NOTES
1. ALL PLANT DISTRIBUTION EARTH CABLES SHALL BE INSULTED COPPER CABLE AND ALL EARTH BARS AND EARTH LUG TERMINATIONS TO BE TINNED. FEEDS TO SUB MCC AND SDB SHALL BE BCEW.

LEGEND

NSX250F TM200D 200A TP MG MCB — DOOR INTERLOCKED, PADLOCKABLE CIRCUIT BREAKER COMPLETE WITH AUXILIARY CONTACTS INDICATING POSITION AND WHEN TRIPPED. TYPE, No. POLES AND SIZE AS SHOWN.
MCB – MINIATURE CIRCUIT BREAKER
MCCB – MOULDED CASE CIRCUIT BREAKER
MMS – MANUAL MOTOR STARTER

VSD — MCC CONTROL CUBICLE FOR VARIABLE SPEED DRIVE MOTOR CONTROL. SEE MOTOR CONTROL CENTRE EQUIPMENT REQUIREMENTS TABLE FOR MORE INFORMATION.

SS — MCC CONTROL CUBICLE FOR SOFT START MOTOR CONTROL. SEE MOTOR CONTROL CENTRE EQUIPMENT REQUIREMENTS TABLE FOR MORE INFORMATION.

DOL — MCC CONTROL CUBICLE FOR DIRECT START MOTOR CONTROL. SEE MOTOR CONTROL CENTRE EQUIPMENT REQUIREMENTS TABLE FOR MORE INFORMATION.

BT WT — ELECTRICAL MOTOR, SIZED AS SHOWN ON DRAWING, COMPLETE WITH PROTECTION AS SHOWN:
WT – WINDING TEMPERATURE
BT – BEARING TEMPERATURE
ACH – ANTI-CONDENSATE HEATERS
WI – WATER INGRESS
EL – EARTH LEAKAGE

VENTILATION / COOLING FAN

LEVEL DETECTOR — LEVEL DETECTOR
DO METER — DISSOLVED OXYGEN METER
TEMPERATURE SENSOR(°C) — TEMPERATURE SENSOR
TEMPERATURE INDICATION(°C) — TEMPERATURE INDICATION TRANSMITTER
CHLORINATION SENSOR — CHLORINATION SENSOR
LEVEL SWITCH
PRESSURE SENSOR
PRESSURE SWITCH
EMERGENCY STOP ONLY
FLOW METER
FLOW SWITCH
ROTAMETER
POSITION SENSOR
MOTORIZED ACTUATED VALVE
SOLENOID ACTUATED VALVE
WEIGHT SENSOR
ACTUATED WEIR
INPUT / OUTPUT TO PLC

POWER CABLES
40 16 2.5 — – No. OF CORES – CABLE SIZE – SIZE OF EARTH (B–BARE, I–INSULATED)

INSTRUMENT CABLES
2P INSTP — – No. OF PAIRS – TYPE OF INSTRUMENTATION CABLE
7 CORE COPPER CABLE TERMINATION / PATCH PANEL

INCOMER REQUIREMENTS
- BREAKER AS DESCRIBED ON LEGEND
- SURGE PROTECTION AS SHOWN ON SCHEMATIC
- HRC CONTROL FUSE HOLDERS AND CARTRIDGES
- CONTROL LINKS
- PHASE FAILURE RELAY COMPLETE WITH CONTROL WIRING AND INDICATION LIGHT
- 3x AMMETERS (92x92) TO INDICATE RED, WHITE AND BLUE PHASE CURRENTS
- INDICATION LIGHT MEANS "MAINS ON" (WHITE)
- EARTH BAR EXTENDING FROM INCOMING COMPARTMENT TO ALL COMPARTMENTS
- 1x VOLTMETER (92x92), 7 POSITION SELECTOR SWITCH, HRC FUSE HOLDERS AND CARTRIDGES
- PM710 POWER METER COMPLETE WITH CONTROL WIRING ETC, COMPLETE

