

- NOTES:
1. INSTALL 100mm THICK HOUSE KEEPING PAD UNDER EQUIPMENT. EXTEND PAD 75mm BEYOND EQUIPMENT. CONFIRM EXACT DIMENSIONS OF PAD WITH MANUFACTURERS SHOP DRAWINGS. COORDINATE WITH STRUCTURAL.
 2. INSTALL 19MM PAINTED PLYWOOD BACKBOARD FOR MOUNTING OF FIBER OPTIC CABLE BREAKOUT BOX AND PATCH PANEL.
 3. PROVIDE SHELF SECURED TO WALL FOR UPS FOR NETWORK EQUIPMENT. UPS SAME SIZE AS SPECIFIED IN SECTION 40 50 00. UPS TO PLUG INTO DEDICATED RECEPTACLE AND ALL NETWORK GEAR TO BE PLUGGED INTO UPS.
 4. ALL WIRING IN WITHIN THE HEADWORKS BUILDING SHALL ADHERE TO CLASS 1 ZONE 1 WIRING METHODS.
 5. LOCAL CONTROLS FOR SCREENER AND SCREW COMPACTOR. COORDINATE EXACT CONFIGURATION, QUANTITY & SIZE OF CONDUCTORS AND LAYOUT WITH EQUIPMENT SUPPLIER.
 6. COORDINATE EXACT LOCATION OF O/H DOOR OPENER WITH DOOR SUPPLIER.
 7. SPARE CONDUIT. STUB UP IN ROOM 300mm A.F.F. AND CAP OFF.
 8. WIRING FROM MOTOR STARTERS TO DAMPERS AND EXHAUST FANS BY ELECTRICAL CONTRACTOR.
 9. CONTRACTOR TO VALIDATE WIRING SIZE ON SITE AND COORDINATE WITH DEPARTMENTAL REPRESENTATIVE PRIOR TO ORDERING WIRING AND PANEL.
 10. THIS ROOM IS NOT A HAZARDOUS AREA WHEN EXHAUST FANS ARE RUNNING ACHIEVING 6 AIR CHANGES PER HOUR.
 11. NON-EXPLOSION PROOF ROOM CONTRACTOR. SEE DIAGRAM DETAIL ON PAGE E06.



| | | |
|---|-------------------------------|------------|
| 3 | ISSUED FOR TENDER | 06/17/2022 |
| 2 | ISSUED FOR RS4 99% SUBMISSION | 10/30/2020 |
| 1 | ISSUED FOR RS4 66% SUBMISSION | 02-28/2020 |
| 0 | ISSUED FOR RS3 SUBMISSION | 08-17/2018 |

