3Ø
0.5
SLUDGE BLANKET SENSOR (AE4020)
SHEARPIN LIMIT SWITCH (LS4210)
HIGH-HIGH TORQUE SWITCH (LS4220)
HIGH TORQUE SWITCH (LS4230)
SLUDGE BLANKET ANALYZER (AIT4020)
CLARIFIER CONTROL PANEL FCP4020
LC-23
RTU-3
3#12, 1#12(G), 6#12(C) - 1" C. (HB-19,21,23)
2#12,1#12 (G) - ¾" C. (LC-13)
LC-13
HC-19,21,23
WEATHER PROOF CAST ALUMINUM JUNCTION BOX MOUNT 1" ABOVE GRADE
DB-20

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	TELESCOPING RAIL MOUNT	2

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 20' TALL SQUARE STEEL POLE POWDER COAT BLACK.
2. ALUMINUM POLE W/ TELESCOPING RAIL MOUNT. (SEE DETAIL SHT. E-005)

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (CLARIFIER DRIVES, LIMIT SWITCHES & SCUM PUMP DEVICES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. EXPOSED CONDUITS SHALL BE RIGID ALUMINUM. ALUMINUM THAT COMES IN CONTACT WITH CONCRETE SHALL BE PANTED WITH PROTECTIVE ASPHALTIC COATING.

KEYED NOTES:

1	CONTROL PANELS TO BE PROVIDED BY EQUIPMENT MANUFACTURER
2	INSTALL LIGHT SWITCH ON HANDRAIL WHERE SHOWN APPROXIMATELY 36" ABOVE GRADE.

1 PLAN
D-701
SCALE: 3/16" = 1'-0"

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1" .5" 0" 1"

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Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

REGISTERED 03/19/2025 NO. 31217 PROFESSIONAL ENGINEER
CHARLES K. BUTTERFIELD

CLARIFIERS
ELECTRICAL PLAN

E-401

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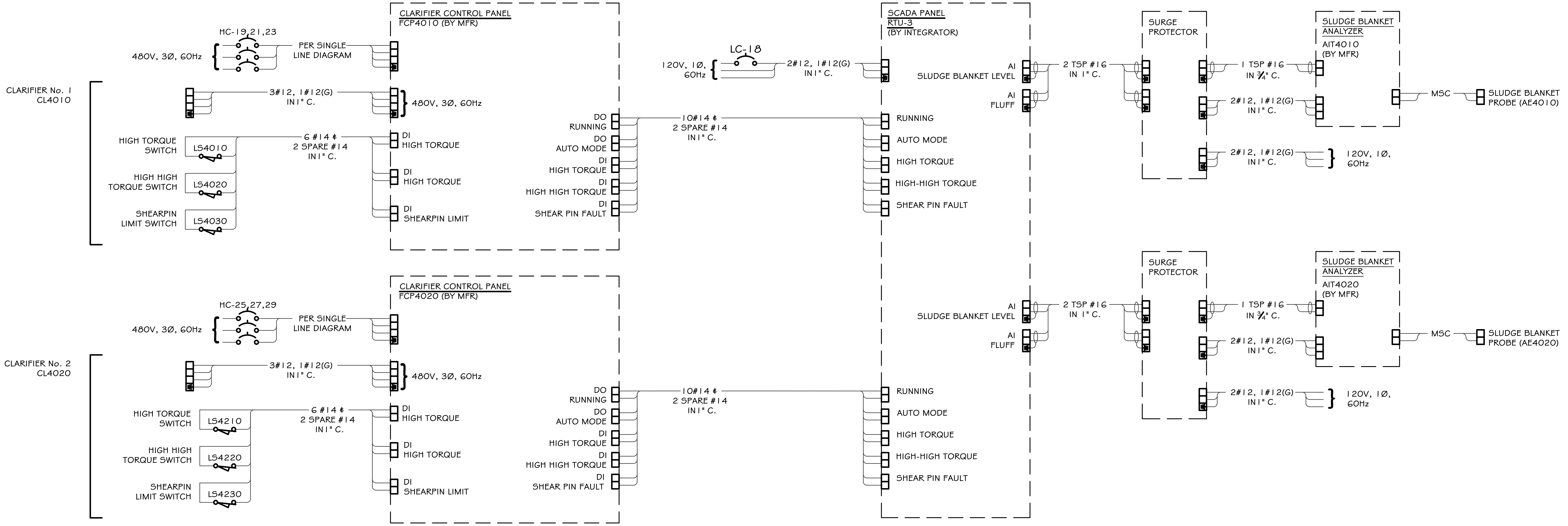
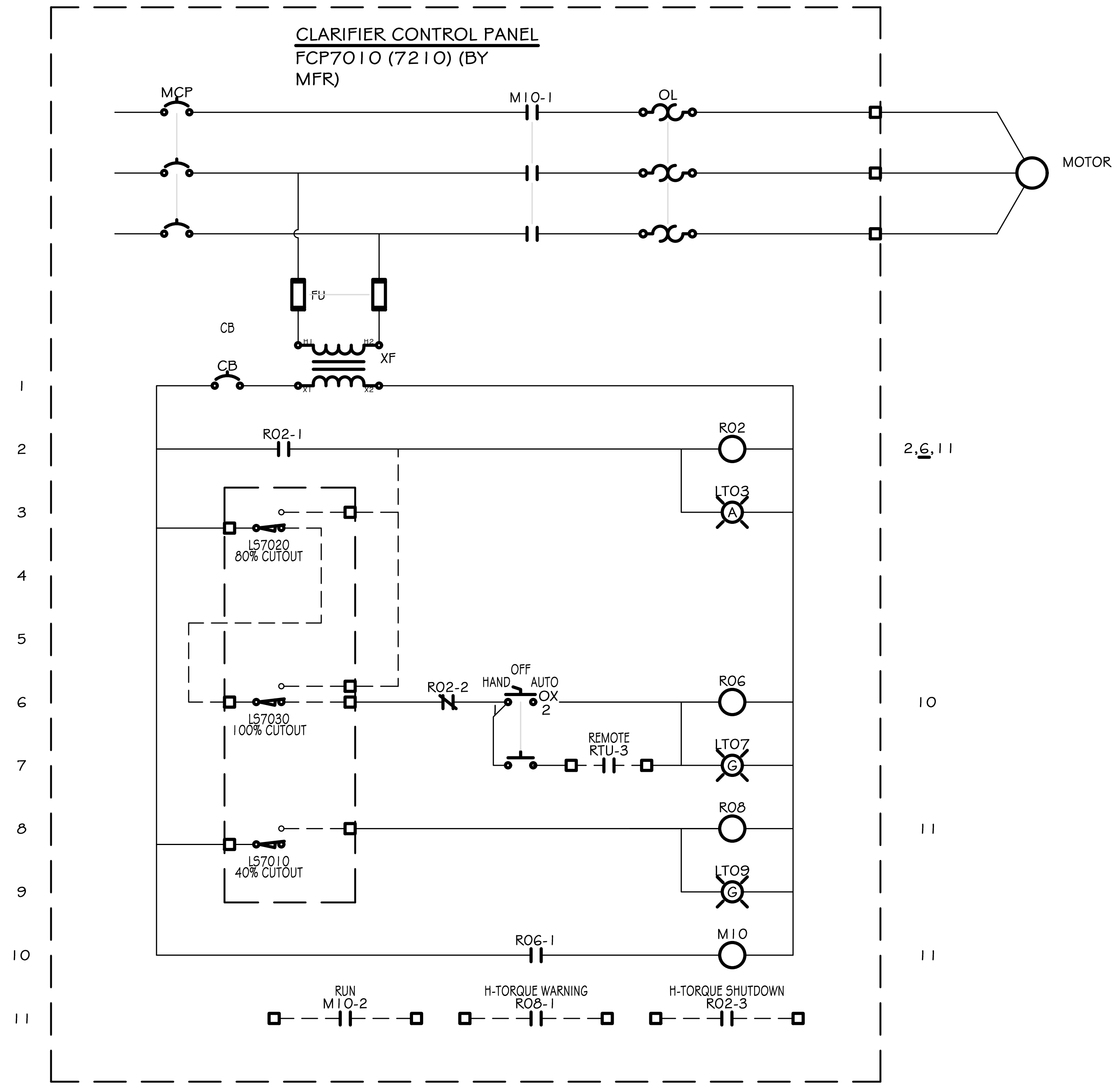


1
E-402

CLARIFIER ELECTRICAL SCHEMATICS

SCALE: N.T.S.



2
E-402

CLARIFIER CONTROL PANEL

SCALE: N.T.S.

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03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

CLARIFIERS
ELECTRICAL
SCHEMATIC

E-402

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OC	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	POLE MOUNT	1

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 10' TALL SQUARE STEEL POLE POWDER COAT BLACK.

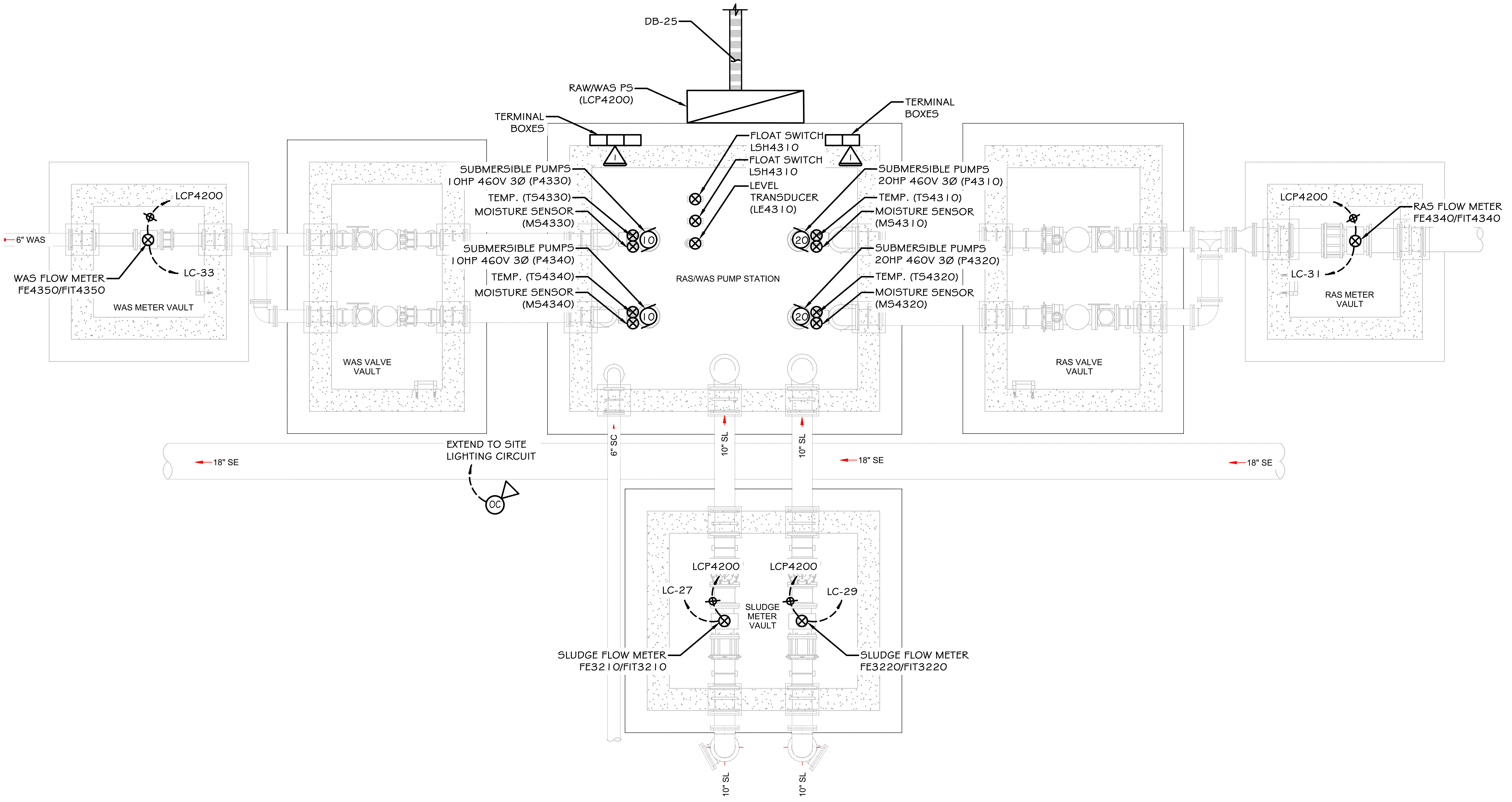
NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (CLARIFIER DRIVES, LIMIT SWITCHES & SCUM PUMP DEVICES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.

2. EXPOSED CONDUITS SHALL BE RIGID ALUMINUM. ALUMINUM THAT COMES IN CONTACT WITH CONCRETE SHALL BE PANTED WITH PROTECTIVE ASPHALTIC COATING.

KEYED NOTES:

▷1 INSTALL TERMINAL BOXES FOR EACH RAW / WAS PUMP AND LEVEL CONTROL DEVICES SEE PUMP CABLE INSTALLATION DETAIL SHEET E-004.



1 PLAN
E-403
SCALE: 3/8" = 1 '- 0"

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Designer:	GS
Drawn By:	

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GROVE CREEK WPCP
COMMERCE, GA

CATL230033

CHARLES K. BUTTERFIELD
NO. 31217
03/19/2025

RAS/WAS PUMP
STATION ELECTRICAL
PLAN

E-403

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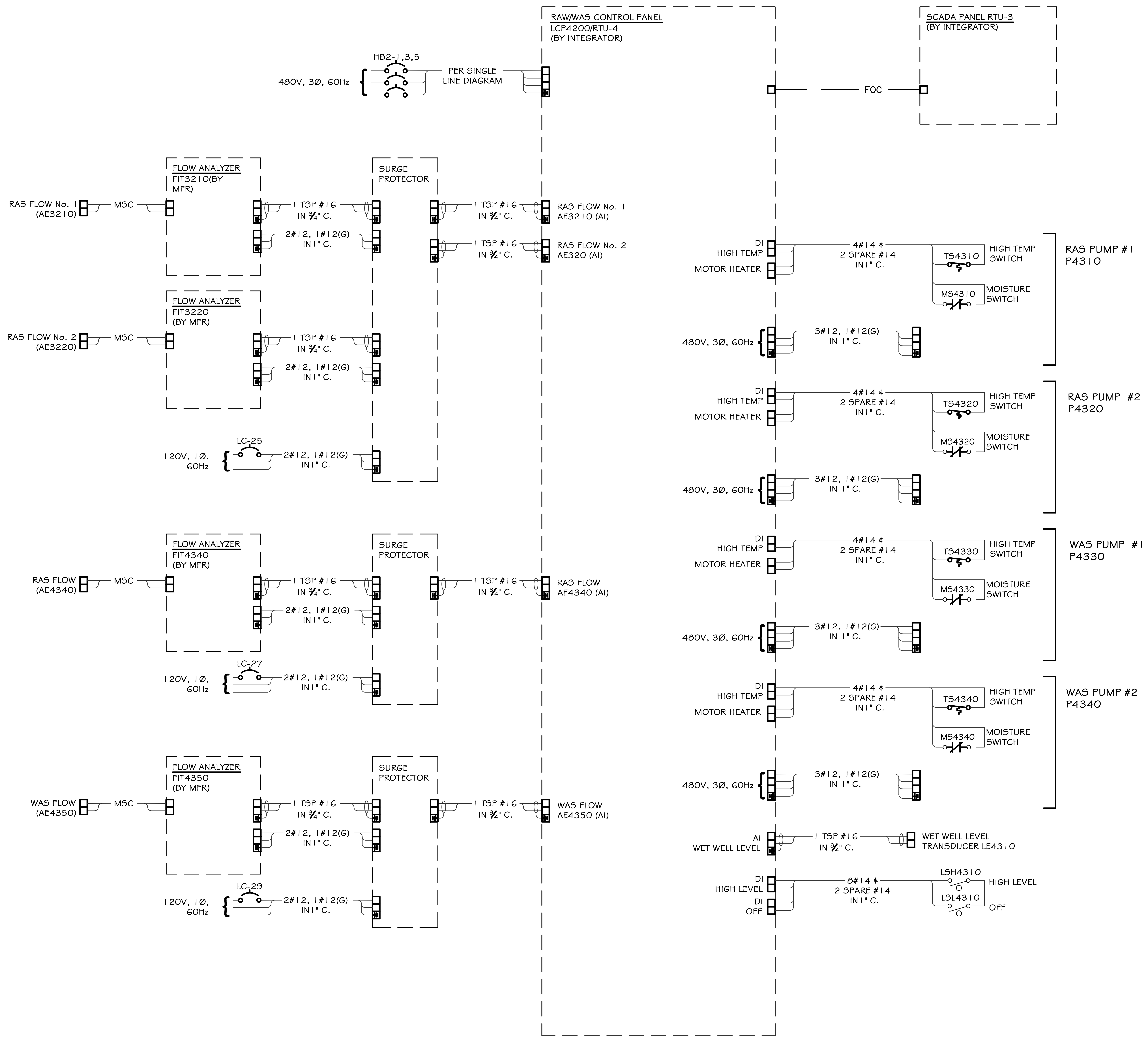

1
E-404

RAS WAS PUMP STATION ELECTRICAL SCHEMATIC

SCALE: N.T.S.

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GOODWYN MILLS CAWOOD, LLC
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1" .5" 0" 1"

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

RAS/WAS PUMP
STATION ELECTRICAL
SCHEMATIC

E-404

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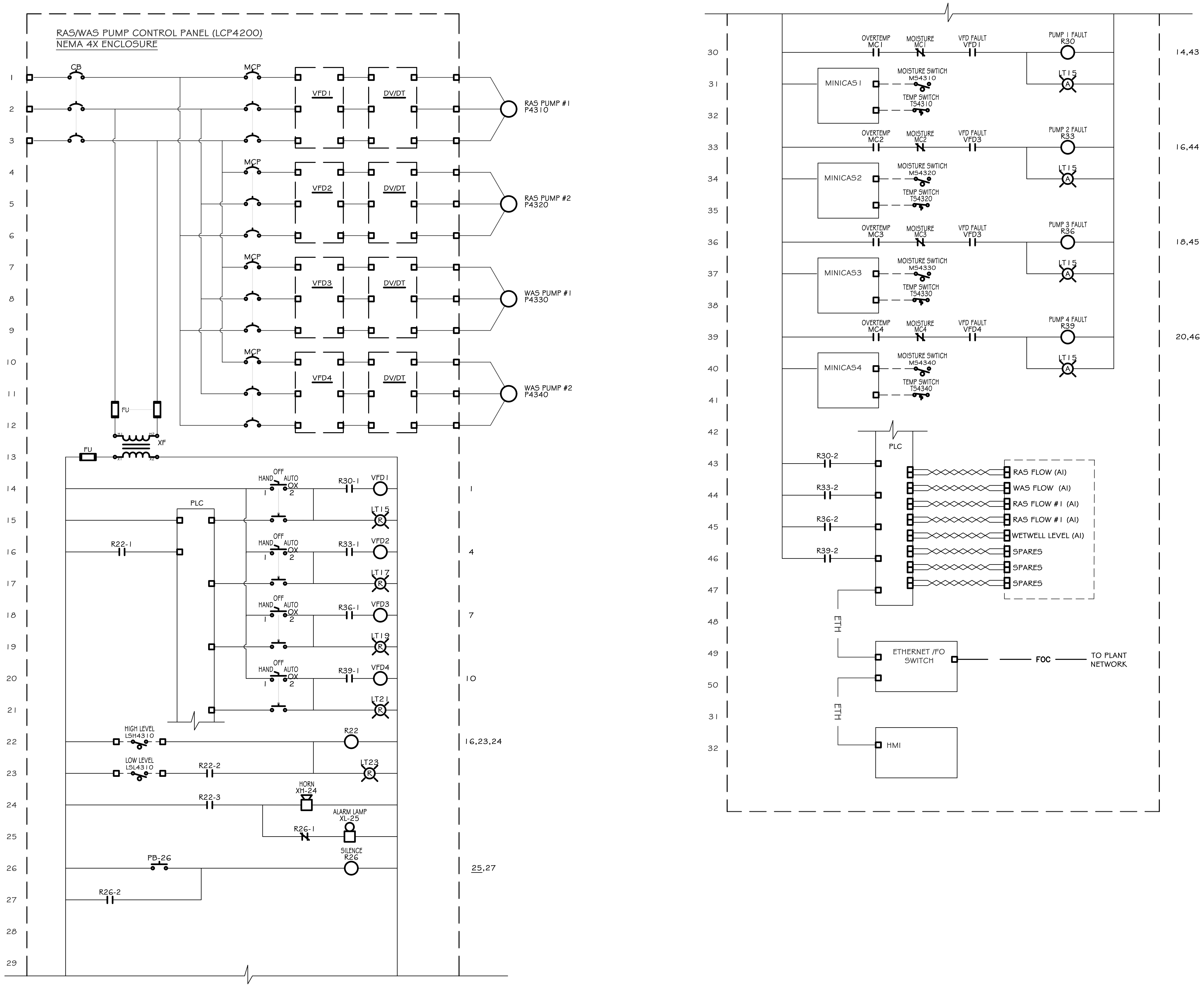

NOTE:
1) THE INTEGRATOR SHALL PROVIDE WIRING DIAGRAM DRAWINGS, A BILL OF MATERIALS, & A LAYOUT PLAN FOR THE CONTROL PANEL AND ALL ASSOCIATED COMPONENTS. THESE DOCUMENTS MUST BE SUBMITTED FOR THE ENGINEER'S REVIEW & APPROVAL PRIOR TO FABRICATION.

1
E-405
RAS/WAS PUMP CONTROL SCHEMATIC LCP4200
SCALE: N.T.S.

SUBMERSIBLE AERATOR CONTROL PANEL (LCP6100)

A. SCOPE OF WORK
  1. CONTRACTOR SHALL PROVIDE ONE PANEL TO POWER AND CONTROL THE FOUR (4) PROPOSED 20HP RAS/WAS PUMPS.
  2. THE POWER SERVICE FOR EACH AERATOR WILL BE 460VOLTS, 3-PHASE, 60 HERTZ.
  3. THE CONTROL PANEL LIST OF DEVICES IS DESCRIBED BELOW. THE EQUIPMENT LISTED BELOW IS A GUIDE AND DOES NOT RELIEVE THE INTEGRATOR FROM SUPPLYING A SYSTEM THAT WILL FUNCTION AS REQUIRED.
  4. PROVIDE HMI DISPLAY FOR PUMP CONTROL & STATUS AS WELL AS, WAS FLOW, RAS FLOW RAS FLOW #1 AND RAS FLOW #2 FOR USER INTERFACE.

B. ENCLOSURE
  1. THE ENCLOSURE SHALL BE A NEMA 4X WATERPROOF, CORROSION RESISTANT, 304 STAINLESS STEEL WITH INNER DEAD FRONT DOOR. THE ENCLOSURE SHALL ADEQUATELY HOUSE ALL OF THE COMPONENTS. THE DOOR GASKET SHALL BE RUBBER COMPOSITION WITH A RETAINER TO ASSURE A POSITIVE SEAL.
  2. FOR NEMA 4X ENCLOSURES, A POLISHED ALUMINUM DEAD FRONT SHALL BE MOUNTED ON A CONTINUOUS AIRCRAFT TYPE HINGE, CONTAIN CUTOUTS FOR MOUNTED EQUIPMENT, AND PROVIDE PROTECTION OF PERSONNEL FROM LIVE INTERNAL WIRING. “HAND-OF-AUTO” CONTROL SWITCHES, INDICATOR PILOT LIGHTS, AND ELAPSED TIME METERS, SHALL BE MOUNTED ON THE EXTERNAL SURFACE OF THE DEAD FRONT. THE DEAD FRONT SHALL OPEN A MINIMUM OF 150 DEGREES TO ALLOW ACCESS TO EQUIPMENT FOR MAINTENANCE.

C. BACK PLATE
  1. THE BACK PLATE SHALL BE MANUFACTURED OF 12 GAUGE SHEET STEEL AND BE FINISHED WITH A PRIMER COAT AND TWO (2) COATS OF BAKED ON WHITE ENAMEL. ALL HARDWARE MOUNTED TO THE SUBPANEL SHALL BE ACCOMPLISHED WITH MACHINE THREAD TAPPED HOLES. SHEET METAL SCREWS ARE NOT ACCEPTABLE. ALL DEVICES SHALL BE PERMANENTLY IDENTIFIED.

D. PILOT DEVICES
  1. ALL PILOT DEVICES SHALL BE 30MM SIEMENS CLASS 52 OR EQUAL.
  2. FOR NEMA 4X ENCLOSURES, ALL PILOT DEVICES SHALL BE MOUNTED ON THE INNER DEAD FRONT DOOR FOR UNLESS OTHERWISE NOTED.
  3. THE CONTROL PANEL SHALL INCLUDE THE FOLLOWING FOR EACH AERATOR:
    a. RUNNING LIGHT
    b. ALARM LIGHT
    c. HOA SELECTOR SWITCHES
    d. ELAPSED TIME METER

E. MAIN DISCONNECT, CIRCUIT BREAKERS, LIGHTNING PROTECTION
  1. THE CONTROL PANEL SHALL HAVE A MAIN CIRCUIT BREAKER DISCONNECT.
  2. EACH VFD SHALL HAVE CIRCUIT BREAKERS THAT ARE HEAVY DUTY THERMAL MAGNETIC OR MOTOR CIRCUIT PROTECTORS SIMILAR AND EQUAL TO SIEMENS. EACH BREAKER SHALL BE SIZED TO MEET THE PUMP MOTOR OPERATING CHARACTERISTICS AND SHALL HAVE A MINIMUM OF 22,000 AMPS INTERRUPTING CAPACITY AT 480 VAC.
  3. CIRCUIT BREAKERS SHALL BE INDICATING TYPE PROVIDING “ON-OFF-TRIP” POSITIONS OF THE OPERATING HANDLE WHEN THE BREAKER IS TRIPPED AUTOMATICALLY, THE HANDLE SHALL ASSUME A MIDDLE POSITION INDICATING “TRIP”.

F. VARIABLE FREQUENCY DRIVES
  1. VFD SHALL BE 6-PULSE, CONSTANT TORQUE, MICROPROCESSOR-BASED, HIGH FREQUENCY IGBT-BASED VARIABLE FREQUENCY DRIVE WITH CONTROL FUNCTIONS. DRIVE SHALL OPERATE ON 460 VAC, 3 PHASE, 60 HERTZ POWER. DRIVES SHALL BE DANFOSS MODEL VLT FC-202 DRIVE, ABB MODEL ACQ550 - 01 - 031A - 4 + B055, OR EQUAL.

