

ELECTRICAL SPECIFICATIONS

1. GENERAL:
- A. ALL WORK SHALL CONFORM TO THE LATEST ADOPTED EDITIONS OF THE NEC, NFPA, IBC, UCC AND LOCAL CODES.

B. OBTAIN ALL PERMITS AND APPROVAL FROM AUTHORITIES HAVING JURISDICTION AND PAYING ALL FEES REQUIRED.

C. SUBMIT SIX(6) SETS OF SHOP DRAWINGS FOR APPROVAL OF THE FOLLOWING:

1. WIRE

2. DEVICES

3. PANELS

4. CONDUIT

5. LIGHT FIXTURES

6. COORDINATED, DIMENSIONED, MEP FLOOR PLANS.

D. PROVIDE TEMPORARY POWER AS REQUIRED FOR THE PROJECT.

E. ALL WORK SHALL BE DONE UNDER NORMAL WORKING HOURS, UNLESS OTHERWISE NOTED.

F. TELEPHONE/DATA WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

G. PROVIDE ANY/ALL PROPERLY SIZED THERMAL ELEMENTS IN STARTERS AS REQUIRED.

2. GROUNDING:

A. GROUNDING SYSTEM: PERMANENTLY AND EFFECTIVELY GROUND ALL METALLIC CONDUITS, SUPPORTS, CABINETS, PANELBOARDS AND SYSTEM GROUNDING-NEUTRAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC. MAINTAIN CONTINUITY OF EQUIPMENT GROUND THROUGHOUT THE SYSTEM. GROUND CLAMPS SHALL BE APPROVED TYPE, SPECIFICALLY DESIGNED FOR GROUNDING. WHERE GROUNDING CONDUCTOR IS ENCLOSED IN CONDUIT, GROUND CLAMPS SHALL BE OF A TYPE WHICH GROUNDS BOTH CONDUCTOR AND CONDUIT. ALL CIRCUITS IN FLEXIBLE CONDUIT OR PLASTIC CONDUIT SHALL INCLUDE A GROUND WIRE SIZED IN ACCORDANCE WITH "NEC" TABLE 250-122.

B. EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROVIDED FOR ALL FEEDERS AND BRANCH CIRCUITS. USE GREEN GROUND.

3. IDENTIFICATION:

A. MODIFY DIRECTORIES OF EXISTING PANELS WHERE CHANGES AND/OR ADDITIONS HAVE BEEN MADE.

B. WIRE AND CABLE COLOR CODING.

1. POWER WIRING: CONSISTENT PHASE IDENTIFICATION OF ALL WIRES SHALL BE MAINTAINED AS FOLLOWS:

208/120 VOLT, 3ø 60 HZ

277/480V 3ø

PHASE A

PHASE B

PHASE C

NEUTRAL WIRE

GROUND WIRE

BLACK

RED

BLUE

WHITE

GREEN

BROWN

ORANGE

YELLOW

WHITE WITH

GRAY STRIPE

2. CONTROL WIRES: WIRES OF CONTROL CIRCUITS SHALL BE CONSISTENTLY COLOR CODED TO PERMIT EASY IDENTIFICATION OF CONDUCTORS.

C. PROVIDE IDENTIFICATION OF ALL BRANCH CIRCUIT WIRES IN PULL BOXES AND AT TERMINATIONS WITH PANEL AND CIRCUIT NUMBER.

D. PROVIDE PLASTIC ENGRAVED LABELS ON PANELS, DISCONNECT SWITCHES AND TRANSFORMERS TO INDICATE POWER SOURCE AND VOLTAGE.

4. WIRING METHODS:

A. BRANCH CIRCUIT AND FEEDER WIRING RUN WITHIN THE BUILDING SHALL BE INSTALLED IN ELECTRO-METALLIC TUBING WITH COMPRESSION FITTINGS AND RUN CONCEALED WHERE POSSIBLE, BUT EXPOSED ON EXISTING SURFACES WHERE CONDUITS CANNOT BE CONCEALED. ARMORED CABLE(TYPE MC OR HCF-90) SHALL BE PERMITTED IN CONCEALED AREAS ONLY AND TO THE EXTENT PERMITTED BY CODE.

B. WIRING FOR CONTROLS, COMMUNICATIONS AND OTHER SYSTEMS SHALL BE IN RACEWAY SPECIFIED FOR BRANCH CIRCUITS UNLESS SPECIFICALLY NOTED OTHERWISE.

C. PROVIDE SEALS FOR RACEWAYS PASSING THROUGH FLOORS, ROOFS AND WALLS.

D. CONDUCTORS SHALL BE 600 VOLT INSULATION, COPPER, TYPE THHN OR THWN.

E. FURNISH AND INSTALL ALL POWER WIRING AS REQUIRED FOR EQUIPMENT FURNISHED UNDER H.V.A.C., PLUMBING AND GENERAL TRADE SECTIONS. UNLESS OTHERWISE NOTED.

F. LIQUID TIGHT FLEXIBLE METAL CONDUIT IN LENGTHS OF 3' OR LESS WITH APPROVED TYPE FITTINGS SHALL BE USED FOR CONNECTIONS TO VIBRATING EQUIPMENT, MOTORS, AND OTHER OUTLETS WHERE WIRING WILL BE EXPOSED TO WEATHER, MOISTURE OR VIBRATIONS.

G. INSTALL RACEWAYS FROM BOX TO BOX OR TERMINATIONS AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO EFFECT CIRCUITING DESCRIBED WITH CIRCUIT NUMBERS ADJACENT TO EQUIPMENT. GROUPING HOME RUNS OR COMBINING WIRES IN COMMON RACEWAYS WILL BE ALLOWED WITH A MAXIMUM OF THREE SINGLE POLE BRANCH CIRCUITS IN A RACEWAY. INCREASE WIRE SIZES AND RACEWAYS WHERE REQUIRED TO AVOID LOSS OF AMPACITY AS REQUIRED BY NATIONAL ELECTRIC CODE.

