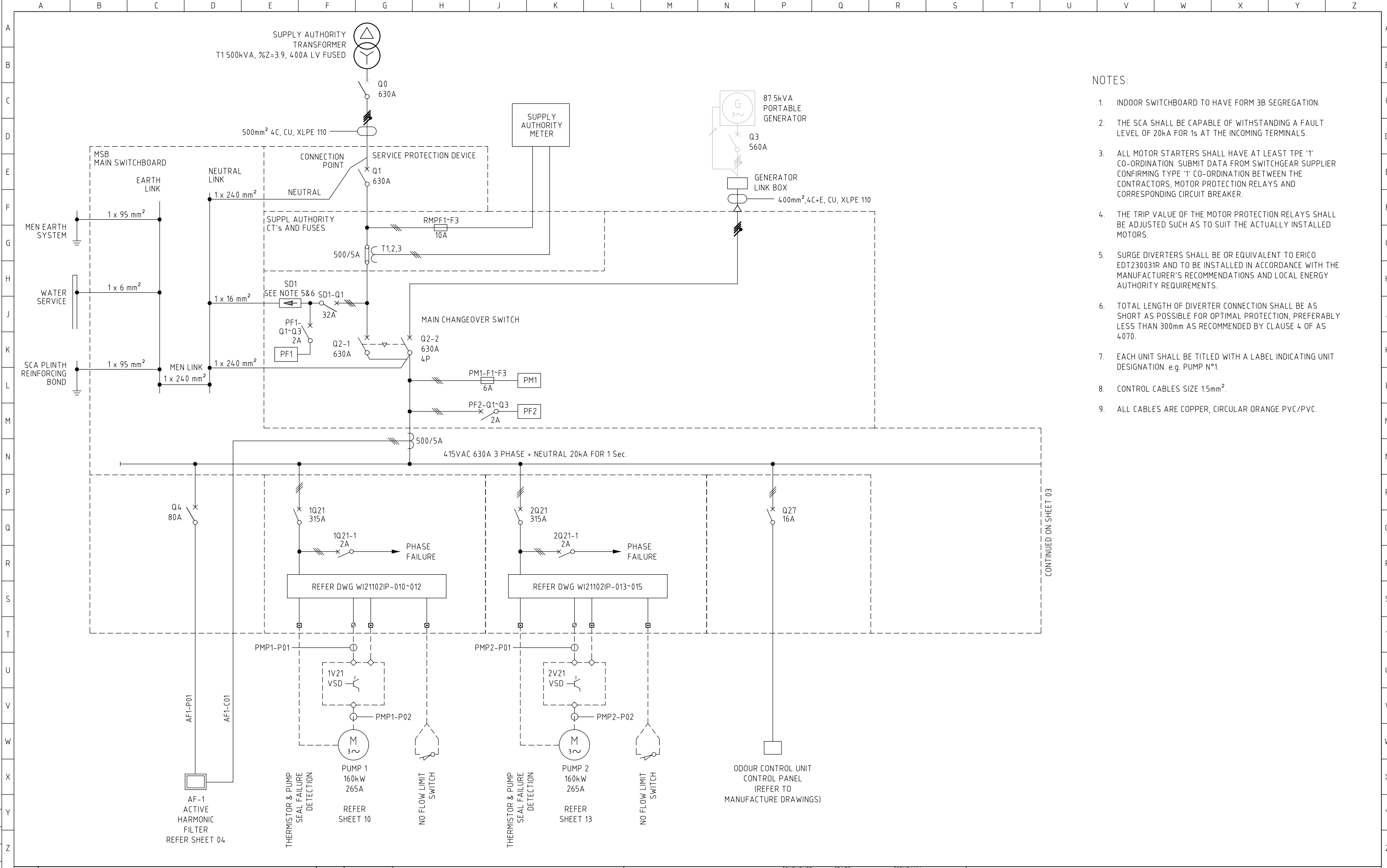


	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z
A	SHOALHAVEN CITY COUNCIL LARGE SEWER PUMP STATION SCA PANEL (TYPICAL)																							
B																								
C																								
D																								

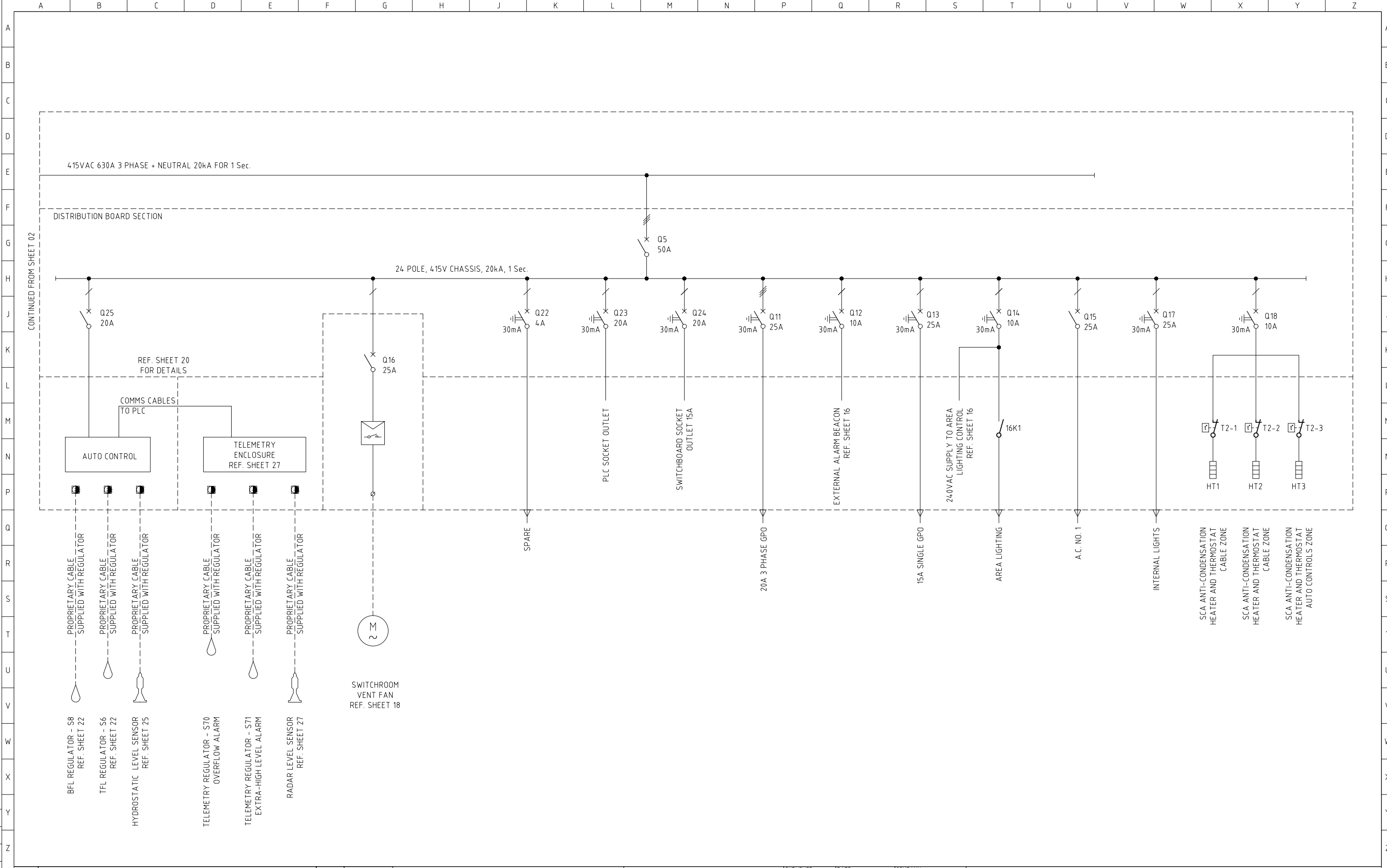
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SHEET No.	DRAWING No.	DRAWING TITLE	REV No.	REV DATE	SHEET No.	DRAWING No.	DRAWING TITLE	REV No.	REV DATE	SHEET No.	DRAWING No.	DRAWING TITLE	REV No.	REV DATE
000	50	DRAWING INDEX	0	01/03/24	033	72	MAIN SWITCHBOARD MANUAL TRANSFER SWITCH	0	01/03/24	067				
001					034	73	MAIN SWITCHBOARD AHF PROTECTION DEVICE	0	01/03/24	068				
002	51	SINGLE LINE DIAGRAM SHEET 1 OF 2	0	01/03/24	035	74	MAIN SWITCHBOARD MONITORING	0	01/03/24	069				
003	52	SINGLE LINE DIAGRAM SHEET 2 OF 2	0	01/03/24	036	75	MAIN SWITCHBOARD DISTRIBUTION	0	01/03/24	TERMINATION DIAGRAMS				
004	53	INCOMING POWER SCHEMATIC DIAGRAM	0	01/03/24	037	76	MAIN SWITCHBOARD PUMP 1	0	01/03/24	070	87	PUMP 1 TERMINATION DIAGRAM	0	01/03/24
