

# "SITE NAME" SEWAGE PUMP STATION - "LOCATION ID"

## TASWATER ELECTRICAL SWITCHBOARD TYPE 2 (ESS) "DUTY TYPE"

SWITCHBOARD DRAWINGS - (TWP-xx-xxx-001)	
E001	COVER PAGE
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Revision Notes					
REV E: STAKEHOLDER FEEDBACK INCORPORATED					
REV F: MODIFICATIONS FROM PROTOTYPE APPLICATIONS					
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REV K: IPD ADDED, GENERAL REVISIONS & STAKEHOLDER FEEDBACK INC.					
Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

Scale	SCALE
Datum	
Sheet Size	A3
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

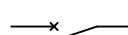

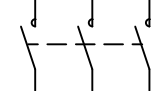
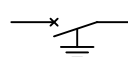

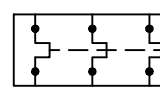
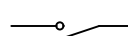
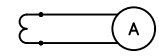
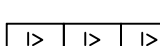
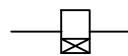
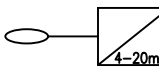
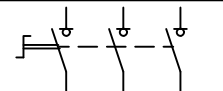
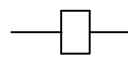

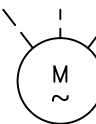


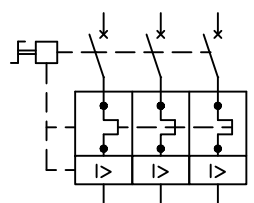
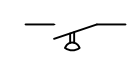

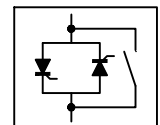
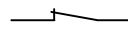

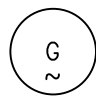
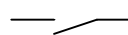

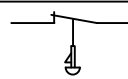


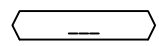
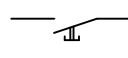
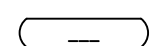
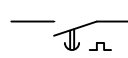
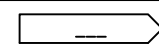
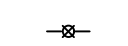
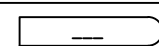
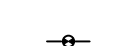
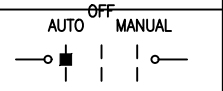
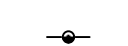

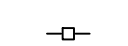
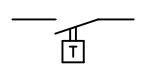
PROJECT DETAILS			DESIGN		DATE
Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

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"LOCATION ID" - "SITE NAME" S.P.S.							
"LOCATION ADDRESS"							
SEWAGE PUMP STATION							
COVER PAGE							
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; font-size: 8px;">Sheet Number</td> <td style="width: 40%; font-weight: bold;">TWS-E-0003</td> <td style="width: 40%; font-size: 8px;">REVISION</td> </tr> <tr> <td></td> <td style="font-weight: bold;">E001</td> <td style="font-weight: bold;">K</td> </tr> </table>	Sheet Number	TWS-E-0003	REVISION		E001	K
Sheet Number	TWS-E-0003	REVISION					
	E001	K					

## SYMBOL LIBRARY

	FUSED TERMINAL		GENERAL / DEVICE TERMINAL		FUSE
	CIRCUIT BREAKER		PLUG / SOCKET CONNECTION		CONTACTOR 3 PHASE
	RCBO		WIRING JOINT		OVERLOAD 3 PHASE
	SWITCH		AMMETER (CURRENT TRANSFORMER CONNECTED)		SHORT CIRCUIT PROTECTION 3 PHASE
	TIMER RELAY COIL		AC CURRENT TRANSDUCER (4-20mA OUTPUT)		ISOLATOR 3 PHASE
	RELAY COIL		EARTH		MOTOR 3 PHASE
	LEVEL SWITCH (FLOAT) (CLOSED CONTACT IN HANGING STATE)		DIODE		MOTOR CIRCUIT BREAKER 3 PHASE (WITH OVERLOAD & SHORT CIRCUIT PROTECTION)
	LEVEL SWITCH (FLOAT) (OPEN CONTACT IN HANGING STATE)		GREEN LED INDICATOR		ELECTRONIC SOFT STARTER WITH INTERNAL BYPASS
	NORMALLY CLOSED CONTACT		AMBER LED INDICATOR		GENERATOR
	NORMALLY OPEN CONTACT		WHITE LED INDICATOR		
	EMERGENCY STOP PUSHBUTTON (NORMALLY CLOSED CONTACT)		BLUE LED INDICATOR		
	PUSHBUTTON SWITCH (NC) (NORMALLY CLOSED CONTACT)		PLC/RTU INPUT - DIGITAL		
	PUSHBUTTON SWITCH (NO) (NORMALLY OPEN CONTACT)		PLC/RTU OUTPUT - DIGITAL		
	SINGLE SHOT ON DELAY CONTACT		PLC/RTU INPUT - ANALOG		
	MCC TERMINAL		PLC/RTU OUTPUT - ANALOG		
	PLC/RTU TERMINAL (KNIFE DISCONNECT)		AUTO/OFF/MANUAL SWITCH (AUTO POSITION)		
	FIELD TERMINAL		SURGE DIVERTOR		
	ESS TERMINAL		THERMOSTAT		

### SWITCHBOARD WIRING COLOURS

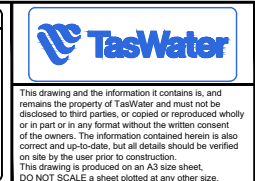
1. GENERAL COLOUR CODE FOR LOW VOLTAGE (LV) WIRING:
  - RED, WHITE, BLUE FOR PHASES
  - BLACK FOR NEUTRAL
  - GREEN-YELLOW FOR EARTH
2. LV CONTROL WIRING (>50VAC):
  - RED (FROM RED PHASE) FOR ACTIVE
  - BLACK FOR NEUTRAL
3. EXTRA LOW VOLTAGE WIRING (ELV):
  - ORANGE FOR +24VDC or +12VDC (fixed DC voltage wiring)
  - GREY FOR 0VDC (fixed DC voltage wiring)
  - PURPLE FOR SWITCHED DIGITAL/CONTROL & ANALOG WIRING

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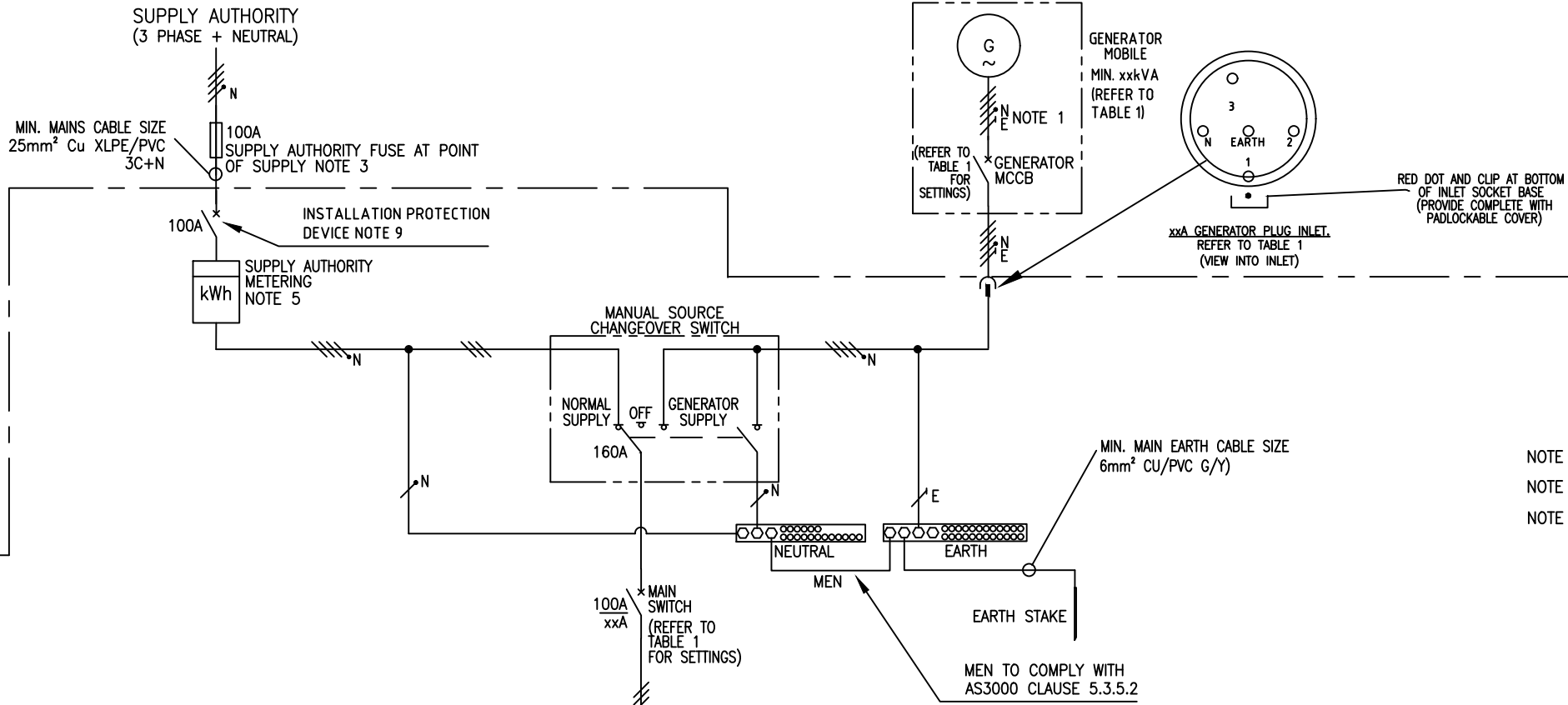
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"LOCATION ID" - "SITE NAME" S.P.S. "LOCATION ADDRESS" SEWAGE PUMP STATION DESIGN NOTES SYMBOL LIBRARY			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Drawing Number <b>TWS-E-0003</b>	Revision <b>E002 K</b>

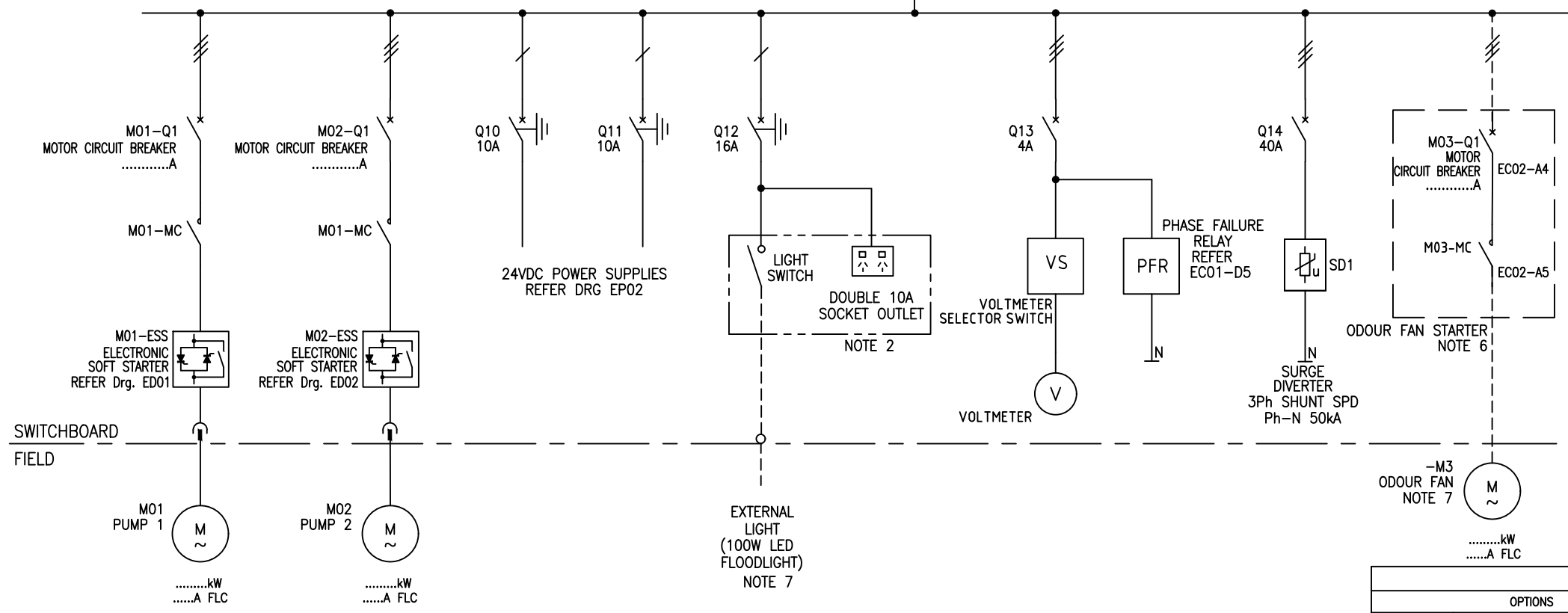
NOTE 8

SUPPLY AUTHORITY SUPPLY DETAILS	
SUPPLY TRANSFORMER SIZE	.....kVA
SUPPLY AUTHORITY FUSE SIZE	100A
MAXIMUM PROSPECTIVE FAULT CURRENT	.....kA
SUPPLY TRANSFORMER NO.	.....
SUPPLY POLE NO.	.....



MANUFACTURERS LABEL	
LOCATION ID	
VOLTAGE / CURRENT / FREQUENCY	400VAC / 100A / 50Hz
MAXIMUM FAULT CURRENT RATING	10kA for 1 sec
MAXIMUM CURRENT RATING	100A
MANUFACTURED DATE	
MANUFACTURER DETAILS	
SUPPLY PROSPECTIVE FAULT CURRENT	.....kA DATE

- NOTES
- 1/ NO NEUTRAL TO EARTH CONNECTION AT THE GENERATOR SET
  - 2/ LIGHT SWITCH INTEGRATED ON SOCKET OUTLET.
  - 3/ ELECTRICAL INSTALLATION CONTRACTOR TO ARRANGE SERVICE FUSE INSTALLATION.
  - 4/ SWITCHBOARD MANUFACTURER TO INSERT DETAILS.
  - 5/ SWITCHBOARD MANUFACTURER TO PROVIDE METER PANEL BACK PLANE AND INSTALLATION PROTECTION DEVICE (IPD) IN SUPPLY, ELECTRICAL INSTALLATION CONTRACTOR TO PROVIDE METER, REFER TO TASNWORKS SERVICE & INSTALLATION RULES
  - 6/ ODOUR FAN MOTOR CIRCUIT BREAKER AND CONTACTOR (IF REQUIRED) IS LOCATED IN AC DISTRIBUTION MODULE.
  - 7/ DASHED LINES INDICATE OPTIONAL EQUIPMENT, REQUIREMENT TO BE DETERMINED.
  - 8/ DESIGNER TO OBTAIN THIS INFORMATION FROM SUPPLY AUTHORITY. AND INSERT DETAIL ON DRAWING
  - 9/ INSTALLATION PROTECTION DEVICE (IPD) 100A, 10kA, CURVE C, WITH LABEL "INSTALLATION PROTECTION DEVICE - ISOLATE FOR SWITCHBOARD MAINTENANCE ONLY"



OPTIONS		PROTECTION SETTINGS (MAX)							
DRIVE SIZE	GENERATOR PLUG SIZE	MINIMUM GENERATOR SIZE	GENERATOR MCCB Ir	GENERATOR MCCB Icd OR Ii	MAIN SWITCH Ir	MAIN SWITCH tr	MAIN SWITCH Icd	MAIN SWITCH (tsd)	MAIN SWITCH (Ii)
>4kW <=11kW	MARECHAL DS3 50A	44kVA	50A	150A	0.63(63A)	7.5s	8(504A)	0.1s (I <sup>2</sup> tOFF)	8(800A)
>11kW, <=22kW	MARECHAL DS6 90A	110kVA	80A	400A	0.8(80A)	5s	10(800A)	0.05s (I <sup>2</sup> tOFF)	8(800A)

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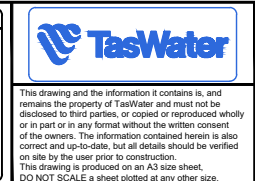
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1					
2					

SCALE		PROJECT DETAILS			DESIGN			DATE		
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DRAWING ISSUE

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"LOCATION ADDRESS"

SEWAGE PUMP STATION

SINGLE LINE DIAGRAM

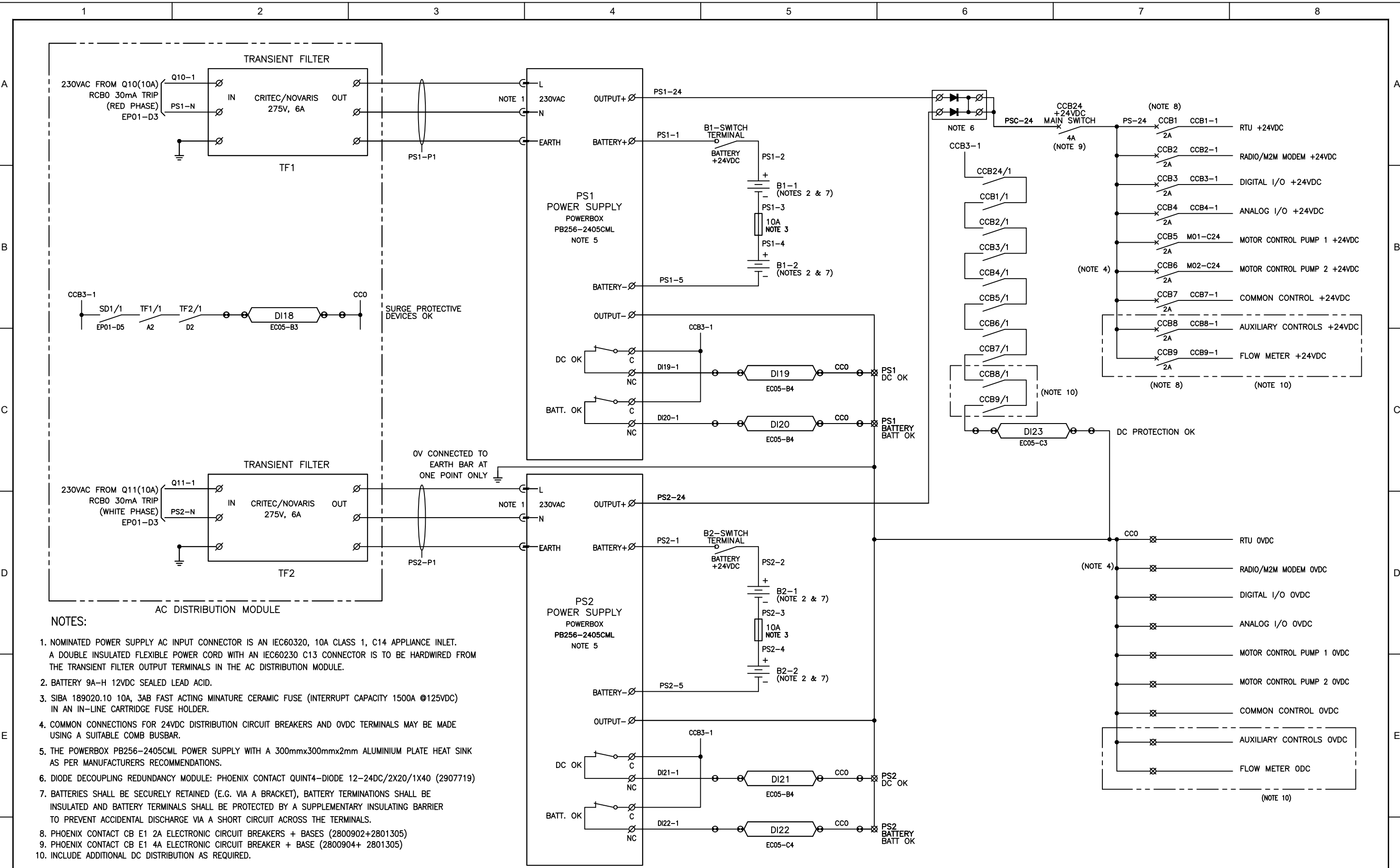
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ABN: 47 162220 653