revisions

project

SEWAGE TREATMENT
UPGRADES
SPRINGHILL INSTITUTION

drawing

design

ELECTRICAL
SINGLE LINE,
POWER LAYOUT
& HEATER SCHEDULE

designed EH

date 2022-06-17

drawn GS

date 2022-06-17

approved DD

date 2022-06-17

Tender

PWGSC Project Manager

Administrateur de projets TP50C

project number

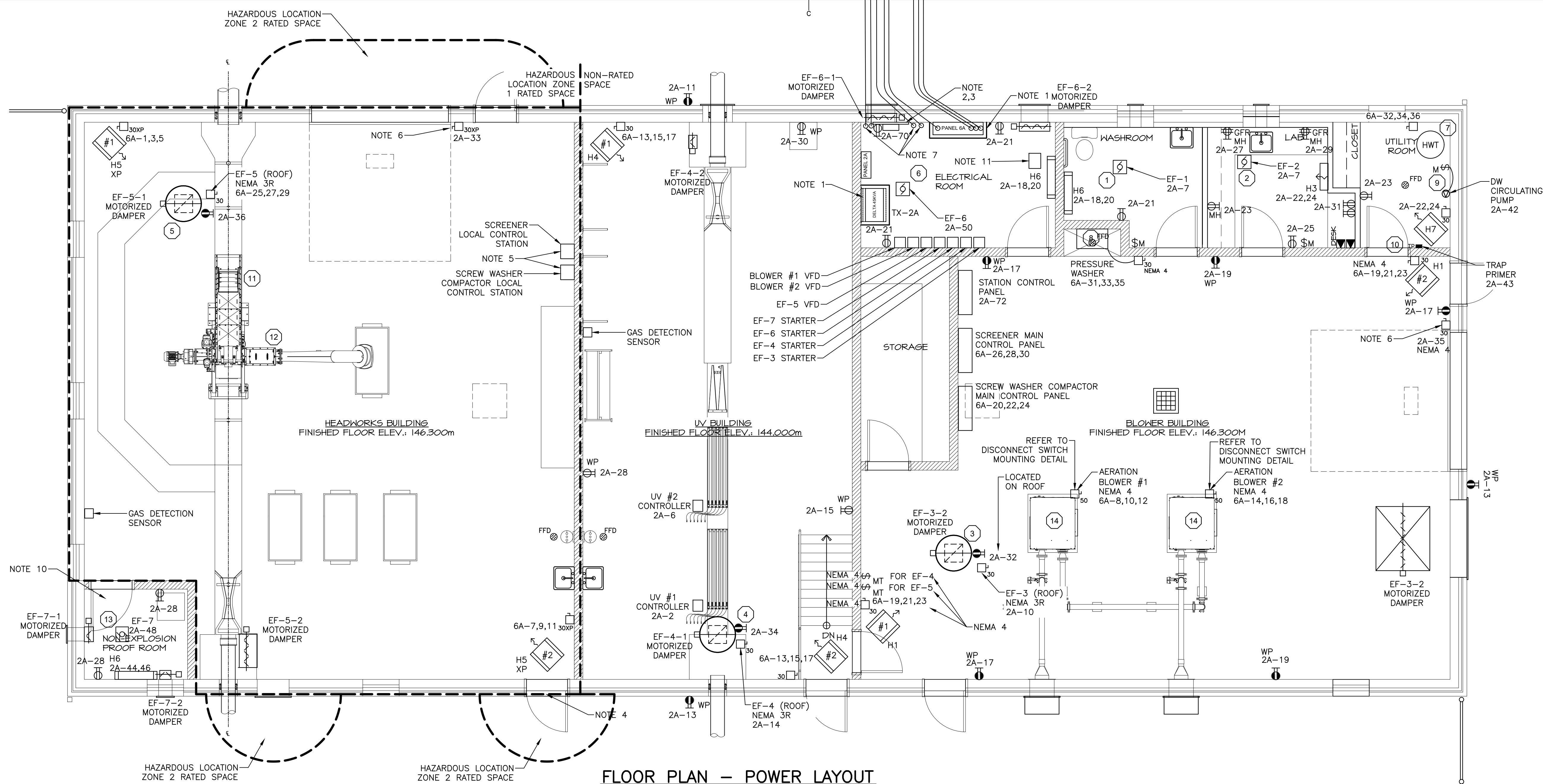
R.061876.001

drawing no.