G. TRANSFORMER
  1. THE 3KVA CONTROL TRANSFORMER SHALL BE LARGE ENOUGH TO PROVIDE 120 VAC FOR CONTROL CIRCUITS AND SEPARATE DUPLEX CONTROL POWER RECEPTACLE. THE TRANSFORMER SHALL UTILIZE CONTROL FUSES ON THE PRIMARY AND SECONDARY CIRCUITS. ONE LEG OF THE SECONDARY SHALL BE GROUNDED.

H. PUMP CONTROL DEVICES
  1. A MODICON PLC SHALL BE PROVIDED TO OPERATE THE STATION ONE LEVEL MAINTAINING MODE. THE VFD SHALL RAMP UP AND DOWN TO MAINTAIN LEVEL IN THE WET WELL. BACK UP FLOATS SHALL BE PROVIDED TO OPERATE THE STATION IN PUMP DOWN MODE IN CASE OF FAILURE OF THE LEVEL CONTROL SYSTEM. MAXIMUM ONE RAS AND ONE WAS PUMP TO OPERATE AT A TIME. THE SECOND RAS AND WAS PUMP IS AN INSTALLED SPARE, THE PUMP SHALL OPERATE BASED ON A TIMED SCHEDULE.

J. ANCILLARY EQUIPMENT
  1. THE ANCILLARY EQUIPMENT LISTED BELOW SHALL BE INCLUDED WITH THE CONTROL PANEL.
    a. PHASE MONITOR FOR MONITORING INCOMING POWER.
    b. CONTROL PANEL ANTI-CONDENSATION HEATER.
    c. PROVIDE AIR CONDITIONING AS REQUIRED FOR VFD COOLING.

K. MISCELLANEOUS
  1. PANEL MARKINGS
    a. ALL COMPONENT PARTS IN THE CONTROL PANEL SHALL BE PERMANENTLY MARKED AND IDENTIFIED AS THEY ARE INDICATED ON THE DRAWING. MARKING SHALL BE ON THE BACK PLATE ADJACENT TO THE COMPONENT. ALL CONTROL CONDUCTORS AND TERMINALS SHALL BE IDENTIFIED WITH HEAT SHRINK TYPE, NON-ADHESIVE WIRE MARKERS.
  2. TESTING
    a. ALL PANELS SHALL BE TESTED TO THE POWER REQUIREMENTS AS SHOWN ON THE PLANS TO ASSURE PROPER OPERATION OF ALL THE COMPONENTS. EACH CONTROL FUNCTION SHALL BE ACTIVATED TO CHECK FOR PROPER OPERATION AND INDICATION.
    b. FIELD COMMISSIONING AND STARTUP. THE PANEL SHALL BE TESTED IN THE FIELD BY AN AUTHORIZED STARTUP TECHNICIAN ASSURING ALL CONTROL DEVICES FUNCTION PROPERLY AND SEQUENCE OF OPERATION IS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
  3. WARRANTY
    a. ALL EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. THE GUARANTEE SHALL BE EFFECTIVE AGAINST ALL DEFECTS IN WORKMANSHIP OR DEFECTIVE COMPONENTS.
  4. MANUFACTURER
    a. THE CONTROL PANEL MANUFACTURER SHALL BE A UL508 LISTED SHOP FOR INDUSTRIAL CONTROL SYSTEMS SHALL PROVIDE EVIDENCE OF SUCH ON REQUEST FROM THE ENGINEER OR USING AUTHORITY. THE PANEL SHALL BE PROVIDED WITH A UL LABEL. THE PANEL SHOP SHALL HAVE BUILT UL508 CONTROL PANELS FOR NO LESS THAN 5 YEARS. PANEL SHALL BE PROVIDED BY GLOBAL CONTROL SYSTEMS (678) 888-2838, APPLIED INDUSTRIAL CONTROLS (770) 614-7022 OR EQUAL.

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No. PEF007886
Exp. 06.30.2026

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Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

RAS/WAS PUMP
STATION ELECTRICAL
SCHEMATIC

E-405

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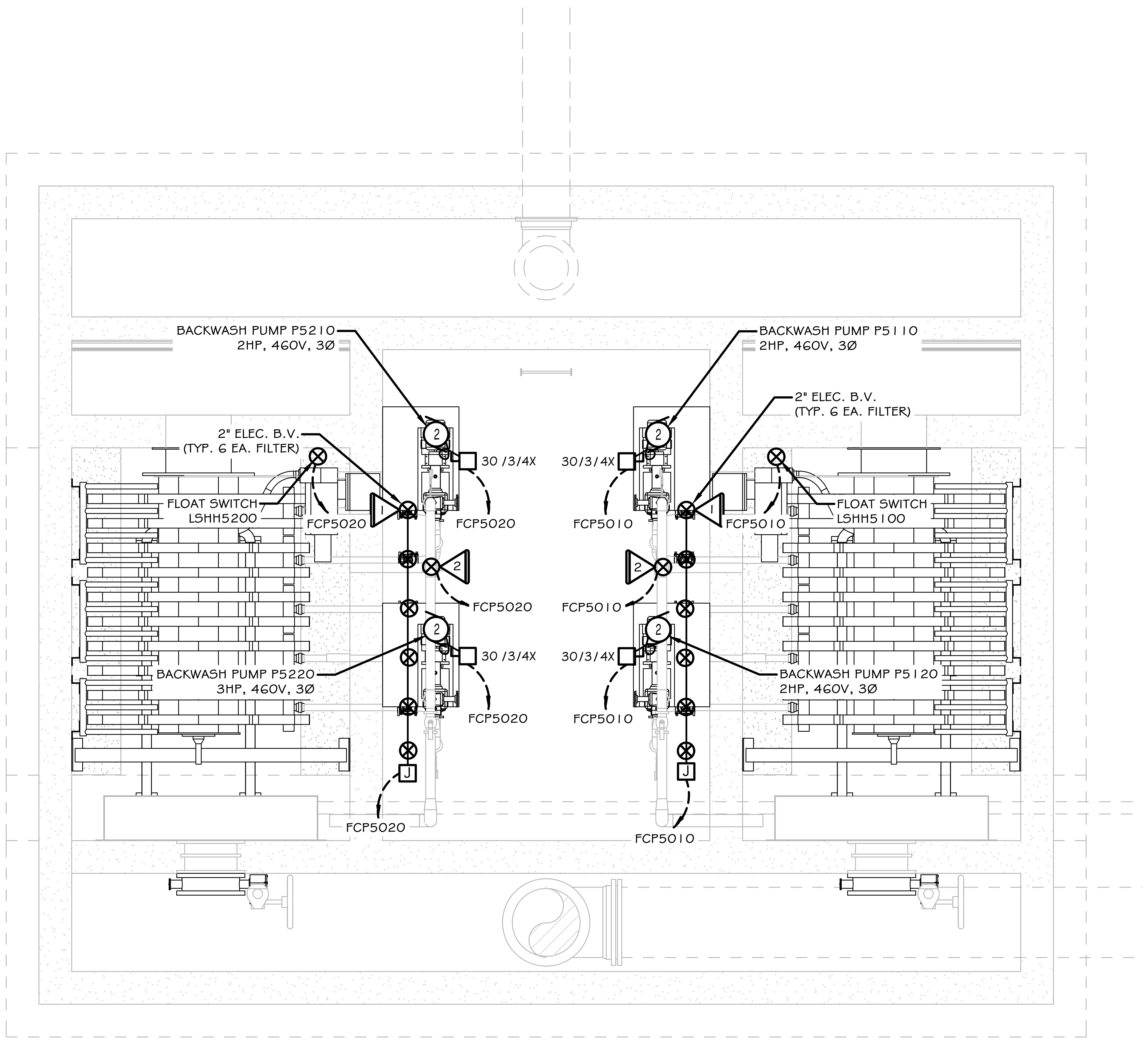

1
E-501

FILTER ELECTRICAL BOTTOM PLAN

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

KEYED NOTES:

1. 7#12, 1#12(G) (TYP. EA. SOLENOID ACTUATED VALVE) VERIFY WIRE SIZE & QUANTITY W/ MANUFACTURER. VALVES SHOWN SCHEMATICALLY, SEE MANUFACTURER DRAWING FOR LOCATION.
2. TWISTED SHIELD PAIR CABLE FROM VACUUM TRANSDUCER TO FILTER CONTROL PANEL.

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (LEVEL SENSORS, SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONDUITS SHALL BE INSTALLED WITHIN THE CONCRETE WALLS WHERE PRACTICABLE. WHERE EXPOSED CONDUITS ARE REQUIRED THE CONDUIT SHALL BE PVC COATED RIGID STEEL CONDUIT.

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1" .5" 0" 1"

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COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

FILTERS ELECTRICAL
BOTTOM PLAN

E-501

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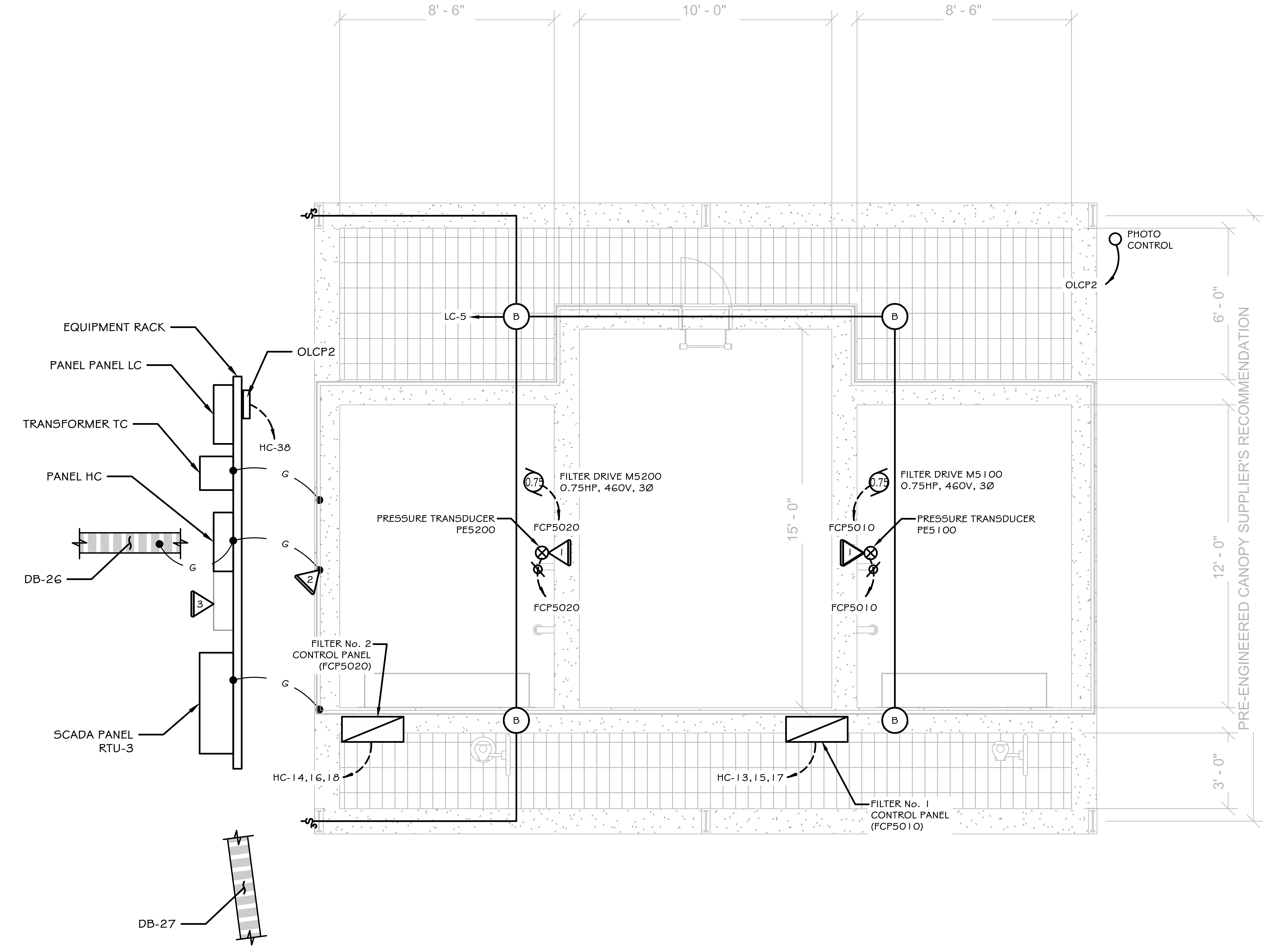
8' - 6"
10' - 0"
8' - 6"
LC-5
B
B
B
B
PHOTO CONTROL
OLCP2
6' - 0"
12' - 0"
3' - 0"
15' - 0"
PRE-ENGINEERED CANOPY SUPPLIER'S RECOMMENDATION
EQUIPMENT RACK
PANEL PANEL LC
OLCP2
HC-38
TRANSFORMER TC
PANEL HC
G
G
G
G
DB-26
2
3
SCADA PANEL RTU-3
FILTER No. 2 CONTROL PANEL (FCP5020)
HC-14,16,18
FILTER DRIVE M5200 0.75HP, 460V, 3Ø
0.75
PRESSURE TRANSDUCER PE5200
FCP5020
1
FCP5020
FILTER DRIVE M5100 0.75HP, 460V, 3Ø
0.75
FCP5010
PRESSURE TRANSDUCER PE5100
1
FCP5010
HC-13,15,17
FILTER No. 1 CONTROL PANEL (FCP5010)
DB-27

1 E-502 **FILTER ELECTRICAL TOP PLAN**

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

KEYED NOTES:

1. 2#12, 1 SHIELDED TWISTED PAIR & SENSOR VENT LINE FROM PRESSURE TRANSDUCER TO FCP (TYP. EA. FILTER). VERIFY WIRE SIZE & QUANTITY W/ MANUFACTURER.
2. BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. #2 BARE COPPER GROUNDING CONDUCTOR.
3. PROVIDE SPACE ON EQUIPMENT RACK FOR FUTURE PANEL- LC SECTION.

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (LEVEL SENSORS, SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONDUITS SHALL BE INSTALLED WITHIN THE CONCRETE WALLS WHERE PRACTICABLE. WHERE EXPOSED CONDUITS ARE REQUIRED THE CONDUIT SHALL BE PVC COATED RIGID STEEL CONDUIT.

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE		
B	○	LED CANOPY LIGHT	COOPER LIGHTING - LUMARK / RPGC25S LITHONIA LIGHTING / VVCPG LED V4 P4 40K 70CRI T5M PM	63	7,811	4000K	70	LED	120V	1

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. PENDANT MOUNT BY CONTRACTOR.

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03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

FILTERS ELECTRICAL
TOP PLAN

E-502

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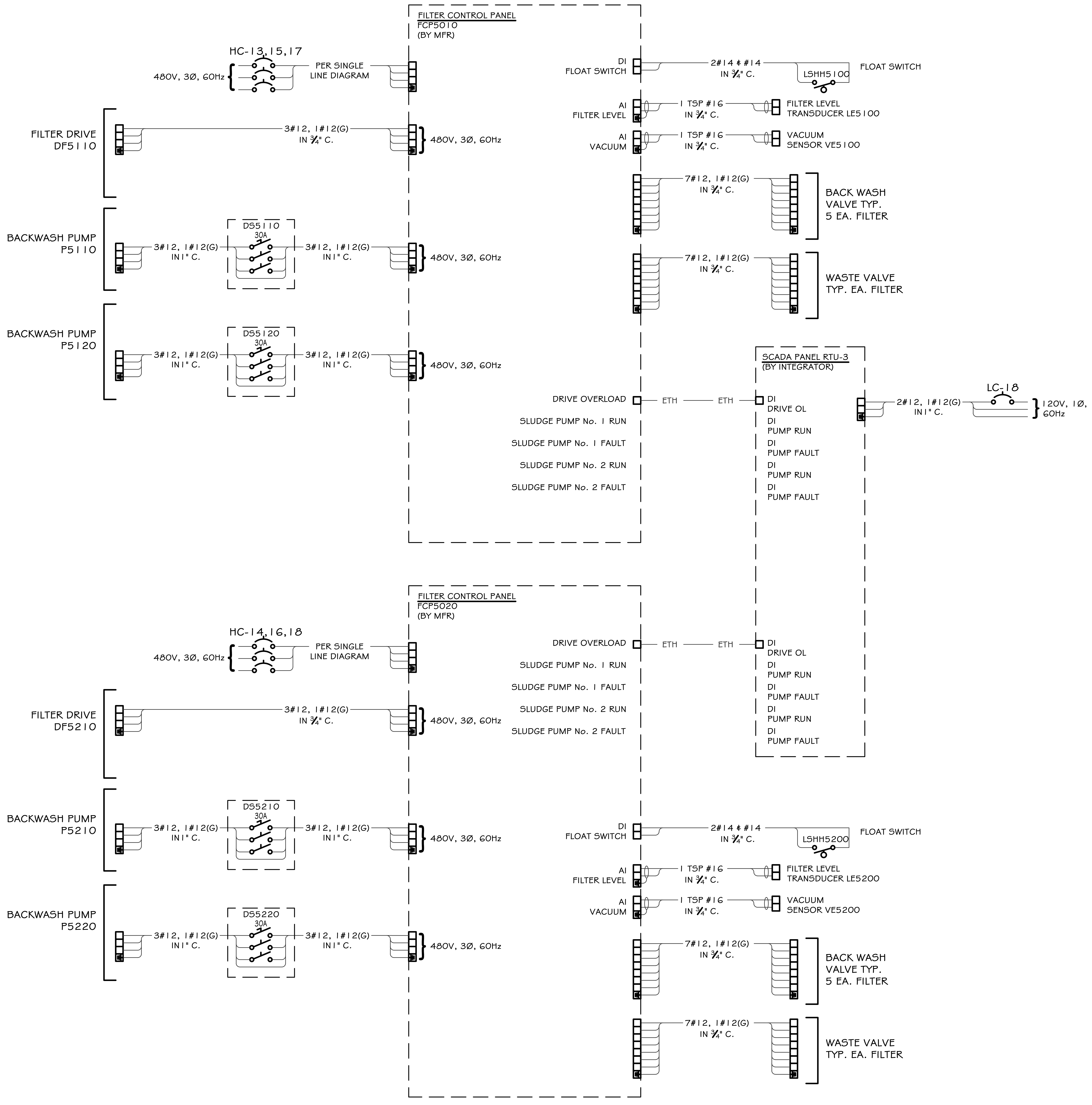

1
E-503

FILTER ELECTRICAL SCHEMATICS

SCALE: N.T.S.

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FILTERS ELECTRICAL SCHEMATIC

E-503

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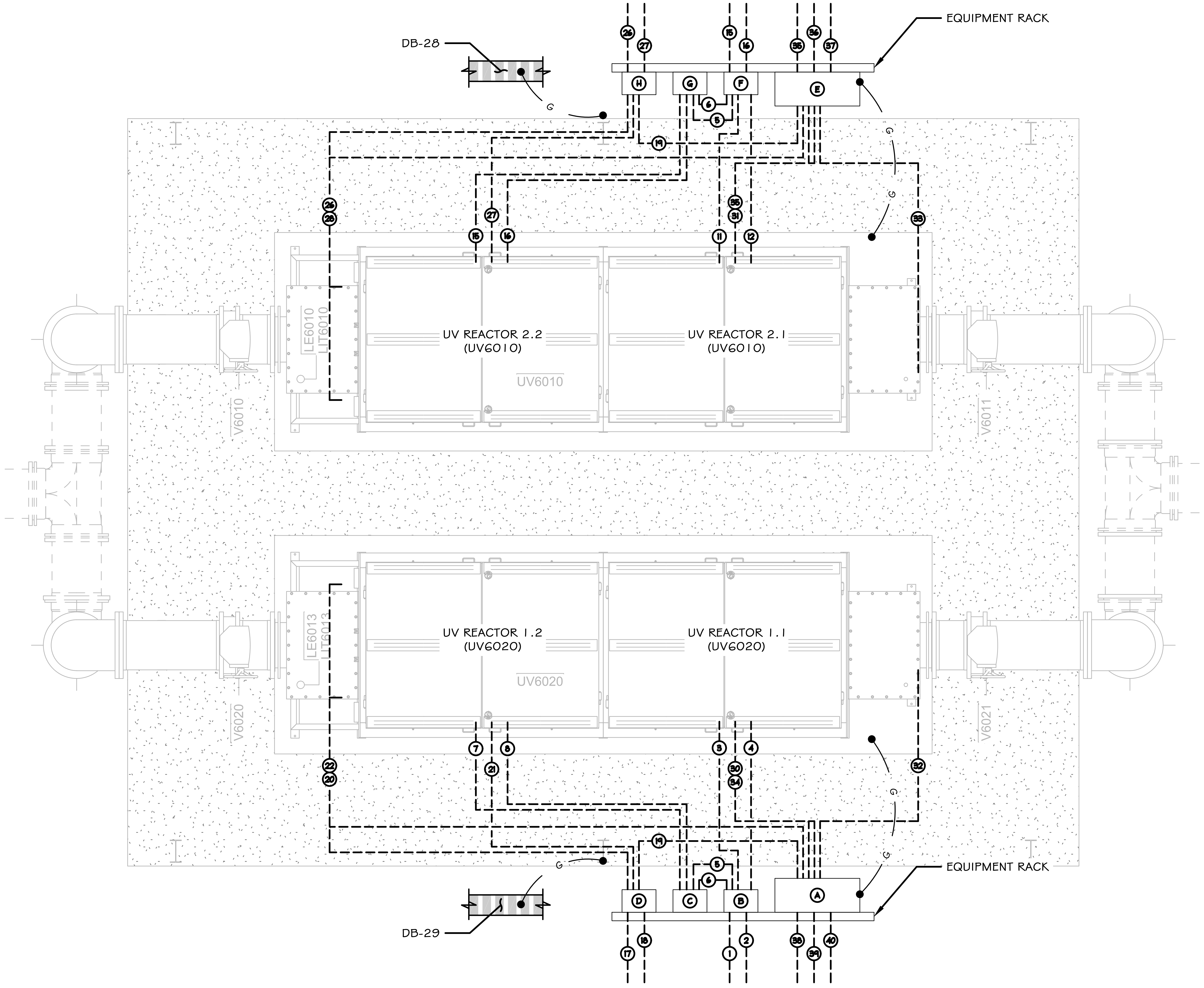
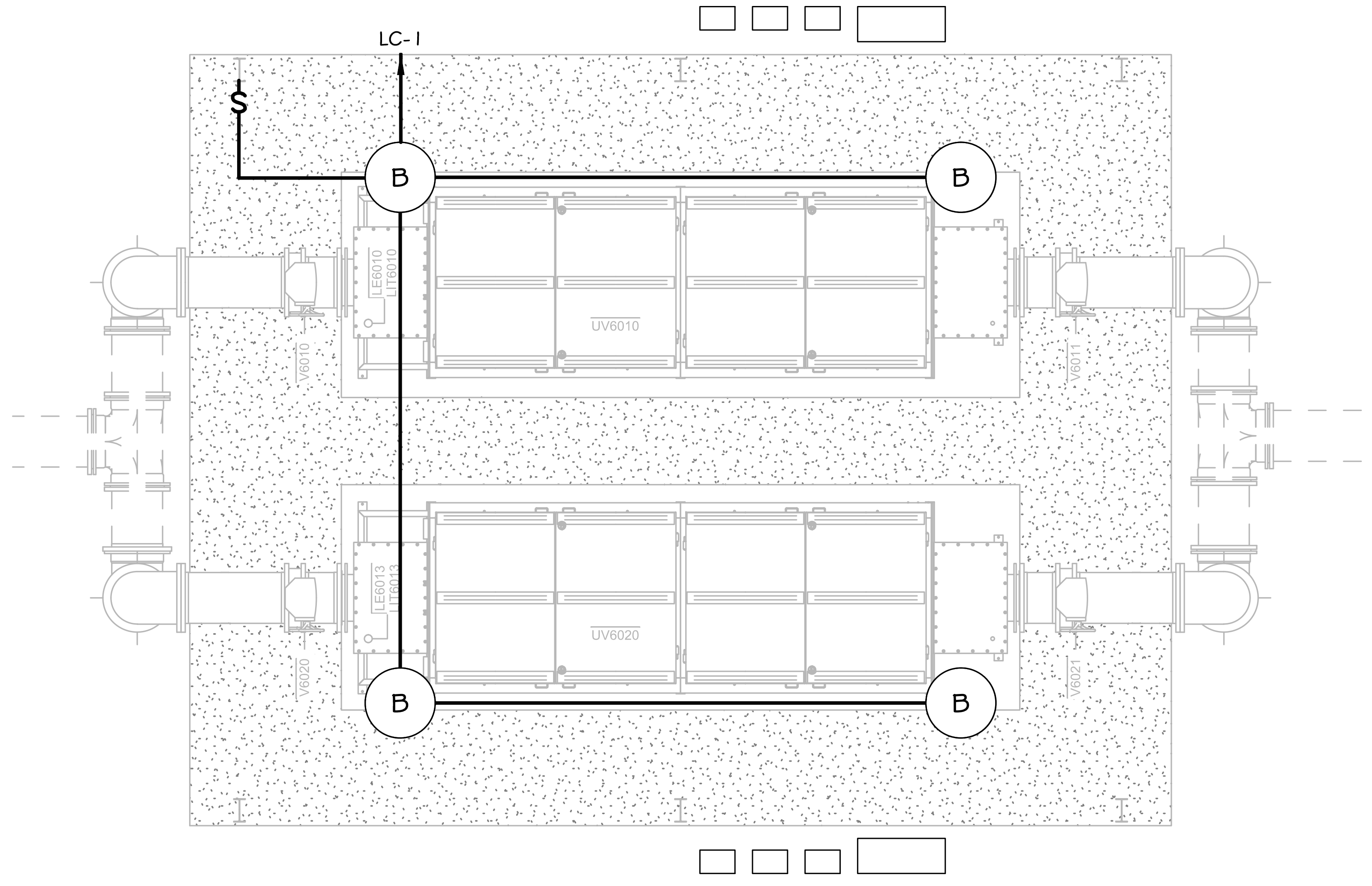


1 UV DISINFECTION ELECTRICAL PLAN

E-601

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



2 UV DISINFECTION LIGHTING PLAN

E-601

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

UV EQUIPMENT SCHEDULE

MARK	DESCRIPTION
Ⓐ	UV-1 CONTROL PANEL (FCP6010)
Ⓑ	POWER DISCONNECT PANEL (PDP-1.1)
Ⓒ	POWER DISCONNECT PANEL (PDP-1.2)
Ⓓ	PUMP CONTROL PANEL (FCP6011)
Ⓔ	UV-2 CONTROL PANEL (FCP6020)
Ⓕ	POWER DISCONNECT PANEL (PDP-2.1)
Ⓖ	POWER DISCONNECT PANEL (PDP-2.2)
Ⓗ	PUMP CONTROL PANEL (FCP6021)

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS WATTS	LAMPS LUMENS	LAMPS TEMP	LAMPS CRI	LAMPS TYPE	VOLTS	REMARKS
B	○	LED CANOPY LIGHT	COOPER LIGHTING - LUMARK / RPGC25S LITHONIA LIGHTING / VVCPG LED V4 P4 40K 70CRI T5M PM	63	7,811	4000K	70	LED	120V	1

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. PENDANT MOUNT BY CONTRACTOR.