Sheet Number: TWS-E-0003

Revision: EP01

Author: K



- NOTES:**
1. NOMINATED POWER SUPPLY AC INPUT CONNECTOR IS AN IEC60320, 10A CLASS 1, C14 APPLIANCE INLET. A DOUBLE INSULATED FLEXIBLE POWER CORD WITH AN IEC60230 C13 CONNECTOR IS TO BE HARDWIRED FROM THE TRANSIENT FILTER OUTPUT TERMINALS IN THE AC DISTRIBUTION MODULE.
  2. BATTERY 9A-H 12VDC SEALED LEAD ACID.
  3. SIBA 189020.10 10A, 3AB FAST ACTING MINATURE CERAMIC FUSE (INTERRUPT CAPACITY 1500A @125VDC) IN AN IN-LINE CARTRIDGE FUSE HOLDER.
  4. COMMON CONNECTIONS FOR 24VDC DISTRIBUTION CIRCUIT BREAKERS AND 0VDC TERMINALS MAY BE MADE USING A SUITABLE COMB BUSBAR.
  5. THE POWERBOX PB256-2405CML POWER SUPPLY WITH A 300mmx300mmx2mm ALUMINIUM PLATE HEAT SINK AS PER MANUFACTURERS RECOMMENDATIONS.
  6. DIODE DECOUPLING REDUNDANCY MODULE: PHOENIX CONTACT QUINT4-DIODE 12-24DC/2X20/1X40 (2907719)
  7. BATTERIES SHALL BE SECURELY RETAINED (E.G. VIA A BRACKET), BATTERY TERMINATIONS SHALL BE INSULATED AND BATTERY TERMINALS SHALL BE PROTECTED BY A SUPPLEMENTARY INSULATING BARRIER TO PREVENT ACCIDENTAL DISCHARGE VIA A SHORT CIRCUIT ACROSS THE TERMINALS.
  8. PHOENIX CONTACT CB E1 2A ELECTRONIC CIRCUIT BREAKERS + BASES (2800902+2801305)
  9. PHOENIX CONTACT CB E1 4A ELECTRONIC CIRCUIT BREAKER + BASE (2800904+ 2801305)
  10. INCLUDE ADDITIONAL DC DISTRIBUTION AS REQUIRED.

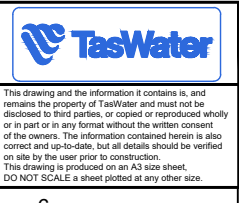
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Project No	J21247	Drawn	VAD	19/05/2022
Vault Folder		Designed	PLJ	19/05/2022
Discipline	E	Verified	CMS	19/05/2022
HPRM Folder				

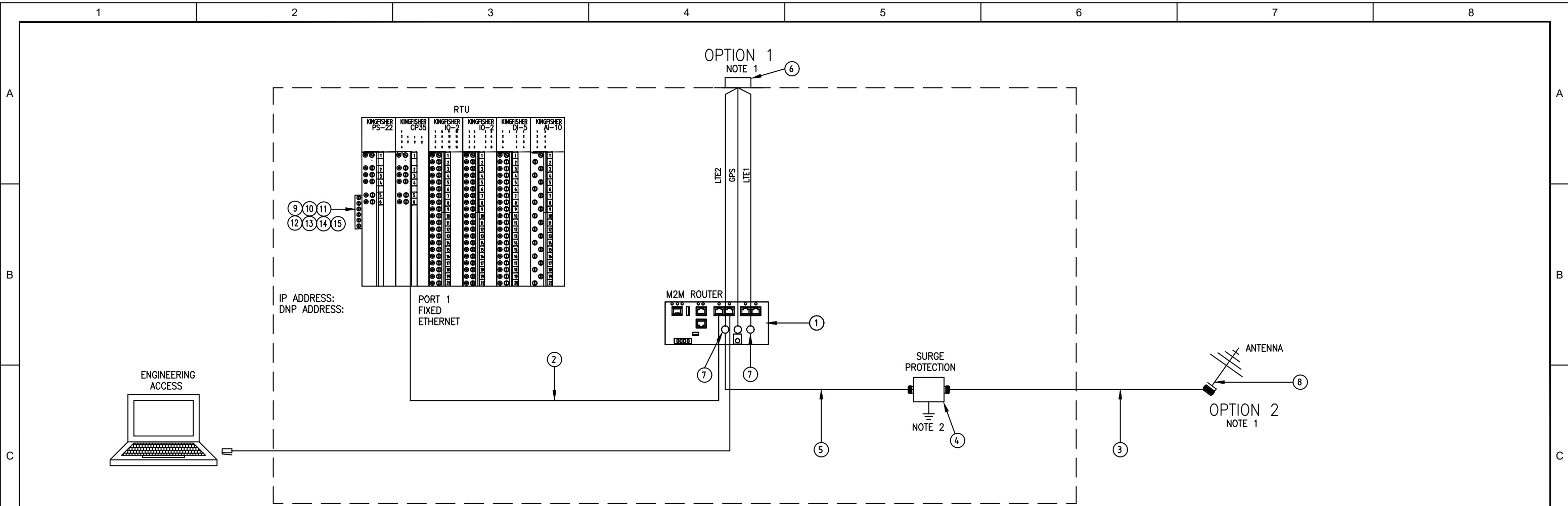
**NOT FOR CONSTRUCTION**



**"LOCATION ID" - "SITE NAME" S.P.S.**  
**"LOCATION ADDRESS"**  
**SEWAGE PUMP STATION**  
**24VDC POWER DISTRIBUTION**

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number	TWS-E-0003	Revision	EP02
			K



ITEM	QTY	DESCRIPTION	MAKER	TYPE	REMARKS
1	1	M2M ROUTER	CISCO	IR1101-K9	M2M ROUTER, SIM & CONFIG PROVIDED BY TASWATER BUSINESS SYSTEMS
2	1	ETHERNET PATCH CABLE	GENERIC	CAT 6	WITH RJ45 PLUGS FITTED
3	-	FEEDER, CO-AXIAL CABLE	RFI	RG8 MALE 'N' TYPE CONNECTOR	LENGTH TO BE DETERMINED
4	1	SURGE PROTECTOR	ERICO OR NOVARIS EQUIVALENT	CSP1-NB90	INTERNALLY MOUNTED
5	50cm	FEEDER TAIL	RFI	9207N-0.5 AND ADAPTOR	PULSE SMA(M) TO N (M) 0.5m AND FME(M) TO SMA (F) ADAPTOR
6	1	ANTENNA (VANDAL PROOF)	RFI	LMHP-G-1.5M-FS	PANEL MOUNT
7	2	ADAPTOR (OPTION 1)	RFI	A-88	PULSE FME(M) TO SMA (M)
8	1	ANTENNA (POOR SIGNAL AREA)	RFI	LPDA7030-11-0.5NF	MOUNTED ON POLE - TASWATER TO ADVISE
9	1	RTU	KINGFISHER	CP-35	
10	1	MEMORY CARD	KINGFISHER	ACC-uSD-16GB	SANDISK ULTRA 16GB MICRO SDHC
11	2	DIGITAL INPUT/OUTPUT MODULE	KINGFISHER	IO-2-1	
12	1	DIGITAL INPUT MODULE	KINGFISHER	DI-5-1	
13	1	ANALOG INPUT MODULE	KINGFISHER	AI-10-1	
14	1	RTU BACKPLANE	KINGFISHER	B0-6-0-E00	6 SLOT BACKPLANE
15	1	RTU POWER SUPPLY	KINGFISHER	PS-22-0	20-60VDC

**NOTES**  
 1/ TASWATER TO ADVISE WHICH ANTENNA TYPE TO USE  
 2/ EARTHING OF THE SPD TO BE VIA A DEDICATED EARTHING CONDUCTOR (6mm<sup>2</sup> Cu G/Y PVC). THE EARTHING CONDUCTOR IS TO BE CONNECTED TO THE CABINET COMMON EARTH BAR. THE EARTHING CONDUCTOR CONNECTION TO BE AS SHORT AND DIRECT AS POSSIBLE WITH NO LOOPS.

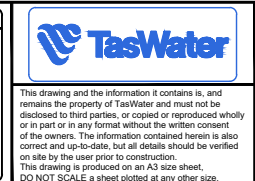
TYPE	DESCRIPTION	COMMENTS
OPTION 1	PANEL MOUNTED ANTENNA	VANDAL PROOF
OPTION 2	POLE MOUNTED ANTENNA	VERTICALLY POLARISED AND ORIENTATED FOR MAXIMUM RECEIVED SIGNAL STRENGTH INDICATION. (FOR DETAILS REFER TO TDESTD102 TASWATER ELECTRICAL AND SCADA TECHNICAL STANDARD - CONSTRUCTION AND APPLICATION)

Revision Notes					
REV E: STAKEHOLDER FEEDBACK INCORPORATED					
REV F: MODIFICATIONS FROM PROTOTYPE APPLICATIONS					
REV G: ISSUED FOR PROJECT SPECIFIC DESIGN					
REV H: MINOR LABELLING UPDATES					
REV J: KINGFISHER RTU I/O CARD AI-1 CHANGED TO AI-10					
REV K: IPD ADDED, GENERAL REVISIONS & STAKEHOLDER FEEDBACK INC.					
Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

Scale	SCALE
Datum	
Sheet Size	A3
References	

PROJECT DETAILS			DESIGN		DATE
Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

DRAWING ISSUE  
**NOT FOR CONSTRUCTION**

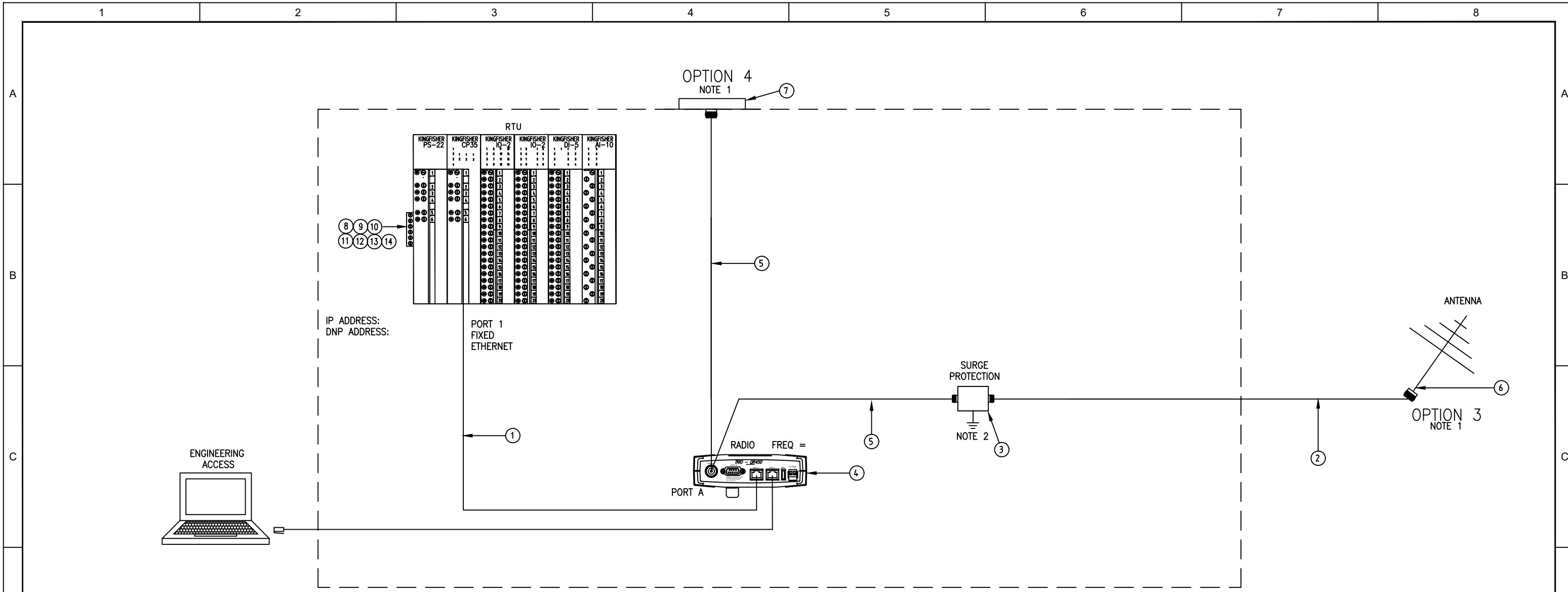


"LOCATION ID" - "SITE NAME" S.P.S.  
 "LOCATION ADDRESS"  
 SEWAGE PUMP STATION  
 TELEMETRY TOPOLOGY (M2M INSTALLATION)

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number: TWS-E-0003  
 Revision: EN01 K





ITEM	QTY	DESCRIPTION	MAKER	TYPE	REMARKS
1	1	ETHERNET PATCH CABLE	GENERIC	CAT 6	WITH RJ45 PLUGS FITTED
2	-	FEEDER, CO-AXIAL CABLE	RFI	RG8 MALE 'N' TYPE CONNECTOR	LENGTH TO BE DETERMINED
3	1	SURGE PROTECTOR	ERICO	CSP1-NB90	INTERNALLY MOUNTED
4	1	QR SERIES TRIO RADIO	SCHNEIDER	TBURQR4HHE00E1L00	
5	100cm	FEEDER TAIL	SCHNEIDER ELECTRIC	TBURRFTTNCM-NM1.0M	TNC MALE to N TYPE MALE 1.0m RG-223
6	1	ANTENNA & BRACKET	RFI	YAGI YB SERIES - TASWATER TO ADVISE MODEL NUMBER	FREQUENCY 450-470Mhz UNLESS OTHERWISE ADVISED
7	1	PANEL MOUNT UNITY GAIN ANTENNA (VANDAL PROOF)	RFI	TLA400 SERIES	FREQUENCY TO SUIT RADIO
8	1	RTU	KINGFISHER	CP-35	
9	1	MEMORY CARD	KINGFISHER	ACC-uSD-16GB	SANDISK ULTRA 16GB MICRO SDHC
10	2	DIGITAL INPUT/OUTPUT MODULE	KINGFISHER	IO-2-1	
11	1	DIGITAL INPUT MODULE	KINGFISHER	DI-5-1	
12	1	ANALOG INPUT MODULE	KINGFISHER	AI-10-1	
13	1	RTU BACKPANE	KINGFISHER	B0-6-0-E00	6 SLOT BACKPLANE
14	1	RTU POWER SUPPLY	KINGFISHER	PS-22-0	20-60 VDC

**NOTES**

1/ CHOSEN OPTION TO BE APPROVED BY TASWATER

2/ EARTHING OF THE SPD TO BE VIA A DEDICATED EARTHING CONDUCTOR (6mm<sup>2</sup> Cu G/Y PVC). THE EARTHING CONDUCTOR IS TO BE CONNECTED TO THE CABINET COMMON EARTH BAR. THE EARTHING CONDUCTOR CONNECTION TO BE AS SHORT AND DIRECT AS POSSIBLE WITH NO LOOPS.