MOTOR CONTROL CENTRE EQUIPMENT REQUIREMENTS
STARTER CUBICLE REQUIREMENTS

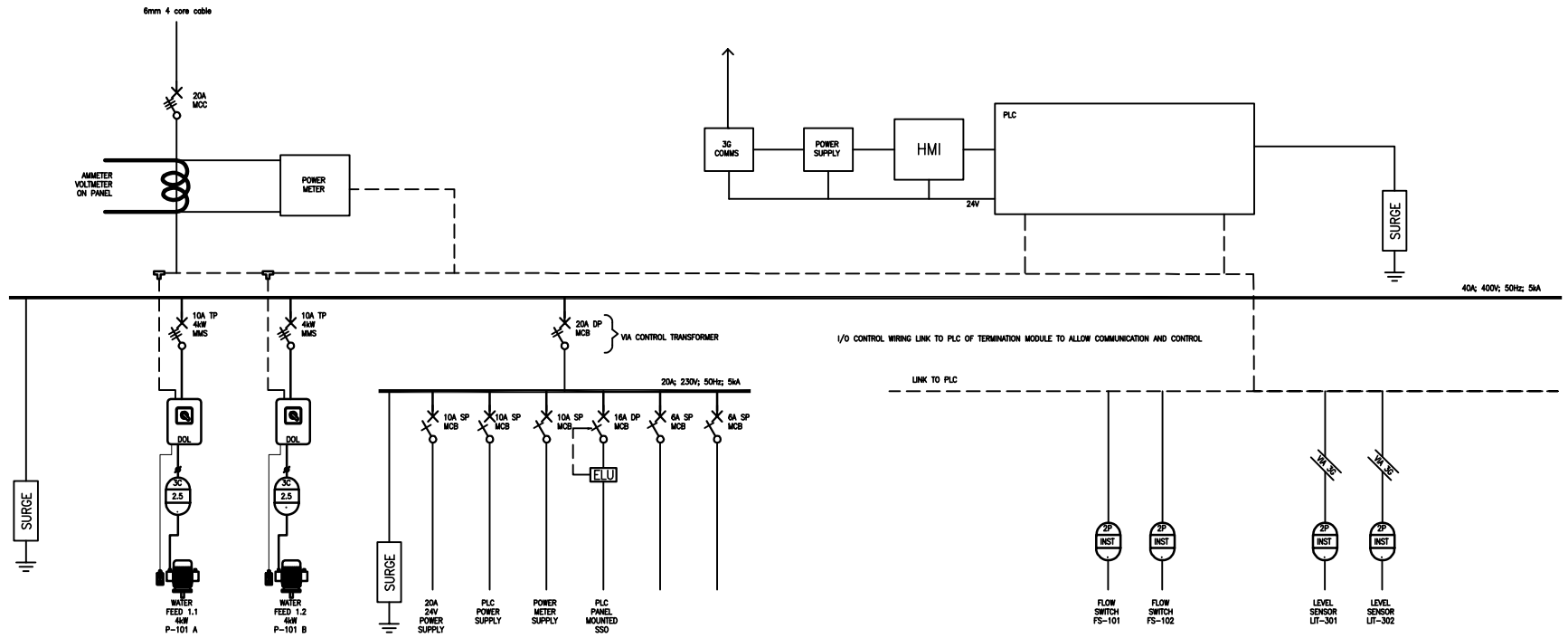
GENERAL FOR ALL STARTER CUBICLES
- DOOR INTERLOCKED, PADLOCKABLE CIRCUIT BREAKER COMPLETE WITH AUXILIARY CONTACT INDICATING POSITION, TYP, No. POLES AND SIZE AS SHOWN ON DRAWING.
- HRC CONTROL FUSE HOLDERS AND CARTRIDGES.
- CONTROL LINKS.
- PTC THERMISTOR PROTECTION RELAY AND WIRING.
- AMMETER (76 x 76) IN THE WHITE PHASE.
- HOUR COUNTER.
- MODE SELECTOR SWITCH – MANUAL/OFF/AUTO.
- 3 WIRE CONTROL PUSHBUTTONS: RUN(GREEN), STOP(RED), RESET(BLUE)
- LED INDICATION LIGHTS: RUN(GREEN), STOP(RED), TRIPPED(AMBER), MOTOR TEMP(AMBER), E STOP SIGNAL(RED)
- SAK 2.5 TERMINALS, RELAYS AND CONTRACTORS REQUIRED TO PROVIDE THE CONTROL FUNCTIONS AS DESCRIBED IN THE PLANT CONTROL PHILOSOPHY.

