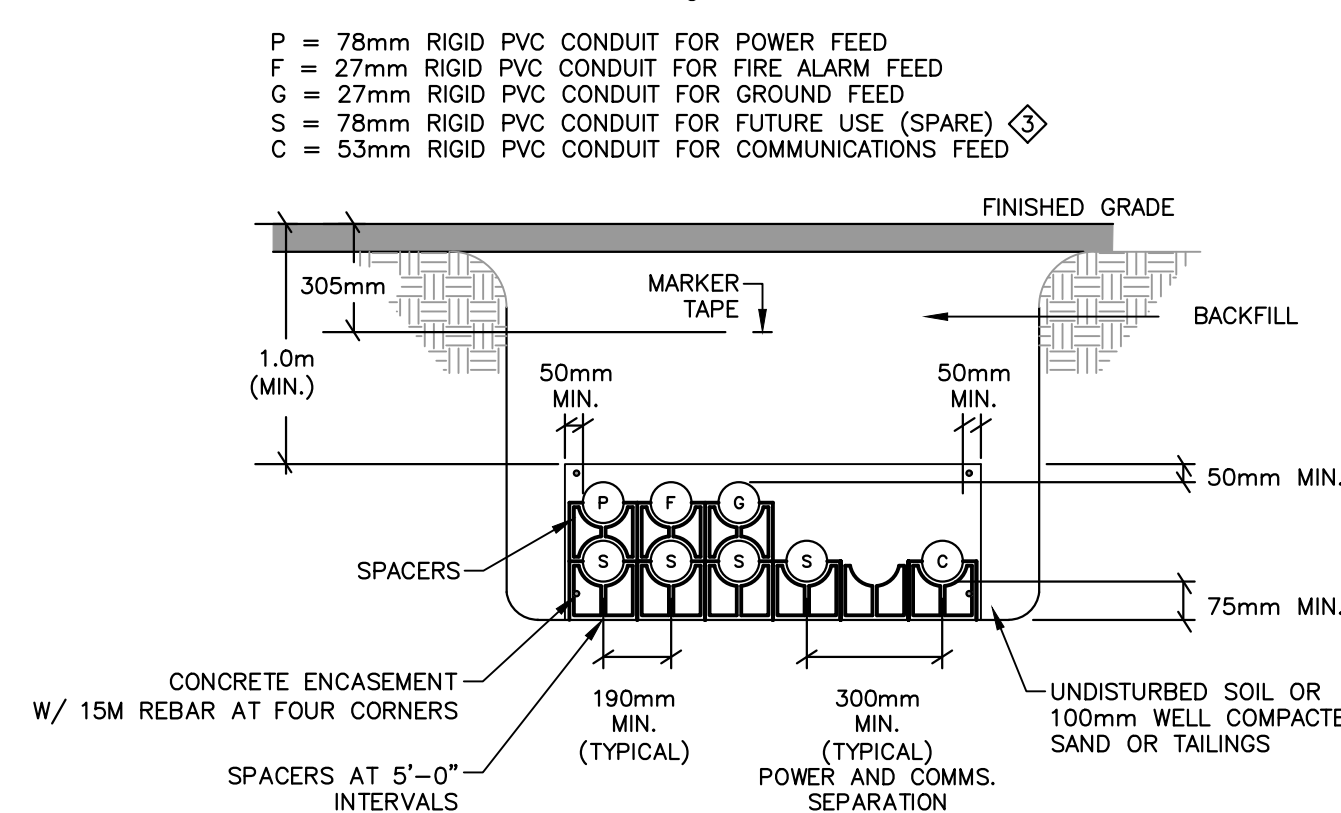


LIGHT POLE BASE DETAIL 1
SCALE : N.T.S.

LIGHT POLE BASE NOTES:

- COORDINATE AND CONFIRM DESIGN WITH STRUCTURAL DRAWINGS. REFER TO CONCRETE AND REBAR SPECIFICATIONS FOR FURTHER INFORMATION. BASE IS DESIGNED, SUPPLIED AND INSTALLED BY STRUCTURAL. THIS DETAIL IS SHOWN FOR CONDUIT LOCATIONS ONLY.
- CONFIRM BOLT CIRCLE WITH SHOP DRAWINGS AND ANCHOR BOLTS DIMENSIONS PRIOR TO POURING.
- CONCRETE FORMS SHALL BE "ART FORMS INTERNATIONAL". STYLE TO BE DECIDED BY ARCHITECT. FORM TO BE PURCHASED BY ELECTRICAL CONTRACTOR AND TURNED OVER TO THE GENERAL CONTRACTOR PRIOR TO POURING OF CONCRETE.
- REFER TO SHOP DRAWINGS AND STRUCTURAL DRAWINGS FOR "XXX" DIMENSIONS.