TYPE	DESCRIPTION	COMMENTS
OPTION 3	POLE MOUNTED ANTENNA	SIZE DEPENDS ON RADIO PATH ANALYSIS
OPTION 4	PANEL MOUNTED ANTENNA	VANDAL PROOF

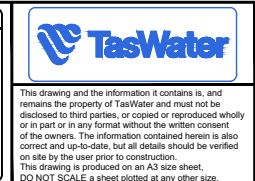
Revision Notes					
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REV F: MODIFICATIONS FROM PROTOTYPE APPLICATIONS					
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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

Scale	SCALE
Datum	
Sheet Size	A3
References	

PROJECT DETAILS			DESIGN		DATE
Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

DRAWING ISSUE

**NOT FOR CONSTRUCTION**



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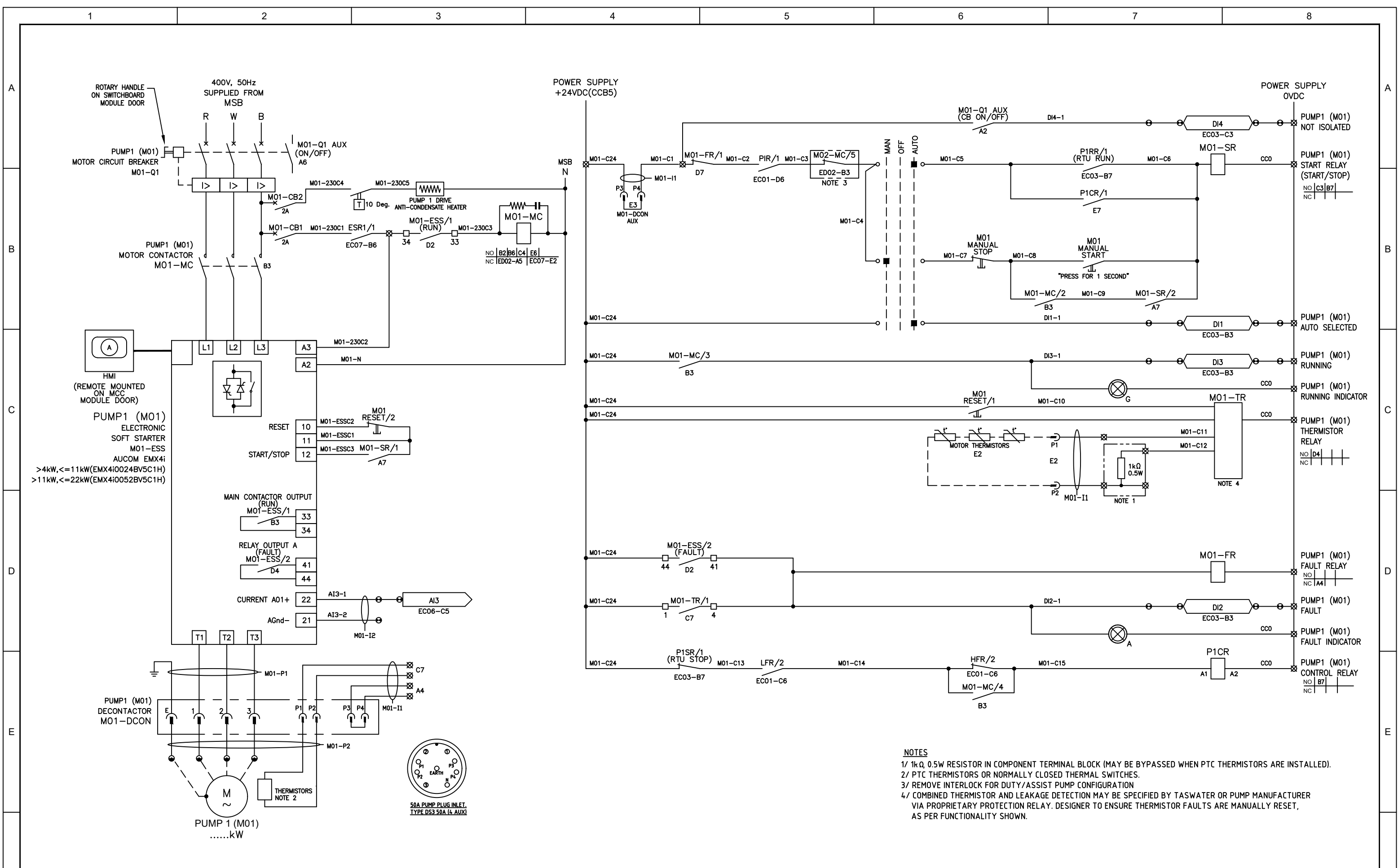
"LOCATION ADDRESS"

SEWAGE PUMP STATION

TELEMETRY TOPOLOGY (RADIO INSTALLATION)

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
ABN: 47 162220 653

Sheet Number: TWS-E-0003  
Revision: EN02 K



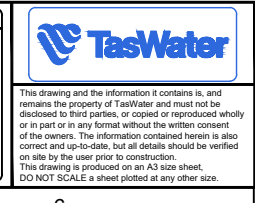
- NOTES**
- 1/ 1kΩ, 0.5W RESISTOR IN COMPONENT TERMINAL BLOCK (MAY BE BYPASSED WHEN PTC THERMISTORS ARE INSTALLED).
  - 2/ PTC THERMISTORS OR NORMALLY CLOSED THERMAL SWITCHES.
  - 3/ REMOVE INTERLOCK FOR DUTY/ASSIST PUMP CONFIGURATION
  - 4/ COMBINED THERMISTOR AND LEAKAGE DETECTION MAY BE SPECIFIED BY TASWATER OR PUMP MANUFACTURER VIA PROPRIETARY PROTECTION RELAY. DESIGNER TO ENSURE THERMISTOR FAULTS ARE MANUALLY RESET, AS PER FUNCTIONALITY SHOWN.

Revision Notes					
REV E: STAKEHOLDER FEEDBACK INCORPORATED					
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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

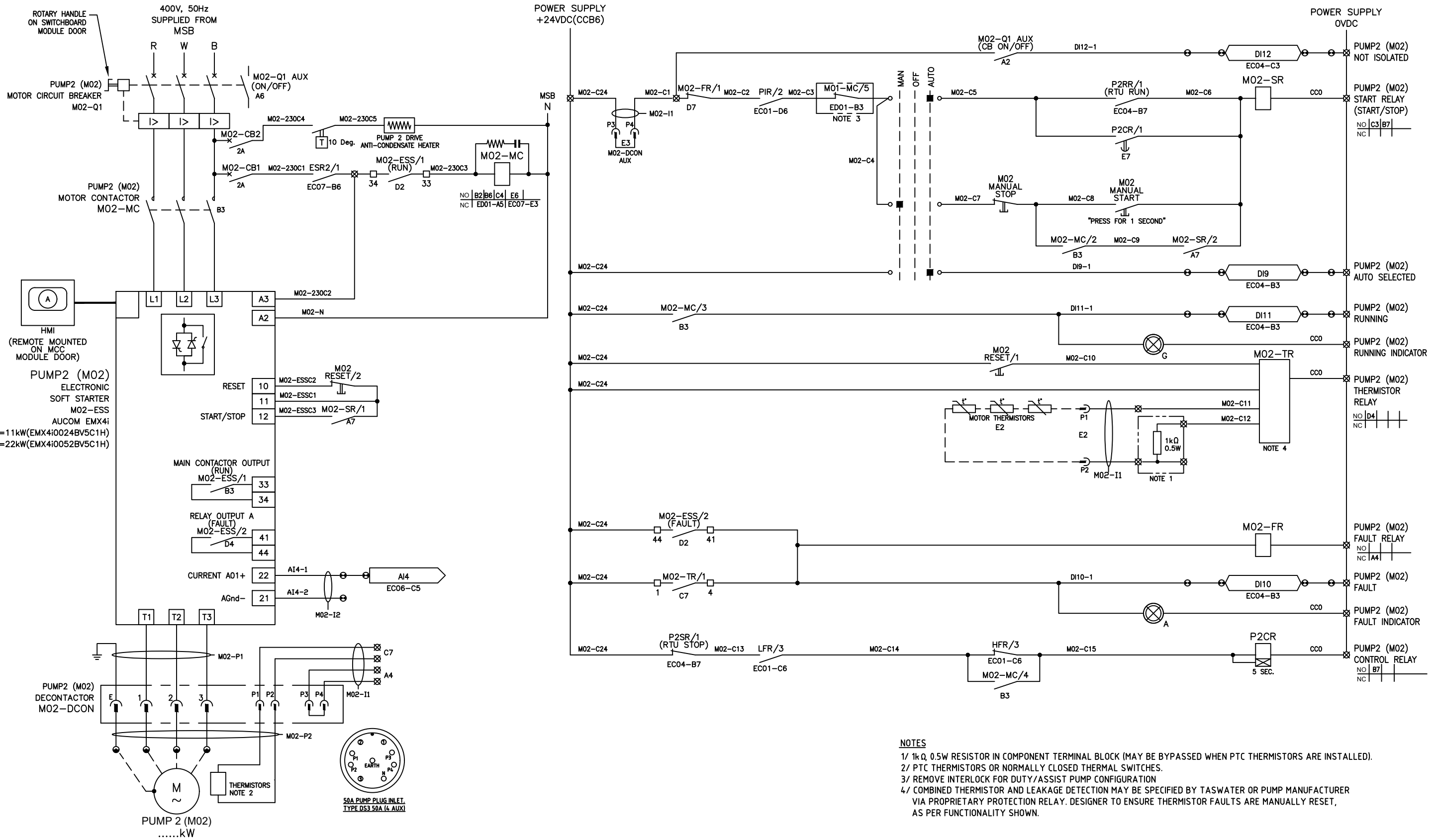
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PROJECT DETAILS				DESIGN		DATE	
Project No	J21247	Drawn	VAD			19/05/2022	
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Discipline	E	Verified	CMS			19/05/2022	
HPRM Folder							

**NOT FOR CONSTRUCTION**



"LOCATION ID" - "SITE NAME" S.P.S.			
"LOCATION ADDRESS"			
SEWAGE PUMP STATION			
PUMP 1 DRIVE - SCHEMATIC DIAGRAM			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION ED01 K



- NOTES**
- 1/ 1kΩ 0.5W RESISTOR IN COMPONENT TERMINAL BLOCK (MAY BE BYPASSED WHEN PTC THERMISTORS ARE INSTALLED).
  - 2/ PTC THERMISTORS OR NORMALLY CLOSED THERMAL SWITCHES.
  - 3/ REMOVE INTERLOCK FOR DUTY/ASSIST PUMP CONFIGURATION
  - 4/ COMBINED THERMISTOR AND LEAKAGE DETECTION MAY BE SPECIFIED BY TASWATER OR PUMP MANUFACTURER VIA PROPRIETARY PROTECTION RELAY. DESIGNER TO ENSURE THERMISTOR FAULTS ARE MANUALLY RESET, AS PER FUNCTIONALITY SHOWN.

**Revision Notes**

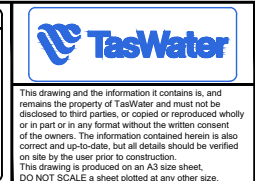
Rev.	K	Date	17/01/24	Approved	V. Vijayalayan
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Vault Folder		Designed	PLJ	19/05/2022
Discipline	E	Verified	CMS	19/05/2022
HPRM Folder				

**NOT FOR CONSTRUCTION**

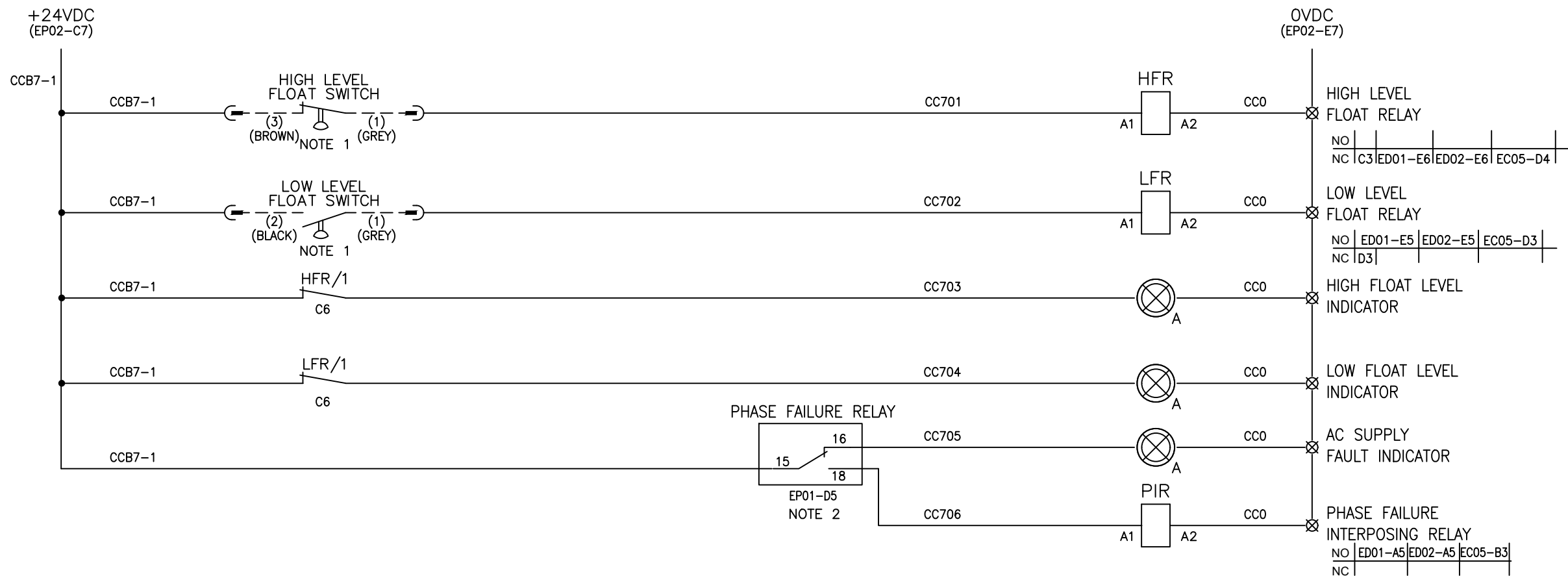


"LOCATION ID" - "SITE NAME" S.P.S.  
 "LOCATION ADDRESS"  
 SEWAGE PUMP STATION  
 PUMP 2 DRIVE - SCHEMATIC DIAGRAM

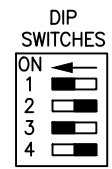
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

TWS-E-0003  
 ED02 K





- NOTES**
- 1/ FLOAT SWITCH TYPE FLYGT ENM10 SHOWN IN HANGING POSITION WITH EMPTY WET WELL
  - 2/ PHASE FAILURE RELAY SETTINGS
    - POWER ON DELAY: 6s
    - VOLTAGE: 400VAC Ph-Ph
    - VOLTAGE TOLERANCE: -12% (↘) +16% (↗)
    - DELAY: 10s

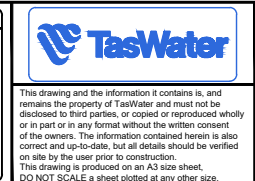


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Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

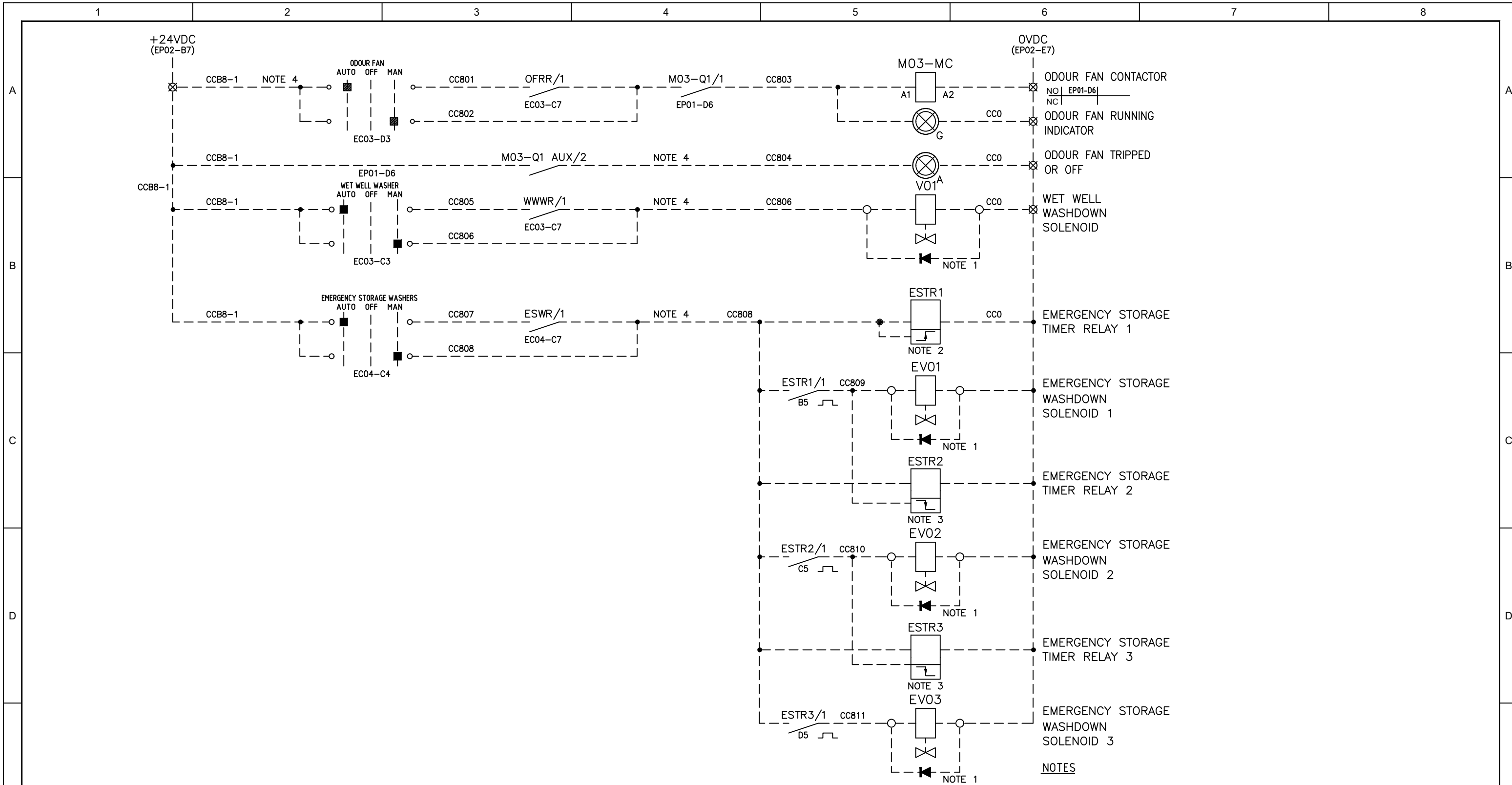
**NOT FOR CONSTRUCTION**



**"LOCATION ID" - "SITE NAME" S.P.S.**  
**"LOCATION ADDRESS"**  
 SEWAGE PUMP STATION  
 24V DC COMMON CONTROL

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number	REVISION
TWS-E-0003	EC01 K



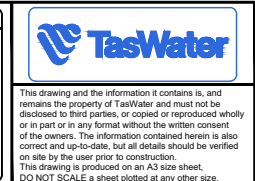
- NOTES**
- 1/ DIODE WILL BE REQUIRED TO PROTECT WWWR & ESWR RELAYS
  - 2/ INTERVAL TIMER RELAY WITH TRIGGER 'ON'  
(NHP CARLO GAVAZZI DMB51CM24, FUNCTION - 'In', TIME - ...)
  - 3/ INTERVAL TIMER RELAY WITH TRIGGER 'OFF'  
(NHP CARLO GAVAZZI DMB51CM24, FUNCTION - 'Io', TIME - ...)
  - DUPLICATE AS REQUIRED FOR ADDITIONAL SEQUENTIAL SOLENOID VALVES
  - 4/ DASHED LINES INDICATE OPTIONAL EQUIPMENT, REQUIREMENT TO BE DETERMINED.

