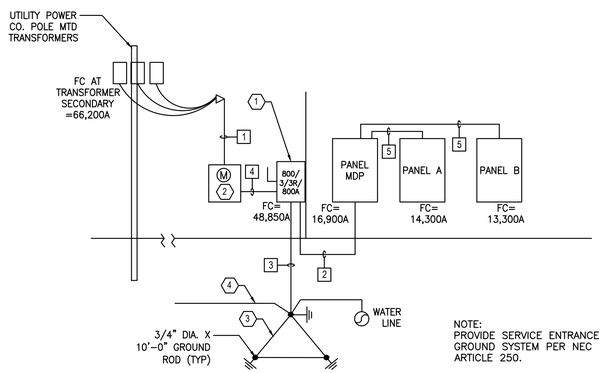


1 E001 **ELECTRICAL RISER DIAGRAM**
NTS

NOTE:
CONTRACTOR SHALL RUN CONDUIT AND PULL ALL WIRE TO BUILDING.

## FEEDER SCHEDULE

| MARK | SETS | FEEDER | AMPS | NOTE |
|---|---|---|---|---|
| 1 | 2 | 4#500KCMIL, 4"C. | 800A | 1 |
| 2 | 2 | 4#500KCMIL, #1/0(G)4"C. | 800A | – |
| 3 | 1 | #2/0(G), 1"C. | GND | – |
| 4 | 2 | 4#500KCMIL, 4"C. | 800A | – |
| 5 | 1 | 4#1/0, 1#6(G), 2"C. | 150A | – |
| | | | | |
| | | | | |

NOTES:
1. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT LOCATION OF UTILITY CO'S. POLE MTD. TRANSFORMERS. E.C. SHALL BASE BID PRICE FOR FEEDERS AND CONDUIT ON THAT DISTANCE. CONDUIT SERVICE MAST AND WEATHERHEAD SHALL BE GRS (GALVANIZED RIGID STEEL).

## GENERAL NOTES: (FOR 1/E001 ONLY)

1. ALL ELECTRICAL PANELS ARE DESIGNED, BASED ON EATON EQUIPMENT AND SERIES RATED. IF AN ALTERNATE MANUFACTURER IS SUBSTITUTED, IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROPERLY MATCH AND SERIES RATE ALL PANELS.
2. ELECTRICAL EQUIPMENT A.I.C. RATING SHALL BE VERIFIED BY OBTAINING AVAILABLE FAULT CURRENT FROM ELECTRICAL UTILITY COMPANY. IF ADJUSTMENTS IN AIC RATING ARE REQUIRED, CONTRACTOR SHALL MAKE THE ADJUSTMENTS. CONTRACTOR SHALL PROVIDE LEGIBLY MARKED LABEL ON SERVICE EQUIPMENT INDICATING AVAILABLE FAULT CURRENT PER NEC 110.24(A).
3. CONTRACTOR SHALL PROVIDE ARC FLASH WARNING NOTE ON ELECTRICAL EQUIPMENT PER NEC 110.16.

## RISER NOTES:

1. PROVIDE 800A, 208/120V, 3P, 4W MAIN DISCONNECT SWITCH WITH 800A CLASS L FUSES, IN NEMA 3R ENCLOSURE AND RATED FOR SERVICE ENTRANCE.
2. PROVIDE CT CABINET W/METER BASE PER UTILITY COMPANY REQUIREMENTS. COORDINATE LOCATION OF METER W/UTILITY COMPANY AND LANDLORD.
3. #2/0G (TYP).
4. CONNECT MINIMUM #4 FOUNDATION, REINFORCING BAR TO MAIN GROUND SYSTEM.