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CHARLES K. BUTTERFIELD

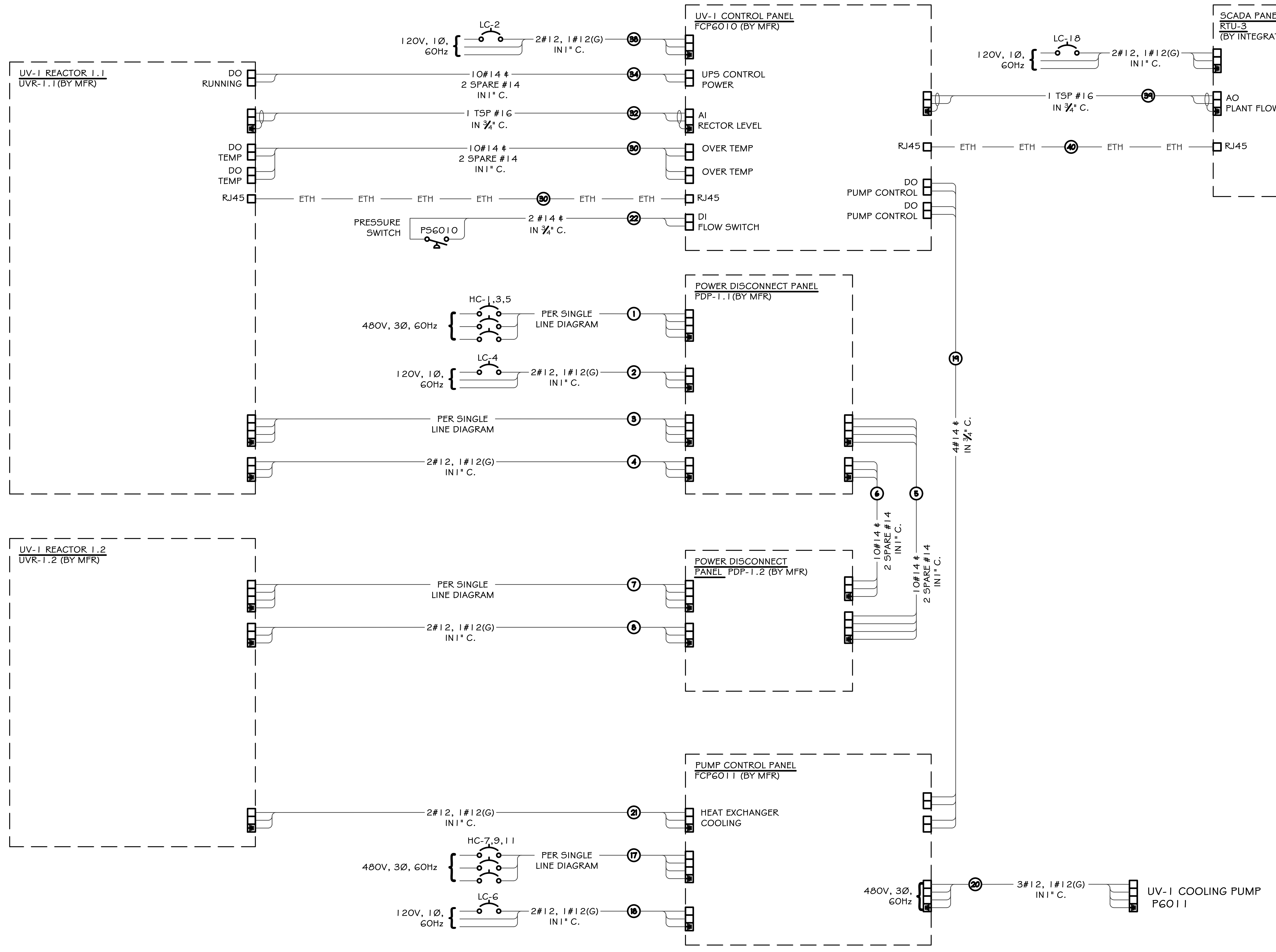
COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

UV DISINFECTION
ELECTRICAL PLAN

E-601

NOTE:
LABEL PANELS PDP-1.1 AND FCP6011, INDICATING MULTIPLE SOURCES OF INCOMING POWER. "MULTIPLE POWER SOURCES – VERIFY ISOLATION BEFORE MAINTENANCE"



1
E-602

UV REACTOR 1 ELECTRICAL SCHEMATIC

SCALE: N.T.S.

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1" .5" 0" 1"

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UV DISINFECTION
ELECTRICAL
SCHEMATICS

E-602

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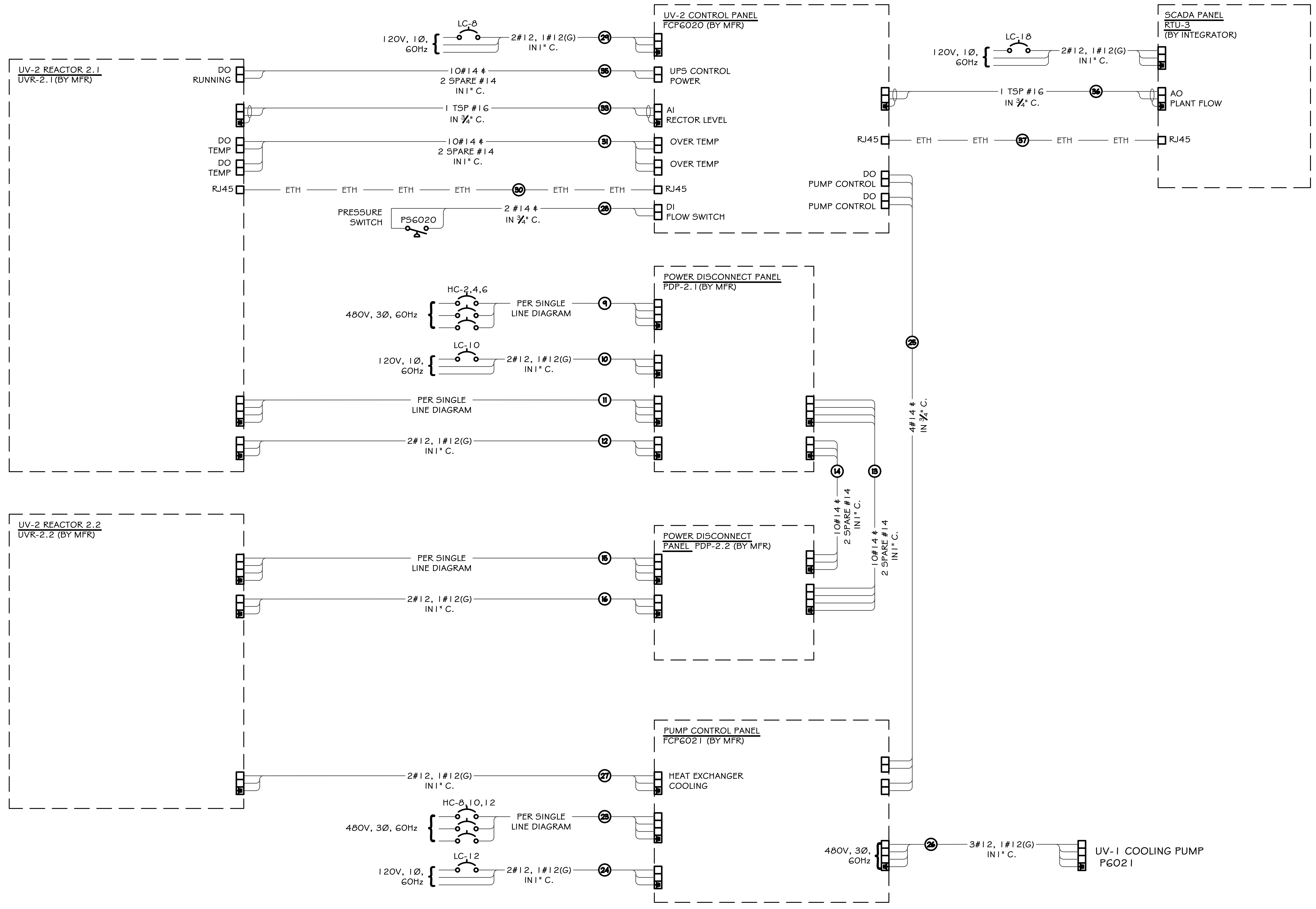
NOTE:
LABEL PANELS PDP-2.1 AND FCP6021, INDICATING MULTIPLE SOURCES OF INCOMING POWER. "MULTIPLE POWER SOURCES – VERIFY ISOLATION BEFORE MAINTENANCE"



1
E-603

UV REACTOR 2 ELECTRICAL SCHEMATIC

SCALE: N.T.S.

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UV DISINFECTION
ELECTRICAL
SCHEMATICS

E-603

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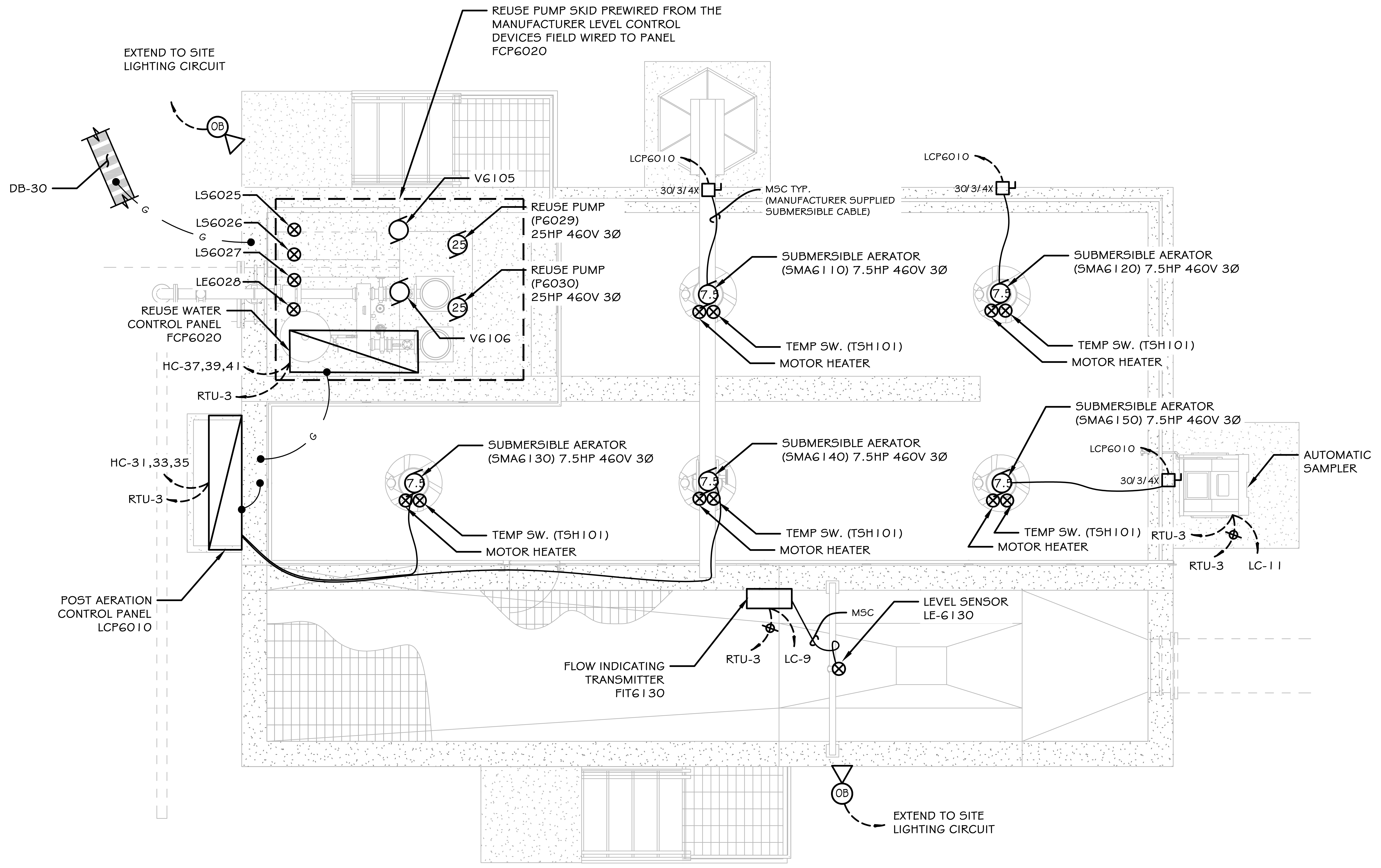
REUSE PUMP SKID PREWIRED FROM THE MANUFACTURER LEVEL CONTROL DEVICES FIELD WIRED TO PANEL FCP6020
EXTEND TO SITE LIGHTING CIRCUIT
OB
DB-30
G
LS6025
LS6026
LS6027
LE6028
V6105
REUSE PUMP (P6029) 25HP 460V 3Ø
REUSE PUMP (P6030) 25HP 460V 3Ø
25
V6106
REUSE WATER CONTROL PANEL FCP6020
HC-37,39,41
RTU-3
LCP6010
30/3/4X
MSC TYP. (MANUFACTURER SUPPLIED SUBMERSIBLE CABLE)
SUBMERSIBLE AERATOR (SMA6110) 7.5HP 460V 3Ø
SUBMERSIBLE AERATOR (SMA6120) 7.5HP 460V 3Ø
7.5
TEMP SW. (TSH101)
MOTOR HEATER
HC-31,33,35
SUBMERSIBLE AERATOR (SMA6130) 7.5HP 460V 3Ø
SUBMERSIBLE AERATOR (SMA6140) 7.5HP 460V 3Ø
SUBMERSIBLE AERATOR (SMA6150) 7.5HP 460V 3Ø
AUTOMATIC SAMPLER
LC-11
POST AERATION CONTROL PANEL LCP6010
MSC
LEVEL SENSOR LE-6130
FLOW INDICATING TRANSMITTER FIT6130
LC-9
EXTEND TO SITE LIGHTING CIRCUIT

1 E-604 REUSE PUMP STATION AND POST AERATION ELECTRICAL PLAN

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

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (LEVEL SENSORS, SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.
2. CONDUITS SHALL BE INSTALLED WITHIN THE CONCRETE WALLS WHERE PRACTICABLE. WHERE EXPOSED CONDUITS ARE REQUIRED THE CONDUIT SHALL BE PVC COATED RIGID STEEL CONDUIT.
3. ROUTE MANUFACTURER SUPPLIED SUBMERSIBLE AERATOR CABLES FROM AERATOR TO POST AERATION CONTROL PANEL.

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	POLE MOUNT	1

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 10' TALL SQUARE STEEL POLE POWDER COAT BLACK.

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Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

CHARLES K. BUTTERFIELD
03/19/2025
NO. 31217

PLANT REUSE PS &
POST AERATION
ELECTRICAL PLAN

E-604

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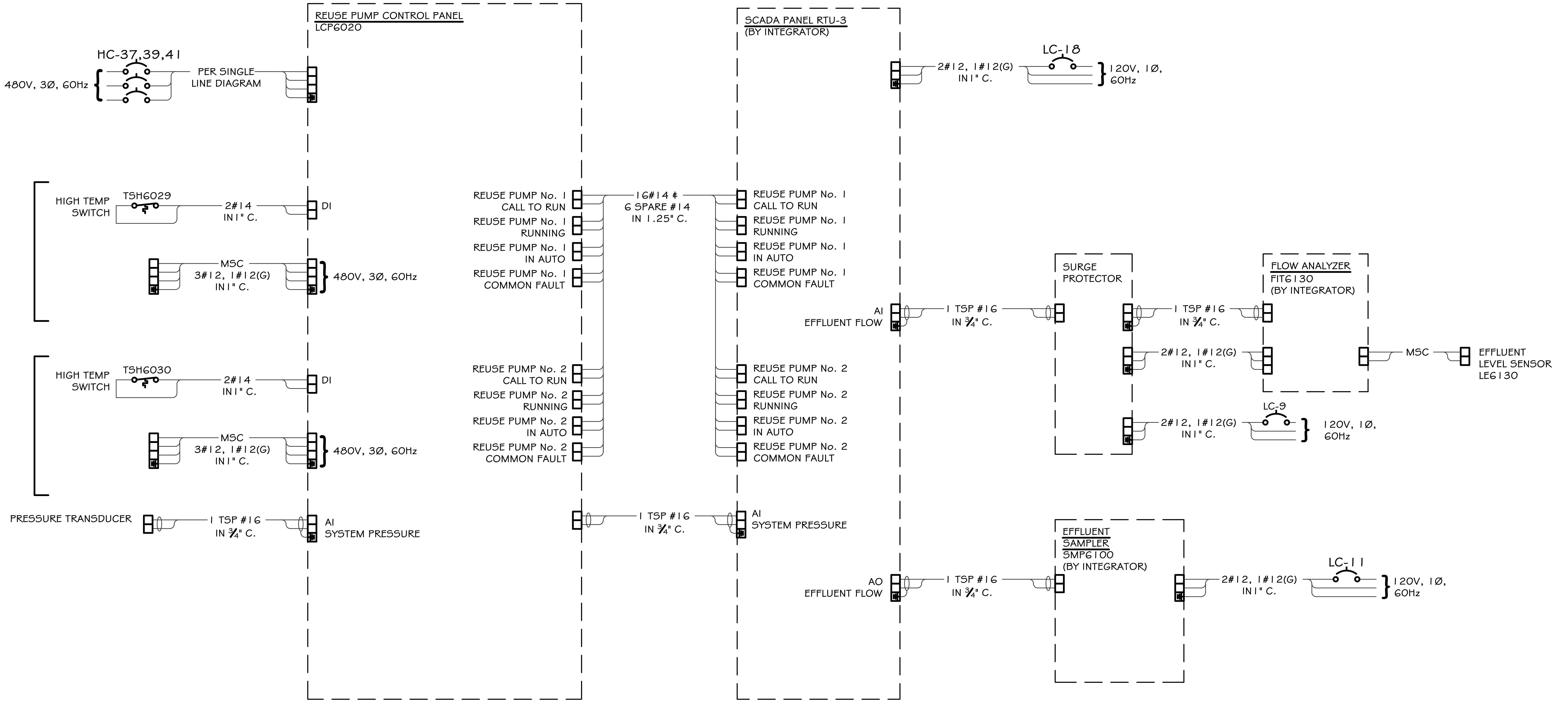

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E-605

REUSE PUMP STATION ELECTRICAL SCHEMATICS

SCALE: N.T.S.

REUSE PUMP STATION CONTROL PANEL

A. SCOPE OF WORK

1. CONTRACTOR SHALL PROVIDE ONE PANEL TO POWER AND CONTROL THE TWO (2) PROPOSED 25HP REUSE PUMPS.
2. THE POWER SERVICE FOR EACH PUMP WILL BE 480VOLTS, 3-PHASE, 60 HERTZ.
3. THE CONTROL PANEL LIST OF DEVICES IS DESCRIBED BELOW. THE EQUIPMENT LISTED BELOW IS A GUIDE AND DOES NOT RELIEVE THE CONTROLLER MANUFACTURER FROM SUPPLYING A SYSTEM THAT WILL FUNCTION AS REQUIRED.

B. ENCLOSURE

1. THE ENCLOSURE SHALL BE A NEMA 4X WATERPROOF, CORROSION RESISTANT, 304 STAINLESS STEEL WITH INNER DEAD FRONT DOOR. THE ENCLOSURE SHALL ADEQUATELY HOUSE ALL OF THE COMPONENTS. THE DOOR GASKET SHALL BE RUBBER COMPOSITION WITH A RETAINER TO ASSURE A POSITIVE SEAL.
2. FOR NEMA 4X ENCLOSURES, A POLISHED ALUMINUM DEAD FRONT SHALL BE MOUNTED ON A CONTINUOUS AIRCRAFT TYPE HINGE, CONTAIN CUTOUTS FOR MOUNTED EQUIPMENT, AND PROVIDE PROTECTION OF PERSONNEL FROM LIVE INTERNAL WIRING. "HAND-OF-AUTO" CONTROL SWITCHES, INDICATOR PILOT LIGHTS, AND ELAPSED TIME METERS, SHALL BE MOUNTED ON THE EXTERNAL SURFACE OF THE DEAD FRONT. THE DEAD FRONT SHALL OPEN A MINIMUM OF 150 DEGREES TO ALLOW ACCESS TO EQUIPMENT FOR MAINTENANCE.

C. BACK PLATE

1. THE BACK PLATE SHALL BE MANUFACTURED OF 12 GAUGE SHEET STEEL AND BE FINISHED WITH A PRIMER COAT AND TWO (2) COATS OF BAKED ON WHITE ENAMEL. ALL HARDWARE MOUNTED TO THE SUBPANEL SHALL BE ACCOMPLISHED WITH MACHINE THREAD TAPPED HOLES. SHEET METAL SCREWS ARE NOT ACCEPTABLE. ALL DEVICES SHALL BE PERMANENTLY IDENTIFIED.

D. PILOT DEVICES

1. ALL PILOT DEVICES SHALL BE 30MM SIEMENS CLASS 52 OR EQUAL.
2. FOR NEMA 4X ENCLOSURES, ALL PILOT DEVICES SHALL BE MOUNTED ON THE INNER DEAD FRONT DOOR FOR UNLESS OTHERWISE NOTED.
3. THE CONTROL PANEL SHALL INCLUDE THE FOLLOWING FOR EACH PUMP:
    a. RUNNING LIGHT
    b. ALARM LIGHT
    c. HOA SELECTOR SWITCHES
    d. ELAPSED TIME METER
4. THE CABINET ENCLOSURE SHALL BE FURNISHED WITH THE FOLLOWING DOOR MOUNTED CONTROLS AND PILOTS: DRIVE READY PILOT LIGHT, DRIVE RUNNING PILOT LIGHT, DRIVE FAULT PILOT LIGHT, START-STOP PUSH BUTTONS.

E. MAIN DISCONNECT, CIRCUIT BREAKERS, LIGHTNING PROTECTION

1. THE CONTROL PANEL SHALL HAVE A MAIN CIRCUIT BREAKER DISCONNECT.
2. EACH DRIVE SHALL HAVE CIRCUIT BREAKERS THAT ARE HEAVY DUTY THERMAL MAGNETIC OR MOTOR CIRCUIT PROTECTORS SIMILAR AND EQUAL TO SIEMENS AS REQUIRED BY DRIVE MANUFACTURER. EACH BREAKER SHALL BE SIZED TO MEET THE PUMP MOTOR AND DRIVE OPERATING CHARACTERISTICS AND SHALL HAVE A MINIMUM OF 22,000 AMPS INTERRUPTING CAPACITY AT 480 VAC.
3. CIRCUIT BREAKERS SHALL BE INDICATING TYPE PROVIDING "ON-OFF-TRIP" POSITIONS OF THE OPERATING HANDLE WHEN THE BREAKER IS TRIPPED AUTOMATICALLY, THE HANDLE SHALL ASSUME A MIDDLE POSITION INDICATING "TRIP".

F. VFDS

1. PROVIDE 2 VARIABLE FREQUENCY DRIVES, ONE FOR EACH REUSE PUMP. THE DRIVES SHALL BE AN ABB ACQ580 25HP VARIABLE TORQUE/HEAVY DUTY DRIVES 480 VOLT / 3 PHASE / 60 HERTZ MOUNTED IN THE PUMP CONTROL ENCLOSURE. CLIMATE CONTROL SHALL BE PROVIDED IF REQUIRED.
2. VFDS SHALL BE PROVIDED WITH CONTROL PANEL KEYPAD MOUNTING KIT AND ETHERNET ADAPTER.

G. LOCAL & REMOTE ALARMS

1. INDIVIDUAL CONTROL RELAYS SHALL BE USED FOR REMOTE ALARMS. RELAYS SHALL HAVE ISOLATED NO & NC CONTACTS WIRED TO TERMINAL BLOCKS FOR FIELD INTERFACE.

H. VFD PUMP CONTROL SYSTEM OPERATION

1. THE VFD PUMP SYSTEM CONTROL LOGIC SHALL ALLOW FOR THE VFDS TO CONTROL AUTOMATIC ALTERNATION OF THE PUMPS. THE REUSE SYSTEM PRESSURE SHALL BE SENSED BY THE PRESSURE TRANSDUCER. THE SYSTEM SHALL RUN BASED ON OPERATOR INPUT PRESSURE VALUES.
2. PUMPS TO OPERATE OFF THE PRESSURE LEVEL TRANSDUCER AND THE DISPLAY SHALL INDICATE SYSTEM PRESSURE. THE VFDS SHALL AUTOMATICALLY RAMP UP PUMP SPEEDS BASED ON REUSE SYSTEM PRESSURE. FIELD ADJUSTABLE OPERATING SET POINTS SHALL BE PROVIDED FOR THE OPERATOR.

G. TRANSFORMER

1. THE 3KVA CONTROL TRANSFORMER, IF REQUIRED, SHALL BE LARGE ENOUGH TO PROVIDE 120 VAC FOR CONTROL CIRCUITS AND SEPARATE DUPLEX CONTROL POWER RECEPTACLE. THE TRANSFORMER SHALL UTILIZE CONTROL FUSES ON THE PRIMARY AND SECONDARY CIRCUITS. ONE LEG OF THE SECONDARY SHALL BE GROUNDED.

H. LOCAL & REMOTE ALARMS

1. INDIVIDUAL CONTROL RELAYS SHALL BE USED FOR REMOTE ALARMS. RELAYS SHALL HAVE ISOLATED NO & NC CONTACTS WIRED TO TERMINAL BLOCKS FOR FIELD INTERFACE.

J. ANCILLARY EQUIPMENT

1. THE ANCILLARY EQUIPMENT LISTED BELOW SHALL BE INCLUDED WITH THE CONTROL PANEL.
    a. PHASE MONITOR FOR MONITORING INCOMING POWER.
    b. MOTOR THERMOSTAT PROTECTION CIRCUIT.
    c. CONTROL PANEL ANTI-CONDENSATION HEATER.