Revision Notes					
REV E: STAKEHOLDER FEEDBACK INCORPORATED					
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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

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PROJECT DETAILS			DESIGN		DATE
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Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

**NOT FOR CONSTRUCTION**

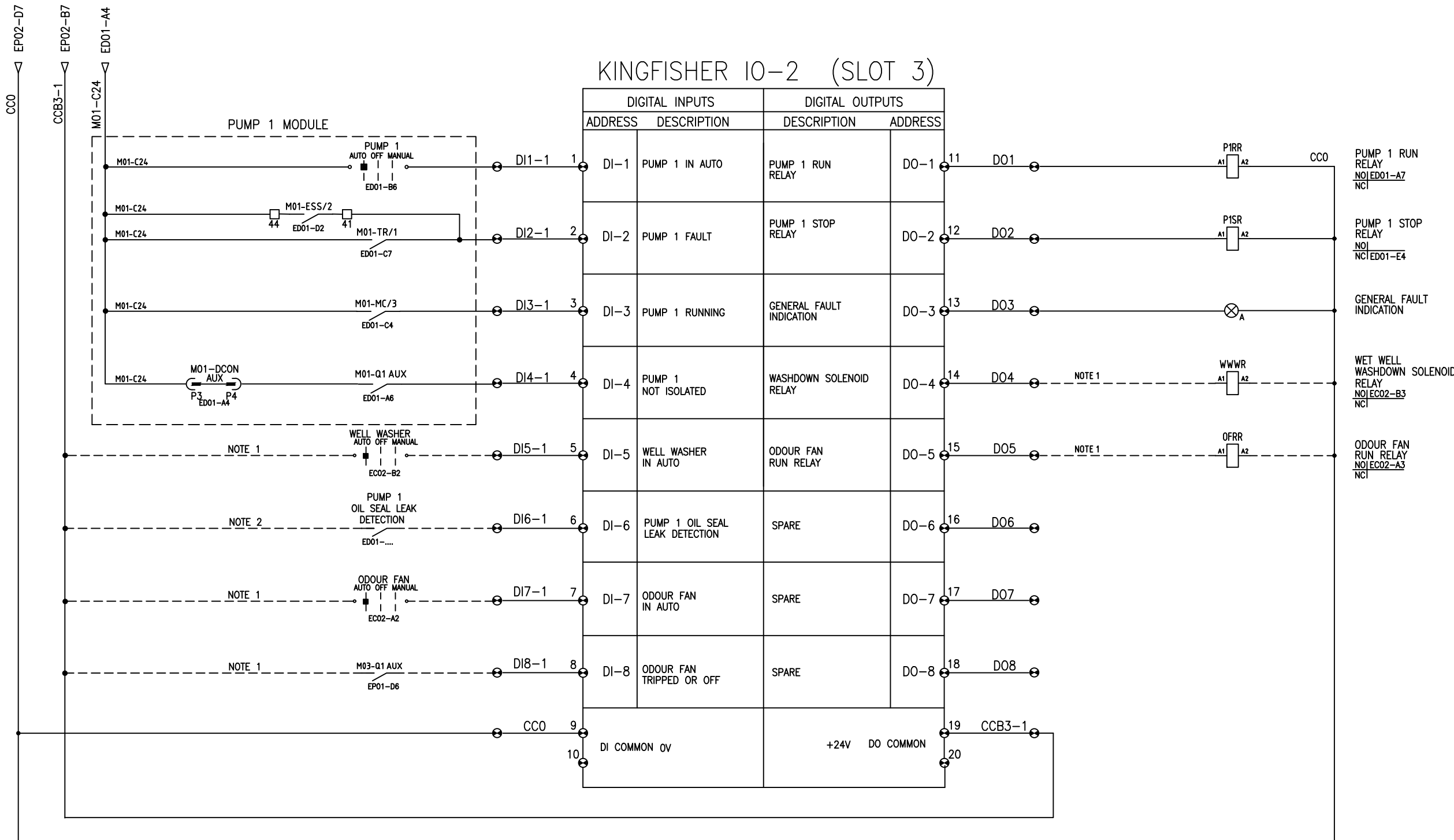


**"LOCATION ID" - "SITE NAME" S.P.S.**  
**"LOCATION ADDRESS"**  
 SEWAGE PUMP STATION  
 24V DC AUXILIARY CONTROLS

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number	TWS-E-0003	Revision	EC02
			K

# KINGFISHER 10-2 (SLOT 3)



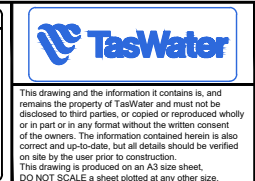
- NOTES**
- 1/ DASHED LINES INDICATE OPTIONAL EQUIPMENT, REQUIREMENT TO BE DETERMINED.
  - 2/ DEPENDENT ON PUMP SIZE (>11kW)

Revision Notes					
REV E: STAKEHOLDER FEEDBACK INCORPORATED					
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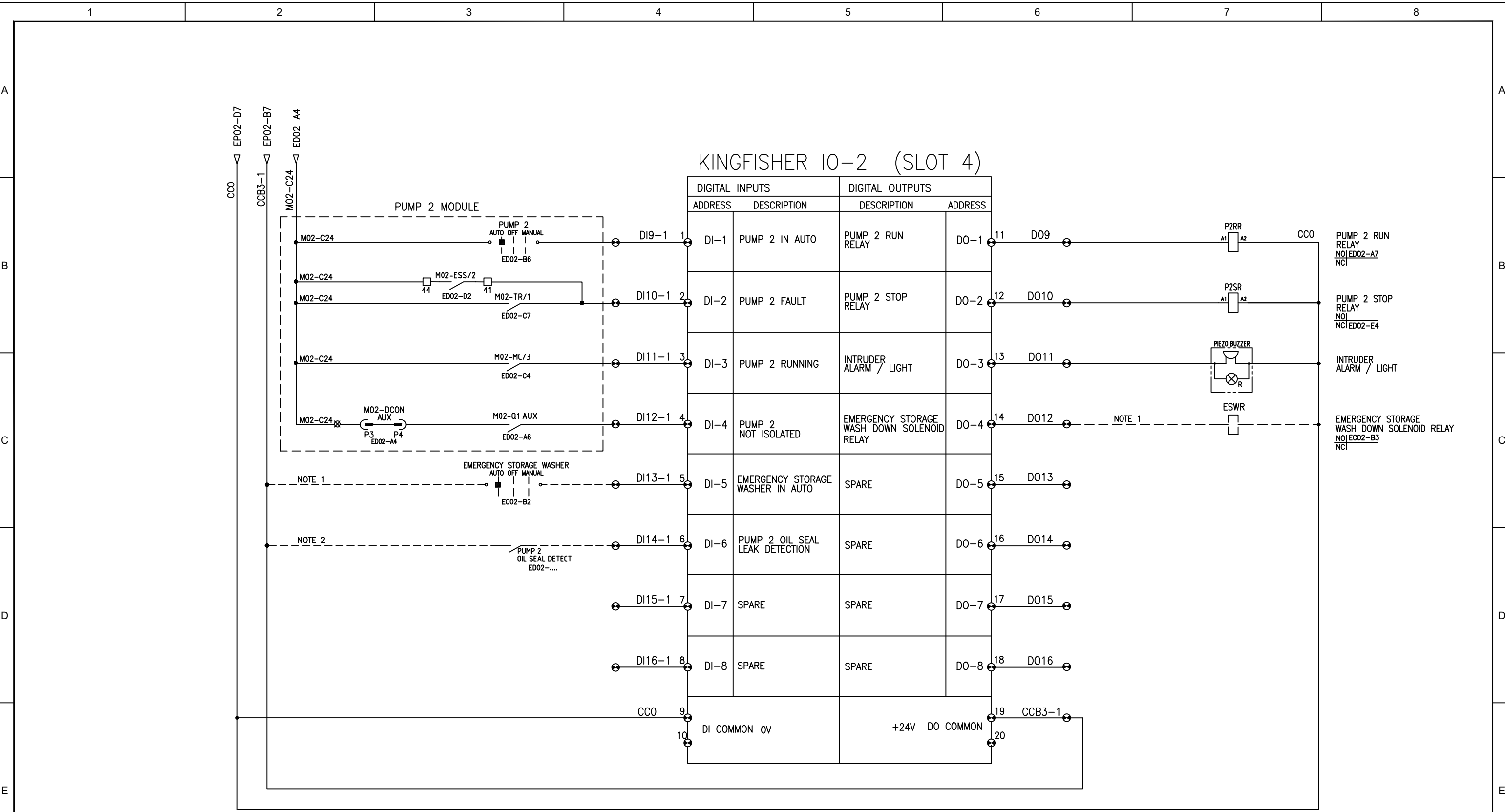
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PROJECT DETAILS			DESIGN		DATE
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Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

NOT FOR  
CONSTRUCTION



"LOCATION ID" - "SITE NAME" S.P.S.			
"LOCATION ADDRESS"			
SEWAGE PUMP STATION			
KINGFISHER 10-2 MODULE (SLOT 3)			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Drawing Number <b>TWS-E-0003</b>	Revision EC03 K



**NOTES**

1/ DASHED LINES INDICATE OPTIONAL EQUIPMENT, REQUIREMENT TO BE DETERMINED.

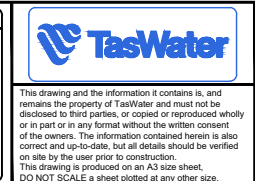
2/ DEPENDENT ON PUMP SIZE (>11kW)

Revision Notes					
Rev.	K	Date	17/01/24	Approved	V. Vijayalayan
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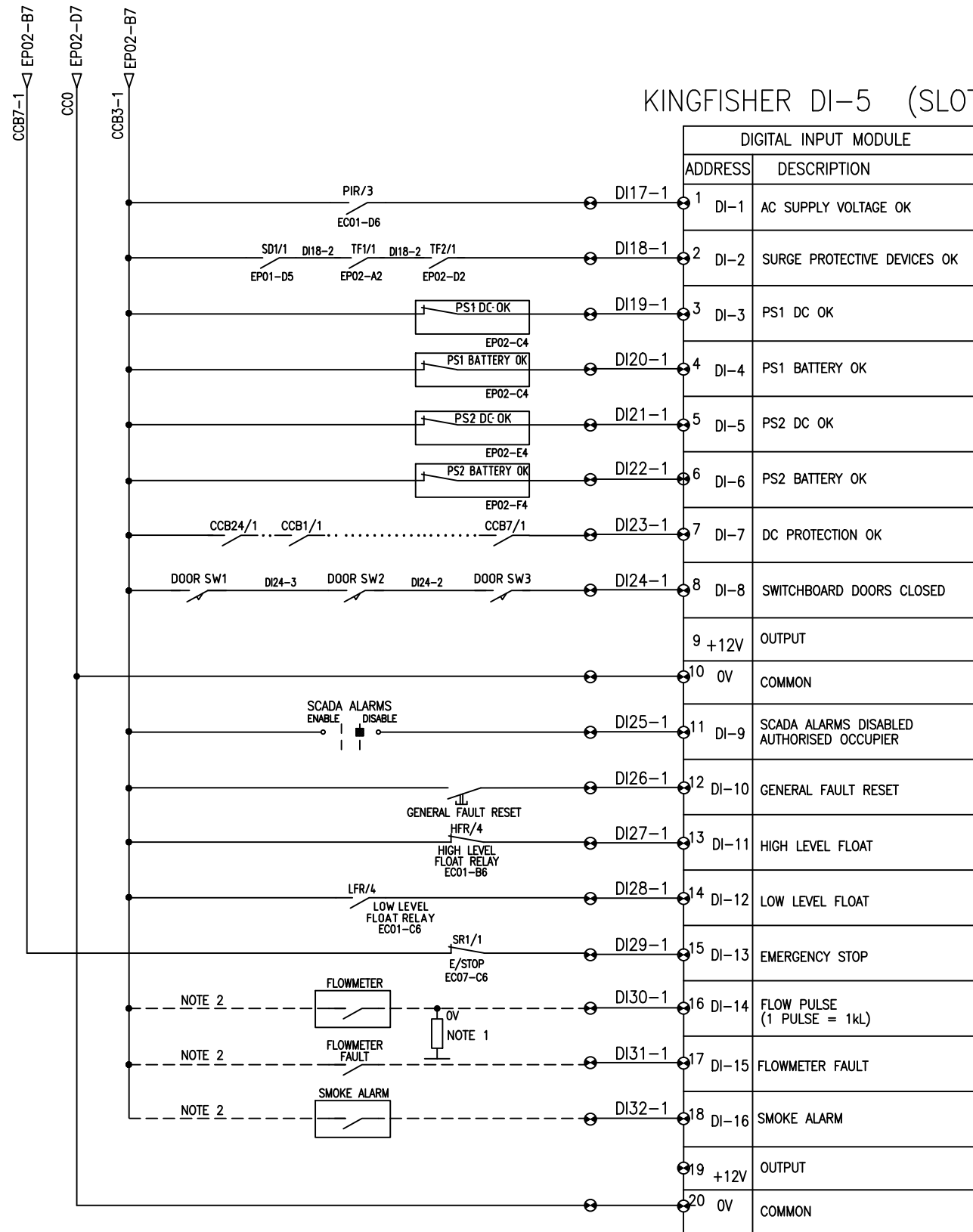
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Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

NOT FOR  
CONSTRUCTION



"LOCATION ID" - "SITE NAME" S.P.S.			
"LOCATION ADDRESS"			
KINGFISHER IO-2 MODULE (SLOT 4)			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION <b>EC04 K</b>

### KINGFISHER DI-5 (SLOT 5)



DIGITAL INPUT MODULE	
ADDRESS	DESCRIPTION
1 DI-1	AC SUPPLY VOLTAGE OK
2 DI-2	SURGE PROTECTIVE DEVICES OK
3 DI-3	PS1 DC OK
4 DI-4	PS1 BATTERY OK
5 DI-5	PS2 DC OK
6 DI-6	PS2 BATTERY OK
7 DI-7	DC PROTECTION OK
8 DI-8	SWITCHBOARD DOORS CLOSED
9 +12V	OUTPUT
10 0V	COMMON
11 DI-9	SCADA ALARMS DISABLED AUTHORISED OCCUPIER
12 DI-10	GENERAL FAULT RESET
13 DI-11	HIGH LEVEL FLOAT
14 DI-12	LOW LEVEL FLOAT
15 DI-13	EMERGENCY STOP
16 DI-14	FLOW PULSE (1 PULSE = 1kL)
17 DI-15	FLOWMETER FAULT
18 DI-16	SMOKE ALARM
19 +12V	OUTPUT
20 0V	COMMON

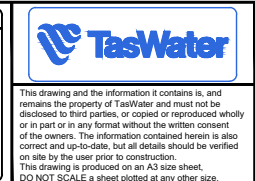
NOTES:  
 1/ REFER TO FLOW METER FOR CORRECT SIZING OF RESISTOR.  
 2/ DASHED LINES INDICATE OPTIONAL EQUIPMENT, REQUIREMENT TO BE DETERMINED.

