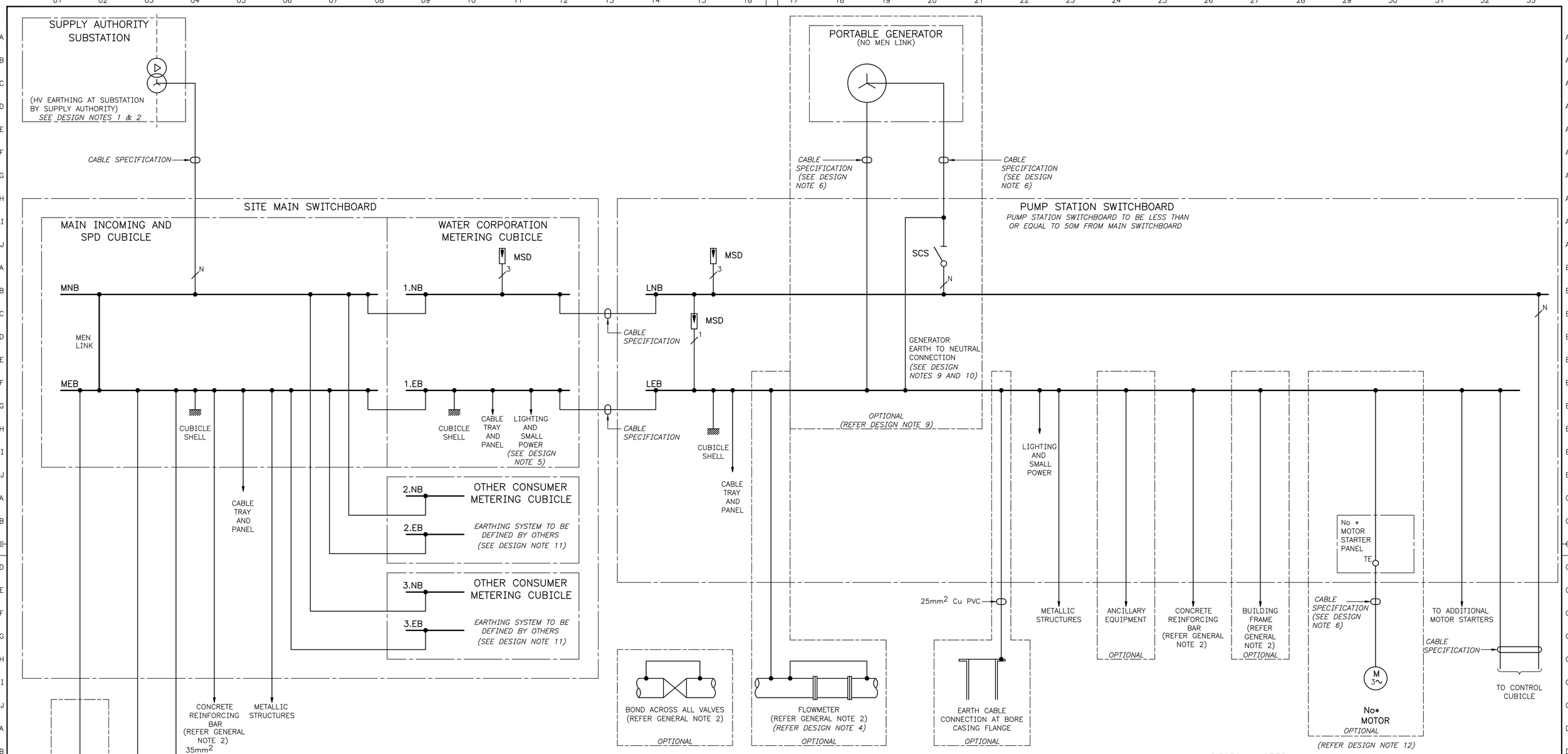
DocuSign Envelope ID: 1E6DACEA-E829-42D4-B707-DD7D965183F8



DESIGN NOTES

1. REFER TO DS22 FOR EARTHING CONNECTIONS WHEN SUPPLIED FROM WATER CORPORATION TRANSFORMER
2. REFER DS22 FOR HV EARTHING REQUIREMENTS FOR BORE PUMP STATIONS
3. ANCILLARY EQUIPMENT TO BE DETAILED BY ELECTRICAL DESIGN ENGINEER
4. FLOWMETER TO BE EARTHED IN ACCORDANCE WITH SCADA BRANCH DIRECTION
5. SMALL POWER OPTIONAL FOR MAIN SWITCHBOARD ON MULTIPLE SWITCHBOARD SITE
6. ELECTRICAL DESIGN ENGINEER SHALL DETAIL METHOD OF CONNECTION OF GENERATOR AND MOTOR CABLES. E.G. APPLIANCE INLET OR DISCONNECT CUBICLE
7. OPTIMAL SPACING OF EARTH ELECTRODES IS 2 x ELECTRODE LENGTH
8. WHICH EARTH ELECTRODE TO BOND COMMUNICATIONS EARTH TO IS DEPENDENT ON PROJECT REQUIREMENTS
9. PORTABLE GENERATOR SHOWN, FOR PERMANENT GENERATOR DETAIL REFER MN01-2-1. PERMANENT GENERATOR NEUTRAL SWITCHING SHALL BE AT THE GENERATOR AND EARTH TO NEUTRAL CONNECTION NOT REQUIRED
10. FOR PORTABLE GENERATOR, DESIGNER TO CONFIRM GENERATOR EARTH TO NEUTRAL CONNECTION REQUIREMENTS BASED ON AS/NZS 3010:2017
11. OTHER SWITCHBOARD NOMENCLATURE FOR DESCRIPTIVE PURPOSES ONLY AND CAN BE RE-TITLED TO SUIT PROJECT REQUIREMENTS
12. FOR VARIABLE SPEED CONTROLLER AND VARIABLE SPEED CONTROLLER FILTER OPTIONS REFER MN01-2-5