K. MISCELLANEOUS

1. PANEL MARKINGS
    a. ALL COMPONENT PARTS IN THE CONTROL PANEL SHALL BE PERMANENTLY MARKED AND IDENTIFIED AS THEY ARE INDICATED ON THE DRAWING. MARKING SHALL BE ON THE BACK PLATE ADJACENT TO THE COMPONENT. ALL CONTROL CONDUCTORS AND TERMINALS SHALL BE IDENTIFIED WITH HEAT SHRINK TYPE, NON-ADHESIVE WIRE MARKERS.
2. TESTING
    a. ALL PANELS SHALL BE TESTED TO THE POWER REQUIREMENTS AS SHOWN ON THE PLANS TO ASSURE PROPER OPERATION OF ALL THE COMPONENTS. EACH CONTROL FUNCTION SHALL BE ACTIVATED TO CHECK FOR PROPER OPERATION AND INDICATION.
    b. FIELD COMMISSIONING AND STARTUP. THE PANEL SHALL BE TESTED IN THE FIELD BY AN AUTHORIZED STARTUP TECHNICIAN ASSURING ALL CONTROL DEVICES FUNCTION PROPERLY AND SEQUENCE OF OPERATION IS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
3. WARRANTY
    a. ALL EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. THE GUARANTEE SHALL BE EFFECTIVE AGAINST ALL DEFECTS IN WORKMANSHIP OR DEFECTIVE COMPONENTS.
4. MANUFACTURER
    a. THE CONTROL PANEL MANUFACTURER SHALL BE A UL508 LISTED SHOP FOR INDUSTRIAL CONTROL SYSTEMS SHALL PROVIDE EVIDENCE OF SUCH ON REQUEST FROM THE ENGINEER OR USING AUTHORITY. THE PANEL SHALL BE PROVIDED WITH A UL LABEL. THE PANEL SHOP SHALL HAVE BUILT UL508 CONTROL PANELS FOR NO LESS THAN 5 YEARS. PANEL SHALL BE PROVIDED BY APPLIED INDUSTRIAL CONTROLS (770) 614-7022, DUBLIN AUTOMATION (478) 353-1142 OR EQUAL.

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

PLANT REUSE PUMP
STATION ELECTRICAL
SCHEMATIC

E-605

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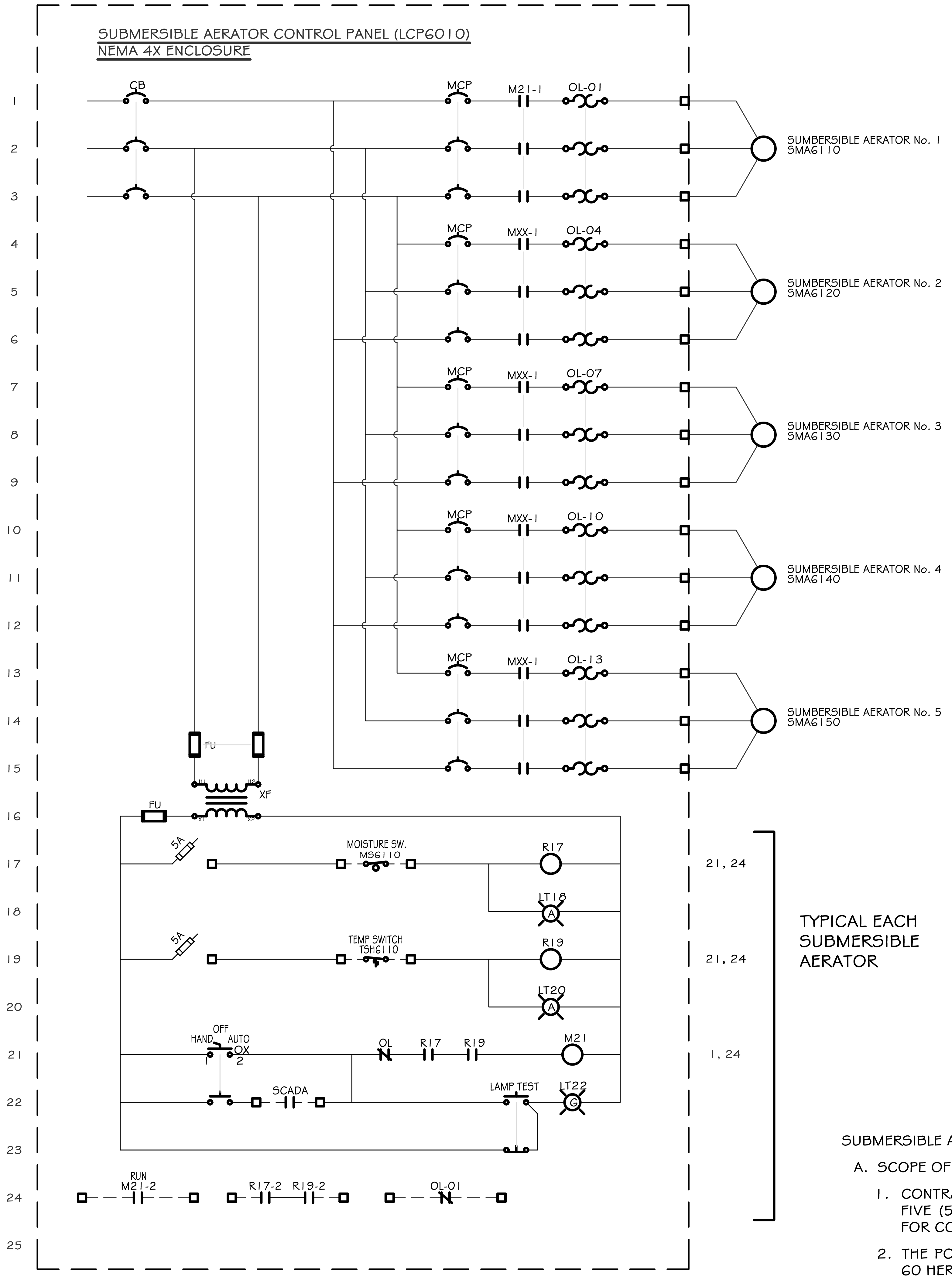
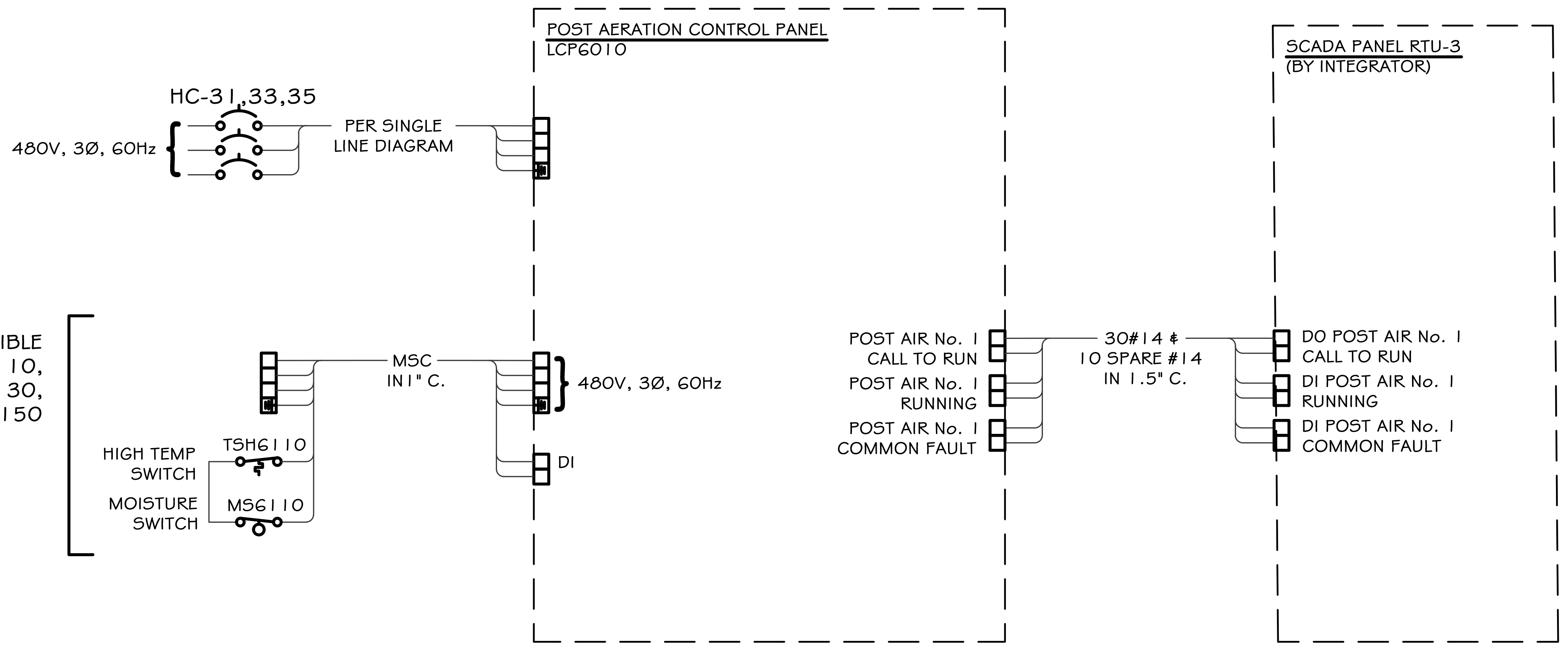


NOTE:

1) THE CONTRACTOR SHALL PROVIDE WIRING DIAGRAM DRAWINGS, A BILL OF MATERIALS, & A LAYOUT PLAN FOR THE CONTROL PANEL AND ALL ASSOCIATED COMPONENTS. THESE DOCUMENTS MUST BE SUBMITTED FOR THE ENGINEER'S REVIEW & APPROVAL PRIOR TO FABRICATION.

SUBMERSIBLE AERATOR CONTROL PANEL SCHEMATIC


HC-31,33,35
480V, 3Ø, 60Hz
PER SINGLE LINE DIAGRAM
POST AERATION CONTROL PANEL LCP6010
SCADA PANEL RTU-3 (BY INTEGRATOR)
SUBMERSIBLE AERATOR (SMA6110, SMA6120, SMA6130, SMA6140, SMA6150
MSC IN 1" C.
480V, 3Ø, 60Hz
DI
HIGH TEMP SWITCH
TSH6110
MOISTURE SWITCH
MS6110
POST AIR No. 1 CALL TO RUN
POST AIR No. 1 RUNNING
POST AIR No. 1 COMMON FAULT
30#14 & 10 SPARE #14 IN 1.5" C.
DO POST AIR No. 1 CALL TO RUN
DI POST AIR No. 1 RUNNING
DI POST AIR No. 1 COMMON FAULT

POST AERATION ELECTRICAL SCHEMATICS

SUBMERSIBLE AERATOR CONTROL PANEL

A. SCOPE OF WORK

1. CONTRACTOR SHALL PROVIDE ONE PANEL TO POWER AND CONTROL THE FIVE (5) PROPOSED 7.5HP SUBMERSIBLE AERATORS. PROVIDE SPACE FOR CONTROLS TO TWO FUTURE SUBMERSIBLE AERATORS.
2. THE POWER SERVICE FOR EACH AERATOR WILL BE 480VOLTS, 3-PHASE, 60 HERTZ.
3. THE CONTROL PANEL LIST OF DEVICES IS DESCRIBED BELOW. THE EQUIPMENT LISTED BELOW IS A GUIDE AND DOES NOT RELIEVE THE CONTROLLER MANUFACTURER FROM SUPPLYING A SYSTEM THAT WILL FUNCTION AS REQUIRED.

B. ENCLOSURE

1. THE ENCLOSURE SHALL BE A NEMA 4X WATERPROOF, CORROSION RESISTANT, 304 STAINLESS STEEL WITH INNER DEAD FRONT DOOR. THE ENCLOSURE SHALL ADEQUATELY HOUSE ALL OF THE COMPONENTS. THE DOOR GASKET SHALL BE RUBBER COMPOSITION WITH A RETAINER TO ASSURE A POSITIVE SEAL.
2. FOR NEMA 4X ENCLOSURES, A POLISHED ALUMINUM DEAD FRONT SHALL BE MOUNTED ON A CONTINUOUS AIRCRAFT TYPE HINGE, CONTAIN CUTOUTS FOR MOUNTED EQUIPMENT, AND PROVIDE PROTECTION OF PERSONNEL FROM LIVE INTERNAL WIRING. "HAND-OF-AUTO" CONTROL SWITCHES, INDICATOR PILOT LIGHTS, AND ELAPSED TIME METERS, SHALL BE MOUNTED ON THE EXTERNAL SURFACE OF THE DEAD FRONT. THE DEAD FRONT SHALL OPEN A MINIMUM OF 150 DEGREES TO ALLOW ACCESS TO EQUIPMENT FOR MAINTENANCE.

C. BACK PLATE

1. THE BACK PLATE SHALL BE MANUFACTURED OF 12 GAUGE SHEET STEEL AND BE FINISHED WITH A PRIMER COAT AND TWO (2) COATS OF BAKED ON WHITE ENAMEL. ALL HARDWARE MOUNTED TO THE SUBPANEL SHALL BE ACCOMPLISHED WITH MACHINE THREAD TAPPED HOLES. SHEET METAL SCREWS ARE NOT ACCEPTABLE. ALL DEVICES SHALL BE PERMANENTLY IDENTIFIED.

D. PILOT DEVICES

1. ALL PILOT DEVICES SHALL BE 30MM SIEMENS CLASS 52 OR EQUAL.
2. FOR NEMA 4X ENCLOSURES, ALL PILOT DEVICES SHALL BE MOUNTED ON THE INNER DEAD FRONT DOOR FOR UNLESS OTHERWISE NOTED.
3. THE CONTROL PANEL SHALL INCLUDE THE FOLLOWING FOR EACH AERATOR:
    a. RUNNING LIGHT
    b. ALARM LIGHT
    c. HOA SELECTOR SWITCHES
    d. ELAPSED TIME METER

E. MAIN DISCONNECT, CIRCUIT BREAKERS, LIGHTNING PROTECTION

1. THE CONTROL PANEL SHALL HAVE A MAIN CIRCUIT BREAKER DISCONNECT.
2. EACH CONSTANT SPEED MOTOR STARTER SHALL HAVE CIRCUIT BREAKERS THAT ARE HEAVY DUTY THERMAL MAGNETIC OR MOTOR CIRCUIT PROTECTORS SIMILAR AND EQUAL TO SIEMENS. EACH BREAKER SHALL BE SIZED TO MEET THE AERATOR MOTOR OPERATING CHARACTERISTICS AND SHALL HAVE A MINIMUM OF 22,000 AMPS INTERRUPTING CAPACITY AT 480 VAC.
3. CIRCUIT BREAKERS SHALL BE INDICATING TYPE PROVIDING "ON-OFF-TRIP" POSITIONS OF THE OPERATING HANDLE WHEN THE BREAKER IS TRIPPED AUTOMATICALLY, THE HANDLE SHALL ASSUME A MIDDLE POSITION INDICATING "TRIP".

F. MOTOR STARTERS

1. MAGNETIC MOTOR STARTERS SHALL BE FURNISHED FOR EACH AERATOR MOTOR. STARTERS OF NEMA SIZE 1 AND ABOVE SHALL BE DESIGNED FOR ADDITION OF AT LEAST TWO AUXILIARY CONTACTS. STARTERS RATED "0", "00", OR FRACTIONAL SIZE ARE NOT ACCEPTABLE. POWER CONTACTS SHALL BE DOUBLE-BREAK AND MADE OF CADMIUM OXIDE SILVER. ALL MOTOR STARTERS SHALL BE EQUIPPED TO PROVIDE UNDER-VOLTAGE RELEASE AND OVERLOAD PROTECTION ON ALL THREE PHASES. PROVIDE SOLID STATE OVERLOADS, BIMETALLIC TYPE THERMAL OVERLOADS ARE NOT ACCEPTABLE. STARTERS SHALL BE EQUAL TO SIEMENS CLASS 14.

G. TRANSFORMER

1. THE 3KVA CONTROL TRANSFORMER, IF REQUIRED, SHALL BE LARGE ENOUGH TO PROVIDE 120 VAC FOR CONTROL CIRCUITS AND SEPARATE DUPLEX CONTROL POWER RECEPTACLE. THE TRANSFORMER SHALL UTILIZE CONTROL FUSES ON THE PRIMARY AND SECONDARY CIRCUITS. ONE LEG OF THE SECONDARY SHALL BE GROUNDED.

H. LOCAL & REMOTE ALARMS

1. INDIVIDUAL CONTROL RELAYS SHALL BE USED FOR REMOTE ALARMS. RELAYS SHALL HAVE ISOLATED NO & NC CONTACTS WIRED TO TERMINAL BLOCKS FOR FIELD INTERFACE.

J. ANCILLARY EQUIPMENT

1. THE ANCILLARY EQUIPMENT LISTED BELOW SHALL BE INCLUDED WITH THE CONTROL PANEL.
    a. PHASE MONITOR FOR MONITORING INCOMING POWER.
    b. 120V POWERED CIRCUIT FOR MOTOR SPACE HEATERS, APPROXIMATELY 25W, VERIFY WITH EQUIPMENT SUPPLIER.
    c. CONTROL PANEL ANTI-CONDENSATION HEATER.

K. MISCELLANEOUS

1. PANEL MARKINGS
    a. ALL COMPONENT PARTS IN THE CONTROL PANEL SHALL BE PERMANENTLY MARKED AND IDENTIFIED AS THEY ARE INDICATED ON THE DRAWING. MARKING SHALL BE ON THE BACK PLATE ADJACENT TO THE COMPONENT. ALL CONTROL CONDUCTORS AND TERMINALS SHALL BE IDENTIFIED WITH HEAT SHRINK TYPE, NON-ADHESIVE WIRE MARKERS.
2. TESTING
    a. ALL PANELS SHALL BE TESTED TO THE POWER REQUIREMENTS AS SHOWN ON THE PLANS TO ASSURE PROPER OPERATION OF ALL THE COMPONENTS. EACH CONTROL FUNCTION SHALL BE ACTIVATED TO CHECK FOR PROPER OPERATION AND INDICATION.
    b. FIELD COMMISSIONING AND STARTUP. THE PANEL SHALL BE TESTED IN THE FIELD BY AN AUTHORIZED STARTUP TECHNICIAN ASSURING ALL CONTROL DEVICES FUNCTION PROPERLY AND SEQUENCE OF OPERATION IS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
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4. MANUFACTURER
    a. THE CONTROL PANEL MANUFACTURER SHALL BE A UL508 LISTED SHOP FOR INDUSTRIAL CONTROL SYSTEMS SHALL PROVIDE EVIDENCE OF SUCH ON REQUEST FROM THE ENGINEER OR USING AUTHORITY. THE PANEL SHALL BE PROVIDED WITH A UL LABEL. THE PANEL SHOP SHALL HAVE BUILT UL508 CONTROL PANELS FOR NO LESS THAN 5 YEARS. PANEL SHALL BE PROVIDED BY APPLIED INDUSTRIAL CONTROLS (770) 614-7022, DUBLIN AUTOMATION (478) 353-1142 OR EQUAL.

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1" .5" 0"

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Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

REGISTERED 03/19/2025 NO. 31217 PROFESSIONAL ENGINEER
CHARLES K. BUTTERFIELD

POST AERATION
ELECTRICAL SCHEMATIC

E-606

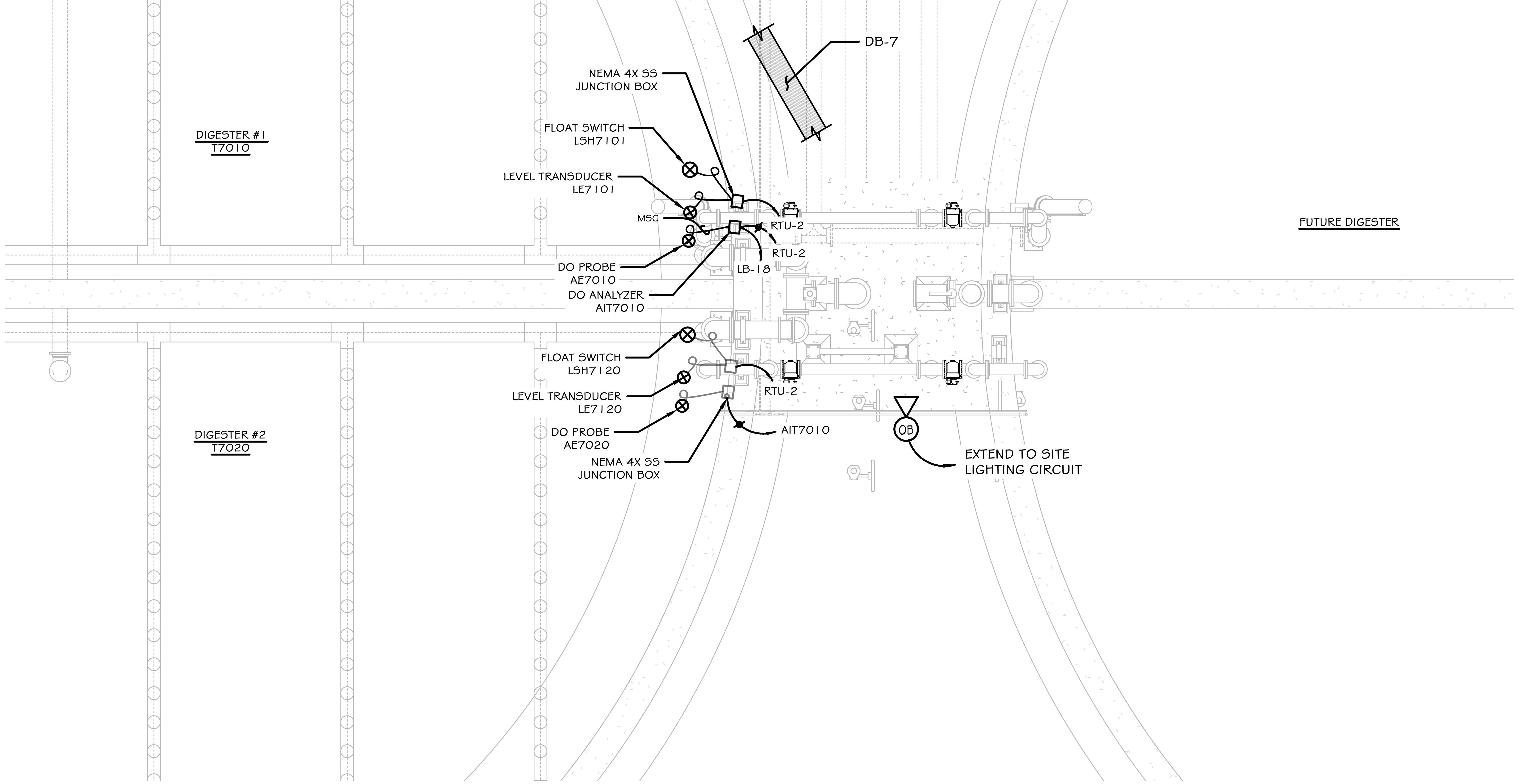
LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OB	○◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	MVOLT	10'-0"	TELESCOPING RAIL MOUNT	2

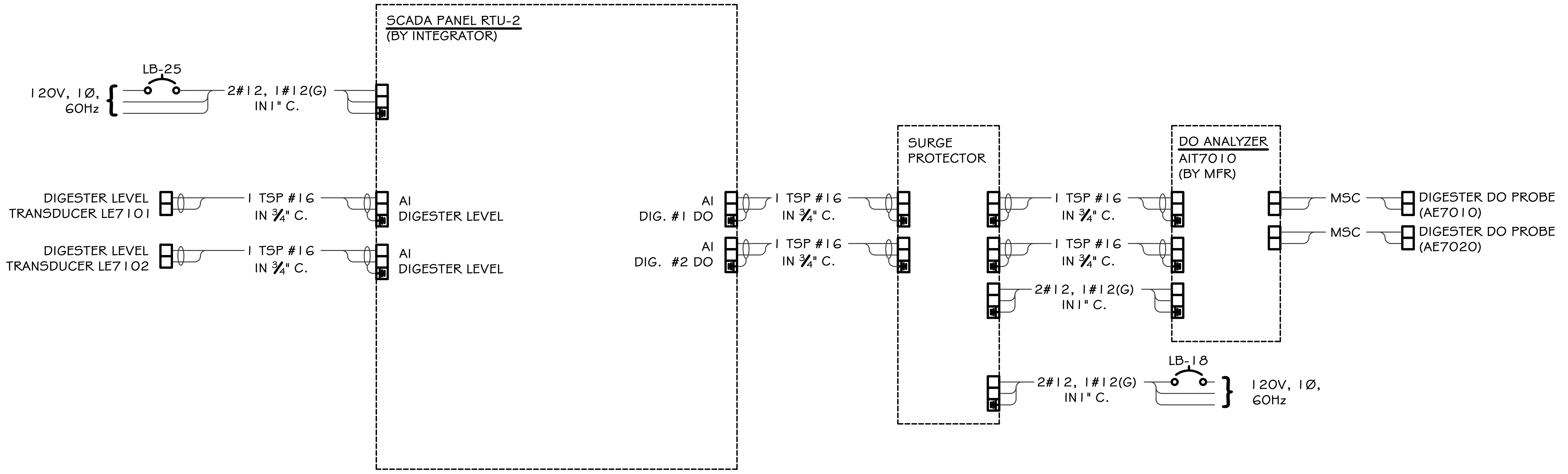
NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. MOUNT 20' TALL SQUARE STEEL POLE POWDER COAT BLACK.
2. ALUMINUM POLE W/ TELESCOPING RAIL MOUNT. (SEE DETAIL SHT. E-005)

NOTE:
1. STUB UP FUTURE CONDUITS TO PREPARE FOR FUTURE EQUIPMENT AND DEVICES ASSOCIATED WITH DIGESTER NUMBER TWO.



