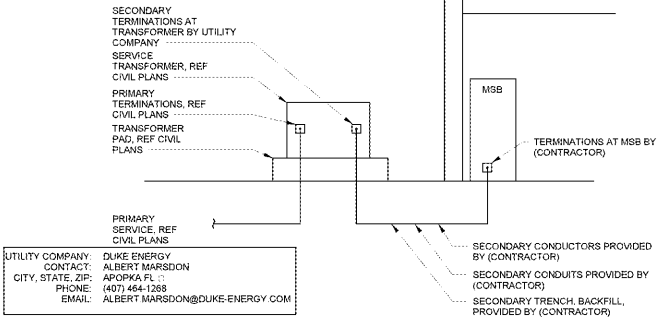


CTS FURNISHED BY (UTILITY), INSTALLED BY (UTILITY)
 CTS LOCATED AT (TRANSFORMER)
 METER BASE FURNISHED BY (CONTRACTOR), INSTALLED BY (CONTRACTOR)
 METER FURNISHED BY (UTILITY/CONTRACTOR), INSTALLED BY (UTILITY/CONTRACTOR)
 METER LOCATION AT (TRANSFORMER)
 METERING CONDUIT (1-1/4") PROVIDED BY (CONTRACTOR)



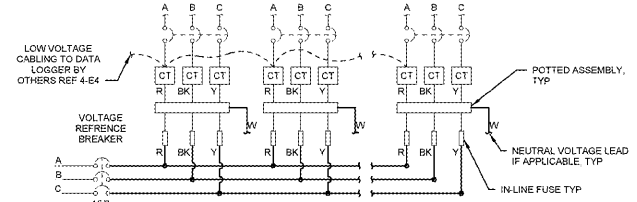
6 UTILITY COORDINATION
NTS

COORDINATE ALL REQUIREMENTS WITH LOCAL ELECTRICAL UTILITY OR PRIMARY SERVICE PROVIDER WHERE APPLICABLE PRIOR TO BID. PROVIDE ALL MATERIAL AND LABOR NECESSARY TO COMPLY WITH LOCAL REQUIREMENTS.

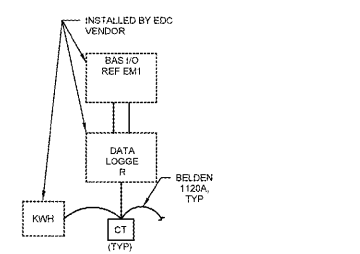
ARC FLASH INFORMATION	
CATEGORY 0	USE THIS INFORMATION IN ACCORDANCE WITH APPLICABLE OSHA STANDARDS, NFPA 70E, AND OTHER REQUIRED SAFE ELECTRICAL WORK PRACTICES
18 INCHES FLASH PROTECTION BOUNDARY	1.2 CAL/cm ² MAX INCIDENT ENERGY AT 18" WORKING DISTANCE
CATEGORY 0 PPE CATEGORY (PER NFPA 70E 2009)	PER NFPA 70E-2009
480 VAC SHOCK HAZARD WHEN COVER IS OPEN	
42 INCHES LIMITED APPROACH	
12 INCHES RESTRICTED APPROACH	
1 INCH PROHIBITED APPROACH	
ORDER # XXXXXXXX DATE: XXXXXX	
VALUES PROVIDED BY A (EDC VENDOR) ENGINEERING ANALYSIS. ANY SYSTEM MODIFICATION, ADJUSTMENT OF PROTECTIVE DEVICE SETTINGS, OR FAILURE TO PROPERLY MAINTAIN EQUIPMENT WILL INVALIDATE THIS LABEL. FOR MORE INFORMATION, CONTACT (EDC VENDOR) AT 000-XXX-XXXX.	

NOTES
 A. AT APPROXIMATELY 8 WEEKS PRIOR TO POSSESSION DATE, EDC VENDOR SHALL REQUEST AS-BUILT FEEDER INFORMATION (CONDUCTOR MATERIAL, LENGTH, CONDUCTORS PER PHASE, SIZE, INSULATION TYPE, AND CONDUIT TYPE) IN ORDER TO COMPLETE AN ARC FLASH HAZARD STUDY. PROVIDE INFORMATION TO EDC VENDOR BY 7 WEEKS PRIOR TO POSSESSION DATE.
 B. FOR EXISTING EQUIPMENT BEING RE-USED, DOCUMENT EXISTING OVERCURRENT PROTECTIVE DEVICE TYPES AND EXISTING FEEDER INFORMATION FOR COORDINATION WITH EDC VENDOR.
 C. ARC FLASH INCIDENT ENERGY WARNING LABELS SHALL BE INSTALLED BY EDC VENDOR PRIOR TO POSSESSION.

