OCPD FEEDING PANEL:	FEEDER (WIRE SIZE)	EQ GND PER TABLE 250.122	INCH PER TABLE C9 PVC (WORST CASE)	ALUMINUM FEEDER: TABLE 310.16 Type (THHN - DRY, THWN - WET) 60° C 0-100A 75° C 100A+	SERVICE GND PER 250.66
15A	12 AWG	12	1/2	(4)#12AL, #12AL G, 0.5"C	8
20A	10 AWG	8	3/4	(4)#10AL, #8AL G, 0.75"C	8
25A	10 AWG	8	3/4	(4)#10AL, #8AL G, 0.75"C	8
30A	8 AWG	8	1	(4)#8AL, #8AL G, 1"C	8
35A	8 AWG	8	1	(4)#8AL, #8AL G, 1"C	8
40A	6 AWG	8	1	(4)#6AL, #8AL G, 1"C	8
45A	4 AWG	8	1 1/4	(4)#6AL, #8AL G, 1.25"C	8
50A	4 AWG	8	1 1/4	(4)#4AL, #8AL G, 1.25"C	8
60A	3 AWG	8	1 1/4	(4)#3AL, #6AL G, 1.25"C	8
70A	2 AWG	6	1 1/2	(4)#2AL, #6AL G, 1.5"C	8
80A	1 AWG	6	2	(4)#1AL, #6AL G, 2"C	8
90A	1/0	6	2	(4)#1/0AL, #6AL G, 2"C	8
100A	1/0	6	2	(4)#1/0AL, #6AL G, 2"C	6
110A	2/0	4	2	(4)#2/0AL, #4AL G, 2"C	6
125A	2/0	4	2	(4)#2/0AL, #4AL G, 2"C	4
150A	3/0	4	2 1/2	(4)#3/0AL, #4AL G, 2.5"C	4
175A	4/0	4	2 1/2	(4)#4/0AL, #4AL G, 2.5"C	2
200A	250 AWG	4	3	(4)#250AL, #4AL G, 3"C	1/0
225A	300 AWG	2	3	(4)#300AL, #2AL G, 3"C	1/0
250A	350 AWG	2	3	(4)#350AL, #2AL G, 3"C	1/0
300A	500 AWG	1	3 1/2	(4)#500AL, #1AL G, 3.5"C	1/0
350A	4/0	1	2 1/2	2 SETS OF (4)#4/0AL, #1AL G, 2.5"C	1/0
400A	250 AWG	1	3	2 SETS OF (4)#250AL, #1AL G, 3"C	1/0
450A	300 AWG	1/0	3	2 SETS OF (4)#300AL, #1/0AL G, 3"C	3/0
500A	350 AWG	1/0	3	2 SETS OF (4)#350AL, #1/0AL G, 3"C	3/0
600A	500 AWG	2/0	3 1/2	2 SETS OF (4)#500AL, #2/0AL G, 3.5"C	4/0
700A	350 AWG	3/0	3	3 SETS OF (4)#350AL, #3/0AL G, 3"C	4/0
800A	400 AWG	3/0	3 1/2	3 SETS OF (4)#400AL, #3/0AL G, 3.5"C	4/0
1000A	350 AWG	4/0	3	4 SETS OF (4)#350AL, #4/0AL G, 3"C	4/0
1200A	500 AWG	250	3 1/2	4 SETS OF (4)#500AL, #250AL G, 3.5"C	250
1600A	400 AWG	350	3 1/2	6 SETS OF (4)#400AL, #350AL G, 3.5"C	250
2000A	350 AWG	400	3	8 SETS OF (4)#350AL, #400AL G, 3"C	250
2500A	500 AWG	2-300	3 1/2	9 SETS OF (4)#500AL, #2-300AL G, 3.5"C	250
3000A	500 AWG	2-300	3 1/2	10 SETS OF (4)#500AL, #2-300AL G, 3.5"C	250
4000A	500 AWG	2-400	3 1/2	13 SETS OF (4)#500AL, #2-400AL G, 3.5"C	250
5000A	500 AWG	3-400	3 1/2	17 SETS OF (4)#500AL, #3-400AL G, 3.5"C	250
6000A	500 AWG	3-400	3 1/2	20 SETS OF (4)#500AL, #3-400AL G, 3.5"C	250

