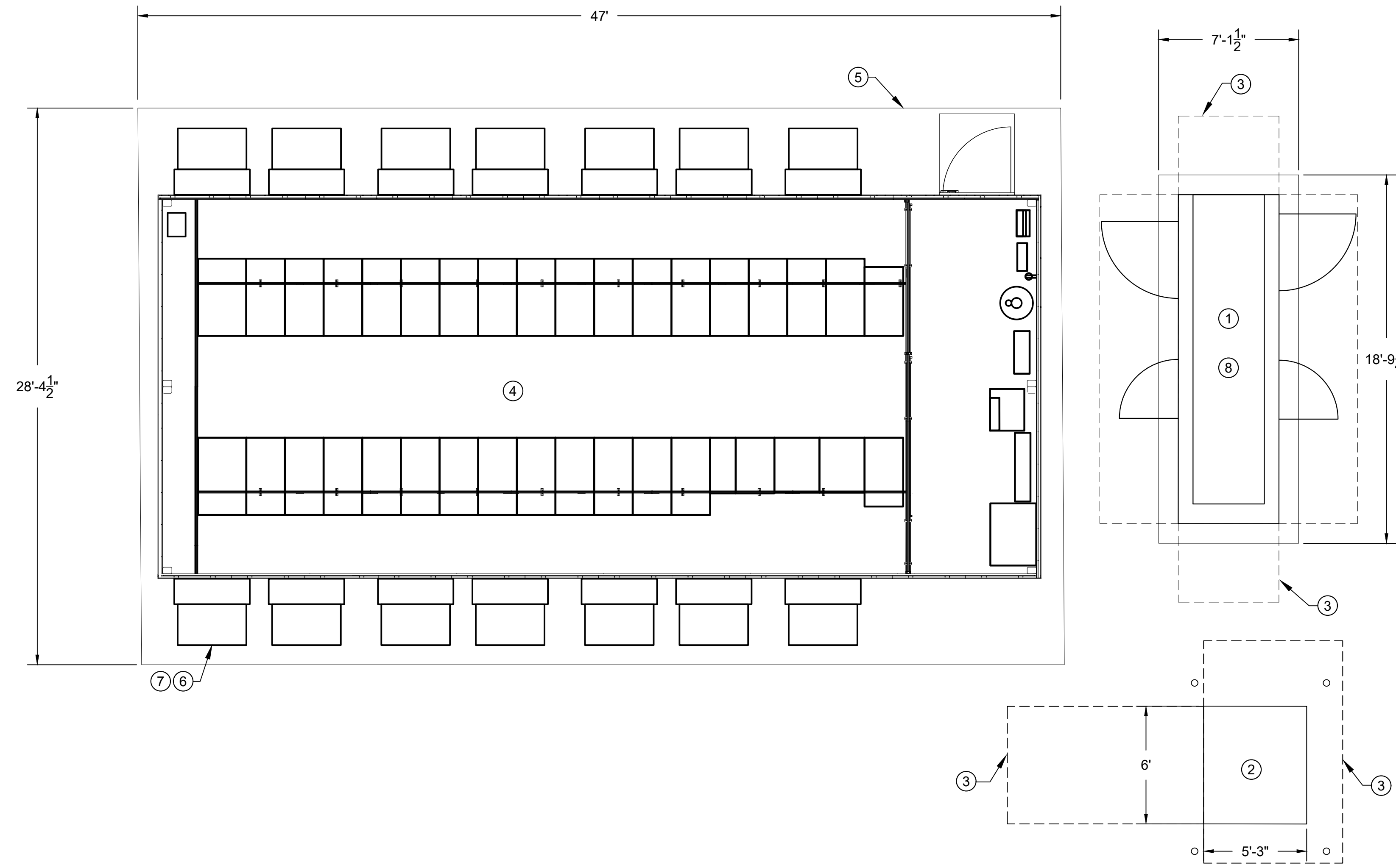


PREFAB CONFIGURATION-9

PREFAB FRAME SIZE (KVA)	MAX IT LOAD (KW)	PREFAB MODULE DIMENSIONS (APPROXIMATE)			MDP-100 SYSTEM VOLTAGE LEVEL (V)	UPS SYSTEM MODEL	SERVICE ENTRANCE PANEL MODEL	SERVICE ENTRANCE PANEL(A)	NO. OF WALL MOUNT COOLING UNITS WITH HEATER	IT RACK (MODEL)/ NETWORKING IT RACK (MODEL)	NO. OF IT RACKS	IT RACK DENSITY (KVA/RACK)	NO. OF SINGLE PHASE POLES IN PDU	IT RACK DIMENSIONS (APPROXIMATE)			IT RACK DISTRIBUTION UNIT (MODEL)
		DEPTH (FT)	WIDTH (FT)	HEIGHT (FT)										DEPTH (FT)	WIDTH (FT)	HEIGHT (FT)	
180	162	45	19.5	11	480	GALAXY VM(180KVA)	ASCO-300	800	14	AR3300/ AR3350	30	6	72	4	2	6.5	AP8865



GENERAL NOTES:

- REFER TO ONE LINE DIAGRAM ON SHEET E400 FOR ADDITIONAL DETAILS ON THE ELECTRICAL SYSTEM.
- FOR ELECTRICAL SCHEDULES, SEE DRAWINGS ON SHEETS E600 AND E801.

PLAN NOTES:

- 500KW/625KVA STANDBY GENERATOR.
- UTILITY TRANSFORMER.
- REQUIRED CLEARANCE (TYPICAL).
- REFER TO DRAWING E102 FOR PREFAB MODULE DETAILS.
- CONCRETE PAD (TYPICAL).
- WMF0661 WALL MOUNT COOLING UNIT(TYPICAL OF 14 UNITS).
- INSTALL A READILY ACCESSIBLE, LOCAL DISCONNECT NEAR EACH WALL MOUNT COOLING UNIT (TYPICAL OF 14).
- GENERATOR SHALL INCLUDE A BUILT-IN CIRCUIT BREAKER. SEE ONE LINE DRAWING E400 FOR DETAILS.

ELECTRICAL SITE LAYOUT PLAN CONFIGURATION-9

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

CONSULTANTS:



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PROJECT INFORMATION:

160KW DATA CENTER
REFERENCE DESIGN
PREFAB CONFIGURATION-9

KEYPLAN:

REV.	DATE	DESCRIPTION
0	06/03/19	CONCEPTUAL DRAWINGS
1		
2		

DRAWN BY: GR

CHECKED BY: MN

PROJECT NUMBER: ENGR18-0024

DRAWING SCALE: NONE

SHEET TITLE:
ELECTRICAL SITE LAYOUT PLAN CONFIGURATION-9

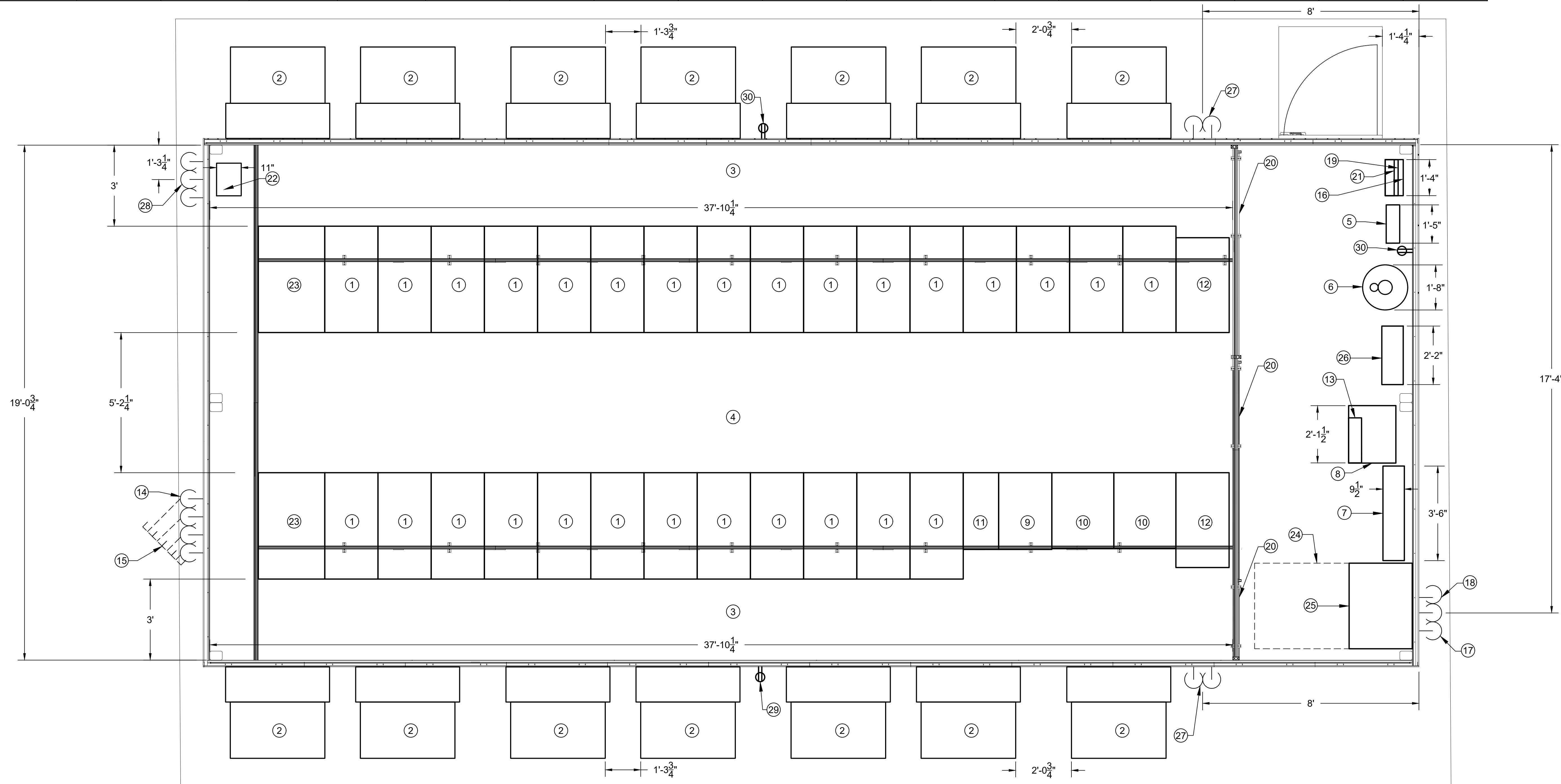
DATE: 06/03/19

DRAWING NUMBER:

E101

PREFAB CONFIGURATION-9

PREFAB FRAME SIZE (KVA)	MAX IT LOAD (KW)	PREFAB MODULE DIMENSIONS (APPROXIMATE)			MDP-100 SYSTEM VOLTAGE LEVEL (V)	UPS SYSTEM MODEL	SERVICE ENTRANCE PANEL MODEL	SERVICE ENTRANCE PANEL(A)	NO. OF WALL MOUNT COOLING UNITS WITH HEATER	IT RACK (MODEL)/ NETWORKING IT RACK (MODEL)	NO. OF IT RACKS	IT RACK DENSITY (KVA/RACK)	NO. OF SINGLE PHASE POLES IN PDU	IT RACK DIMENSIONS (APPROXIMATE)			IT RACK DISTRIBUTION UNIT (MODEL)
		DEPTH (FT)	WIDTH (FT)	HEIGHT (FT)										DEPTH (FT)	WIDTH (FT)	HEIGHT (FT)	
180	162	45	19.5	11	480	GALAXY VM(180KVA)	ASCO-300	800	14	AR3300/ AR3350	30	6	72	4	2	6.5	AP8865



GENERAL NOTES:

- REFER TO THE ONE LINE DIAGRAM ON SHEET E400 FOR ADDITIONAL DETAILS ON THE ELECTRICAL SYSTEM.
- FOR ELECTRICAL SCHEDULES, SEE DRAWINGS ON SHEETS E600 AND E601.

PLAN NOTES:

- IT RACK.
- WMF0661 WALL-MOUNT COOLING UNIT WITH HEATER.
- HOT AISLE.
- COLD AISLE.
- FIRE ALARM CONTROL PANEL. INSTALLATION SHALL COMPLY WITH NFPA 72 REQUIREMENTS.
- FIRE SUPPRESSION CYLINDER.
- 480V MAIN(I-LINE) DISTRIBUTION PANEL(MDP-100).
- 480-208/120V STEP-DOWN TRANSFORMER (TRF-1).
- GALAXY VM 180KVA UPS MODULE.
- GALAXY VM 180KVA UPS BATTERY CABINET GVMMODBCW.
- GALAXY VM UPS I/O CABINET.
- MODULAR POWER DISTRIBUTION UNIT PDPM150G6F.
- 208/120V DISTRIBUTION PANEL (PDB-200).

- PROVIDE FOUR(4) 3" CONDUITS FOR DATA/FIBER OPTICS. CONDUITS SHALL BE CONNECTED PERPENDICULARLY TO MODULE WALL AT 120" ABOVE FINISHED SLAB AT LOCATION SHOWN. TURN VERTICALLY WITH A 36" RADIUS DOWN TO SLAB FOR UNDERGROUND RUN. PROVIDE UNDERGROUND PORTION TO JUST OUTSIDE OF SLAB EDGE AS SHOWN. PROVIDE STRUCTURAL SUPPORT FOR ABOVEGROUND PORTION. CO-ORDINATE HEIGHT OF CONDUITS ABOVE FINISHED SLAB AS REQUIRED.
- RUN UNDERGROUND PORTION DIAGONALLY AT 45 DEGREES TO THE LEFT, AS SHOWN, TO EXTEND 48" BEYOND THE EDGE OF THE PAD TO BE CONTINUED BY OTHERS. CAP CONDUIT ENDS AT THIS POINT.
- CP-100 CONTROL PANEL.

- PROVIDE THREE(3) 3" CONCRETE ENCASED UNDERGROUND PVC SCH-80 CONDUITS FOR POWER FROM UTILITY. CONDUITS SHALL BE CONNECTED PERPENDICULARLY TO MODULE WALL. CO-ORDINATE HEIGHT OF CONDUITS ABOVE FINISHED SLAB AS REQUIRED.
- PROVIDE THREE(3) 3" AND TWO(2) 1-1/2" CONCRETE ENCASED UNDERGROUND PVC SCH-80 CONDUITS FOR POWER AND CONTROLS FROM GENERATOR.CONDUITS SHALL BE CONNECTED PERPENDICULARLY TO MODULE WALL. CO-ORDINATE HEIGHT OF CONDUITS ABOVE FINISHED SLAB AS REQUIRED.
- GENERATOR ANNUNCIATOR PANEL (OPTIONAL).

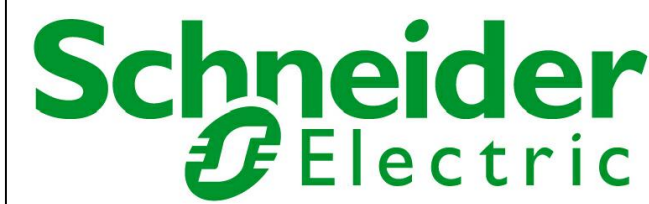
- DOOR.
- ACCESS CONTROL PANEL(OPTIONAL).
- HUMIDIFIER(OPTIONAL).
- NETWORKING IT RACK.
- REQUIRED CLEARANCE(TYPICAL).
- ASCO-300 MODEL(480V) SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH WITH PROGRAMMABLE DELAYED TRANSITION.
- 480/277V, 800AMP I-LINE DISTRIBUTION PANEL.

- CONDUITS FOR POWER TO WALL MOUNT COOLING UNITS CONNECTED PERPENDICULARLY TO MODULE WALL. CO-ORDINATE HEIGHT OF CONDUITS ABOVE FINISHED SLAB AS REQUIRED.
- PIPES FOR HUMIDIFICATION AND DEHUMIDIFICATION. PIPES SHALL BE CONNECTED PERPENDICULARLY TO MODULE WALL AT 7-1/2" ABOVE FINISHED SLAB AT LOCATION SHOWN.
- 120V RECEPTACLE MOUNTED ON MODULE EXTERIOR WALL WITH WEATHERPROOF COVER.
- 120V RECEPTACLE(TYPICAL).

ELECTRICAL PREFAB MODULE DETAILS CONFIGURATION-9

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

CONSULTANTS:



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PROJECT INFORMATION:

160KW DATA CENTER
REFERENCE DESIGN
PREFAB CONFIGURATION-9

KEYPLAN:

REV.	DATE	DESCRIPTION
0	06/03/19	CONCEPTUAL DRAWINGS
1		
2		

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PROJECT NUMBER: ENGR18-0024

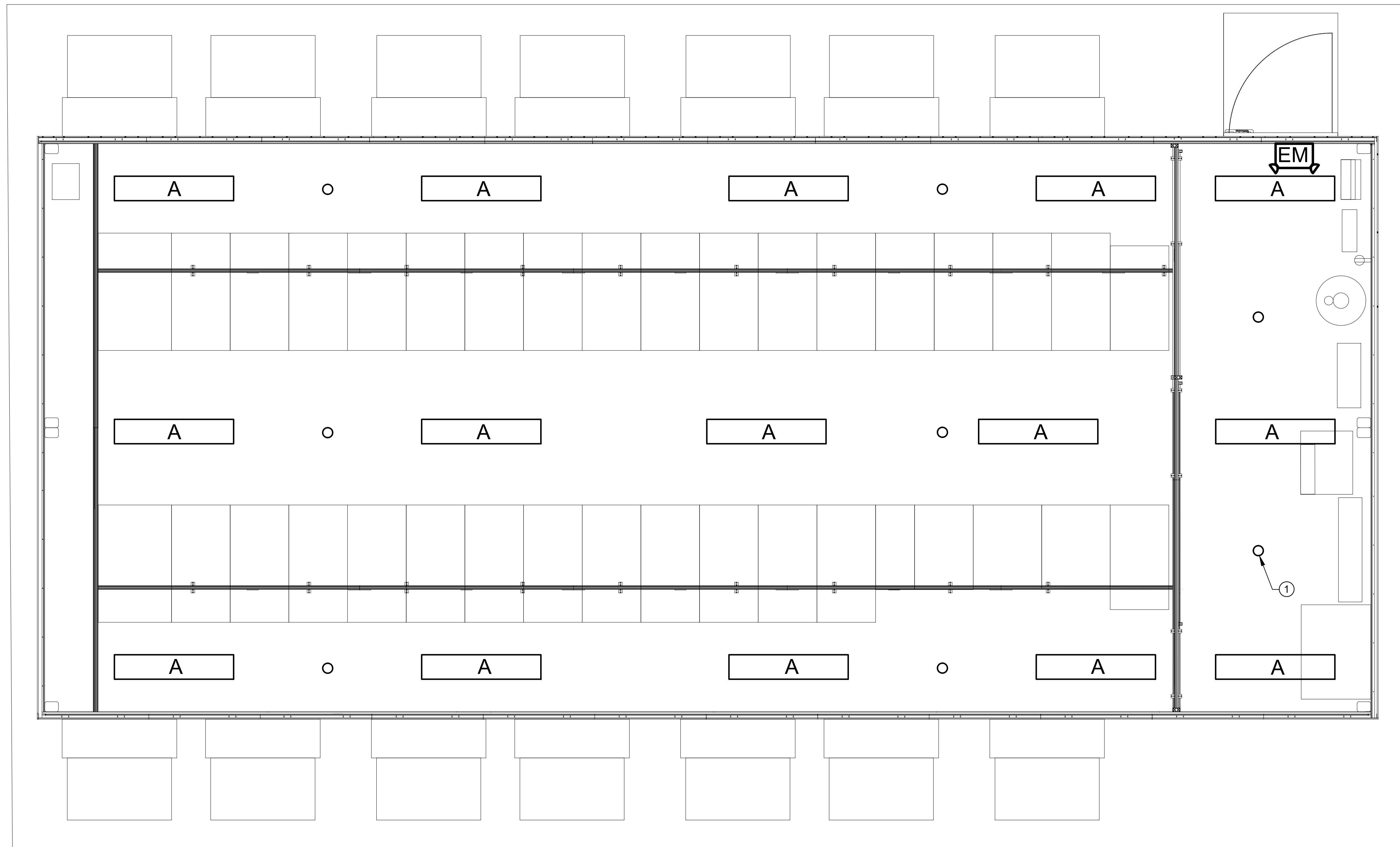
DRAWING SCALE: NONE

SHEET TITLE:
**ELECTRICAL
PREFAB MODULE DETAILS
CONFIGURATION-9**

DATE:
06/03/19

DRAWING NUMBER:

E102



LIGHTING FIXTURE SCHEDULE								
TYPE		MANUFACTURER PRODUCT #	VOLTAGE	WATTAGE	LAMP	NUMBER OF FIXTURES	MOUNTING	REMARKS
A	LED 4FT VAPORTIGHT	LITHONIA LIGHTING	120V	38W	LED	15	SURFACE	4' LED VAPOR TIGHT FIXTURE DIMMABLE
		4VT2-LD4-4-DR-UNVL840-CD1-WL-U						
EM	LED COMBO EXIT/EMERGENCY LIGHTS	LITHONIA LIGHTING	120V	4.3W	LED	1	SURFACE	THERMOPLASTIC WHITE (2) HEAD, BATTERY BACKED EMERGENCY LIGHT
		LHQM LED R HO M6						

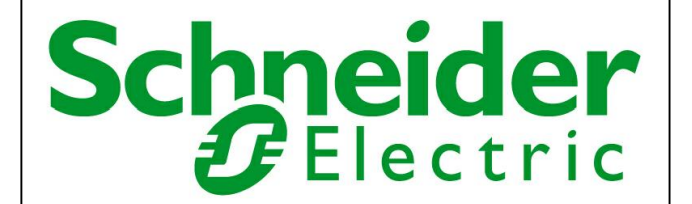
GENERAL NOTES:

- REFER TO ONE LINE DIAGRAMS ON SHEETS E400 AND E401 FOR ADDITIONAL DETAILS ON THE ELECTRICAL SYSTEM.
- FOR ELECTRICAL SCHEDULES, SEE DRAWINGS ON SHEETS E600 AND E601.

PLAN NOTES:

- OCCUPANCY SENSOR(TYP.) MODEL DT-305 OR CX-100-3 OR SIMILAR.

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PROJECT INFORMATION:

160KW DATA CENTER
REFERENCE DESIGN
PREFAB CONFIGURATION-9

KEYPLAN:

REV.	DATE	DESCRIPTION
0	06/03/19	CONCEPTUAL DRAWINGS
1		
2		

DRAWN BY: GR

CHECKED BY: MN

PROJECT NUMBER: ENGR18-0024

DRAWING SCALE: NONE

SHEET TITLE:
**ELECTRICAL
LIGHTING PLAN
CONFIGURATION-9**

DATE: 06/03/19

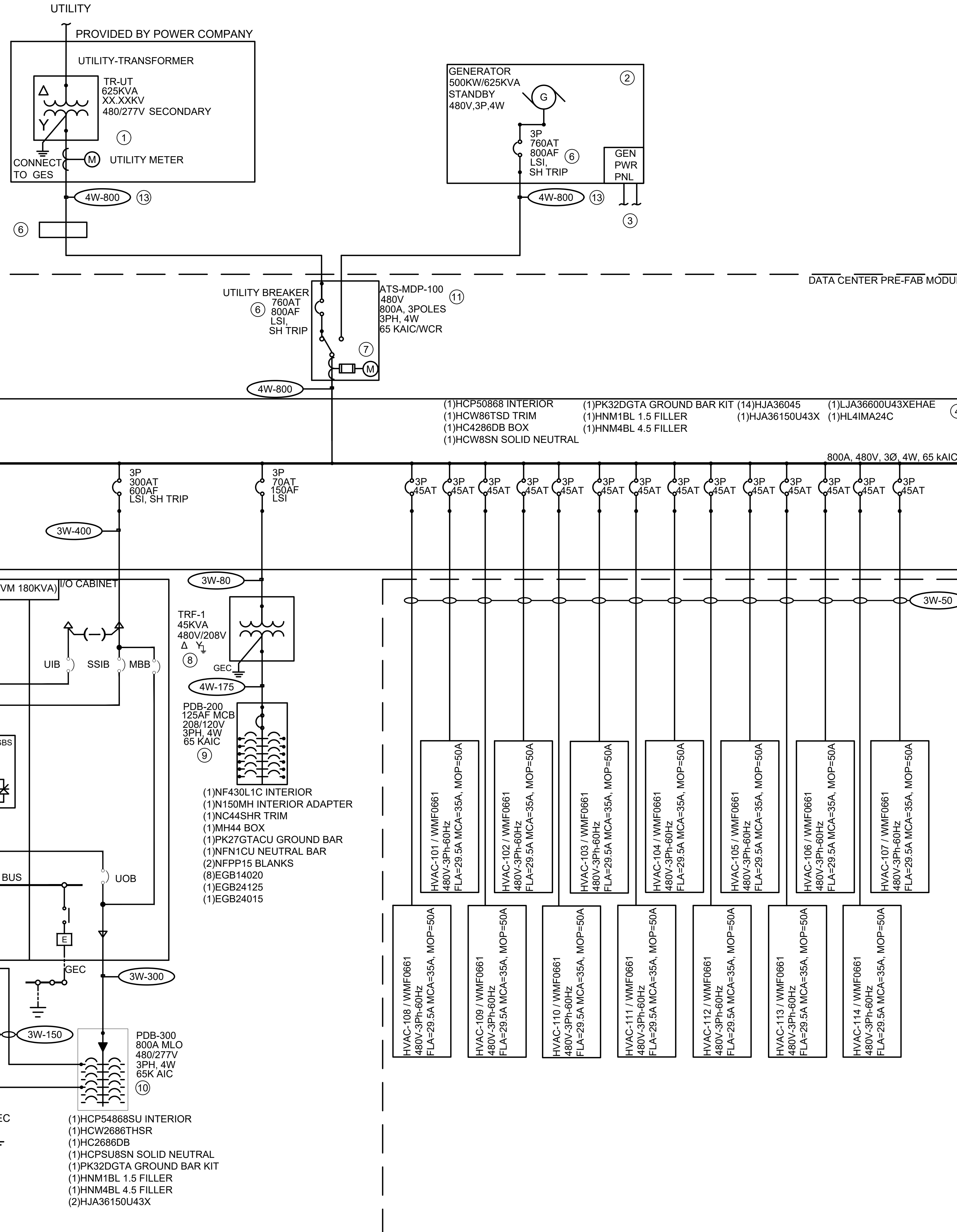
DRAWING NUMBER:
E104

**ELECTRICAL LIGHTING PLAN
CONFIGURATION-9**

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

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ELECTRICAL ONE LINE DIAGRAM:



GENERAL NOTES:

- SEE DRAWING E001 FOR ABBREVIATIONS AND SYMBOLS.
- SEE DRAWING E002 AND E003 FOR ELECTRICAL SPECIFICATIONS.
- SEE DRAWINGS E600 AND E601 FOR ELECTRICAL SCHEDULES.

CONTROLS NOTES:

- SUPPLY OF CONTROL PANELS ALONG WITH THEIR INTEGRATION SERVICES WITH THE DATA CENTER SYSTEM SHALL BE PROVIDED BY SCHNEIDER EPMS DIVISION.
- PROVIDE A SEPARATE CONDUIT FOR CONNECTING THE SPD WITH PM8000 FOR SPD FAILURE MONITORING.
- PROVIDE A 1KVA 208V/120V CPT FOR PROVIDING 120V CONTROL POWER TO CONTROL EQUIPMENT ON 120V AC SUPPLY.
- PROVIDE A 120V AC TO 24V DC POWER SUPPLY FOR 24V DC CONTROL POWER REQUIREMENTS.
- THE CIRCUIT BREAKER INSIDE THE GENERATOR ENCLOSURE SHALL BE EQUIPPED WITH A 24V DC SHUNT TRIP UNIT. SHUNT TRIPS ARE TO BE WIRED TO EPO PANEL.
- PROVIDE AN ETHERNET SWITCH WITH SUFFICIENT PORTS FOR CONNECTING THE PM8000, UPS SYSTEM COMPONENTS AND ALL OTHER COMPONENTS THAT REQUIRE REMOTE MONITORING AND CONFIGURATION.

