

LEGEND

SYMBOL	DESCRIPTION
	A-1,3,5 ADJACENT TO ARROW INDICATES HOME-RUN OF CIRCUITS 1,3,5 TO PANEL A. 3,5 OR A-3,5 ADJACENT TO ARROW INDICATES CIRCUIT CONTINUATION. MARKS ACROSS RACEWAY RUNS INDICATE THE NUMBER OF NO. 12 CONDUCTORS. UNLESS NOTED, NO MARKS INDICATES TWO NO. 12 CONDUCTORS. EQUIPMENT GROUNDING CONDUCTORS ARE NOT SHOWN, SEE GENERAL NOTES. IF INDICATED ADJACENT TO OUTLET, NUMERAL AND LOWER CASE LETTER INDICATES CIRCUIT CONNECTION AND SWITCHLEG DESIGNATION RESPECTIVELY. TYPE B OR CAPITAL LETTER B INDICATES LIGHT FIXTURE TYPE. UNLESS NOTED, DIMENSIONS INDICATED IN LEGEND AND ON PLANS ARE TO BOTTOM OF OUTLET OR DEVICE. ALL SYMBOLS INDICATED HEREIN MAY NOT NECESSARILY BE USED ON THE PLANS.
	CEILING OUTLET AND LED FIXTURE
	WALL OUTLET AND LED FIXTURE
	WALL MTD DUAL REMOTE EMERGENCY HEAD - MTD 8' AFF.
	OUTLET AND LED EXIT LIGHT - LETTERS INDICATE FIXTURE TYPE. PROVIDE ARROWS INDICATED
	POST TOP LED LUMINAIRE, POLE. SEE E0.2.
	FLOOD LIGHT WITH POLE - SEE E0.2.
	WALL MOUNTED TWO HEAD EMERGENCY FIXTURE, MT. 8' AFF.
	PHOTOCELL, EATON/GREENGATE PPS-5, MOUNTED UNDER EAVE OR 10' AFG, NOTE G10.
	WEATHERPROOF JUNCTION BOX MOUNTED TO STRUCTURE
	POLYMER CONCRETE PULL BOX MOUNTED FLUSH IN GRADE, REFER TO DETAIL 4/E-03.
	DUPLEX RECEPTACLE- MT. 16" AFF, NUMBER DESIGNATES LOCAL BRANCH CIRCUIT SERVING OUTLET
	DUPLEX RECEPTACLE- MT. 48" AFF AND/OR ABOVE COUNTER TOP
	WEATHERPROOF DUPLEX RECEPTACLE, MT. 16" ABOVE FLOOR AND 36" ABOVE EARTH W/ IN-USE COVER, TYPE 'WR' RECEPTACLE
	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE- MT. 48" AFF AND/OR ABOVE COUNTER TOP OR AS INDICATED
	DUPLEX RECEPTACLE, NEMA 5-20R- MT. 16" AFF
	DUPLEX GF RECEPTACLE, NEMA 5-20R-GF - MTD. WITHIN WATER COOLER HOUSING.
	TELEPHONE/DATA OUTLET- MT. 16" AFF U.N.O. EXTEND 1" C TO NEAREST TELEPHONE CABINET OR BACKBOARD
	SINGLE POLE TOGGLE SWITCH- MT. 48" UP
	THREE-WAY TOGGLE SWITCH- MT. 48" UP
	PIR WALL OCCUPANCY SENSOR - MT. 48" UP, EATON/GREENGATE OSW-P-1001-MV
	ULTRASONIC WALL OCCUPANCY SENSOR - MT. 48" UP, EATON/GREENGATE OSW-U-0721-MV
	MOTOR RATED SWITCH WITH OVERLOAD PROTECTION - MT. 48" UP.
	MOTOR RATED DISCONNECT SWITCH, SINGLE PHASE - MT. 48" UP.
	DOOR SWITCH FOR CHEMICAL ROOM, SQUARE D CLASS 9007 MS/ML WITH LEVER ARM.
	EMERGENCY POWER-OFF PUSHBUTTON STATION
	PANELBOARD, SURFACE MOUNTED
	TELEPHONE OR SIGNAL BACKBOARD, 3/4" X 4" X 8" UNLESS NOTED
	DRY-TYPE TRANSFORMER - VOLTAGE, PHASE, AND KVA AS INDICATED
	EQUIPMENT AS NOTED
	ELECTRIC METER
	MOTOR, HORSEPOWER AS INDICATED
	NON-FUSIBLE DISCONNECT SWITCH, RATING/POLES/ENCLOSURE AS INDICATED
	MAGNETIC STARTER
	COMBINATION MAGNETIC STARTER/NON-FUSIBLE DISCONNECT SWITCH
	RACEWAY INSTALLED CONCEALED IN WALLS AND/OR ABOVE CEILING
	RACEWAY INSTALLED CONCEALED IN/OR BELOW FLOOR SLAB OR BELOW GRADE
	RACEWAY INSTALLED EXPOSED
	GROUND RING AROUND SITE 4/0 CU BURIED AT 36" BELOW GRADE. NOTE G9.
	FLEXIBLE METALLIC RACEWAY
	CONDUIT STUB-UP AND HOMERUN
	CONDUIT UP/CONDUIT DOWN
	CONDUIT TERMINATION, STUB-OUT
	GROUND
	GROUND ROD LOCATION
	FIRE ALARM CONTROL PANEL - NOTE G13.
	FIRE ALARM MANUAL PULL STATION - MT. 48" UP
	FIRE ALARM AUDIBLE AND VISUAL SIGNAL DEVICE. MOUNT 6" BELOW FINISHED CEILING OR 80" AFF, WHICHEVER IS LOWER, TO THE BOTTOM OF THE LENS
	HEAT DETECTOR, CEILING MOUNTED.
	SMOKE DETECTOR, CEILING MOUNTED.
	DUCT MOUNTED SMOKE DETECTOR

ABBREVIATIONS

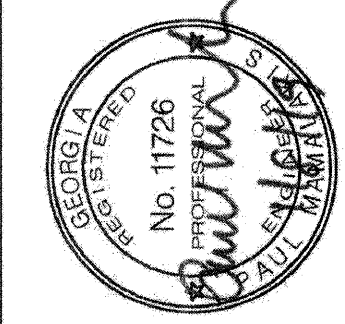
A OR AMP	AMPERES
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
ASYM	ASYMMETRICAL
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CNTL	CONTROL
CT	CURRENT TRANSFORMER
D	DEPTH
DISC	DISCONNECT SWITCH
DISC SW	DISCONNECT SWITCH
EXP	EXPLOSION PROOF
F	FUSE
G OR GND	GROUND
H	HEIGHT
HP	HORSEPOWER
JB OR J	JUNCTION BOX
KVA	KILOVOLT - AMPS
KW	KILOWATTS
L	LENGTH
MCB OR MB	MAIN CIRCUIT BREAKER
MH OR MTG	MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
MT OR MTD	MOUNT OR MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOC.
NTS	NOT TO SCALE
P	POLE
PMT	PAD MOUNT TRANSFORMER
PNL	PANELBOARD
RECEPT	RECEPTACLE
RMS	ROOT MEAN SQUARE
SPD	SURGE PROTECTION DEVICE (TVSS)
SW	SWITCH
SYM	SYMMETRICAL
TBB	TELEPHONE BACKBOARD
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
W	WIDTH
W/	WITH
WP	WEATHER PROOF
XDUCER	TRANSDUCER, ULTRASONIC TYPE
XFMR	TRANSFORMER
AREA OF REFUGE SYSTEM - SEE NOTE G16	
AOR	WALL MOUNTED AREA OF REFUGE LIGHTED SIGN RATH 7050.
AORS	AREA OF REFUGE SIGN WITH RAISED. LETTER AND BRAILLE ENTRY SIGN. 48" AFF RATH 7044.
AORI	AREA OF REFUGE INTERCOM, 48" AFF. FLUSH MOUNT - BATTERY BACKUP RATH 2100-958NSR.
AORM	AREA OF REFUGE MASTER, 48" AFF SURFACE MOUNTED - BATTERY BACKUP RATH 2500-205FM.
AORPS	AREA OF REFUGE POWER SUPPLY RATH 2500-PWR24.

GENERAL NOTES:

- WHEN CONDUCTOR SIZE IS INDICATED FOR BRANCH CIRCUIT HOME RUN, THE CONDUCTOR SIZE INDICATED SHALL BE USED FOR THE COMPLETE CIRCUIT.
- ALL EQUIPMENT SUPPORTS AND HANGERS SHALL BE COORDINATED WITH STRUCTURAL DRAWINGS TO INSURE THAT LOCATION OF SUPPORTS AND HANGERS OCCUR WITHIN 4" OF PANEL POINT.
- HEAT TAPE CONNECTIONS SHALL BE DIRECT CONNECTIONS.
- GROUNDING CONDUCTORS SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS. REFER TO SECONDARY GROUNDING SPECIFICATION SECTION.
- THE CONTRACTOR SHALL COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT PROVIDED WITH THE DRAWINGS. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY REQUIRED ADJUSTMENTS IN BREAKER RATINGS, MOTOR CONTROLLERS, FEEDERS, ETC. SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
- THE RECEPTACLE SHALL BE MOUNTED ON THE EQUIPMENT FRAME OR CONCRETE STRUCTURE. PROVIDE WEATHER RESISTANT TYPE 'WR'.
- THE AUTOMATIC TRANSFER SWITCH SHALL PROVIDE A PRE-TRANSFER, POST-TRANSFER, NORMAL POWER AND EMERGENCY POWER SIGNAL TO THE IN-PLANT SCADA PANEL AND MBR PROCESS CONTROL PANEL. THE IN-PLANT SCADA PANEL AND MBR PROCESS PANEL SHALL PROVIDE THE LOAD STEP SEQUENCE REQUIRED IN SPECIFICATION SECTION 263213. IT SHALL ALSO PROVIDE LOCK-OUT OF SPECIFIED LOADS DURING EMERGENCY GENERATOR OPERATION.
- ITEM PROVIDED WITH EQUIPMENT FURNISHED BY OTHERS. FIELD CONNECTION BY ELECTRICAL CONTRACTOR.
- PROVIDE DETECTABLE BARRIER TAPE, 3M SCOTCH SERIES 400, BURIED AT 18" BELOW GRADE. FURNISH 6" WIDE X 5 MIL TAPE WITH ALUMINUM BACKING. INSTALL ABOVE ALL BURIED ELECTRICAL CONDUITS AND CABLES.
- AIM PHOTO CELL AWAY FROM ARTIFICIAL LIGHT SOURCES. ADJUST SHIELD FOR PROPER OPERATION AND TO REDUCE FALSE-SWITCHING.
- FOR ALL DISCONNECT SWITCHES SERVING MOTORS WITH VFDs, PROVIDE AUXILIARY CONTACTS IN DISCONNECT SWITCH. CONTACTS SHALL BREAK-FIRST/MAKE-LAST. CONNECT TO VFD CONTROL CIRCUIT TO DE-ENERGIZE DRIVE CONTROL SUCH THAT BEFORE SWITCH IS OPENED THE VFD WILL NOT BE UNDER LOAD. COORDINATE WITH DRIVE MANUFACTURER.
- PROVIDE SHIELDED CABLES AS SPECIFIED FOR MOTORS SERVED BY VFD AS SPECIFIED. NO SPLICES ALLOWED.
- PROVIDE TWO FIRE ALARM SYSTEMS. ONE IS FOR DE-WATERING BUILDING (SEE E15.0) AND ONE FOR LIMITED ELEVATOR SYSTEM IN MAIN BUILDING (SEE E1.2).
- REFER TO P-ID DRAWINGS FOR CONDUIT, WIRE AND CONNECTIONS TO PLANT SCADA AND INSTRUMENTATION. DEVICES ARE NOT SHOWN ON ELECTRICAL DRAWINGS. PROVIDE ALL UTILITIES, INCLUDING POWER AS REQUIRED. EMERSON SCADA SYSTEM IS TO BE PROVIDED UNDER SEPARATE CONTRACT. CONTRACTOR TO COORDINATE WITH AND PROVIDE POWER AND CONDUITS AS REQUIRED. PROVIDE CONDUITS AS SPECIFIED.
- PROVIDE SERVICE TO ROLL UP DOORS, DESIGN RATED 1/2 HP, 120V. LOCATE 20/1/1 DISCONNECT AT TOP OF DOOR NEAR MOTOR. PROVIDE ALL CONDUITS AND WIRING FOR COMPLETE INSTALLATION.
- PROVIDE AREA OF REFUSE SYSTEM WITH MASTER STATION ON FIRST FLOOR, TWO REMOTE INTERCOM STATIONS ON SECOND FLOOR FOR COMPLETE SYSTEM. PROVIDE ALL SIGNS AS REQUIRED. ALL WIRING TO BE IN CONDUIT. COORDINATE TELEPHONE CONNECTION AND PROGRAMMING WITH OWNER. DEMONSTRATE OPERATION TO ENGINEER AND OWNER AT FINAL ACCEPTANCE.

ELECTRICAL SYSTEMS SEISMIC REQUIREMENTS PER IBC-2012/ASCE 7-10

A. PER THE 2012 INTERNATIONAL BUILDING CODE, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7-10.			
B. EXTERIOR EQUIPMENT (INCLUDING ROOF CURBS, RAILS, SUPPORTS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTER 25 TO 29 OF ASCE 7-10.			
C. WHERE DESIGN FOR SEISMIC AND WIND LOADS IS REQUIRED, THE MORE DEMANDING FORCE MUST BE USED.			
D. REFERENCE THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY, WIND SPEEDS, ETC.			
E. USE THE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.			
F. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL REGISTERED IN THE STATE THE JOB IS LOCATED. SUBMITTALS MUST INCLUDE STAMPED AND SIGNED DRAWINGS AND CALCULATIONS.			
G. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE RECEIPT OF THE APPROVED SEISMIC SUBMITTAL.			
H. SEISMIC RESTRAINTS FOR CONDUIT, CABLE TRAYS AND BUS DUCT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.			
ELECTRICAL COMPONENT IMPORTANCE FACTOR (Ip) DESIGNATION			
Ip = 1.0		Ip = 1.5 (LIFE SAFETY COMPONENTS)	
● ALL ASSOCIATED ELECTRICAL WORK UNLESS NOTED OTHERWISE			
● EMERGENCY LIGHTS ● GENERATOR ● TRANSFER SWITCH ● EMERGENCY DISTRIBUTION EQUIPMENT ● EXIT LIGHTS			
SEISMIC DESIGN CATEGORIES C, OCC, RISK III, Ip = 1.0			
COMPONENT IMPORTANCE FACTOR (Ip)			
1.0			
COMPONENT IDENTIFICATION	SEISMIC RESTRAINT REQUIREMENT	NOTES	
ROOF MOUNTED	RESTRAIN ALL	1	
FLOOR MOUNTED	RESTRAIN ALL	1,2	
WALL MOUNTED	RESTRAIN ALL	1,2	
COMPONENTS SUPPORTS	RESTRAIN ALL	1	
SUSPENDED EQUIPMENT	RESTRAIN ALL	1	
SINGLE CONDUIT	RESTRAIN IF 2.5" AND LARGER	3	
CABLE TRAY/BUS DUCT TRAPEZOID CONDUIT	DO NOT DELETE ON TRAPEZE IF LARGER THAN OR EQUAL TO 2.5". RESTRAIN IF TOTAL WEIGHT OF SUSPENDED COMPONENT IS LARGER THAN 10LBS/FT	3	
COMPONENT CERTIFICATION	NOT REQUIRED	5	
PENDANT, LAY-IN AND CAN LIGHTS	REQUIRED	4	
NOTES:			
1. EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.			
2. RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER MASS AT 4' OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.			
3. RESTRAINT IS NOT REQUIRED IF THE CONDUIT IS SUPPORTED BY HANGERS AND EACH HANGER IN THE RUN IS 12" IN, OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12" IN, OR LESS, WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.			
4. THE RESTRAINT OF PENDANT, LAY-IN AND CAN LIGHTS IS ADDRESSED IN ASTM G835 AND E580.			
5. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OR RECORD.			



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TRAVIS FIELD WATER RECLAMATION FACILITY
 LEGEND, ABBREVIATIONS & GEN. NOTES

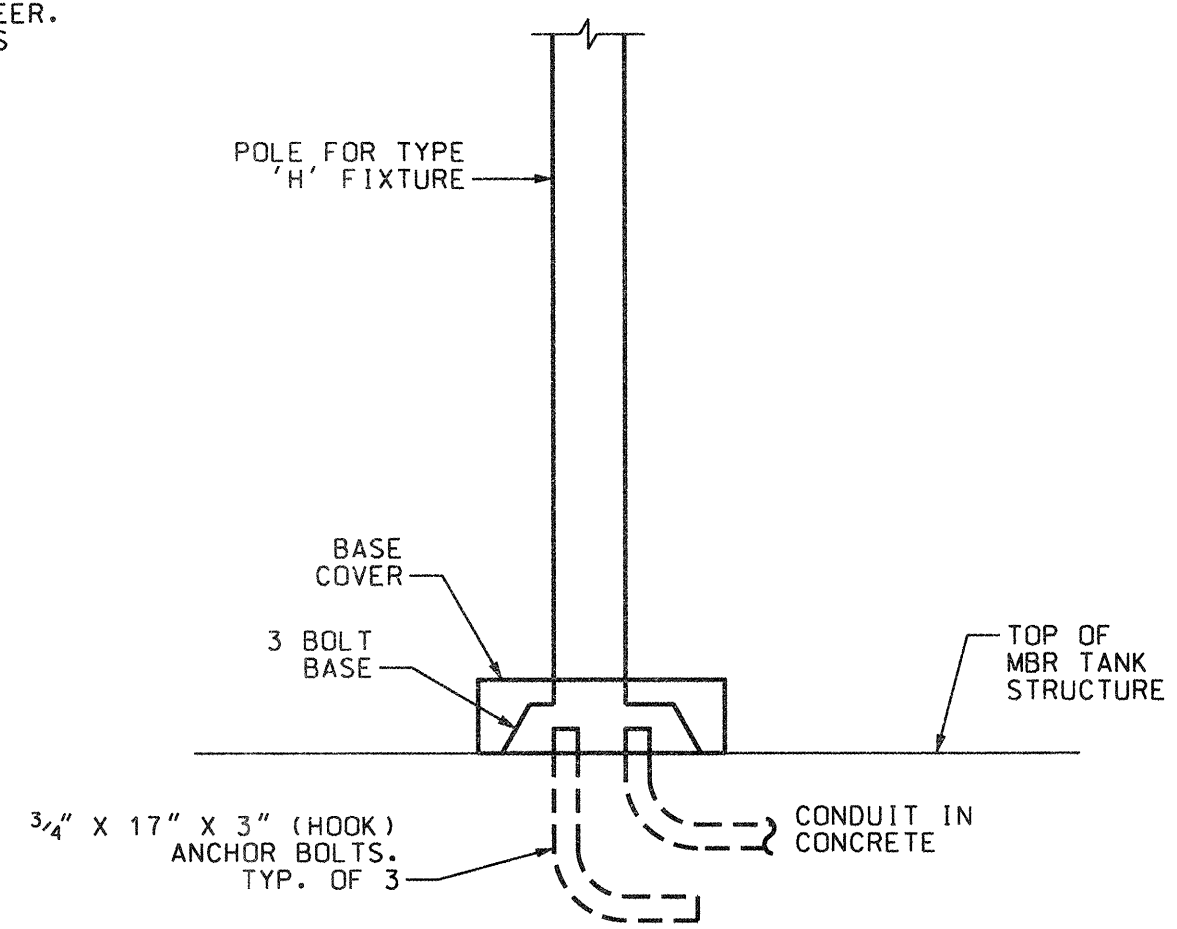
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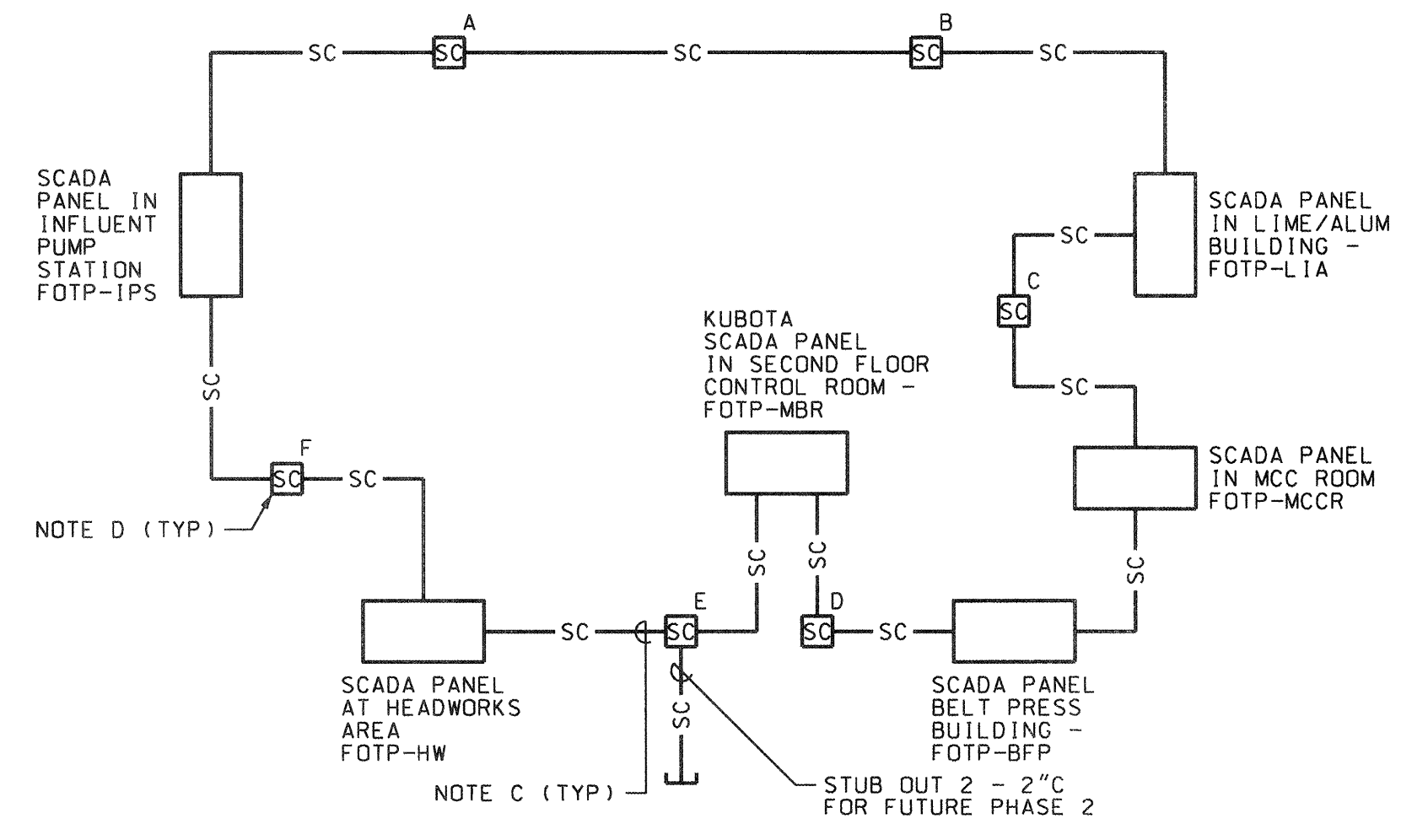
LIGHTING FIXTURE SCHEDULE - NOTE LF-4

TYPE	DESCRIPTION	VOLTAGE	LAMP	MOUNTING	NOTES	TYPE	DESCRIPTION	VOLTAGE	LAMP	MOUNTING	NOTES
A	4' VAPORTITE LED - HIGH OUTPUT METALUX 4VT2-LD4-8-DR100-UNV-L840-CD1-WL- ACCESSORIES: SSL/TEH/VT2-SS-MBK OR APPROVED EQUAL	UNV	LED INCLUDED 8000L	SURFACE	PROVIDE WITH STAINLESS STEEL LATCHES AND MOUNTING BRACKET	L	2' X 4' FLAT PANEL TROFFER METALUX 24FP4740C OR APPROVED EQUAL	UNV	4800L LED 4000K 40W	RECESSED	LF-1
B	LED WALL PACK LUMARK LD-WP-FC-4A-ED-EMLD-CD OR APPROVED EQUAL	UNV	LED INCLUDED 40W	WALL	COORDINATE ELEVATION WITH ARCHITECTURAL PLAN	M	4' STRIP LED METALUX 4SNLED-LD5-44SL-L840CDIU OR APPROVED EQUAL	UNV	4350L LED 4000K 31W	SURFACE	
C	LED WALL PACK CANLET 02-12W-L-W-F-0G-01 OR APPROVED EQUAL	UNV	LED INCLUDED 1100L - 4000K	WALL		N	4' VAPORTITE LED METALUX 4VT2-LD4-4-DR100-UNV-L840-CD1-WL- ACCESSORIES: SSL/TEH/VT2-SS-MBK OR APPROVED EQUAL	UNV	4800L LED 4000K 40W	SURFACE	
D	4' SURFACE LED METALUX 4SWLED-LD4-40SL-LW-L840-CD-1-AIB/SPACER-U OR APPROVED EQUAL	UNV	LED INCLUDED 4000L 30W	WALL	PROVIDE WITH 1-1/2" SPACER 7'-6" TO BOTTOM	P	MBR CANOPY LIGHT FIXTURES LUMARK 0DCAST1B OR APPROVED EQUAL	277V	5100L LED 4000K 54W	SURFACE	
F	2' X 4' RECESSED LED TROFFER METALUX 24ALN-G-LD4-55-UNV-L840-CD-1 OR APPROVED EQUAL	UNV	LED INCLUDED	RECESSED	LF-1	XA	LED WET LOCATION EMERGENCY LIGHT EXIT W/ REMOTE HEAD ISOLITE MAC-C-12V-42-R-BB-W-7W REMOTE HEAD: WRH-2-9W OR APPROVED EQUAL	UNV	SUPPLIED WITH FIX.	WALL	PROVIDE ARROWS, MOUNTING & SINGLE FACE OR DOUBLE FACE AS INDICATED ON THE DRAWINGS MOUNT REMOTE HEADS 8' AFF WHERE SHOWN.
G	2' X 2' FLAT PANEL TROFFER METALUX 22FP3240C OR APPROVED EQUAL	UNV	3560L LED 4000L 30W	RECESSED		XB	LED THERMOPLASTIC EXIT W/ DOUBLE REMOTE HEADS ISOLITE RLCLD-R-WH-SD-RLLEDWP2 OR APPROVED EQUAL	UNV	SUPPLIED W/ FIX.	WALL	PROVIDE ARROWS, MOUNTING & SINGLE FACE OR DOUBLE FACE AS INDICATED ON THE DRAWINGS MOUNT REMOTE HEADS 8' AFF WHERE SHOWN.
H	LED FLOOD LIGHT/POST TOP LUMARK 2-NFFLD-A25-E-UNV-66-S-BZ OR APPROVED EQUAL	UNV	LED INCLUDED	POLE	MOUNT ON 15' POLE. NOTE LF-3 AND 2/E0.2.	ELU1	NEMA 4X EMERGENCY LIGHT ISOLITE HZN-12-42-7W(LED)-SD-NC OR APPROVED EQUAL	UNV	LED INCLUDED	WALL	PROVIDE WITH HAND HELD REMOTE TESTER 8' AFF ISOLITE TLRT
K	LED FLOOD LIGHT LUMARK NFFLDC75DUNV66SBZ OR APPROVED EQUAL	UNV	25,000L LED 4000K 180W	POLE	LF-2	ELU2	COMPACT LED EMERGENCY LIGHT ISOLITE RL2LED-4-WH-SD W/ RLLEDWP2 OR APPROVED EQUAL	UNV	LED INCLUDED	WALL	PROVIDE WITH REMOTE HEADS WHERE INDICATED 8' AFF
K1	SAME AS TYPE K EXCEPT 60 FT POLE										

- NOTES:**
- LF-1. PROVIDE CHAIN HANGERS FOR FIXTURES MOUNTED IN DROPPED CEILING. EXTEND CHAINS TO STRUCTURE, 2 PER FIXTURE.
 - LF-2. PROVIDE 35 FT (60 FT FOR TYPE K1) ROUND TAPERED BRONZE FIBERGLASS POLE SET 6 FT IN GROUND. PROVIDE BULLHORN AT TOP WITH 2 TYPE 'K' FLOODLIGHTS PER POLE. POLE TO BE RATED FOR 130 MPH WITH BULLHORN AND FIXTURES INSTALLED. EXTEND COUNTERPOISE GROUND TO POLE. FINAL AIMING TO BE MADE IN FIELD AT FINAL REVIEW AFTER DARK. HANDHOLE TO BE 24" AFG.
 - LF-3. FOR EACH POST TOP FIXTURE LOCATION (H) PROVIDE 2 TYPE H FLOODLIGHTS MOUNTED ON BULLHORN ATOP POLE. POLE TO BE 15 FT ROUND STRAIGHT 5" ALUMINUM (0.125" THICKNESS) RATED FOR FIXTURES AND BULLHORN WITH 3 BOLT STANDARD BASE AND ROUND ALUMINUM COVER, HANDHOLE, AND ANCHOR BOLTS. COORDINATE ANCHOR BOLTS WITH MBR TANK STRUCTURE. FINAL AIMING TO BE MADE IN FIELD.
 - LF-4. FIXTURES SPECIFIED INDICATE LEVEL OF QUALITY OF FIXTURES REQUIRED. SIMILAR FIXTURES BY OTHER MANUFACTURERS MAY BE ACCEPTABLE UPON REVIEW AND APPROVAL BY ARCHITECT/ENGINEER. ALL FIXTURES SHALL BE SUPPLIED BY LOCAL REPRESENTATIVES IE ALESCO/NEXT GEN, ARDD & WINTER, ASI, LAI, OR SESCO.