005	54	24VDC POWER SUPPLIES SCHEMATIC DIAGRAM	0	01/03/24	038	77	MAIN SWITCHBOARD PUMP 2	0	01/03/24	071	88	PUMP 2 TERMINATION DIAGRAM	0	01/03/24
006					039	78	MAIN SWITCHBOARD PLC COMPARTMENT	0	01/03/24	072				
007					040	79	MAIN SWITCHBOARD VENT FAN CONTROL	0	01/03/24	073				
008					041	80	MAIN SWITCHBOARD ODOUR CONTROL	0	01/03/24	074				
009					042					075				
MOTOR STARTER CONTROL CIRCUIT DIAGRAM					043					076				
010	55	PUMP 1 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 1 OF 3	0	01/03/24	044					077				
011	56	PUMP 1 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 2 OF 3	0	01/03/24	045					078				
012	57	PUMP 1 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 3 OF 3	0	01/03/24	046	81	METER PANEL GENERAL ARRANGEMENT DRAWING	0	01/03/24	079				
013	58	PUMP 2 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 1 OF 3	0	01/03/24	047	82	GENERATOR CONNECTION PANEL GENERAL ARRANGEMENT DRAWING	0	01/03/24	CIVIL DETAILS				
014	59	PUMP 2 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 2 OF 3	0	01/03/24	048	83	ACTIVE HARMONIC FILTER GENERAL ARRANGEMENT DRAWING	0	01/03/24	080	89	CONDUIT ROUTING LAYOUT SHEET 1 OF 2	0	01/03/24
015	60	PUMP 2 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 3 OF 3	0	01/03/24	049	84	VARIABLE SPEED DRIVE GENERAL ARRANGEMENT DRAWING	0	01/03/24	081	90	CONDUIT ROUTING LAYOUT SHEET 2 OF 2	0	01/03/24
016	61	COMMON CONTROL SCHEMATIC DIAGRAM	0	01/03/24	CABLE SCHEDULE					082				
017					050	85	CABLE SCHEDULE	0	01/03/24	083	91	EQUIPOTENTIAL BONDING LAYOUT	0	01/03/24
018	62	VENT FAN CONTROL SCHEMATIC DIAGRAM	0	01/03/24	051					084				
019					052					085	92	LIGHTING AND SMALL POWER LAYOUT	0	01/03/24
PLC RACK LAYOUT & I/O SCHEMATICS					053					086	93	LIGHT POLE DETAIL	0	01/03/24
020	63	PLC LAYOUT	0	01/03/24	054					087				
021					055					088				
022	64	DIGITAL INPUT MODULE	0	01/03/24	056					089				
023	65	DIGITAL INPUT MODULE	0	01/03/24	057									
024	66	DIGITAL OUTPUT MODULE	0	01/03/24	058					090				