OCPD FEEDING PANEL:	FEEDER (WIRE SIZE)	EQ GND PER TABLE 250.122	INCH PER TABLE C9 PVC (WORST CASE)	COPPER FEEDER: TABLE 310.16 Type (THHN - DRY, THWN - WET) 60° C 0-100A 75° C 100A+	SERVICE GND. PER 250.66
15A	12 AWG	12	1/2	(4)#12CU, #12CU G, 0.5"C	8
20A	12 AWG	12	1/2	(4)#12CU, #12CU G, 0.5"C	8
25A	10 AWG	10	3/4	(4)#10CU, #10CU G, 0.75"C	8
30A	10 AWG	10	3/4	(4)#10CU, #10CU G, 0.75"C	8
35A	8 AWG	10	1	(4)#8CU, #10CU G, 1"C	8
40A	8 AWG	10	1	(4)#8CU, #10CU G, 1"C	8
45A	6 AWG	10	1	(4)#6CU, #10CU G, 1"C	8
50A	6 AWG	10	1	(4)#6CU, #10CU G, 1"C	8
60A	4 AWG	8	1 1/4	(4)#4CU, #8CU G, 1.25"C	8
70A	4 AWG	8	1 1/4	(4)#4CU, #8CU G, 1.25"C	8
80A	3 AWG	8	1 1/4	(4)#3CU, #8CU G, 1.25"C	8
90A	3 AWG	8	1 1/4	(4)#3CU, #8CU G, 1.25"C	8
100A	3 AWG	8	1 1/4	(4)#3CU, #8CU G, 1.25"C	8
110A	2 AWG	8	1 1/2	(4)#2CU, #8CU G, 1.5"C	8
125A	1 AWG	6	2	(4)#1CU, #6CU G, 2"C	6
150A	1/0	6	2	(4)#1/0CU, #6CU G, 2"C	6
175A	2/0	6	2	(4)#2/0CU, #6CU G, 2"C	4
200A	3/0	6	2 1/2	(4)#3/0CU, #6CU G, 2.5"C	4
225A	4/0	4	2 1/2	(4)#4/0CU, #4CU G, 2.5"C	2
250A	250 AWG	4	3	(4)#250CU, #4CU G, 3"C	2
300A	350 AWG	1	3	(4)#350CU, #1CU G, 3"C	2
350A	500 AWG	1	3 1/2	(4)#500CU, #1CU G, 3.5"C	2
400A	3/0	3	2 1/2	2 SETS OF (4)#3/0CU, #3CU G, 2.5"C	2
450A	4/0	2	2 1/2	2 SETS OF (4)#4/0CU, #2CU G, 2.5"C	1/0
500A	250 AWG	2	3	2 SETS OF (4)#250CU, #2CU G, 3"C	1/0
600A	350 AWG	1	3	2 SETS OF (4)#350CU, #1CU G, 3"C	2/0
700A	250 AWG	1/0	3	3 SETS OF (4)#250CU, #1/0CU G, 3"C	2/0
800A	300 AWG	1/0	3	3 SETS OF (4)#300CU, #1/0CU G, 3"C	3/0
1000A	400 AWG	2/0	3 1/2	3 SETS OF (4)#400CU, #2/0CU G, 3.5"C	3/0
1200A	350 AWG	3/0	3	4 SETS OF (4)#350CU, #3/0CU G, 3"C	3/0
1600A	400 AWG	4/0	3 1/2	5 SETS OF (4)#400CU, #4/0CU G, 3.5"C	3/0
2000A	400 AWG	250	3 1/2	6 SETS OF (4)#400CU, #250CU G, 3.5"C	3/0
2500A	500 AWG	350	3 1/2	7 SETS OF (4)#500CU, #350CU G, 3.5"C	3/0
3000A	500 AWG	400	3 1/2	8 SETS OF (4)#500CU, #400CU G, 3.5"C	3/0
4000A	500 AWG	500	3 1/2	11 SETS OF (4)#500CU, #500CU G, 3.5"C	3/0
5000A	500 AWG	2-350	3 1/2	14 SETS OF (4)#500CU, #2-350CU G, 3.5"C	3/0
6000A	500 AWG	2-400	3 1/2	16 SETS OF (4)#500CU, #2-400CU G, 3.5"C	3/0