H. FLEXIBLE METAL CONDUIT WITH APPROVED TYPE FITTING MAY BE USED IN LIMITED LENGTHS FOR CONNECTIONS TO RECESSED FIXTURES WHERE IT IS NECESSARY TO PROVIDE FLEXIBLE CONNECTIONS. IT MAY ALSO BE USED WHERE STRUCTURAL MEMBERS PRECLUDE THE USE OF ELECTRICAL METALLIC TUBING OR CONDUITS.

I. INSTALL CONDUIT CONTINUOUS BETWEEN BOXES AND CABINETS WITH NO MORE THAN FOUR(4) 90 DEGREE BENDS. SECURELY FASTEN IN PLACE WITH STRAPS, HANGERS AND STEEL SUPPORTS AS REQUIRED. DO NOT SUPPORT CONDUIT FROM SUSPENDED CEILING GRID OR SUSPENSION WIRES. REAM CONDUIT ENDS BEFORE INSTALLATION AND THOROUGHLY CLEAN BEFORE INSTALLATION. OPENINGS SHALL BE PLUGGED OR COVERED TO KEEP CONDUIT CLEAN. TERMINALS ON SWITCHES AND RECEPTACLES SHALL NOT BE USED TO "FEED THRU" TO THE NEXT SWITCH OR RECEPTACLE. THE DISCONNECTIONS OR REMOVAL OF A DEVICE FROM A BOX SHALL NOT INTERFERE WITH OR INTERRUPT THE CONDUCTOR CONTINUITY.

J. CONDUCTORS SHALL BE CONTINUOUS FROM ORIGIN TO PANEL OR EQUIPMENT WITHOUT SPLICES. WHERE TAP SPLICES ARE NECESSARY AND APPROVED, THEY SHALL BE MADE WITH SUITABLE CONNECTORS IN JUNCTION BOXES.

K. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL CONTROL WIRING.

L. ALL WIRE AND CABLE AMPACITIES INDICATED ON DRAWINGS ARE BASED ON 75°C. TEMPERATURE RATING. ALL LUGS, BREAKERS, SWITCHES AND OTHER TERMINATIONS SHALL HAVE 75°C. RATINGS AS A MINIMUM.

M. BALANCE ALL LOADS BETWEEN PHASES.

N. SEPARATE NEUTRALS SHALL BE RUN FOR ALL CIRCUITS.

5. TRANSFORMERS:

A. TRANSFORMERS SHALL BE DRY TYPE WITH AVERAGE TEMPERATURE RISE NOT EXCEED 150°C.
- ELECTRICAL SPECIFICATIONS
6. PANELBOARDS:

A. PANELBOARDS SHALL BE FACTORY ASSEMBLED AS MANUFACTURED BY SQUARE "D", GENERAL ELECTRIC, OR CUTLER-HAMMER; MEETING U.L. STANDARDS 30 AND 87, WITH U.L. LABEL. ALL CONDUCTOR TERMINALS TO BE U.L. FOR MINIMUM 75°C. SYSTEMS SHALL BE FULLY RATED.

B. BRACING SHALL BE EQUIVALENT TO, OR COMPARABLE WITH, THE RATED INTERRUPTING CAPACITY OF SMALLEST OVERCURRENT DEVICE IN THAT PANEL.

C. BREAKERS TO BE THERMAL MAGNETIC TYPE, BOLT-IN, QUICK-MAKE, QUICK-BREAK TYPE, SINGLE UNIT CONSTRUCTION WITH TRIP SETTINGS AND NUMBER OF POLES AS INDICATED ON DRAWINGS. TWO AND THREE POLE BREAKERS SHALL BE SINGLE UNIT COMMON TRIP TYPE. ALL BREAKERS CONNECTED TO LIGHTING BRANCH CIRCUITS SHALL BE APPROVED FOR THAT USE AND MARKED "SWD". MINIMUM 10KAIC.

D. PANELBOARD CABINETS SHALL BE ONE PIECE CODE GAGE GALVANIZED STEEL WITH MOUNTING STUDS. WIRING GUTTER OF AMPLE SIZE AND KNOCKOUTS FOR CONDUIT CONNECTIONS AS REQUIRED. BUS BARS SHALL BE 98% CONDUCTIVE COPPER, ARRANGED FOR SEQUENCE PHASING AND ALL CONNECTIONS SHALL BE SILVER PLATED. FRONTS SHALL BE ONE PIECE CODE GAGE STEEL WITH ADJUSTABLE FASTENERS, SINGLE DOOR LOCK AND KEY. PROVIDE FLUSH MOUNT UNITS UNLESS OTHERWISE INDICATED. PROVIDE A PLASTIC COVERED TYPEWRITTEN SCHEDULE IDENTIFYING ALL BRANCH CIRCUITS INSIDE EACH CABINET.

E. ALL PANELS SHALL HAVE TYPEWRITTEN DIRECTORIES.

F. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY, QUICK-MAKE, QUICK-BREAK TYPE NEMA 1 ENCLOSURE (NEMA 3R FOR OUTDOOR). SWITCHES SHALL BE AS MANUFACTURED BY SQUARE "D", GENERAL ELECTRIC, OR CUTLER-HAMMER. FURNISH AND INSTALL ALL FUSES AS MANUFACTURED BY BUSSMAN, COULD-SHAWMUT OR LITT-FUSE. ALL CONDUCTOR TERMINALS TO BE U.L. FOR MINIMUM 75' C. NON FUSED RATINGS SHALL MATCH CONDUCTOR RATINGS. U.O.N.

G. CIRCUIT BREAKERS FOR HVAC EQUIPMENT SHALL BE HACR.

H. CONTRACTOR SHALL CONTACT THE LOCAL UTILITY COMPANY AND COORDINATE THE NEW ELECTRICAL SERVICE AS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS REQUIRED BY THE UTILITY TO ESTABLISH THE NEW SERVICE. NEW SERVICE SHALL BE INSTALLED AS PER THE UTILITY'S REQUIREMENTS.