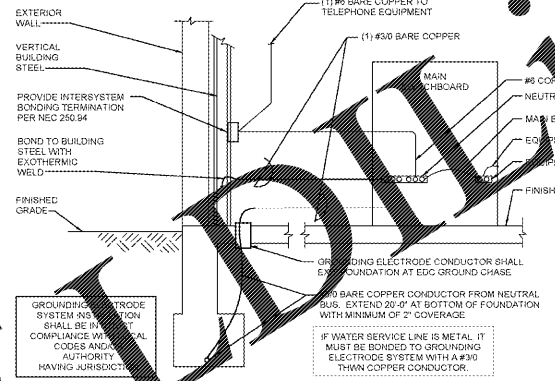
5 ARC FLASH DETAIL
NTS



3 VOLTAGE REFERENCE WIRING DIAGRAM
NTS



4 SUB-METERING LOW VOLTAGE WIRING
NTS

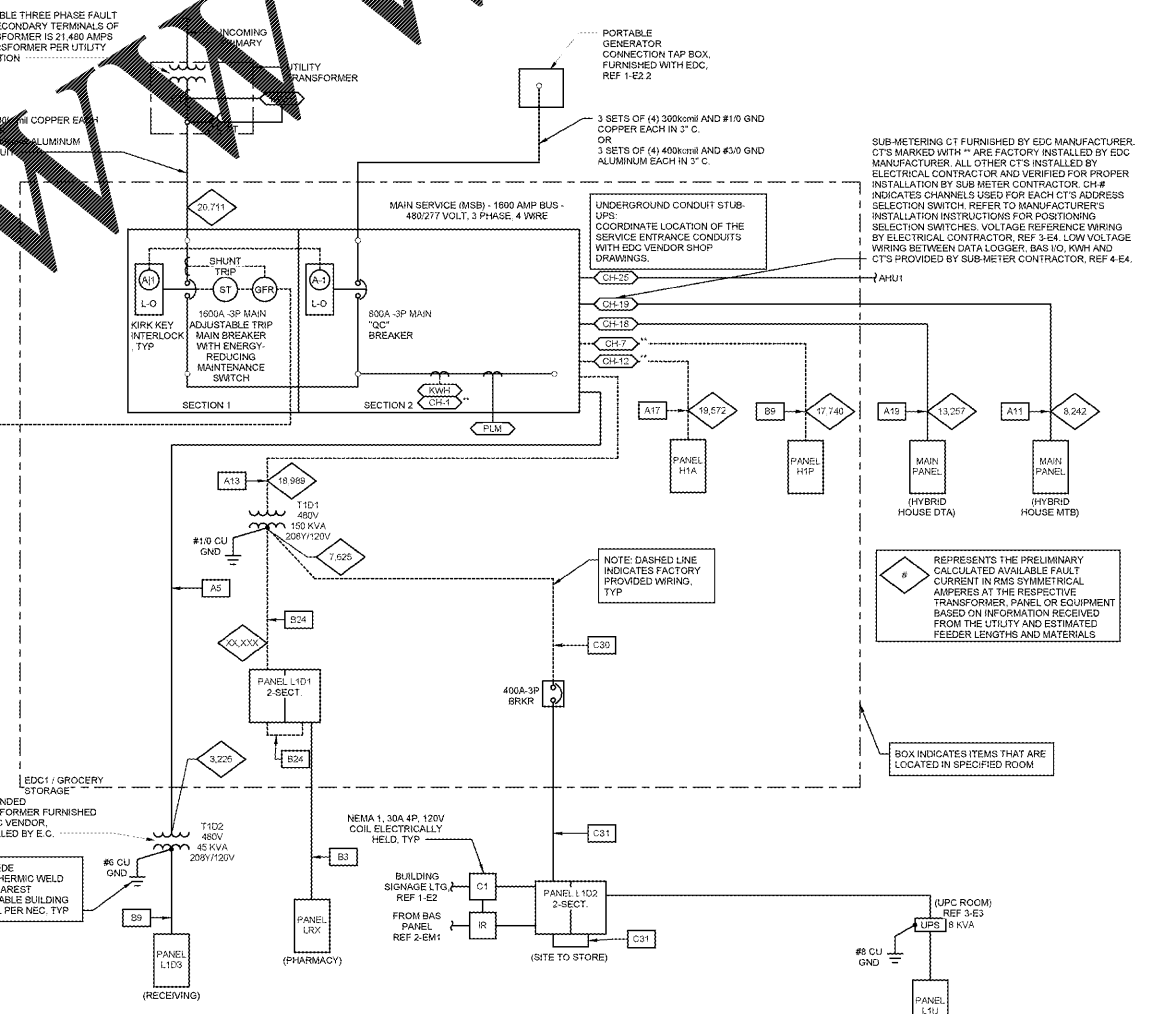


2 GROUNDING ELECTRODE SYSTEM
NTS

MSB SWITCHBOARD		480V/277 V 3PH 4W 600 A, 100 C-B, 6 800 A GEN BREAKER (7) AIC, FULLY RATED FLOOR MOUNT GROUND BUS				
DESCRIPTION	WIRE BRKR PL	A	B	C	PL BRKR WIRE DESCRIPTION	
1 HYBRID HOUSE DTA (8) 480/3	500 A 3	104.20 18.18	104.20 18.18	104.20 19.65	3 150 A	PANEL H1P (8.9) 480/277/8
7 HYBRID HOUSE MTR (8) 480/3	200 A 3	41.57 83.71	41.57 83.71	41.57 83.71	3 400 A	PANEL H1A (8.9) 480/3
12 TRANSFORMER T1D1 (6.9) 150 KVA 480/3	250 A 3	49.47 9.42	49.41 9.42	51.14 8.42	3 40 A #8	DOES OVEN(TOP) (2) 34.0 A 480/3 DOES SHUNT-TRIP BREAKER
19 AHU1 480/3	#40 225 A 3	57.31 15.66	57.31 15.66	57.31 15.66	3 70 A #4	DOES OVEN (BOTTOM) (2) 36.5 A 480/3 DOES SHUNT-TRIP BREAKER
25 BALER 10 HP 480/3	#10 30 A 3	3.88 1.67	3.88 1.67	3.88 1.67	3 20 A	SPUH (2) 480/3
33 COMPACTOR 10 HP 480/3	#10 30 A 3	3.88 0.20	3.88 0.20	3.88 0.20	3 15 A	PLM (3) 480/3
37 KW/HVLS-BMETERING (3) 480/3	15 A 3	0.17 16.23	0.17 14.68	0.17 17.11	3 70 A	TRANSFORMER T102 (R) 45 KVA 480/3
TOTAL CONNECTED		405.34	404.00	428.35		KVA
TOTAL CONNECTED		1464.05	1458.49	1478.55		AMPS
TOTAL LOAD		1218.69	1218.69	1485.85		AMPS
PER NEC ARTICLE 120		1169.12	1169.12	1426.23		AMPS