UTILITY XFMR CLEARANCES FROM BUILDINGS AND BUILDING OPENINGS

TYPE OF CONSTRUCTION	CLEARANCE EXTENDING OUT FROM BUILDING	SIDE CLEARANCE	HEIGHT CLEARANCE
COMBUSTIBLE	12 FT	–	–
NON-COMBUSTIBLE	6 FT	–	–
DOORS	20 FT	10 FT	–
WINDOWS	10 FT	5 FT	10 FT
AIR VENTS	20 FT	10 FT	25 FT

NOTE:
1. DISTANCES ARE FROM THE PAD OR TRANSFORMER WHICHEVER IS CLOSER TO THE BUILDING OR OPENING.
2. A MINIMUM CLEAR WORKING SPACE OF 3 FT. MUST BE MAINTAINED FROM EACH SIDE OF THE TRANSFORMER AND A MINIMUM OF 10 FT. FROM THE FRONT.
2. COORDINATE WITH LOCAL UTILITY COMPANY FOR ANY DIFFERENCES IN CLEARANCES THAN WHAT IS SHOWN.

METER CENTER NOTE BASED ON SQ-D MANUFACTURE

1. 1000, 1200, OR 1600 AMPS MAIN DEVICES MUST BE CENTER LOCATED WHEN USED WITH 125/225 AMPS BRANCH UNITS WITH 800 A MAIN CROSS BUS.
2. 2000 A MAIN DEVICE MUST BE CENTER LOCATED WHEN USED WITH 125/225 AMPS BRACH UNITS WITH 1200 AMPS MAIN HORIZONTAL CROSS BUS.
3. E.C. SHALL CONNECT METERS SO THAT CONNECTED LOADS ON EITHER SIDE OF THE MAIN SECTION ARE NOT OVER THE BUS RATING. METER CENTER CONFIGURATIONS SHOWN ARE DIAGRAMMATIC ONLY.

FEEDER SCHEDULE NOTES:
1. ALL FEEDER SIZES LISTED MAY NOT BE USED IN PROJECT RISER DIAGRAM.
2. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED.
3. REFER TO LATEST EDITION OF NEC FOR CONDUIT TYPES REQUIRED PER THEIR LOCATION. IF CONDUIT OTHER THAN 'EMT' IS REQUIRED USE SIZE PER MAXIMUM FILL TABLES.
6. IG – PROVIDE ISOLATED GROUND CONDUCTOR FOR ISOLATED GROUND BUS IN PANEL.

MAXIMUM AVAILABLE FAULT CURRENT IS BASED ON A 1000KVA UTILITY TRANSFORMER WITH 5.325%Z. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF TRANSFORMER CHARACTERISTIC INDICATE A HIGHER FAULT CURRENT IS POSSIBLE. FAULT CURRENT MUST BE CALCULATED AFTER INSTALLATION AND BE LEGIBLY MARKED ON SERVICE EQUIPMENT WITH THE DATE CALCULATED TO COMPLY WITH ART 110.24 BEFORE THE POWER CAN BE TURNED ON TO THE SERVICE.

(1) E.C. SHALL PROVIDE VARIANCE FOR SECONDARY FEEDERS AND ASSOCIATED CONDUITS IF UTILITY COMPANY DOES NOT PROVIDE SECONDARIES TO POINT OF SERVICE. VARIFY WITH LOCAL UTILITY IF SECONDARY BUS ENCLOSURE WILL BE REQUIRED.

(2) FEEDER SHALL BE ENCASED IN

SWBD: **"SB-4"** SQD MDSR

VOLTAGE: 120 / 208 3 PHASE 4 WIRE QED-2 TYPE

MOUNTING: FLOOR 1600 AMP MAIN CIRCUIT BREAKER 65,000 AIC

CKT / ID	LOAD SERVED	BREAKER FRAME	BREAKER TRIP	BREAKER POLE	FEEDER	NOTES	KVA
1	SPD	30	30				0.0
2	MC#4A	600	600				580.1
3	H4A	600	600				10.8
4	CH	600	600				93.9