PLAN NOTES:

- UTILITY METER (TO BE PROVIDED BY POWER COMPANY).
- 500KW/625KVA STANDBY GENERATOR.
- RUN TWO PHASE WIRES, A NEUTRAL WIRE AND A GROUND WIRE IN A 1-1/2" CONDUIT FROM PDB-200 PANEL TO GENERATOR POWER PANEL. REFER TO PANEL SCHEDULE ON DRAWING E-601 FOR DETAILS.
- 480V, 800AMP I-LINE DISTRIBUTION PANELBOARD.
- OPTIONAL 800A SERVICE ENTRANCE RATED DISCONNECT SWITCH (PROVIDED BY OTHERS).
- CIRCUIT BREAKER WILL BE EQUIPPED WITH A MICROLOGIC 5.0 POWER TRIP UNIT AND A SHUNT TRIP UNIT. SHUNT TRIPS SHALL BE WIRED TO EPO PANEL.
- ASCO-5210 POWER METER(OPTIONAL).
- 45KVA TRANSFORMER MODEL EX45T3H.
- 208/120V, 125AMP NF DISTRIBUTION PANEL. SEE DRAWING E-601 FOR DETAILS.
- 480/277V, 800AMP HCP-SU I-LINE PANEL. SEE DRAWING E-600 FOR DETAILS.
- ASCO-300 MODEL(480V) SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH WITH PROGRAMMABLE DELAYED TRANSITION.
- MODULAR POWER DISTRIBUTION UNIT PDPM150G6F. SEE DRAWING E-601 FOR DISTRIBUTION PANEL SCHEDULES WITHIN PDU-A1 AND PDU-A2 FOR DETAILS.
- CONDUCTORS FROM UTILITY AND GENERATOR SHOWN AS PER WIRE SCHEDULE SHALL BE RUN IN 3" PVC SCH-80 CONDUITS.



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PROJECT INFORMATION:

160KW DATA CENTER REFERENCE DESIGN PREFAB CONFIGURATION-9

KEYPLAN:

REV.	DATE	DESCRIPTION
0	06/03/19	CONCEPTUAL DRAWINGS
1		
2		

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PROJECT NUMBER: ENGR18-0024

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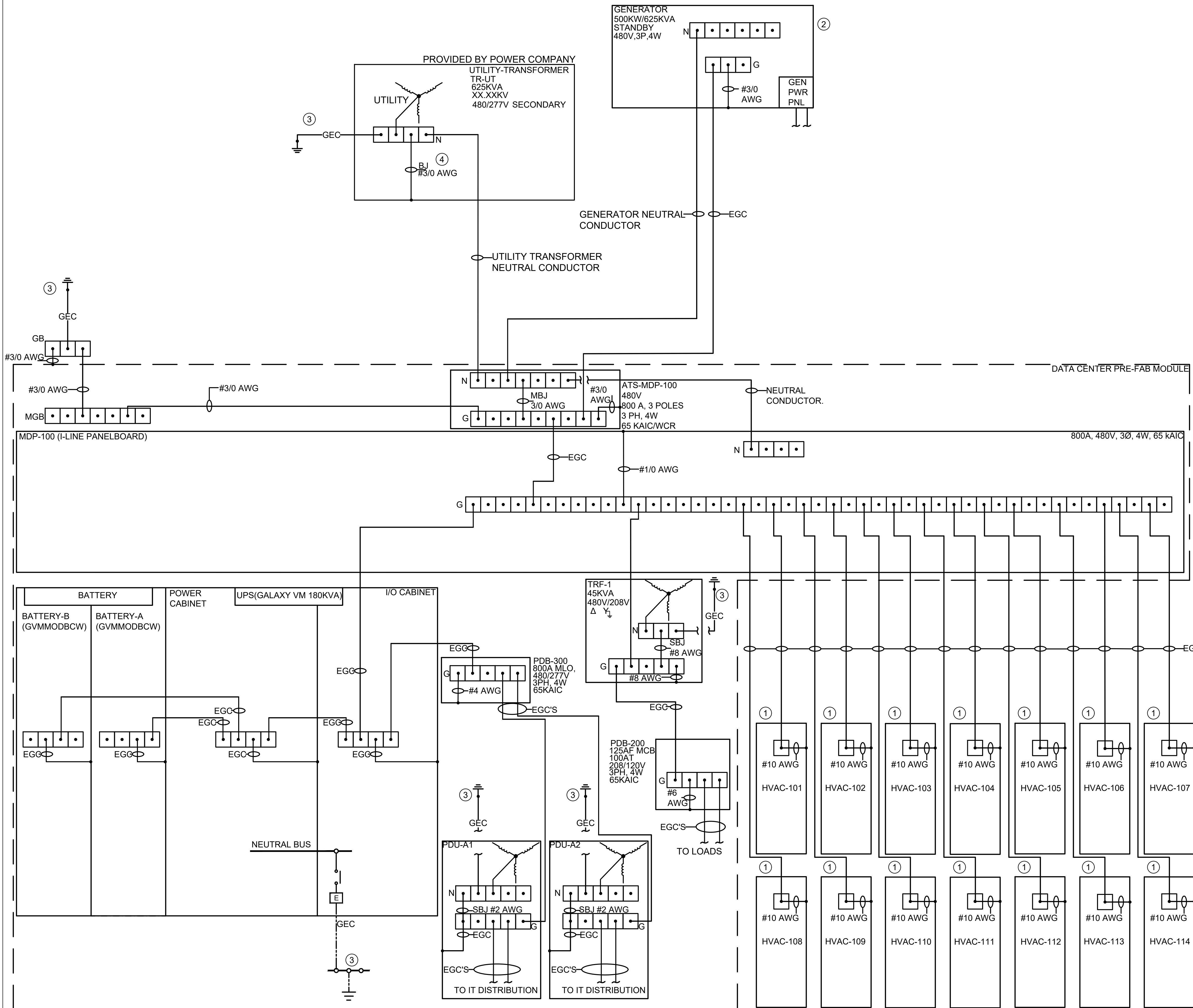
SHEET TITLE:
ELECTRICAL ONE LINE DIAGRAM CONFIGURATION-9

DATE: 06/03/19

DRAWING NUMBER:

E400

ELECTRICAL GROUNDING DIAGRAM:



GENERAL NOTES:

- SEE DRAWING E001 FOR ABBREVIATIONS AND SYMBOLS.
- SEE DRAWING E002 AND E003 FOR ELECTRICAL SPECIFICATIONS.
- SEE DRAWINGS E400 FOR ELECTRICAL ONE LINE DIAGRAMS.
- SEE DRAWING E500 FOR ELECTRICAL DETAILS.
- SEE DRAWING E600 AND E601 FOR ELECTRICAL SCHEDULES.
- ALL GROUNDING CONNECTIONS AND BONDINGS SHALL BE BY ARTICLE 250 OF NFPA 70. EQUIPMENT GROUNDING CONDUCTORS ARE NORMALLY RUN WITH CIRCUIT CONDUCTORS. SEE DRAWING E400 AND E401 FOR ONE LINE DIAGRAMS AND E600 ELECTRICAL SCHEDULES FOR EGC SIZING DETAILS.
- REFER TO ELECTRICAL GROUNDING AND LIGHTNING PROTECTION DRAWING ON SHEET E103 FOR ADDITIONAL DETAILS.

PLAN NOTES:

- ① WALL MOUNT COOLING UNIT WITH HEATER(TYP.).
- ② GENERATOR GROUNDING SYSTEM IS BASED ON A NON-SEPERATELY DERIVED SYSTEM.
- ③ SEE DRAWING E103 GROUNDING AND LIGHTNING PROTECTION FOR DETAILS.
- ④ BONDING JUMPER(PROVIDED BY OTHERS) TO BE INSTALLED AS REQUIRED. ALL GROUNDING CONNECTIONS AND BONDINGS SHALL BE AS PER ARTICLE 250 AND 450 OF NFPA 70 AND SHALL MEET ALL STATE AND LOCAL CODE REQUIREMENTS.

LEGEND:

- EGC — EQUIPMENT GROUNDING CONDUCTOR NORMALLY RUN IN RACEWAYS WITH CIRCUIT CONDUCTORS. SIZE PER NEC.
- GEC — GROUNDING ELECTRODE CONDUCTOR.
- BJ — BONDING JUMPER. SIZE PER NEC.
- MBJ — MAIN BONDING JUMPER.
- SBJ — SYSTEM BONDING JUMPER.
- MGB MAIN GROUNDING BAR.
- N NEUTRAL BAR.
- G GROUND BAR.