A-A TRENCH DETAIL 2
SCALE : N.T.S.

SPECIFIC NOTES:

- PROVIDE FIBER OPTIC NETWORK CABLING FROM MAIN RACK IN EXISTING COAST GUARD BUILDING TO NEW MCI HEAVY EQUIPMENT BUILDING. PROVIDE ONE (1) GATE NETWORK DROP TO TIE-IN BUILDING AUTOMATION SYSTEM CONTROL PANEL. SEE SPECIFICATIONS FOR EXACT REQUIREMENTS.
- PROVIDE FIRE ALARM CONNECTIONS FROM EXISTING COAST GUARD BUILDING TO NEW FIRE ALARM PANEL IN NEW BUILDING.
- STUB AND CAP FOUR (4) EMPTY 78mm CONDUITS AT CANADIAN COAST GUARD BUILDING AND AT NEW MCI HEAVY EQUIPMENT BUILDING FOR FUTURE UPGRADES.

SPECIFIC NOTES
SCALE : N.T.S.

3
E01/E01

LIST OF DRAWINGS — ELECTRICAL

- | | |
|-----|--|
| E01 | LEGEND, SITE PLAN AND DETAILS |
| E02 | LIGHTING, POWER AND SYSTEMS FLOOR AND MEZZANINE PLAN |
| E03 | SCHEDULES, DETAILS AND SINGLE LINE DIAGRAM |

SITE

- EXISTING UNDERGROUND CONDUITS/DUCTBANK.
- NEW UNDERGROUND CONDUITS/DUCTBANK. REFER TO SECTION DETAIL INDICATED.
- UNDERGROUND SECTION DETAIL IDENTIFIER. REFER TO DETAIL INDICATED.
- CONDUIT STUB OUT AND CAP OFF

LIGHTING

- LINEAR LUMINAIRE, TYPE AS SPECIFIED.
- WALL MOUNTED LUMINAIRE, TYPE AS SPECIFIED.
- EXISTING POLE MOUNTED LUMINAIRE
- EMERGENCY LIGHTING SYSTEM DUAL REMOTE HEADS, 'BU-1' INDICATES WHICH BATTERY UNIT SERVES REMOTE. REFER TO LUMINAIRE SCHEDULE.

- EMERGENCY LIGHTING BATTERY UNIT C/W DUAL HEADS, 'BU-1' INDICATES BATTERY UNIT IDENTIFIER. REFER TO LUMINAIRE SCHEDULE.
- GREEN LED "RUNNING MAN" EXIT SIGN, RECESSED CEILING MOUNT OR WALL MOUNTED AS INDICATED. NUMBER OF FACES AND DIRECTIONAL ARROWS AS SHOWN. REFER TO LUMINAIRE SCHEDULE.
- LIGHTING CONTROL
- SINGLE ONE GANG TOGGLE SWITCH
- 3-WAY SWITCH
- SWITCH MOUNTED OCCUPANCY SENSOR
- PHOTO ELECTRIC CONTROL

EQUIPMENT CONNECTIONS AND CONTROLS

- MOTOR CONNECTION AS SPECIFIED.
- MOTOR CONNECTION C/W UNFUSED DISCONNECT SWITCH.
- 120/208V DIRECT CONNECTION
- 347/600V DIRECT CONNECTION
- MOTOR STARTER AS SPECIFIED.
- POWER ACTIVATED OVERHEAD DOOR BUTTON SUPPLIED BY DOOR HARDWARE SUPPLIER, WIRED BY ELECTRICAL.
- RECESSED OR SURFACE MOUNTED ELECTRICAL PANELBOARD

GENERAL POWER

- 5-15R, 15A, 120V U-GROUND DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER.
- 5-20R, 20A, 120V T-SLOT U-GROUND DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER.
- 5-20R, 20A, 120V (T-SLOT) U-GROUND QUAD RECEPTACLE - STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER.
- 5-20R, 20A, 120V (T-SLOT) U-GROUND DUPLEX RECEPTACLE C/W GROUND FAULT CIRCUIT INTERRUPTER - STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER.
- 'WP' INDICATES WEATHER PROOF