025	67	ANALOG INPUT AND OUTPUT MODULE	0	01/03/24	059					091				
026					LOOP DIAGRAMS					092				
027	68	TELEMETRY INTERFACE DETAILS	0	01/03/24	060	86	INSTRUMENTATION LOOP DIAGRAM	0	01/03/24	093				
028					061					094				
029					062					095				
GENERAL ARRANGEMENTS					063					096				
030	69	MAIN SWITCHBOARD GENERAL ARRANGEMENT DRAWING	0	01/03/24	064					097				
031	70	MAIN SWITCHBOARD SERVICE PROTECTION DEVICE	0	01/03/24	065					098				
032	71	MAIN SWITCHBOARD ENERGY AUTHORITY CURRENT TRANSFORMER	0	01/03/24	066					099				

				CONSULTANT DETAILS:			 City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au			SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) COVER SHEET				
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										DRAWN:	DATE:	COMPANY:					
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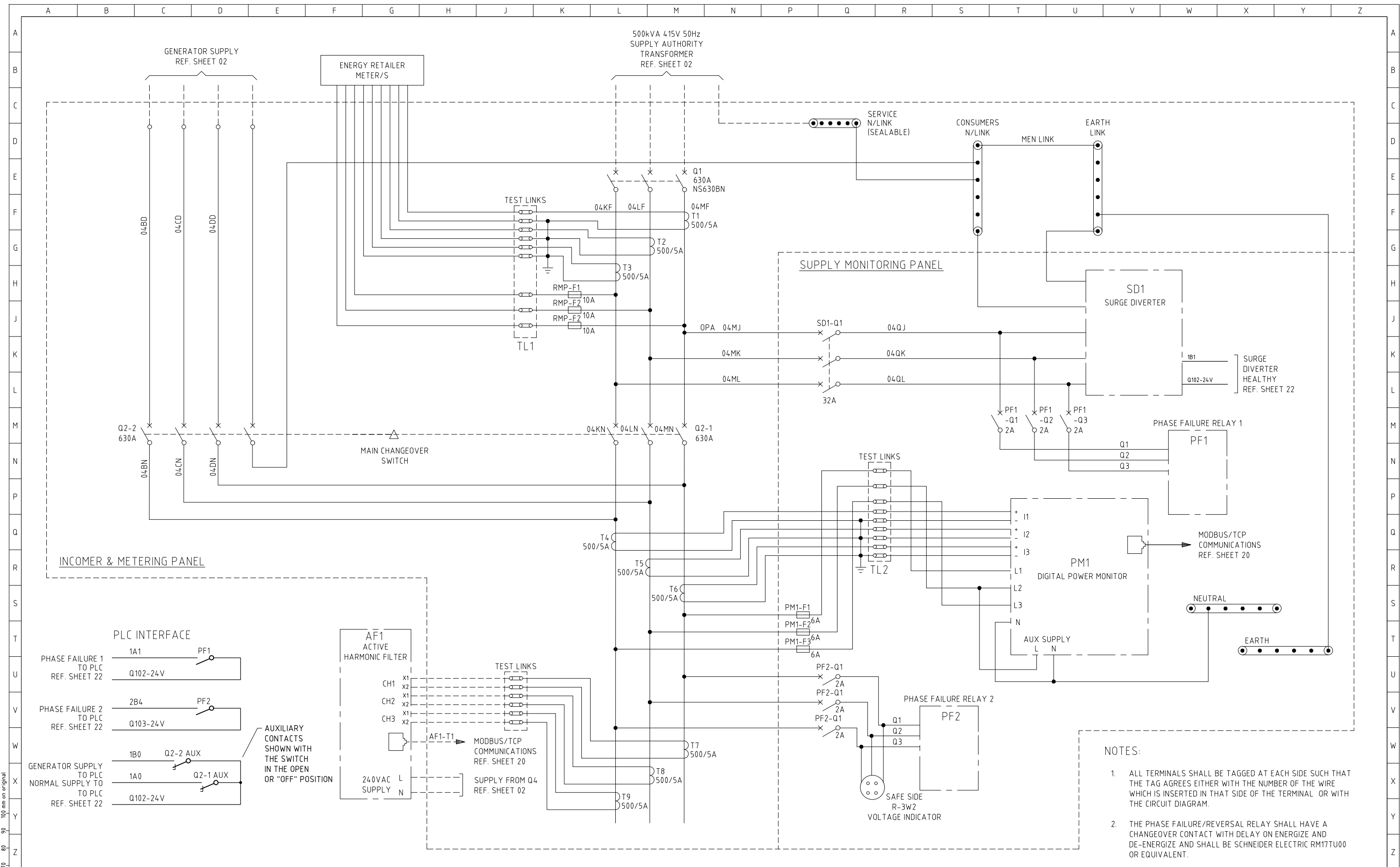


- NOTES:
- INDOOR SWITCHBOARD TO HAVE FORM 3B SEGREGATION.
 - THE SCA SHALL BE CAPABLE OF WITHSTANDING A FAULT LEVEL OF 20kA FOR 1s AT THE INCOMING TERMINALS.