1 E-701
DIGESTER ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



2 E-701
DIGESTER ELECTRICAL SCHEMATICS
SCALE: N.T.S.

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DIGESTERS
ELECTRICAL PLAN

E-701

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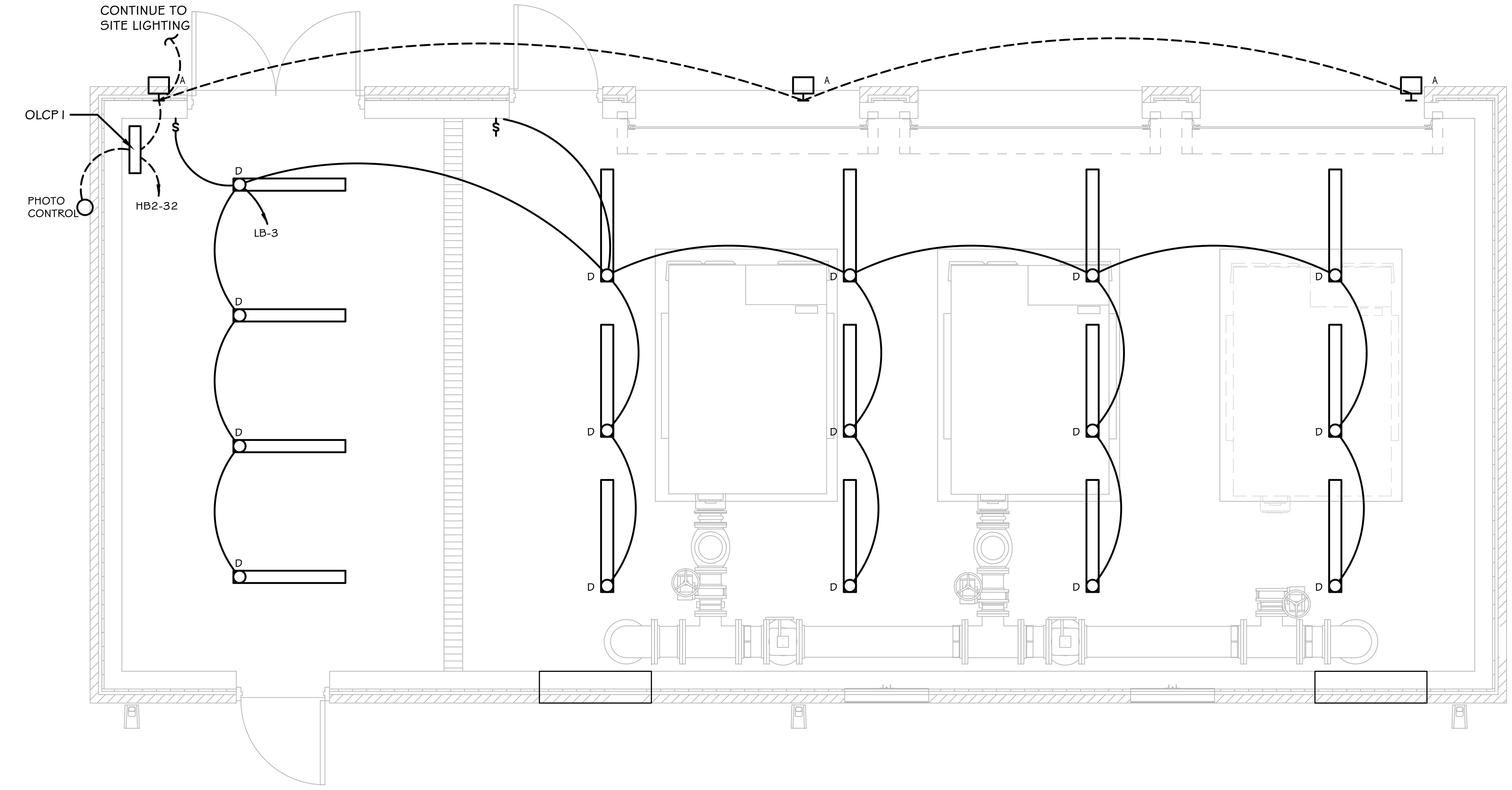

BLOWER BUILDING LIGHTING PLAN

1
E-711
SCALE: 3/8" = 1 '- 0"

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS
				WATTS	LUMENS	TEMP	CRI	TYPE	
A	🖵	LOW-PROFILE ARCHITECTURAL LED WALL PACK	COOPER LIGHTING - LUMARK / XTOR6B-W BZ LITHONIA LIGHTING / WPX2 LED 40K MVOLT DDBXD	58	6,133	4000K	70	LED	277V
D	▭	LED WRAP AROUND W/ SELECTABLE CCT & LUMEN	COOPER LIGHTING - METALUX / 4NWS3CMS-UNV-HI LITHONIA LIGHTING / FML4W 48 5000LM 840 ZT	39	4,851	3500K	82	LED	120V

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

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03/19/2025
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BLOWER BUILDING
LIGHTING PLAN

E-711

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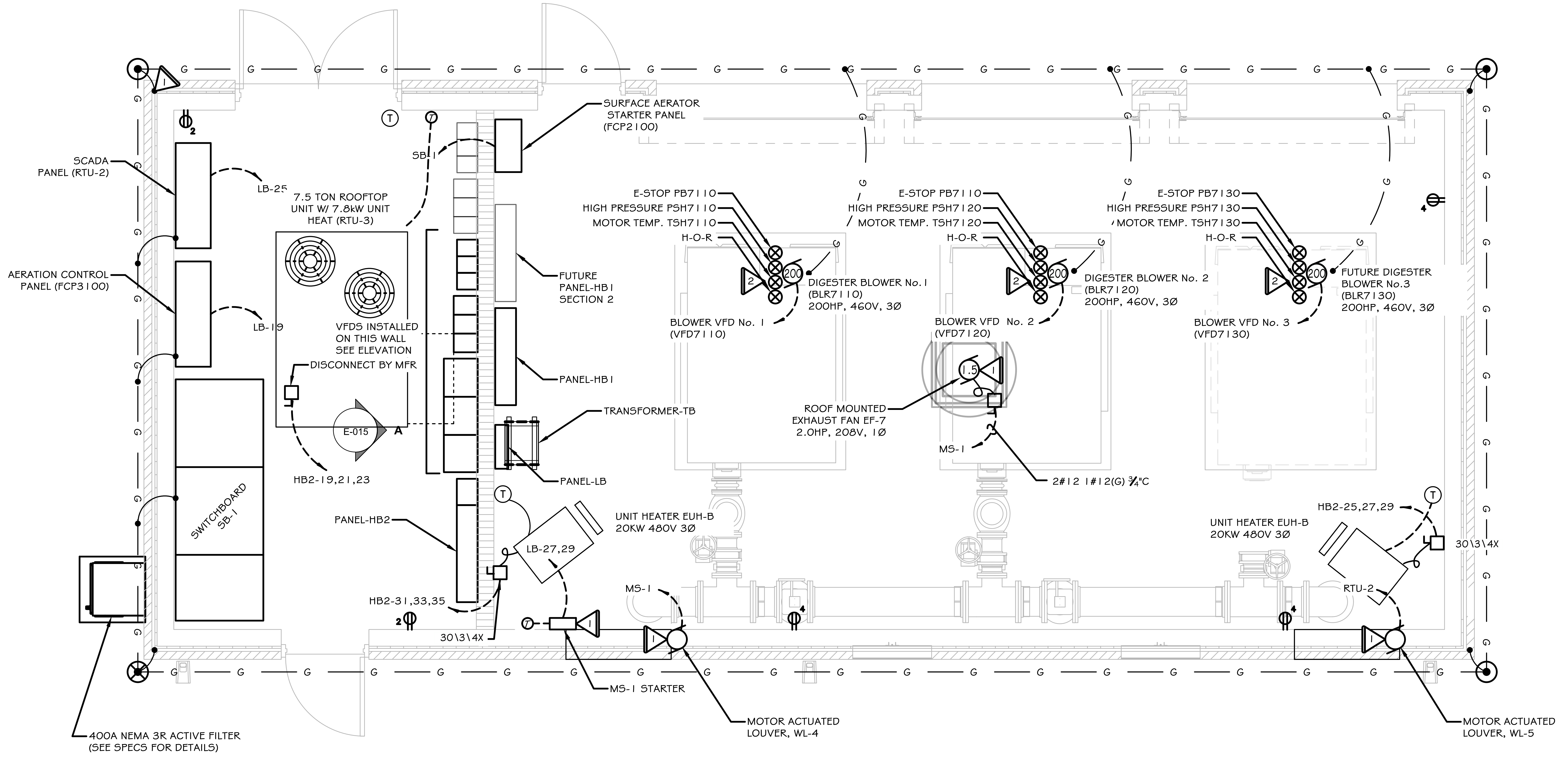
NOTES

1. VERIFY ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN LIGHT SWITCHES TO INSURE PROPER SWITCH LOCATION. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ARE AT THE PROPER HEIGHT.
2. GENERAL ELECTRIC NOTES APPLY TO THE ELECTRICAL PLAN SEE SHEET E-001.
3. THIS CONDUIT/DUCT BANK LAYOUT IS FOR GUIDANCE, ROUTE ALL RACEWAYS IN THE INDICATED CORRIDORS. ANY ADDITIONAL DUCTS OR CONDUITS SHALL BE INSTALLED FOR RACEWAYS FOR POWER, CONTROL AND SIGNAL CIRCUITS AS REQUIRED.
4. SEE SPECIFICATIONS FOR GREATER DETAILS REGARDING RACEWAYS.
5. THE ELECTRICAL CONTRACTOR WILL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION AND AVOID CONFLICTS. ELECTRICAL CONTRACTOR WILL WORK CLOSELY WITH GENERAL CONTRACTOR AND VERIFY EXACT TYPES AND LOCATIONS OF EQUIPMENT AND PIPING TO BE INSTALLED WHICH MAY AFFECT THE PLACEMENT OF ELECTRICAL WORK.

KEYED NOTES:

1 CONTRACTOR TO FURNISH AND INSTALL ALL POWER/ SIGNAL CABLING/ CONDUIT FOR THE THERMOSTAT TO CONTROL THE EXHAUST FAN & LOUVER. SEE WIRING DIAGRAM SHEET E-903. WL-4 TO INTERLOCK WITH MS-1, THERMOSTAT, AND EF-7. WL-5 TO INTERLOCK WITH BLOWER STARTERS PER SIGNAL FROM SCADA PANEL RTU-2.

2 BLOWER CONTROL PANEL BY MANUFACTURER WITH H-O-R AND E-STOP MOTOR PROTECTION SCHEME.


SCADA PANEL (RTU-2)
AERATION CONTROL PANEL (FCP3100)
SWITCHBOARD SB-1
400A NEMA 3R ACTIVE FILTER (SEE SPECS FOR DETAILS)
LB-25
LB-19
7.5 TON ROOFTOP UNIT W/ 7.8kW UNIT HEAT (RTU-3)
VFDS INSTALLED ON THIS WALL SEE ELEVATION
DISCONNECT BY MFR
E-015
A
HB2-19,21,23
SB-1
SURFACE AERATOR STARTER PANEL (FCP2100)
FUTURE PANEL-HB1 SECTION 2
PANEL-HB1
TRANSFORMER-TB
PANEL-LB
PANEL-HB2
HB2-31,33,35
30\3\4X
LB-27,29
UNIT HEATER EUH-B 20KW 480V 3Ø
MS-1
MS-1 STARTER
MOTOR ACTUATED LOUVER, WL-4
E-STOP PB7110
HIGH PRESSURE PSH7110
MOTOR TEMP. TSH7110
H-O-R
200
DIGESTER BLOWER No. 1 (BLR7110) 200HP, 460V, 3Ø
BLOWER VFD No. 1 (VFD7110)
E-STOP PB7110
HIGH PRESSURE PSH7120
MOTOR TEMP. TSH7120
H-O-R
DIGESTER BLOWER No. 2 (BLR7120) 200HP, 460V, 3Ø
BLOWER VFD No. 2 (VFD7120)
1.5
ROOF MOUNTED EXHAUST FAN EF-7 2.0HP, 208V, 1Ø
MS-1
2#12 1#12(G) ¾"C
E-STOP PB7130
HIGH PRESSURE PSH7130
MOTOR TEMP. TSH7130
H-O-R
FUTURE DIGESTER BLOWER No.3 (BLR7130) 200HP, 460V, 3Ø
BLOWER VFD No. 3 (VFD7130)
HB2-25,27,29
UNIT HEATER EUH-B 20KW 480V 3Ø
30\3\4X
RTU-2
MOTOR ACTUATED LOUVER, WL-5
T
G

1 E-712 **BLOWER BUILDING ELECTRICAL PLAN**

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

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COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

BLOWER BUILDING
ELECTRICAL PLAN

E-712

BFIELD ENGINEERING, LLC
4180 Providence Road, Suite 325
Marietta, GA 30062
Phone: (678) 650-0732

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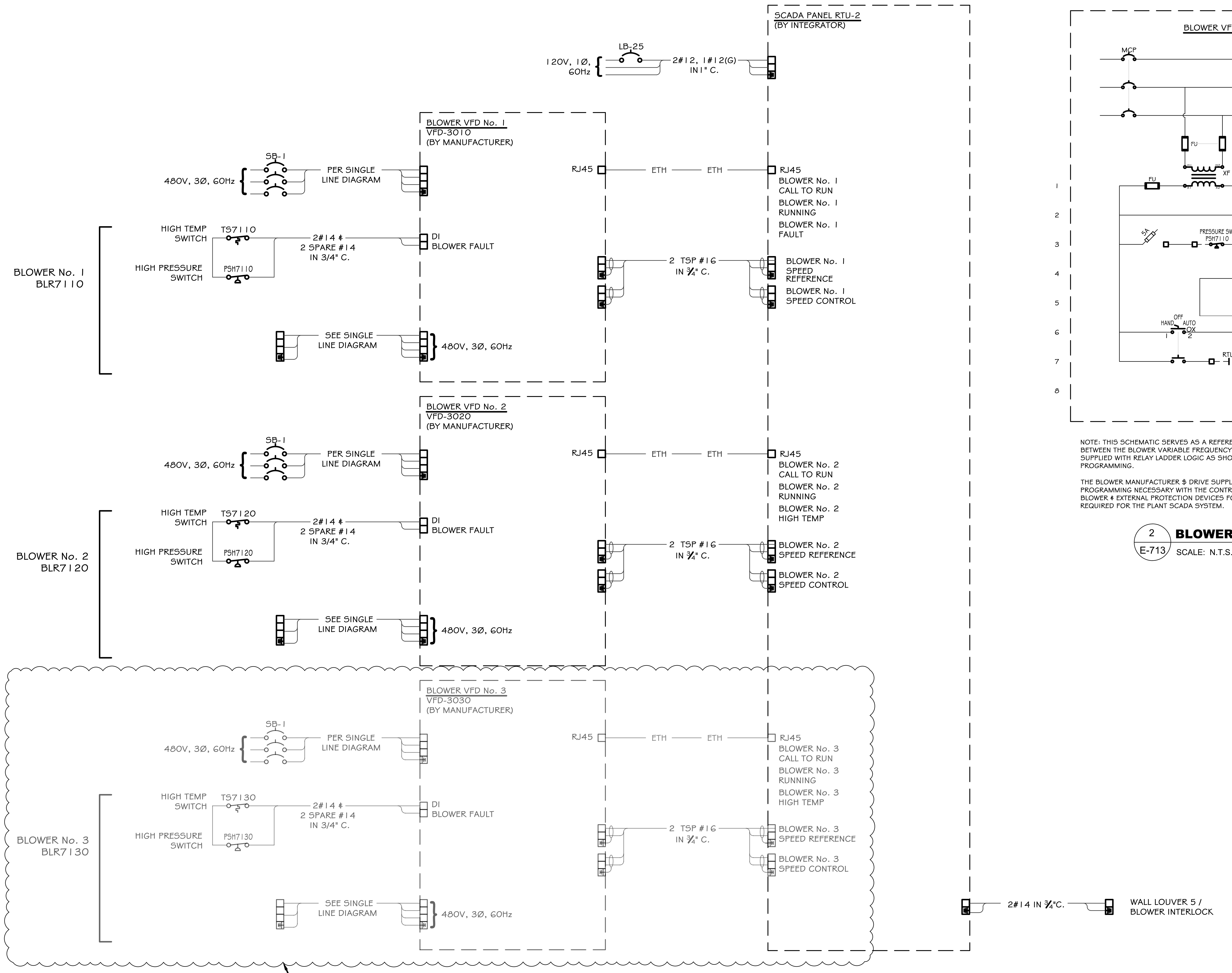
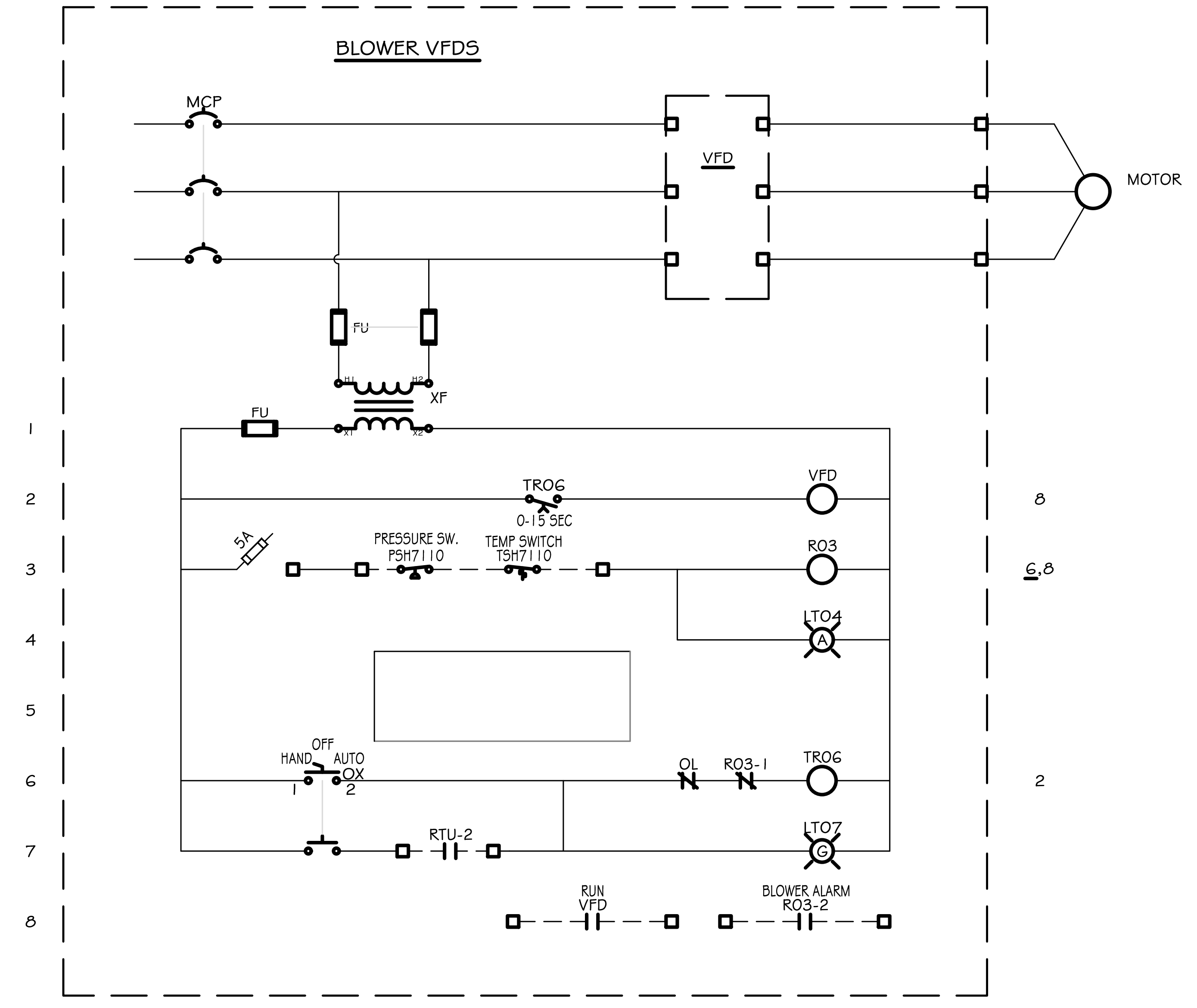


1
E-713

BLOWER ELECTRICAL SCHEMATIC

SCALE: N.T.S.



NOTE: THIS SCHEMATIC SERVES AS A REFERENCE SOLELY FOR DEPICTING THE INTENDED CONNECTIONS BETWEEN THE BLOWER VARIABLE FREQUENCY DRIVE (VFD) & EXTERNAL DEVICES. THE DRIVE MAY BE SUPPLIED WITH RELAY LADDER LOGIC AS SHOWN OR MAY BE CONTROLLED THROUGH INTERNAL DEVICE PROGRAMMING.

THE BLOWER MANUFACTURER $ DRIVE SUPPLIER SHALL PROVIDE WIRING DIAGRAMS & COORDINATE ANY PROGRAMMING NECESSARY WITH THE CONTRACTOR & SCADA INTEGRATOR TO CONNECT THE DRIVE, BLOWER & EXTERNAL PROTECTION DEVICES FOR A FULLY FUNCTIONING SYSTEM INCLUDING SIGNALS AS REQUIRED FOR THE PLANT SCADA SYSTEM.

2
E-713

BLOWER VFD SCHEMATIC

SCALE: N.T.S.

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No. PEF007858
Exp. 06.30.2026

1" .5" 0"

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Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

BLOWER BUILDING
ELECTRICAL
SCHEMATICS

E-713

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4180 Providence Road, Suite 325
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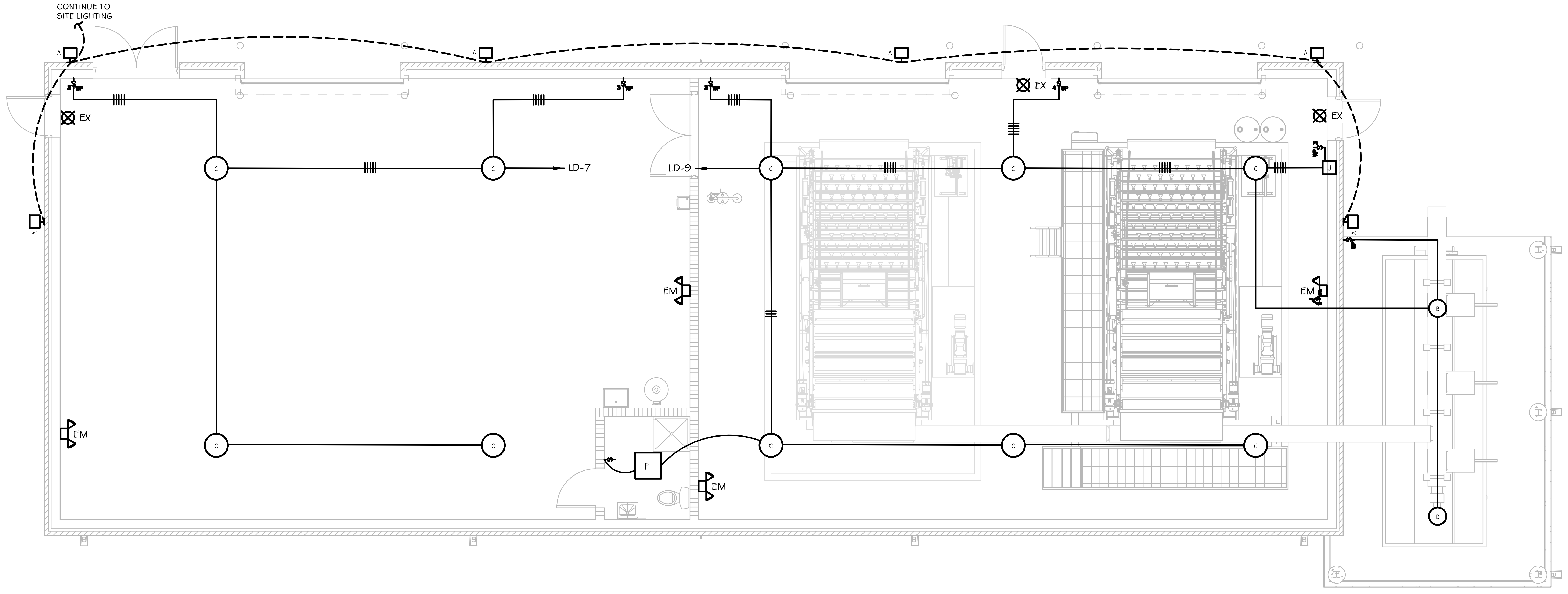
LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
A	☐	LOW-PROFILE ARCHITECTURAL LED WALL PACK	COOPER LIGHTING - LUMARK / XTOR6B-W BZ LITHONIA LIGHTING / WPX2 LED 40K MVOLT DDBXD	58	6,133	4000K	70	LED	277V	14-0"	WALL MOUNT	-
B	○	LED CANOPY LIGHT	COOPER LIGHTING - LUMARK / RPGC25S LITHONIA LIGHTING / VVCPG LED V4 P4 40K 70CRI T5M PM	63	7,811	4000K	70	LED	120	14'-0"	PENDANT MOUNT	3
C	○	LED ROUND HIGH BAY W/ SELECTABLE CCT & LUMEN	COOPER LIGHTING / UHBS-2436-MV-L84050 LITHONIA LIGHTING / JEBL 24L	147	23,607	4000K	82	LED	120V	14'-0"	SUSPENSION MOUNTING	4
F	☐	2' X 2' LED TROFFER GENERAL RECESSED	COOPER LIGHTING - METALUX / 22 GR LD5 40 L835 LITHONIA LIGHTING / 2GTL 2 2' 40L LP835	39	4,098	3500K	80	LED	120V	9'-0"	CEILING MOUNTED	5
EX	⊠	DIE CAST AL. LED EXIT LIGHT	COOPER LIGHTING SURE-LITES / TPX LITHONIA LIGHTING / LE S1R	1.0	-	-	-	LED	120V	12-0"	SUSPENSION MOUNTING	-
EM		LED EMERGENCY LIGHT	COOPER LIGHTING - SURE-LITES / SELM60 LITHONIA LIGHTING / TCU 350L M4	5	309	-	-	LED	120V	12-0"	WALL MOUNT	-

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
3. PENDANT MOUNT BY CONTRACTOR.
4. LIGHT FIXTURE WILL BE IP 65, NEMA 4X RATED.
5. PROVIDE DRYWALL MOUNTING KIT FOR FIXTURES LOCATED IN THE BATHROOMS.

NOTES
1. VERIFY ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN LIGHT SWITCHES TO INSURE PROPER SWITCH LOCATION.
2. EMERGENCY LIGHTING CIRCUIT NOT SHOWN FOR CLARITY, INSTALL EMERGENCY & EXIT SIGNS ON CIRCUIT LD-5.