I. CONTRACTOR SHALL VERIFY AVAILABLE SHORT CIRCUIT FROM THE UTILITY AND HAVE SHORT CIRCUIT CALCULATIONS PERFORMED BY THE MANUFACTURER FOR APPROVAL.

7. CLOSE OUT:

A. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED AND TESTED FOR PROPER OPERATION. AFTER WIRES ARE IN PLACE AND CONNECTED TO DEVICES AND EQUIPMENT. THE SYSTEM SHALL BE TESTED FOR SHORTS AND GROUNDS. ALL HOT AND NEUTRAL CONDUCTORS, IF SHORTED OR GROUNDED, SHALL BE REMOVED AND REPLACED. ALL METERS, INSTRUMENTS, CABLE CONNECTIONS, EQUIPMENT OR APPARATUS NECESSARY FOR MAKING ALL TESTS, SHALL BE FURNISHED BY THIS CONTRACTOR AT HIS OWN EXPENSE.

B. TOUCH-UP OR REFINISH DAMAGED SURFACES OF FIXTURES AND EQUIPMENT, EXPOSED TO VIEW.
- 
- 

GROUND ROD

TRANSFORMER

ELECTRIC METER

EXPOSED CONDUIT OR CABLE

CONCEALED CONDUIT OR CABLE

PANEL

ELECTRICAL ABBREVIATION LEGEND

| ABBREVIATION | DESCRIPTION                      | ABBREVIATION | DESCRIPTION                              |
|--------------|----------------------------------|--------------|------------------------------------------|
| A            | AMPERE                           | LP           | LIGHTING PANEL                           |
| AC           | ALTERNATING CURRENT              | MCB          | MAIN CIRCUIT BREAKER                     |
| AFF          | ABOVE FINISHED FLOOR             | MDP          | MAIN DISTRIBUTION PANEL                  |
| AHJ          | AUTHORITY HAVING JURISDICTION    | MGB          | MAIN GROUND BUS                          |
| AWG          | AMERICAN WIRE GAGE               | MLO          | MAIN LUGS ONLY                           |
| C            | CONDUIT                          | N            | NEW                                      |
| CB           | CIRCUIT BREAKER                  | NIC          | NOT IN CONTRACT                          |
| CKT          | CIRCUIT                          | ø            | PHASE                                    |
| D/S          | DISCONNECT SWITCH                | PNL          | PANEL                                    |
| E            | EXISTING                         | PP           | POWER PANEL                              |
| EC           | ELECTRICAL CONTRACTOR            | PVC          | POLY VINYL CHLORIDE CONDUIT              |
| EMT          | ELECTRICAL METALLIC TUBING       | RP           | RECEPTACLE PANEL                         |
| G            | GROUND                           | V            | VOLT                                     |
| GFI          | GROUND FAULT CIRCUIT INTERRUPTER | WP           | WEATHER PROOF (NEMA RATED)(WHILE IN USE) |
| JB           | JUNCTION BOX                     | XFMR         | TRANSFORMER                              |
| KCMIL        | THOUSAND CIRCULAR MILS           |              |                                          |
| KVA          | KILOVOLT – AMPERE                |              |                                          |
| KW           | KILOWATT                         |              |                                          |

ELECTRICAL GENERAL NOTES

1. ELECTRICAL DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONAL REQUIREMENTS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
2. PANELBOARD LOCKS SHALL BE KEYED IN ACCORDANCE TO OWNER REQUIREMENTS.
3. THE ELECTRICAL CONTRACTOR SHALL TRACE AFFECTED POWER PANEL BRANCH CIRCUITS IN CONTRACT AREAS TO DETERMINE WIRING CONFIGURATION OF AFFECTED AND SURROUNDING AREAS. ELECTRICAL CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS TO AID IN REWIRING CONTRACT AREAS IN COMPLIANCE WITH ENGINEERING DOCUMENTS, LOCAL CODES, AND ORDINANCES. PROVIDE FINDINGS IN REPORT FORM WITH MARKED UP DRAWINGS, TO THE ENGINEER AS SOON AS COMPLETED. NO REWIRING SHALL BEGIN UNTIL THIS STEP IS COMPLETED.



KSI CONSULTING ENGINEERS, LLC

ADDRESS:

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PHONE:

732.938.2666

FAX:

732.938.2521

CERTIFICATE OF AUTHORIZATION NO.

24GA28124300

Paul Ruppel, P.E.