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PROJECT INFORMATION:

160KW DATA CENTER
REFERENCE DESIGN
PREFAB CONFIGURATION-9

KEYPLAN:

REV.	DATE	DESCRIPTION
0	06/03/19	CONCEPTUAL DRAWINGS
1		
2		

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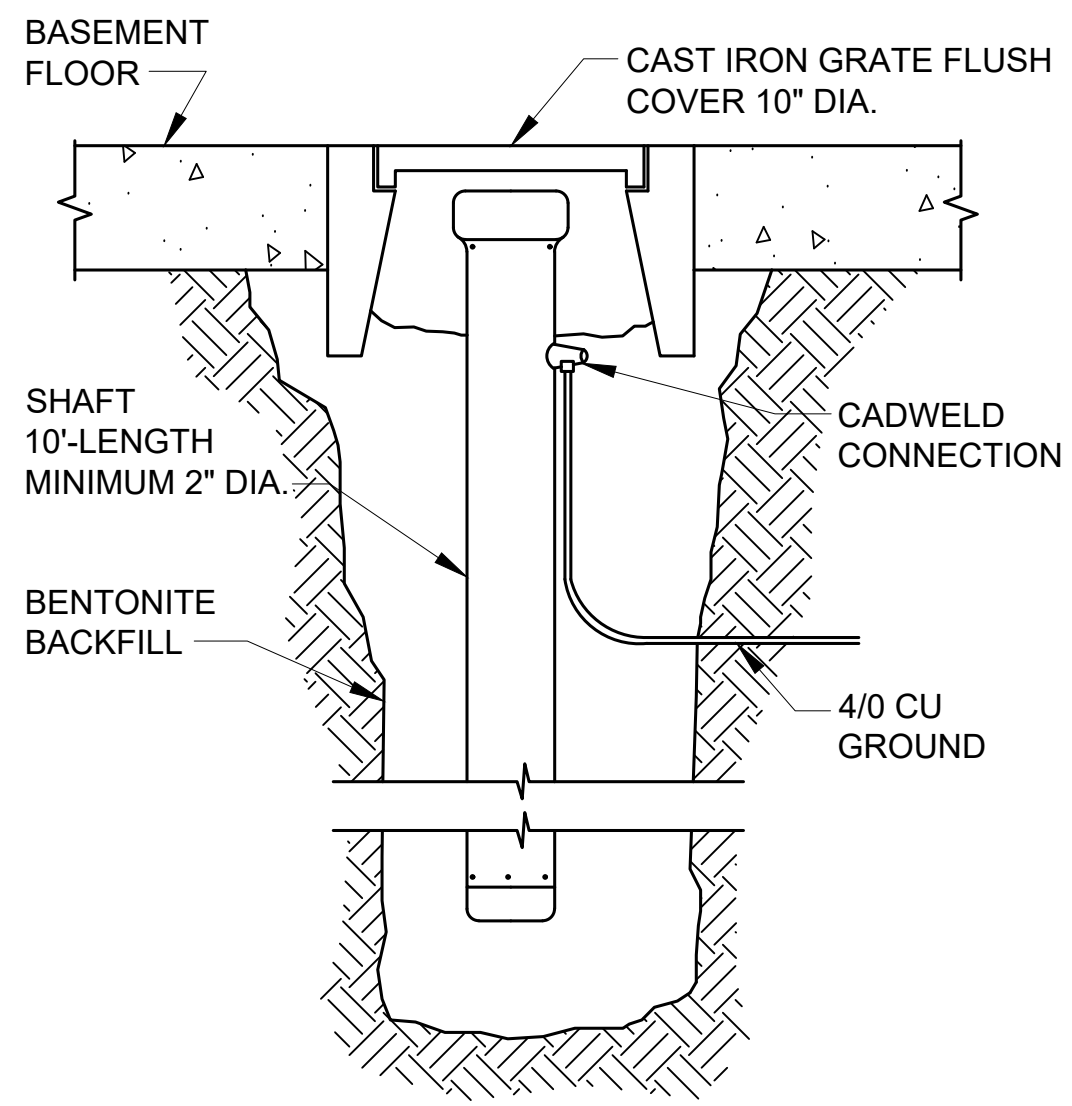
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SHEET TITLE:
ELECTRICAL GROUNDING DIAGRAM CONFIGURATION-9

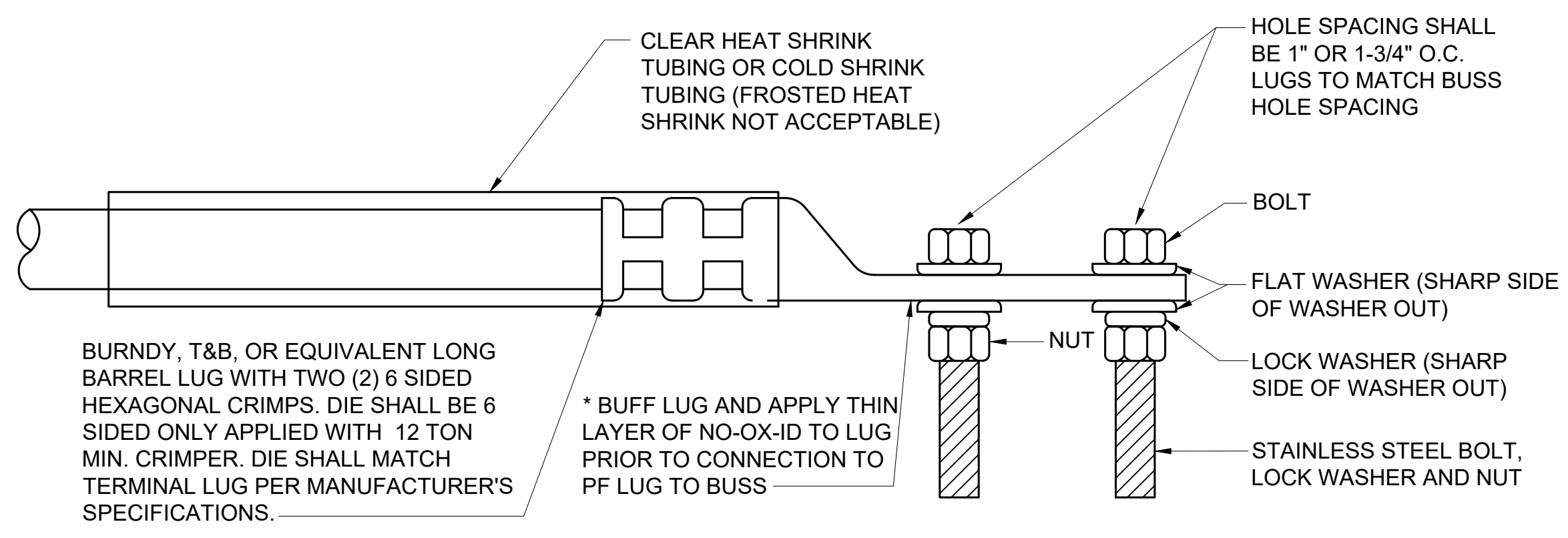
DATE: 06/03/19

DRAWING NUMBER:

E401

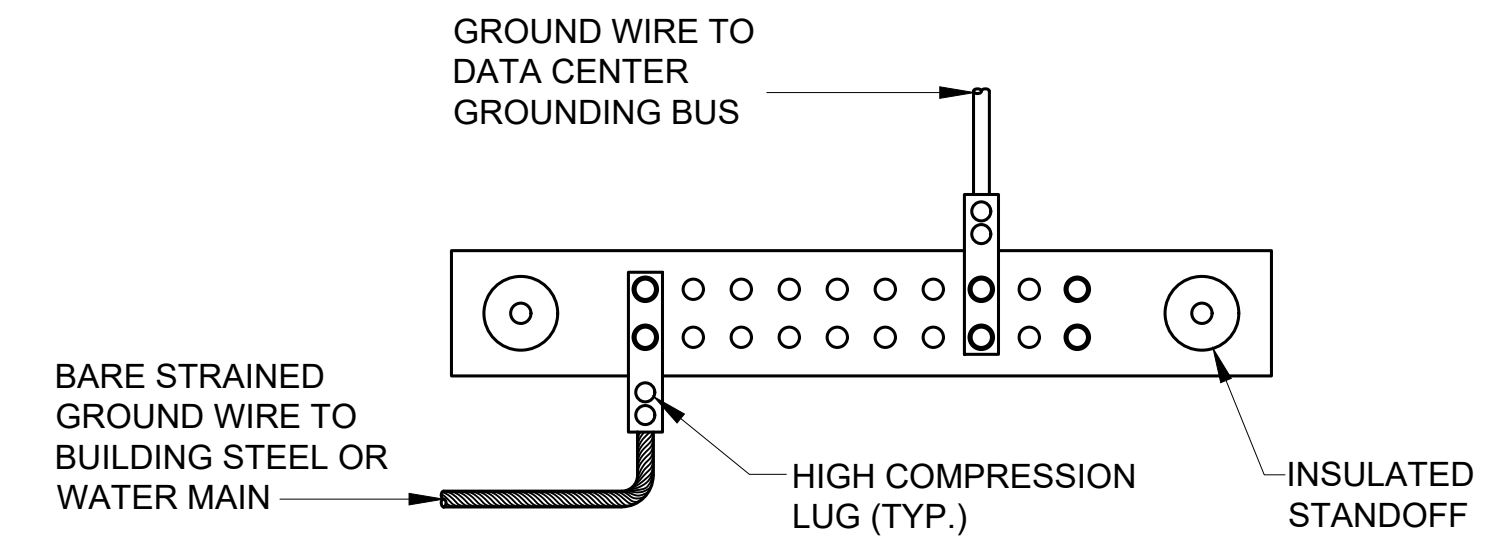


1 MAIN GROUNDING ROD SYSTEM - DETAIL
E500 NOT TO SCALE

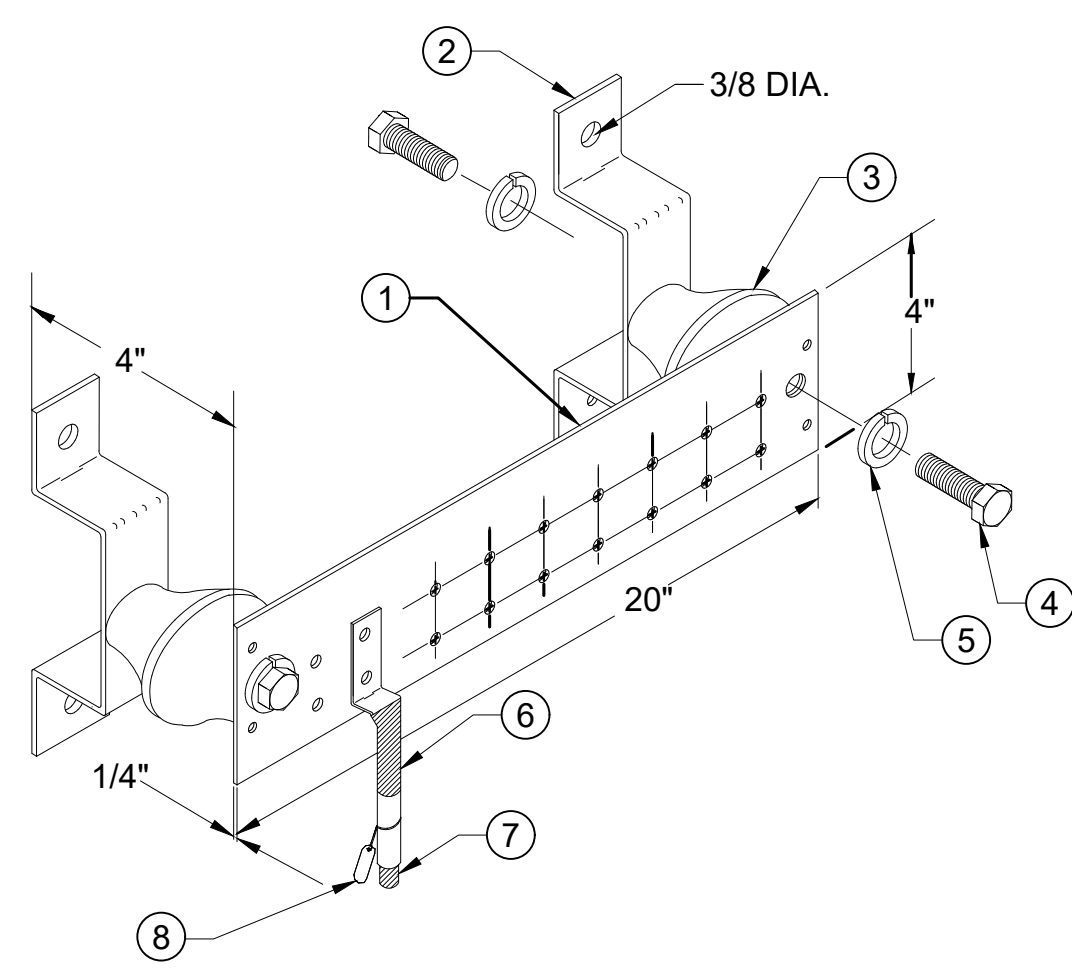


IMPORTANT NOTE:
THE CONTRACTOR SHALL SUPPLY A SAMPLE AS ILLUSTRATED ON THIS DETAIL TO LEE TECHNOLOGIES FOR APPROVAL PRIOR TO LAYING ANY CABLES OR PURCHASING LUGS. THE CONTRACTOR SHALL SUBMIT SAMPLES FOR REVIEW IN A TIMELY MANNER TO ENSURE MATERIALS MAY BE ORDERED TO MEET PROJECT SCHEDULE. FAILURE TO SUBMIT SAMPLE FOR REVIEW AND USE OF NON-APPROVED MATERIALS MAY BE SUBJECT TO REPLACEMENT AT CONTRACTORS EXPENSE.

2 CABLE LUG - DETAIL
E500 NOT TO SCALE



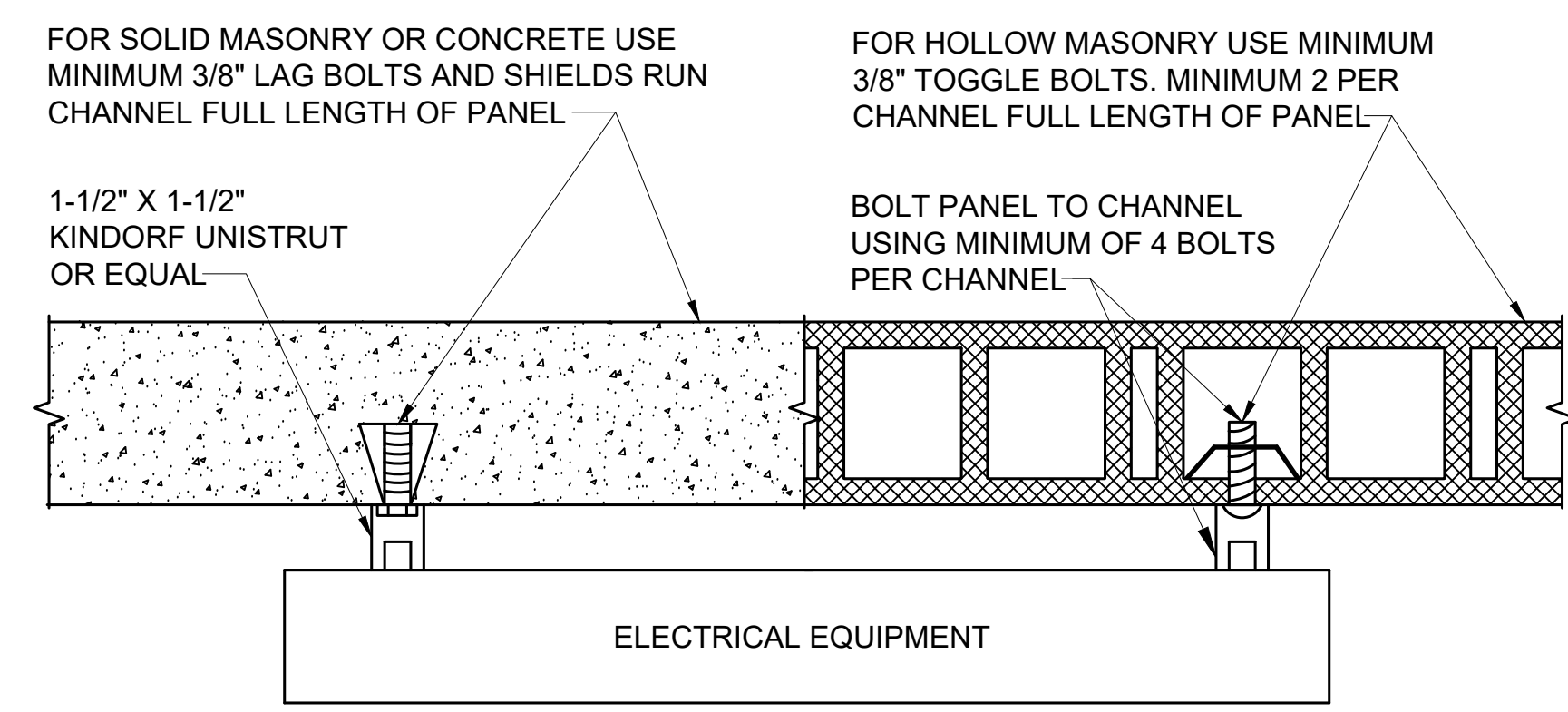
3 MAIN GROUNDING BUS - DETAIL
E500 NOT TO SCALE



ITEM NO.	REQ.	DESCRIPTION
①	1	GROUND BAR
②	2	WALL MTG. BRKT.(OR FLOOR)
③	2	INSULATORS
④	4	5/8"-11 X 1 H.H.C.S.
⑤	4	5/8" LOCKWASHER
⑥	1	SEE DETAIL #1 IN THIS SHEET
⑦	1	GREEN INSULATED GROUND CONDUCTOR
⑧	1	DESTINATION LABEL TAG DO NOT REMOVE

- BELOW RAISED FLOOR AGB +12" A.F.F.
- PROVIDE INSULATORS 24" ON CENTER ACROSS LENGTH OF GROUND BAR.
- ALL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL TAMPER PROOF HARDWARE OR EXOTHERMIC WELD.

4 INSULATED GROUND BAR - DETAIL
E500 NOT TO SCALE



NOTE:
ALL SAFETY SWITCHES, 60A AND LARGER; ALL STARTERS AND CONTROLLERS, 3 H.P. AND LARGER; ALL SURFACE MOUNTED PANELS AND ALL EQUIPMENT MOUNTED ON OUTSIDE WALLS, SHALL BE MOUNTED IN THIS MANNER.