## LOAD SUMMARY

| | CONN VA | | DEMAND VA |
|---|---|---|---|
| PANEL'MDP': | | | |
| LIGHTING: | 5400 x | 125% = | 6750 |
| RECEPTACLE: | 10600 x | 100% = | 10600 |
| HVAC: | 85368 x | 80% = | 68294 |
| WATER HEATER: | 45000 x | 80% = | 36000 |
| KITCHEN EQ: | 93700 x | 65% = | 60905 |
| TOTAL PANEL 'MDP' | 240068/360= 670A | | 182549/360= 507A |

507A x 125% = 634A
THEREFORE, SIZE PANEL 'MDP', PANEL FEEDER AND MAIN PANEL DISCONNECT SWITCH FOR 800A.

| PANEL'A': | | | |
|---|---|---|---|
| LIGHTING: | 5400 x | 125% = | 6750 |
| RECEPTACLE: | 10600 x | 100% = | 10600 |
| KITCHEN: | 12800 x | 65% = | 8320 |
| MISC: | 3500 x | 100% = | 3500 |
| TOTAL PANEL 'A' | 32300/360= 90A | | 29170/360= 81A |

90A x 125% = 112A
THEREFORE, SIZE PANEL 'A', PANEL FEEDER AND MAIN PANEL CIRCUIT BREAKER FOR 150A.

| PANEL'B': | | | |
|---|---|---|---|
| HVAC: | 2300 x | 100% = | 2300 |
| KITCHEN EQ: | 48500 x | 65% = | 31525 |
| TOTAL PANEL 'B' | 50800/360= 141A | | 33825/360= 94A |

94A x 125% = 118A
THEREFORE, SIZE PANEL 'B', PANEL FEEDER AND MAIN PANEL CIRCUIT BREAKER FOR 150A.

## FAULT CURRENT CALCULATION

A FAULT CURRENT OF 66200 AMPS (FROM XFMR FC TABLE) IS BASED ON AN ESTIMATED 3 (THREE) POLE MOUNTED TRANSFORMERS SIZE OF 500 KVA (3-167). IF A DIFFERENT SIZE OR DIFFERENT IMPEDANCE TRANSFORMER IS USED, MAKE THE NECESSARY ADJUSTMENTS TO ALL THE PANEL AIC RATINGS, DUE TO THE LARGER/SMALLER FAULT CURRENT AVAILABLE.

1. @ MDS: L = 50, $I_{sc}$ = 66200, E = 208, C = 23256 (#500KCMIL CU)

   f = (1.732 x 50 X 66200)/(2 X 23256)X208 =0.593

   1/1.593 = 0.628

   I@MDS = .628 x 66200 = 41557 AMPS
2. @ PANEL MDP: LET-THRU 800A CLASS L FUSES: $I_{sc}$ = 18000

   L = 20, E = 208, C = 23256 (#500KCMIL CU)

   f = (1.732 x 20 x 18000)/(2 X 23256)X208 =0.064

   1/1.064 = 0.940

   I@MDP = .940 x 18000 = 16917 AMPS
   THEREFORE, MINIMUM AIC RATING IS 22000.
3. @ PANEL A: L = 10, $I_{sc}$ = 16917, E = 208, C = 7692 (#1/0 CU)

   f = (1.732 x 10 x 16917)/(7692)X208 =0.183

   1/1.183 = 0.845

   I@A = .845 x 16917 = 14300 AMPS
   THEREFORE, MINIMUM AIC RATING IS 22000.
4. @ PANEL B: L = 15, $I_{sc}$ = 16917, E = 208, C = 7692 (#1/0 CU)

   f = (1.732 x 15 x 16917)/(7692)X208 =0.275

   1/1.275 = 0.784

   I@B = .784 x 16917 = 13268 AMPS
   THEREFORE, MINIMUM AIC RATING IS 22000.

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RELEASED FOR CONSTRUCTION

ISSUES / REVISIONS:

| DATE | DESCRIPTION |
|---|---|
| 11/12/19 | REVISION AND RELEASE FOR PERMITTING |

DRAWN BY: BAM
CHK'D BY: JFM

PROJECT DESCRIPTION:
PROJECT DESCRIPTION

PROJECT TITLE:
SURCHEROS
108 ROBERSON MILL RD.
MACON, GA.

SHEET TITLE:
RISER DIAGRAM, FAULT CURRENT CALCS & LOAD CALCS

PROJECT NO: 19055

E001