Revision Notes					
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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

Scale	SCALE
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HPRM Folder					

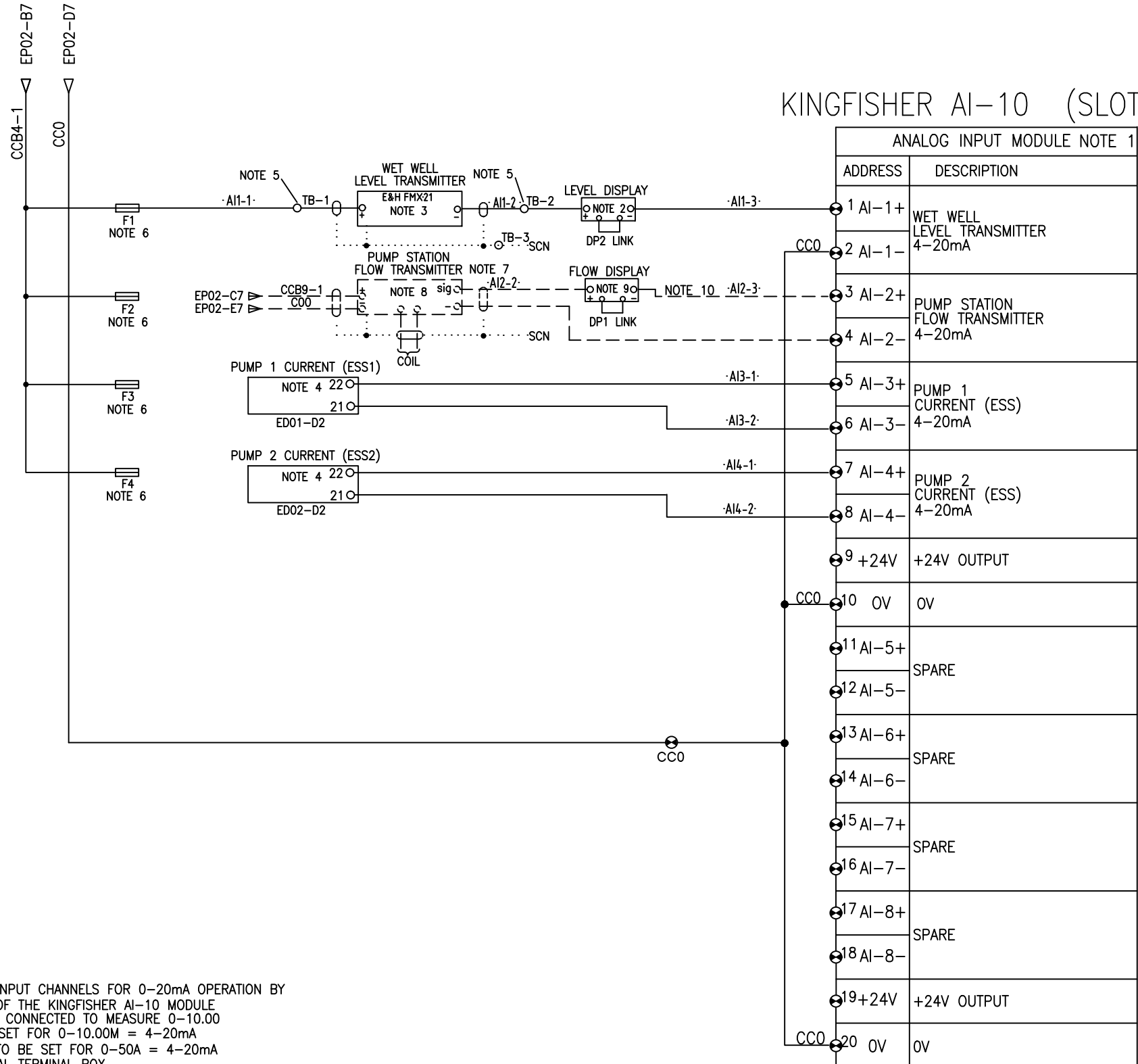
NOT FOR  
CONSTRUCTION



"LOCATION ID" - "SITE NAME" S.P.S. "LOCATION ADDRESS" SEWAGE PUMP STATION KINGFISHER DI-5 MODULE (SLOT 5)			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION EC05 K



### KINGFISHER AI-10 (SLOT 6)



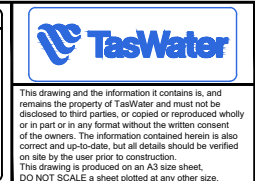
- NOTES**
- 1/ CONFIGURE ALL ANALOGUE INPUT CHANNELS FOR 0-20mA OPERATION BY REMOVING LINK ON THE REAR OF THE KINGFISHER AI-10 MODULE
  - 2/ DISPLAY TO HAVE LINK DP2 CONNECTED TO MEASURE 0-10.00
  - 3/ LEVEL TRANSMITTER TO BE SET FOR 0-10.00M = 4-20mA
  - 4/ AC CURRENT TRANSDUCER TO BE SET FOR 0-50A = 4-20mA
  - 5/ LEVEL TRANSMITTER EXTERNAL TERMINAL BOX
  - 6/ ALL FUSES 80mA, AS PER TASWATER STANDARD DRAWING TWS-E-0014
  - 7/ FLOW METER TO BE INCLUDED ONLY IF REQUIRED (SIEMENS OR E&H)
  - 8/ FLOW TRANSMITTER TO BE SET FOR 0-100.0L/sec = 4-20mA
  - 9/ DISPLAY TO HAVE LINK DP1 CONNECTED TO MEASURE 0-100.0L/sec
  - 10/ DASHED LINES INDICATE OPTIONAL EQUIPMENT, REQUIREMENT TO BE DETERMINED.

Revision Notes					
REV E: STAKEHOLDER FEEDBACK INCORPORATED					
REV F: MODIFICATIONS FROM PROTOTYPE APPLICATIONS					
REV G: ISSUED FOR PROJECT SPECIFIC DESIGN					
REV H: MINOR LABELLING UPDATES					
REV J: KINGFISHER RTU I/O CARD AI-1 CHANGED TO AI-10					
REV K: IPD ADDED, GENERAL REVISIONS & STAKEHOLDER FEEDBACK INC.					
Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

Scale	SCALE
Datum	
Sheet Size	A3
References	

PROJECT DETAILS			DESIGN		DATE
Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

**NOT FOR CONSTRUCTION**

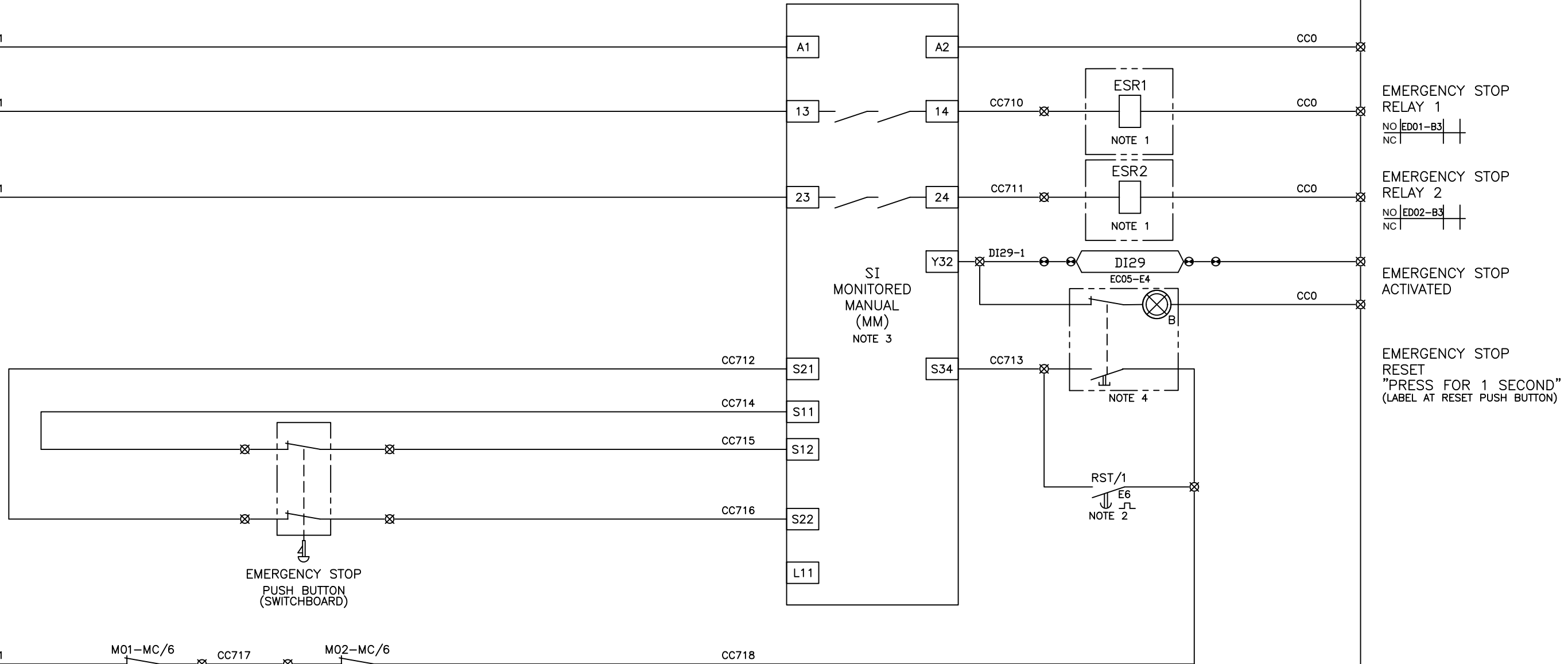


"LOCATION ID" - "SITE NAME" S.P.S. "LOCATION ADDRESS" SEWAGE PUMP STATION KINGFISHER AI-10 MODULE (SLOT 6)			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION EC06 K

POWER SUPPLY  
+24VDC(CCB7)

POWER SUPPLY  
OVDC

SR1



- EMERGENCY STOP SAFETY CONTROL RELAYS S&S CSS7E-62EC 24VDC. MOUNT ESR1 IN THE PUMP 1 (M01) DRIVE MODULE AND ESR2 IN THE PUMP 2 (M02) DRIVE MODULE.
- POWER ON EMERGENCY STOP RESET TIMER SHALL BE A PULSE DELAYED RELAY PROVIDING A ONE SHOT 0.5-1S ON PULSE 10 SECONDS AFTER 24VDC IS APPLIED.  
(EXAMPLE, SCHNEIDER RE22R2MXMU IN MODE P SET FOR 10 SECONDS DELAY OR NHP DCB-01-C-M24 IN MODE SH, T1 = 10S, T2 = 1S)
- SAFETY RELAY, AB GUARD MASTER 440R-S12R2 SET IN MONITORED MANUAL (MM) MODE.
- EMERGENCY STOP RESET WITH INTEGRAL LED INDICATOR (BLUE) - SHOWING E/STOP HAS BEEN ACTIVATED AND RESET IS REQUIRED.
- CONTACTOR AUXILIARY CONTACT FROM MOTOR CONTACTOR ASSOCIATED WITH GROUP E/STOP. CONTACTOR AUXILIARY CONTACT SHALL BE POSITIVELY GUIDED. SNAP ON AUXILIARY CONTACTS ARE NOT ACCEPTABLE.

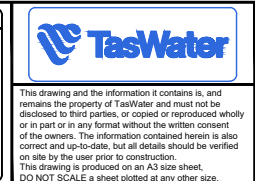
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Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

DRAWING ISSUE

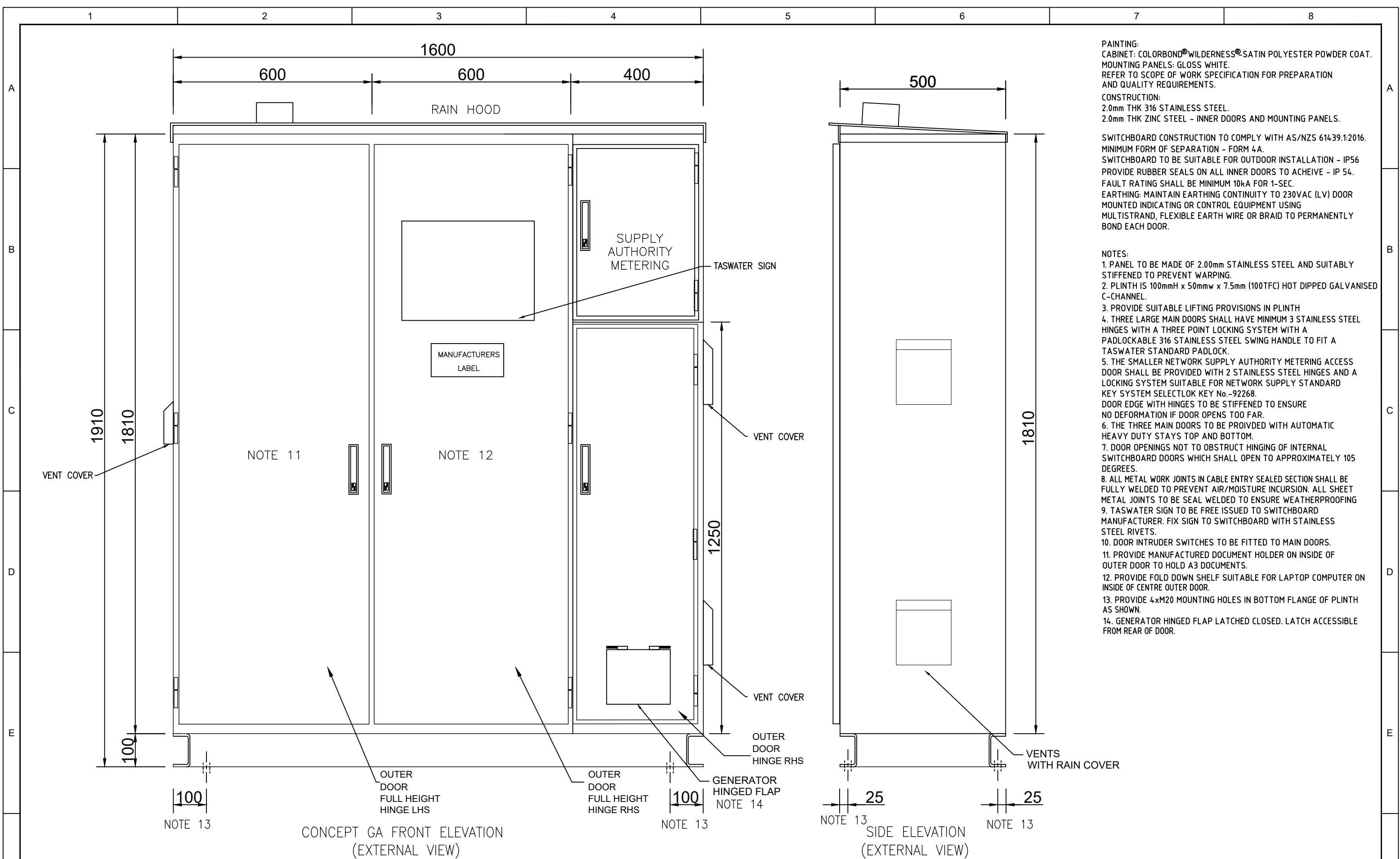
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"LOCATION ID" - "SITE NAME" S.P.S.  
"LOCATION ADDRESS"  
SEWAGE PUMP STATION  
EMERGENCY STOP CIRCUIT SCHEMATIC DIAGRAM

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
ABN: 47 162220 653

Sheet Number: TWS-E-0003  
Revision: EC07  
K



**PAINTING:**  
 CABINET: COLORBOND® WILDERNESS® SATIN POLYESTER POWDER COAT.  
 MOUNTING PANELS: GLOSS WHITE.  
 REFER TO SCOPE OF WORK SPECIFICATION FOR PREPARATION AND QUALITY REQUIREMENTS.

**CONSTRUCTION:**  
 2.0mm THK 316 STAINLESS STEEL.  
 2.0mm THK ZINC STEEL - INNER DOORS AND MOUNTING PANELS.

**SWITCHBOARD CONSTRUCTION TO COMPLY WITH AS/NZS 61439.1:2016.**  
 MINIMUM FORM OF SEPARATION - FORM 4A.  
 SWITCHBOARD TO BE SUITABLE FOR OUTDOOR INSTALLATION - IP56  
 PROVIDE RUBBER SEALS ON ALL INNER DOORS TO ACHIEVE - IP 54.  
 FAULT RATING SHALL BE MINIMUM 10kA FOR 1-SEC.  
 EARTHING: MAINTAIN EARTHING CONTINUITY TO 230VAC (LV) DOOR MOUNTED INDICATING OR CONTROL EQUIPMENT USING MULTISTRAND, FLEXIBLE EARTH WIRE OR BRAID TO PERMANENTLY BOND EACH DOOR.

- NOTES:**
1. PANEL TO BE MADE OF 2.00mm STAINLESS STEEL AND SUITABLY STIFFENED TO PREVENT WARPING.
  2. PLINTH IS 100mmH x 50mmw x 7.5mm (100TFC) HOT DIPPED GALVANISED C-CHANNEL.
  3. PROVIDE SUITABLE LIFTING PROVISIONS IN PLINTH
  4. THREE LARGE MAIN DOORS SHALL HAVE MINIMUM 3 STAINLESS STEEL HINGES WITH A THREE POINT LOCKING SYSTEM WITH A PADLOCKABLE 316 STAINLESS STEEL SWING HANDLE TO FIT A TASWATER STANDARD PADLOCK.
  5. THE SMALLER NETWORK SUPPLY AUTHORITY METERING ACCESS DOOR SHALL BE PROVIDED WITH 2 STAINLESS STEEL HINGES AND A LOCKING SYSTEM SUITABLE FOR NETWORK SUPPLY STANDARD KEY SYSTEM SELECTLOK KEY No.-92268.
  6. DOOR EDGE WITH HINGES TO BE STIFFENED TO ENSURE NO DEFORMATION IF DOOR OPENS TOO FAR.
  7. THE THREE MAIN DOORS TO BE PROVIDED WITH AUTOMATIC HEAVY DUTY STAYS TOP AND BOTTOM.
  8. DOOR OPENINGS NOT TO OBSTRUCT HINGING OF INTERNAL SWITCHBOARD DOORS WHICH SHALL OPEN TO APPROXIMATELY 105 DEGREES.
  9. ALL METAL WORK JOINTS IN CABLE ENTRY SEALED SECTION SHALL BE FULLY WELDED TO PREVENT AIR/MOISTURE INCURSION. ALL SHEET METAL JOINTS TO BE SEAL WELDED TO ENSURE WEATHERPROOFING
  10. TASWATER SIGN TO BE FREE ISSUED TO SWITCHBOARD MANUFACTURER. FIX SIGN TO SWITCHBOARD WITH STAINLESS STEEL RIVETS.
  11. DOOR INTRUDER SWITCHES TO BE FITTED TO MAIN DOORS.
  12. PROVIDE MANUFACTURED DOCUMENT HOLDER ON INSIDE OF OUTER DOOR TO HOLD A3 DOCUMENTS.
  13. PROVIDE FOLD DOWN SHELF SUITABLE FOR LAPTOP COMPUTER ON INSIDE OF CENTRE OUTER DOOR.
  14. PROVIDE 4xM20 MOUNTING HOLES IN BOTTOM FLANGE OF PLINTH AS SHOWN.
  15. GENERATOR HINGED FLAP LATCHED CLOSED. LATCH ACCESSIBLE FROM REAR OF DOOR.