Professional Engineer

State of New Jersey

DATE: 7/13/22

KSI PROJECT #: 2100B\_44

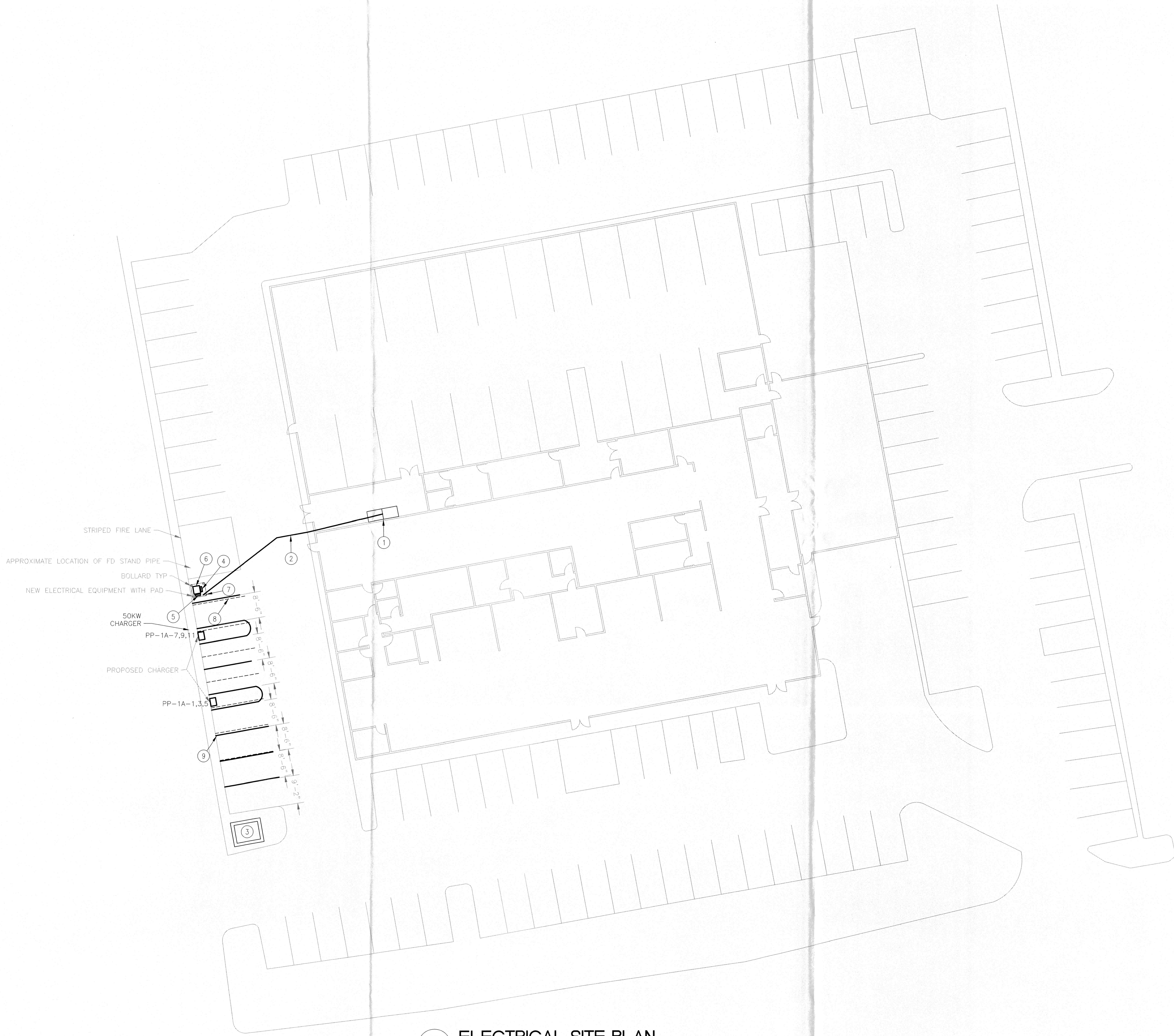
NEW JERSEY PROFESSIONAL ENGINEER

LICENSE NUMBER: 4515800

ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ENGINEER. THE REPRODUCTION OF THIS DRAWING FOR THE PURPOSE OF COPYING THIS WORK OR REVISING THIS DRAWING SHALL BE CONSIDERED A VIOLATION OF BOTH THE PROFESSIONAL CODE OF ETHICS AND A THEFT OF COMPANY ASSETS. BOTH OF WHICH SHALL BE PROSECUTED TO THE FULLEST EXTENT OF CURRENT STATUTES.

PROJECT TITLE:





01  
E1.1  
ELECTRICAL SITE PLAN  
1/16"=1'-0"

KEY NOTES

- EXISTING ELECTRICAL SERVICE.
- PROPOSED ROUTING OF UNDERGROUND SECONDARY ELECTRICAL SERVICE CONDUITS. COORDINATE THE ROUTING WITH FIELD CONDITIONS.
- EXISTING UTILITY TRANSFORMER.
- PROPOSED LOCATION OF NEW PANEL PP-1A. COORDINATE THE FINAL LOCATION WITH THE OWNER.
- PROPOSED LOCATION OF NEW PANEL LV-1A. COORDINATE THE FINAL LOCATION WITH THE OWNER.
- PROPOSED LOCATION OF THE NEW 150KVA TRANSFORMER. COORDINATE THE FINAL LOCATION WITH THE OWNER.
- PROVIDE AND INSTALL BOLLARDS AROUND THE NEW EQUIPMENT ON 4' CENTERS. POSITION BOLLARDS SUCH THAT THE BOLLARDS ARE NOT WITHIN THE CLEARANCES OF THE NEW EQUIPMENT.
- REMOVE EXISTING STRIPING. TYP
- PROPOSED NEW STRIPING. TYP

GENERAL NOTES

- COORDINATE LOCATION OF ALL EQUIPMENT WITH THE OWNER PRIOR TO ROUGH-IN.
- COORDINATE UTILITY SHUT DOWNS WITH THE OWNER PRIOR TO ROUGH-IN.



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LICENSE NUMBER: 451800

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PROJECT TITLE:

PROPOSED ELECTRICAL SERVICE UPGRADE AT:  
  
PINE BELT NISSAN  
111 NJ-36  
KEYPORT, NEW JERSEY 07735

DATE: 7/13/22 REVISION:  
7/13/22 FOR PERMIT

DRAWING TITLE:  
ELECTRICAL  
SITE PLAN

DESIGNED BY:  
AJC

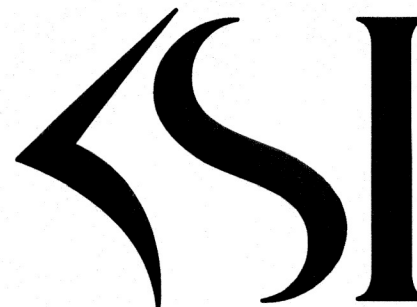
DRAWN BY:  
AJC

DATE:  
7/13/22

SCALE:  
AS NOTED

DRAWING NUMBER:  
E1.1





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Paul Rippa, P.E.  
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State of New Jersey  
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KSI PROJECT #: 2100M\_44  
NEW JERSEY PROFESSIONAL ENGINEER  
LICENSE NUMBER: 451800