 - ALL MOTOR STARTERS SHALL HAVE AT LEAST TPE '1' CO-ORDINATION. SUBMIT DATA FROM SWITCHGEAR SUPPLIER CONFIRMING TYPE '1' CO-ORDINATION BETWEEN THE CONTRACTORS, MOTOR PROTECTION RELAYS AND CORRESPONDING CIRCUIT BREAKER.
 - THE TRIP VALUE OF THE MOTOR PROTECTION RELAYS SHALL BE ADJUSTED SUCH AS TO SUIT THE ACTUALLY INSTALLED MOTORS.
 - SURGE DIVERTERS SHALL BE OR EQUIVALENT TO ERICO EDT230031R AND TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND LOCAL ENERGY AUTHORITY REQUIREMENTS.
 - TOTAL LENGTH OF DIVERTER CONNECTION SHALL BE AS SHORT AS POSSIBLE FOR OPTIMAL PROTECTION, PREFERABLY LESS THAN 300mm AS RECOMMENDED BY CLAUSE 4 OF AS 4070.
 - EACH UNIT SHALL BE TITLED WITH A LABEL INDICATING UNIT DESIGNATION. e.g. PUMP N°1.
 - CONTROL CABLES SIZE 1.5mm².
 - ALL CABLES ARE COPPER, CIRCULAR ORANGE PVC/PVC.

				CONSULTANT DETAILS:			Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) SINGLE LINE DIAGRAM SHEET 1 OF 2				
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No.	REVISION DETAILS	DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E	23557	51	002	0

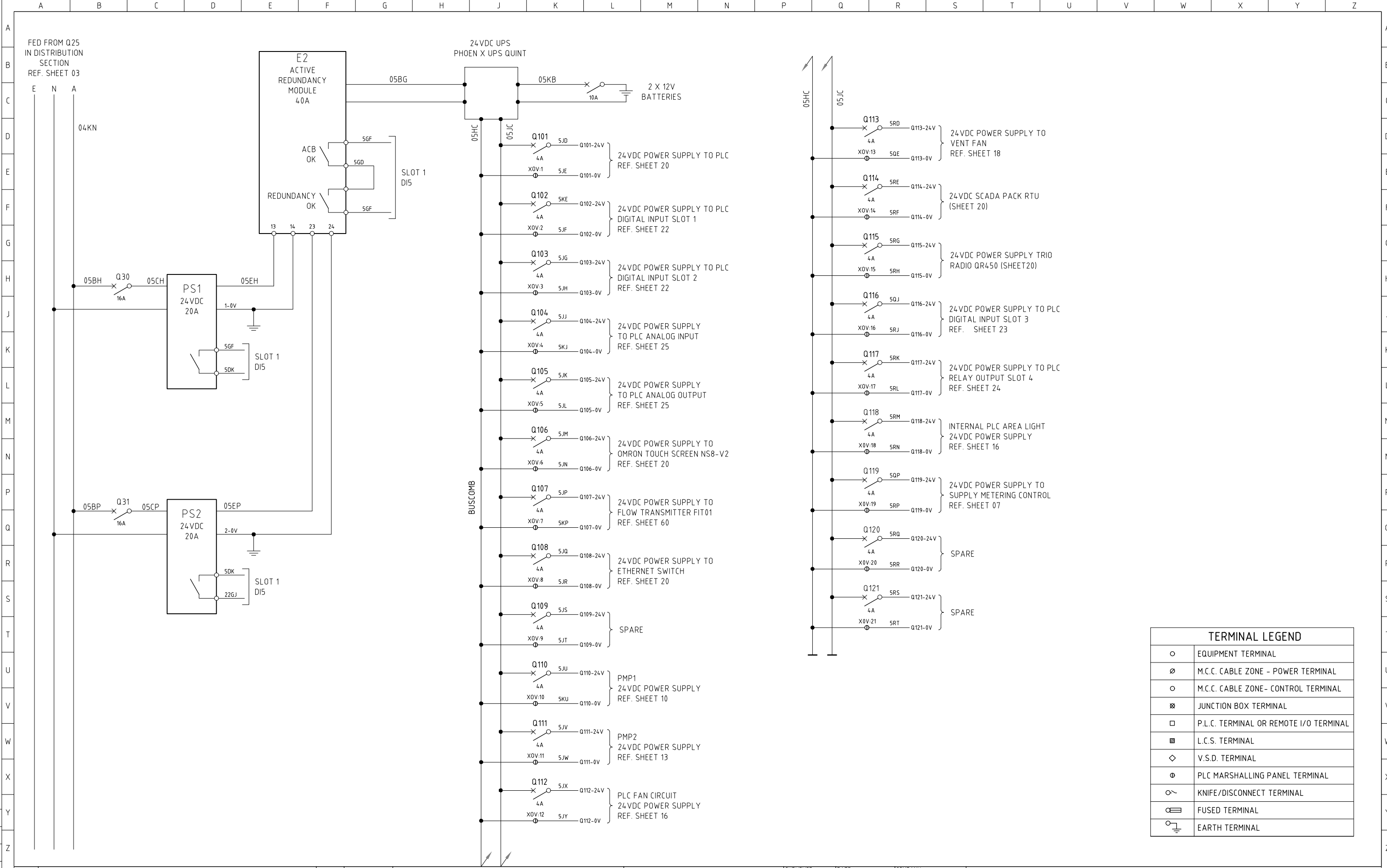


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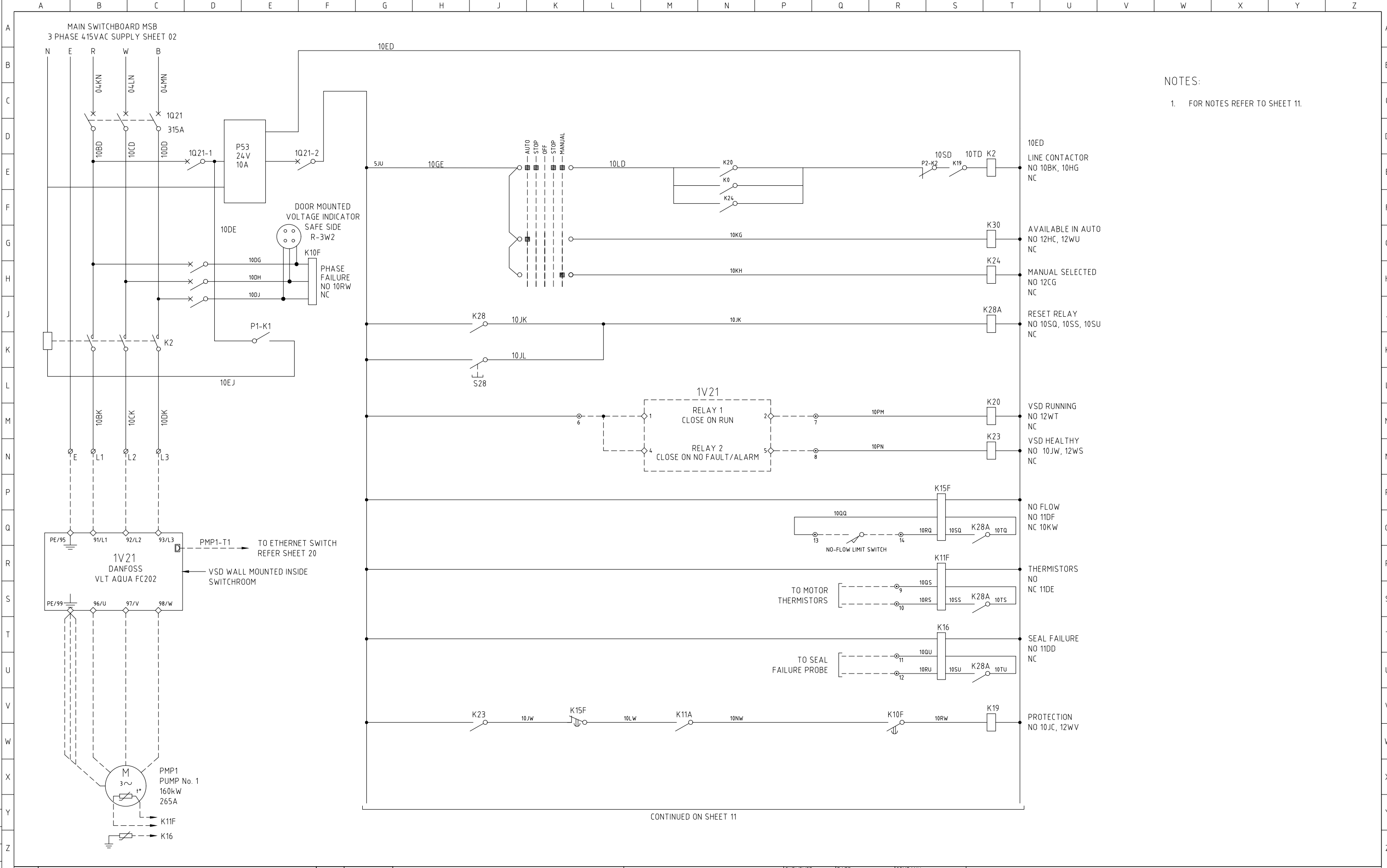
- NOTES:
1. ALL TERMINALS SHALL BE TAGGED AT EACH SIDE SUCH THAT THE TAG AGREES EITHER WITH THE NUMBER OF THE WIRE WHICH IS INSERTED IN THAT SIDE OF THE TERMINAL OR WITH THE CIRCUIT DIAGRAM.