CONCEPT GA FRONT ELEVATION  
(EXTERNAL VIEW)

SIDE ELEVATION  
(EXTERNAL VIEW)

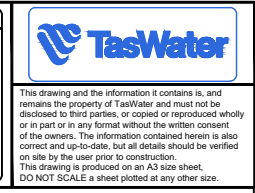
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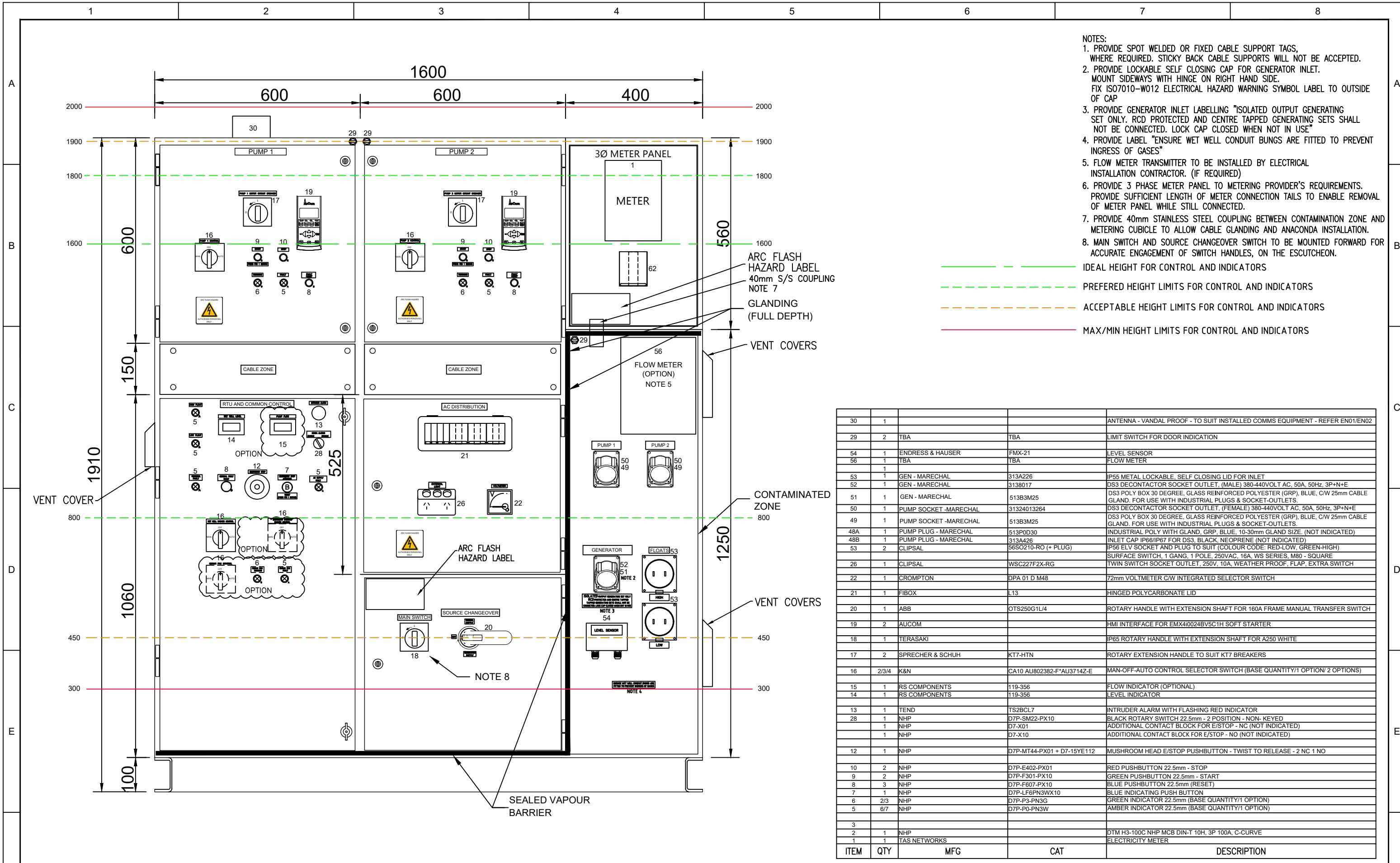
PROJECT DETAILS			DESIGN		DATE
Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

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<b>"LOCATION ID" - "SITE NAME" S.P.S.</b>			
<b>"LOCATION ADDRESS"</b>			
<b>SEWAGE PUMP STATION</b>			
<b>SWITCHBOARD GENERAL ARRANGEMENT - EXTERNAL (RH)</b>			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION EL01 K



ITEM	QTY	MFG	CAT	DESCRIPTION
30	1			ANTENNA - VANDAL PROOF - TO SUIT INSTALLED COMMS EQUIPMENT - REFER EN01/EN02
29	2	TBA	TBA	LIMIT SWITCH FOR DOOR INDICATION
54	1	ENDRESS & HAUSER	FMX-21	LEVEL SENSOR
56	1	TBA	TBA	FLOW METER
53	1	GEN - MARECHAL	313A226	IP55 METAL LOCKABLE, SELF CLOSING LID FOR INLET
52	1	GEN - MARECHAL	3138017	DS3 DECONTACTOR SOCKET OUTLET, (MALE) 380-440VOLT AC, 50A, 50Hz, 3P+N+E
51	1	GEN - MARECHAL	513B3M25	DS3 POLY BOX 30 DEGREE, GLASS REINFORCED POLYESTER (GRP), BLUE, C/W 25mm CABLE GLAND, FOR USE WITH INDUSTRIAL PLUGS & SOCKET-OUTLETS
50	1	PUMP SOCKET - MARECHAL	31324013264	DS3 DECONTACTOR SOCKET OUTLET, (FEMALE) 380-440VOLT AC, 50A, 50Hz, 3P+N+E
49	1	PUMP SOCKET - MARECHAL	513B3M25	DS3 POLY BOX 30 DEGREE, GLASS REINFORCED POLYESTER (GRP), BLUE, C/W 25mm CABLE GLAND, FOR USE WITH INDUSTRIAL PLUGS & SOCKET-OUTLETS
48A	1	PUMP PLUG - MARECHAL	513P0D30	INDUSTRIAL POLY WITH GLAND, GRP, BLUE, 10-30mm GLAND SIZE, (NOT INDICATED)
48B	1	PUMP PLUG - MARECHAL	313A426	INLET CAP IP66/IP67 FOR DS3, BLACK, NEOPRENE (NOT INDICATED)
53	2	CLIPSAL	56SO210-RO (+ PLUG)	IP56 ELV SOCKET AND PLUG TO SUIT (COLOUR CODE: RED-LOW, GREEN-HIGH)
26	1	CLIPSAL	WSC227F2X-RG	SURFACE SWITCH, 1 GANG, 1 POLE, 250VAC, 16A, WS SERIES, M80 - SQUARE
22	1	CROMPTON	DPA 01 D M48	TWIN SWITCH SOCKET OUTLET, 250V, 10A, WEATHER PROOF, FLAP, EXTRA SWITCH
21	1	FIBOX	L13	72mm VOLTMETER C/W INTEGRATED SELECTOR SWITCH
20	1	ABB	OTS250G1L/4	HINGED POLYCARBONATE LID
19	2	AUCOM		ROTARY HANDLE WITH EXTENSION SHAFT FOR 160A FRAME MANUAL TRANSFER SWITCH
18	1	TERASAKI		HMI INTERFACE FOR EMX4I0024BV5C1H SOFT STARTER
17	2	SPRECHER & SCHUH	KT7-HTN	IP65 ROTARY HANDLE WITH EXTENSION SHAFT FOR A250 WHITE
16	2/3/4	K&N	CA10 AU802382-F*AU3714Z-E	ROTARY EXTENSION HANDLE TO SUIT KT7 BREAKERS
15	1	RS COMPONENTS	119-356	MAN-OFF-AUTO CONTROL SELECTOR SWITCH (BASE QUANTITY/1 OPTION/ 2 OPTIONS)
14	1	RS COMPONENTS	119-356	FLOW INDICATOR (OPTIONAL)
13	1	TEND	TS2BCL7	LEVEL INDICATOR
28	1	NHP	D7P-SM22-PX10	INTRUDER ALARM WITH FLASHING RED INDICATOR
	1	NHP	D7-X01	BLACK ROTARY SWITCH 22.5mm - 2 POSITION - NON-KEYED
	1	NHP	D7-X10	ADDITIONAL CONTACT BLOCK FOR E/STOP - NC (NOT INDICATED)
	1	NHP	D7P-MT44-PX01 + D7-15YE112	ADDITIONAL CONTACT BLOCK FOR E/STOP - NO (NOT INDICATED)
12	1	NHP	D7P-MT44-PX01 + D7-15YE112	MUSHROOM HEAD E/STOP PUSHBUTTON - TWIST TO RELEASE - 2 NC 1 NO
10	2	NHP	D7P-E402-PX01	RED PUSHBUTTON 22.5mm - STOP
9	2	NHP	D7P-F301-PX10	GREEN PUSHBUTTON 22.5mm - START
8	3	NHP	D7P-F607-PX10	BLUE PUSHBUTTON 22.5mm (RESET)
7	1	NHP	D7P-LF6PN3WX10	BLUE INDICATING PUSH BUTTON
6	2/3	NHP	D7P-P3-PN3G	GREEN INDICATOR 22.5mm (BASE QUANTITY/1 OPTION)
5	6/7	NHP	D7P-P0-PN3W	AMBER INDICATOR 22.5mm (BASE QUANTITY/1 OPTION)
3				
2	1	NHP	DTM H3-100C NHP MCB DIN-T 10H, 3P 100A, C-CURVE	
1	1	TAS NETWORKS		ELECTRICITY METER

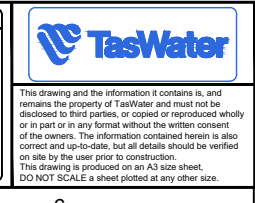
Rev.	K	Date	17/01/24	Approved	V. Vijayalayan
Revision Notes					
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Scale	SCALE
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PROJECT DETAILS			DESIGN		DATE
Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

**DRAWING ISSUE**

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**"LOCATION ADDRESS"**

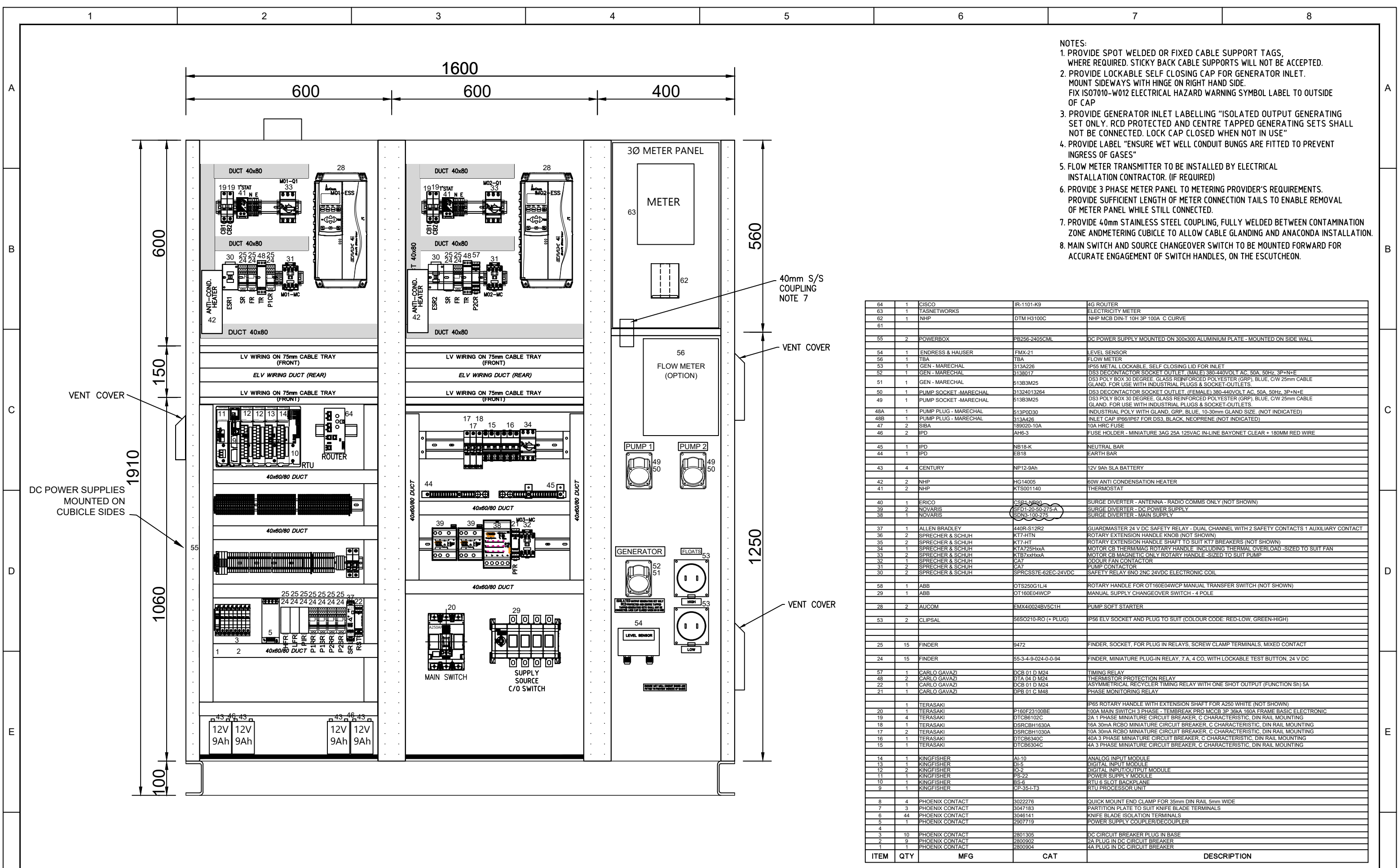
**SEWAGE PUMP STATION**

**SWITCHBOARD GENERAL ARRANGEMENT - CONTROLS (RH)**

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number: **TWS-E-0003**  
 Revision: **EL02**  
 Author: **K**





**Revision Notes**

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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan
1					
2					

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PROJECT DETAILS	DESIGN	DATE
Project No	J21247	19/05/2022
Vault Folder	Designed	PLJ
Discipline	E	Verified
HPRM Folder		CMS

References

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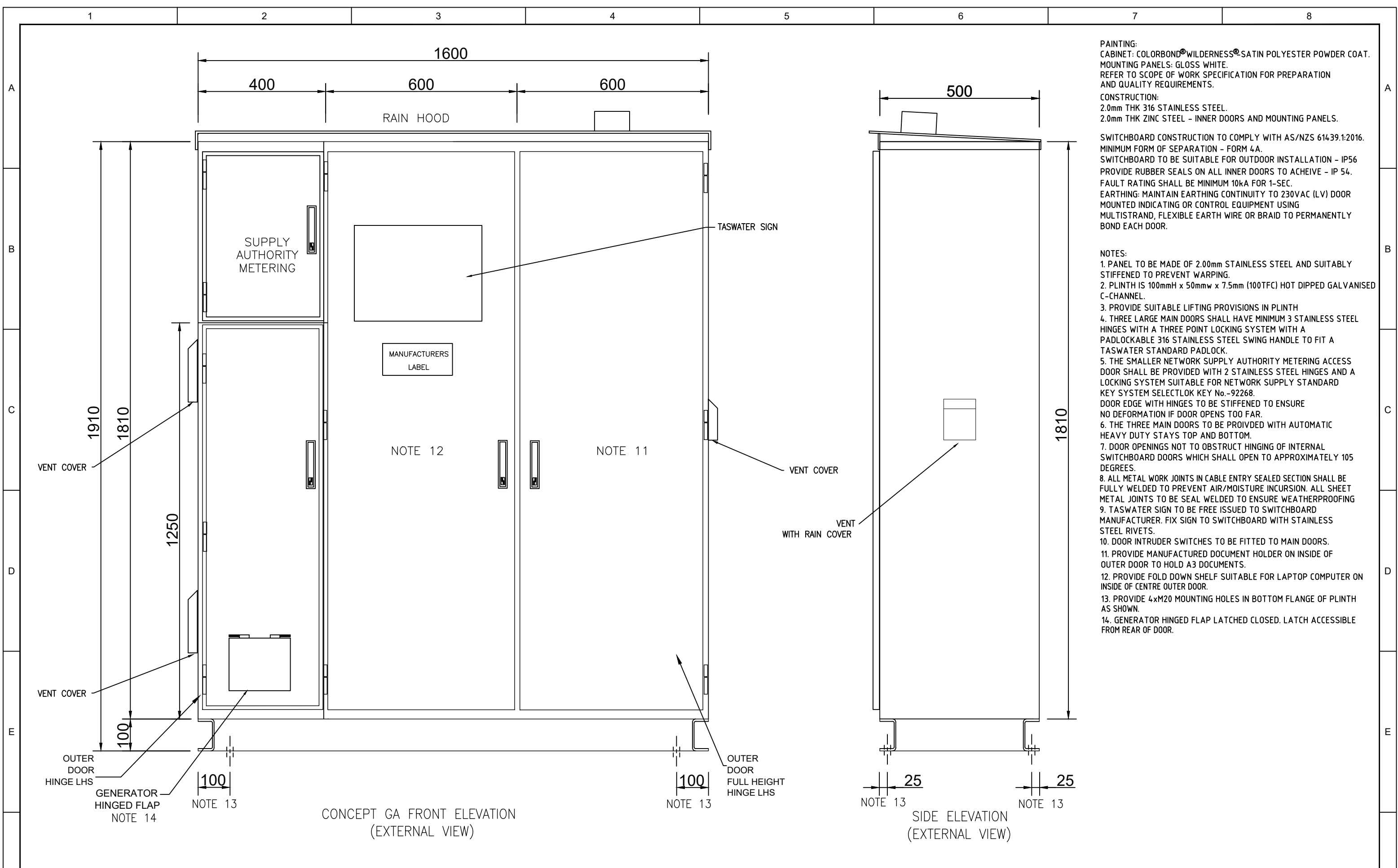
**TasWater**

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

ITEM	QTY	MFG	CAT	DESCRIPTION
14	1	KINGFISHER	AI-10	ANALOG INPUT MODULE
13	1	KINGFISHER	DI-5	DIGITAL INPUT MODULE
12	2	KINGFISHER	IO-2	DIGITAL INPUT/OUTPUT MODULE
11	1	KINGFISHER	PS-22	POWER SUPPLY MODULE
10	1	KINGFISHER	BS-6	RTU 6 SLOT BACKPLANE
9	1	KINGFISHER	CP-35-1-T3	RTU PROCESSOR UNIT
8	4	PHOENIX CONTACT	3022276	QUICK MOUNT END CLAMP FOR 35mm DIN RAIL 5mm WIDE
7	3	PHOENIX CONTACT	3047183	PARTITION PLATE TO SUIT KNIFE BLADE TERMINALS
6	44	PHOENIX CONTACT	3048141	KNIFE BLADE ISOLATION TERMINALS
5	1	PHOENIX CONTACT	2807719	POWER SUPPLY COUPLER/DECOUPLER
4	4	PHOENIX CONTACT	2801305	DC CIRCUIT BREAKER PLUG IN BASE
3	9	PHOENIX CONTACT	2800902	2A PLUG IN DC CIRCUIT BREAKER
2	1	PHOENIX CONTACT	2800904	4A PLUG IN DC CIRCUIT BREAKER

"LOCATION ID" - "SITE NAME" S.P.S.	
"LOCATION ADDRESS"	
SWITCHBOARD GENERAL ARRANGEMENT - EQUIPMENT (RH)	
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD	Sheet Number: TWS-E-0003
ABN: 47 162220 653	REVISION: EL03 K





PAINTING:  
 CABINET: COLORBOND® WILDERNESS® SATIN POLYESTER POWDER COAT.  
 MOUNTING PANELS: GLOSS WHITE.  
 REFER TO SCOPE OF WORK SPECIFICATION FOR PREPARATION AND QUALITY REQUIREMENTS.