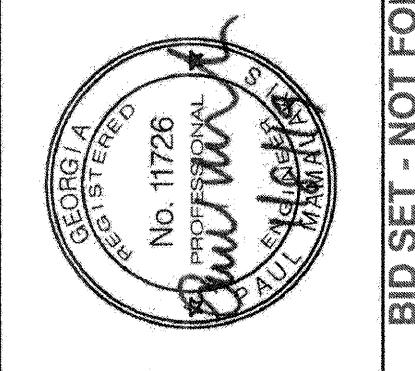


2 TYPE 'H' FIXTURE MOUNTING DETAIL
E0.2 NOT TO SCALE



1 SCADA RISER DIAGRAM
E0.2 NOT TO SCALE

- NOTES:**
- A. PROVIDE EXTERIOR FIBER RING FOR PLANT SCADA SYSTEM. VERIFY EXACT LAYOUT AND LOCATION IN FIELD. REFER TO SITE PLAN SHEET E1.0 FOR LAYOUT.
 - B. PROVIDE CONDUIT AND BOXES AS REQUIRED. SCADA VENDOR TO PROVIDE FIBER CABLE. CONTRACTOR TO INSTALL. SCADA VENDOR TO TERMINATE AND TEST.
 - C. ALL CONDUITS (-SC-) TO BE 2 - 2" C WITH MARKING TAPE ABOVE. INSTALL 24" BELOW GRADE MINIMUM WITH LONG SWEEP ELBOWS. INSTALL FIBER CABLES IN ONE CONDUIT AND PULL STRING IN OTHER.
 - D. ALL BOXES TO BE QUAZITE PC 17" X 30" X 24"D WITH 'FIBER' LOGO. SEE 4/E0.3



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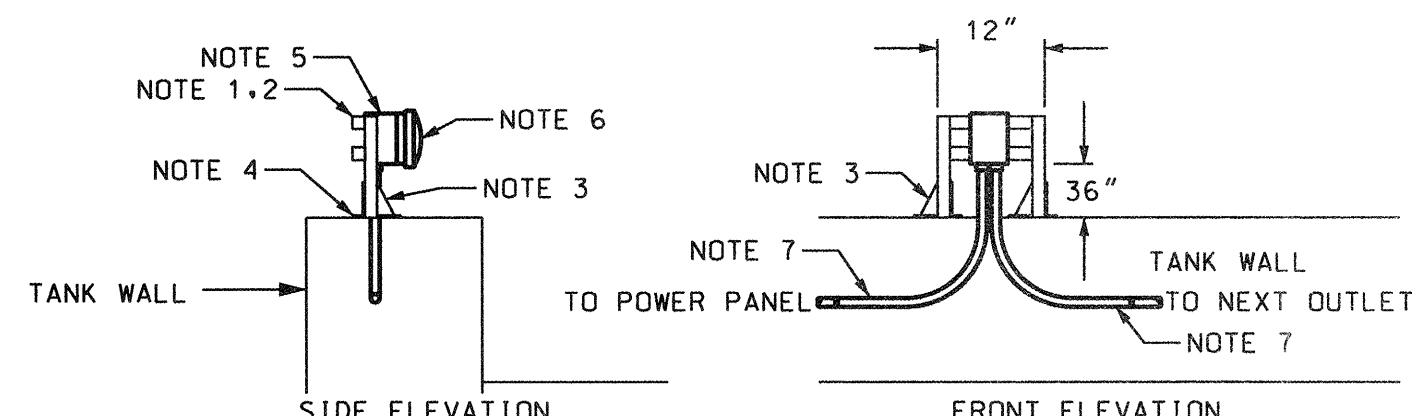
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LIGHTING FIXTURE SCHEDULE

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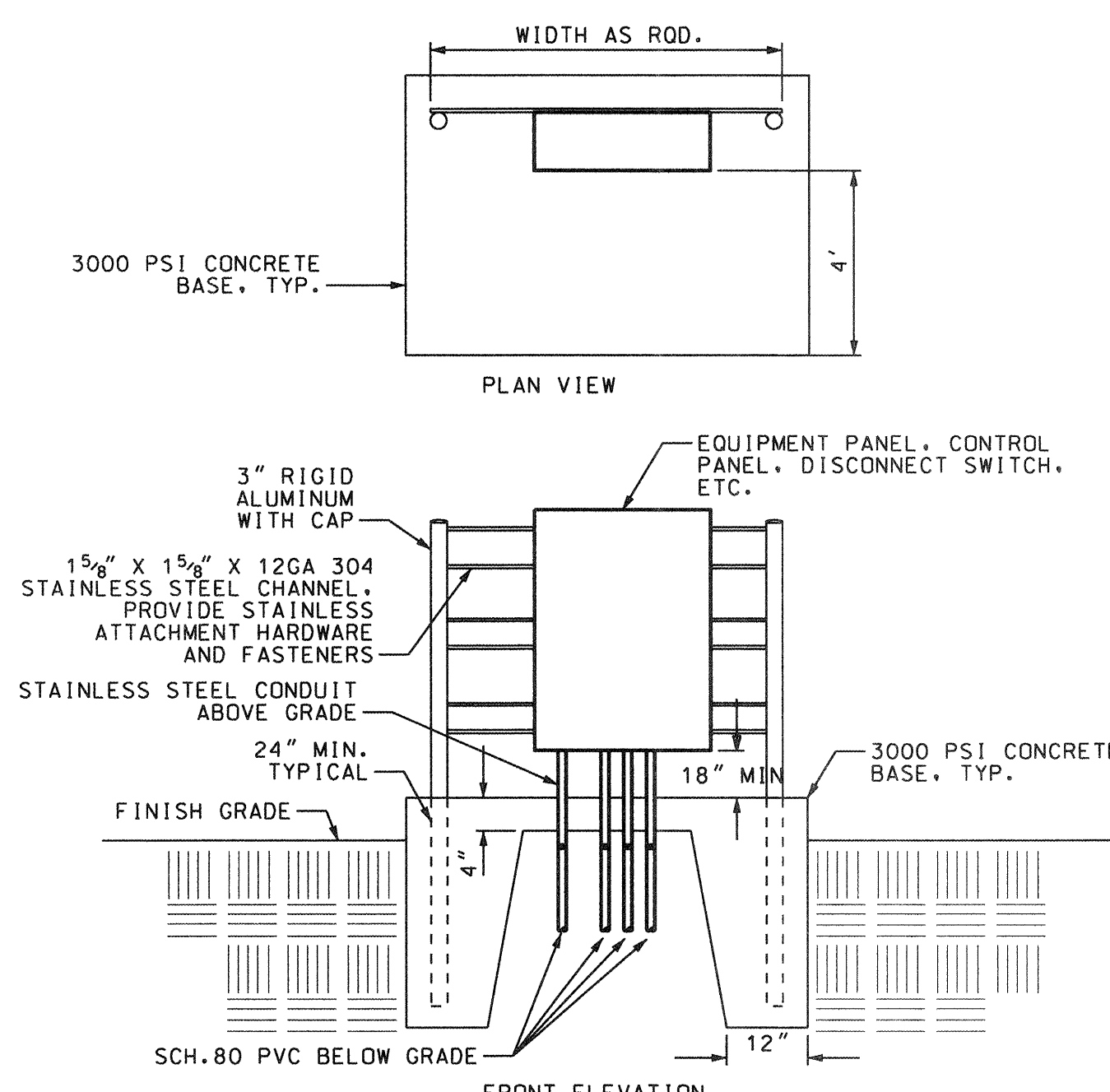
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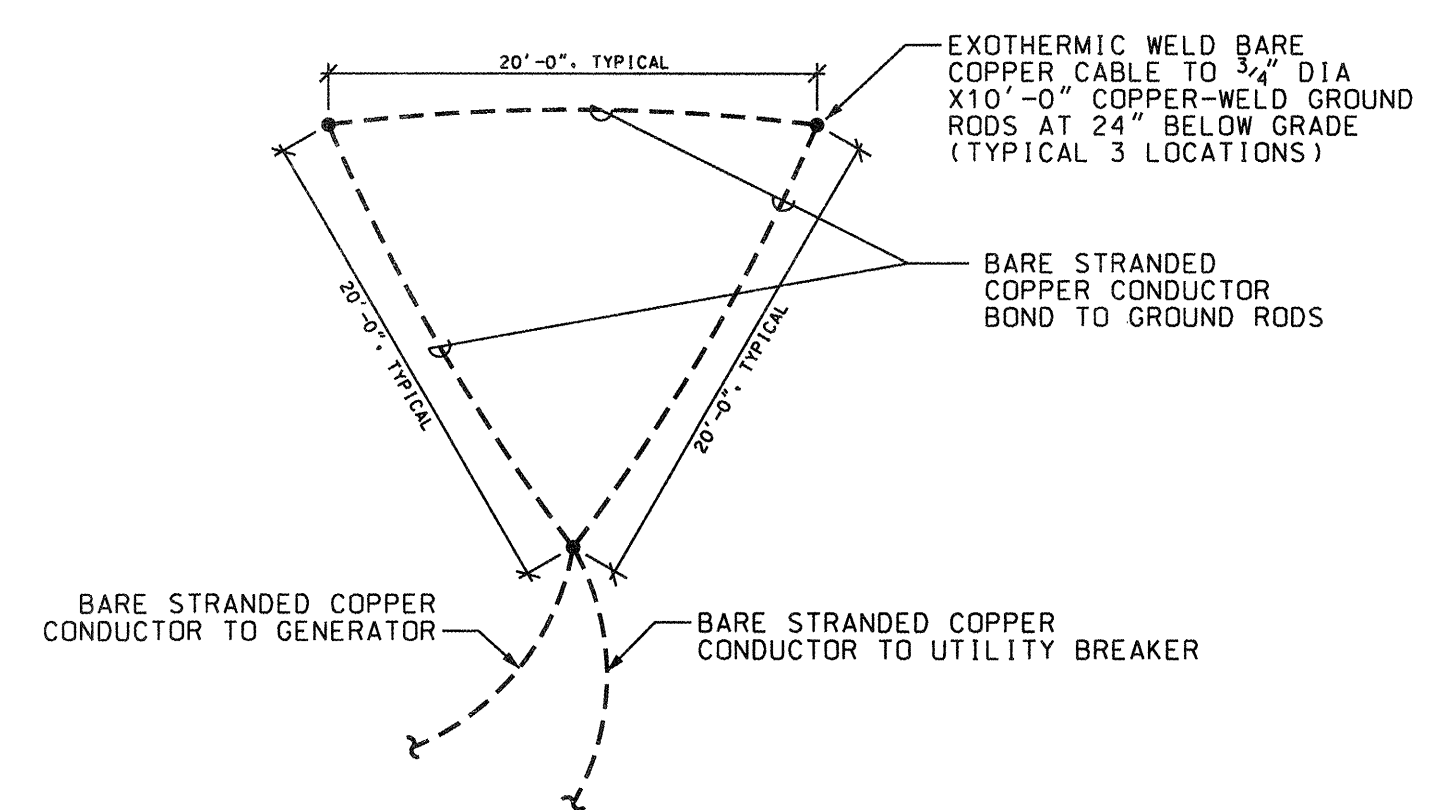
NOTES: MBR TANK RECEPTACLE DETAIL

1. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL. MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
2. 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" X 1 5/8", B-LINE B22 SERIES OR EQUAL.
3. B-LINE B278 STAINLESS STEEL POST BASE FOR B22, TWO PER ASSEMBLY.
4. PROVIDE SIX RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWM1236, 1/2" X 3/4" ANCHOR.
5. RECEPTACLE OUTLET BOX SHALL BE A CROUSE-HINDS FDS2SS, STAINLESS STEEL DEVICE BOX WITH TWO 3/4" CONDUIT HUBS.
6. RECEPTACLE OUTLET WEATHERPROOF COVER SHALL BE A CALBRITE STAINLESS STEEL 1-GANG DEEP LID WEATHERPROOF COVER, S6000FVCD.
7. STAINLESS STEEL CONDUIT FROM WITHIN CONCRETE TO OUTLET BOX, PVC WITHIN CONCRETE. NO FITTINGS ALLOWED 36" OR LESS ABOVE TANK WALL.

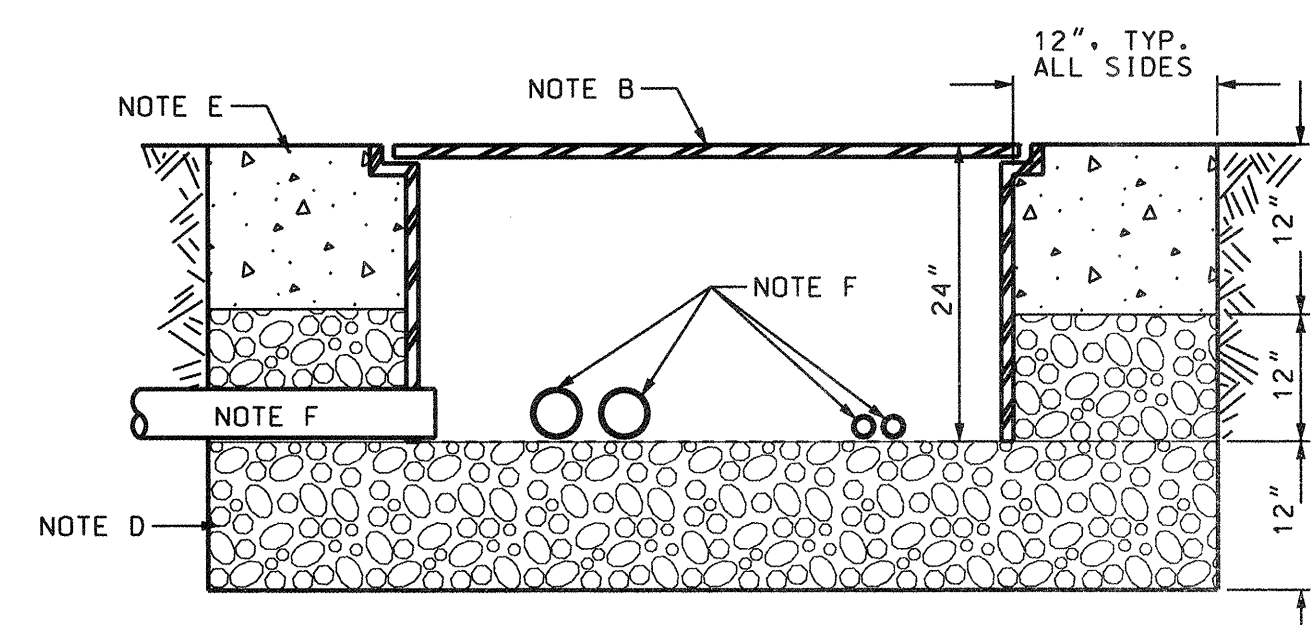
1 MBR TANK RECEPTACLE DETAIL
E0.3 N.T.S.



2 EQUIPMENT RACK
E0.3 N.T.S.



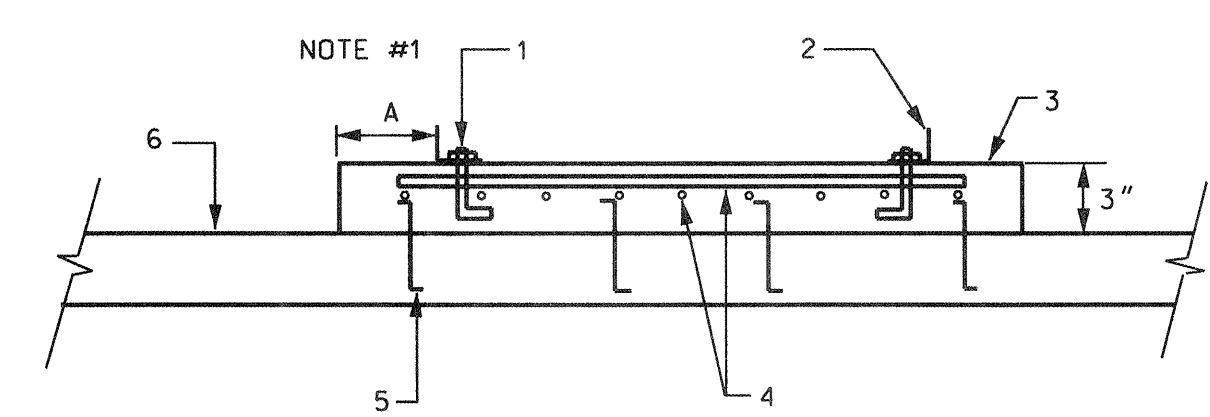
3 SECONDARY ELECTRICAL GROUNDING
E0.3 N.T.S.



NOTES:

- A. JUNCTION BOXES SHALL BE QUAZITE POLYMER CONCRETE TYPE "PG" OPEN BOTTOM, OR EQUIVALENT BY OLD CASTLE.
- B. THE COVER SHALL BE TIER 22 RATED, LOGO - "POWER", "TELEPHONE" OR "CONTROLS".
- C. BOX DIMENSIONS SHALL BE AS NOTED ON THE DRAWINGS.
- D. PROVIDE A BASE OF CRUSHED STONE, 12" DEEP AND EXTENDING 12" BEYOND THE BOX ON ALL SIDES.
- E. PROVIDE A CONCRETE SUPPORT AROUND THE BOX, 12" WIDE AND 12" DEEP, ALL SIDES.
- F. CONDUIT ENTRY SHALL BE THROUGH THE SIDE WALL AT THE BOTTOM BELOW THE CONCRETE OR UP THROUGH THE BOTTOM.
- G. FOR ALL CONDUCTORS: PROVIDE PERMANENT TAGS IDENTIFYING ALL CABLES.

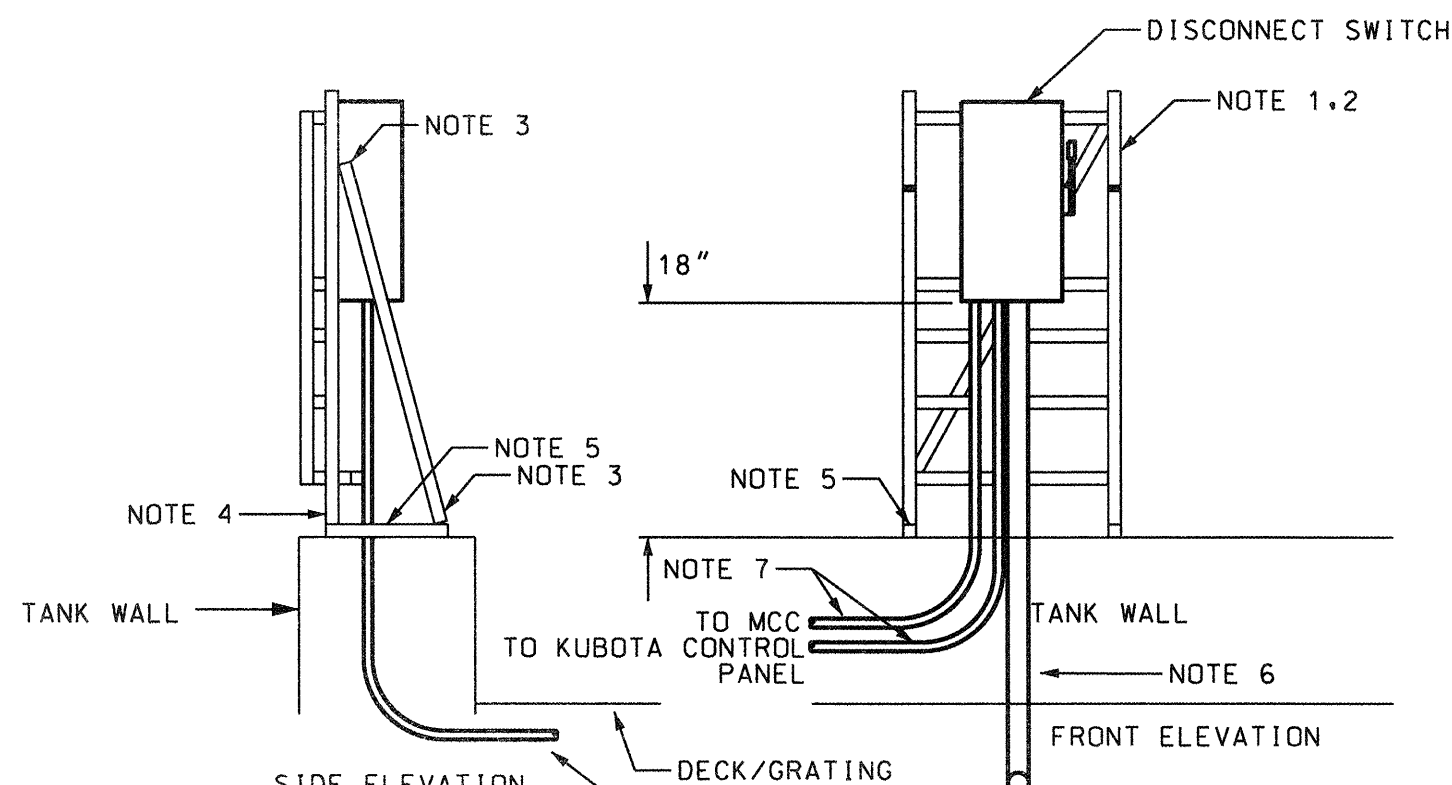
4 PULL BOX - FLUSH WITH FINISHED GRADE
E0.3 N.T.S.



1. 1/2" GALV. ANCHOR BOLTS - 24" O.C. MIN.
2. ELECTRICAL EQUIPMENT MOUNTING FRAME
3. HOUSEKEEPING BASE
4. REINFORCING #4 BAR 12" O.C. BOTH DIRECTIONS
5. #4 Z BAR DOWELLS - 12" O.C. BOTH DIRECTIONS
6. FLOOR SLAB

1. DIMENSION 'A' SHALL EXCEED DIMENSIONS OF EQUIPMENT BASE BY NOT LESS THAN THREE INCHES IN ALL DIMENSIONS.
2. THIS DETAIL SHALL BE APPLICABLE TO MAIN SWITCHBOARD, FLOOR MOUNTED DRY TYPE TRANSFORMER, FLOOR MOUNTED AUTOMATIC TRANSFER SWITCHES, COMMUNICATIONS EQUIPMENT RACKS AND OTHER FLOOR MOUNTED ELECTRICAL EQUIPMENT EXCEEDING 200 LBS IN WEIGHT.