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PROJECT TITLE:

PROPOSED ELECTRICAL SERVICE UPGRADE AT:

PINE BELT NISSAN  
111 NJ-36  
KEYPORT, NEW JERSEY 07755

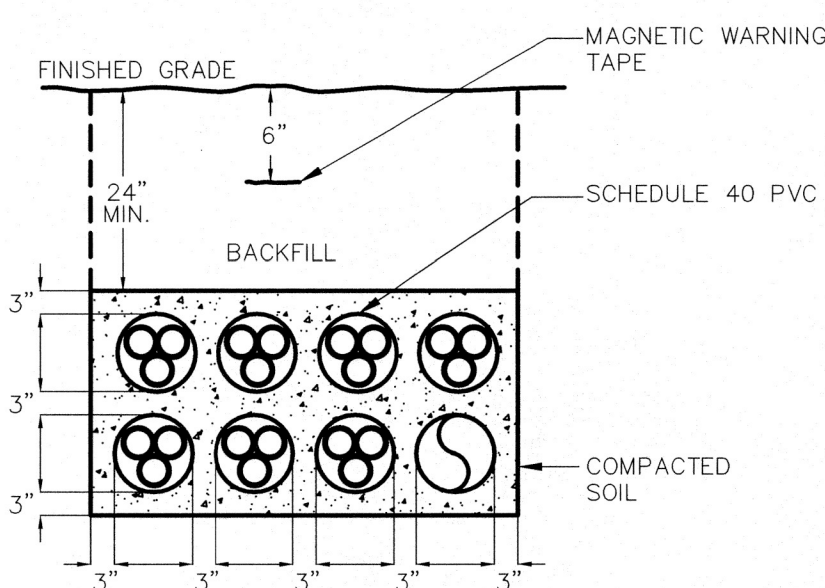
DATE: 7/13/22  
REVISION: FOR PERMIT  
DRAWING TITLE:

DESIGNED BY:  
AJC  
DRAWN BY:  
AJC

DATE: 7/13/22  
SCALE: AS NOTED

DRAWING NUMBER:

E2.1



NOTES:  
1. DETAIL IS FOR GENERAL INSTALLATION AND NOT FOR QUANTITY OR SIZE OF CONDUITS. SEE SINGLE LINE DRAWING. ALWAYS PROVIDE ONE SPARE CONDUIT WITHIN DUCTBANK.

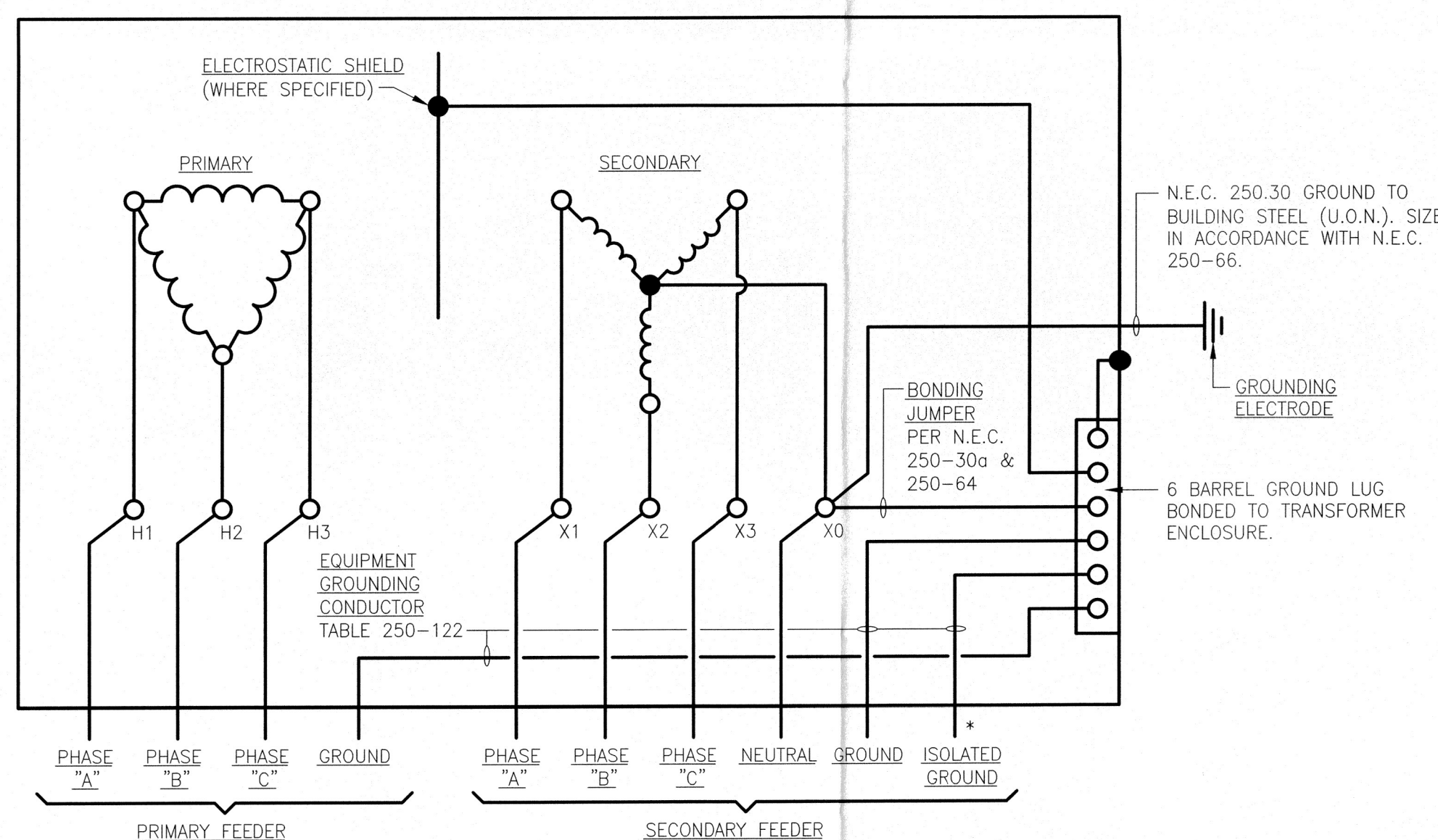
01 SECONDARY DUCT BANK DETAIL  
E2.1 NONE