CONSTRUCTION:  
 2.0mm THK 316 STAINLESS STEEL.  
 2.0mm THK ZINC STEEL - INNER DOORS AND MOUNTING PANELS.

SWITCHBOARD CONSTRUCTION TO COMPLY WITH AS/NZS 61439.1:2016.  
 MINIMUM FORM OF SEPARATION - FORM 4A.  
 SWITCHBOARD TO BE SUITABLE FOR OUTDOOR INSTALLATION - IP56  
 PROVIDE RUBBER SEALS ON ALL INNER DOORS TO ACHIEVE - IP 54.  
 FAULT RATING SHALL BE MINIMUM 10kA FOR 1-SEC.  
 EARTHING: MAINTAIN EARTHING CONTINUITY TO 230VAC (LV) DOOR MOUNTED INDICATING OR CONTROL EQUIPMENT USING MULTISTRAND, FLEXIBLE EARTH WIRE OR BRAID TO PERMANENTLY BOND EACH DOOR.

- NOTES:
1. PANEL TO BE MADE OF 2.00mm STAINLESS STEEL AND SUITABLY STIFFENED TO PREVENT WARPING.
  2. PLINTH IS 100mmH x 50mmw x 7.5mm (100TFC) HOT DIPPED GALVANISED C-CHANNEL.
  3. PROVIDE SUITABLE LIFTING PROVISIONS IN PLINTH
  4. THREE LARGE MAIN DOORS SHALL HAVE MINIMUM 3 STAINLESS STEEL HINGES WITH A THREE POINT LOCKING SYSTEM WITH A PADLOCKABLE 316 STAINLESS STEEL SWING HANDLE TO FIT A TASWATER STANDARD PADLOCK.
  5. THE SMALLER NETWORK SUPPLY AUTHORITY METERING ACCESS DOOR SHALL BE PROVIDED WITH 2 STAINLESS STEEL HINGES AND A LOCKING SYSTEM SUITABLE FOR NETWORK SUPPLY STANDARD KEY SYSTEM SELECTLOK KEY No.-92268.
  6. DOOR EDGE WITH HINGES TO BE STIFFENED TO ENSURE NO DEFORMATION IF DOOR OPENS TOO FAR.
  7. THE THREE MAIN DOORS TO BE PROVIDED WITH AUTOMATIC HEAVY DUTY STAYS TOP AND BOTTOM.
  8. DOOR OPENINGS NOT TO OBSTRUCT HINGING OF INTERNAL SWITCHBOARD DOORS WHICH SHALL OPEN TO APPROXIMATELY 105 DEGREES.
  9. ALL METAL WORK JOINTS IN CABLE ENTRY SEALED SECTION SHALL BE FULLY WELDED TO PREVENT AIR/MOISTURE INCURSION. ALL SHEET METAL JOINTS TO BE SEAL WELDED TO ENSURE WEATHERPROOFING
  10. TASWATER SIGN TO BE FREE ISSUED TO SWITCHBOARD MANUFACTURER. FIX SIGN TO SWITCHBOARD WITH STAINLESS STEEL RIVETS.
  11. DOOR INTRUDER SWITCHES TO BE FITTED TO MAIN DOORS.
  12. PROVIDE MANUFACTURED DOCUMENT HOLDER ON INSIDE OF OUTER DOOR TO HOLD A3 DOCUMENTS.
  13. PROVIDE FOLD DOWN SHELF SUITABLE FOR LAPTOP COMPUTER ON INSIDE OF CENTRE OUTER DOOR.
  14. PROVIDE 4xM20 MOUNTING HOLES IN BOTTOM FLANGE OF PLINTH AS SHOWN.
  15. GENERATOR HINGED FLAP LATCHED CLOSED. LATCH ACCESSIBLE FROM REAR OF DOOR.

CONCEPT GA FRONT ELEVATION  
(EXTERNAL VIEW)

SIDE ELEVATION  
(EXTERNAL VIEW)

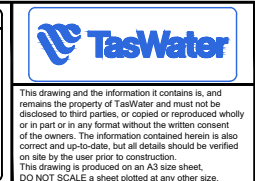
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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan

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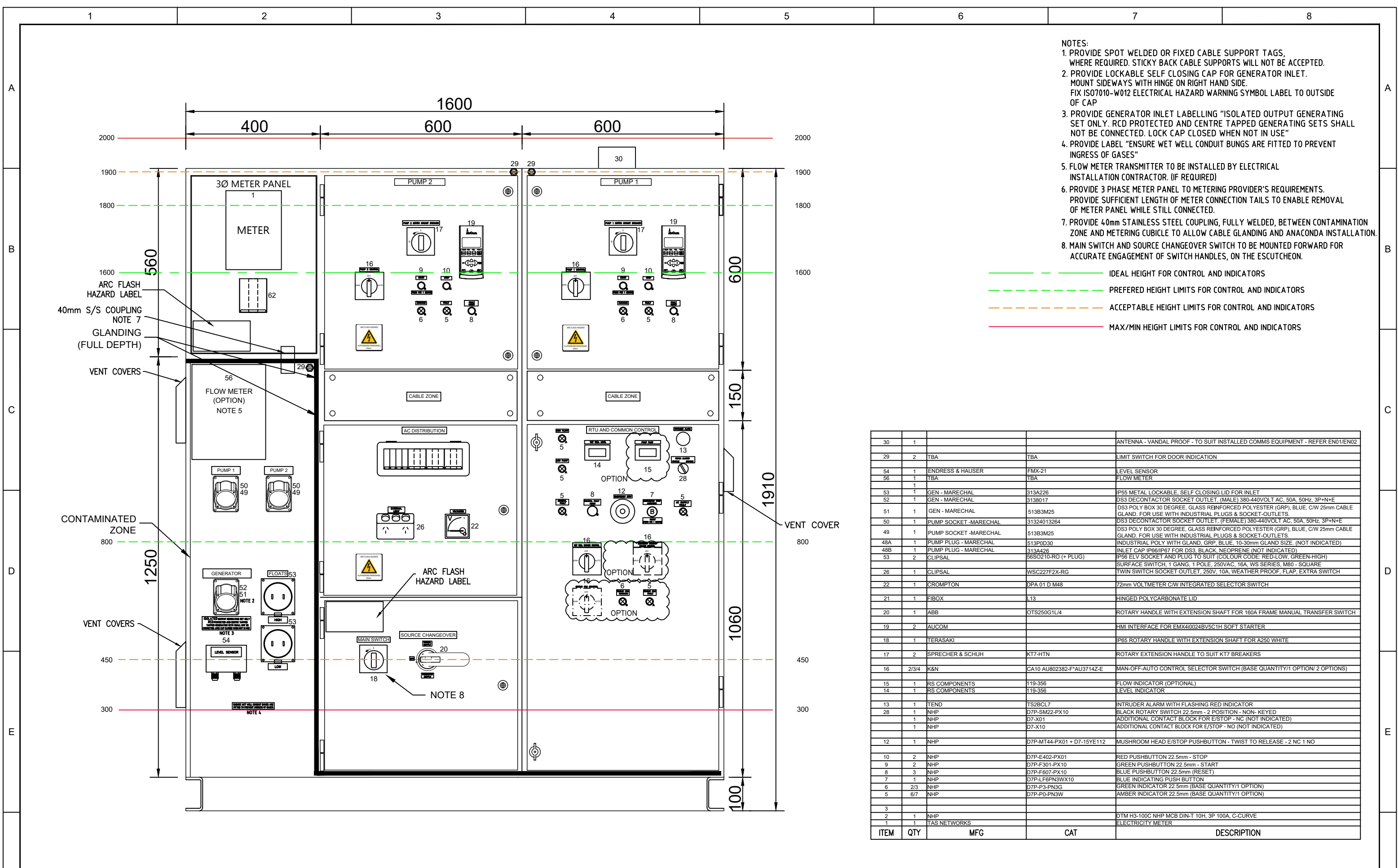
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Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

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"LOCATION ID" - "SITE NAME" S.P.S.			
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SEWAGE PUMP STATION			
SWITCHBOARD GENERAL ARRANGEMENT - EXTERNAL (LH)			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION EL04 K



- NOTES:
1. PROVIDE SPOT WELDED OR FIXED CABLE SUPPORT TAGS, WHERE REQUIRED. STICKY BACK CABLE SUPPORTS WILL NOT BE ACCEPTED.
  2. PROVIDE LOCKABLE SELF CLOSING CAP FOR GENERATOR INLET. MOUNT SIDEWAYS WITH HINGE ON RIGHT HAND SIDE. FIX ISO7010-W012 ELECTRICAL HAZARD WARNING SYMBOL LABEL TO OUTSIDE OF CAP
  3. PROVIDE GENERATOR INLET LABELLING "ISOLATED OUTPUT GENERATING SET ONLY. RCD PROTECTED AND CENTRE TAPPED GENERATING SETS SHALL NOT BE CONNECTED. LOCK CAP CLOSED WHEN NOT IN USE"
  4. PROVIDE LABEL "ENSURE WET WELL CONDUIT BUNGS ARE FITTED TO PREVENT INGRESS OF GASES"
  5. FLOW METER TRANSMITTER TO BE INSTALLED BY ELECTRICAL INSTALLATION CONTRACTOR. (IF REQUIRED)
  6. PROVIDE 3 PHASE METER PANEL TO METERING PROVIDER'S REQUIREMENTS. PROVIDE SUFFICIENT LENGTH OF METER CONNECTION TAILS TO ENABLE REMOVAL OF METER PANEL WHILE STILL CONNECTED.
  7. PROVIDE 40mm STAINLESS STEEL COUPLING, FULLY WELDED, BETWEEN CONTAMINATION ZONE AND METERING CUBICLE TO ALLOW CABLE GLANDING AND ANACONDA INSTALLATION.
  8. MAIN SWITCH AND SOURCE CHANGEOVER SWITCH TO BE MOUNTED FORWARD FOR ACCURATE ENGAGEMENT OF SWITCH HANDLES, ON THE ESCUTCHEON.

- IDEAL HEIGHT FOR CONTROL AND INDICATORS
- PREFERRED HEIGHT LIMITS FOR CONTROL AND INDICATORS
- ACCEPTABLE HEIGHT LIMITS FOR CONTROL AND INDICATORS
- MAX/MIN HEIGHT LIMITS FOR CONTROL AND INDICATORS

ITEM	QTY	MFG	CAT	DESCRIPTION
30	1			ANTENNA - VANDAL PROOF - TO SUIT INSTALLED COMMS EQUIPMENT - REFER EN01/EN02
29	2	TBA	TBA	LIMIT SWITCH FOR DOOR INDICATION
54	1	ENDRESS & HAUSER	FMX-21	LEVEL SENSOR
56	1	TBA	TBA	FLOW METER
53	1	GEN - MARECHAL	313A226	IP55 METAL LOCKABLE, SELF CLOSING LID FOR INLET
52	1	GEN - MARECHAL	3138017	DS3 DECONTACTOR SOCKET OUTLET, (MALE) 380-440VOLT AC, 50A, 50Hz, 3P+N+E
51	1	GEN - MARECHAL	513B3M25	DS3 POLY BOX 30 DEGREE, GLASS REINFORCED POLYESTER (GRP), BLUE, C/W 25mm CABLE GLAND. FOR USE WITH INDUSTRIAL PLUGS & SOCKET-OUTLETS.
50	1	PUMP SOCKET -MARECHAL	31324013264	DS3 DECONTACTOR SOCKET OUTLET, (FEMALE) 380-440VOLT AC, 50A, 50Hz, 3P+N+E
49	1	PUMP SOCKET -MARECHAL	513B3M25	DS3 POLY BOX 30 DEGREE, GLASS REINFORCED POLYESTER (GRP), BLUE, C/W 25mm CABLE GLAND. FOR USE WITH INDUSTRIAL PLUGS & SOCKET-OUTLETS.
48A	1	PUMP PLUG - MARECHAL	513PDD30	INDUSTRIAL POLY WITH GLAND, GRP, BLUE, 10-30mm GLAND SIZE. (NOT INDICATED)
48B	1	PUMP PLUG - MARECHAL	313A426	INLET CAP IP66/IP67 FOR DS3, BLACK, NEOPRENE (NOT INDICATED)
53	2	CLIPSAL	56S0210-RO (+ PLUG)	IP56 ELY SOCKET AND PLUG TO SUIT (COLOUR CODE: RED-LOW, GREEN-HIGH)
26	1	CLIPSAL	WSC227F2X-RG	SURFACE SWITCH, 1 GANG, 1 POLE, 250VAC, 16A, WS SERIES, M80 - SQUARE
22	1	CROMPTON	DPA 01 D M48	TWIN SWITCH SOCKET OUTLET, 250V, 10A, WEATHER PROOF, FLAP, EXTRA SWITCH
21	1	FIBOX	L13	72mm VOLTMETER C/W INTEGRATED SELECTOR SWITCH
20	1	ABB	OTS250G1L4	HINGED POLYCARBONATE LID
19	2	AUCOM		ROTARY HANDLE WITH EXTENSION SHAFT FOR 160A FRAME MANUAL TRANSFER SWITCH
18	1	TERASAKI		HMI INTERFACE FOR EMX40024BV5C1H SOFT STARTER
17	2	SPRECHER & SCHUH	KT7-HTN	IP65 ROTARY HANDLE WITH EXTENSION SHAFT FOR A250 WHITE
16	2/3/4	K&N	CA10 AU802382-F*AU3714Z-E	ROTARY EXTENSION HANDLE TO SUIT KT7 BREAKERS
15	1	RS COMPONENTS	119-356	MAN-OFF-AUTO CONTROL SELECTOR SWITCH (BASE QUANTITY/1 OPTION/ 2 OPTIONS)
14	1	RS COMPONENTS	119-356	FLOW INDICATOR (OPTIONAL)
13	1	TEND	TS2BCL7	LEVEL INDICATOR
28	1	NHP	D7P-SM22-PX10	INTRUDER ALARM WITH FLASHING RED INDICATOR
7	1	NHP	D7-X01	BLACK ROTARY SWITCH 22.5mm - 2 POSITION - NON- KEYED
6	2/3	NHP	D7P-P3-PN3G	ADDITIONAL CONTACT BLOCK FOR E/STOP - NC (NOT INDICATED)
5	6/7	NHP	D7P-P0-PN3W	ADDITIONAL CONTACT BLOCK FOR E/STOP - NO (NOT INDICATED)
3				MUSHROOM HEAD E/STOP PUSHBUTTON - TWIST TO RELEASE - 2 NC 1 NO
10	2	NHP	D7P-E402-PX01	RED PUSHBUTTON 22.5mm - STOP
9	2	NHP	D7P-F301-PX10	GREEN PUSHBUTTON 22.5mm - START
8	3	NHP	D7P-F607-PX10	BLUE PUSHBUTTON 22.5mm (RESET)
7	1	NHP	D7P-LF6PN3WX10	BLUE INDICATING PUSH BUTTON
6	2/3	NHP	D7P-P3-PN3G	GREEN INDICATOR 22.5mm (BASE QUANTITY/1 OPTION)
5	6/7	NHP	D7P-P0-PN3W	AMBER INDICATOR 22.5mm (BASE QUANTITY/1 OPTION)
3				
2	1	NHP	DTM H3-100C NHP MCB DIN-T 10H, 3P 100A, C-CURVE	
1	1	TAS NETWORKS		ELECTRICITY METER

Revision Notes

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Rev.	K	Date	17/01/24	Approved	V. Vijayalayan
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Scale	SCALE
Datum	A3
Sheet Size	A3

PROJECT DETAILS	DESIGN	DATE
Project No	J21247	19/05/2022
Vault Folder	Designed	PLJ
Discipline	E	Verified
HPRM Folder		CMS

References

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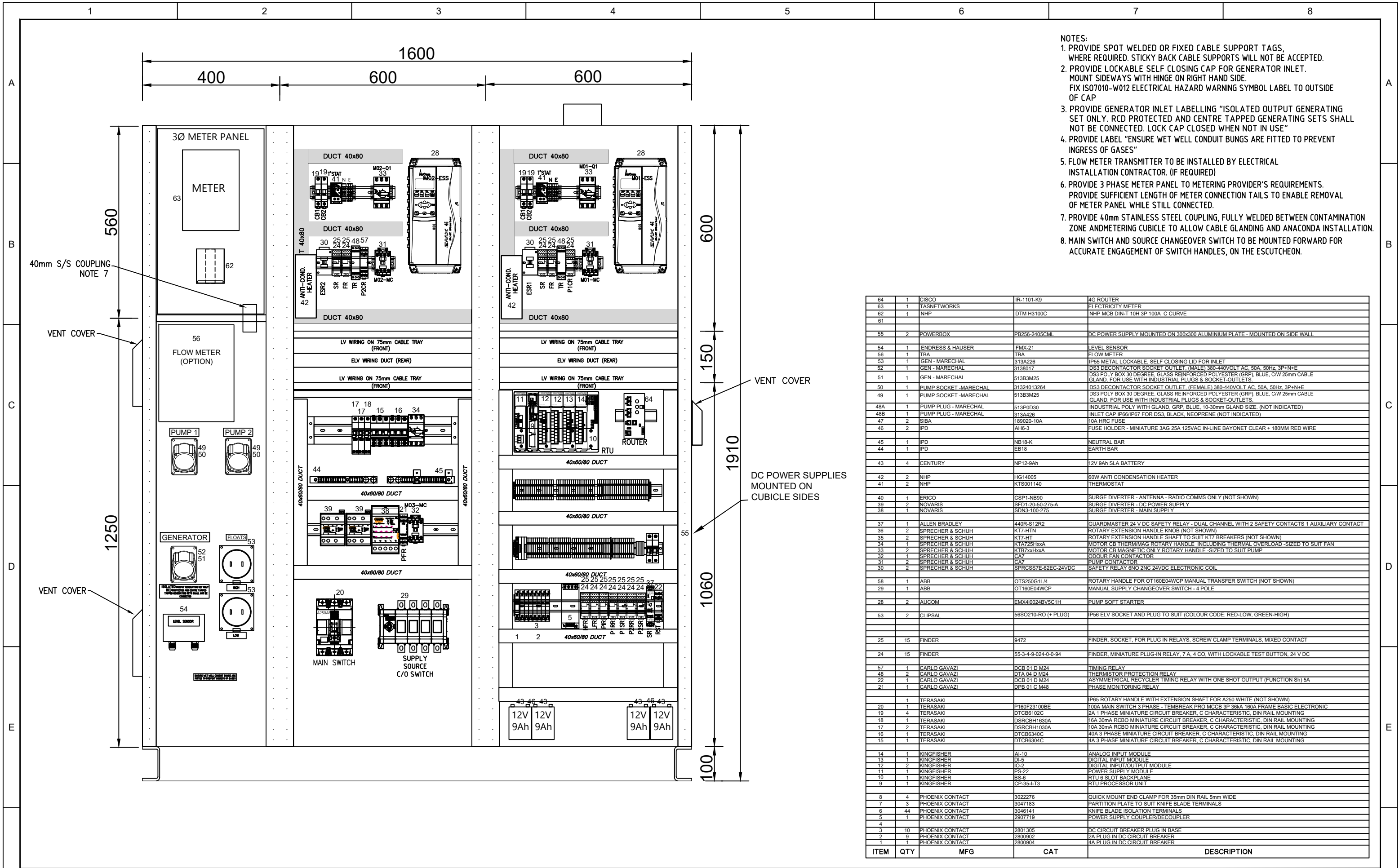
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**TasWater**