1
E-721
DEWATERING BUILDING LIGHTING PLAN
SCALE: 1/4" = 1'- 0"

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

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Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

DEWATERING BUILDING
LIGHTING PLAN

E-721

BFIELD ENGINEERING, LLC
4180 Providence Road, Suite 325
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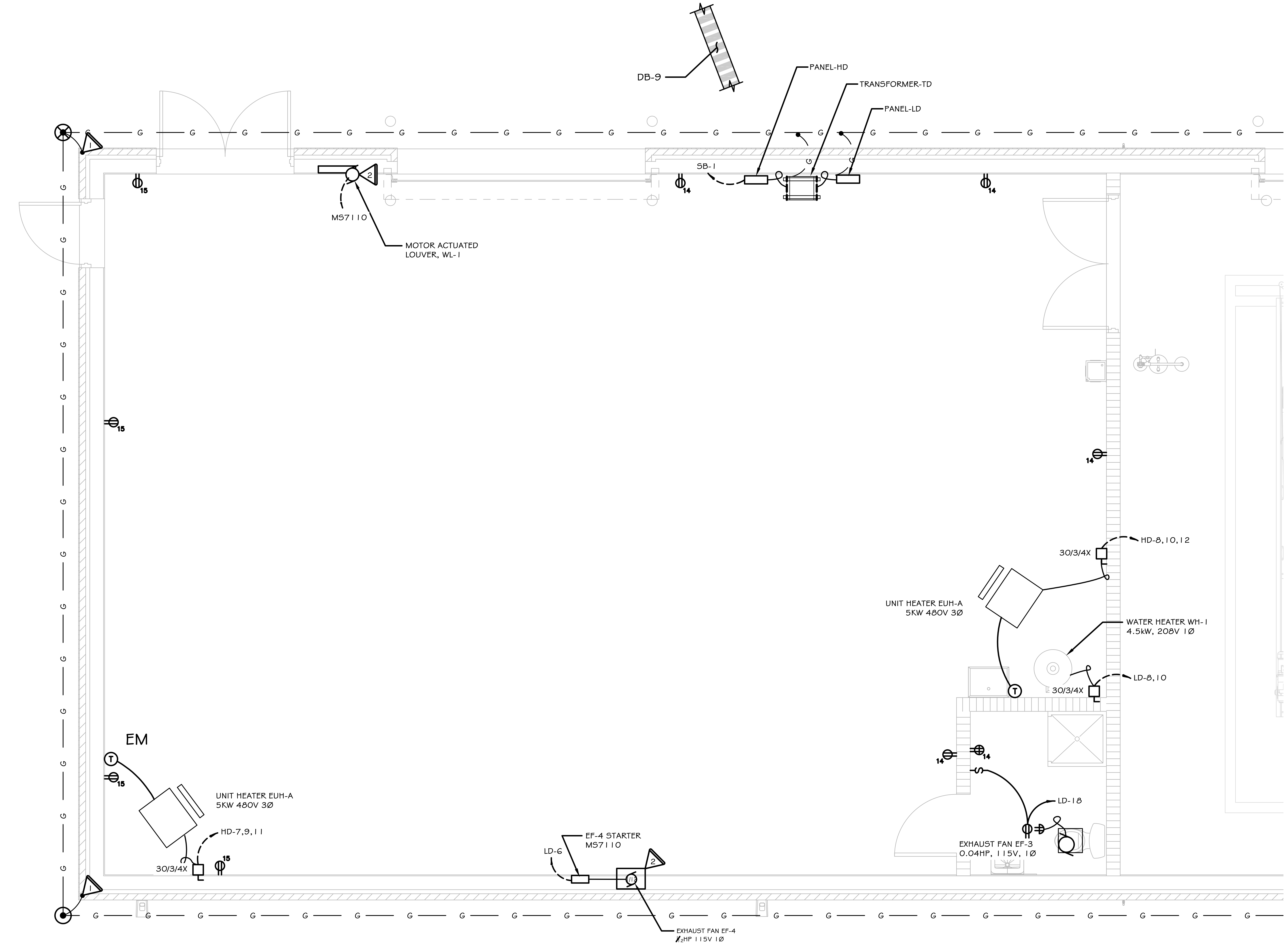

1 E-722 **DEWATERING BUILDING STORAGE ROOM ELECTRICAL PLAN**

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

NOTES

1. VERIFY ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN LIGHT SWITCHES TO INSURE PROPER SWITCH LOCATION. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ARE AT THE PROPER HEIGHT.

KEYED NOTES:

1. BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.
2. CONTRACTOR TO FURNISH AND INSTALL ALL POWER/ SIGNAL CABLING/ CONDUIT FOR THE THERMOSTAT TO CONTROL THE EXHAUST FAN & LOUVER. SEE WIRING DIAGRAM SHEET E-903.

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

DEWATERING BUILDING
STORAGE ROOM
ELECTRICAL PLAN

E-722

BFIELD ENGINEERING, LLC
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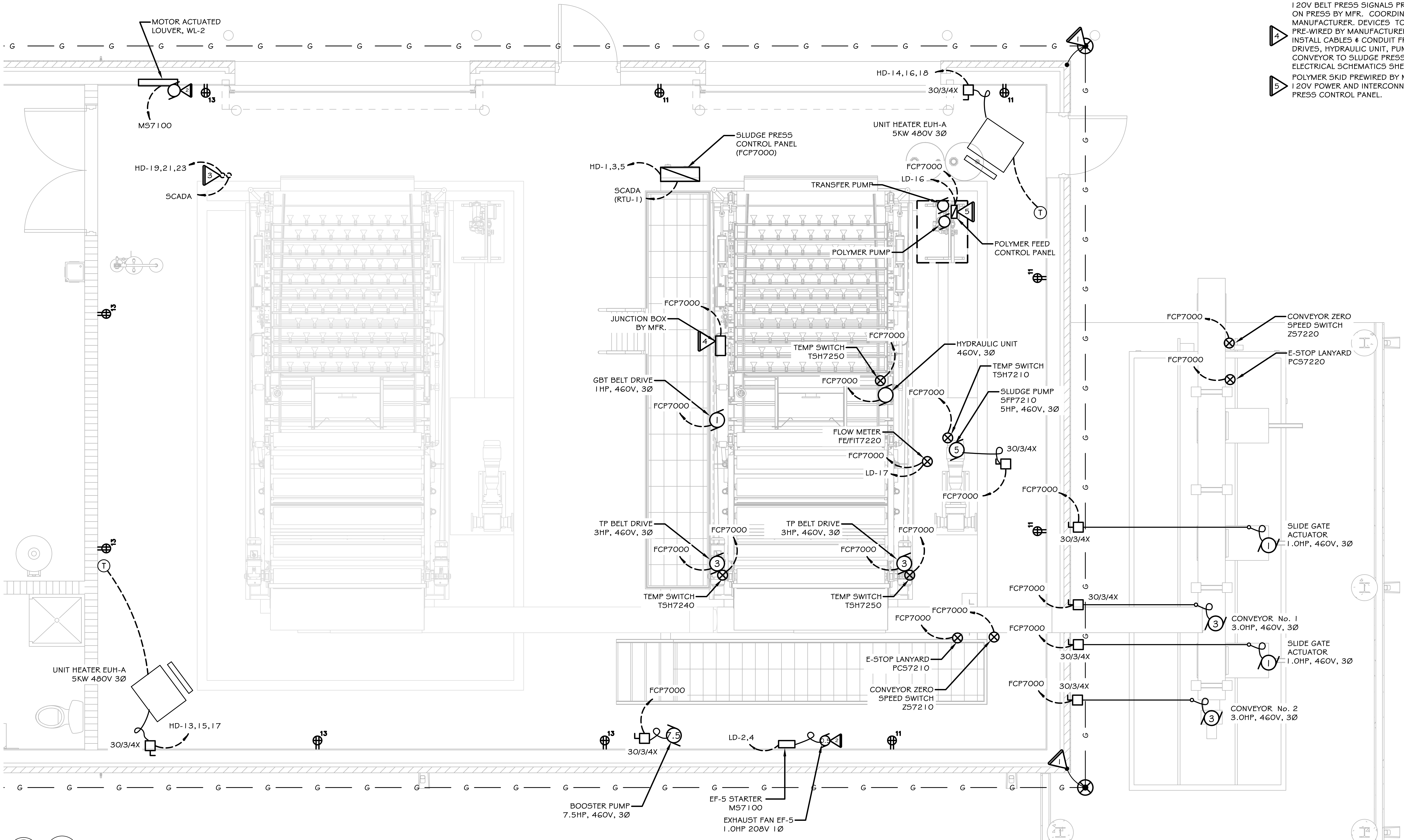
Marietta, GA 30062
Phone: (678) 650-0732

NOTES

1. VERIFY ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN LIGHT SWITCHES TO INSURE PROPER SWITCH LOCATION. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ARE AT THE PROPER HEIGHT.

KEYED NOTES:

1. BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.
2. CONTRACTOR TO FURNISH AND INSTALL ALL POWER/ SIGNAL CABLING/ CONDUIT FOR THE THERMOSTAT TO CONTROL THE EXHAUST FAN & LOUVER. SEE WIRING DIAGRAM SHEET E-903.
3. STUB UP AND CAP POWER & SIGNAL CONDUITS FOR FUTURE BELT PRESS CONNECTION.
4. 120V BELT PRESS SIGNALS PRE-WIRED TO JUNCTION BOX ON PRESS BY MFR. COORDINATE LOCATION WITH MANUFACTURER. DEVICES TO BE INSTALLED AND PRE-WIRED BY MANUFACTURER. CONTRACTOR PROVIDE & INSTALL CABLES & CONDUIT FROM JUNCTION BOX, PRESS DRIVES, HYDRAULIC UNIT, PUMPS, POLYMER SYSTEM & CONVEYOR TO SLUDGE PRESS CONTROL PANEL. SEE ELECTRICAL SCHEMATICS SHEET E-724 FOR DETAILS.
5. POLYMER SKID PREWIRED BY MANUFACTURER. PROVIDE 120V POWER AND INTERCONNECTING WIRING TO BELT PRESS CONTROL PANEL.



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E-723

DEWATERING BUILDING DEWATERING ROOM ELECTRICAL PLAN

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

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Drawn By:	

03/19/2025
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CHARLES K. BUTTERFIELD

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

DEWATERING BUILDING
DEWATERING ROOM
ELECTRICAL PLAN

E-723

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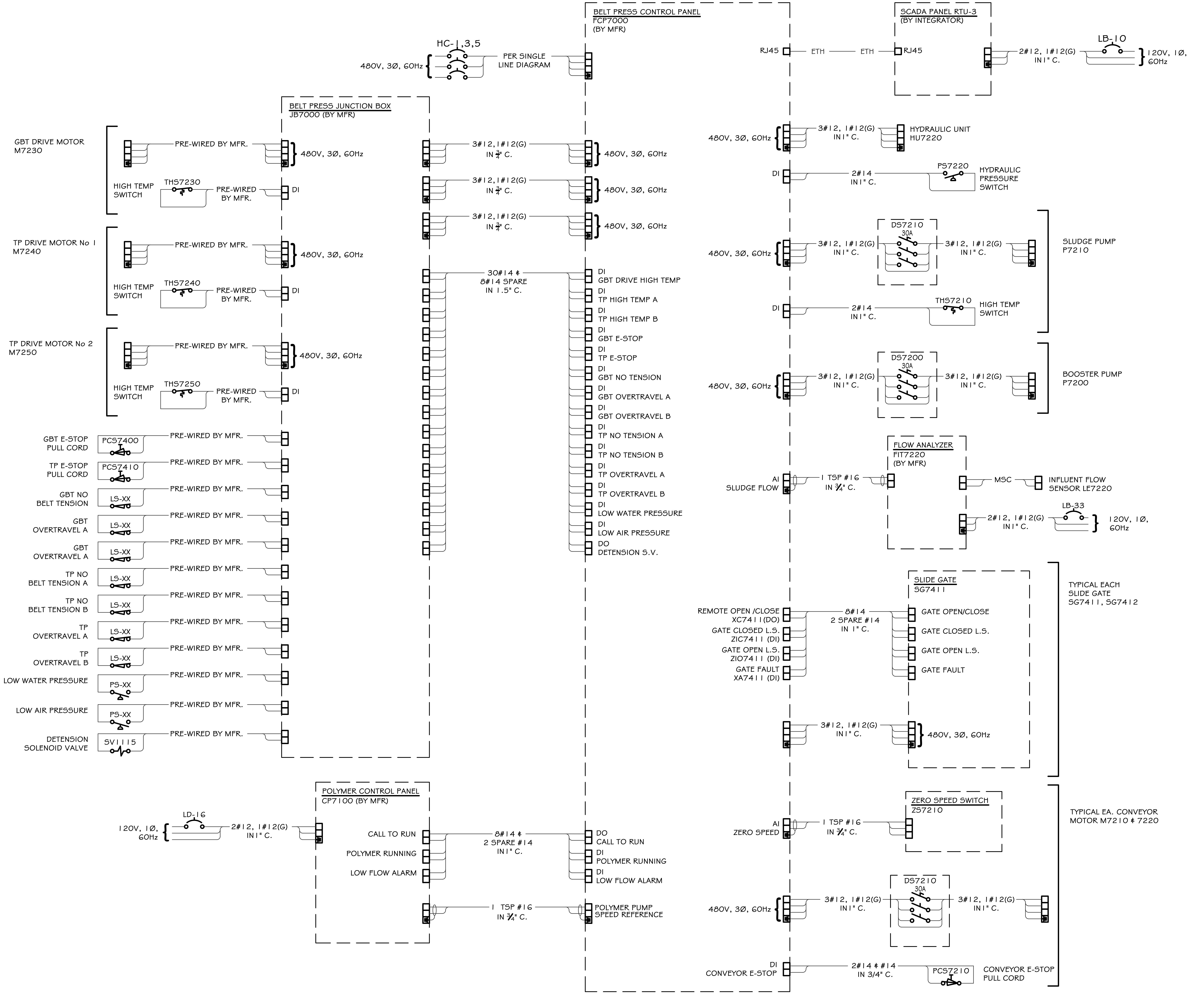

1
E-724

SLUDGE DEWATERING ELECTRICAL SCHEMATIC

SCALE: N.T.S.

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GROVE CREEK WPCP
COMMERCE, GA

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03/19/2025
NO. 31217
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DEWATERING BUILDING
ELECTRICAL SCHEMATIC

E-724

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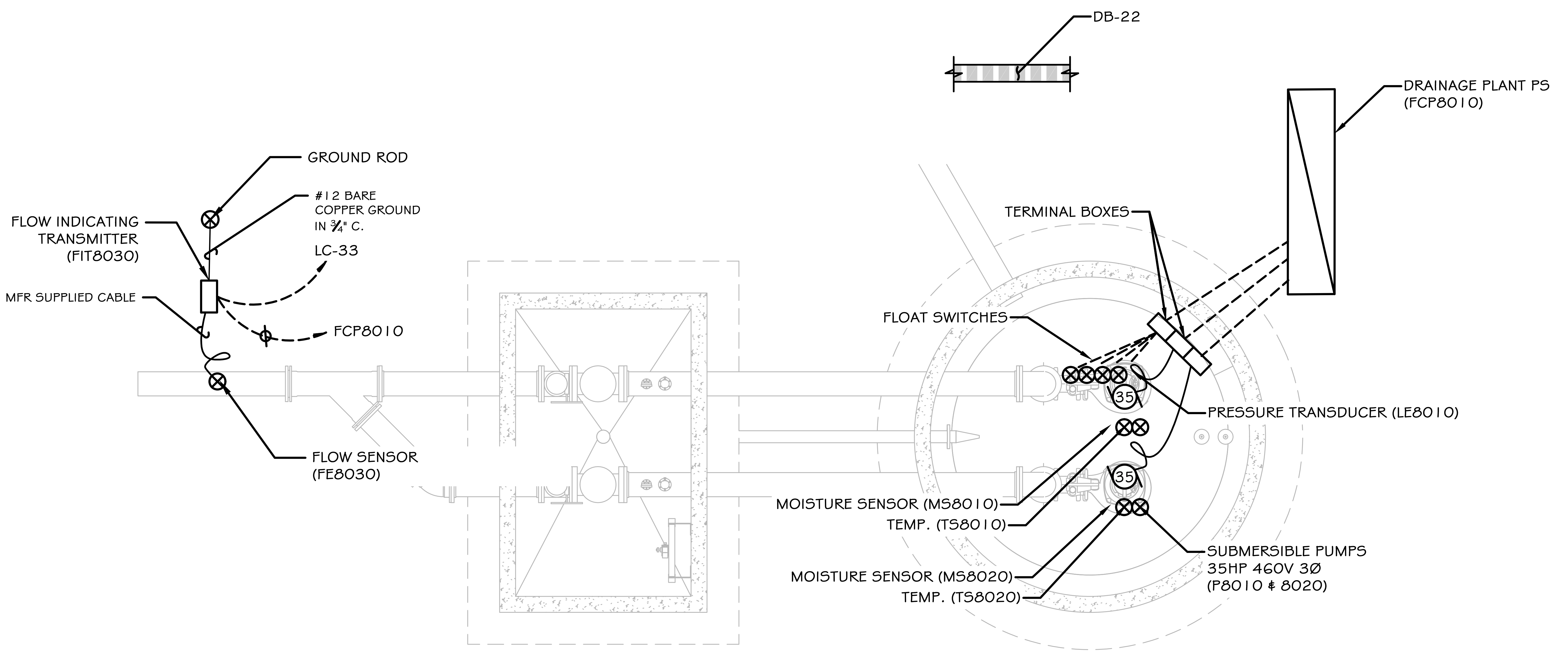
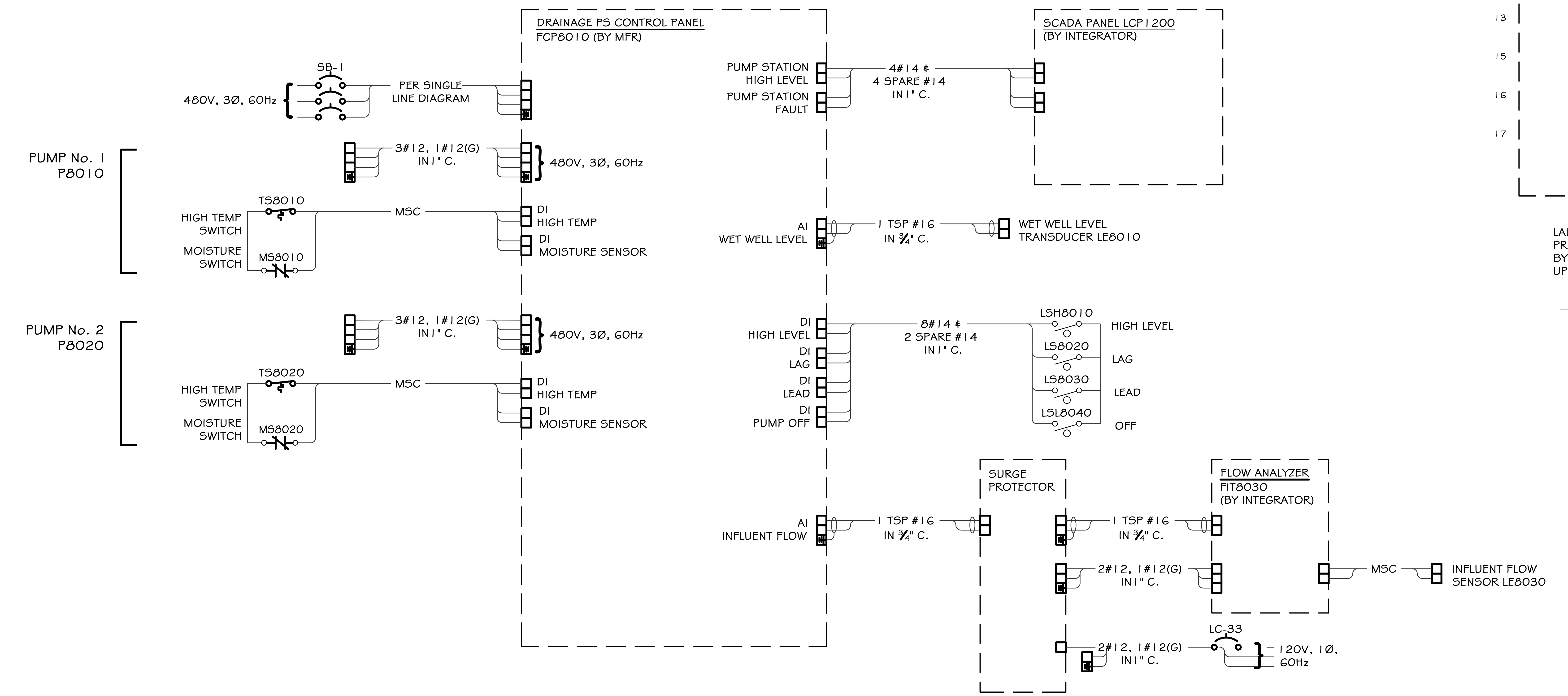
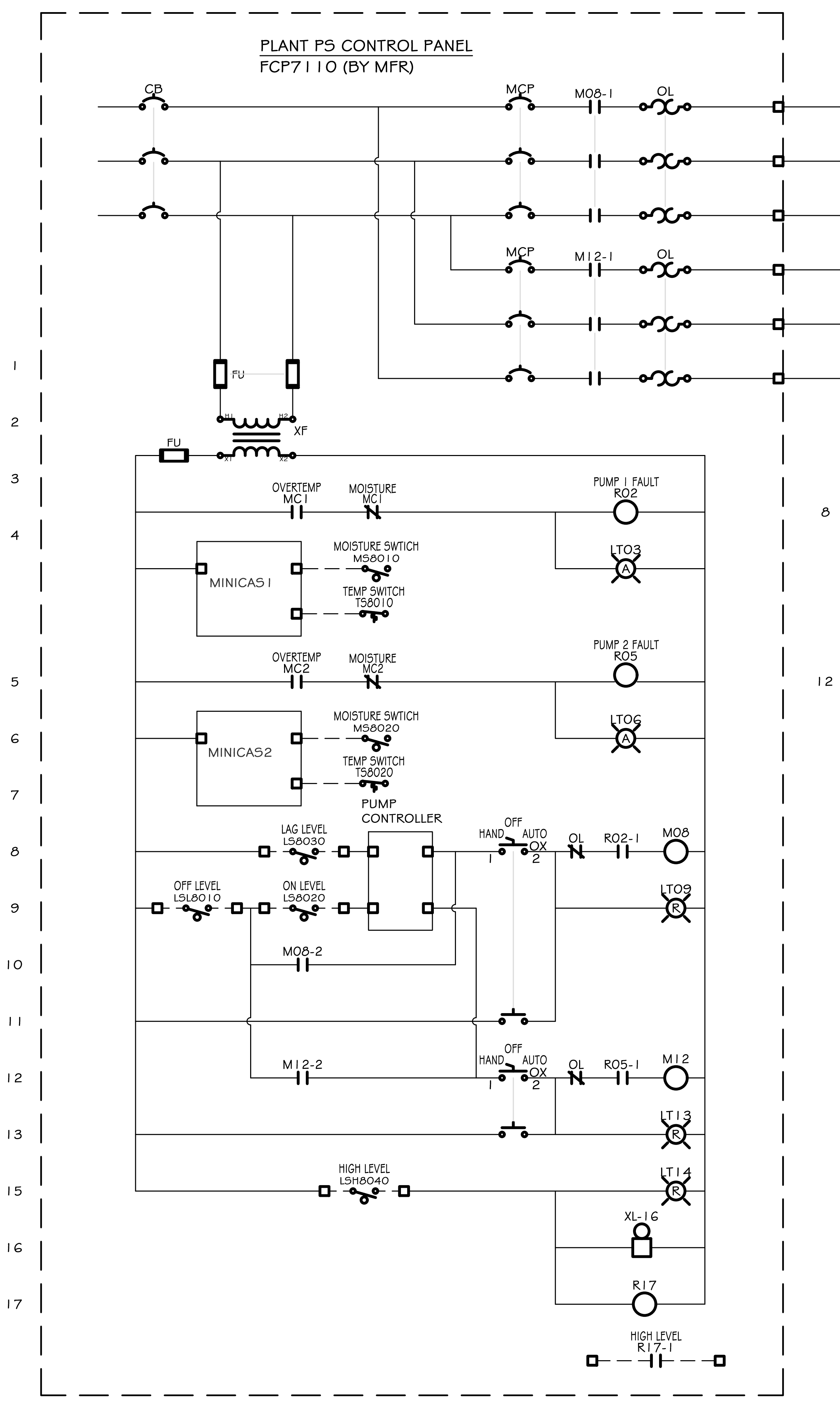


1 E-801 **PLAN**

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



DRAINAGE PUMP STATION ELECTRICAL SCHEMATIC



LADDER DIAGRAM IS A DEPICTION OF INTENDED OPERATION, MANUFACTURER TO PROVIDE DEVICES AS REQUIRED. LEAD, LAG AND HIGH LEVEL TO BE PROVIDED BY LEVEL SENSOR. MANUFACTURER TO PROVIDE PUMP CONTROLLER WITH BACK UP FLOAT CONTROLS.