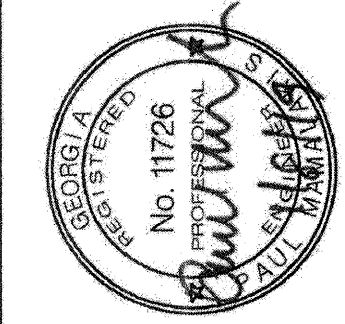
5 ELECTRICAL EQUIPMENT HOUSEKEEPING BASE
E0.3 N.T.S.



NOTES: DISCONNECT SWITCH MOUNTING DETAIL

1. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL. MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
2. 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" X 1 5/8", B-LINE B22 SERIES OR EQUAL.
3. B-LINE B335 FOUR-HOLE ADJUSTABLE HINGE, FOUR LOCATIONS.
4. B-LINE B104 FOUR-HOLE CORNER ANGLE.
5. PROVIDE FOUR RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWM1236, 1/2" X 3/4" ANCHOR.
6. STUB 2" STAINLESS STEEL CONDUIT FROM DISCONNECT SWITCH INTO TANK BELOW DECKING. FIELD COORDINATE LOCATION AND ELEVATION OF STUBOUT WITH STRUCTURAL DRAWINGS. PROVIDE STAINLESS STEEL CABLE SUPPORT BRACKET ADJACENT TO GUIDE RAILS. PROVIDE NONCONDUCTIVE, SINGLE EYE, DOUBLE WEAVE, NON-METALLIC GRIP (ARAMID FIBER) FOR SUPPORT OF MOTOR CABLES. ATTACH TO MOTOR CABLE WITH TWO HEAVY DUTY ZIP TIES. FURNISH PRODUCTS OF HUBBELL - KELLEMS.
7. STAINLESS STEEL CONDUIT FROM WITHIN CONCRETE TO DISCONNECT SWITCH. SCH. 80 PVC WITHIN CONCRETE. NO FITTINGS ALLOWED 18" OR LESS ABOVE TANK WALL.
8. THIS DETAIL APPLIES TO INSTALLATION ON OR ABOUT THE TREATMENT BASINS OR INFLUENT SCREENS.

6 DISCONNECT SWITCH MOUNTING DETAIL
E0.3 N.T.S.



NO.	REVISIONS	DATE	BY
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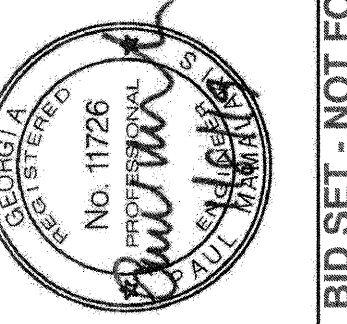
SAVANNAH savannahga.gov
TRAVIS FIELD WATER RECLAMATION FACILITY
ELECTRICAL DETAILS

JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
DRAWN:	LC
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	N.T.S.

E0.3

15-APR-2019 10:51:47 AM

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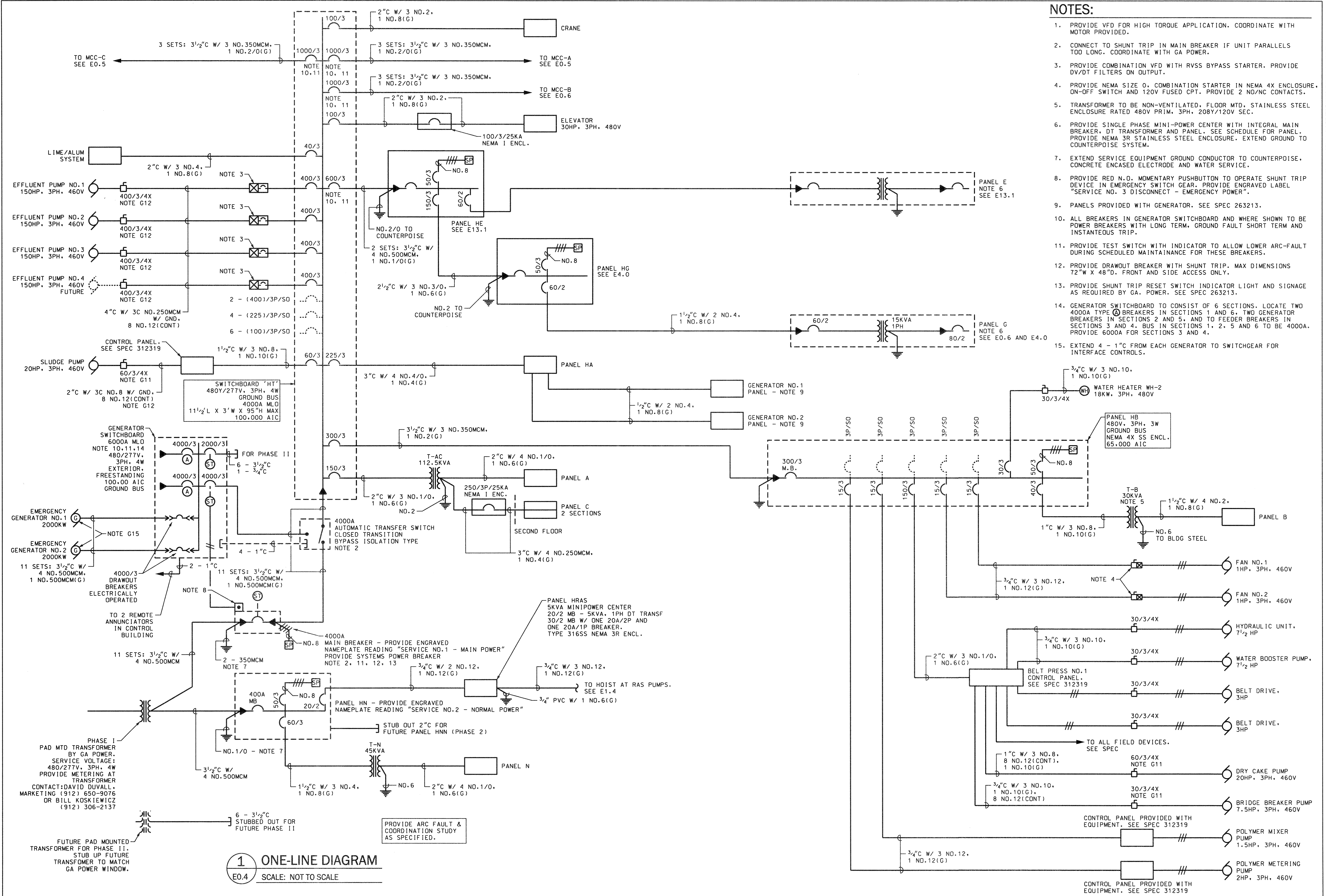
TRAVIS FIELD WATER RECLAMATION FACILITY
 ONE-LINE DIAGRAM

JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	N.T.S.

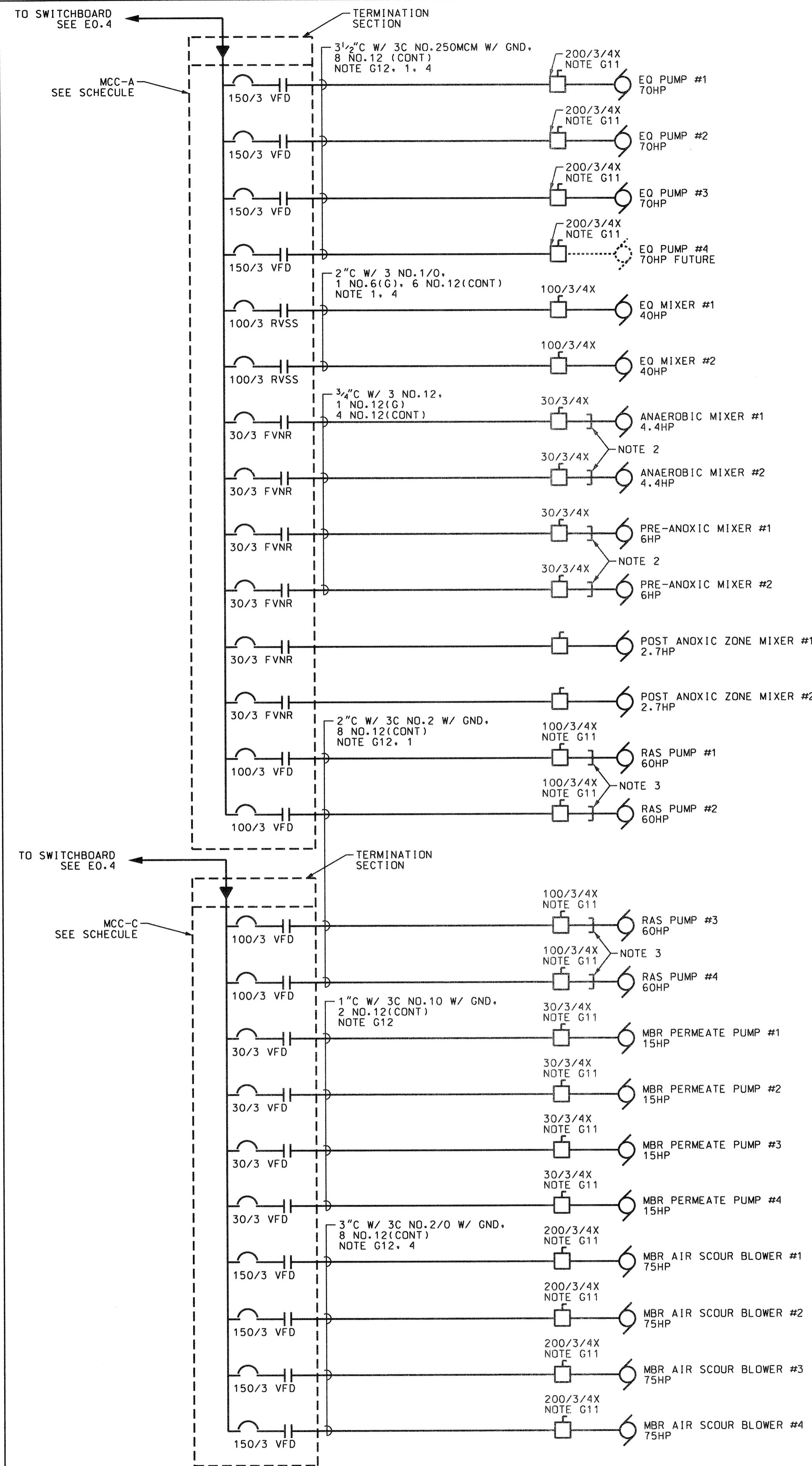
E0.4

NOTES:

1. PROVIDE VFD FOR HIGH TORQUE APPLICATION. COORDINATE WITH MOTOR PROVIDED.
2. CONNECT TO SHUNT TRIP IN MAIN BREAKER IF UNIT PARALLELS TOO LONG. COORDINATE WITH GA POWER.
3. PROVIDE COMBINATION VFD WITH RVSS BYPASS STARTER. PROVIDE DV/DT FILTERS ON OUTPUT.
4. PROVIDE NEMA SIZE 0. COMBINATION STARTER IN NEMA 4X ENCLOSURE. ON-OFF SWITCH AND 120V FUSED CPT. PROVIDE 2 NO/NC CONTACTS.
5. TRANSFORMER TO BE NON-VENTILATED, FLOOR MTD. STAINLESS STEEL ENCLOSURE RATED 480V PRIM. 3PH. 208Y/120V SEC.
6. PROVIDE SINGLE PHASE MINI-POWER CENTER WITH INTEGRAL MAIN BREAKER, 3PT TRANSFORMER AND PANEL. SEE SCHEDULE FOR PANEL. PROVIDE NEMA 3R STAINLESS STEEL ENCLOSURE. EXTEND GROUND TO COUNTERPOISE SYSTEM.
7. EXTEND SERVICE EQUIPMENT GROUND CONDUCTOR TO COUNTERPOISE. CONCRETE ENCASED ELECTRODE AND WATER SERVICE.
8. PROVIDE RED N.O. MOMENTARY PUSHBUTTON TO OPERATE SHUNT TRIP DEVICE IN EMERGENCY SWITCHGEAR. PROVIDE ENGRAVED LABEL "SERVICE NO. 3 DISCONNECT - EMERGENCY POWER".
9. PANELS PROVIDED WITH GENERATOR. SEE SPEC 263213.
10. ALL BREAKERS IN GENERATOR SWITCHBOARD AND WHERE SHOWN TO BE POWER BREAKERS WITH LONG TERM. GROUND FAULT SHORT TERM AND INSTANTANEOUS TRIP.
11. PROVIDE TEST SWITCH WITH INDICATOR TO ALLOW LOWER ARC-FAULT DURING SCHEDULED MAINTAINANCE FOR THESE BREAKERS.
12. PROVIDE DRAWOUT BREAKER WITH SHUNT TRIP. MAX DIMENSIONS 72"W X 48"D. FRONT AND SIDE ACCESS ONLY.
13. PROVIDE SHUNT TRIP RESET SWITCH INDICATOR LIGHT AND SIGNAGE AS REQUIRED BY GA. POWER. SEE SPEC 263213.
14. GENERATOR SWITCHBOARD TO CONSIST OF 6 SECTIONS. LOCATE TWO 4000A TYPE 2 BREAKERS IN SECTIONS 1 AND 6. TWO GENERATOR BREAKERS IN SECTIONS 2 AND 5. AND TO FEEDER BREAKERS IN SECTIONS 3 AND 4. BUS IN SECTIONS 1, 2, 5 AND 6 TO BE 4000A. PROVIDE 6000A FOR SECTIONS 3 AND 4.
15. EXTEND 4 - 1" C FROM EACH GENERATOR TO SWITCHGEAR FOR INTERFACE CONTROLS.



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15-APR-2019 10:58:15 AM
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MOTOR CONTROL CENTER MCC-A - NOTE G

VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 1000	VERT BUS: 300			
BUS BRACING: 100,000 AIC		MAX. OVERALL LENGTH: 15.5'			DEMAND LOAD: 600A			
UNIT NO.	EQUIPMENT SERVED	HP	CIRCUIT BREAKER			CONTROLS	NOTES	
			STARTER SIZE	FRAME	TRIP			POLES
AA1	TERMINATION SECTION	-	-	-	-	-	A	
AB1	EQ PUMP #1	70	VFD	MCP	150	3	I	C,F,H,J
AC1	EQ PUMP #2	70	VFD	MCP	150	3	I	C,F,H,J
AD1	EQ PUMP #3	70	VFD	MCP	150	3	I	C,F,H,J
AE1	EQ PUMP #4	70	VFD	MCP	150	3	I	C,F,H,J
AF1	EQ MIXER #1	40	RVSS	MCP	100	3	II	E,J
AG1	EQ MIXER #2	40	RVSS	MCP	100	3	II	E,J
AB2	ANAEROBIC MIXER #1	4.4	1	MCP	30	3	II	C,E
AC2	ANAEROBIC MIXER #2	4.4	1	MCP	30	3	II	C,E
AD2	PRE-ANOXIC MIXER #1	6	1	MCP	30	3	II	C,E
AE2	PRE-ANOXIC MIXER #2	6	1	MCP	30	3	II	C,E
AF2	POST ANOXIC ZONE MIXER #1	2.7	1	MCP	30	3	II	C,E
AG2	POST ANOXIC ZONE MIXER #2	2.7	1	MCP	30	3	II	C,E
AH1	RAS PUMP #1	60	VFD	MCP	100	3	I	C,E,H,J
AI1	RAS PUMP #2	60	VFD	MCP	100	3	I	C,E,H,J
AH2	SPACE	-	(1)	MCP	-	3	-	D
AI2	SPACE	-	(1)	MCP	-	3	-	D

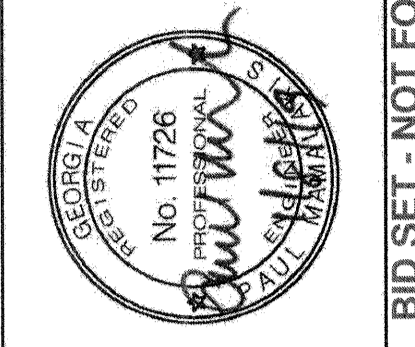
MOTOR CONTROL CENTER MCC-C - NOTE G

VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 1000	VERT BUS: 300			
BUS BRACING: 100,000 AIC		MAX. OVERALL LENGTH: 15.5'			DEMAND LOAD: 600A			
UNIT NO.	EQUIPMENT SERVED	HP	CIRCUIT BREAKER			CONTROLS	NOTES	
			STARTER SIZE	FRAME	TRIP			POLES
CA1	TERMINATION SECTION	-	-	-	-	-	A	
CB1	RAS PUMP #3	60	VFD	MCP	100	3	I	C,E,H,J
CC1	RAS PUMP #4	60	VFD	MCP	100	3	I	C,E,H,J
CD1	MBR PERMEATE PUMP #1	15	VFD	MCP	30	3	I	C,F,H,J
CD2	MBR PERMEATE PUMP #2	15	VFD	MCP	30	3	I	C,F,H,J
CD3	MBR PERMEATE PUMP #3	15	VFD	MCP	30	3	I	C,F,H,J
CD4	MBR PERMEATE PUMP #4	15	VFD	MCP	30	3	I	C,F,H,J
CE1	MBR AIR SCOUR BLOWER #1	75	VFD	MCP	150	3	I	C,F,H,J
CF1	MBR AIR SCOUR BLOWER #2	75	VFD	MCP	150	3	I	C,F,H,J
CG1	MBR AIR SCOUR BLOWER #3	75	VFD	MCP	150	3	I	C,F,H,J
CH1	MBR AIR SCOUR BLOWER #4	75	VFD	MCP	150	3	I	C,F,H,J
CB2	SPACE	-	-	MCP	-	3	-	D
CC2	SPACE	-	-	MCP	-	3	-	D
CI1	SPACE	-	-	MCP	-	3	-	D
CI2	SPACE	-	-	MCP	-	3	-	D
CI3	SPACE	-	-	MCP	-	3	-	D
CI4	SPACE	-	-	MCP	-	3	-	D
CI5	SPACE	-	-	MCP	-	3	-	D
CI6	SPACE	-	-	MCP	-	3	-	D

- NOTES:** MOTOR CONTROL CENTER
- PROVIDE LUGS FOR FEEDER CONDUCTORS SHOWN IN TERMINATION SECTION.
 - CONTROL DEVICES SHALL BE:
I - FOR VFD'S, SEE SPECS.
II - HDA SWITCH, RED 'RUN' PILOT LAMP, BLUE 'OVERLOAD' PILOT LAMP, 2 - NC/NO CONTACTS.
 - FOR VFD SERVING MOTORS OVER 100 FT FROM MCC, PROVIDE OUTPUT DV/DI FILTER.
 - PROVIDE BUCKET FOR FUTURE EQUIPMENT SHOWN.
 - FOR SUBMERSIBLE PUMPS, PROVIDE CONNECTIONS TO LEAK DETECTOR IN WINDINGS AND THERMAL MODULE TO MONITOR MOTOR TEMP AS REQUIRED. PROVIDE 'AMBER' PILOT LAMPS FOR 'LEAK' AND ANOTHER FOR 'HI-TEMP'. IF THESE SAFETIES OCCUR, TURN ON LIGHT AND LOCKOUT PUMP. PROVIDE MANUAL RESET BUTTON IN COVER.
 - FOR MOTOR WITH INTEGRAL THERMAL PROTECTION, PROVIDE THERMAL MODULE AS REQUIRED TO MONITOR MOTOR TEMP. PROVIDE 'AMBER' PILOT LAMP 'HI-TEMP'. IF THIS SAFETY OCCURS, TURN ON LIGHT, LOCK OUT PUMP. PROVIDE MANUAL RESET BUTTON IN COVER.
 - PROVIDE CURRENT LIMITERS FOR ALL BREAKERS IN MCC'S.
 - PROVIDE DV/DI FILTERS ON OUTPUT.
 - EACH RVSS AND VFD SHALL BE PROVIDED WITH A MODBUS TCP/IP ETHERNET CONNECTION, NATIVELY WITHOUT GATEWAY FOR CONNECTION TO SCADA.

- NOTES:** ONE-LINE DIAGRAM
- EXTEND CIRCUITS THROUGH EXTERIOR JUNCTION BOXES A, B & C. SEE SITE PLAN.
 - STUB 2" C FOR PUMP CABLES PROVIDED WITH PUMP.
 - STUB 3" C FOR PUMP CABLES PROVIDED WITH PUMP.
 - PROVIDE CONTROL CONDUCTORS IN CONDUITS TO MOTORS FOR CONNECTIONS TO AUX. SWITCH IN DISCONNECT, AND MOTOR THERMAL SENSORS. CONNECT AS REQUIRED.
 - CABLES PROVIDED WITH PUMP.

1 ONE-LINE DIAGRAM
E0.5 SCALE: NOT TO SCALE



NO.	BY	DATE	REVISIONS

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TRAVIS FIELD WATER RECLAMATION FACILITY
ONE-LINE DIAGRAM

JOB NO:	J-26963.0000
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DRAWN:	LC
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	N.T.S.

E0.5

STANDBY GENERATOR SIZING AND LOADING CRITERIA

THE STANDBY GENERATOR AND TRANSFER SWITCH SHALL BE SIZED TO POWER SELECTED LOADS DURING A POWER OUTAGE. THE LOADS TO BE POWERED ARE BEING PROVIDED IN PHASE I AND OTHERS IN PHASE II. THE SIZING OF THE GENERATOR SYSTEM ASSUMES THAT THERE WILL BE 2 GENERATORS OPERATING IN PARALLEL. LOADS WILL BE STEPPED ON ONCE THE SYSTEM IS BEING POWERED FROM THE GENERATORS THROUGH THE PLANT SCADA SYSTEM.

THE GENERATOR SYSTEM SHALL BE SIZED SO THAT ONE GENERATOR CAN START AND RUN ALL OF THE LOADS SHOWN ON PHASE I.

FOR PHASE II, IF ONLY ONE GENERATOR IS ON LINE, THE SCADA SYSTEM WILL LOCK OUT LOADS TO MATCH THE PHASE I LOADS.

SELECTED LOADS ARE TO BE LOCKED OUT IF THE TRANSFER SWITCH IS IN THE EMERGENCY POSITION. SEE BELOW. THE LOADS CAN BE MANUALLY LOADED BY THE OPERATOR ONLY.

THE SCADA SYSTEM WILL RECEIVE A 'READY TO TRANSFER' SIGNAL FROM THE TRANSFER SWITCH. ONCE THIS OCCURS, THE SCADA SYSTEM WILL DROP OFF ALL STEPPED LOADS AND STEP ON AS SHOWN. LOADS THAT ARE LOCKED OUT DURING EMERGENCY POWER OPERATION ARE TO BE STEPPED ON AFTER OTHER LOADS ARE ALLOWED TO RUN.