|                                                         | Kw     | RUNNING POWER FACTOR | KVA (Kw%pf) | DEMAND FACTOR                                         |
|---------------------------------------------------------|--------|----------------------|-------------|-------------------------------------------------------|
| LIGHTING                                                | 0.00   | 0.95                 | 0.00        | 100% = 0.00 KVA                                       |
| RECEPTACLES                                             | 0.00   | 0.95                 | 0.00        | 1st 10 KVA @100% = 0.00 KVA<br>REMAINDER @ 50% = 0.00 |
| KITCHEN EQUIPMENT                                       | 0.00   | 0.90                 | 0.00        | 100% = 0.00 KVA                                       |
| AIR CONDITIONING                                        | 72.00  | 0.90                 | 80.00       | 100% = 80.00 KVA                                      |
| MISCELLANEOUS                                           | 100.00 | 0.90                 | 111.11      | 100% = 111.11 KVA                                     |
| EXISTING LOAD*                                          | 163.00 | 1.00                 | 163.00      | 100% = 163.00 KVA<br>= 354.11 KVA<br>= 425.93 AMPS    |
| TOTALS                                                  |        |                      |             | TOTAL AMPERES = 435.93 AMPS                           |
| STARTUP OF LARGEST MOTOR = HP (25%OF FULL LOAD AMPERES) |        |                      |             | = 10.00 AMPS                                          |

\*EXISTING LOAD REPRESENTS THE PEAK DEMAND AS RECORDED BY JCP&L OVER THE PAST 12 MONTHS

02 ELECTRICAL LOAD SUMMARY  
E2.1 NONE

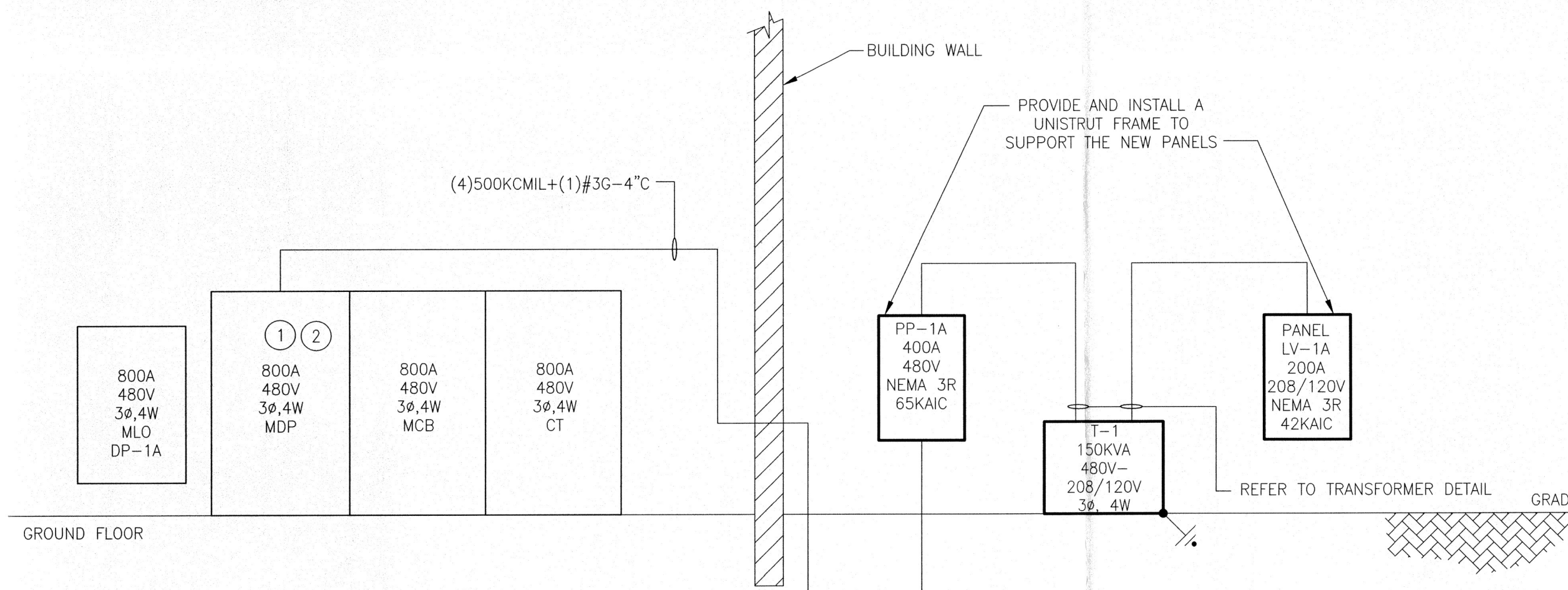
| OVER CURRENT PROTECTION AND CABLE SIZE FOR 3 PHASE, 480-208/120 VOLT, DRY TYPE, AA TRANSFORMERS (WITH PRIMARY AND SECONDARY PROTECTION) (BASED ON 2017)                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                           |                                       |              |                     |                                           |                                                   |              |                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------|---------------------------------------|--------------|---------------------|-------------------------------------------|---------------------------------------------------|--------------|---------------------|
| KVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | FLA   | PRIMARY - 480                             |                                       |              |                     | SECONDARY 208Y/120                        |                                                   |              |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | RECOMMENDED CB OR FUSE SIZE $\Delta$ AMPS | CABLE SIZE AWG. COPPER $\Delta$ PHASE | GND $\Delta$ | CONDUIT SIZE INCHES | RECOMMENDED CB OR FUSE SIZE $\Delta$ AMPS | CABLE SIZE AWG. COPPER $\Delta$ PHASE AND NEUTRAL | GND $\Delta$ | CONDUIT SIZE INCHES |
| 150                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 181.0 | 250                                       | 250KCMIL                              | #4           | 2-1/2               | 416.0                                     | 500                                               | (2)250KCMIL  | #2 (2)3             |
| $\Delta$ CABLE SIZE BASED ON RECOMMENDED CB/FUSE USE WITH 75 DEGREES C. WIRE; HIGHER CB/FUSE SIZE OR VOLTAGE DROP CONSIDERATIONS MAY NECESSITATE LARGER CABLE.<br>$\Delta$ CONDUIT SIZED FOR LISTED CABLES - TYPE THWN.<br>$\Delta$ REFERENCE NEC ART. 450-3(B).<br>$\Delta$ CONDUIT AND CABLE NOT RECOMMENDED - CONSIDER BUS DUCT OR CABLE TRAY.<br>$\Delta$ SIZE OF GROUND CABLE IS FOR EQUIPMENT GROUND CABLE PER NEC 250-122.<br>$\Delta$ SEE 250-66 AND TABLE 250-66 FOR GROUNDING ELECTRODE CONDUCTOR CABLE SIZE.<br>$\Delta$ REFERENCE NEC ART. 240-21 FOR LOCATION IN CIRCUIT. |       |                                           |                                       |              |                     |                                           |                                                   |              |                     |