GENERAL NOTES

1. THE OVERALL EARTHING RESISTANCE OF THE ELECTRICAL EARTHING SYSTEM SHALL BE NOT MORE THAN 15 OHMS
2. UNLESS OTHERWISE SHOWN ALL BONDING CABLES FOR PIPES, METALLIC STRUCTURES, BUILDING FRAME AND CONCRETE REINFORCEMENT SHALL BE 70mm^2 COPPER

EARTH ELECTRODE DESIGN

1. ** EARTH ELECTRODES, **mm DIAMETER SHALL BE INSTALLED ** METRES DEEP AND SPACED A MINIMUM OF ** METRES APART *(SEE DESIGN NOTE 7)*
2. INDIVIDUAL ELECTRODE RESISTANCE CALCULATED TO BE ** Ω
3. ELECTRODE SYSTEM RESISTANCE CALCULATED TO BE ** Ω

SOIL RESISTIVITY TESTS

PERFORMED BY *(PERSON) (COMPANY) (DATE)*

DISTANCE (m)	**	**	**	**	**	**
RESISTANCE (Ω)	**	**	**	**	**	**
SOIL RESISTIVITY (Ωm)	**	**	**	**	**	**

CODE SCHEDULE

EB	EARTH BAR
LEB	LOCAL EARTH BAR
LNB	LOCAL NEUTRAL BAR
MEB	MAIN EARTH BAR
MNB	MAIN NEUTRAL BAR
MSD	MAINS SURGE DIVERTER
NB	NEUTRAL BAR
SCS	SUPPLY CHANGEOVER SWITCH

ELECTRODE SYSTEM RESISTANCE TEST RESULTS

TEST DATE	DD/MM/YYYY	DD/MM/YYYY	DD/MM/YYYY	DD/MM/YYYY	DD/MM/YYYY	DD/MM/YYYY
LV1 RESISTANCE (Ω)	**	**	**	**	**	**
LV2 RESISTANCE (Ω)	**	**	**	**	**	**
SYSTEM RESISTANCE (Ω)	**	**	**	**	**	**

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD
F	03/2024		PORTABLE GENERATOR NEUTRAL CONNECTION REVISED	SAM	TL	EG
E	01/2024		ELECTRODE SYSTEM RESISTANCE TEST RESULTS TABLE ADDED	SAM	TL	EG
D	09/2023		MAIN SWITCHBOARD AND OTHER CONSUMER SWITCHBOARDS REVISED	SAM	SG	TL
C	01/2023		GENERATOR EARTH CONNECTION REVISED; DESIGN NOTES RENUMBERED	PH	SG	EG
B	08/2021		MOTOR EARTHING CONFIGURATIONS MADE OPTIONAL FOR VSC,	PH	TL	EG

DESIGN SURVEY NONE | VERTICAL DATUM NONE | COORDINATE SYS NONE | ASCON SURVEY NONE | DES REF | DES CALC NA | DES CHD NA | DRN P HARVEY | Q.C. CHD S MEMORY | NORTH POINT

ENGINEERING

SUBMITTED 23/10/2020 T LIU (SIGNED) SENIOR ENGINEER – ELECTRICAL

RECOMMENDED 23/10/2020 E GLIWSKI (SIGNED) PRINCIPAL ENGINEER – ELECTRICAL

APPROVED 23/10/2020 N JOHNSON (SIGNED) SNR PRINCIPAL ENGINEER – ELECT

WATER CORPORATION

ELECTRICAL STANDARD SWITCHBOARD DESIGNS
SMALL PUMP STATIONS
PRIMARY DESIGN – EARTHING DIAGRAM TEMPLATE
MULTIPLE MASTER METERS – SHARED EARTHING

FILE | PROJECT | PLAN MN01-2-4.1 | CAD | ISSUE F | ORIGINAL SHEET SIZE A1 | MF

© THIS DRAWING IS THE PROPERTY OF THE WATER CORPORATION. IT SHALL NOT BE COPIED WITHOUT PERMISSION.

STANDARDS\APPROVED\MN01\PREAPPROVAL\MN01-002-004-01F 15:25 12/03/2024 MEMORYSO/NB46194