5 SURFACE EQUIPMENT MOUNTING - DETAIL
E500 NOT TO SCALE



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SEAL:

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PROJECT INFORMATION:
**160KW DATA CENTER
REFERENCE DESIGN
PREFAB CONFIGURATION-9**

KEYPLAN:

REV.	DATE	DESCRIPTION
0	06/03/19	CONCEPTUAL DRAWINGS
1		
2		

DRAWN BY: GR

CHECKED BY: MN

PROJECT NUMBER: ENGR18-0024

DRAWING SCALE: NONE

SHEET TITLE:
**ELECTRICAL DETAILS
CONFIGURATION-9**

DATE: 06/03/19

DRAWING NUMBER:

E500

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DISTRIBUTION PANELBOARD 'MDP-100' SCHEDULE																				
VOLTAGE	PH	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING SURFACE	LOCATION MODULE	PANEL CATALOG NUMBER :												
277 / 480	3	4		800	65,000			LOAD	COND.	WIRE	CIRCUIT BRKR	ITEM	PHASE			LOAD	COND.	WIRE	CIRCUIT BRKR	ITEM
CKT #	ITEM SERVED	CIRCUIT TRIP	BRKR	WIRE SIZE	COND. SIZE	LOAD (KVA)	A	B	C	LOAD (KVA)	COND. SIZE	WIRE SIZE	P	TRIP	ITEM SERVED	CKT #				
1	UPS	300	3	2 #3/0	2"	180.00	67.62			22.85	1"	4	3	70	TRF-1	2				
3																4				
5																6				
7							16.35									8				
9	HVAC-101	45	3	8	3/4"	24.52		16.35		24.52	3/4"	8	3	45	HVAC-108	10				
11																12				
13							16.35									14				
15	HVAC-102	45	3	8	3/4"	24.52		16.35		24.52	3/4"	8	3	45	HVAC-109	16				
17																18				
19							16.35									20				
21	HVAC-103	45	3	8	3/4"	24.52		16.35		24.52	3/4"	8	3	45	HVAC-110	22				
23																24				
25							16.35									26				
27	HVAC-104	45	3	8	3/4"	24.52		16.35		24.52	3/4"	8	3	45	HVAC-111	28				
29																30				
31							16.35									32				
33	HVAC-105	45	3	8	3/4"	24.52		16.35		24.52	3/4"	8	3	45	HVAC-112	34				
35																36				
37							16.35									38				
39	HVAC-106	45	3	8	3/4"	24.52		16.35		24.52	3/4"	8	3	45	HVAC-113	40				
41																42				
43							8.17			0.00	3/4"	8	3	45	HVAC-114(REDUANT)	44				
45	HVAC-107	45	3	8	3/4"	24.52		8.17								46				
47																48				
49							0.00									50				
51	SPACE							0.00								52				
53																54				
55							0.00									56				
57	SPACE							0.00								58				
59																60				
61							0.00									62				
63	SPD BREAKER	60	3	6	3/4"	0.00		0.00								64				
65																66				
							173.87	173.87	173.87											

LOAD TYPE	LOAD (KVA)	SUBLOADS (KVA)										TOTAL (KVA)	DEM FAC	DEM LD	NOTES
UPS	180.00	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	180.00	1.00	180.00	
TRF-1	22.85	-	-	-	-	-	-	-	-	-	-	22.85	1.00	22.85	
HVAC-101	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-102	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-103	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-104	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-105	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-106	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-107	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-108	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-109	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-110	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-111	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-112	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-113	24.52	-	-	-	-	-	-	-	-	-	-	24.52	1.00	24.52	
HVAC-114(REDUANT)	0.00	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	
												521.61		521.61	TOTAL KVA
25 % OF Largest Motor Load	6.13	-	-	-	-	-	-	-	-	-	-	6.13	1.00	6.13	
25 % OF UPS Continuous Load plus Battery Charging	70.00	-	-	-	-	-	-	-	-	-	-	70.00	1.00	70.00	
25 % OF TRF-1's Continuous Loads	5.06	-	-	-	-	-	-	-	-	-	-	4.91	1.00	4.91	
												602.65		602.65	SUM TOTAL KVA(125% CONTINUOUS LOAD+ 100% NON CONTINUOUS LOAD+100% MOTOR LOADS+ 25% LARGEST MOTOR LOAD)
												724.88		724.88	TOTAL AMPS

DISTRIBUTION PANELBOARD 'PDB-300' SCHEDULE																				
VOLTAGE	PH	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING SURFACE	LOCATION MODULE	PANEL CATALOG NUMBER :												
277 / 480	3	4		800	65,000			LOAD	COND.	WIRE	CIRCUIT BRKR	ITEM	PHASE			LOAD	COND.	WIRE	CIRCUIT BRKR	ITEM
CKT #	ITEM SERVED	CKT TRIP	BRK P	WIRE SIZE	COND. SIZE	LOAD (KVA)	A	B	C	LOAD (KVA)	COND. SIZE	WIRE SIZE	P	TRIP	ITEM SERVED	CKT #				
1	PDU-A1	150	3	1/0		90.00	60.40			91.20		1/0	3	150	PDU-A2	2				
3																4				
5																6				
7							0.00									8				
9	SPACE							0.00								10				
11																12				
							60.40	60.40	60.40											
												181.20		181.20	TOTAL KVA					
												217.95		217.95	TOTAL AMPS					

PLAN NOTES:

- 1 POWER SHALL BE DISTRIBUTED FROM PDB-300 PANEL TO THE TWO PDP150G6F PDU'S PDU-A1 AND PDU-A2 THROUGH CABLE TRAYS.

3-WIRE FEEDER SIZING SCHEDULE

SYMBOL	# OF SETS	CONDUCTORS (COPPER)	GND.	CONDUIT
3W-15	1	3 #12	#12	3/4"
3W-20	1	3 #12	#12	3/4"
3W-25	1	3 #10	#12	3/4"
3W-30	1	3 #10	#10	3/4"
3W-35	1	3 #8	#10	3/4"
3W-40	1	3 #8	#10	3/4"
3W-45	1	3 #8	#10	3/4"
3W-50	1	3 #8	#10	3/4"
3W-60	1	3 #6	#10	3/4"
3W-70	1	3 #4	#8	1"
3W-80	1	3 #4	#8	1"
3W-90	1	3 #3	#8	1-1/4"
3W-100	1	3 #3	#8	1-1/4"
3W-110	1	3 #2	#6	1-1/4"
3W-125	1	3 #1	#6	1-1/4"
3W-150	1	3 1/0	#6	1-1/2"
3W-175	1	3 2/0	#6	2"
3W-200	1	3 3/0	#6	2"
3W-225	1	3 4/0	#4	2"
3W-250	1	3 250 MCM	#4	2-1/2"
3W-300	1	3 350 MCM	#4	2-1/2"
3W-350	1	3 500 MCM	#3	3"
3W-400	2	3 3/0	#3	2"
3W-450	2	3 4/0	#2	2"
3W-500	2	3 250 MCM	#2	2-1/2"
3W-600	2	3 350 MCM	#1	2-1/2"
3W-700	2	3 500 MCM	1/0	3"
3W-800	3	3 300 MCM	1/0	2-1/2"
3W-1000	3	3 400 MCM	2/0	2-1/2"
3W-1200	4	3 350 MCM	3/0	2-1/2"
3W-1600	5	3 400 MCM	4/0	2-1/2"
3W-2000	6	3 400 MCM	250 MCM	2-1/2"
3W-2500	7	3 500 MCM	350 MCM	3"
3W-3000	8	3 500 MCM	400 MCM	3"
3W-4000	11	3 500 MCM	500 MCM	3"
3W-5000	11	3 700 MCM	700 MCM	3-1/2"
3W-6000	13	3 750 MCM	800 MCM	3-1/2"

+ WHERE THE FEEDER SYMBOL IS SHOWN WITH A SUBSCRIPT 'IG', THE FEEDER SHALL BE PROVIDED WITH A SEPERATE ISOLATED GROUND CONDUCTOR SIZED TO MATCH THE EQUIPMENT GROUND.

-CONDUCTOR SIZING BASED ON NEC TABLE 310.15(B)(16) FOR COPPER CONDUCTORS RATED AT 75°C.
-EQUIPMENT GROUNDING CONDUCTOR SIZING BASED ON NEC TABLE 250.122 FOR COPPER CONDUCTORS.
-CONDUIT SIZING BASED ON NEC TABLE C.1 FOR TYPE THHN, THWN, THWN-2 CONDUCTORS IN ELECTRICAL METALLIC TUBING.

4-WIRE FEEDER SIZING SCHEDULE

SYMBOL	# OF SETS	CONDUCTORS (COPPER)	GND.	CONDUIT
4W-15	1	4 #12	#12	3/4"
4W-20	1	4 #12	#12	3/4"
4W-25	1	4 #10	#12	3/4"
4W-30	1	4 #10	#10	3/4"
4W-35	1	4 #8	#10	3/4"
4W-40	1	4 #8	#10	3/4"
4W-45	1	4 #8	#10	3/4"
4W-50	1	4 #8	#10	3/4"
4W-60	1	4 #6	#10	1"
4W-70	1	4 #4	#8	1-1/4"
4W-80	1	4 #4	#8	1-1/4"
4W-90	1	4 #3	#8	1-1/4"
4W-100	1	4 #3	#8	1-1/4"
4W-110	1	4 #2	#6	1-1/4"
4W-125	1	4 #1	#6	1-1/2"
4W-150	1	4 1/0	#6	2"
4W-175	1	4 2/0	#6	2"
4W-200	1	4 3/0	#6	2"
4W-225	1	4 4/0	#4	2-1/2"
4W-250	1	4 250 MCM	#4	2-1/2"
4W-300	1	4 350 MCM	#4	3"
4W-350	1	4 500 MCM	#3	3"
4W-400	2	4 3/0	#3	2"
4W-450	2	4 4/0	#2	2-1/2"
4W-500	2	4 250 MCM	#2	2-1/2"
4W-600	2	4 350 MCM	#1	3"
4W-700	2	4 500 MCM	1/0	3"
4W-800	3	4 300 MCM	1/0	2-1/2"
4W-1000	3	4 400 MCM	2/0	3"
4W-1200	4	4 350 MCM	3/0	3"
4W-1600	5	4 400 MCM	4/0	3"
4W-2000	6	4 400 MCM	250 MCM	3"
4W-2500	7	4 500 MCM	350 MCM	3"
4W-3000	8	4 500 MCM	400 MCM	3"
4W-4000	11	4 500 MCM	500 MCM	3"
4W-5000	11	4 700 MCM	700 MCM	4"
4W-6000	13	4 750 MCM	800 MCM	4"