DRAINAGE PUMP STATION CONTROL PANEL

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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

YARD DRAIN PUMP
STATION ELECTRICAL
PLAN

E-801

BFIELD ENGINEERING, LLC
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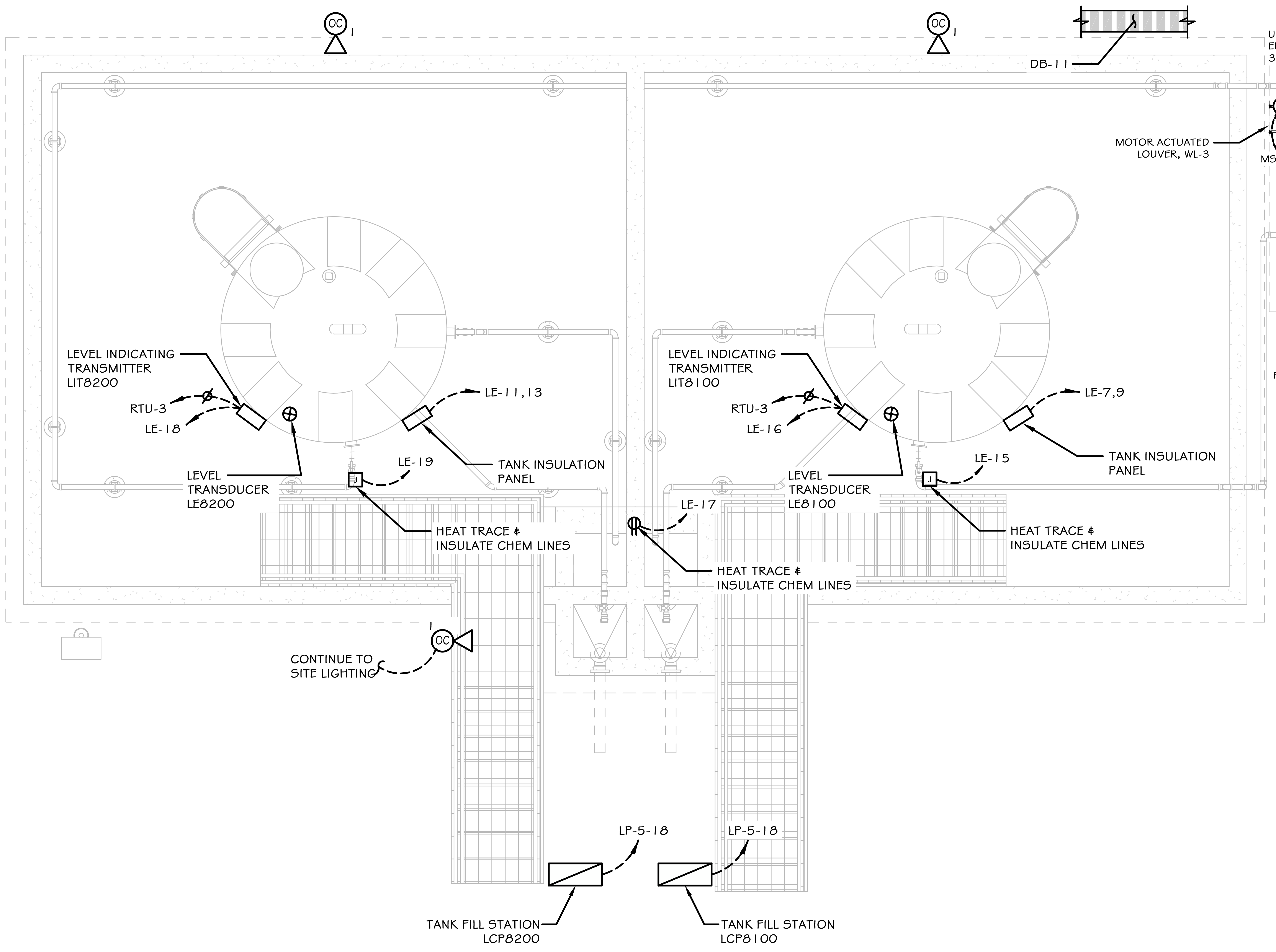
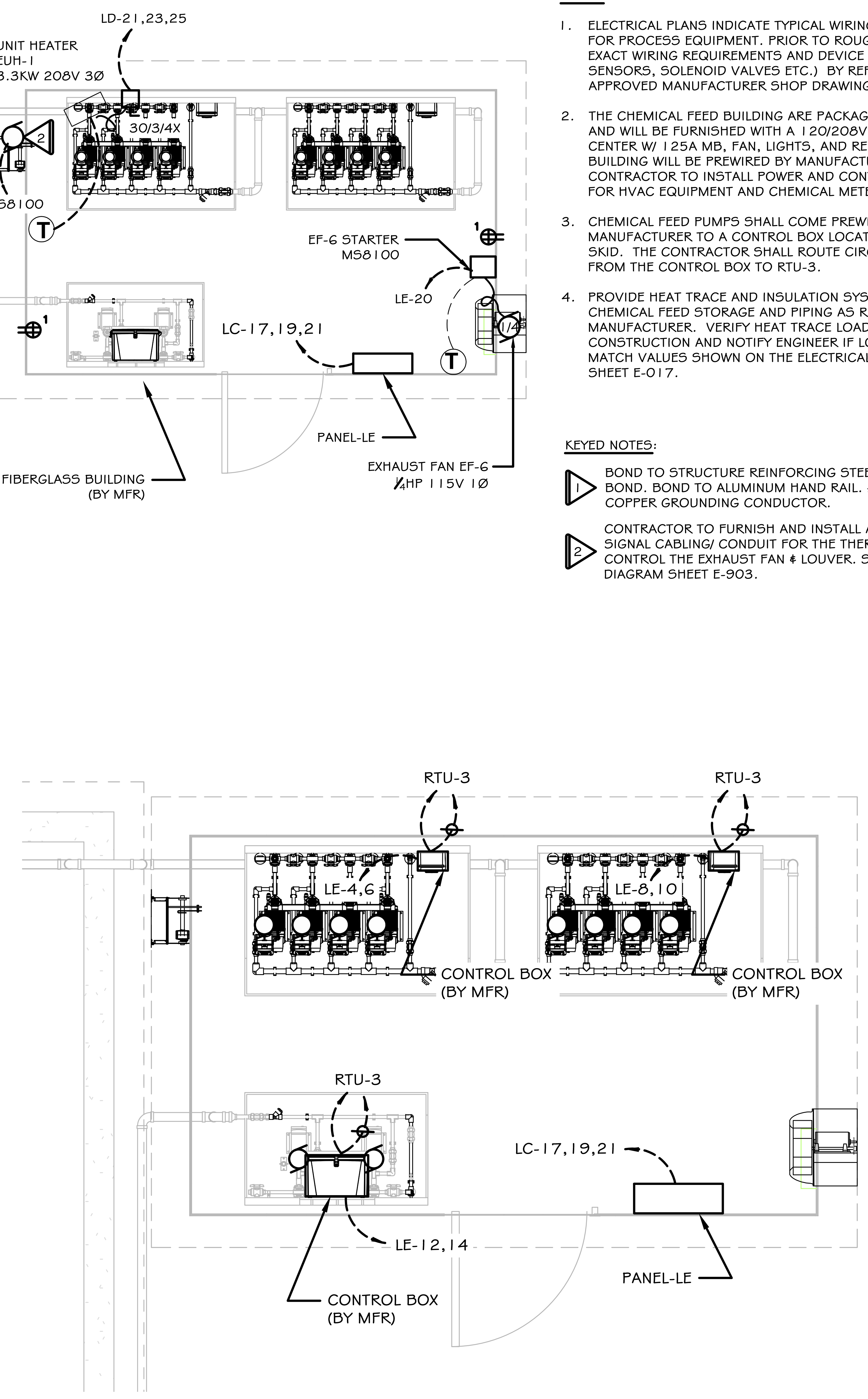

OC
1
OC
1
DB-11
LEVEL INDICATING TRANSMITTER LIT8200
RTU-3
LE-18
LE-11,13
LEVEL TRANSDUCER LE8200
LE-19
TANK INSULATION PANEL
HEAT TRACE & INSULATE CHEM LINES
LEVEL INDICATING TRANSMITTER LIT8100
RTU-3
LE-16
LE-7,9
LE-15
TANK INSULATION PANEL
LEVEL TRANSDUCER LE8100
LE-17
HEAT TRACE & INSULATE CHEM LINES
HEAT TRACE & INSULATE CHEM LINES
1
OC
CONTINUE TO SITE LIGHTING
LP-5-18
LP-5-18
TANK FILL STATION LCP8200
TANK FILL STATION LCP8100
MOTOR ACTUATED LOUVER, WL-3

1 E-802 CHEMICAL TANK FARM ELECTRICAL PLAN

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



2 E-802 CHEMICAL FEED - ELECTRICAL PLAN

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

NOTES

1. ELECTRICAL PLANS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. PRIOR TO ROUGH-IN, ENSURE THE EXACT WIRING REQUIREMENTS AND DEVICE LOCATIONS (LEVEL SENSORS, SOLENOID VALVES ETC.) BY REFERENCING APPROVED MANUFACTURER SHOP DRAWINGS.

2. THE CHEMICAL FEED BUILDING ARE PACKAGED FRP BUILDINGS AND WILL BE FURNISHED WITH A 120/208V, 3PH LOAD CENTER W/ 125A MB, FAN, LIGHTS, AND RECEPTACLE BUILDING WILL BE PREWIRED BY MANUFACTURER. CONTRACTOR TO INSTALL POWER AND CONTROL CIRCUITS FOR HVAC EQUIPMENT AND CHEMICAL METERING PUMPS.

3. CHEMICAL FEED PUMPS SHALL COME PREWIRED BY THE MANUFACTURER TO A CONTROL BOX LOCATED ON THE PUMP SKID. THE CONTRACTOR SHALL ROUTE CIRCUITS AS SHOWN FROM THE CONTROL BOX TO RTU-3.

4. PROVIDE HEAT TRACE AND INSULATION SYSTEM FOR CHEMICAL FEED STORAGE AND PIPING AS REQUIRED BY MANUFACTURER. VERIFY HEAT TRACE LOADS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF LOADS DO NOT MATCH VALUES SHOWN ON THE ELECTRICAL SCHEDULES SHEET E-017.

KEYED NOTES:

1 BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. BOND TO ALUMINUM HAND RAIL. #4/0 BARE COPPER GROUNDING CONDUCTOR.

2 CONTRACTOR TO FURNISH AND INSTALL ALL POWER/ SIGNAL CABLING/ CONDUIT FOR THE THERMOSTAT TO CONTROL THE EXHAUST FAN & LOUVER. SEE WIRING DIAGRAM SHEET E-903.

LIGHTING FIXTURE SCHEDULE

MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE				
OC	O◁	LED FLOOD LIGHT	CROUSE-HINDS / PVM-5L-N-J-UNV-1-S903 APPELTON / KPS-IMLLED-3-3-N-P-BU	41	4,468	4000K	70	LED	277V	12'-0"	SUSPENSION MOUNTING	1

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
1. 12' FIXED ALUMINUM POLE MOUNT.

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COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

CHEMICAL TANK FARM
ELECTRICAL PLAN

E-802

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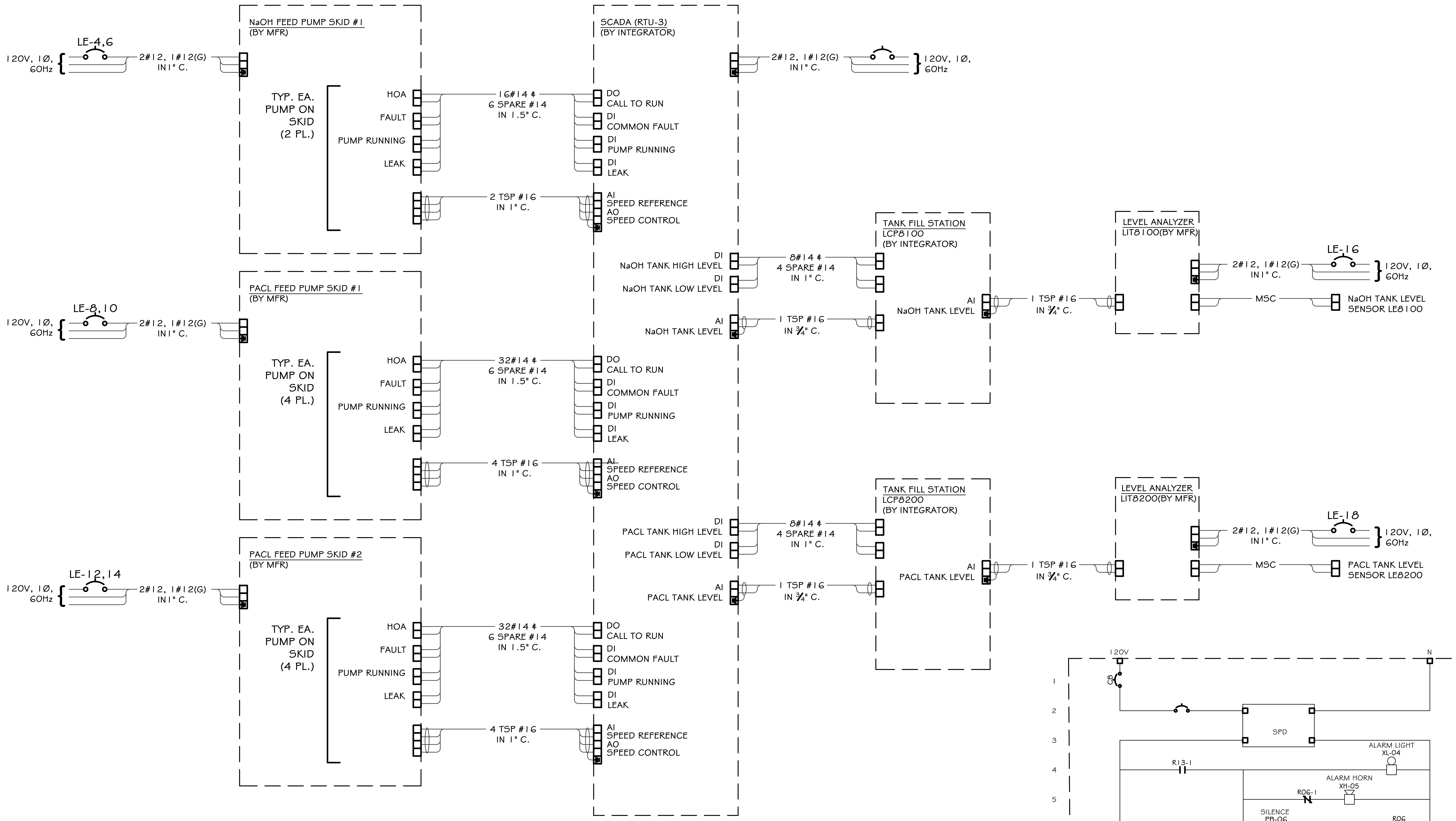
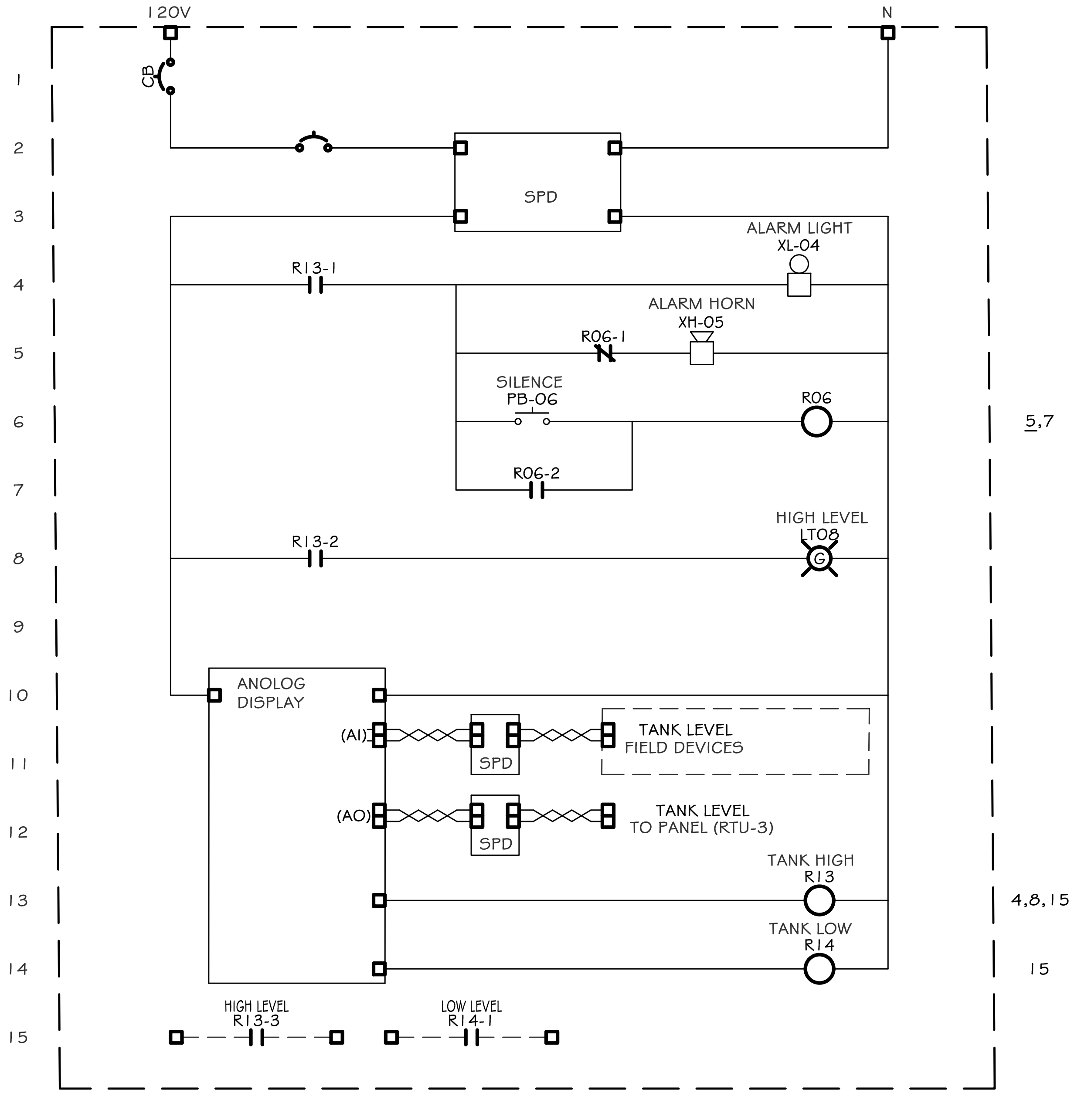

LE-4,6
120V, 1Ø, 60Hz
2#12, 1#12(G) IN 1" C.
NaOH FEED PUMP SKID #1 (BY MFR)
TYP. EA. PUMP ON SKID (2 PL.)
HOA
FAULT
PUMP RUNNING
LEAK
16#14 ¢ 6 SPARE #14 IN 1.5" C.
2 TSP #16 IN 1" C.
SCADA (RTU-3) (BY INTEGRATOR)
DO CALL TO RUN
DI COMMON FAULT
DI PUMP RUNNING
DI LEAK
AI SPEED REFERENCE
AO SPEED CONTROL
2#12, 1#12(G) IN 1" C.
120V, 1Ø, 60Hz
DI NaOH TANK HIGH LEVEL
DI NaOH TANK LOW LEVEL
AI NaOH TANK LEVEL
8#14 ¢ 4 SPARE #14 IN 1" C.
1 TSP #16 IN 3/4" C.
TANK FILL STATION LCP8100 (BY INTEGRATOR)
AI NaOH TANK LEVEL
1 TSP #16 IN 3/4" C.
LEVEL ANALYZER LIT8100(BY MFR)
LE-16
2#12, 1#12(G) IN 1" C.
120V, 1Ø, 60Hz
MSC
NaOH TANK LEVEL SENSOR LE8100
LE-8,10
PACL FEED PUMP SKID #1 (BY MFR)
TYP. EA. PUMP ON SKID (4 PL.)
32#14 ¢ 6 SPARE #14 IN 1.5" C.
4 TSP #16 IN 1" C.
DI PACL TANK HIGH LEVEL
DI PACL TANK LOW LEVEL
AI PACL TANK LEVEL
TANK FILL STATION LCP8200 (BY INTEGRATOR)
AI PACL TANK LEVEL
LEVEL ANALYZER LIT8200(BY MFR)
LE-18
PACL TANK LEVEL SENSOR LE8200
LE-12,14
PACL FEED PUMP SKID #2 (BY MFR)
TYP. EA. PUMP ON SKID (4 PL.)

1 E-803 CHEMICAL FEED ELECTRICAL SCHEMATIC

SCALE: N.T.S.



2 E-803 TANK FILL STATION CONTROL SCHEMATIC (LCP8100,LCP8200)

SCALE: N.T.S.

TANK FILL STATION CONTROL PANEL (LCP8100 * LCP8200)

A. SCOPE OF WORK
  1. THE POWER SERVICE FOR EACH CONTROL PANLE WILL BE 120VOLTS, 1-PHASE, 60 HERTZ.
  2. THE CONTROL PANEL LIST OF DEVICES IS DESCRIBED BELOW. THE EQUIPMENT LISTED BELOW IS A GUIDE AND DOES NOT RELIEVE THE INTEGRATOR FROM SUPPLYING A SYSTEM THAT WILL FUNCTION AS REQUIRED.
  3. PROVIDE ANALOG DISPLAYS FOR TANK LEVEL.

B. ENCLOSURE
  1. THE ENCLOSURE SHALL BE A NEMA 4X WATERPROOF, CORROSION RESISTANT, 304 STAINLESS STEEL WITH INNER DEAD FRONT DOOR. THE ENCLOSURE SHALL ADEQUATELY HOUSE ALL OF THE COMPONENTS. THE DOOR GASKET SHALL BE RUBBER COMPOSITION WITH A RETAINER TO ASSURE A POSITIVE SEAL.
  2. FOR NEMA 4X ENCLOSURES, A POLISHED ALUMINUM DEAD FRONT SHALL BE MOUNTED ON A CONTINUOUS AIRCRAFT TYPE HINGE, CONTAIN CUTOUTS FOR MOUNTED EQUIPMENT, AND PROVIDE PROTECTION OF PERSONNEL FROM LIVE INTERNAL WIRING. ANALOG DISPLAYS, INDICATOR PILOT LIGHTS, SHALL BE MOUNTED ON THE EXTERNAL SURFACE OF THE DEAD FRONT.

C. MAIN DISCONNECT, CIRCUIT BREAKERS, LIGHTNING PROTECTION
  1. THE CONTROL PANEL SHALL HAVE A 20A MAIN CIRCUIT BREAKER DISCONNECT.
  2. PROVIDE TRANSIENT VOLTAGE SURGE PROTECTOR PHONEIX CONTACT 2907918 OR EQUAL.

J. ANCILLARY EQUIPMENT
  1. THE ANCILLARY EQUIPMENT LISTED BELOW SHALL BE INCLUDED WITH THE CONTROL PANEL.
    a. UPS - APC SNC1500C OR EQUAL.
    b. GFCI RECEPTACLE.
    c. POWER SUPPLY.

K. MISCELLANEOUS
  1. PANEL MARKINGS
    a. ALL COMPONENT PARTS IN THE CONTROL PANEL SHALL BE PERMANENTLY MARKED AND IDENTIFIED AS THEY ARE INDICATED ON THE DRAWING. MARKING SHALL BE ON THE BACK PLATE ADJACENT TO THE COMPONENT. ALL CONTROL CONDUCTORS AND TERMINALS SHALL BE IDENTIFIED WITH HEAT SHRINK TYPE, NON-ADHESIVE WIRE MARKERS.
  2. TESTING
    a. ALL PANELS SHALL BE TESTED TO THE POWER REQUIREMENTS AS SHOWN ON THE PLANS TO ASSURE PROPER OPERATION OF ALL THE COMPONENTS. EACH CONTROL FUNCTION SHALL BE ACTIVATED TO CHECK FOR PROPER OPERATION AND INDICATION.
    b. FIELD COMMISSIONING AND STARTUP. THE PANEL SHALL BE TESTED IN THE FIELD BY AN AUTHORIZED STARTUP TECHNICIAN ASSURING ALL CONTROL DEVICES FUNCTION PROPERLY AND SEQUENCE OF OPERATION IS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
  3. WARRANTY
    a. ALL EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. THE GUARANTEE SHALL BE EFFECTIVE AGAINST ALL DEFECTS IN WORKMANSHIP OR DEFECTIVE COMPONENTS.
  4. MANUFACTURER
    a. THE CONTROL PANEL MANUFACTURER SHALL BE A UL508 LISTED SHOP FOR INDUSTRIAL CONTROL SYSTEMS SHALL PROVIDE EVIDENCE OF SUCH ON REQUEST FROM THE ENGINEER OR USING AUTHORITY. THE PANEL SHALL BE PROVIDED WITH A UL LABEL. THE PANEL SHOP SHALL HAVE BUILT UL508 CONTROL PANELS FOR NO LESS THAN 5 YEARS. PANEL SHALL BE PROVIDED BY GLOBAL CONTROL SYSTEMS (678) 888-2838, APPLIED INDUSTRIAL CONTROLS (770) 614-7022 OR EQUAL.