E05

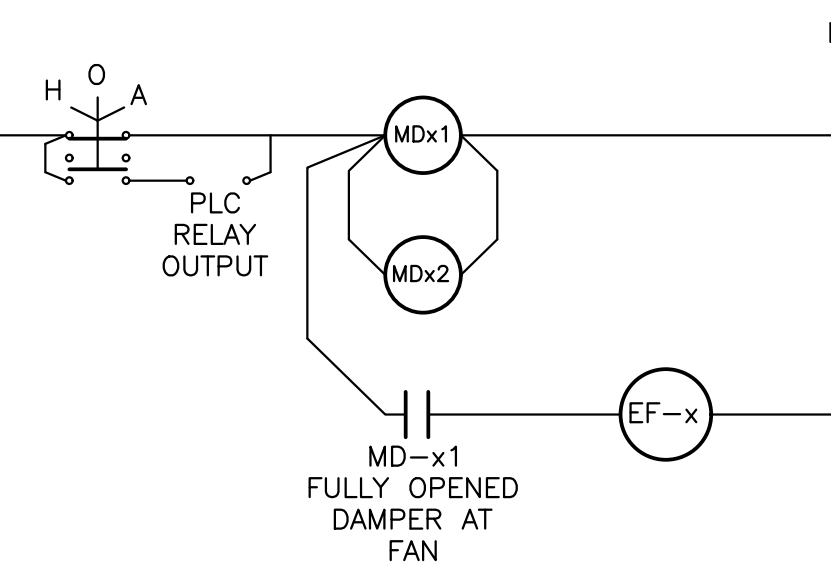
no. du projet

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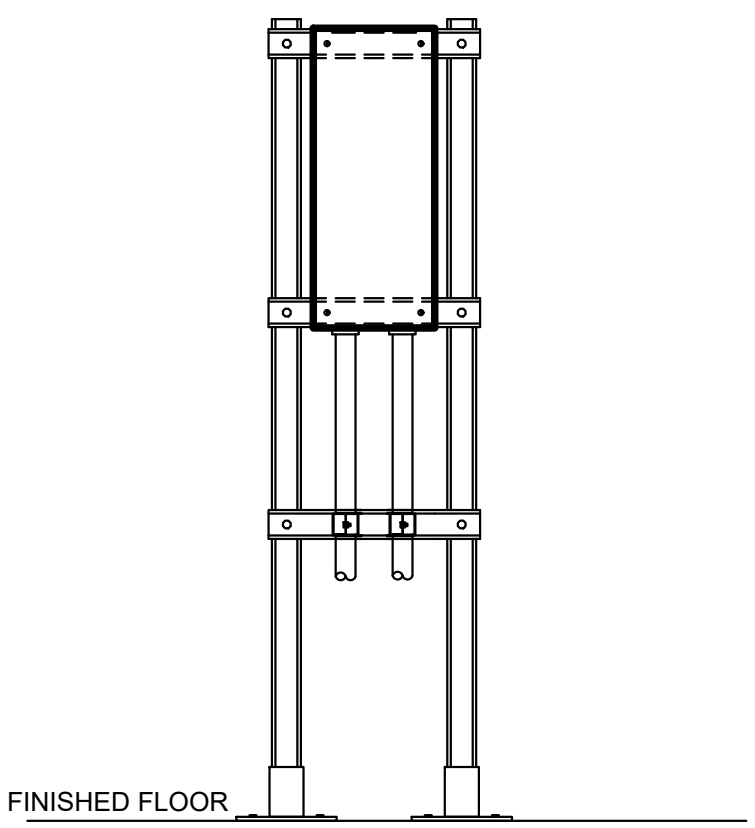
FLOOR PLAN - POWER LAYOUT

SCALE : 1:50



SEQUENCE OF OPERATION
WHEN MOTOR STARTER SELECTOR IS SELECTED TO HAND BOTH MOTORIZED DAMPERS ARE POWERED OPEN. ONCE THE DAMPER AT THE FAN IS FULLY OPENED THE FAN WILL START.
WHEN THE SELECTOR SWITCH IS IN AUTO THE PLC WILL DETERMIN WHEN THE FAN IS REQUIRED.

EF-3.4.6 & 7 WIRING SCHEMATIC



DISCONNECT SWITCH MOUNTING DETAIL

| MECHANICAL EQUIPMENT SCHEDULE | | | | | | | | | |
|-------------------------------|--|---------|----------|---------|------------------------------|-------------|----------|--------------|-------|
| ID | DESCRIPTION | VOLTAGE | LOAD | BREKMER | FEEDER | OUT ID | CONTROLS | DISCONNECT | NOTES |
| EF-1 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 120V | 0.2A | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-7 | SW | 15A, NEMA 1 | — |
| EF-2 | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | 120V | 0.2A | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-7 | SW | 15A, NEMA 1 | — |
| EF-3 | SURFACE MOUNTED FAN FORCED HEATER, 20 GAUGE HOUSING, 18 GAUGE FACEPLATE, ENCLOSED PERMANENTLY LUBRICATED MOTOR, C/W SURFACE MOUNTED ADAPTOR, WHITE FINISH | 120V | 1/4 HP | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-10 | HOA/PLC | 30A, NEMA 3R | — |
| EF-4 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 120V | 1/4 HP | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-14 | HOA/PLC | 30A, NEMA 3R | — |
| EF-5 | SUSPENDED FROM CEILING, CLASS 1 ZONE 1 EXPLOSION PROOF UNIT HEATER, 12 GAUGE STEEL CABINET, ADJUSTABLE LOUVERS, INTEGRAL JUNCTION BOX, ZINC PLATED FASTENERS, THERMAL OVERLOAD, BUILT IN CONTROL TRANSFORMER, THREADED NPT HUB CONNECTIONS | 600V | 1 1/2 HP | 15A-3P | 3C#12 AWG + #12 BND IN 21mmC | 6A-25,27,29 | VFD | 30A, NEMA 3R | — |
| EF-6 | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | 120V | 1/8 HP | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-50 | HOA/PLC | 30A, NEMA 1 | — |
| DWH | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 600V | 27 KW | 40A-3P | 3C#8 AWG + #10 BND IN 27mmC | 6A-32,34,36 | N/A | 60A, NEMA 4 | — |
| PRESSURE WASHER | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | 600V | 7 1/2 HP | 15A-3P | 3C#10 AWG + #12 BND IN 21mmC | 6A-31,33,35 | CP | 30A, NEMA 4 | — |
| DW CIRCULATION PUMP | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 120V | 0.2A | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-42 | SW | 15A, NEMA 1 | — |
| TRAP SEAL PRIMER | SUSPENDED FROM CEILING, CLASS 1 ZONE 1 EXPLOSION PROOF UNIT HEATER, 12 GAUGE STEEL CABINET, ADJUSTABLE LOUVERS, INTEGRAL JUNCTION BOX, ZINC PLATED FASTENERS, THERMAL OVERLOAD, BUILT IN CONTROL TRANSFORMER, THREADED NPT HUB CONNECTIONS | 120V | 0.2A | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-43 | N/A | N/A | — |
| SCREENER | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | 600V | 20 HP | 40A-3P | 3C#6 AWG + #10 BND IN 27mmC | 6A-20,22,24 | CP/PLC | 60A, XP | — |
| SCREW COMPACTOR | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 600V | 10 HP | 30A-3P | 3C#10 AWG + #12 BND IN 21mmC | 6A-20,22,24 | CP/PLC | 30A, XP | — |
| EF-7 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 120V | FHP | 15A-1P | 2C#12 AWG + #12 BND IN 21mmC | 2A-48 | HOA/PLC | 30A, NEMA 1 | — |
| AERATION BLOWER #1 | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | 600V | 20 HP | 40A-3P | 3C#6 AWG + #10 BND IN 27mmC | 6A-8,10,12 | VFD | 60A, NEMA 4 | — |
| AERATION BLOWER #2 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 600V | 20 HP | 40A-3P | 3C#6 AWG + #10 BND IN 27mmC | 6A-14,16,18 | VFD | 60A, NEMA 4 | — |