EXTEND THE FOLLOWING POINTS TO SCADA:

POINT	DESCRIPTION	ORIGIN
DI-1	POWER LOSS	TRANSFER SWITCH
DI-2	READY TO TRANSFER TO EMERGENCY	TRANSFER SWITCH
DI-3	TRANSFER SWITCH IN EMERGENCY POSITION	TRANSFER SWITCH
DI-4	GENERATOR NO 1 ON LINE	GENERATOR SWITCH GEAR
DI-5	GENERATOR NO 2 ON LINE	GENERATOR SWITCH GEAR
DI-6	READY TO TRANSFER TO NORMAL	TRANSFER SWITCH
DI-7	TRANSFER SWITCH IN NORMAL POSITION	TRANSFER SWITCH

PHASE I

WHEN THE SYSTEM IS BEING POWERED FROM THE GENERATORS (TRANSFER SWITCH IS IN EMERGENCY POSITION), LOCKOUT THE FOLLOWING LOADS THRU SCADA:

- EQ PUMP NO 3
- EQ PUMP NO 4
- EQ MIXER NO 1
- EQ MIXER NO 2
- PLANT DRAIN PUMP - LAG PUMP
- DRY CAKE PUMP
- BELT PRESS
- POLYMER MIX PUMP
- POLYMER METERING PUMP
- SLUDGE PUMP

THESE LOADS CAN BE MANUALLY STARTED THROUGH SCADA BY OPERATOR

THE STANDBY GENERATORS SHALL BE SIZED TO START AND RUN THE FOLLOWING LOADS:

STEP	LOAD	DESIGN HP/KVA	STARTER
1	INITIAL LOAD P PH1	190 KVA	
1	INITIAL LOAD P PH2	50 KVA	
HEAD WORKS AREA			
1	MOTORIZED GATES (2)	1/2 (4)	FVR
1	PLUG VALVES (2)	1 (3)	FVR
1	WASHER COMPACTORS (3)	3 (3)	FVNR
1	DRUM SCREENS (3)	2 (3)	FVNR
1	GRIT PUMP	10	FVNR
1	CYCLODRIVE	1/2	FVR
UV AREA			
1	UV TRAINS (2)	100 KVA	N/A
EFFLUENT AREA			
1	AIR COMPRESSOR	20 HP	RVSS
1	TRANSFER PUMP	40 HP	VFD
1	OX GAS COMPRESSOR	5 HP	FVNR
1	REUSE PLANT WATER	40 HP	VFD
1	ELEVATOR	30 HP	RVSS
1	WAS PUMP - PH 1	5 HP	FVNR
1	MBT PERMEATE PUMP - PH 1	2 HP	VFD
1	ANAEROBIC MIXER PH 1	2.7 HP	FVNR
1	PRE-ANOXIC MIXER PH 1	6	FVNR
1	POST ANOXIC ZONE MIXER PH 1	2.7	FVNR
1	MBR PERMEATE PUMPS PH 1 (4)	15 (4)	VFD
1	LIME ALUM SYSTEM	25 KVA	NA
1	PLANT DRAIN PUMP	30 HP	VFD
2	EFFLUENT PUMP	150 HP	VFD
3	EFFLUENT PUMP	150 HP	VFD
4	MBR AERATOR BLOWER - PH 1	100	VFD
4	MBR AIR SCOUR BLOWER PH 1	75	VFD
5	MBR AERATOR BLOWER - PH 1	100	VFD
5	MBR AIR SCOUR BLOWER PH 1	75	VFD
6	DIGESTER BLOWER 1 PH 1	75	VFD
6	DIGESTER BLOWER 2 PH 1	30	VFD
7	RAS PUMP PH 1	60	VFD
7	RAS PUMP PH 1	60	VFD
9	RAS PUMP PH 1	60	VFD
10	EQ PUMP NO 1	70	VFD
11	EQ PUMP NO 2	70	VFD
12	MBT AIR SCOUR BLOWER	25	VFD

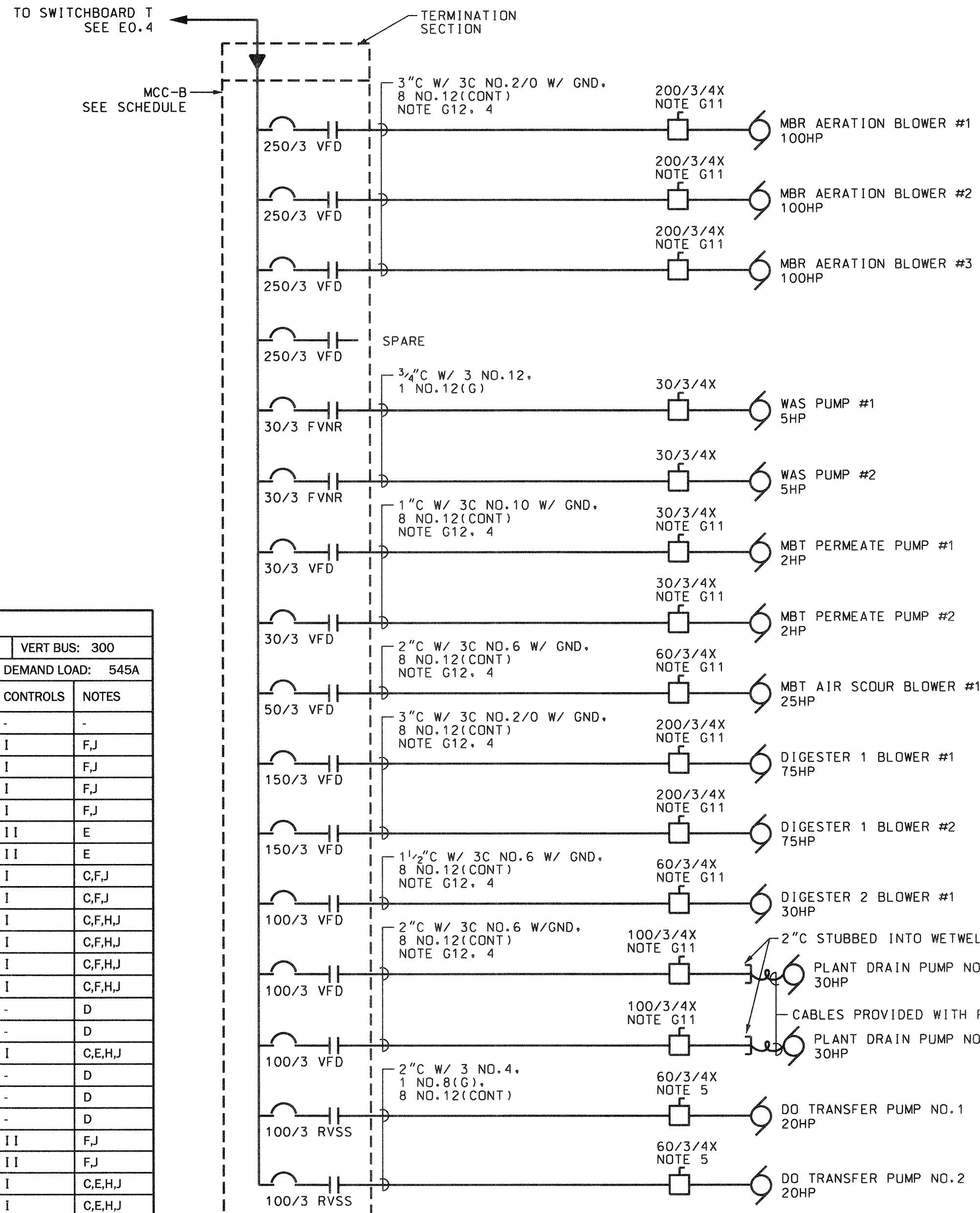
FOR PHASE II, THE SCADA SYSTEM WILL BE MODIFIED NEW STEPS. BELOW IS A LIST OF LOADS REQUIRING POWER FOR PHASE II. ASSUME ALL OF PHASE I LOADS ARE OPERATING.

STEP	LOAD	DESIGN HP/KVA	STARTER
HEAD WORKS AREA			
1	MOTORIZED GATES (1)	1/2 (1)	FVR
1	PLUG VALVES (1)	1 (1)	FVR
1	WASHER COMPACTORS (1)	3 (1)	FVNR
1	DRUM SCREENS (1)	2 (1)	FVNR
UV AREA			
1	UV TRAINS (1)	50 KVA	N/A
1	WAS PUMP - PH 2	5 HP	FVNR
1	MBT PERMEATE PUMP - PH 2	2 HP	VFD
1	ANAEROBIC MIXER PH 2	2.7 HP	FVNR
1	PRE-ANOXIC MIXER PH 2	6	FVNR
1	POST ANOXIC ZONE MIXER PH 2	2.7	FVNR
1	MBR PERMEATE PUMPS PH 2 (4)	15 (4)	VFD
13	EFFLUENT PUMP	150 HP	VFD
14	MBR AERATOR BLOWER - PH 2	100	VFD
14	MBR AIR SCOUR BLOWER - PH 2	75	VFD
15	MBR AERATOR BLOWER - PH 2	100	VFD
15	MBR AIR SCOUR BLOWER PH 2	75	VFD
16	MBR AERATOR BLOWER - PH 2	100	VFD
16	MBR AIR SCOUR BLOWER PH 2	75	VFD
17	DIGESTER BLOWER 1 PH 2	75	VFD
17	DIGESTER BLOWER 2 PH 2	30	VFD
18	RAS PUMP PH 2	60	VFD
19	RAS PUMP PH 2	60	VFD
20	RAS PUMP PH 2	60	VFD
21	EQ PUMP NO 3	70	VFD
22	MBT AIR SCOUR BLOWER	25	VFD

MOTOR CONTROL CENTER		MCC-B - NOTE G	
VOLTAGE: 480V		PHASE: 3	WIRE: 3
BUS BRACING: 100,000 AIC		MAX. OVERALL LENGTH: 19'	
UNIT NO.		EQUIPMENT SERVED	STARTER
HP		CIRCUIT BREAKER	TRIP
SIZE		FRAME	POLES
CONTROLS		NOTES	
BB1	TERMINATION SECTION	-	-
BC1	MBR AERATION BLOWER #1	100 VFD	MCP 250 3 I
BC2	MBR AERATION BLOWER #2	100 VFD	MCP 250 3 I
BD1	MBR AERATION BLOWER #3	100 VFD	MCP 250 3 I
BE1	SPARE	100 VFD	MCP 250 3 I
BF1	WAS PUMP #1	5	1 MCP 30 3 II
BF2	WAS PUMP #2	5	1 MCP 30 3 II
BF3	MBT PERMEATE PUMP #1	2	VFD MCP 30 3 I
BF4	MBT PERMEATE PUMP #2	2	VFD MCP 30 3 I
BG1	MBT AIR SCOUR BLOWER #1	25	VFD MCP 50 3 I
BH1	DIGESTER 1 BLOWER #1	75	VFD MCP 150 3 I
BH2	DIGESTER 1 BLOWER #2	75	VFD MCP 150 3 I
BG2	DIGESTER 2 BLOWER #1	30	VFD MCP 100 3 I
BH2	SPACE	(1)	MCP - 3 -
BI2	SPACE	(1)	MCP - 3 -
BJ1	SPACE	20	VFD MCP 50 3 I
BJ2	SPACE	(1)	MCP - 3 -
BJ3	SPACE	(1)	MCP - 3 -
BJ4	SPACE	(1)	MCP - 3 -
BK1	DO TRANSFER PUMP NO.1	20	RVSS MCP 50 3 II
BK2	DO TRANSFER PUMP NO.2	20	RVSS MCP 50 3 II
BK3	PLANT DRAIN PUMP NO.1	30	VFD MCP 100 3 I
BK4	PLANT DRAIN PUMP NO.2	30	VFD MCP 100 3 I

SEE MCC NOTES ON SHEET E0.5.

SCHEDULE PANELBOARD A									
MAINS		VOLTAGE		PHASE		WIRE		MOUNTING	
150	MB	120/208		3		4		SURFACE	
CIR.	TRIP/POLE	KVA		CONNECTED LOAD		KVA		TRIP/POLE	CIR.
#	#	PH. A	PH. B	PH. C	DESCRIPTION	KVA	PH. A	PH. B	PH. C
1	20/1	1.00			SUMP PUMP	0.40			
3	20/1	0.10			OIL MONITOR	0.9			
5	20/1	0.50			ELEVATOR LIGHTING	0.7			
7	20/1	0.50			FIRE ALARM	1.1			
9	20/1	0.30			ANOXIC FM (3)	0.5			
11	20/1	0.20			PREA DO (2)	0.4			
13	20/1	0.40			MBR FM (4)	0.8			
15	20/1	0.40			MBR TURB (4)	0.7			
17	20/1	0.40			MBR FM (4)	0.6			
19	20/1	0.10			MBR CC FM (1)	0.4			
21	20/1	0.10			WAS FM (1)	0.1			
23	20/1	0.10			TANK LEVEL (1)	0.1			
25	20/1	0.40			DOSING PUMPS (2)	0.4			
27	20/1	0.10			MBT FM (1)	0.1			
29	20/1	0.10			MBT FL FM (1)	0.3			
31	50/2	3.10			HP-1	5.7			
33	-	3.10			HP-1	5.7			
35	30/2	1.70			HP-2	4.3			
37	-	1.70			HP-2	4.3			
39	20/2	1.50			SCADA PANEL	3.0			
41	-	1.50			SCADA PANEL	3.0			
MIN. BREAKER AIC:		25,000 AIC		14.1	11.0	9.4	TOTAL CONNECTED LOAD		34.5
NOTES: * TRIP FREE LOCK TAB, RED		13.8	10.8	9.1	TOTAL DEMAND LOAD		33.7		



SEE SHEET E0.5 FOR NOTES FOR ONE-LINE AND MCC SCHEDULE

1 MCC-B ONE-LINE DIAGRAM
E0.6 NOT TO SCALE

SCHEDULE PANELBOARD C (SECTION 1)									
MAINS		VOLTAGE		PHASE		WIRE		MOUNTING	
250A	MLO	120/208		3		4		SURFACE	
CIR.	TRIP/POLE	KVA		CONNECTED LOAD		KVA		TRIP/POLE	CIR.
#	#	PH. A	PH. B	PH. C	DESCRIPTION	KVA	PH. A	PH. B	PH. C
1	20/1	1.00			FUME HOOD	2.2			
3	20/1	0.40			RECEPTACLES	1.0			
5	20/1	0.60			RECEPTACLES	1.0			
7	20/1/GF	1.20			REFRIGERATOR	2.2			
9	20/1	0.60			RECEPTACLES	1.20			
11	20/1	0.60			RECEPTACLES	1.2			
13	20/1	0.60			RECEPTACLES	1.4			
15	20/1	0.60			RECEPTACLES	1.4			
17	20/1	0.40			RECEPTACLES	1.6			
19	20/1	0.40			RECEPTACLES	0.4			
21	20/1	1.20			RECEPTACLES	1.2			
23	20/1	1.20			RECEPTACLES	1.2			
25	20/1				SPARE	0.0			
27	20/1				SPARE	0.0			
29	20/1				SPARE	0.0			
31	20/2	1.50			SCADA PANEL	1.5			
33	-	1.50			SCADA PANEL	1.5			
35	20/2	1.50			SCADA PANEL	1.5			
37	-	1.50			SCADA PANEL	1.5			
39	20/2	1.50			SCADA PANEL	1.5			
41	-	1.50			SCADA PANEL	1.5			
MIN. BREAKER AIC:		22,000 AIC		9.2	7.8	8.0	TOTAL CONNECTED LOAD		25.0
NOTES:		9.2	7.8	8.0	TOTAL DEMAND LOAD		25.0		

SCHEDULE PANELBOARD C (SECTION 2)									
MAINS		VOLTAGE		PHASE		WIRE		MOUNTING	
250	MLO	120/208		3		4		SURFACE	
CIR.	TRIP/POLE	KVA		CONNECTED LOAD		KVA		TRIP/POLE	CIR.
#	#	PH. A	PH. B	PH. C	DESCRIPTION	KVA	PH. A	PH. B	PH. C
43	20/1	0.40			RECEPTACLE	0.4			
45	20/1				SPARE	0.0			
47	20/1				SPARE	0.0			
49	20/1				SPARE	0.0			
51	20/1				SPARE	0.0			
53	20/1				SPARE	0.0			
55	20/1				SPARE	0.0			
57	20/1				SPARE	0.0			
59	20/1				SPARE	0.0			
61	/1				SPACE				

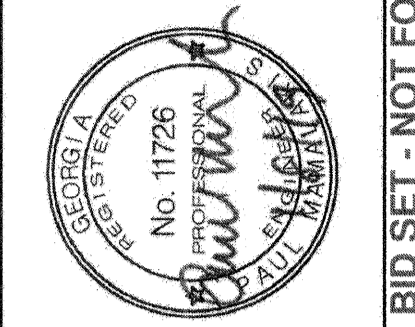
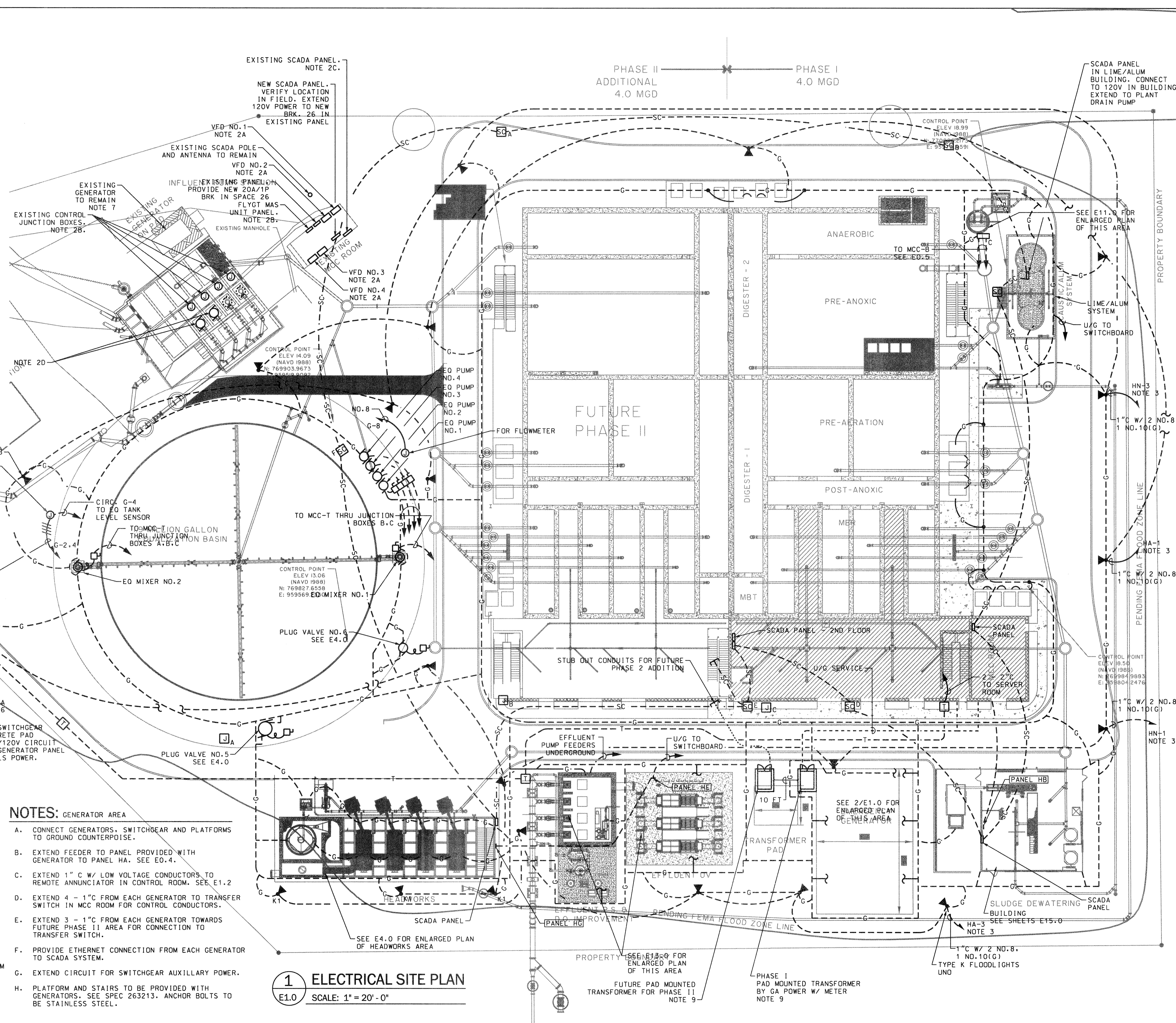
NOTES:

- PROVIDE 4/0 CU COUNTERPOISE GROUND WHERE SHOWN AROUND PLANT (---G---) INSTALL 12" BELOW GRADE MINIMUM. PROVIDE 3/4" X 10 FT COPPERCLAD GROUND ROD 100 FT O.C. CADWELD TO COUNTERPOISE. EXTEND 4/0 CU AND BOND TO METAL EQUIPMENT AND STRUCTURES ON SITE. WHERE GROUNDING CONNECTS EQUIPMENT MOUNTED ON CONCRETE SLABS. EXTEND 1 1/2" PVC UNDER SLAB TO INSTALL COUNTERPOISE.
- MODIFY EXISTING PUMP STATION TO CONVERT TO AN INFLUENT PUMP STATION.
 - FOR EACH OF FOUR STARTERS FOR EXISTING 100 HP SUBMERSIBLE PUMPS. REPLACE EXISTING SQUARE D ALTIVAR 71 VFDs WITH NEW VFDs TO MATCH EXISTING. CONNECT TO EXISTING CONTROLS AS REQUIRED. RETURN EXISTING VFDs TO CITY. SET VFD TO MATCH MOTOR INSTALLED. PROVIDE FACTORY STARTUP.
 - REMOVE EXISTING CONDUITS AND CONTROL CONDUCTORS FROM EXISTING FLYGT MAS UNITS TO EXISTING CONTROL BOXES ON WETWELL STRUCTURE. FOR EACH OF 4 MAS UNITS. EXTEND NEW 1" C WITH 12 C/NO. 14 CONTROL CONDUCTORS AND TERMINATE ON EXISTING TERMINAL BLOCK. LABEL EACH CONDUCTOR AND TERMINAL STRIP. VERIFY OPERATOR WITH PUMPS.
 - EXISTING. EMERSON SCADA PANEL.
 - CONNECT TWO NEW PUMPS TO EXISTING DISCONNECT SWITCHES.
- EXTEND CIRCUIT THRU EXTERIOR LIGHTING CONTROL PANEL IN MAIN ELECTRICAL ROOM. SEE NOTE 1, SHEET E1.3.
- PROVIDE IN GROUND JUNCTION BOXES [] FOR TELEPHONE/DATA SERVICE BOXES TO BE QUAZITE PC 17" X 30" X 24" DEEP WITH "TELEPHONE" LOGO. SEE 4/E0.3. TELEPHONE CONDUITS (---T---) TO BE 3 - 2" PVC W/ PULL STRINGS.
- PROVIDE U/G SCADA FIBER LOOP (---SC---) WITH HANDHOLES [] AS SHOWN FOR SCADA SYSTEM. PROVIDE LONG SWEEP ELBOWS. COORDINATE EXACT LAYOUT IN FIELD. SEE RISER DIAGRAM 1/E0.2.
- SEE ONE-LINE DIAGRAMS SHEETS E0.4 AND E0.5 AND EXTEND CIRCUITS THROUGH JUNCTION BOXES. JUNCTION BOXES [] A, B AND C SHALL BE QUAZITE PG STYLE. 24" DEEP. OPEN BOTTOM WITH "ELECTRIC" LOGO. A TO BE 36" X 48". B & C TO BE 36" X 72". SEE 4/E0.3.
- REFER TO SPEC 263213 FOR MODIFICATIONS TO EXISTING GENSET. EXTEND ETHERNET CONNECTION TO NEW SCADA PANEL.
- AIM ONE LIGHT TOWARDS MIXER AND SECOND LIGHT TOWARDS MANUAL GATE.
- PAD MOUNTED TRANSFORMER AND CONCRETE PAD BY GA POWER. PROVIDE 10 FT MIN. CLEARANCE FROM ALL EQUIPMENT AND 10 FT BETWEEN TRANSFORMERS. PROVIDE METERING CONDUITS TO TOTALIZE METERS. PADS TO BE 92"W X 112"D TYP.

- NOTES: GENERATOR AREA**
- CONNECT GENERATORS, SWITCHGEAR AND PLATFORMS TO GROUND COUNTERPOISE.
 - EXTEND FEEDER TO PANEL PROVIDED WITH GENERATOR TO PANEL HA. SEE E0.4.
 - EXTEND 1" C W/ LOW VOLTAGE CONDUCTORS TO REMOTE ANNUNCIATOR IN CONTROL ROOM. SEE E1.2.
 - EXTEND 4 - 1" C FROM EACH GENERATOR TO TRANSFER SWITCH IN MCC ROOM FOR CONTROL CONDUCTORS.
 - EXTEND 3 - 1" C FROM EACH GENERATOR TOWARDS FUTURE PHASE II AREA FOR CONNECTION TO TRANSFER SWITCH.
 - PROVIDE ETHERNET CONNECTION FROM EACH GENERATOR TO SCADA SYSTEM.
 - EXTEND CIRCUIT FOR SWITCHGEAR AUXILLARY POWER.
 - PLATFORM AND STAIRS TO BE PROVIDED WITH GENERATORS. SEE SPEC 263213. ANCHOR BOLTS TO BE STAINLESS STEEL.

2 ENLARGED PLAN - GENERATOR AREA
E1.0 SCALE: 1" = 10'-0"

1 ELECTRICAL SITE PLAN
E1.0 SCALE: 1" = 20'-0"



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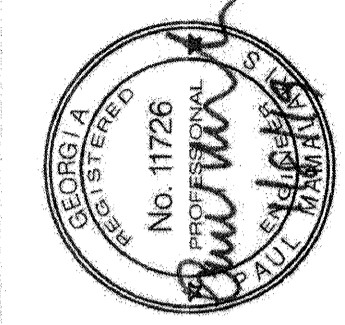
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TRAVIS FIELD WATER RECLAMATION FACILITY
ELECTRICAL SITE PLAN

JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2009
DRAWN:	LC
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	1" = 20'-0"

E1.0

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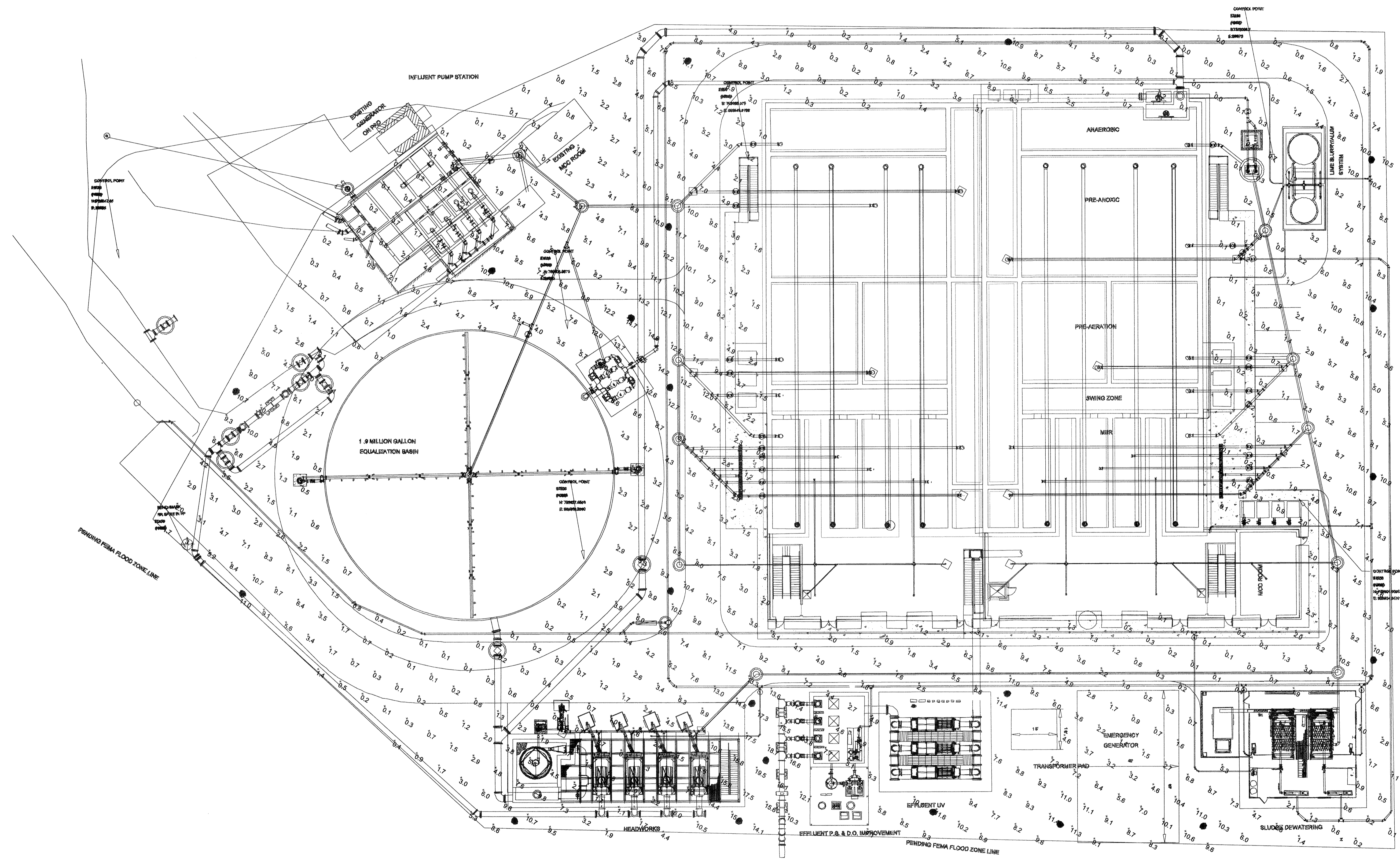
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TRAVIS FIELD WATER RECLAMATION FACILITY
 SITE LIGHTING INFORMATION

JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
DRAWN:	LC
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	1" = 20'-0"

E1.0A



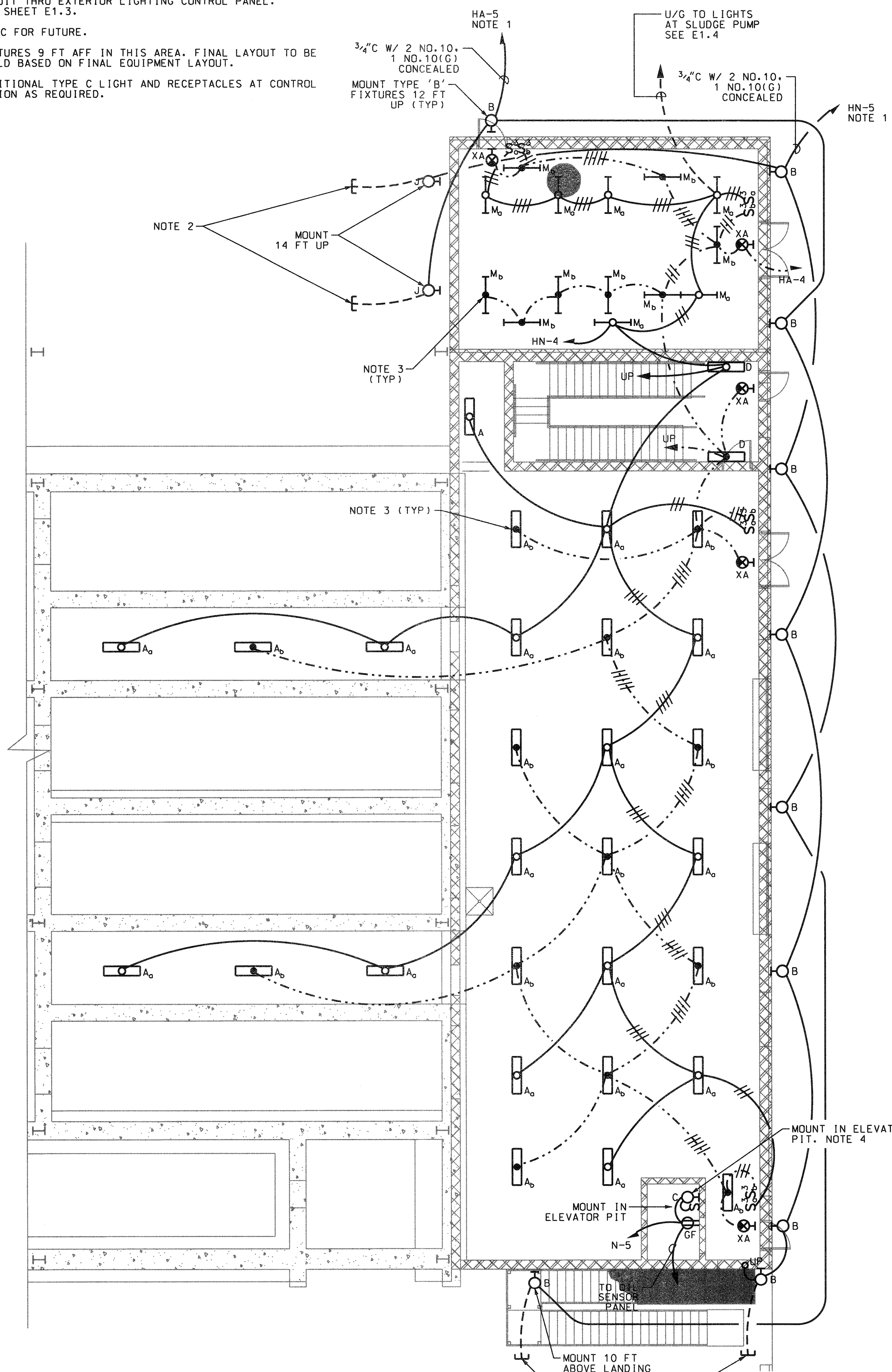
1 SITE LIGHTING INFORMATION
 E1.0A SCALE: 1" = 20'-0"

HORIZONTAL FOOTCANDLES ARE SHOWN FOR INFORMATION ONLY. PROVIDE LIGHTING INFORMATION FOR FLOODLIGHTS PROVIDED. SEE PLANS FOR SHELTER LIGHTING AND LIGHTING ON TOP OF MBR TANKS.

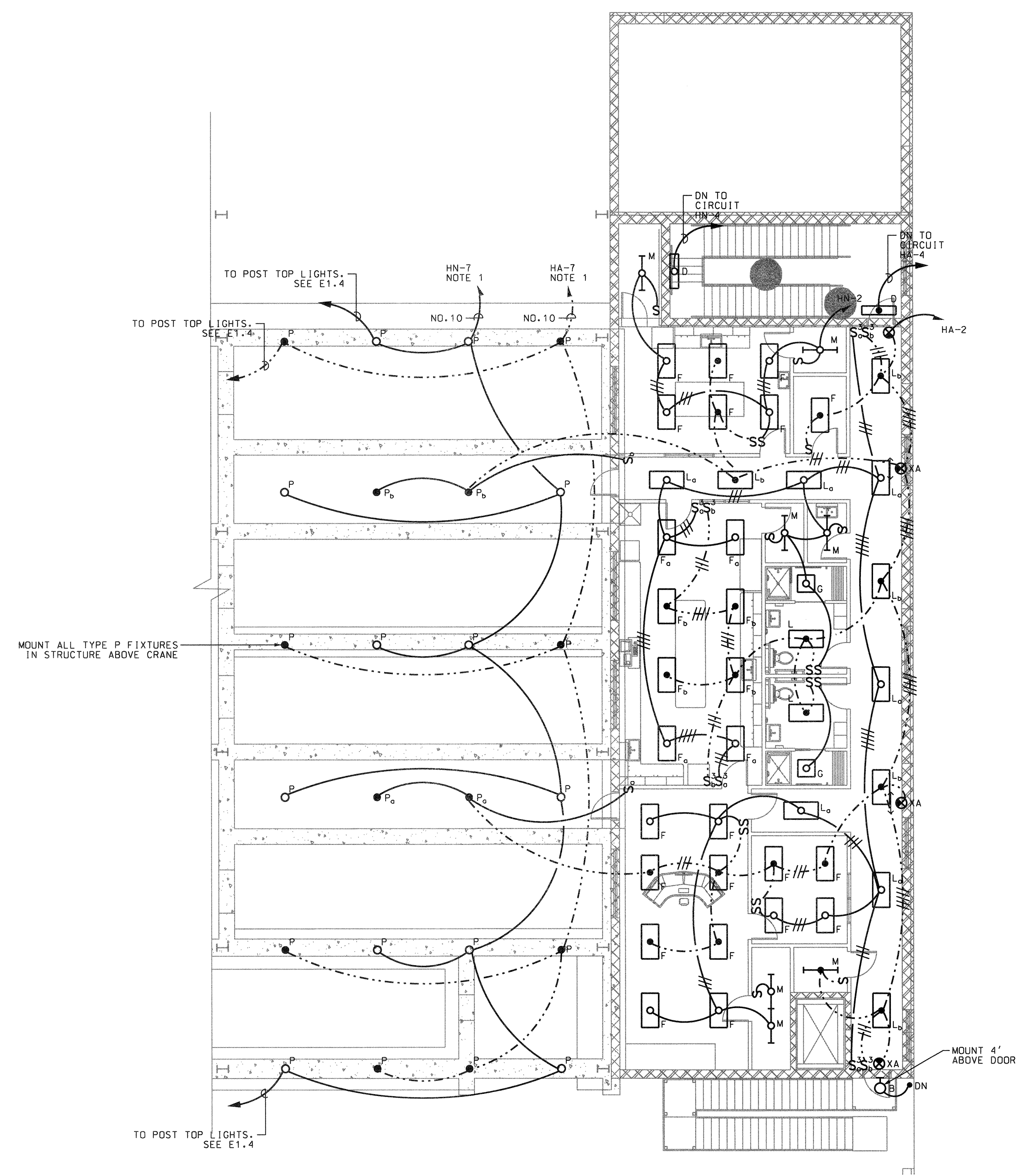
15-APR-2015
 11:45 AM
 T.HUTTON

NOTES:

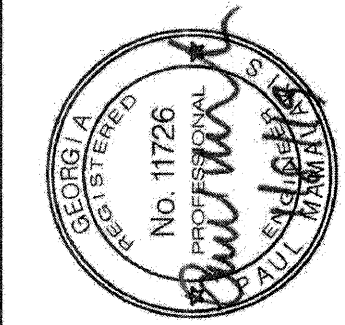
1. EXTEND CIRCUIT THRU EXTERIOR LIGHTING CONTROL PANEL. SEE NOTE 1, SHEET E1.3.
2. STUB OUT 3/4" C FOR FUTURE.
3. PENDANT FIXTURES 9 FT AFF IN THIS AREA. FINAL LAYOUT TO BE MADE IN FIELD BASED ON FINAL EQUIPMENT LAYOUT.
4. PROVIDE ADDITIONAL TYPE C LIGHT AND RECEPTACLES AT CONTROL PANEL LOCATION AS REQUIRED.



1 FIRST FLOOR LIGHTING PLAN
E1.1 SCALE: 1/8" = 1'-0"



2 SECOND FLOOR LIGHTING PLAN
E1.1 SCALE: 1/8" = 1'-0"



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TRAVIS FIELD WATER RECLAMATION FACILITY
LIGHTING PLANS

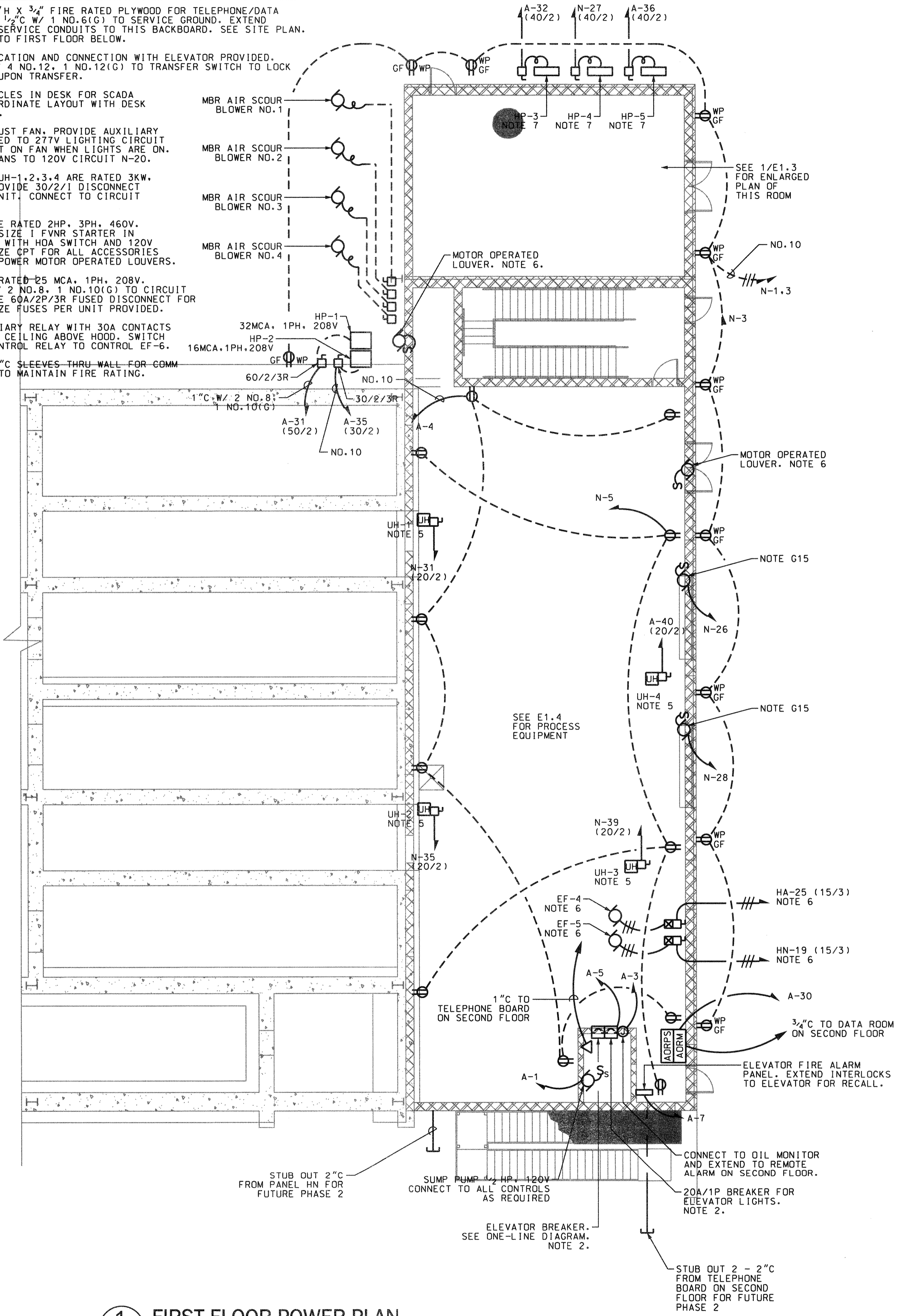
JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
DRAWN:	LC
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	1/8" = 1'-0"

E1.1

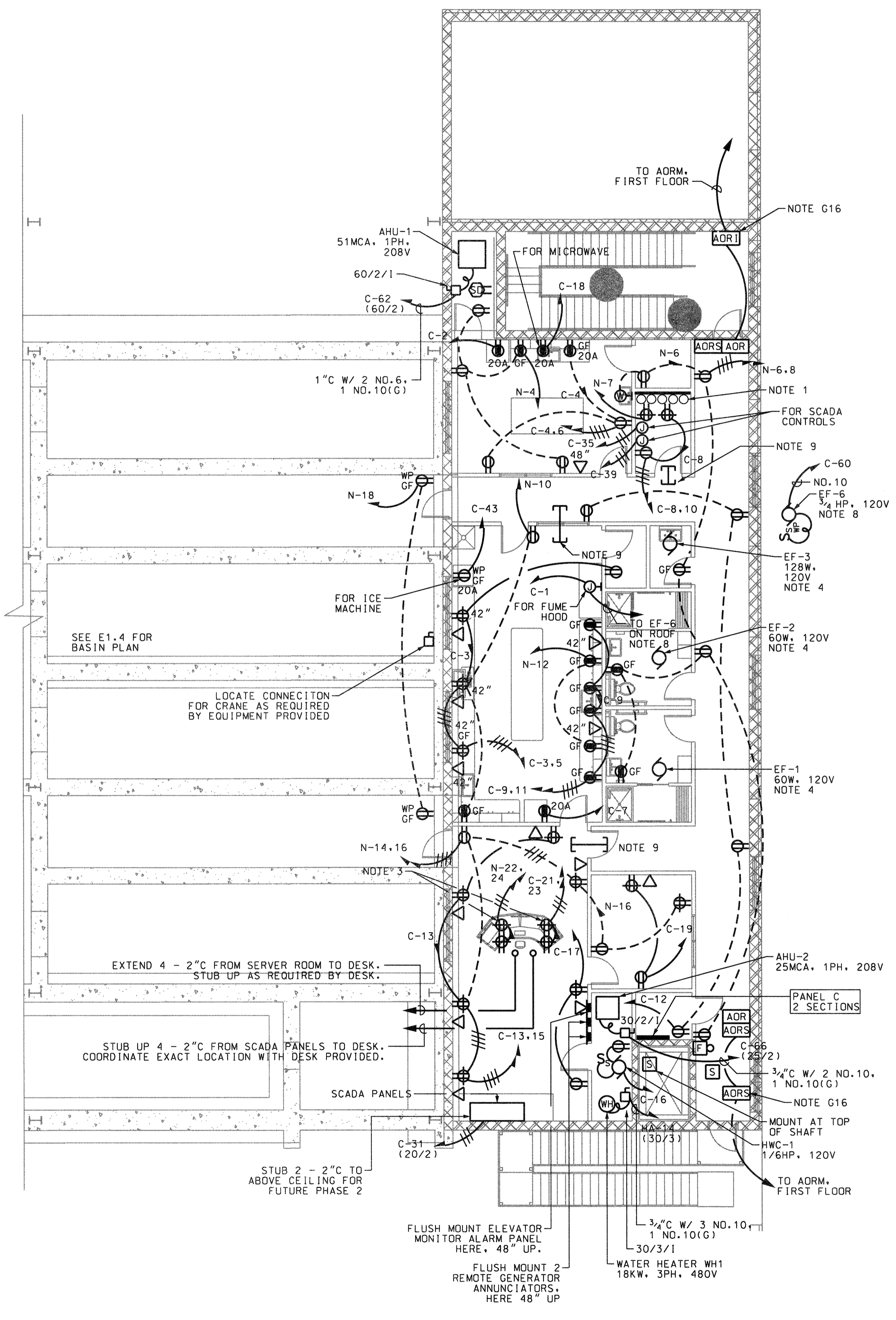
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NOTES:

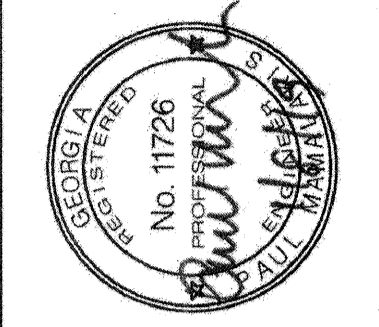
1. MOUNT 4'W X 8'H X 3/4" FIRE RATED PLYWOOD FOR TELEPHONE/DATA BOARD. EXTEND 1/2"C W/ 1 NO.6(G) TO SERVICE GROUND. EXTEND TELECOM DATA SERVICE CONDUITS TO THIS BACKBOARD. SEE SITE PLAN. STUD 2 - 2"C TO FIRST FLOOR BELOW.
2. COORDINATE LOCATION AND CONNECTION WITH ELEVATOR PROVIDED. EXTEND 1/2"C W/ 4 NO.12, 1 NO.12(G) TO TRANSFER SWITCH TO LOCK OUT ELEVATOR UPON TRANSFER.
3. MOUNT RECEPTACLES IN DESK FOR SCADA MONITORS. COORDINATE LAYOUT WITH DESK AND EQUIPMENT.
4. FOR EACH EXHAUST FAN, PROVIDE AUXILIARY RELAY CONNECTED TO 277V LIGHTING CIRCUIT IN ROOM TO CUT ON FAN WHEN LIGHTS ARE ON. CONNECT ALL FANS TO 120V CIRCUIT N-20.
5. UNIT HEATERS UH-1,2,3,4 ARE RATED 3KW, 1PH, 208V. PROVIDE 30/2/1 DISCONNECT ADJACENT TO UNIT. CONNECT TO CIRCUIT SHOWN.
6. EF-4 AND 5 ARE RATED 2HP, 3PH, 460V. PROVIDE NEMA SIZE I FVNR STARTER IN NEMA 4X ENCL. WITH HDA SWITCH AND 120V FUSED CPT. SIZE CPT FOR ALL ACCESSORIES INCLUDING TO POWER MOTOR OPERATED LOUVERS.
7. HP-3,4,5 ARE RATED 25 MCA, 1PH, 208V. EXTEND 3/4"C W/ 2 NO.8, 1 NO.10(G) TO CIRCUIT SHOWN. PROVIDE 60/2/3R FUSED DISCONNECT FOR EACH UNIT. SIZE FUSES PER UNIT PROVIDED.
8. PROVIDE AUXILIARY RELAY WITH 30A CONTACTS MOUNTED ABOVE CEILING ABOVE HOOD. SWITCH IN HOOD TO CONTROL RELAY TO CONTROL EF-6.
9. PROVIDE 2 - 4"C SLEEVES THRU WALL FOR GOMM CABLES. SEAL TO MAINTAIN FIRE RATING.



1 FIRST FLOOR POWER PLAN
E1.2 SCALE: 1/8" = 1'-0"



2 SECOND FLOOR POWER PLAN
E1.2 SCALE: 1/8" = 1'-0"



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TRAVIS FIELD WATER RECLAMATION FACILITY
POWER PLANS

JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
DRAWN:	LC
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	1/8" = 1'-0"

E1.2

BID SET - NOT FOR CONSTRUCTION

NOTES:

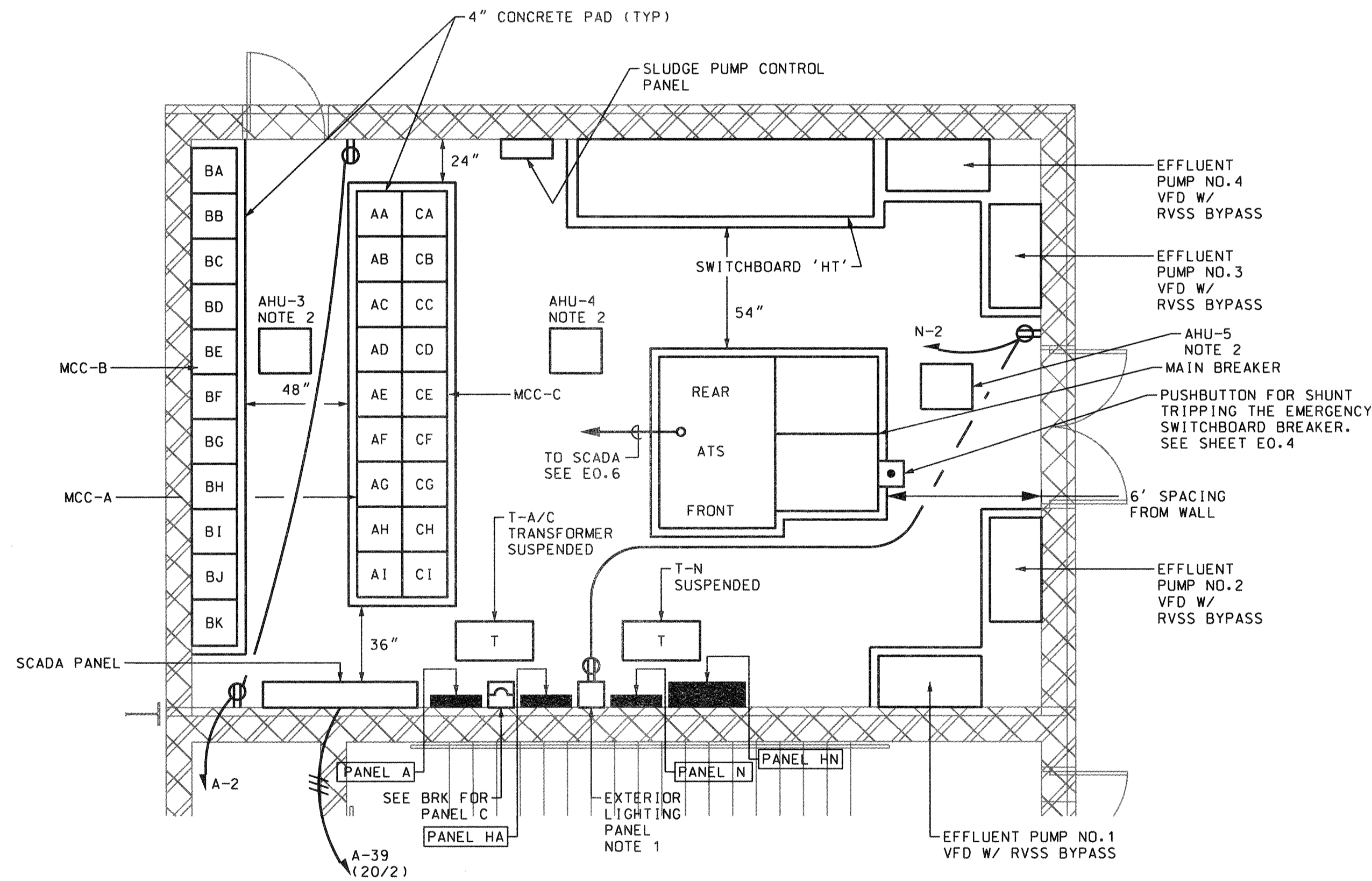
- PROVIDE EXTERIOR LIGHTING CONTROL PANEL IN NEMA 1 ENCLOSURE WITH HINGED COVER. PROVIDE ELECTRONIC ASTRONOMICAL TIME CLOCK WITH BATTERY BACKUP INSIDE SIMILAR TO PARACON EC725T/277V. EACH CHANNEL TO CONTROL EOE# CONTACTOR AS NOTED BELOW. PROVIDE HOA SWITCH FOR EACH CONTACTOR IN COVER OF PANEL. CONNECT TIME CLOCK TO AUTO POSITION. LABEL HOA SWITCHES.

CONTACTOR A	
CONTACT	CIRCUIT
A-1	HA-1
A-2	HA-3
A-3	HA-5
A-4	HA-7
A-5	SPARE
A-6	SPARE

CONTACTOR B	
CONTACT	CIRCUIT
B-1	HN-1
B-2	HN-3
B-3	HN-5
B-4	HN-7
B-5	SPARE
B-6	SPARE

CONNECT TO SCADA SYSTEM FOR MASTER 'OFF' CONTROL FOR BOTH SETS OF CONTACTORS.

- EXTEND POWER TO INTERIOR AHU-3,4,5 FROM EXTERIOR HP UNIT AS REQUIRED. DO NOT LOCATE UNITS ABOVE ELECTRICAL EQUIPMENT.
- PROVIDE NEC REQUIRED CLEARANCES BASED ON EQUIPMENT PROVIDED. CONTRACTOR TO PROVIDE LAYOUT FOR REVIEW PRIOR TO ROUGH-IN.