GMC
6120 Powers Ferry Road NW, Suite 200
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GOODWYN MILLS CAWOOD, LLC
No.PEF007898
Exp.06.30.2026

1" .5" 0" 1"

ISSUE	DATE
30% Submittal	05.30.2024
60% Submittal	08.29.2024
90% Submittal	11.27.2024
Bid Set	03.19.2025
Conformed Set	
Project Manager:	CW
Engineer:	GS
Designer:	GS
Drawn By:	

COMMERCE 2.0 MGD
GROVE CREEK WPCP
COMMERCE, GA

CATL230033

03/19/2025
NO. 31217
CHARLES K. BUTTERFIELD

CHEMICAL TANK FARM
ELECTRICAL SCHEMATIC

E-803

BFIELD ENGINEERING, LLC
4180 Providence Road, Suite 325
Marietta, GA 30062
Phone: (678) 650-0732

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LIGHTING FIXTURE SCHEDULE

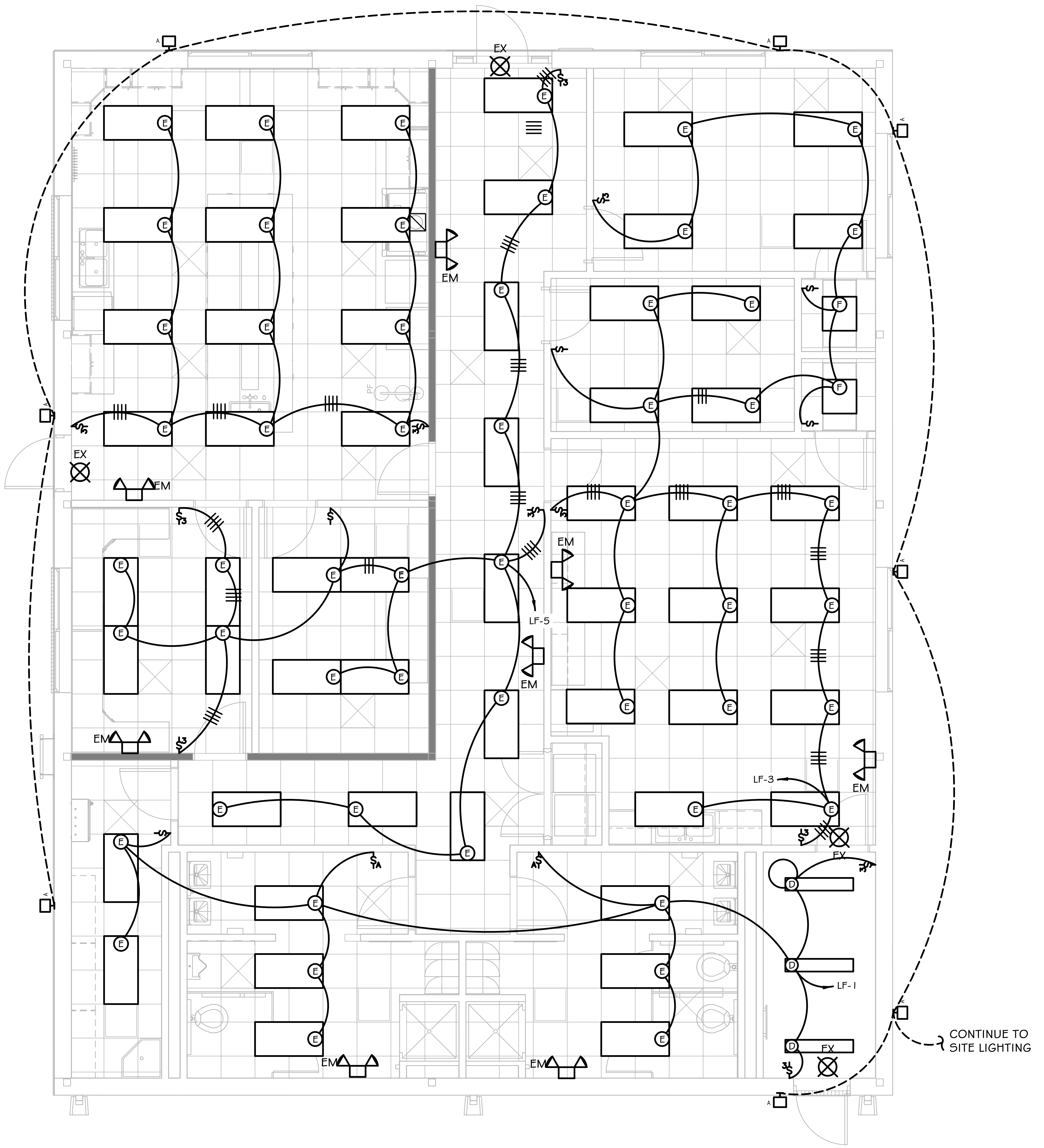
MARK	SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS					VOLTS	REMARKS
				WATTS	LUMENS	TEMP	CRI	TYPE		
A	🖵	LOW-PROFILE ARCHITECTURAL LED WALL PACK	COOPER LIGHTING - LUMARK / XTOR6B-W BZ LITHONIA LIGHTING / WPX2 LED 40K MVOLT DDBXD	58	6,133	4000K	70	LED	277V	-
D	▭	LED WRAP AROUND W/ SELECTABLE CCT & LUMEN	COOPER LIGHTING - METALUX / 4NWS3CMS-UNV-HI LITHONIA LIGHTING / FML4W 48 5000LM 840 ZT	39	4,851	3500K	82	LED	120V	-
E	▭	2' X 4' LED TROFFER GENERAL RECESSED	COOPER LIGHTING - METALUX / 24 GR LD5 64 L835 LITHONIA LIGHTING / 2GTL 4 4' 60L LP835	48	6,462	3500K	80	LED	120V	5
F	□	2' X 2' LED TROFFER GENERAL RECESSED	COOPER LIGHTING - METALUX / 22 GR LD5 40 L835 LITHONIA LIGHTING / 2GTL 2 2' 40L LP835	39	4,098	3500K	80	LED	120V	-
EM		LED EMERGENCY LIGHT	COOPER LIGHTING - SURE-LITES / SELM60 LITHONIA LIGHTING / TCU 350L M4	5	309	-	-	LED	120V	-
EX	⊠	DIE CAST AL. LED EXIT LIGHT	COOPER LIGHTING SURE-LITES / TPX LITHONIA LIGHTING / LE S1R	1.0	-	-	-	LED	120V	-

NOTES:
1. SYMBOL LETTERS INDICATE MARK, AND NUMBER DESIGNATES LIGHTING CIRCUIT IDENTIFICATION.

REMARKS:
5. PROVIDE DRYWALL MOUNTING KIT FOR FIXTURES LOCATED IN THE BATHROOMS. PROVIDE DIMMING DRIVERS AND SWITCH FOR LAB ROOM.

NOTES

1. VERIFY ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN LIGHT SWITCHES TO INSURE PROPER SWITCH LOCATION. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ARE AT THE PROPER HEIGHT.
2. EMERGENCY LIGHTING CIRCUIT NOT SHOWN FOR CLARITY, INSTALL EMERGENCY & EXIT SIGNS ON CIRCUIT LF-7.



1 **ADMIN BUILDING LIGHTING PLAN**
E-901 SCALE: 1/4" = 1'-0"

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1" .5" 0"

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GROVE CREEK WPCP
COMMERCE, GA

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ADMIN BUILDING
LIGHTING PLAN

E-901

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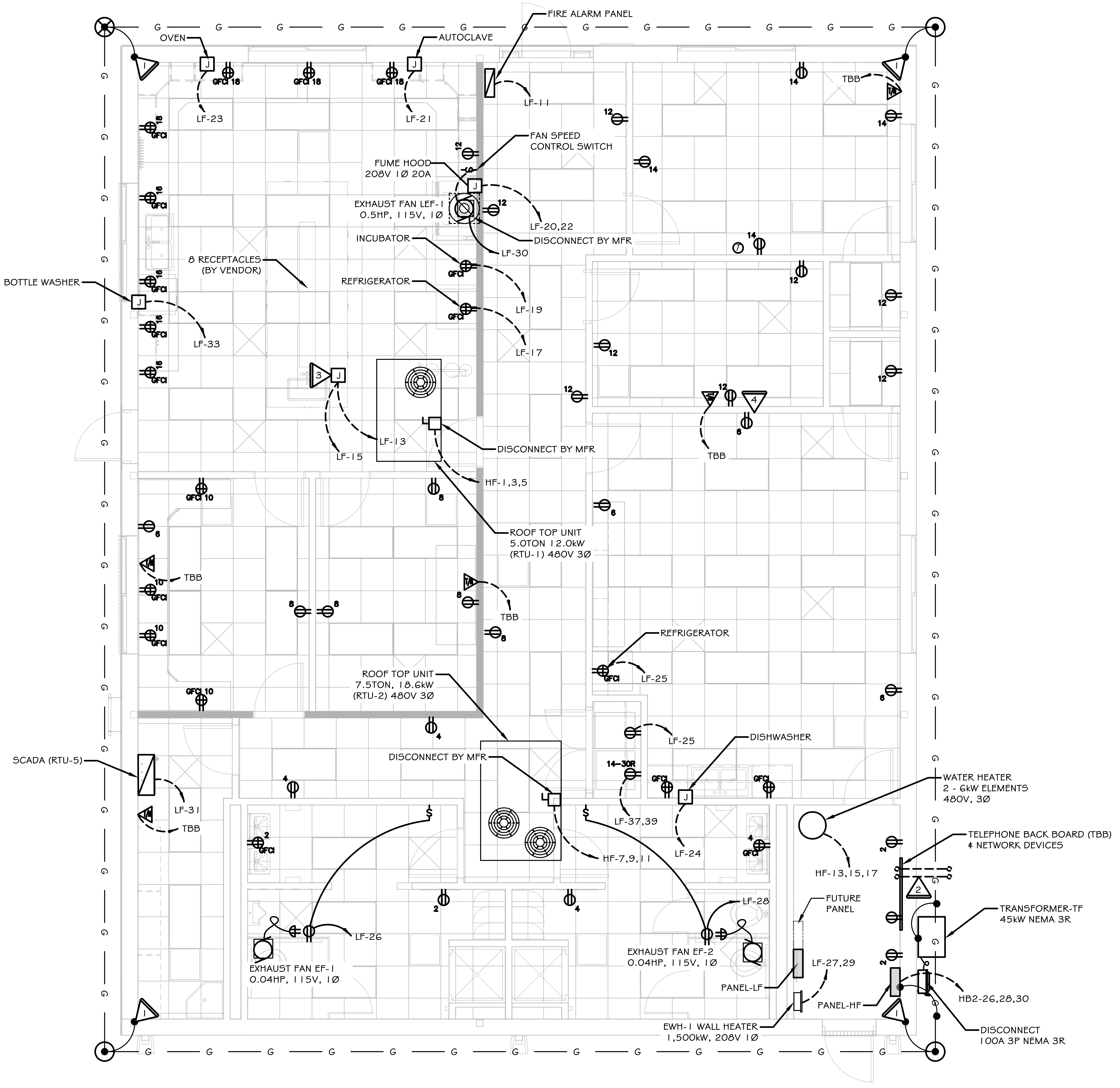

1 E-902 **ADMIN BUILDING ELECTRICAL PLAN**
SCALE: 1/4" = 1'- 0"

NOTES

1. VERIFY ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN LIGHT SWITCHES TO INSURE PROPER SWITCH LOCATION. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ARE AT THE PROPER HEIGHT. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ARE AT THE PROPER HEIGHT.

2. ALL CONDUITS SHALL BE CONCEALED IN THE CEILING, FLOOR OR WALLS. ALL OUTLET BOXES, JUNCTION OR PULL BOXES SHALL BE FLUSH MOUNTED.

3. COORDINATE FINAL TELEPHONE AND NETWORK OUTLET BOX PLACEMENT WITH OWNER BASED ON OFFICE FURNITURE LAYOUT.

4. INSTALL ALL LAB COUNTERTOP RECEPTACLES IN THE BACKSPLASH APRPOXIMATELY 4FT A.F.F.

KEYED NOTES:

1 BOND TO STRUCTURE REINFORCING STEEL W/ EXOTHERMIC BOND. #4/0 BARE COPPER GROUNDING CONDUCTOR.

2 2 - 1.5" C. W/ FISH TAPE TO EXTERIOR OF BUILDING FOR CONNECTION TO CABLE & TELEPHONE UTILITY

3 PROVIDE JUNCTION BOX AND HOME RUN MANUFACTURER MOUNTED RECEPTACLE CIRCUITS TO PANEL. FOUR RECEPTACLES PER CIRCUIT.

4 PROVIDE OUTLET BOX BEHIND TV AND UNDER DESK W/ HDMI WALL PLATE, ROUTE HDMI CABLE UNDER THE SLAB IN 1.5" C.

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ADMIN BUILDING
ELECTRICAL PLAN

E-902

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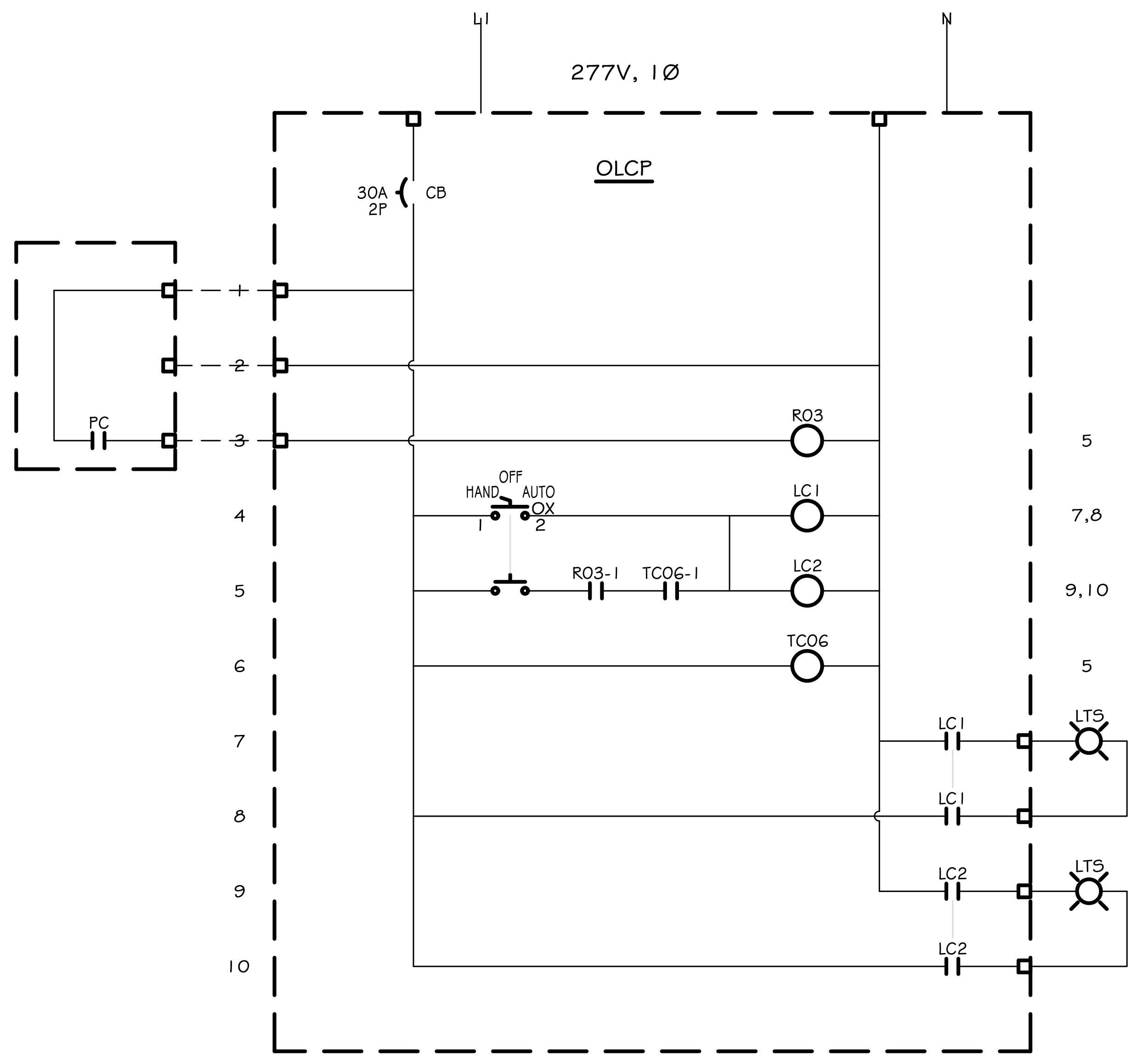
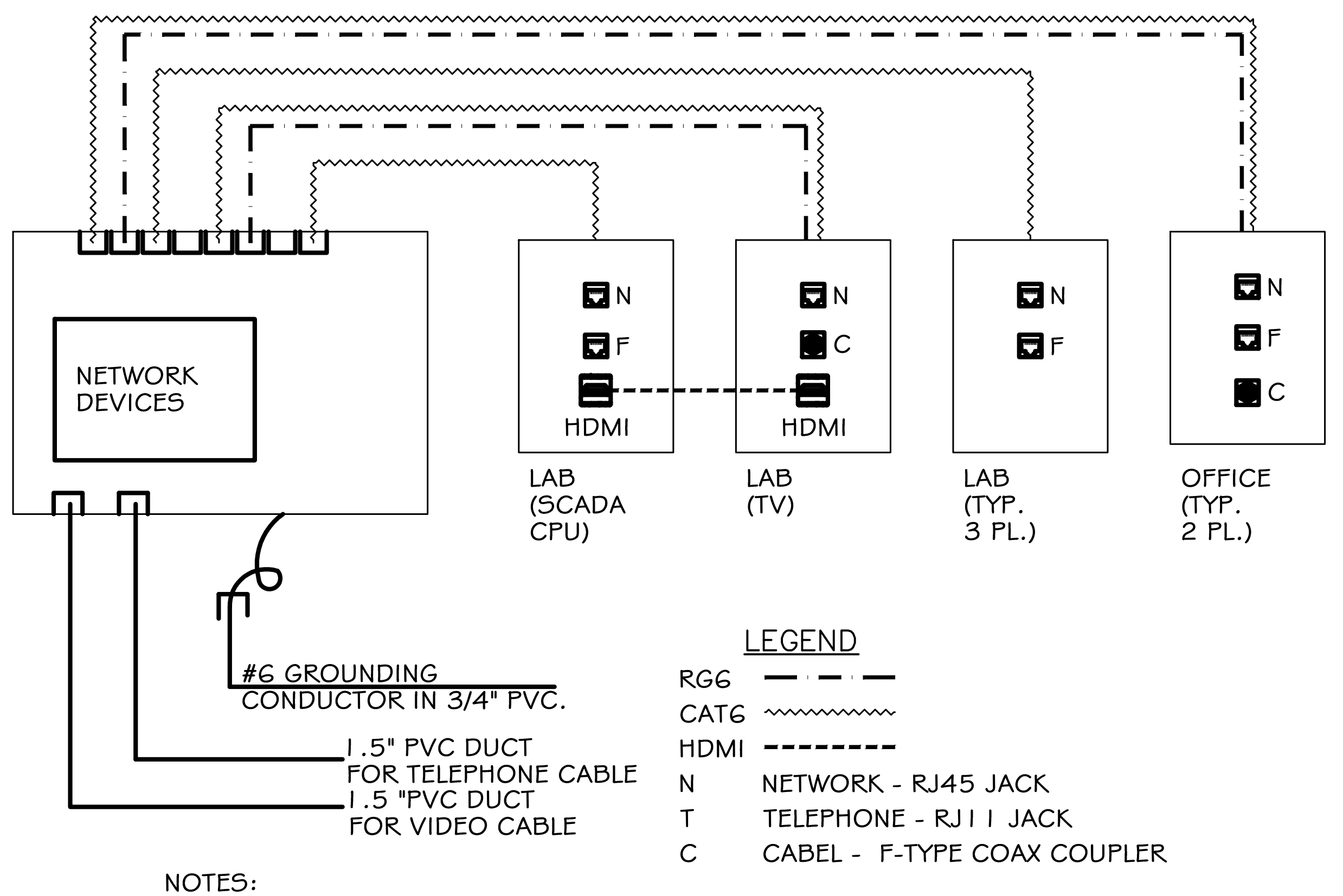


NOTES:

1) PC-PHOTOCONTROL IN CAST WP HOUSING, LIGHT ADJUSTMENT AND NIPPLE, STONCO CAT. NO. P150A. INTERMATIC k4121C OR EQUAL
2) R1,-PLUG-IN RELAY AND SOCKET, 10A, CONTACTS, POTTER BRUMFIELD CAT. NO. KRP11AG. OMRON MY2N-CR OR EQUAL
3) TC-SEVEN DAY PROGRAMMABLE 24 HOUR DIGITAL TIME SWITCH INTERMATIC CAT. NO. ELEC-ET1705C TORK E101B OR EQUAL.
4) LC1(2), 1-MAGNETICALLY HELD, 30A, 2POLE, NO CONTACTOR SQUARE D CLASS 8903, CAT. NO. LO20, GE CR160 OR EQUAL.

1 OUTSIDE LIGHTING CONTROL PANEL (OLCP) SCHEMATIC
E-903

SCALE: NOT TO SCALE


NETWORK DEVICES
N
F
HDMI
LAB (SCADA CPU)
N
C
HDMI
LAB (TV)
N
F
LAB (TYP. 3 PL.)
N
F
C
OFFICE (TYP. 2 PL.)
#6 GROUNDING CONDUCTOR IN 3/4" PVC.
1.5" PVC DUCT FOR TELEPHONE CABLE
1.5 "PVC DUCT FOR VIDEO CABLE

LEGEND

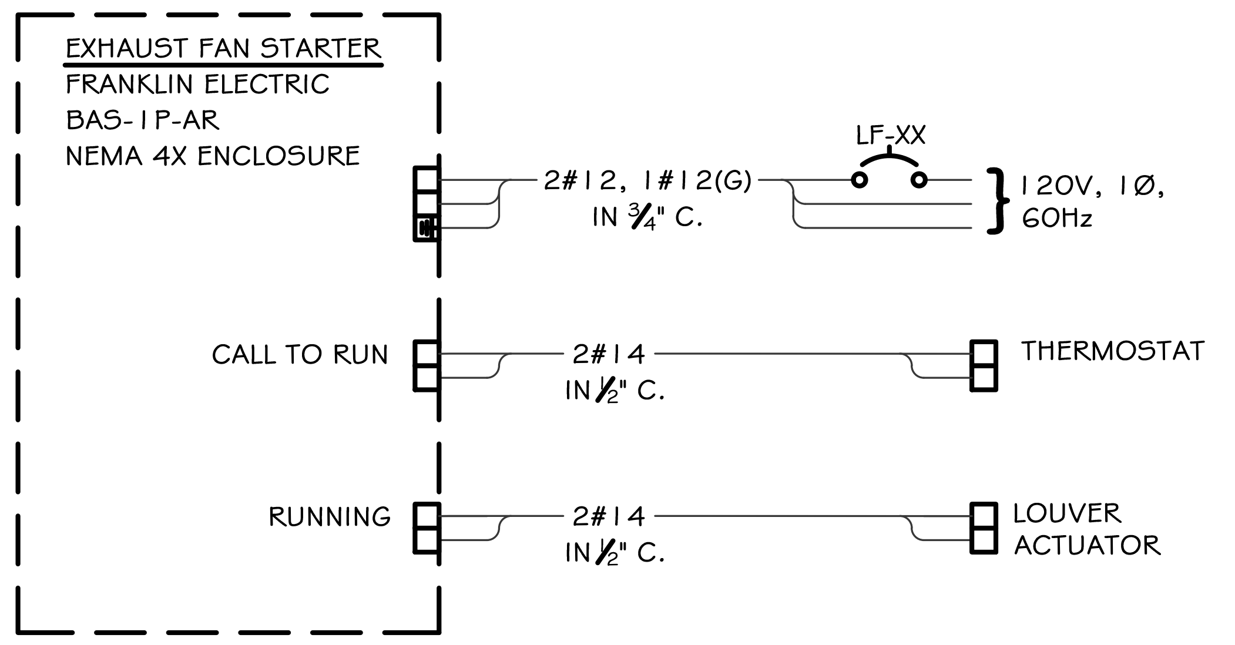
RG6 — - — - —
CAT6 ∿∿∿∿∿
HDMI - - - - - - - -
N NETWORK - RJ45 JACK
T TELEPHONE - RJ11 JACK
C CABEL - F-TYPE COAX COUPLER

NOTES:

1) INTEGRATOR TO PROVIDE NETWORK FIREWALL & ETHERNET SWITCH.
2) CONTRACTOR TO PROVIDE ALL NECESSARY LOW VOLTAGE WIRING, CONDUIT COUPLING, OUTLET BOXES, COVER PLATES, WALL JACKS ETC. FOR COMPLETE SYSTEM.
3) CONTRACTOR, INTEGRATOR & OWNER TO COORDINATE W/ LOCAL INTERNET, CABLE & TELEPHONE UTILITY COMPANY TO SET UP SERVICE.

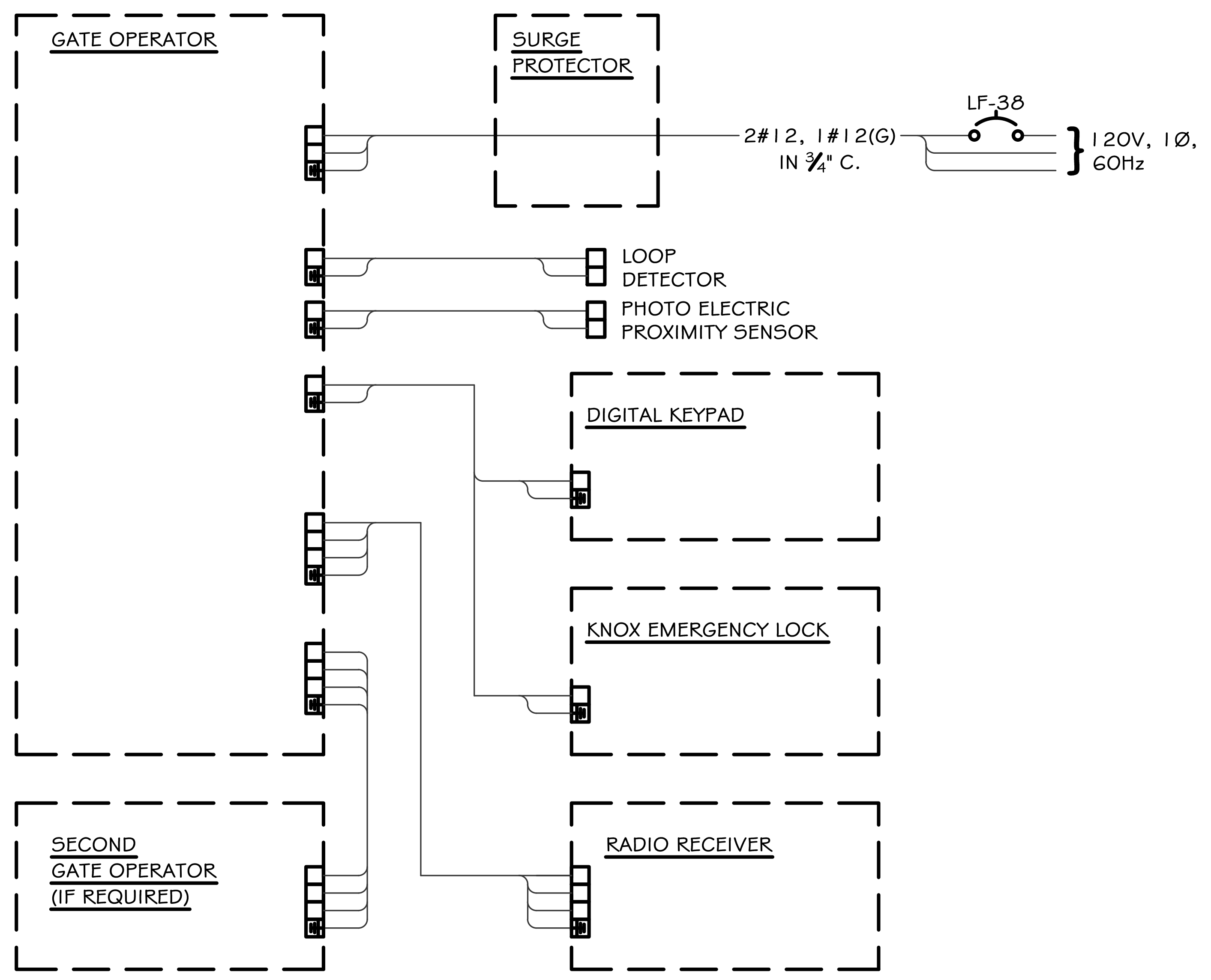
2 LAB COMMUNICATIONS RISER DIAGRAM
E-903

SCALE: NOT TO SCALE



3 EXHAUST FAN INTERCONNECTION DIAGRAM
E-903

SCALE: NOT TO SCALE



NOTE: THIS SCHEMATIC IS TYPICAL OF WIRING REQUIRED FOR THE ELECTRIC GATE. SEE MANUFACTURER'S DIAGRAMS FOR INSTALLATION REQUIREMENTS, WIRE SIZE & QUANTITY. CONTRACTOR TO PROVIDE ALL FIELD WIRING NECESSARY.

4 ELECTRIC GATE BLOCK DIAGRAM
E-903

SCALE: NOT TO SCALE

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