ELECTRICAL ONE-LINE FEEDER SCHEDULE												
FEEDER AMPACITY	NO. OF BETS	FEEDER CONDUCTOR SIZE (75°C)				CONDUIT SIZE (EMT)						
		COPPER CONDUCTORS (MHHW-2)	ALUMINUM CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	3 PHASE CONDUCTORS (MHHW-2)	
30	1	10	10	4	A1	1-1/2"	2"	B1	1-1/2"	2"	C1	3/4"
50	1	10	10	4	A2	3/4"	1"	B2	3/4"	1"	C2	3/4"
75	1	10	10	4	A3	3/4"	1"	B3	1"	1-1/4"	C3	1"
100	1	10	10	4	A4	3/4"	1"	B4	1"	1-1/4"	C4	1"
150	1	10	10	4	A5	1"	1-1/4"	B5	1-1/4"	1-1/4"	C5	1-1/4"
200	1	10	10	4	A6	1"	1-1/4"	B6	1-1/4"	1-1/4"	C6	1-1/4"
250	1	10	10	4	A7	1-1/4"	1-1/2"	B7	1-1/2"	1-1/2"	C7	1-1/2"
300	1	10	10	4	A8	1-1/4"	1-1/2"	B8	1-1/2"	1-1/2"	C8	1-1/2"
350	1	10	10	4	A9	1-1/2"	2"	B9	1-1/2"	2"	C9	1-1/2"
400	1	10	10	4	A10	1-1/2"	2"	B10	1-1/2"	2"	C10	1-1/2"
450	1	10	10	4	A11	2"	2"	B11	2"	2"	C11	2"
500	1	10	10	4	A12	2"	2"	B12	2"	2"	C12	2"
550	1	10	10	4	A13	2"	2"	B13	2-1/2"	2-1/2"	C13	2-1/2"
600	1	10	10	4	A14	1-1/2"	2"	B14	1-1/2"	2"	C14	2"
650	1	10	10	4	A15	1-1/2"	2"	B15	2"	2-1/4"	C15	2"
700	1	10	10	4	A16	2-1/2"	3"	B16	2-1/2"	3"	C16	3"
750	1	10	10	4	A17	2"	2"	B17	2-1/2"	3"	C17	2-1/2"
800	1	10	10	4	A18	2"	2"	B18	2-1/2"	3"	C18	2-1/2"
850	1	10	10	4	A19	2-1/2"	2-1/2"	B19	2-1/2"	3"	C19	2-1/2"
900	1	10	10	4	A20	2-1/2"	2-1/2"	B20	2-1/2"	3"	C20	3"
950	1	10	10	4	A21	2-1/2"	3"	B21	3"	3-1/2"	C21	3"
1000	1	10	10	4	A22	2-1/2"	3"	B22	2-1/2"	3"	C22	2-1/2"