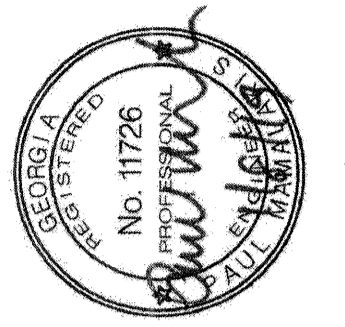


1 MAIN ELECTRICAL ROOM - ENLARGED PLAN
E1.3 SCALE: 1/4" = 1'-0"

SCHEDULE PANELBOARD HA											
MAINS		VOLTAGE		PHASE		WIRE		MOUNTING			
225A		480Y/277		3		4		SURFACE			
CIR.	TRIP/	CONNECTED LOAD			KVA			TRIP/	CIR.		
#	POLE	KVA	DESCRIPTION	PH. A	PH. B	PH. C	DESCRIPTION	KVA	POLE	#	
1	20/1	2.20	EXTERIOR LIGHTING	3.2			LIGHTING	1.00	20/1	2	
3	20/1	1.80	EXTERIOR LIGHTING		3.0		LIGHTING	1.20	20/1	4	
5	20/1	0.40	EXTERIOR LIGHTING			0.4	SPARE		20/1	6	
7	20/1	0.80	EXTERIOR LIGHTING	0.8			SPARE		20/1	8	
9	20/1		SPARE		0.0		SPARE		20/1	10	
11	20/1		SPARE			0.0	SPARE		20/1	12	
13	60/2	7.50	GENERATOR NO. 1 PANEL	13.5			WATER HEATER	6.00	30/3	14	
15	-	7.50	GENERATOR NO. 1 PANEL		13.5			6.00	-	16	
17	60/2	7.50	GENERATOR NO. 2 PANEL			13.5		6.00	-	18	
19	-	7.50	GENERATOR NO. 2 PANEL	8.1			ANOXIC VALVES	0.60	20/3	20	
21	60/2		SPARE		0.6			0.60	-	22	
23	-					0.6		0.60	-	24	
25	15/3	0.70	EF-4	0.7			SPACE		/1	26	
27	-	0.80			0.8		SPACE		/1	28	
29	-	0.70				0.7	SPACE		/1	30	
31	/1		SPACE	0.0			SPACE		/1	32	
33	/1		SPACE		0.0		SPACE		/1	34	
35	/1		SPACE			0.0	SPACE		/1	36	
37	/1		SPACE	0.0			SPACE		/1	38	
39	/1		SPACE		0.0		SPACE		/1	40	
41	/1		SPACE			0.0	SPACE		/1	42	
MIN. BREAKER AIC:		65,000 AIC		26.3	17.9	15.2	TOTAL CONNECTED LOAD	59.4			
NOTES:				26.3	17.9	15.2	TOTAL DEMAND LOAD	59.4			

SCHEDULE PANELBOARD HN											
MAINS		VOLTAGE		PHASE		WIRE		MOUNTING			
400A		480Y/277		3		4		SURFACE			
CIR.	TRIP/	CONNECTED LOAD			KVA			TRIP/	CIR.		
#	POLE	KVA	DESCRIPTION	PH. A	PH. B	PH. C	DESCRIPTION	KVA	POLE	#	
1	20/1	2.20	EXTERIOR FLOODLIGHTS	3.8			LIGHTING	1.80	20/1	2	
3	20/1	1.80	EXTERIOR FLOODLIGHTS		3.2		LIGHTING	1.40	20/1	4	
5	20/1	0.40	EXTERIOR LIGHTING			0.4	SPARE		20/1	6	
7	20/1	1.40	EXTERIOR LIGHTING	1.4			SPARE		20/1	8	
9	20/1		SPARE		0.0		SPARE		20/1	10	
11	20/1		SPARE			0.0	SPARE		20/1	12	
13	20/1		SPARE	0.0			SPARE		20/1	14	
15	20/1		SPARE		0.0		SPARE		20/1	16	
17	20/1		SPARE			0.0	SPARE		20/1	18	
19	15/3	0.70	EF-5	15.7			PANEL N	15.00	60/3	20	
21	-	0.70			15.7			15.00	-	22	
23	-	0.70				15.7		15.00	-	24	
25	100/3	20.00	FUTURE PANEL HNN	20.0			SPACE		/3	26	
27	-	20.00	FUTURE PANEL HNN		20.0				-	28	
29	-	20.00	FUTURE PANEL HNN			20.0			-	30	
31	20/2		PANEL HRAS	0.0			SPACE		/3	32	
33	-		PANEL HRAS		0.0				-	34	
35	20/2		PANEL FDH			0.0			-	36	
37	-		PANEL FDH	0.0			SPACE		/3	38	
39	/2		SPACE		0.0				-	40	
41	-					0.0			-	42	
MIN. BREAKER AIC:		65,000 AIC		40.9	38.9	36.1	TOTAL CONNECTED LOAD	115.9			
NOTES:				40.9	38.9	36.1	TOTAL DEMAND LOAD	115.9			

SCHEDULE PANELBOARD N											
MAINS		VOLTAGE		PHASE		WIRE		MOUNTING			
150A		208/120		3		4		SURFACE			
CIR.	TRIP/	CONNECTED LOAD			KVA			TRIP/	CIR.		
#	POLE	KVA	DESCRIPTION	PH. A	PH. B	PH. C	DESCRIPTION	KVA	POLE	#	
1	20/1	0.80	RECEPTACLES	1.2			RECEPTACLES	0.40	20/1	2	
3	20/1	0.90	RECEPTACLES		1.5		RECEPTACLES	0.60	20/1	4	
5	20/1	1.10	RECEPTACLES			1.9	RECEPTACLES	0.80	20/1	6	
7	20/1	1.00	RECEPTACLES	2.1			RECEPTACLES	1.10	20/1	8	
9	20/1	0.80	EXTERIOR RECEPTACLES		1.4		RECEPTACLES	0.60	20/1	10	
11	20/1	0.90	EXTERIOR RECEPTACLES			1.5	RECEPTACLES	0.60	20/1	12	
13	20/1		SPARE	0.6			RECEPTACLES	0.60	20/1	14	
15	20/1		SPARE		0.4		RECEPTACLES	0.40	20/1	16	
17	20/1		SPARE			0.4	RECEPTACLES	0.40	20/1	18	
19	20/1		SPARE	0.3			FANS	0.30	20/1	20	
21	20/1		SPARE		1.2		RECEPTACLES - DESK	1.20	20/1	22	
23	20/1		SPARE			1.2	RECEPTACLES - DESK	1.20	20/1	24	
25	20/1		SPARE	1.0			ROLL UP DOOR	1.00	20/1	26	
27	40/2	2.60	HP-4		3.6		ROLL UP DOOR	1.00	20/1	28	
29	-	2.60	HP-4			2.6	SPARE		20/1	30	
31	20/2	1.50	UH-1	1.5			SPARE		20/1	32	
33	-	1.50	UH-1		1.5		SPARE		20/1	34	
35	20/2	1.50	UH-2			1.5	SPARE		20/1	36	
37	-	1.50	UH-2	1.5			SPARE		20/1	38	
39	20/2	1.50	UH-3		1.5		SPARE		20/1	40	
41	-	1.50	UH-3			1.5	SPARE		20/1	42	
MIN. BREAKER AIC:		25,000 AIC		8.2	11.1	10.6	TOTAL CONNECTED LOAD	29.9			
NOTES:				8.2	11.1	10.6	TOTAL DEMAND LOAD	29.9			



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TRAVIS FIELD WATER RECLAMATION FACILITY
 MAIN ELECTRICAL ROOM - ENLARGED PLAN

JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
DRAWN:	L.C.
DESIGNED:	PM
REVIEWED:	PM
APPROVED:	PM
SCALE:	1/4" = 1'-0"

E1.3

BID SET - NOT FOR CONSTRUCTION

NOTES:

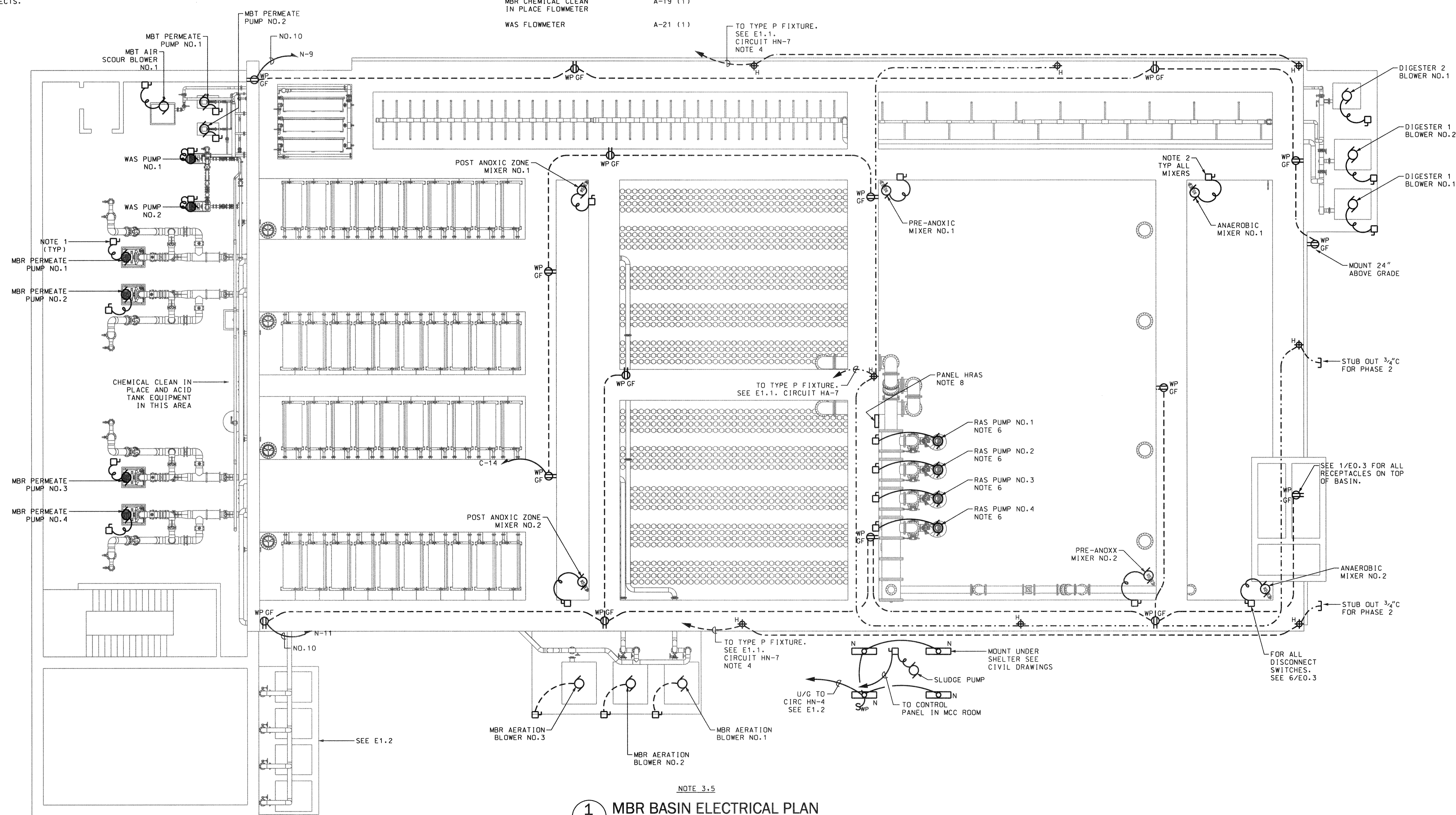
1. MOUNT DISCONNECTS ON FREE STANDING RACK. CONNECT TO MOTOR WITH SELTITE FLEX. LOCATE SWITCH TO MAINTAIN ALL CLEARANCES AND ACCESS TO EQUIPMENT.
 2. PROVIDE NON-METALLIC STRAIN RELIEF AS SPECIFIED FOR MIXER CABLES PROVIDED.
 3. ALL CONDUITS THAT EXTEND TO TOP OF BASINS SHALL BE RUN INTO GROUND FLOOR EQUIPMENT ROOM TO WIRING TROUGH. EXIT TROUGH TO EXTEND CONDUIT TO MCC OR PANEL OUT OF TOP OF TROUGH TO PREVENT CONDENSATION FROM ENTERING DISTRIBUTION EQUIPMENT.
 4. CIRCUIT TO BE CONTROLLED THRU EXTERIOR LIGHTING CONTACTORS. SEE E1.3.
 5. PROVIDE POWER FOR FIELD DEVICES AS REQUIRED. COORDINATE LOCATIONS WITH MBR EQUIPMENT VENDOR.
- FOR EACH 480V VALVE, PROVIDE 30/3/4X DISCONNECT, FOR EACH 120V VALVE AND DOSING PUMPS AND MIXER, PROVIDE 30/1/4X DISCONNECTS.

LOAD	CIRCUIT
ANOXIC MOTORIZED VALVES (3) 480V, 3PH	HA-20 (3)
ANOXIC FLOWMETERS (3)	A-9 (3)
PRE-AERATION BASIN DO MTR (2)	A-11 (2)
MRB BASIN MOTORIZED VALVES 2 PER BASIN, 4 BASINS - 120V EA	A-8(8)
8 TOTAL	

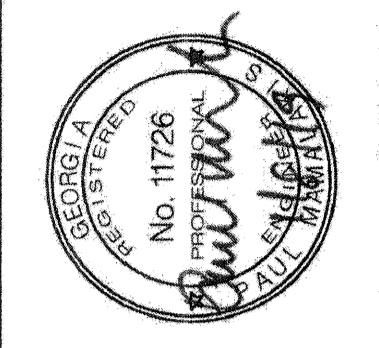
LOAD	CIRCUIT
MBR PERMEATE MOTORIZED VALVES (4) 120V	A-10,12 - NOTE 7
MBR PERMEATE FLOWMETERS (4)	A-13 (4)
MBR TURBIDITY MTR (4)	A-15 (4)
MBR AERATION SYSTEM FLOWMETERS (4)	A-17 (4)
MBR AIR FLOWMETERS (4)	A-14(4)
CIP(2) AND WAS FLOWMETER	A-16(3)
MBR CHEMICAL CLEAN-IN PLACE AND WAS MOTORIZED VALVE(2) 120V	A-18(2)
MBR CHEMICAL CLEAN IN PLACE FLOWMETER	A-19 (1)
WAS FLOWMETER	A-21 (1)

LOAD	CIRCUIT
CHLORINE TANK LEVEL SENSOR	A-23 (1)
CHLORINE TANK DOSING PUMPS (2)	A-25 (2)
MEMBRANE THICKENER, RESCREEN MOTORIZED VALVES (2) 120V	A-20(3)
MBT PERMEATE FLOWMETER	A-27 (1)
MBT AIR SCOUR BLOWER FLOWMETER	A-29 (1)
ACID TANK MIXER	A-6

6. PROVIDE CIRCUIT AND DISCONNECT FOR 4 MOTORIZED VALVES AT EACH RAS PUMP. SEE NOTE 5.
7. EACH CIRCUIT SHALL POWER 2 VALVES EACH. PROVIDE TWO 1500VA, 120 UPS (ONE FOR EACH CIRCUIT) MOUNTED ABOVE SCADA PANEL TO PROVIDE UPS POWER TO 4 VALVES.
8. PROVIDE FESTOON CABLE SYSTEM AS REQUIRED WITH STAINLESS STEEL HARDWARE FOR RAS HOIST, RATED 1HP, 1PH, 230V.



1 MBR BASIN ELECTRICAL PLAN
 E1.4 SCALE: 1/8" = 1'-0"



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TRAVIS FIELD WATER RECLAMATION FACILITY
 MBR BASIN ELECTRICAL PLAN

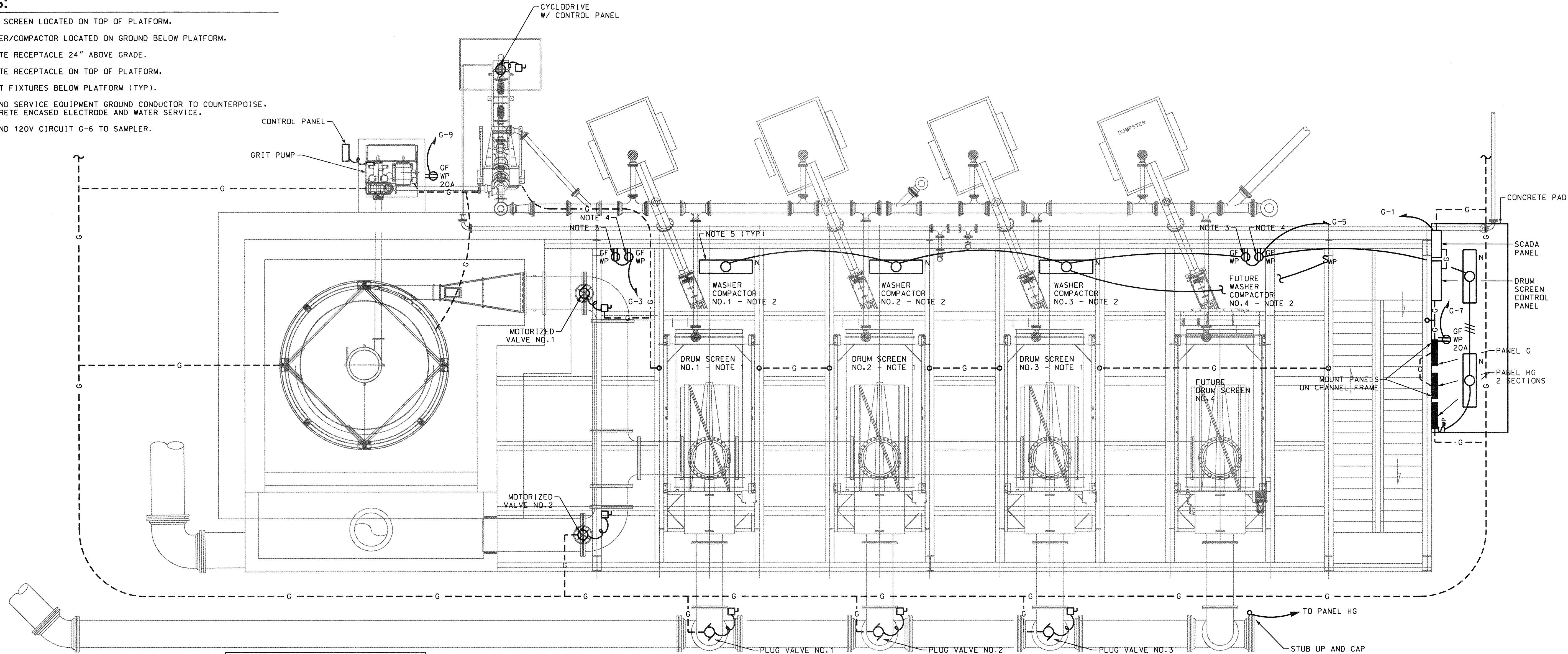
JOB NO:	J-26963.0000
DATE:	JANUARY 15, 2019
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SCALE:	1/8" = 1'-0"

E1.4

BID SET - NOT FOR CONSTRUCTION

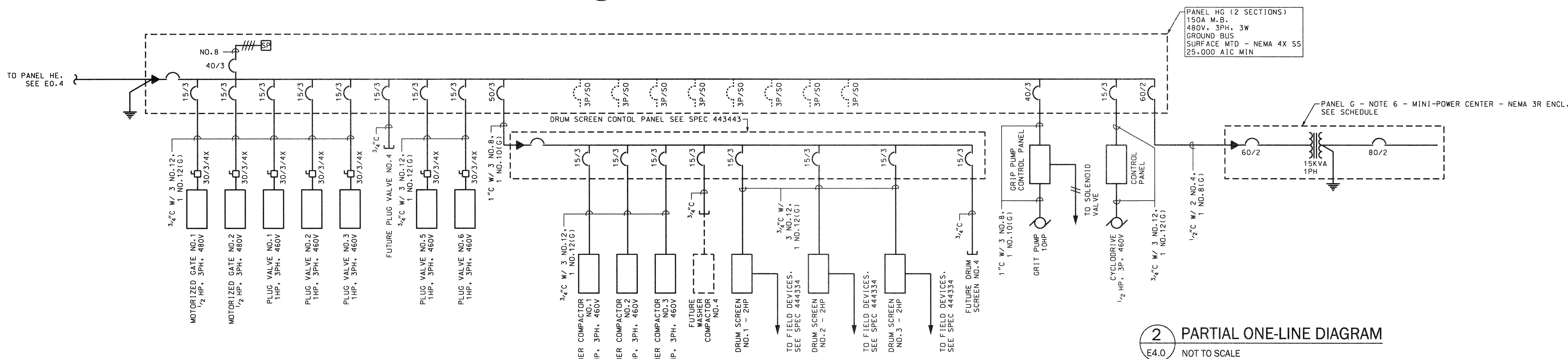
NOTES:

1. DRUM SCREEN LOCATED ON TOP OF PLATFORM.
2. WASHER/COMPACTOR LOCATED ON GROUND BELOW PLATFORM.
3. LOCATE RECEPTACLE 24" ABOVE GRADE.
4. LOCATE RECEPTACLE ON TOP OF PLATFORM.
5. MOUNT FIXTURES BELOW PLATFORM (TYP).
6. EXTEND SERVICE EQUIPMENT GROUND CONDUCTOR TO COUNTERPOISE. CONCRETE ENCASED ELECTRODE AND WATER SERVICE.
7. EXTEND 120V CIRCUIT G-6 TO SAMPLER.

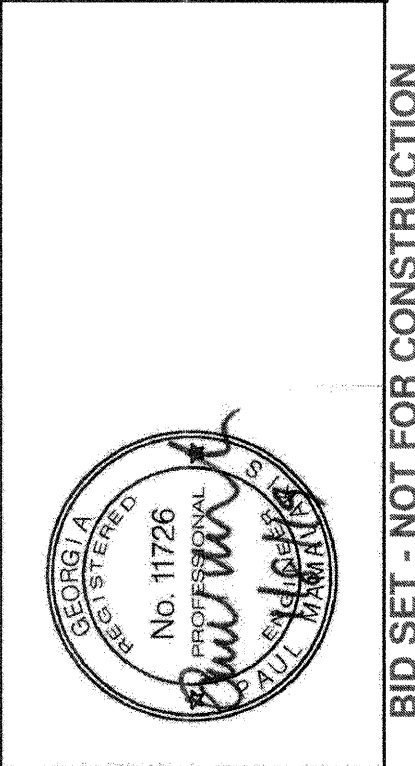


ALL CONDUITS, BOXES, AND SUPPORTS IN THIS AREA SHALL BE STAINLESS STEEL.