FIRE ALARM SYSTEM

- PULL STATION
- FLUSH MOUNTED HORN - 'HS' DENOTES HORN STROBE COMBINATION.
- AUTOMATIC COMBINATION FIXED TEMPERATURE/RATE OF RISE HEAT DETECTOR - WALL OR CEILING MOUNTED
- SMOKE DETECTOR - WALL OR CEILING MOUNTED
- RECESSED OR SURFACE MOUNTED FIRE ALARM CONTROL PANEL
- SPRINKLER SYSTEM FLOW OR PRESSURE SWITCH BY MECHANICAL AND WIRED BY ELECTRICAL. COORDINATE/CONFIRM EXACT LOCATIONS AND QUANTITIES WITH MECHANICAL DRAWINGS.
- SPRINKLER SYSTEM OR STANDPIPE SUPERVISED VALVE BY MECHANICAL AND WIRED BY ELECTRICAL. COORDINATE/CONFIRM EXACT LOCATIONS AND QUANTITIES WITH MECHANICAL DRAWINGS.
- SINGLE INPUT MODULE
- END OF LINE RESISTOR

COMMUNICATIONS

- DATA OUTLET - '3' INDICATES 3 DROPS
- MISCELLANEOUS
- INDICATES CONDUIT.

- ELECTRICAL DRAWING NOTES
- MECHANICAL EQUIPMENT - REFER TO MECHANICAL EQUIPMENT SCHEDULE
- OWNER'S EQUIPMENT - REFER TO OWNER'S EQUIPMENT SCHEDULE

ABBREVIATIONS

- AFF - ABOVE FINISHED FLOOR
- AFG - ABOVE FINISHED GRADE
- BU - BATTERY UNIT
- DHWT - DOMESTIC HOT WATER HEATER
- EC - EMPTY CONDUIT
- EF - EXHAUST FAN
- EX - INDICATES DEVICE IS EXISTING TO REMAIN.
- MH - MOUNTING HEIGHT
- WV - INDICATES EXISTING DEVICE IS TO BE MOVED.
- NTS - NOT TO SCALE
- REL - INDICATES EXISTING DEVICE IN RELOCATED POSITION.
- TYP - TYPICAL
- WP - WEATHERPROOF

ELECTRICAL LEGEND 5
SCALE : N.T.S.

5
E01/E01

ELECTRICAL SITE PLAN

SCALE : 1:250
0m 5m 10m 15m 20m 25m

4
E01/E01



| | | |
|---|----------------------|------------|
| 4 | RE-ISSUED FOR TENDER | 03/09/2021 |
| 3 | ISSUED FOR TENDER | 02/18/2021 |
| 2 | 99%-RS4 SUBMISSION | 01/28/2021 |
| 1 | 75%-RS4 SUBMISSION | 12/16/2020 |
| 0 | SCHEMATIC DESIGN | 10/14/2020 |

project **MCI HEAVY EQUIPMENT FACILITY** project

BIO DARTMOUTH

ELECTRICAL LEGEND SITE PLAN AND DETAILS

| | | |
|----------|----------------|------------|
| designed | H.G./D.O. | conçu |
| date | FEBRUARY, 2021 | |
| drawn | C.B./H.G. | dessiné |
| date | FEBRUARY, 2021 | |
| approved | T.D. | approuvé |
| date | FEBRUARY, 2021 | |
| Tender | | Submission |

PWGS Project Manager Administrateur de projets TPSGC

project number **R.110935.001** no. du projet

drawing no. **E01 OF 03** no. du dessin



APPROX. NORTH



| | | |
|---|----------------------|---------------|
| 4 | RE-ISSUED FOR TENDER | 03/09 2021 |
| 3 | ISSUED FOR TENDER | 02/18 2021 |
| 2 | 99%-RS4 SUBMISSION | 01/28 2021 |
| 1 | 75%-RS4 SUBMISSION | 12/16 2020 |
| 0 | SCHEMATIC DESIGN | 10/14 2020 |

revisions

project

MCI HEAVY
EQUIPMENT FACILITY

BIO DARTMOUTH

drawing

design

LIGHTING,
POWER AND SYSTEMS
GROUND FLOOR AND
MEZZANINE PLAN

designed H.G./D.O

conçu

date FEBRUARY, 2021

drawn C.B./H.G.

dessiné

date FEBRUARY, 2021

approved T.D.

approuvé

date FEBRUARY, 2021

Tender

Submission

PWSO Project Manager

Administrateur de projets TPSOC

project number

no. du projet

R.110935.001

drawing no.