NOTES:

1. MS - MANUAL STARTER C/W OVERLOAD PROTECTION AND LOCKOUT PROVISION
MSR - MANUAL STARTER C/W OVERLOAD PROTECTION, LOCKOUT PROVISION AND EXTERNAL CONTROL RELAY, RELAY BASE SHALL BE MOUNTED WITHIN AN ENCLOSURE SEPARATE FROM MANUAL STARTER (CONFIRM CONTROL COIL VOLTAGE WITH MECHANICAL CONTRACTOR)
HOA - MAGNETIC STARTER C/W DISCONNECT, CONTROL RELAYS AND HAND, OFF/AUTO SELECTOR SWITCH.
SS - SOFT START
VFD - VARIABLE FREQUENCY DRIVE, C/W LOCK OUT PROVISIONS
XP - MOTOR RATED SWITCH C/W LOCK OUT PROVISION
EXPLOSION PROOF, RATED FOR THE AREA
CONTROL PANEL SUPPLIED WITH EQUIPMENT

SW -
XP -
CP -

MECHANICAL EQUIPMENT SCHEDULE

| HEATER SCHEDULE | | | | |
|-----------------|--|---------------------|------------------|-------|
| TAG | DESCRIPTION | CONTROLS | RATING | NOTES |
| H1 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 24V CONTROL KIT | 5.0KW, 600V, 3ø | 1,2 |
| H2 | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | BUILT IN THERMOSTAT | 2.0KW, 208V, 1ø | |
| H3 | SURFACE MOUNTED FAN FORCED HEATER, 20 GAUGE HOUSING, 18 GAUGE FACEPLATE, ENCLOSED PERMANENTLY LUBRICATED MOTOR, C/W SURFACE MOUNTED ADAPTOR, WHITE FINISH | BUILT IN THERMOSTAT | 2.0KW, 208V, 1ø | |
| H4 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | 24V CONTROL KIT | 10.0KW, 600V, 3ø | 1,2 |
| H5 | SUSPENDED FROM CEILING, CLASS 1 ZONE 1 EXPLOSION PROOF UNIT HEATER, 12 GAUGE STEEL CABINET, ADJUSTABLE LOUVERS, INTEGRAL JUNCTION BOX, ZINC PLATED FASTENERS, THERMAL OVERLOAD, BUILT IN CONTROL TRANSFORMER, THREADED NPT HUB CONNECTIONS | 24V CONTROL KIT | 20.0KW, 600V, 3ø | 1,2 |
| H6 | STEEL SLOPED TOP COMMERCIAL BASEBOARD, 18 GAUGE CABINET, 16 GAUGE FRONT PANEL, C/W THERMAL PROTECTION, WHITE FINISH | BUILT IN THERMOSTAT | 1.0KW, 208V, 1ø | |
| H7 | WALL MOUNTED UNIT HEATER, 18 GAUGE HOUSING C/W ADJUSTABLE LOUVERS, THERMAL PROTECTION, ENCLOSED PERMANENTLY LUBRICATED MOTOR ALMOND FINISH | BUILT IN THERMOSTAT | 2.0KW, 208V, 1ø | |

NOTES:

1. HEATER SHALL BE CONNECTED TO STATION CONTROL PANEL FOR CONTROL

2. FINAL CONNECTION TO HEATER SHALL BE MADE WITH TECK90 CABLE AND CLASS 1, ZONE 1 FITTINGS.

HEATER SCHEDULE