NOTE:  
1. FOLLOW NEC TAP RULES FOR SECONDARY OVER-CURRENT PROTECTION LOCATION.

\* = WHERE REQUIRED

04 TYPICAL DRY TYPE TRANSFORMER CONNECTION DIAGRAM  
E2.1 NONE



NOTES:  
1. DISCONNECT EXISTING PANEL DP-1A FROM THE EXISTING 800A 3 POLE CIRCUIT BREAKER IN MDP. MODIFY EXISTING CONDUCTORS AND CONNECT EXISTING 800A CONDUCTORS TO THE BUS AS A TAP CONNECTION.  
2. REMOVE THE EXISTING 800A, 480V, 3 POLE CIRCUIT BREAKER FROM MDP THAT WAS PREVIOUSLY CONNECTED TO DP-1A AND REPLACE WITH A NEW 400A, 480V, 3 POLE CIRCUIT BREAKER. THE NEW CIRCUIT BREAKER SHALL BE UTILIZED FOR NEW PANEL PP-1A.

03 ELECTRICAL RISER DIAGRAM  
E2.1 NONE

| PANEL PP-1A       |                | SCHEDULE               |                  | COMMENTS:     |          | NEW PANEL |     | 400A |         |         |         | MAIN CIRCUIT BREAKER                |      |      |       |        |                  |                                 |                |               |  |
|-------------------|----------------|------------------------|------------------|---------------|----------|-----------|-----|------|---------|---------|---------|-------------------------------------|------|------|-------|--------|------------------|---------------------------------|----------------|---------------|--|
| PANEL LOCATION    |                | EXTERIOR               |                  |               |          |           |     |      |         |         |         | NUMBER OF POLES: 42                 |      |      |       |        |                  |                                 |                |               |  |
| 480/277           |                | VOLTS, 3 PHASE, 4 WIRE |                  | 400A BUS SIZE |          |           |     |      |         |         |         | PANEL SHORT CIRCUIT RATING: 65 KAIC |      |      |       |        |                  |                                 |                |               |  |
| C.B. POLE NO.     | C.B. TRIP AMPS | C.B. LOAD VA           | LOAD DESCRIPTION | CIR NO        | FDR.DATA |           |     |      | PHASE A | PHASE B | PHASE C | FDR.DATA                            |      |      |       | CIR NO | LOAD DESCRIPTION | C.B. LOAD VA                    | C.B. TRIP AMPS | C.B. POLE NO. |  |
|                   |                |                        |                  |               | No.      | WIRE      | GND | COND |         |         |         | No.                                 | WIRE | GND  | COND  |        |                  |                                 |                |               |  |
| 3                 | 80             | 16,667                 | 50KW CHARGER #1  | 1             | 3        | 8         | 10  | 1    | 16667   | 16667   |         | 3                                   | 250  | 4    | 2-1/2 | 2      | T-1/LV-1A        | 0                               | 250            | 3             |  |
|                   |                | 16,667                 |                  | 3             |          |           |     |      |         |         |         |                                     |      |      |       | 4      |                  | 0                               |                |               |  |
|                   |                | 16,667                 |                  | 5             |          |           |     |      |         | 16667   |         |                                     |      |      |       | 6      |                  | 0                               |                |               |  |
| 3                 | 80             | 16,667                 | 50KW CHARGER #2  | 7             | 3        | 8         | 10  | 1    | 16667   |         | 16667   |                                     |      |      |       | 8      |                  |                                 |                |               |  |
|                   |                | 16,667                 |                  | 9             |          |           |     |      |         |         |         |                                     |      |      |       | 10     | SPARE            |                                 | 80             | 3             |  |
|                   |                | 16,667                 |                  | 11            |          |           |     |      |         | 16667   | 16667   |                                     |      |      |       | 12     |                  |                                 |                |               |  |
|                   |                |                        |                  | 13            |          |           |     |      | 0       |         |         |                                     |      |      |       | 14     | SPACE            |                                 |                |               |  |
| 3                 | 80             |                        | SPARE            | 15            |          |           |     |      | 0       |         |         |                                     |      |      |       | 16     | SPACE            |                                 |                |               |  |
|                   |                |                        |                  | 17            |          |           |     |      |         | 0       |         |                                     |      |      |       | 18     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 19            |          |           |     |      | 0       |         | 0       |                                     |      |      |       | 20     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 21            |          |           |     |      |         | 0       |         |                                     |      |      |       | 22     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 23            |          |           |     |      |         |         | 0       |                                     |      |      |       | 24     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 25            |          |           |     |      | 0       |         |         |                                     |      |      |       | 26     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 27            |          |           |     |      |         | 0       |         |                                     |      |      |       | 28     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 29            |          |           |     |      |         |         | 0       |                                     |      |      |       | 30     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 31            |          |           |     |      | 0       |         |         |                                     |      |      |       | 32     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 33            |          |           |     |      |         | 0       |         |                                     |      |      |       | 34     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 35            |          |           |     |      |         |         | 0       |                                     |      |      |       | 36     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 37            |          |           |     |      | 0       |         |         |                                     |      |      |       | 38     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 39            |          |           |     |      |         |         |         |                                     |      |      |       | 40     | SPACE            |                                 |                |               |  |
|                   |                |                        | SPACE            | 41            |          |           |     |      |         |         | 0       |                                     |      |      |       | 42     | SPACE            |                                 |                |               |  |
| MOUNTING: SURFACE |                | PH-LOAD                |                  | 33334         |          | 33334     |     | VA   |         |         |         |                                     |      |      |       |        |                  | PANEL TYPE : NEMA 3R, WITH      |                |               |  |
| FED FROM: UTILITY |                | CONNECTED LOAD         |                  | 100           |          | KVA       |     |      |         | 120     |         |                                     |      | AMPS |       |        |                  | GROUNDING TERMINAL 100% NEUTRAL |                |               |  |