no. du dessin

E02 OF 03

MEZZANINE PLAN - LIGHTING

SCALE : 1:50

MEZZANINE PLAN - POWER & SYSTEMS

SCALE : 1:50

SPECIFIC NOTES:

- ◇ PROVIDE CONCRETE HOUSEKEEPING PAD FOR TRANSFORMER INSTALLATION.
- ◇ CONFIRM EXACT LOCATIONS FOR NEW BLOCK HEATERS RECEPTACLES ON SITE PRIOR TO ROUGH-IN. SUPPLY AND INSTALL CABLE HOOKS TO MATCH EXISTING BLOCK HEATER HOOKS. FASTEN TO BUILDING. LABEL RECEPTACLES "BLOCK HEATER".
- ◇ CONFIRM EXACT LOCATION OF CRANE ELECTRICAL CONNECTIONS ON SITE WITH EQUIPMENT INSTALLER.
- ◇ PROVIDE TOGGLE TYPE DISCONNECT SWITCH RATED FOR 120V/30A AND COMPLETE WITH LOCKING TAB FOR PUMPS P-1, P-2, P-3, P-4, P-5 AND P-6.
- ◇ CONFIRM EXACT REQUIREMENTS FOR EQUIPMENT PRIOR TO START OF ROUGH-IN AND ORDERING PANELBOARDS. REVIEW SHOP DRAWINGS AND ADVISE OF ANY DISCREPANCIES.
- ◇ PROVIDE AND INSTALL NEW NETWORK RACK AND ASSOCIATED HARDWARE FOR FIBRE AND CAT6 TERMINATIONS AND DISTRIBUTION. PROVIDE ONE (1) CAT6 NETWORK DROP FOR BUILDING AUTOMATION SYSTEM CONTROL PANEL. SEE SPECIFICATIONS FOR EXACT REQUIREMENTS.

SPECIFIC NOTES





N.T.S.

GROUND FLOOR PLAN - LIGHTING

SCALE : 1:50

GROUND FLOOR PLAN - POWER & SYSTEMS

SCALE : 1:50

| LUMINAIRE SCHEDULE | | | | | |
|--|--|------------|--|---------------------------------|-------|
| TYPE | DESCRIPTION | VOLTAGE | MOUNTING | LAMP | NOTES |
| A | 606mm x 375mm x 73mm, SUSPENDED LED VAPOURTIGHT FIXTURE, FROSTED POLYCARBONATE LENSE, FIELD REPLACEABLE DRIVERS; OPERATING TEMPERATURE OF -35 DEG C TO 35 DEG C, IP 67 RATED HOUSING, WIDE DISTRIBUTION, 0 - 10V DIMMABLE | 120 | SUSPENDED BY AIRCRAFT CABLE AT 5.943m ABOVE FINISHED FLOOR | LED 12,000 LUMEN 88 WATTS 4000K | 3 |
| B | 1200mm x 125mm x 90mm, SUSPENDED LED STRIP FIXTURE C/W INTEGRATED OCCUPANCY/MOTION SENSOR, FROSTED POLYCARBONATE LENSE, FIELD REPLACEABLE DRIVERS, OPERATING TEMPERATURE OF -20 DEG C TO 35 DEG C, IP 67 RATED HOUSING, 0 - 10V DIMMABLE | 120 | SURFACE MOUNTED | LED 6,000 LUMEN 55 WATTS 4000K | - |
| AA | 300mm x 250mm x 150mm, WALL MOUNTED LED WEATHERPROOF FIXTURE, FIELD REPLACEABLE DRIVERS; OPERATING TEMPERATURE OF -40 DEG C TO 40 DEG C, IP 65 RATED HOUSING, TYPE 4 DISTRIBUTION | 120 | WALL MOUNTED 5.67m ABOVE FINISHED GROUND | LED 9,500 LUMEN 90 WATTS 4000K | - |
| AA1 | 190mm x 110mm x 100mm, WALL MOUNTED LED WEATHERPROOF FIXTURE, FIELD REPLACEABLE DRIVERS; OPERATING TEMPERATURE OF -40 DEG C TO 40 DEG C, IP 65 RATED HOUSING, TYPE 2 DISTRIBUTION | 120 | WALL MOUNTED 2.743m ABOVE FINISHED GROUND | LED 1,050 LUMEN 10 WATTS 4000K | - |
|   | GREEN LED ALUMINUM 'RUNNING MAN' PICTOGRAM EXIT SIGN, UNIVERSAL AC INPUT, UNIVERSAL MOUNTING, DIE-CAST ALUMINUM FINISH, NUMBER OF FACES AND DIRECTIONAL ARROWS AS INDICATED C/W INTERNAL BATTERY | 120 | WALL OR CEILING MOUNTED | LED 2.5 WATTS | - |
|  | CUBE EMERGENCY DUAL HEAD BATTERY UNIT, AUTOMATIC SOLID-STATE CHARGER, LOW VOLTAGE BATTERY DISCONNECT, BROWNOUT PROTECTION, INTEGRAL TEST SWITCH AND LED AC-ON PILOTS LIGHTS, CONFIRM BATTERY WATTAGE WITH LOADS. | 120/12V DC | WALL OR CEILING MOUNTED | LED 12V-6 WATTS | 1,2 |
|  | DUAL REMOTE EMERGENCY HEADS, LED LAMPS | 12V DC | WALL OR CEILING MOUNTED | LED 12V-6 WATTS | 1,2 |
| NOTES: 1. SIZE BATTERY UNIT CAPACITY BASED ON NUMBER OF HEADS SERVED TO PROVIDE A MINIMUM OF 60 MINUTES RUN TIME. PROVIDE ONE BATTERY UNIT FOR EVERY LIGHTING CIRCUIT WHERE A REMOTE 2. EMERGENCY LIGHTING DUAL HEAD REMOTE BATTERY UNITS SHALL BE CONNECTED TO THE LIGHTING CIRCUIT OF THE AREA IT SERVES AS PER CEC 46-404(4). 3. REFER TO SUSPENDED LIGHTING DETAIL 6-E03. | | | | | |