+ WHERE

DISTRIBUTION PANELBOARD 'PDU-A1' SCHEDULE																
VOLTAGE	PH	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	LOCATION	PANEL CATALOG NUMBER								
120/ 208	3	4	600		65,000	SURFACE	MODULE									
CKT #	ITEM SERVED	CKT. TRIP	BRK P	WIRE SIZE	COND. SIZE	LOAD (KVA)	PHASE	LOAD (KVA)	COND. SIZE	WIRE SIZE	CKT. P	BRK TRIP	ITEM SERVED	CKT #		
							A B C									
1							4.00							2		
3	RACK#1	30	3	10		6.00	4.00	6.00		10	3	30	RACK#10	4		
5							4.00							6		
7							4.00							8		
9	RACK#2	30	3	10		6.00	4.00	6.00		10	3	30	RACK#11	10		
11							4.00							12		
13							4.00							14		
15	RACK#3	30	3	10		6.00	4.00	6.00		10	3	30	RACK#12	16		
17							4.00							18		
19							4.00							20		
21	RACK#4	30	3	10		6.00	4.00	6.00		10	3	30	RACK#13	22		
23							4.00							24		
25							4.00							26		
27	RACK#5	30	3	10		6.00	4.00	6.00		10	3	30	RACK#14	28		
29							4.00							30		
31							4.00							32		
33	RACK#6	30	3	10		6.00	4.00	6.00		10	3	30	RACK#15	34		
35							4.00							36		
37							2.00							38		
39	RACK#7	30	3	10		6.00	2.00						SPACE	40		
41							2.00							42		
43							2.00							44		
45	RACK#8	30	3	10		6.00	2.00						SPACE	46		
47							2.00							48		
49							2.00							50		
51	RACK#9	30	3	10		6.00	2.00						SPACE	52		
53							2.00							54		
55							0.00							56		
57	SPACE						0.00						SPACE	58		
59							0.00							60		
61							0.00							62		
63	SPACE						0.00						SPACE	64		
65							0.00							66		
67							0.00							68		
69	SPACE						0.00						SPACE	70		
71							0.00							72		
						30.00	30.00	30.00								

NOTES:	90.00	TOTAL KVA
DEMAND FACTOR IN ACCORANCE WITH NEC.	249.82	TOTAL AMPS
RACKS SHALL HAVE (N) DISTRIBUTION. OPTIONAL UPGRADE TO (2N) DISTRIBUTION SHALL BE AVAILABLE ON REQUEST.		

DISTRIBUTION PANELBOARD 'PDU-A2' SCHEDULE																
VOLTAGE	PH	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	LOCATION	PANEL CATALOG NUMBER								
120/ 208	3	4	600		65,000	SURFACE	MODULE									
CKT #	ITEM SERVED	CKT. TRIP	BRK P	WIRE SIZE	COND. SIZE	LOAD (KVA)	PHASE	LOAD (KVA)	COND. SIZE	WIRE SIZE	CKT. P	BRK TRIP	ITEM SERVED	CKT #		
							A B C									
1							4.00							2		
3	RACK#16	30	3	10		6.00	4.00	6.00		10	3	30	RACK#25	4		
5							4.00							6		
7							4.00							8		
9	RACK#17	30	3	10		6.00	4.00	6.00		10	3	30	RACK#26	10		
11							4.00							12		
13							4.00							14		
15	RACK#18	30	3	10		6.00	4.00	6.00		10	3	30	RACK#27	16		
17							4.00							18		
19							4.00							20		
21	RACK#19	30	3	10		6.00	4.00	6.00		10	3	30	RACK#28	22		
23							4.00							24		
25							4.00							26		
27	RACK#20	30	3	10		6.00	4.00	6.00		10	3	30	RACK#29	28		
29							4.00							30		
31							4.00							32		
33	RACK#21	30	3	10		6.00	4.00	6.00		10	3	30	RACK#30	34		
35							4.00							36		
37							2.00							38		
39	RACK#22	30	3	10		6.00	2.00						SPACE	40		
41							2.00							42		
43							2.00							44		
45	RACK#23	30	3	10		6.00	2.00						SPACE	46		
47							2.00							48		
49							2.00							50		
51	RACK#24	30	3	10		6.00	2.00						SPACE	52		
53							2.00							54		
55							0.00							56		
57	SPACE						0.00						SPACE	58		
59							0.00							60		
61							0.00							62		
63	SPACE						0.00						SPACE	64		
65							0.00							66		
67	CP-100	15	1	12		1.00	1.00	0.00				1	SPARE	68		
69	SPARE	15	1			0.00	0.00							70		
71							0.00							72		
						31.00	30.00	30.00								

NOTES:	91.00	TOTAL KVA
DEMAND FACTOR IN ACCORANCE WITH NEC.	252.59	TOTAL AMPS
RACKS SHALL HAVE (N) DISTRIBUTION. OPTIONAL UPGRADE TO (2N) DISTRIBUTION SHALL BE AVAILABLE ON REQUEST.		

SYSTEM LOAD CALCULATION		
ITEM	LOAD	UNIT
CRITICAL LOAD	180.000	KVA
HVAC-101	24.520	KVA
HVAC-102	24.520	KVA
HVAC-103	24.520	KVA
HVAC-104	24.520	KVA
HVAC-105	24.520	KVA
HVAC-106	24.520	KVA
HVAC-107	24.520	KVA
HVAC-108	24.520	KVA
HVAC-109	24.520	KVA
HVAC-110	24.520	KVA
HVAC-111	24.520	KVA
HVAC-112	24.520	KVA
HVAC-113	24.520	KVA
HVAC-114(REDUANT)	0.000	KVA
ERV & DAMPER SYSTEM	0.600	KVA
FIRE SUPPRESSION	2.000	KVA
RECEPTACLES	2.000	KVA
GENERATOR POWER PANEL	15.000	KVA
CONTROLS POWER	1.000	KVA
INTERIOR LIGHTING	0.65	KVA
HUMIDIFIER(OPTIONAL)	0.6	KVA
EXTERIOR LIGHTING	1	KVA
TOTAL KVA	521.610	KVA

PLAN NOTES:
 ① POWER SHALL BE DISTRIBUTED TO IT RACKS AND CONTROL PANEL LOAD THROUGH CABLE TRAYS.

DISTRIBUTION PANELBOARD 'PDB-200' SCHEDULE																					
VOLTAGE	PH	WIRE	MCB (A)	MLO (A)	AIC	MOUNTING	LOCATION	PANEL CATALOG NUMBER :													
120/ 208	3	4	125		65,000	SURFACE	MODULE														
CKT #	ITEM SERVED	CKT. TRIP	BRK P	WIRE SIZE	COND. SIZE	LOAD (KVA)	PHASE	LOAD (KVA)	COND. SIZE	WIRE SIZE	CKT. P	BRK TRIP	ITEM SERVED	CKT #							
							A B C														
1	ERV & DAMPER SYSTEM	20	1	12	3/4"	0.60		2.40					1.80	3/4"	12	1	20	FIRE SUPPRESSION	2		
3	RECEPTACLES	20	1	12	3/4"	1.80							2.80		1.00	3/4"	12	1	20	EXTERIOR LIGHTING	4
5	GENERATOR POWER PANEL	125	2	1	1-1/2"	15.00							8.50		1.00	3/4"	12	1	20	CONTROLS POWER	6
7													0.00		0.00		1	20	SPARE	8	
9	INTERIOR LIGHTING	20	1	12	3/4"	0.65		0.65					7.50		0.00		1	20	SPARE	10	
11								0.55												12	
13	SPACE												0.55		1.10	3/4"	12	2	15	HUMIDIFIER(OPTIONAL)	14
15																				16	
17	SPACE																			18	
19																				20	
21	SPACE																			22	
23																				24	
25	SPACE																			26	
27																				28	
29	SPACE																			30	
						3.60	10.30	9.05													
LOAD TYPE	LOAD (KVA)	SUBLOADS (KVA)									TOTAL (KVA)	DEM FAC	DEM LD	NOTES							
ERV & DAMPER SYSTEM	0.60	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	PNL	0.60	1.00	0.60					
FIRE SUPPRESSION	1.80	-	-	-	-	-	-	-	-	-	-	-	-	1.80	1.00	1.80					
RECEPTACLES	1.80	-	-	-	-	-	-	-	-	-	-	-	-	1.80	1.00	1.80					
EXTERIOR LIGHTING	1.00	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00					
GENERATOR POWER PANEL	15.00	-	-	-	-	-	-	-	-	-	-	-	-	15.00	1.00	15.00					
CONTROLS POWER	1.00	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00					
INTERIOR LIGHTING	0.65	-	-	-	-	-	-	-	-	-	-	-	-	0.65	1.00	0.65					
HUMIDIFIER(OPTIONAL)	1.10	-	-	-	-	-	-	-	-	-	-	-	-	1.10	1.00	1.10					
SPARE	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.00	1.00	0.00					
SPARE	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.00	1.00	0.00					
<hr/>																					
25% Of Largest Motor Load	0.15	-	-	-	-	-	-	-	-	-	-	-	-	0.15	1.00	0.15					
25% Of Continuous Non Motor Loads	4.86	-	-	-	-</																