"LOCATION ID" - "SITE NAME" S.P.S.  
 "LOCATION ADDRESS"  
 SEWAGE PUMP STATION  
 SWITCHBOARD GENERAL ARRANGEMENT - CONTROLS (LH)

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number: **TWS-E-0003**  
 Revision: **EL05**  
 Author: **K**



- NOTES:
1. PROVIDE SPOT WELDED OR FIXED CABLE SUPPORT TAGS, WHERE REQUIRED. STICKY BACK CABLE SUPPORTS WILL NOT BE ACCEPTED.
  2. PROVIDE LOCKABLE SELF CLOSING CAP FOR GENERATOR INLET. MOUNT SIDEWAYS WITH HINGE ON RIGHT HAND SIDE. FIX ISO7010-W012 ELECTRICAL HAZARD WARNING SYMBOL LABEL TO OUTSIDE OF CAP
  3. PROVIDE GENERATOR INLET LABELLING "ISOLATED OUTPUT GENERATING SET ONLY. RCD PROTECTED AND CENTRE TAPPED GENERATING SETS SHALL NOT BE CONNECTED. LOCK CAP CLOSED WHEN NOT IN USE"
  4. PROVIDE LABEL "ENSURE WET WELL CONDUIT BUNGS ARE FITTED TO PREVENT INGRESS OF GASES"
  5. FLOW METER TRANSMITTER TO BE INSTALLED BY ELECTRICAL INSTALLATION CONTRACTOR. (IF REQUIRED)
  6. PROVIDE 3 PHASE METER PANEL TO METERING PROVIDER'S REQUIREMENTS. PROVIDE SUFFICIENT LENGTH OF METER CONNECTION TAILS TO ENABLE REMOVAL OF METER PANEL WHILE STILL CONNECTED.
  7. PROVIDE 40mm STAINLESS STEEL COUPLING, FULLY WELDED BETWEEN CONTAMINATION ZONE AND METERING CUBICLE TO ALLOW CABLE GLANDING AND ANACONDA INSTALLATION.
  8. MAIN SWITCH AND SOURCE CHANGEOVER SWITCH TO BE MOUNTED FORWARD FOR ACCURATE ENGAGEMENT OF SWITCH HANDLES, ON THE ESCUTCHEON.

ITEM	QTY	MFG	CAT	DESCRIPTION
64	1	CISCO	IR-1101-K9	4G ROUTER
63	1	TASNETWORKS		ELECTRICITY METER
62	1	NHP	DTM H3100C	NHP MCB DIN-T 10H 3P 100A C CURVE
61				
55	2	POWERBOX	PB256-2405CML	DC POWER SUPPLY MOUNTED ON 300x300 ALUMINIUM PLATE - MOUNTED ON SIDE WALL
54	1	ENDRESS & HAUSER	FMX-21	LEVEL SENSOR
56	1	TBA		FLOW METER
53	1	GEN - MARECHAL	313A226	IP55 METAL LOCKABLE, SELF CLOSING LID FOR INLET
52	1	GEN - MARECHAL	3138017	DS3 DECONTACTOR SOCKET OUTLET (FEMALE) 380-440VOLT AC, 50A, 50Hz, 3P+N+E
51	1	GEN - MARECHAL	513B3M25	DS3 POLY BOX 30 DEGREE, GLASS REINFORCED POLYESTER (GRP), BLUE, C/W 25mm CABLE GLAND. FOR USE WITH INDUSTRIAL PLUGS & SOCKET-OUTLETS.
50	1	PUMP SOCKET -MARECHAL	31324013264	DS3 DECONTACTOR SOCKET OUTLET (FEMALE) 380-440VOLT AC, 50A, 50Hz, 3P+N+E
49	1	PUMP SOCKET -MARECHAL	513B3M25	DS3 POLY BOX 30 DEGREE, GLASS REINFORCED POLYESTER (GRP), BLUE, C/W 25mm CABLE GLAND. FOR USE WITH INDUSTRIAL PLUGS & SOCKET-OUTLETS.
48A	1	PUMP PLUG - MARECHAL	513P0D30	INDUSTRIAL POLY WITH GLAND, GRP, BLUE, 10-30mm GLAND SIZE. (NOT INDICATED)
48B	1	PUMP PLUG - MARECHAL	313A426	INLET CAP IP66/IP67 FOR DS3, BLACK, NEOPRENE (NOT INDICATED)
47	2	SIBA	189020-10A	10A HRC FUSE
46	2	IPD	AH6-3	FUSE HOLDER - MINIATURE 3AG 2SA 125VAC IN-LINE BAYONET CLEAR + 180MM RED WIRE
45	1	IPD	NB18-K	NEUTRAL BAR
44	1	IPD	EB18	EARTH BAR
43	4	CENTURY	NP12-9Ah	12V 9Ah SLA BATTERY
42	2	NHP	HG14005	60W ANTI CONDENSATION HEATER
41	2	NHP	KTS001140	THERMOSTAT
40	1	ERICO	CSP1-NB90	SURGE DIVERTER - ANTENNA - RADIO COMMS ONLY (NOT SHOWN)
39	2	NOVARIS	SFD1-20-50-275-A	SURGE DIVERTER - DC POWER SUPPLY
38	1	NOVARIS	SDN3-100-275	SURGE DIVERTER - MAIN SUPPLY
37	1	ALLEN BRADLEY	440R-S12R2	GUARDMASTER 24 V DC SAFETY RELAY - DUAL CHANNEL WITH 2 SAFETY CONTACTS 1 AUXILIARY CONTACT
36	2	SPRECHER & SCHUJH	KT7-HTN	ROTARY EXTENSION HANDLE (NOT SHOWN)
35	2	SPRECHER & SCHUJH	KT7-HT	ROTARY EXTENSION HANDLE SHAFT TO SUIT KIT7 BREAKERS (NOT SHOWN)
34	1	SPRECHER & SCHUJH	KT7Z5HxxA	MOTOR OR THERMISTOR ROTARY HANDLE INCLUDING THERMAL OVERLOAD - SIZED TO SUIT FAN
33	2	SPRECHER & SCHUJH	KT7ZxxHxxA	MOTOR OR MAGNETIC ONLY ROTARY HANDLE - SIZED TO SUIT PUMP
32	1	SPRECHER & SCHUJH	CA7	ODOUR FAN CONTACTOR
31	2	SPRECHER & SCHUJH	CA7	PUMP CONTACTOR
30	2	SPRECHER & SCHUJH	SPRCS57E-62EC-24VDC	SAFETY RELAY 6NO 2NC 24VDC ELECTRONIC COIL
58	1	ABB	OTS250G1L4	ROTARY HANDLE FOR OT160E04WCP MANUAL TRANSFER SWITCH (NOT SHOWN)
29	1	ABB	OT160E04WCP	MANUAL SUPPLY CHANGEOVER SWITCH - 4 POLE
28	2	AJCOM	EMX40024BV5C1H	PUMP SOFT STARTER
53	2	CLIPSAL	56SO210-RO (+ PLUG)	IP56 ELV SOCKET AND PLUG TO SUIT (COLOUR CODE: RED-LOW, GREEN-HIGH)
25	15	FINDER	9472	FINDER, SOCKET, FOR PLUG IN RELAYS, SCREW CLAMP TERMINALS, MIXED CONTACT
24	15	FINDER	55-3-4-9-024-0-0-94	FINDER, MINIATURE PLUG-IN RELAY, 7 A, 4 CO, WITH LOCKABLE TEST BUTTON, 24 V DC
57	1	CARLO GAVAZI	DCB 01 D M24	TIMING RELAY
48	2	CARLO GAVAZI	DTA 04 D M24	THERMISTOR PROTECTION RELAY
22	1	CARLO GAVAZI	DCB 01 D M24	ASYMMETRICAL RECycler TIMING RELAY WITH ONE SHOT OUTPUT (FUNCTION Sh) 5A
21	1	CARLO GAVAZI	DPB 01 C M48	PHASE MONITORING RELAY
1	1	TERASAKI		IP65 ROTARY HANDLE WITH EXTENSION SHAFT FOR A250 WHITE (NOT SHOWN)
20	1	TERASAKI	P160F23100BE	100A MAIN SWITCH 3 PHASE - TEMBREAK PRO MCCB 3P 36kA 160A FRAME BASIC ELECTRONIC
19	4	TERASAKI	DTCB8102C	2A 1 PHASE MINIATURE CIRCUIT BREAKER, C CHARACTERISTIC, DIN RAIL MOUNTING
18	1	TERASAKI	DSRCBH1630A	16A 30mA RCBO MINIATURE CIRCUIT BREAKER, C CHARACTERISTIC, DIN RAIL MOUNTING
17	2	TERASAKI	DSRCBH1030A	10A 30mA RCBO MINIATURE CIRCUIT BREAKER, C CHARACTERISTIC, DIN RAIL MOUNTING
16	1	TERASAKI	DTCB8340C	40A 3 PHASE MINIATURE CIRCUIT BREAKER, C CHARACTERISTIC, DIN RAIL MOUNTING
15	1	TERASAKI	DTCB834C	4A 3 PHASE MINIATURE CIRCUIT BREAKER, C CHARACTERISTIC, DIN RAIL MOUNTING
14	1	KINGFISHER	AI-10	ANALOG INPUT MODULE
13	1	KINGFISHER	DI-5	DIGITAL INPUT MODULE
12	2	KINGFISHER	IO-2	DIGITAL INPUT/OUTPUT MODULE
11	1	KINGFISHER	PS-22	POWER SUPPLY MODULE
10	1	KINGFISHER	BS-6	RTU 6 SLOT BACKPLANE
9	1	KINGFISHER	CP-35-LT3	RTU PROCESSOR UNIT
8	4	PHOENIX CONTACT	3022276	QUICK MOUNT END CLAMP FOR 35mm DIN RAIL 5mm WIDE
7	3	PHOENIX CONTACT	3047183	PARTITION PLATE TO SUIT KNIFE BLADE TERMINALS
6	44	PHOENIX CONTACT	3046141	KNIFE BLADE ISOLATION TERMINALS
5	1	PHOENIX CONTACT	2807719	POWER SUPPLY COUPLER/DECOUPLER
4				
3	10	PHOENIX CONTACT	2801305	DC CIRCUIT BREAKER PLUG IN BASE
2	9	PHOENIX CONTACT	2800902	2A PLUG IN DC CIRCUIT BREAKER
1	1	PHOENIX CONTACT	2800904	4A PLUG IN DC CIRCUIT BREAKER

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PROJECT DETAILS	DESIGN	DATE
Project No	J21247	19/05/2022
Vault Folder	Designed	PLJ
Discipline	E	Verified
HPRM Folder		CMS

References

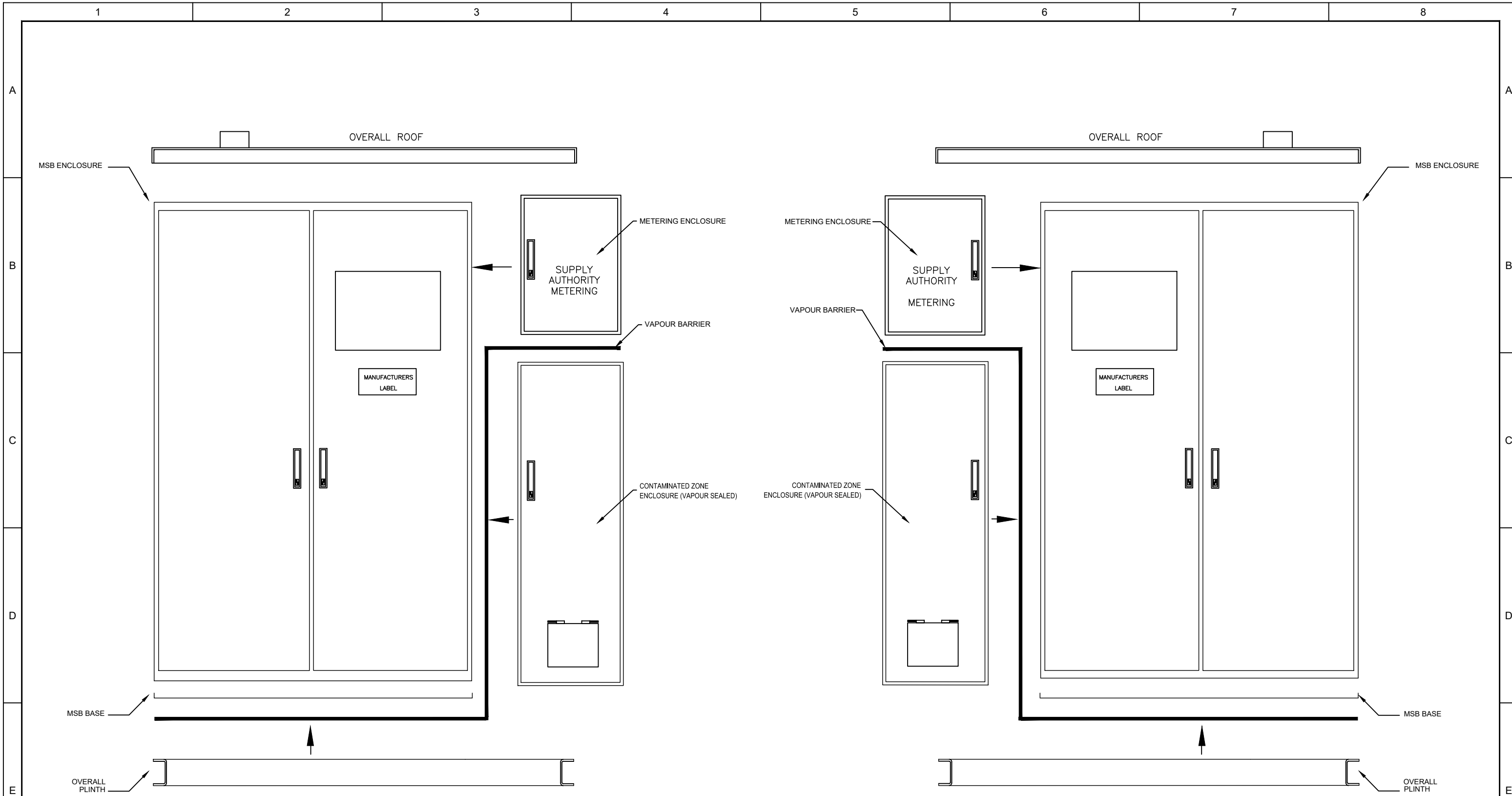
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 "LOCATION ADDRESS"  
 SEWAGE PUMP STATION  
 SWITCHBOARD GENERAL ARRANGEMENT - EQUIPMENT (LH)

TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD  
 ABN: 47 162220 653

Sheet Number: TWS-E-0003  
 Revision: EL06 K



SWITCHBOARD ENCLOSURE COMPONENTS (RH)  
(EXTERNAL VIEW)

SWITCHBOARD ENCLOSURE COMPONENTS (LH)  
(EXTERNAL VIEW)

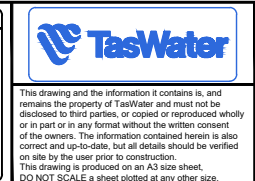
NOTES:  
 1. VAPOUR BARRIER SHALL BE IMPLEMENTED BY EITHER:  
 a). FABRICATING 3 SEPARATE ENCLOSURES (MSB, METERING AND CONTAMINATED ZONE) AND WELDING OR BOLTING TOGETHER, OR  
 b). CONSTRUCTING WITH AN APPROVED VAPOUR SEALING GASKETING SYSTEM ON ALL SIDES ADJACENT TO THE VAPOUR BARRIER.  
 OTHER VAPOUR SEALING METHODS (E.G. FLEXIBLE SEALANTS) WILL NOT BE ACCEPTED.  
 2. ALL CABLE PENETRATIONS THROUGH THE VAPOUR BARRIER SHALL BE NYLON GLANDS WITH IP68 RUBBER SEALS. (ie. STANDARD CABLE GLANDS)

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Project No	J21247	Drawn	VAD		19/05/2022
Vault Folder		Designed	PLJ		19/05/2022
Discipline	E	Verified	CMS		19/05/2022
HPRM Folder					

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SWITCHBOARD GA - ENCLOSURE COMPONENTS (LH/RH)			
TASMANIAN WATER & SEWERAGE CORPORATION PTY LTD ABN: 47 162220 653		Sheet Number <b>TWS-E-0003</b>	REVISION EL07 K