| PANEL LV-1A       |                |              | SCHEDULE               |        | COMMENTS:     |      | NEW PANEL |       | 200A MAIN CIRCUIT BREAKER           |         |         |          |                            |     |                                 |        |                  |              |                |               |  |  |
|-------------------|----------------|--------------|------------------------|--------|---------------|------|-----------|-------|-------------------------------------|---------|---------|----------|----------------------------|-----|---------------------------------|--------|------------------|--------------|----------------|---------------|--|--|
| PANEL LOCATION    |                |              | EXTERIOR               |        |               |      |           |       | NUMBER OF POLES: 42                 |         |         |          |                            |     |                                 |        |                  |              |                |               |  |  |
| 208/120           |                |              | VOLTS, 3 PHASE, 4 WIRE |        | 200A BUS SIZE |      |           |       | PANEL SHORT CIRCUIT RATING: 42 KAIC |         |         |          |                            |     |                                 |        |                  |              |                |               |  |  |
| C.B. POLE NO.     | C.B. TRIP AMPS | C.B. LOAD VA | LOAD DESCRIPTION       | CIR NO | FDR.DATA      |      |           |       | PHASE A                             | PHASE B | PHASE C | FDR.DATA |                            |     |                                 | CIR NO | LOAD DESCRIPTION | C.B. LOAD VA | C.B. TRIP AMPS | C.B. POLE NO. |  |  |
|                   |                |              |                        |        | No.           | WIRE | GND       | COND  |                                     |         |         | No.      | WIRE                       | GND | COND                            |        |                  |              |                |               |  |  |
| 2                 | 125            |              | SPARE                  | 1      | 2             | 1    | 6         | 1-1/2 | 0                                   |         |         | 2        | 1                          | 6   | 1-1/2                           | 2      | SPARE            |              | 125            | 2             |  |  |
|                   |                |              |                        | 3      |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 4      |                  |              |                |               |  |  |
| 2                 | 125            |              | SPARE                  | 5      | 2             | 1    | 6         | 1-1/2 |                                     |         | 0       |          |                            |     |                                 | 6      | SPACE            |              |                |               |  |  |
|                   |                |              |                        | 7      |               |      |           |       | 0                                   |         |         |          |                            |     |                                 | 8      | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 9      |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 10     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 11     |               |      |           |       |                                     |         | 0       |          |                            |     |                                 | 12     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 13     |               |      |           |       | 0                                   |         |         |          |                            |     |                                 | 14     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 15     |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 16     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 17     |               |      |           |       |                                     |         | 0       |          |                            |     |                                 | 18     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 19     |               |      |           |       | 0                                   |         |         |          |                            |     |                                 | 20     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 21     |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 22     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 23     |               |      |           |       |                                     |         | 0       |          |                            |     |                                 | 24     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 25     |               |      |           |       | 0                                   |         |         |          |                            |     |                                 | 26     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 27     |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 28     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 29     |               |      |           |       |                                     |         | 0       |          |                            |     |                                 | 30     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 31     |               |      |           |       | 0                                   |         |         |          |                            |     |                                 | 32     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 33     |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 34     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 35     |               |      |           |       |                                     |         | 0       |          |                            |     |                                 | 36     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 37     |               |      |           |       | 0                                   |         |         |          |                            |     |                                 | 38     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 39     |               |      |           |       |                                     | 0       |         |          |                            |     |                                 | 40     | SPACE            |              |                |               |  |  |
|                   |                |              | SPACE                  | 41     |               |      |           |       |                                     |         | 0       |          |                            |     |                                 | 42     | SPACE            |              |                |               |  |  |
| MOUNTING: SURFACE |                |              | PH-LOAD                |        | 0             |      | 0         |       | 0                                   |         | VA      |          | PANEL TYPE : NEMA 3R, WITH |     |                                 |        |                  |              |                |               |  |  |
| FED FROM: PP-1A   |                |              | CONNECTED LOAD         |        | 0             |      | 0         |       | KVA                                 |         |         |          | AMPS                       |     | GROUNDING TERMINAL 100% NEUTRAL |        |                  |              |                |               |  |  |

05 ELECTRICAL PANEL SCHEDULES  
E2.1 NO SCALE