LUMINAIRE SCHEDULE 1 E03/E03

| MECHANICAL EQUIPMENT SCHEDULE | | | | | | | | | | | | |
|---|--------|------------------------------|-----------------|------------------------|-------|---|---------|---------------------------------|--|--------------------|-------|-------|
| NO. | ITEM | DESCRIPTION | LOCATION | LOAD | VOLTS | Ø | BREAKER | FEEDER | DISCONNECT | STARTER | PANEL | NOTES |
| ① | ERV-1 | ENERGY RECOVERY UNIT | MEZZANINE | 6HP 7.4A/15MOP | 600 | 3 | 15A-3P | 3#12 RW90 + #12 BOND, 21mm C | 30A | REFER TO NOTE 1 | P6A | 1 |
| ② | HP-1 | AIR TO WATER HEAT PUMP | EXTERIOR | 4.3kW 30.4MCA/50MOP | 208 | 1 | 50A-2P | 2#6 RW90 + #8 BOND, 21mm C | 60A NEMA 3R | BY MECH | P2A | - |
| ③ | B-1 | ELECTRIC BOILER | MEZZANINE | 27kW 27.5A | 600 | 3 | 40A-3P | 3#8 RW90 + #10 BOND, 21mm C | 60A | BY MECH VFD | P6A | - |
| ④ | P-1 | MAIN SYSTEM PUMP | MEZZANINE | 110W 0.91A | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH VFD | P2A | 2 |
| ⑤ | P-2 | MAIN SYSTEM PUMP | MEZZANINE | 110W 0.91A | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH | P2A | 2 |
| ⑥ | P-3 | BUFFER TANK PUMP | MEZZANINE | 97W 0.42A | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH | P2A | 2 |
| ⑦ | P-4 | BOILER PUMP | MEZZANINE | 97W 0.42A | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH | P2A | 2 |
| ⑧ | P-5 | HX TO BUFFER TANK PUMP | MEZZANINE | 220W 1.07A | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH | P2A | 2 |
| ⑨ | P-6 | HX TO HEAT PUMP | MEZZANINE | 220W 1.07A | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH | P2A | 2 |
| ⑩ | GF-1 | GLYCOL FILL PUMP | MEZZANINE | ... | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | - | BY MECH | P2A | - |
| ⑪ | DHWT-1 | ELECTRIC HOT WATER HEATER | MEZZANINE | 3kW | 208 | 1 | 20A-2P | 2#12 RW90 + #12 BOND, 21mm C | 30A | BY MECH | P2A | - |
| ⑫ | TP-1 | TRAP PRIMER | WASHROOM 102 | - | 120 | 1 | 15A-1P | 2#12 RW90 + #12 BOND, 21mm C | - | - | P2A | - |
| NOTES: | | | | | | | | | STARTER LEGEND | | | |
| 1. PACKAGED ERV UNIT TO HAVE INTEGRATED VFD (BY MECH). | | | | | | | | | MS= MANUAL TYPE MOTOR STARTER c/w O/L PROTECTION | | | |
| 2. PROVIDE TOGGLE TYPE DISCONNECT SWITCH RATED FOR 120V/30A AND COMPLETE WITH LOCKING TAB FOR PUMPS P-1, P-2, P-3, P-4, P-5 AND P-6. | | | | | | | | | HOA= MAGNETIC STARTER C/W HAND/OFF/AUTO SELECTOR SWITCH | | | |
| | | | | | | | | | VFD= VARIABLE SPEED DRIVE, SUPPLIED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR | | | |

MECHANICAL EQUIPMENT SCHEDULE 2 E03/E03

| OWNER'S EQUIPMENT SCHEDULE | | | | | | | | |
|--|-------------|------|-------|---|--------|----------------------------------|-------|-------|
| ITEM | DESCRIPTION | LOAD | VOLTS | Ø | BRKR | FEEDER | PANEL | NOTES |
| 1 | COMPRESSOR | | 208 | 3 | 20A-3P | 3#12 RW90 + 1#12 BOND, 21mmC. | P2A | 1 |
| 2 | CRANE | | 600 | 3 | 25A-3P | 3#10 RW90 + 1#12 BOND, 21mmC. | P6A | 1 |
| NOTES: 1. CONFIRM EXACT REQUIREMENTS FOR EQUIPMENT PRIOR TO START OF ROUGH-IN AND ORDERING PANELBOARDS. REVIEW SHOP DRAWINGS AND ADVISE OF ANY DISCREPANCIES. | | | | | | | | |

OWNER'S EQUIPMENT SCHEDULE 3 E03/E03

| PANEL VOLTAGE: 347/600V | | | | 347/600V, 3Ø, 4W 225A MAINS | | | | PANEL P6A | | | | | | | |
|--|-------------|---------|------|-----------------------------|---|------|---|-----------|------|-------|-------------|-----------------|-------|----|----|
| CCT | DESCRIPTION | WATTAGE | | | P | BRKR | Ø | WATTAGE | | | DESCRIPTION | CCT | | | |
| | | A | B | C | | | | ABC | AMPS | P | | | A | B | C |
| 1 | ① ERV-1 | 1492 | | | 3 | 15 | B | 40 | 3 | 9000 | | ELECTRIC BOILER | 2 | | |
| 3 | | | 1492 | | | | | | | | 9000 | | | ③ | |
| 5 | | | | 1492 | | | | | | | | | 9000 | | 4 |
| 7 | | | | | | | | | | | | | | | 8 |
| 9 | | | | | | | | | | | | | | | 10 |
| 11 | SPARE | | | | 3 | 15 | B | 25 | 3 | 3500 | | CRANE | 12 | | |
| 13 | | | | | | | | | | | 3500 | | | ② | |
| 15 | | | | | | | | | | | | | | | 14 |
| 17 | SPARE | | | | 3 | 20 | B | 15 | 3 | 660 | | OVERHEAD DOOR | 16 | | |
| 19 | | | | | | | | | | | 660 | | | 18 | |
| 21 | | | | | | | | | | | | | | | 20 |
| 23 | SPARE | | | | 3 | 30 | A | 15 | 3 | 660 | | OVERHEAD DOOR | 22 | | |
| 25 | | | | | | | | | | | 660 | | | 24 | |
| 27 | | | | | | | | | | | | | | | 26 |
| 29 | | | | | | | | | | | | | | | 28 |
| 31 | | | | | | | | | | | | | | | 30 |
| 33 | | | | | | | B | | | | | | 32 | | |
| 35 | | | | | | | | | | | | | 34 | | |
| 37 | | | | | | | | | | | | | 36 | | |
| 39 | | | | | | | A | | | 10362 | | TRANSFORMER T1 | 38 | | |
| 41 | | | | | | | B | 60 | 3 | 10156 | | | 40 | | |
| | | | | | | | C | | | 11858 | | | 42 | | |
| PHASE LOADS | | 1492 | 1492 | 1492 | | | | | | | 24182 | 23976 | 25678 | | |
| TOTAL PHASE LOADS | | 25674 | | | | | | | | | 27170 | | | | |
| TOTAL LOAD | | | | | | | | | | | | | | | |
| TOTAL AMPERAGE | | 75 AMPS | | | | | | | | | | | | | |
| *** - INDICATES BREAKER TO BE C/W LOCK ON DEVICE | | | | | | | | | | | | | | | |