1 HEADWORKS ELECTRICAL PLAN
E4.0 SCALE: 1/4" = 1'-0"



2 PARTIAL ONE-LINE DIAGRAM
E4.0 NOT TO SCALE



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TRAVIS FIELD WATER RECLAMATION FACILITY
PLANT HEADWORK ELECTRICAL PLAN

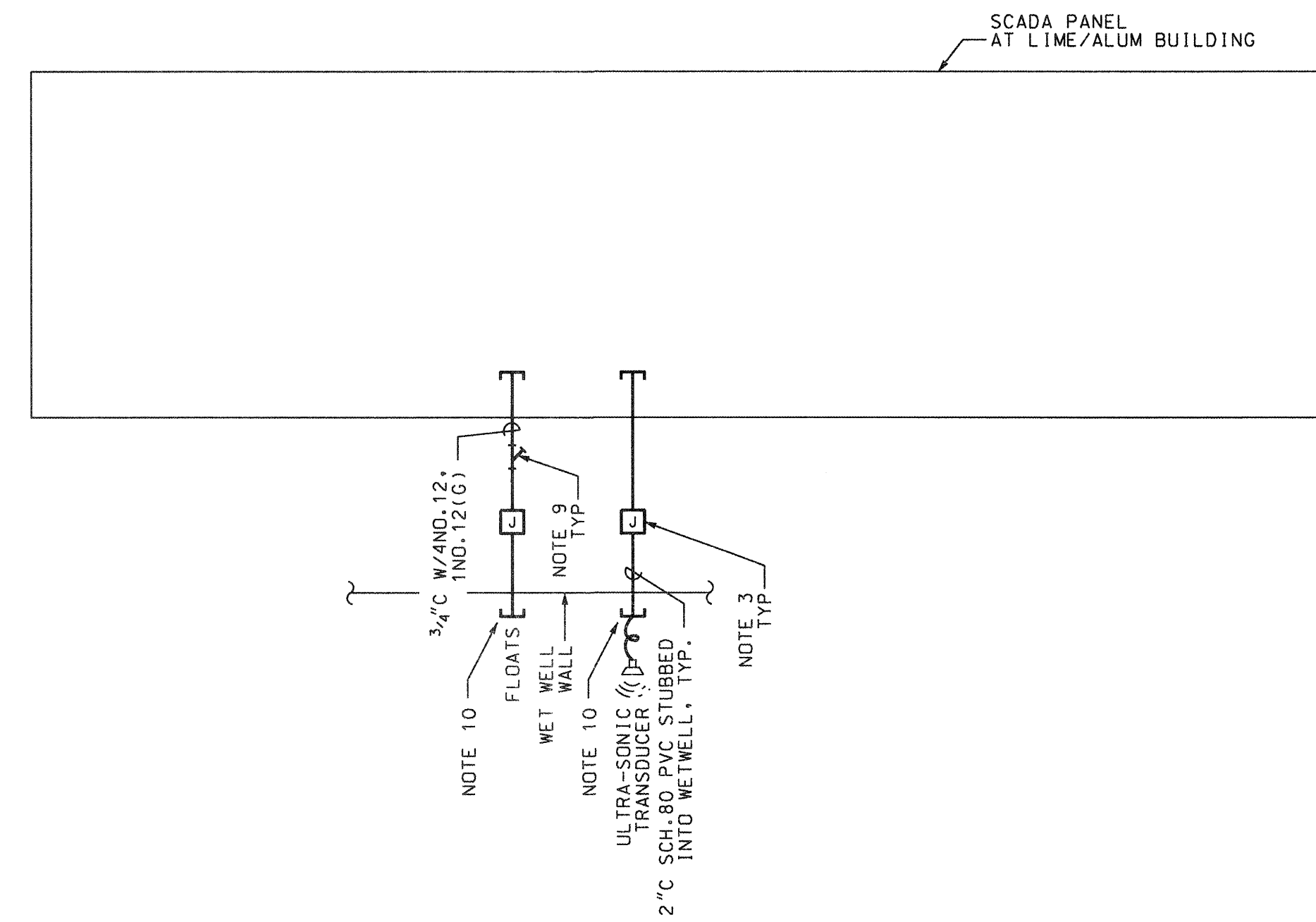
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SCALE:	1/4" = 1'-0"

E4.0

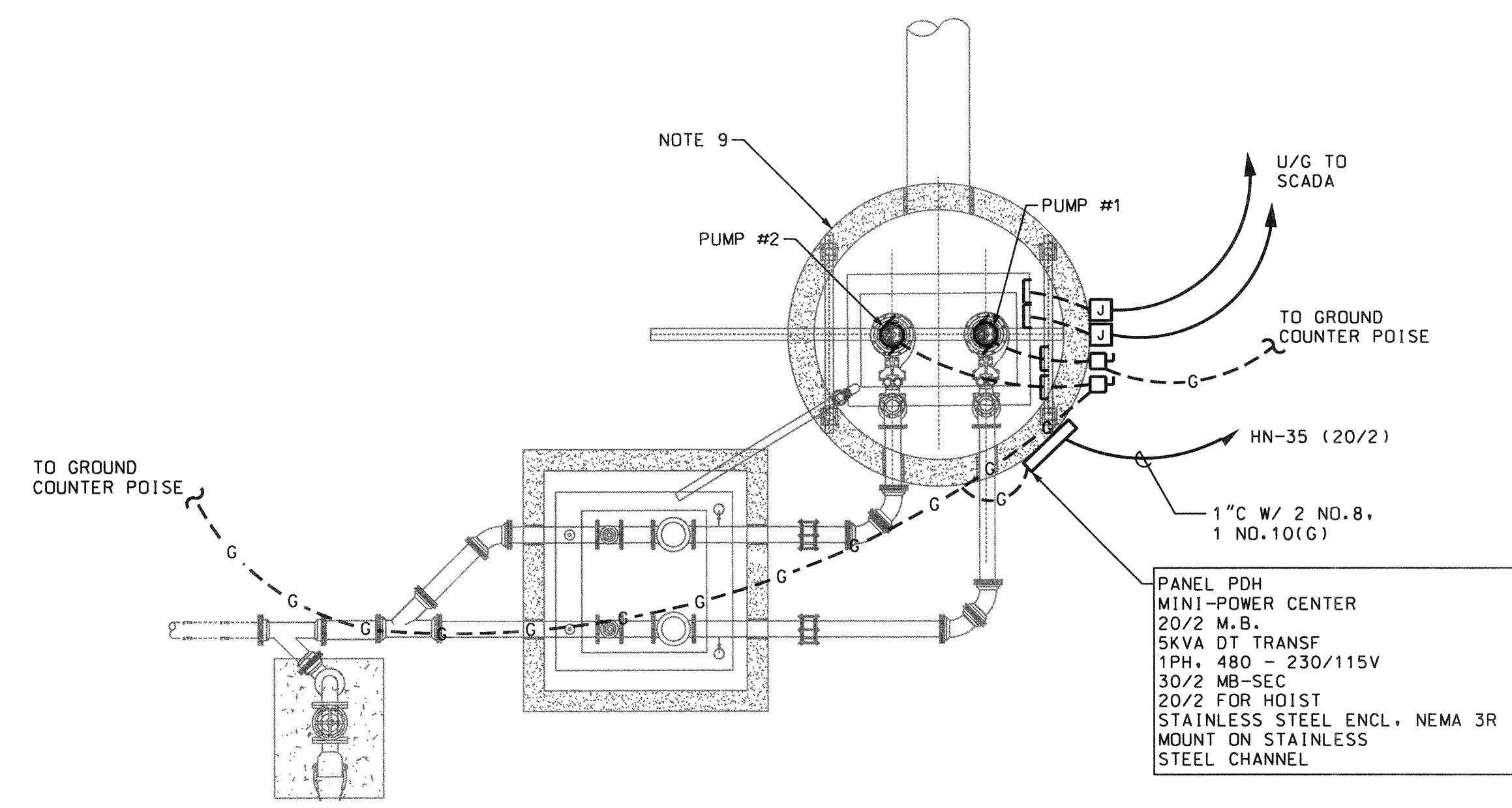
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NOTES: PLANT DRAIN PS ONE-LINE DIAGRAM

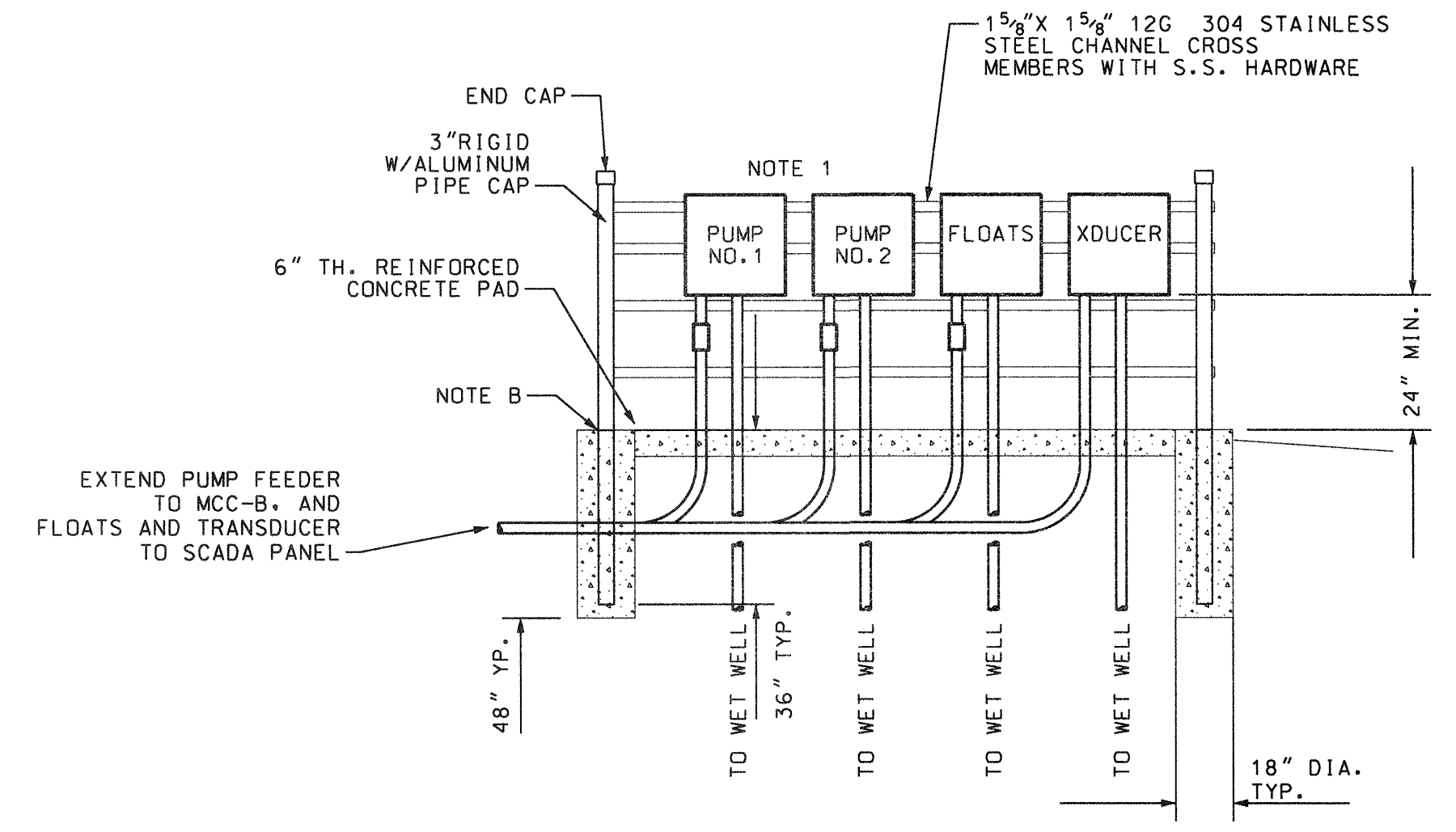
1. ALL CONDUITS INSTALLED EXPOSED TO ATMOSPHERE SHALL BE RIGID ALUMINUM UNLESS OTHERWISE NOTED, ALL CONDUITS INSTALLED BELOW GRADE SHALL BE SCH.80 PVC.
2. CIRCUIT BRAKER AND SWITCH OPERATING HANDLES SHALL BE A MAXIMUM OF 66" ABOVE FINISHED GRADE OR SERVICE PLATFORM. REFER TO EQUIPMENT FRAME & POLE DETAILS 3/E11.0; THIS SHEET.
3. NEMA 4X STAINLESS STEEL JUNCTION BOX, 12" X 12" X 6" WITH ALUMINUM BACKPLATE AND QUARTER-TURN LATCHES, HAMMOND MANUFACTURING CAT. NO. EJ1212655. PROVIDE POWER TERMINAL BLOCK AND/OR TERMINAL STRIP AS REQUIRED.
4. ALL BOLTS, NUTS, WASHERS, ETC. SHALL BE STAINLESS STEEL. PROVIDE FIBER WASHER BETWEEN DIS-SIMILAR METAL COMPONENTS AND ENCLOSURES.
5. THE EQUIPMENT FRAME SHALL BE FIELD FABRICATED. ALL CONNECTIONS SHALL BE BOLTED.
6. SEAL OFF FITTING. PROVIDE FIBER AND EPOXY SEALANT AFTER CONDUCTOR INSTALLATION.
7. SEAL ENDS OF EACH CONDUIT RUN TO THE WET WELL WITH ELECTRICAL DUCT SEAL.
8. PROVIDE STAINLESS STEEL SUPPORT HOOK AND CABLE GRIPS FOR ALL CABLES IN THE WET WELL. GRIPS SHALL BE CLOSED MECH. NON-CONDUCTIVE, DOUBLE WEAVE, ARAMID FIBER TYPE PULLING GRIPS. COORDINATE GRIP SIZE WITH CABLES SUPPORTED. ATTACH GRIP TO CABLE WITH TWO HEAVY-DUTY PLASTIC ZIP TIES. PROVIDE PRODUCTS OF HUBBELL. NO SUBSTITUTIONS PERMITTED.
9. EXTEND 20A/2P CIRCUIT FROM PANEL PDH AND CONNECT TO ELECTRIC HOIST, RATED 1.2HP, 1PH, 230V. PROVIDE FESTOON CABLE ASSEMBLY TO ALLOW HOIST TO BE LOCATED AT EACH LOCATION ON MONORAIL.
10. STUB 2" INTO WETWELL FOR FLOAT AND TRANSDUCER CABLES. SUPPORT CABLES PER NOTE 8. SEAL CONDUIT WITH DUCTSEAL, BOTH ENDS.



2 PLANT DRAIN PS ONE-LINE DIAGRAM
E11.0 SCALE: NOT TO SCALE

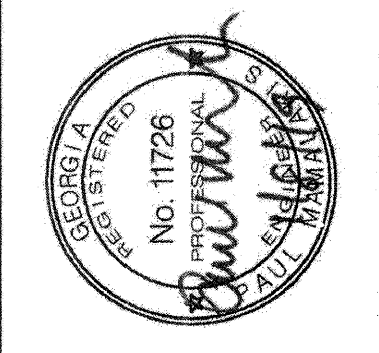


1 DRAIN PUMP STATION ELECTRICAL PLAN
E11.0 SCALE: NOT TO SCALE



3 PLANT DRAIN PS ELEVATION DETAIL
E11.0 SCALE: NOT TO SCALE

- NOTES:** PLANT DRAIN PS ELEVATION DETAIL
1. PROVIDE A CONDUIT WINDOW BENEATH THE PANELS THROUGH THE CONCRETE PADS. THE WINDOW SHALL BE 1/2" DEEP AND EXTEND THE FULL WIDTH OF THE PANEL, EXCEPT FOR FREE-STANDING ENCLOSURES. THE WINDOW SHALL EXTEND THE WIDTH OF THE PANEL BETWEEN THE SUPPORT LEGS. AFTER CONDUIT INSTALLATION, FILL THE WINDOW WITH CRUSHED GRAVEL.
 2. COAT ALL RIGID ALUMINUM STRUCTURAL SUPPORTS ENCASED IN CONCRETE WITH TWO COATS OF SCOTCH WRAP PRIMER AND TWO OVERLAPPING LAYERS OF SCOTCHRAP 51(20 MIL) TAPE. APPLY FROM 6" ABOVE GRADE TO BOTTOM OF STRUCTURAL MEMBER. CORROSION PROTECTION METHODS DESCRIBED ABOVE SHALL ALSO BE APPLIED TO ALL RIGID ALUMINUM CONDUIT THROUGH CONCRETE AND SOILS.



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PLANT DRAIN PUMP STATION ELEC PLAN

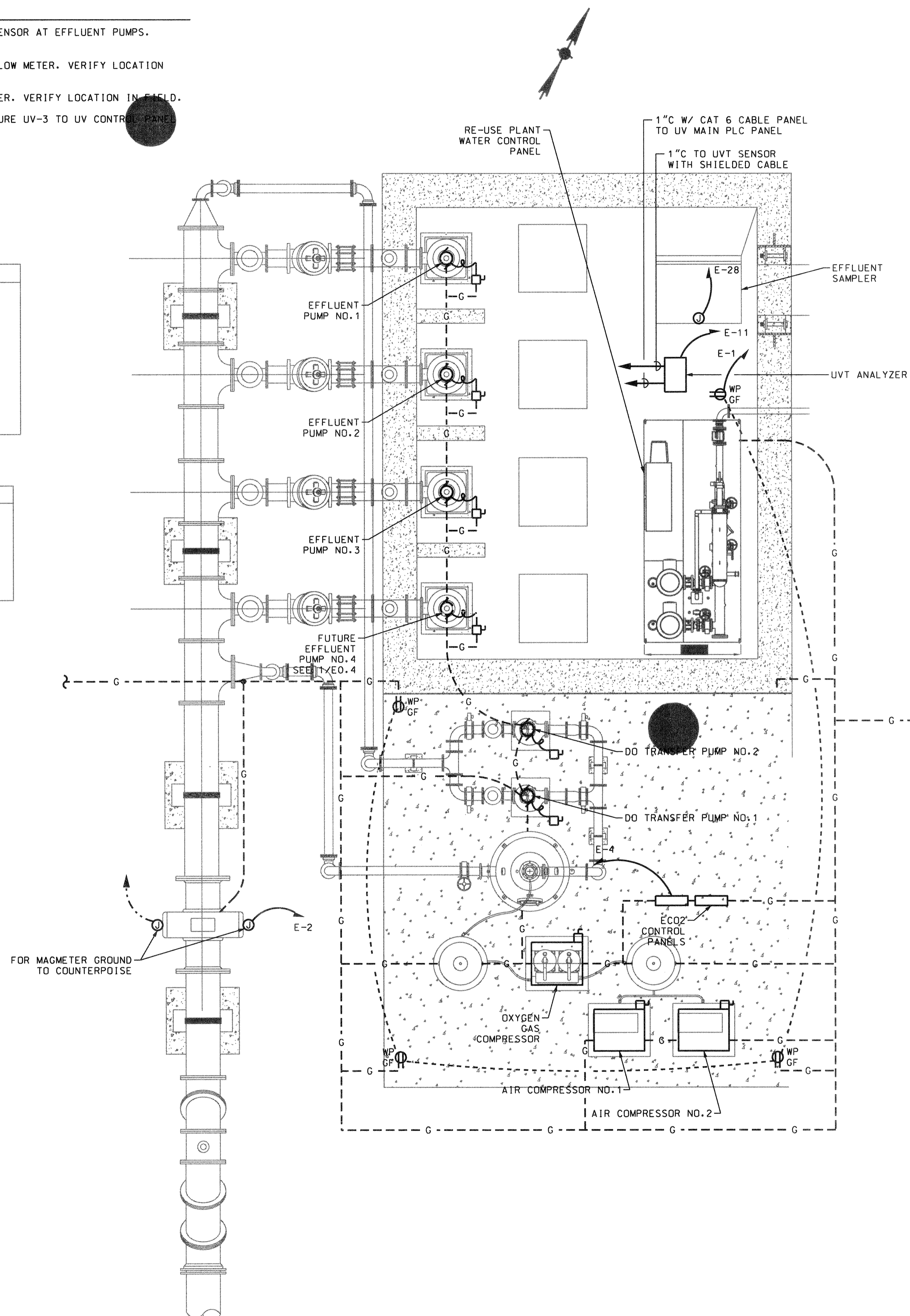
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SCALE:	N.T.S.

E11.0

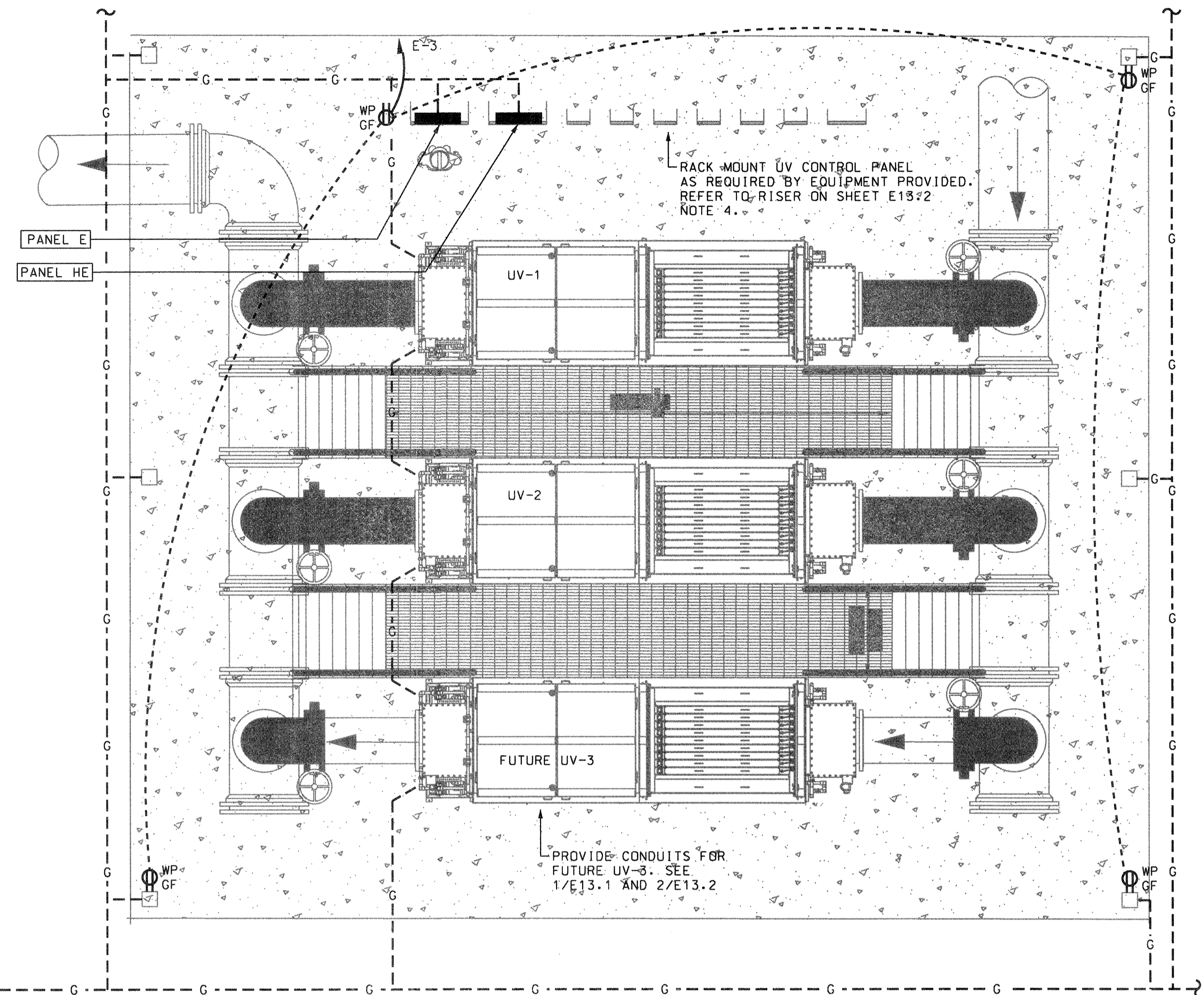
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NOTES:

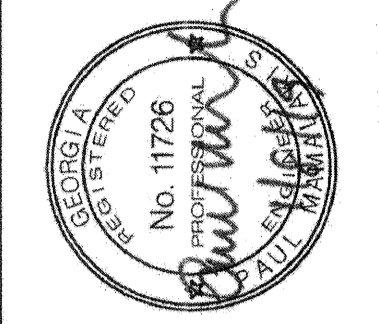
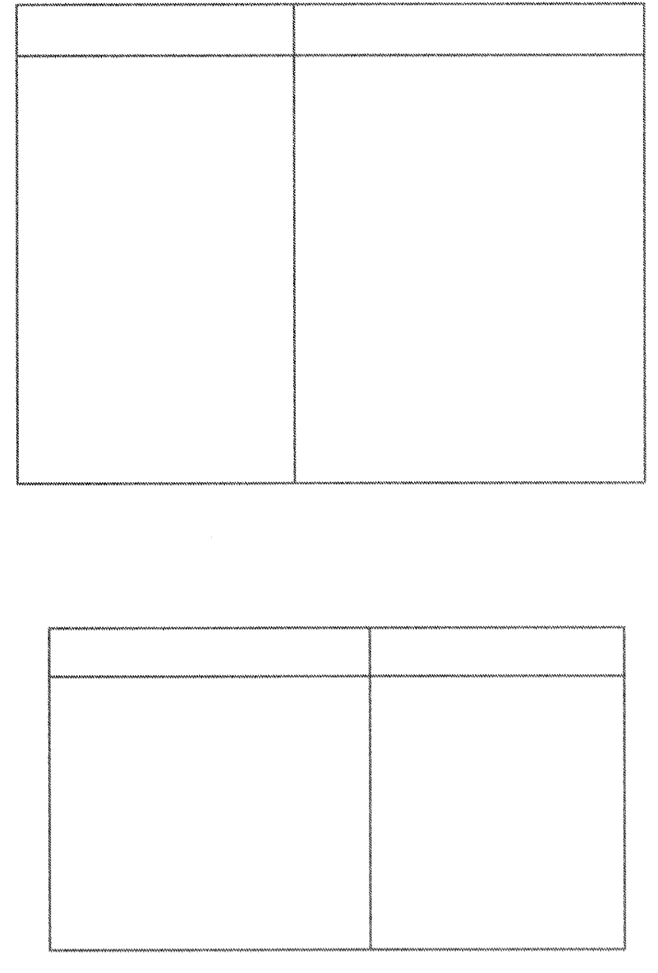
1. EXTEND CIRCUIT E-6 FOR LEVEL SENSOR AT EFFLUENT PUMPS. VERIFY LOCATION IN FIELD.
2. EXTEND CIRCUIT E-8 FOR REUSE FLOW METER. VERIFY LOCATION IN FIELD.
3. EXTEND CIRCUIT E-10 FOR DO METER. VERIFY LOCATION IN FIELD.
4. PROVIDE SPARE CONDUITS FOR FUTURE UV-3 TO UV CONTROL PANEL PER RISER DIAGRAM 2/E13.2.