1 ONE-LINE DIAGRAM
NTS



PANELBOARD NOTES

- TERMINATE GROUND ON ISOLATED GROUND BUS.
- INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-OFF FOR MAINTENANCE).
- INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-ON FOR CRITICAL LOAD).
- GFI BREAKER FOR PERSONNEL PROTECTION (5 mA).
- GFI BREAKER FOR EQUIPMENT PROTECTION (30 mA).
- CONDUCTOR SIZE HAS BEEN INCREASED FOR VOLTAGE DROP. SIZE EQUIPMENT GROUNDING CONDUCTOR PROPORTIONATELY PER NEC.
- REFER TO ONE-LINE DIAGRAM FOR BREAKER FAULT CURRENT FOR INTERRUPTING CAPACITY.
- REFER TO ONE-LINE DIAGRAM FOR WIRE SIZES.
- FACTORY WIRE REQUIRED.
- REFER TO SEE LIGHTING PLAN FOR WIRE SIZES.
- THRU CONDUCTOR.
- FACTORY WIRE WITH BURN LABEL FOR FIRE ALARM CIRCUIT.
- DUAL TAP BREAKER TO PREVENT EMERGENCY NIGHT LIGHTING TO UNSWITCHED TERMINATION.
- DESIGN "SMART" BREAKER.

SWITCHBOARD NOTES

- THE SWITCHBOARD IS PART OF A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) LISTED SERIES RATED SYSTEM THAT REQUIRES THE DOWN STREAM BREAKERS TO BE TESTED WITH THE SWITCHBOARD AS A COMPLETE NRTL LISTED SYSTEM. THE MANUFACTURER WILL PROVIDE SPECIFIC BREAKER TYPES (CATALOG NUMBERS) TO COMPLY WITH THE TESTS FOR A SERIES RATED SYSTEM. ANY REPLACEMENT BREAKERS SUPPLIED SHALL MATCH EXISTING TYPES (CATALOG NUMBERS) SUPPLIED BY THE ORIGINAL SYSTEM MANUFACTURER. FAILURE TO SUPPLY THE CORRECT BREAKERS WILL VOID THE SERIES SYSTEM RATING OF THE COMPLETE ELECTRICAL SYSTEM.
- GROUND FAULT PERFORMANCE TEST:
 - THE GROUND FAULT PROTECTION SYSTEM SHALL BE PERFORMANCE TESTED BY THE EDC VENDOR WHEN THE EQUIPMENT IS FIRST INSTALLED IN ACCORDANCE WITH THE NEC. CONTACT THE EDC VENDOR FOR COORDINATING THE GROUND FAULT TESTING WITH THE UTILITY.
 - THE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH INSTRUCTIONS THAT SHALL BE PROVIDED WITH THE EQUIPMENT. A WRITTEN RECORD OF THIS TEST SHALL BE MADE AND SHALL BE AVAILABLE TO THE AUTHORITY HAVING JURISDICTION.
 - EQUIPMENT SHALL BE DE-ENERGIZED AND ISOLATED FROM THE UTILITY. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A 120V, 20A POWER SOURCE FOR THE TEST SET.
- PORTABLE GENERATOR QUICK CONNECT BREAKER: BREAKER "QC" IS LOAD LIMITED THROUGH THE BUILDING AUTOMATION SYSTEM TO SELECTED STANDBY LOADS. BREAKER "QC" IS PROPERLY INTERLOCKED WITH THE MAIN SERVICE ENTRANCE BREAKER TO PREVENT SIMULTANEOUS OPERATION FROM TWO POWER SOURCES.
- EDC VENDOR SHALL PROVIDE A LABEL ON THE FACE OF EACH SWITCHBOARD AND/OR PANELBOARD NEAR THE LOCATION OF EACH SUB-METERING CT. LABEL SHALL INDICATE BREAKER NUMBER, LOAD SERVED AND CT CHANNEL NUMBER.

CT SIZING

FEEDER AMPS	CT SIZE
0 - 125	100
126 - 375	300
376 - 500	400
501 - 1000	600
1001 - 2000	1600
2001 - 3000	2400

EDC VENDOR SHALL PROVIDE CTS WITH AMPERAGE RATING PER FEEDER LOAD LISTED IN PANELBOARD SCHEDULE AND RANGES IN THE FOLLOWING CHART.

CHECKED BY: ABM
 DRAWN BY: DJA
 FILE NAME: E4
 PHOTO CYCLE: 10/28/16
 DOCUMENT DATE: 01/09/17

BID SET.
NOT FOR CONSTRUCTION

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ONE-LINE DIAGRAM, DETAILS AND SCHEDULES

SHEET: E4