

TECHNICAL SPECIFICATIONS:

- 1. PROTECTIVE EARTHING CONDUCTOR SIZING TO BE AS PER AS/NZS 3000-2018 CL 5.3.3.1.3.
- 2. TARIFF METER TO BE INSTALLED IN A SEPARATE ENCLOSURE (SEPARATE PANEL BOARD), AND TO BE AS PER MIRS AND QECM, AS/NZS 61439 REQUIREMENTS AND ALL RELEVANT STANDARDS.
- 3. SWITCHBOARD TO BE VERIFIED AS PER AS/NZS 3000.2018 AND AS/NZS 61439 WHEN APPLICABLE, THE DRAWINGS GIVEN HERE ARE FOR GUIDANCE ONLY, THE MANUFACTURER OF THE SWITCHBOARD IS RESPONSIBLE FOR VERIFYING IT AS PER AS/NZS 61439 REQUIREMENTS.
- 4. SWITCHING IS PER AS/NZS 3000-2018 CL 7.3.8.1.2.
- 5. SELECTIVITY (DISCRIMINATION) MUST BE MAINTAINED THROUGHOUT THE ENTIRE PROTECTION SYSTEM ENSURING RELIABILITY OF SYSTEM OPERATION, AS PER AS/NZS 3000-2018 CL 2.5.7.2.3. SELECTIVITY STUDY AND CURVES MUST BE PROVIDED TO GRC FOR APPROVAL BEFORE MANUFACTURING, COVERING ALL THE PROTECTION DEVICES STARTING AT THE LOW-TENSION SIDE OF THE ELECTRICITY SUPPLIER TRANSFORMER DOWN TO THE SWITCHBOARD PROTECTIVE CIRCUIT BREAKERS.
- 6. SWITCHBOARD HAS THE FOLLOWING RATINGS:
 - 6.1. RATED OPERATIONAL VOLTAGE: 400V.
 - 6.2. FREQUENCY:50HZ
 - 6.3. ASSEMBLY DESIGNED FOR EARTHING TYPE: TBC
 - 6.4. MINIMUM ACCEPTED CLEARANCE AND CREEPAGE DISTANCES:16MM OR HIGHER AS PER STANDARDS
 - 6.5. POLLUTION DEGREE: (3) EXCESSIVE
 - 6.6. THE PROSPECTIVE R.M.S VALUE OF THE SHORT CIRCUIT CURRENT (ICP) IS LESS THAN THE RATED SHORT TIME WITHSTAND (ICW) OF THE SWITCHBOARD, AND THE SWITCHBOARD RATED PEAK WITHSTAND CURRENT IS GREATER THAN THE PEAK VALUE OF THE SHORT CIRCUIT CURRENT (IPK) AT THE LOCATION. AS PER AS/NZS 3000.2018 AND AS/NZS 61439.
 - 6.7. FORM OF SEGREGATION: FORM 3B WITH TWO EXCEPTIONS:
 - 6.7.1. WHERE IT IS NOT POSSIBLE TO ACHIEVE FORM 3B (LIKE WITH ATS DEVICE COMBINATION) THEN FORM 3BIH IS ACCEPTED FOR THIS COMPARTMENT ONLY. NO OTHER DEVICES WITHIN THE COMPARTMENT WILL BE ALLOWED.
 - 6.7.2. FOR MINATURE CIRCUIT BREAKERS, FORM 2BI IS ACCEPTED IN THEIR COMPARTMENT ONLY. NO OTHER DEVICES WITHIN THE COMPARTMENT WILL BE ALLOWED.
 - 6.8. IP RATING: IP 56 FOR OUTDOOR VENTILATED SWITCHBOARDS - IP 66 FOR OUTDOOR NON-VENTILATED SWITCHBOARDS - IP 52 FOR INDOOR SWITCHBOARDS.
 - 6.9. SIDE HEAT SHIELDS: REQUIRED ON ALL SIDES
 - 6.10. TOP RAIN AND HEAT SHIELD: REQUIRED
 - 6.11. FLEXIBLE BUSBARS: NOT ACCEPTED
 - 6.12. NEUTRAL BUSBAR RATING:100% OF PHASE BUSBAR RATING
- 7. TYPE AC RCDS SHALL NOT BE USED.
- 8. SWITCHBOARD MUST BE LABELLED WITH A STAINLESS-STEEL LABEL INCLUDING THE VALUES IN POINT NUMBER 6 ABOVE, IN ADDITION TO MANUFACTURER DETAILS, MANUFACTURING DATE, RATED CURRENT AND COMPLIANCE TO AS/NZS 61439 WHEN APPLICABLE.
- 9. ALL BUSBARS MUST BE INSULATED, WITH COLOURS AS PER AUSTRALIAN STANDARDS.
- 10. CONSULT WITH THE COUNCIL ENGINEER IF ARC FAULT STUDY IS REQUIRED, DETERMINING THE REQUIRED PPE AS PER APPLICABLE STANDARDS. (ETAP OR SKM PTW OR EQUIVALENT SOFTWARE STUDY IS ACCEPTED).
- 11. WITNESS TESTING (FAT)OF THE SWITCHBOARD IS TO BE ARRANGED WITH THE COUNCIL ENGINEER.
- 12. THE CONNECTION OF THE ATS IN THIS DRAWING IS FOR GUIDANCE, THE TYPE OF CONNECTION IS TO BE DETERMINED AS PER POINT NUMBER 4 ABOVE.
- 13. EACH MODULE CONTAINING A VARIABLE SPEED DRIVE UNIT SHALL INCORPORATE A SUITABLE VENTILATION FAN/ FANS AND FILTER TO DRAW IN COOLER EXTERNAL AIR AND A CORRESPONDING FILTER TO VENT HOT AIR OUT. THE VENTILATION FAN SHALL BE STARTED AND STOPPED BY AN ADJUSTABLE THERMOSTAT.
- 14. WHERE THE VARIABLE SPEED DRIVE IS INSTALLED EXTERNAL TO THE MCC, THE HMI UNIT SHALL BE INSTALLED ON THE IP RATED ENCLOSURE AS PER POINT 6.8 SUCH THAT THE HMI UNIT CAN BE ACCESSED WITHOUT OPENING THE ENCLOSURE
- 15. EQUIPMENT INSTALLED ON DOORS MUST BE RATED ELV, IF ANY OTHER ARRANGEMENT IS REQUIRED, PROPER PROTECTION BEHIND THE EQUIPMENT ON THE DOOR MUST BE PROVIDED TO MAINTAIN THE FORM OF SEPARATION AND PERSONNEL PROTECTION.
- 16. HARMONIC DISTORTION: TOTAL HARMONIC DISTORTION AND HARMONIC DISTORTION CURRENTS MUST BE AS PER THE SUPPLIER AUTHORITY REQUIREMENTS. HARMONIC FILTERS WILL BE REQUIRED TO MITIGATE ANY EXCESSIVE AMOUNT OF HARMONICS.
- 17. ALL WIRES MUST BE LABELLED AT BOTH ENDS.
- 18. TEST CERTIFICATES MUST BE PROVIDED TO THE COUNCIL.

AMENDMENTS			
REV	DESCRIPTION	CHECKED	DATE
0	ISSUED FOR REFERENCE		

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GLADSTONE REGIONAL
COUNCIL

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STANDARD DRAWING
DUAL SEWERAGE PUMP STATION
SWITCHBOARD 22-160KW VSD
TECHNICAL SPECIFICATIONS

DRAWING NO.
GRC-ED-108

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