VSD — VARIABLE SPEED DRIVE STARTER CUBICLE
MCC CONTROL CUBICLE FOR VARIABLE SPEED DRIVE (VSD) MOTOR CONTROL, INCLUDING:
- VSD TO ACCOMMODATE LOAD (SEE SCHEMATIC)
- VSD INTERLOCKING CONTROL WIRING AND INTEGRATED ETHERNET COMMUNICATION PORT

NOTE: SOME VSDs ARE WALL MOUNTED AND THEREFORE THE CONTRACTOR SHALL ALLOW FOR ALL ADDITIONAL WIRING REQUIRED.

SS — SOFT STARTER CUBICLE
MCC CONTROL CUBICLE FOR SOFT START (SS) MOTOR CONTROL, INCLUDING:
- SS TO ACCOMMODATE LOAD (SEE SCHEMATIC)
- SS INTERLOCKING CONTROL WIRING AND INTEGRATED ETHERNET COMMUNICATION PORT

DOL — DIRECT ONLINE STARTER CUBICLE
MCC CONTROL CUBICLE FOR DIRECT ON LINE (DOL) START MOTOR CONTROL, INCLUDING:
- UMC100–FBP DOL STARTER AND ELECTRONIC OVERLOAD PROTECTION SIZED TO ACCOMMODATE LOAD
- DOL STARTER INTERLOCKING CONTROL WIRING



GENERAL NOTES

THE CONTRACTOR WILL BE REQUIRED, IN CONJUNCTION WITH THEIR SPECIALIST CONTRACTOR, TO ENSURE A HOLISTIC INSTALLATION THAT FULLY OPERATES AND IS COMPLETE IN EVERY WAY. IT IS EXPECTED THAT THE CONTRACTORS DESIGN INPUT WILL ENCOMPASS EVERY DETAIL AND IT IS INCUMBENT ON THE CONTRACTOR TO COMPLETE THE DESIGN IN ITS TOTALLY AS ENVISAGED BY THE DETAILED SPECIFICATIONS.
GENERAL ARRANGEMENT DRAWINGS, ADEQUALITY DIMENSIONED AND SUFFICIENTLY DETAILED AS TO PROVIDE A CLEAR PICTURE OF THE EQUIPMENT BEING OFFERED, SHALL BE SUBMITTED WITH THE TENDER. IN ADDITION, A SCHEDULE OF PLANT AND EQUIPMENT DATA SHALL BE COMPLETED IN FULL, IN ORDER TO ASSIST WITH THE DECISION AS TO THE SUITABILITY OF THE PROPOSED PLANT.
THE MANUFACTURING OF THE MOTOR CONTROL CENTRES AND DISTRIBUTION BOARDS SHALL NOT START BEFORE THE ENGINEER HAS APPROVED THE DRAWINGS.
RECORD DRAWINGS SHALL BE SUBMITTED ON PAPER, BACKED UP BY DXF FILES ON CD ROM.
ELECTRICAL SYMBOLS, CABLE ROUTES, CABLED TRAYS ETC. ARE SHOWN DIAGRAMMATICALLY ON THIS DRAWING TO ASSIST THE ELECTRICAL CONTRACTOR IN TENDERING ON THIS TENDER. THE LAYOUT WILL BE FINALIZED TO SUIT THE FINAL EQUIPMENT TO BE INSTALLED. THE FINAL POSITION OF EQUIPMENT SHALL BE VERIFIED BEFORE INSTALLATION OF THE ASSOCIATED ELECTRICAL EQUIPMENT COMMENCES TO ENSURE THAT EQUIPMENT IS INSTALLED CORRECTLY THE FIRST TIME.

REV	REASON FOR ISSUE	DATE	BY	ENG
0	FOR APPROVAL	08/02/21	C.M.	W.L.
T0	FOR TENDER	27/05/21	C.M.	W.L.

UJKA

PROJECT TITLE
DRIEFONTIEN CLINIC UPGARDE

CLIENT
DEPARTMENT OF HEALTH

DRAWING TITLE
MCC SCHEMATIC DRAWING - CBD TREATMENT PLANT

PROJECT NUMBER	DRAWING NO.	REVISION
S1079	S03	T0
SCALE	ENGINEER	SHEET
NTS	W.L.	1OF1
DRAWING STATUS	DATE	SIZE
TENDER	27/05/2021	A1