1 EFFLUENT REUSE PS AND DO SYSTEM ELECTRICAL PLAN
E13.0 SCALE: 1/4" = 1'-0"



2 UV DISINFECTION POWER PLAN
E13.0 SCALE: 1/4" = 1'-0"



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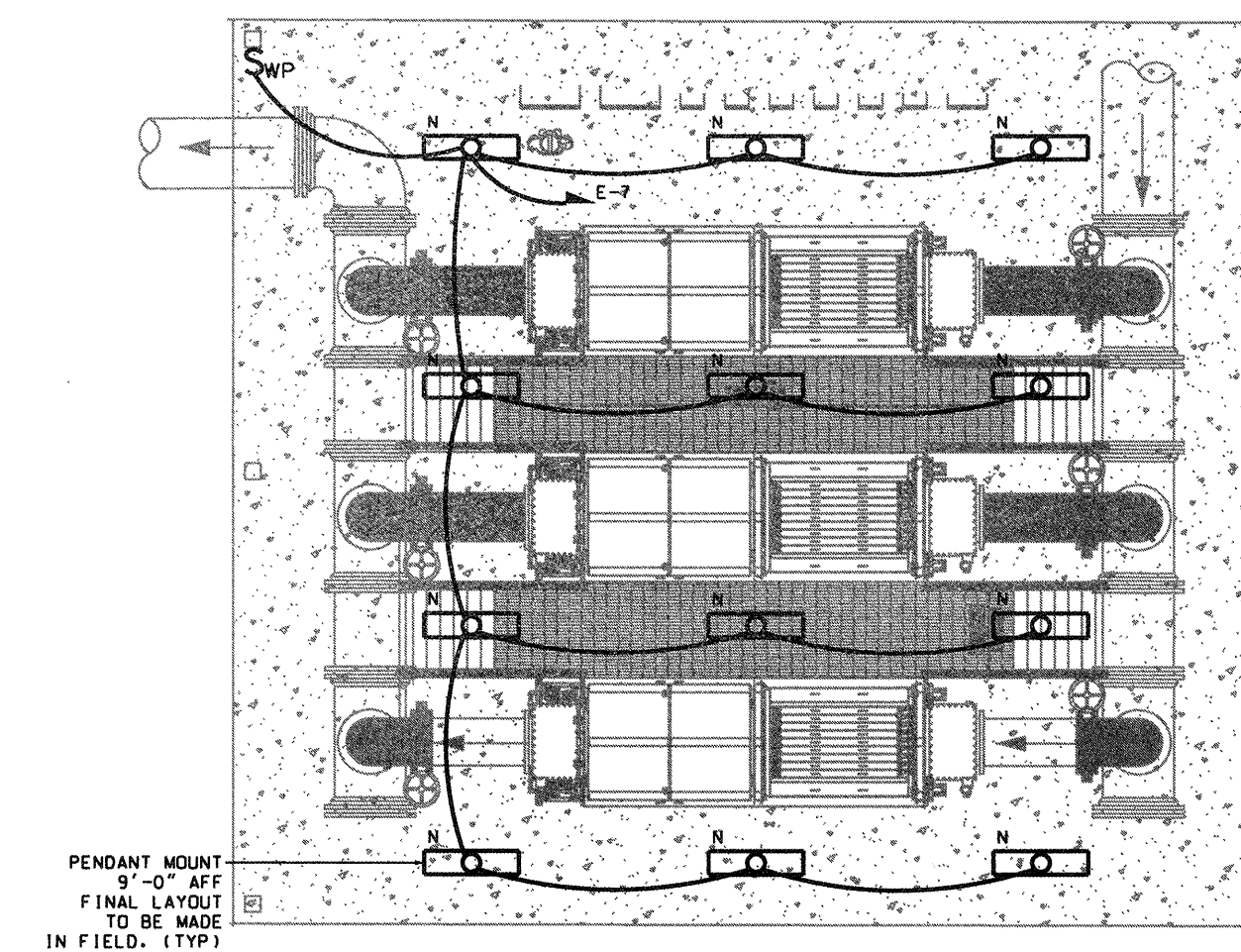
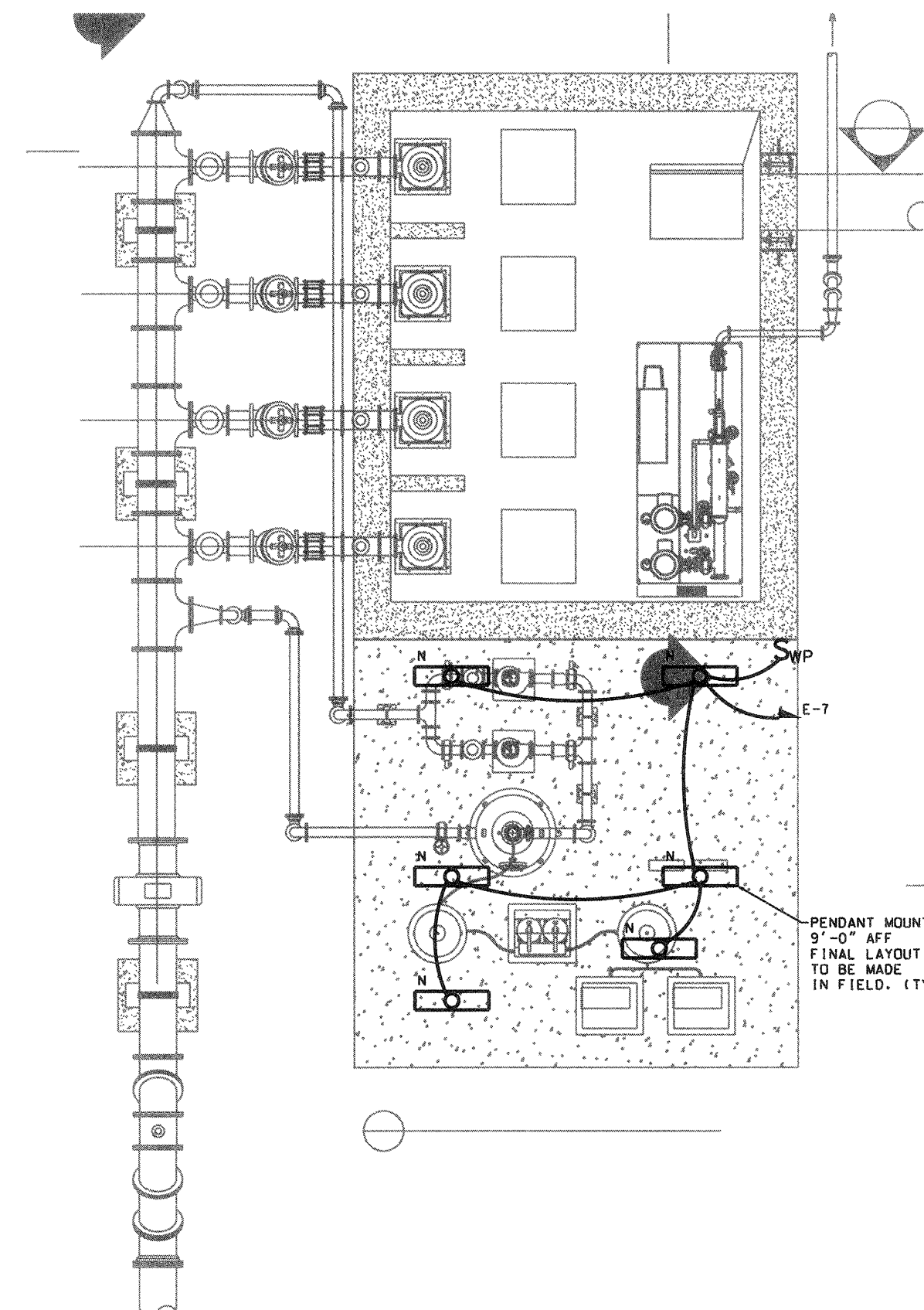
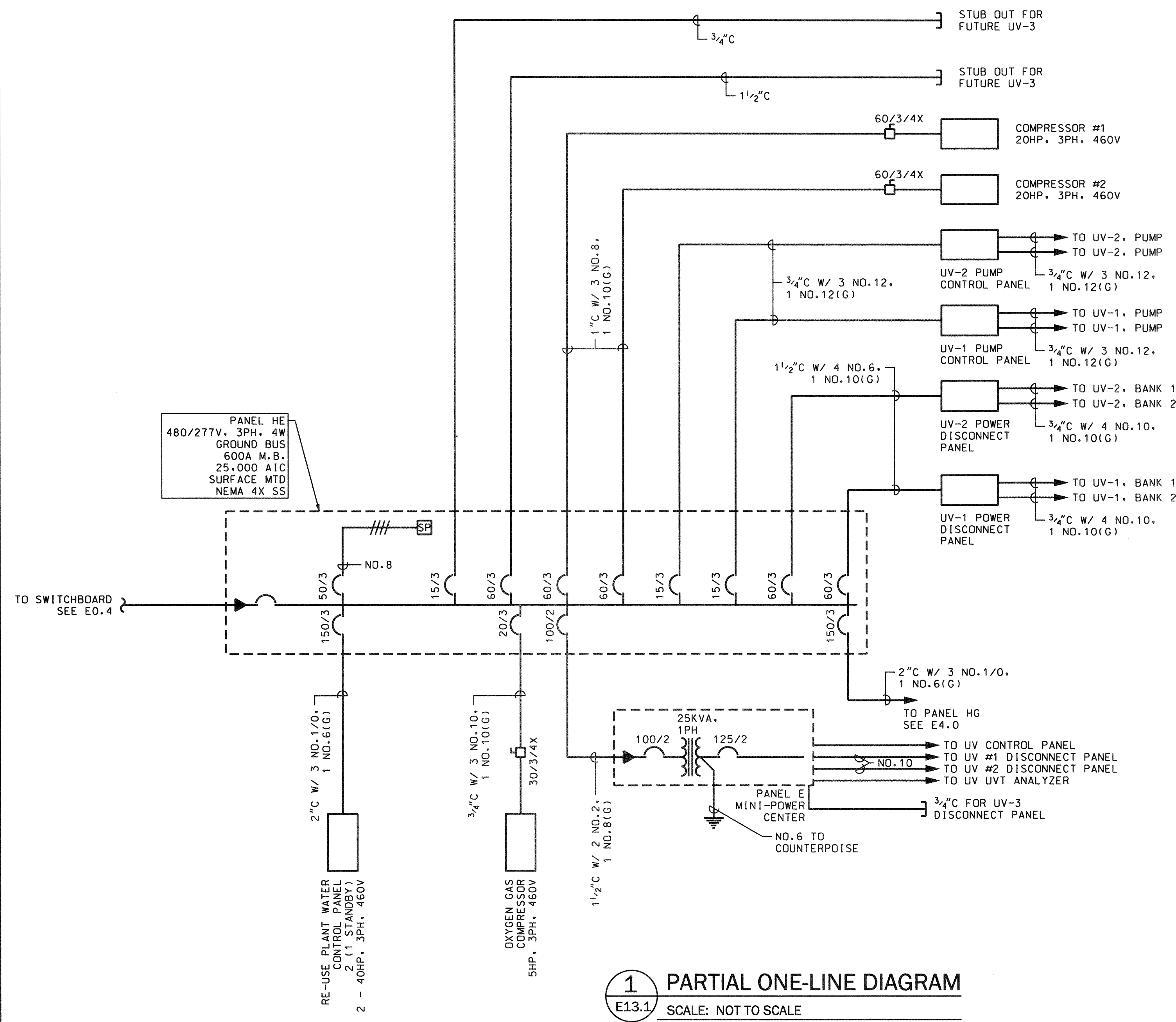
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EFFLUENT PUMP STATION ELEC PLAN

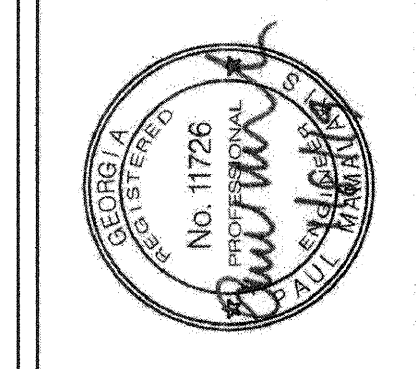
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SCALE:	1/4" = 1'-0"

E13.0

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SCHEDULE PANELBOARD E											
CIR.	TRIP/	MAINS 125A MB	VOLTAGE 120/240	PHASE 1	WIRE 3	CONNECTED LOAD KVA		MOUNTING			
						PH. A	PH. B	DESCRIPTION	KVA	POLE	#
1	20/1	0.80	RECEPTACLES	0.9				MAG METER	0.10	20/1	2
3	20/1	0.80	RECEPTACLES		1.8			ECO2 PANEL	1.00	20/1	4
5	20/1	0.30	LIGHTING	0.4				LEVEL SENSOR	0.10	20/1	6
7	20/1	0.60	LIGHTING		0.7			REUSE FM	0.10	20/1	8
9	20/1	1.00	UV CONTROL PANEL	1.1				DO SENSOR	0.10	20/1	10
11	20/1	0.50	UVT ANALYZER		0.5			SPARE		20/1	12
13	20/1		SPARE	0.0				SPARE		20/1	14
15	20/1		SPARE	0.0	0.0			SPARE		20/1	16
17	20/1		SPARE	0.0				SPARE		20/1	18
19	20/1		SPARE	0.0	0.0			SPARE		20/1	20
21	20/1		SPARE	0.0				SPARE		20/1	22
23	30/1	1.80	UV #1 DISCONNECT PANEL		1.8			SPARE		20/1	24
25	30/1	1.80	UV #2 DISCONNECT PANEL		1.8			SPARE		20/1	26
27	30/1	1.80	UV #3 DISCONNECT PANEL		2.3			EFFLUENT SAMPLER	0.50	20/1	28
29				0.0							30
31					0.0						32
33					0.0						34
35						0.0					36
37						0.0					38
39											40
41						0.0					42
MIN. BREAKER AIC:		10,000 AIC		4.2	7.1	TOTAL CONNECTED LOAD			11.3		
NOTES: MINI-POWER CTR				4.2	7.1	TOTAL DEMAND LOAD			11.3		



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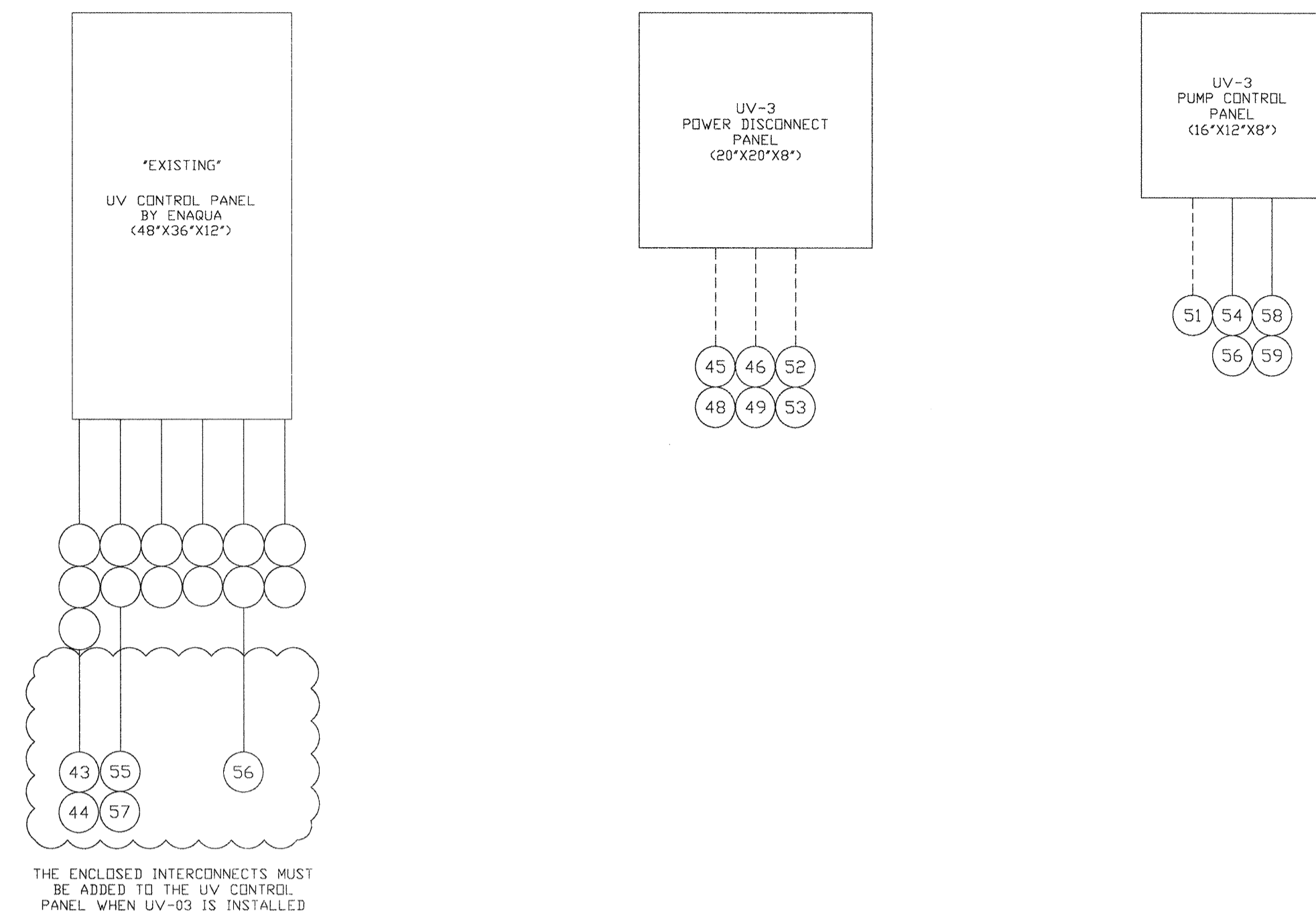
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TRAVIS FIELD WATER RECLAMATION FACILITY
ONE-LINE DIAGRAM

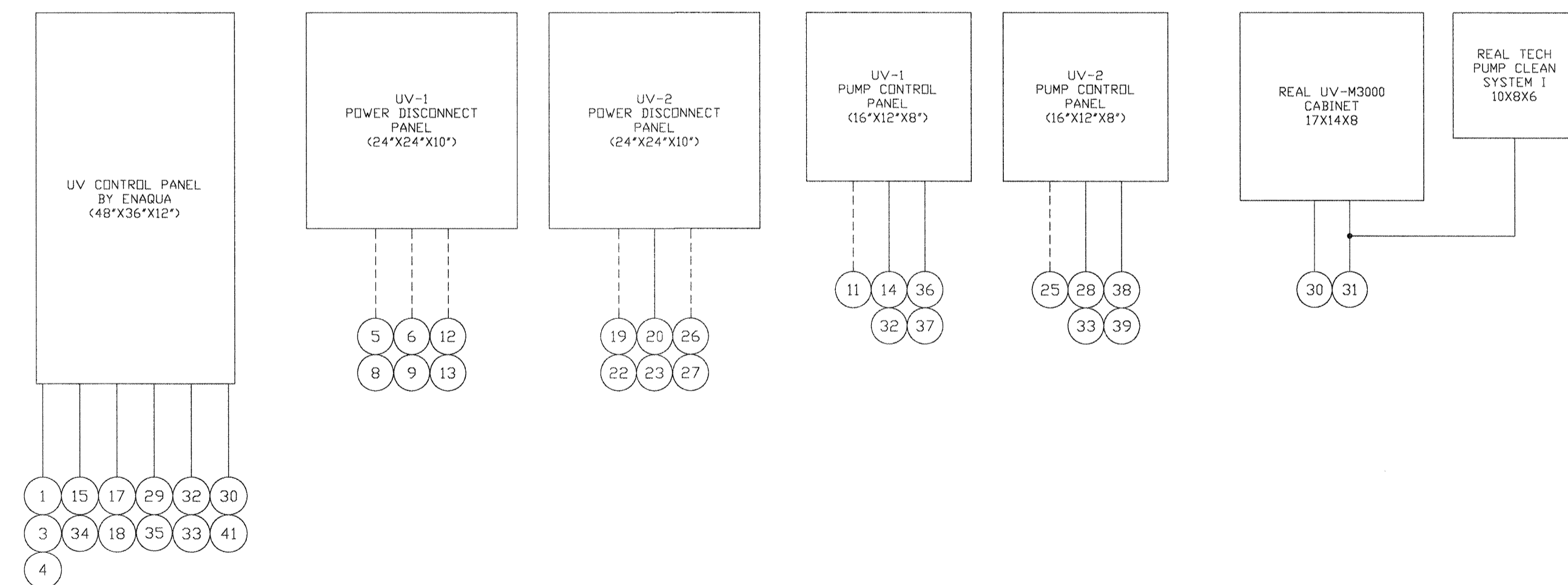
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APPROVED: PM
SCALE: N.T.S.

E13.1

ENAQUA UV REACTOR INTERCONNECT TABLE				ENAQUA UV REACTOR INTERCONNECT TABLE			
NO	DESCRIPTION	FROM	TO	NO	DESCRIPTION	FROM	TO
1	REMOTE START SIGNALS 3-SETS OF DRY CONTACTS	PLANT DCS/SCADA	UV CONTROL PANEL	42	NOT USED	VALVE 3	UV PLC PANEL
2	NOT USED			43	UV-3 LEVEL SENSOR SIGNAL 4-20mA, SHIELDED TWISTED PAIR	LEVEL SENSOR 3	UV CONTROL PANEL
3	UV-1 LEVEL SENSOR SIGNAL 4-20mA, SHIELDED TWISTED PAIR	LEVEL SENSOR 1	UV CONTROL PANEL	44	COMMUNICATION AND CONTROL CAT6	UV-3 BANK 1	UV CONTROL PANEL
4	COMMUNICATION AND CONTROL CAT6	UV-1 BANK 1	UV CONTROL PANEL	45	UV-3 BANK 1 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV-3 POWER DISCONNECT	UV-3 BANK 1
5	UV-1 BANK 1 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV-1 POWER DISCONNECT	UV-1 BANK 1	46	UV-3 BANK 1 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-3 POWER DISCONNECT	UV-3 BANK 1
6	UV-1 BANK 1 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-1 POWER DISCONNECT	UV-1 BANK 1	47	NOT USED		
7	NOT USED			48	UV-3 BANK 2 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV-3 POWER DISCONNECT	UV-3 BANK 2
8	UV-1 BANK 2 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV-1 POWER DISCONNECT	UV-1 BANK 2	49	UV-3 BANK 2 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-3 POWER DISCONNECT	UV-3 BANK 2
9	UV-1 BANK 2 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-1 POWER DISCONNECT	UV-1 BANK 2	50	NOT USED		
10	NOT USED			51	HEAT EXCHANGER COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-3 PUMP CONTROL PANEL	UV-3 BANK 2
11	HEAT EXCHANGER COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-1 PUMP CONTROL PANEL	UV-1 BANK 2	52	UV-3 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV MCC PANEL	UV-3 POWER DISCONNECT
12	UV-1 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV MCC PANEL	UV-1 POWER DISCONNECT	53	UV-3 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UV-3 POWER DISCONNECT
13	UV-1 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UV-1 POWER DISCONNECT	54	PUMP POWER 2-SETS, 480VAC 3P 3-WIRE	UV-3 PUMP CONTROL PANEL	UV-3 COOLING PUMPS
14	PUMP POWER 2-SETS, 480VAC 3P 3-WIRE	UV-1 PUMP CONTROL PANEL	UV-1 COOLING PUMPS	55	PRESSURE SWITCH CONTROL WIRE DRY CONTACT 2-WIRE 18AWG	UV-3 FLOW SWITCH	UV CONTROL PANEL
15	PRESSURE SWITCH CONTROL WIRE DRY CONTACT 2-WIRE 18AWG	UV-1 FLOW SWITCH	UV CONTROL PANEL	56	UV COOLING PUMP CONTROL POWER 120VAC 1P 2-WIRE EACH, 4-WIRES TOTAL	UV CONTROL PANEL	UV-3 PUMP CONTROL PANEL
16	NOT USED			57	UPS CONTROL POWER 120VAC 1P 2-WIRE PLUS GROUND	UV CONTROL PANEL	UV-3 BANK 1
17	UV-2 LEVEL SENSOR SIGNAL 4-20mA, SHIELDED TWISTED PAIR	LEVEL SENSOR 2	UV CONTROL PANEL	58	PUMP POWER 2-SETS, 480VAC 3P 3-WIRE	UV MCC PANEL	UV-3 PUMP CONTROL PANEL
18	COMMUNICATION AND CONTROL CAT6	UV-2 BANK 1	UV CONTROL PANEL	59	HEAT EXCHANGER COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UV-3 PUMP CONTROL PANEL
19	UV-2 BANK 1 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV-2 POWER DISCONNECT	UV-2 BANK 1				
20	UV-2 BANK 1 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-2 POWER DISCONNECT	UV-2 BANK 1				
21	NOT USED						
22	UV-2 BANK 2 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV-2 POWER DISCONNECT	UV-2 BANK 2				
23	UV-2 BANK 2 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-2 POWER DISCONNECT	UV-2 BANK 2				
24	NOT USED						
25	HEAT EXCHANGER COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV-2 PUMP CONTROL PANEL	UV-2 BANK 2				
26	UV-2 LAMP POWER 480VAC 3P 4-WIRE PLUS GROUND	UV MCC PANEL	UV-2 POWER DISCONNECT				
27	UV-2 LAMP RACK COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UV-2 POWER DISCONNECT				
28	PUMP POWER 2-SETS, 480VAC 3P 3-WIRE	UV-2 PUMP CONTROL PANEL	UV-2 COOLING PUMPS				
29	PRESSURE SWITCH CONTROL WIRE DRY CONTACT 2-WIRE 18AWG	UV-2 FLOW SWITCH	UV CONTROL PANEL				
30	UVT SIGNAL 4-20mA SHIELDED TWISTED PAIR	UVT ANALYZER PANEL	UV CONTROL PANEL				
31	UVT ANALYZER POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UVT ANALYZER PANEL				
32	UV COOLING PUMP CONTROL POWER 120VAC 1P 2-WIRE EACH, 4-WIRES TOTAL	UV CONTROL PANEL	UV-1 PUMP CONTROL PANEL				
33	UV COOLING PUMP CONTROL POWER 120VAC 1P 2-WIRE EACH, 4-WIRES TOTAL	UV CONTROL PANEL	UV-2 PUMP CONTROL PANEL				
34	UPS CONTROL POWER 120VAC 1P 2-WIRE PLUS GROUND	UV CONTROL PANEL	UV-1 BANK 1				
35	UPS CONTROL POWER 120VAC 1P 2-WIRE PLUS GROUND	UV CONTROL PANEL	UV-2 BANK 1				
36	PUMP POWER 2-SETS, 480VAC 3P 3-WIRE	UV MCC PANEL	UV-1 PUMP CONTROL PANEL				
37	HEAT EXCHANGER COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UV-1 PUMP CONTROL PANEL				
38	PUMP POWER 2-SETS, 480VAC 3P 3-WIRE	UV MCC PANEL	UV-2 PUMP CONTROL PANEL				
39	HEAT EXCHANGER COOLING POWER 120VAC 1P 2-WIRE PLUS GROUND	UV MCC PANEL	UV-2 PUMP CONTROL PANEL				
40	NOT USED						
41	PLANT FLOW SIGNAL 4-20mA TWISTED SHIELDED PAIR	PLANT DCS/SCADA	UV CONTROL PANEL				



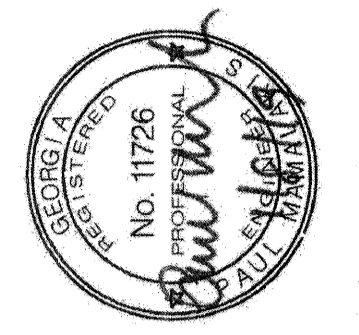
2 FUTURE UV SYSTEM RISER DIAGRAM
E13.2 NOT TO SCALE



1 UV SYSTEM RISER DIAGRAM
E13.2 NOT TO SCALE

- NOTES:**
- COORDINATE LOCATION OF ALL DEVICES WITH UV VENDOR.
 - SEE UV RISER DIAGRAM AND ONE-LINE DIAGRAM FOR FIELD WIRING.
 - EQUIPMENT PROVIDED BY UV EQUIPMENT SUPPLIER. CONNECTIONS BY CONTRACTORS.

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11:51:57 AM
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UV RISER DIAGRAM

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E13.2