TOTAL (CONNECTED): 685

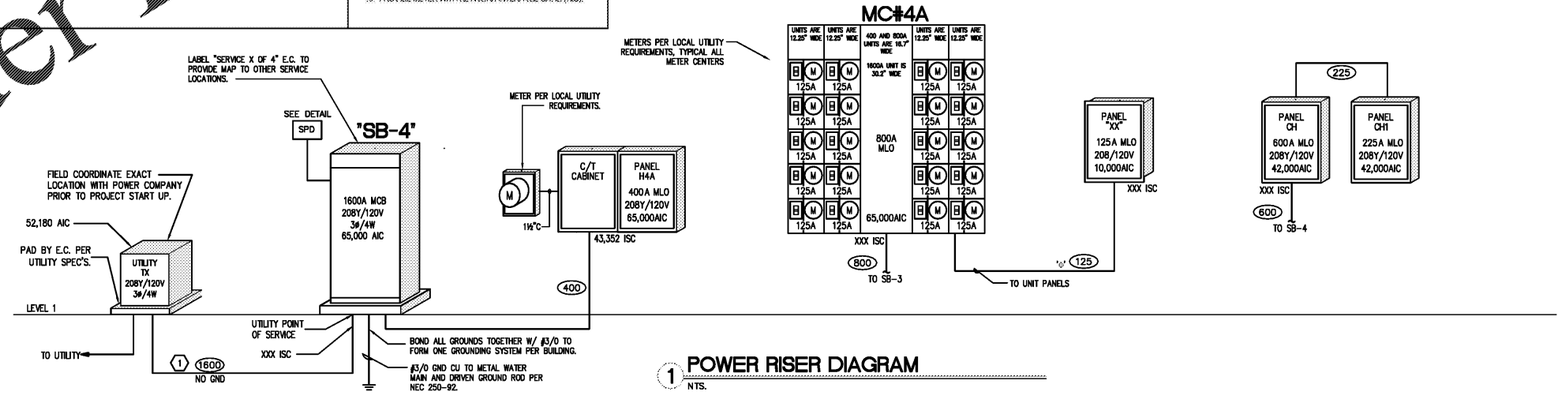
HOUSE PANEL LOAD 0.0 KVA
RESIDENTIAL TOTAL kVA 685.0 KVA
DEMAND FACTOR PER NEC 220.84 0.34 233.4
TOTAL KVA WITH HOUSE PANEL 238
TOTAL AMPS AT 208V, 3-PHASE 662 AMPS

NOTES:
1. THIS SWBD SHALL BE U.L. LISTED FOR USE AS S.E. EQUIP.
2. ALL BRKRS SHALL BE FULLY RATED - NO SERIES RATINGS.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING BUS & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE WITH TYPE 1 SPD (120kA/MODE, 240kA/PHASE MIN).
6. BREAKER SHALL BE 100% RATED.
7. PROVIDE BREAKER WITH SHUNT TRIP.
8. SEE ONE-LINE / POWER RISER DIAGRAM.
9. PROVIDE SWBD WITH POWER METER, SQ-D PM820 OR EQUAL.
10. PROVIDE METER WITH NETWORK INTERFACE CARD (NIC).

DEMAND LOADS MC#4A

			KVA
UNIT PANEL "A"	0		0
UNIT PANEL "B"	9		277.4
UNIT PANEL "C"	9		302.7
UNIT PANEL "D"	0		0.0
UNIT PANEL "E"	0		0.0
	18		
		TOTAL:	580
WITH DEMAND FACTOR (PER NEC 220.84)		38%	220
TOTAL KVA:			220

612 AMPS AT 208V, 3-PHASE



1 POWER RISER DIAGRAM
NTS.

WLA
WATTS LEAF ARCHITECTS, PA
101 North McDowell Street Suite 112
Charlotte, North Carolina 28204
PH 704 376 1200 FX 704 376 5111

ENGINEERING
14301 SOUTH LAKES DRIVE, SUITE E
CHARLOTTE NC 28217
W:704-688-9320 C:704-968-8143
CONSULTING : DESIGN-BUILD
NC LICENSE #P-1248

CRABTREE NORTH APTS.
2251 Charles Drive
Raleigh, North Carolina
EYC COMPANIES

PROJECT 1915
DATE 01OCT19
DRAWN BY CME
CHECKED BY CME

POWER RISER DIAGRAM

E1.10

CME#19-021