 2. THE PHASE FAILURE/REVERSAL RELAY SHALL HAVE A CHANGEOVER CONTACT WITH DELAY ON ENERGIZE AND DE-ENERGIZE AND SHALL BE SCHNEIDER ELECTRIC RM17TU00 OR EQUIVALENT.

				CONSULTANT DETAILS:				SURVEYED:			DATE:			COMPANY:			TITLE:			
								DESIGNED:			DATE:			COMPANY:			LARGE SEWER PUMP STATION			
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0 ISSUED FOR REVIEW				GJ 01/03/24				TRIM REFERENCE No.			INDEX No.			DRAWING No.			SHEET			
No. REVISION DETAILS				DWN DATE				47662E			23557			53			004			
																	0			



Terminal Legend	
	EQUIPMENT TERMINAL
	M.C.C. CABLE ZONE - POWER TERMINAL
	M.C.C. CABLE ZONE- CONTROL TERMINAL
	JUNCTION BOX TERMINAL
	P.L.C. TERMINAL OR REMOTE I/O TERMINAL
	L.C.S. TERMINAL
	V.S.D. TERMINAL
	PLC MARSHALLING PANEL TERMINAL
	KNIFE/DISCONNECT TERMINAL
	FUSED TERMINAL
	EARTH TERMINAL

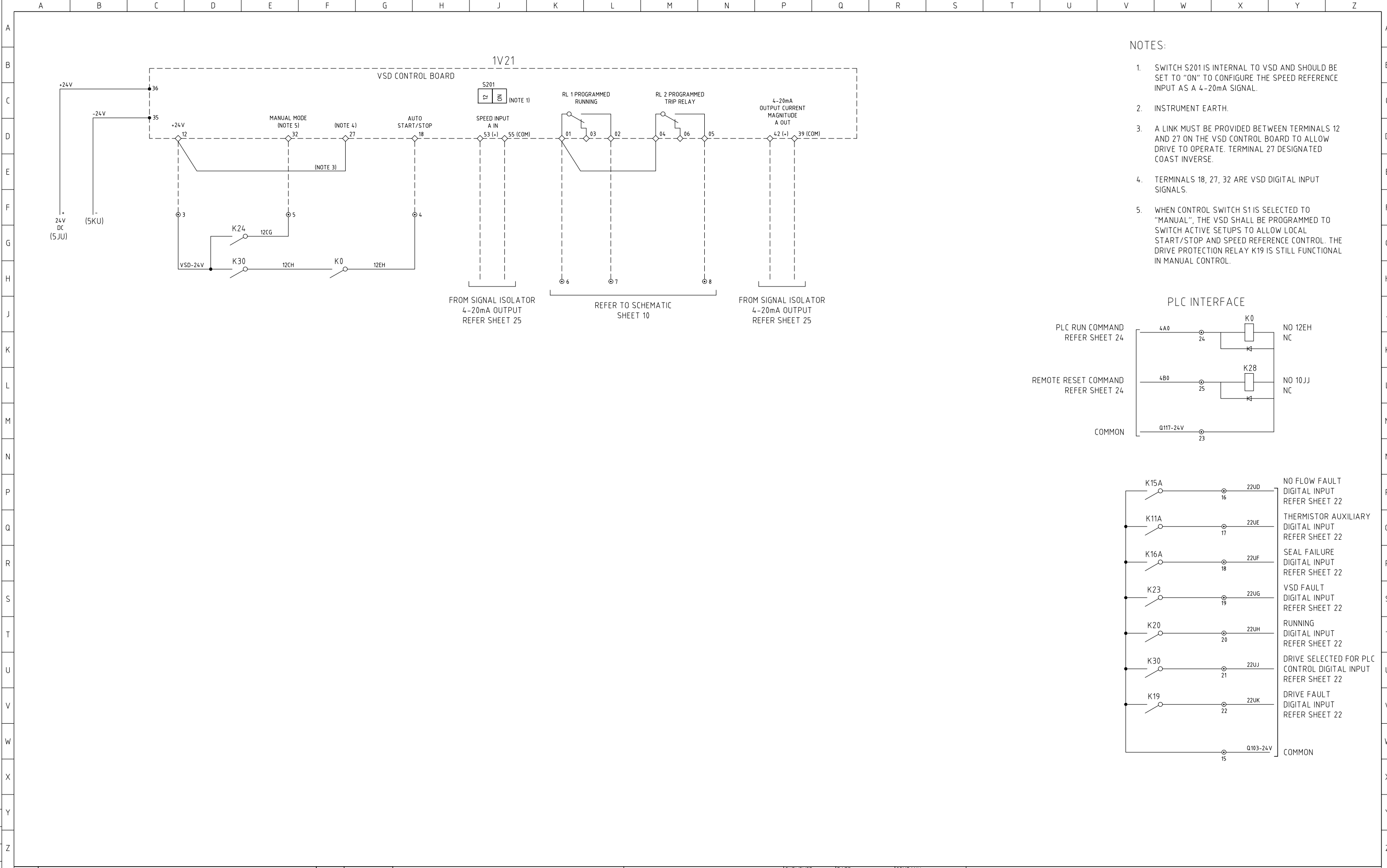
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								CHECKED:			DATE:			COMPANY:			24VDC POWER SUPPLIES		
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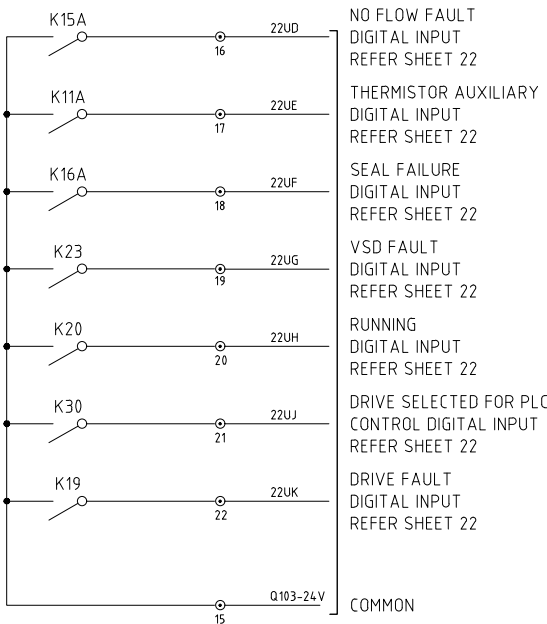
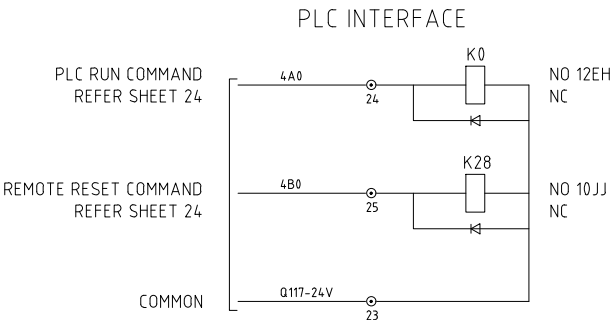
NOTES:
1. FOR NOTES REFER TO SHEET 11.

CONTINUED ON SHEET 11

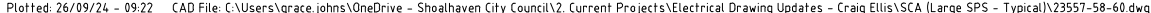
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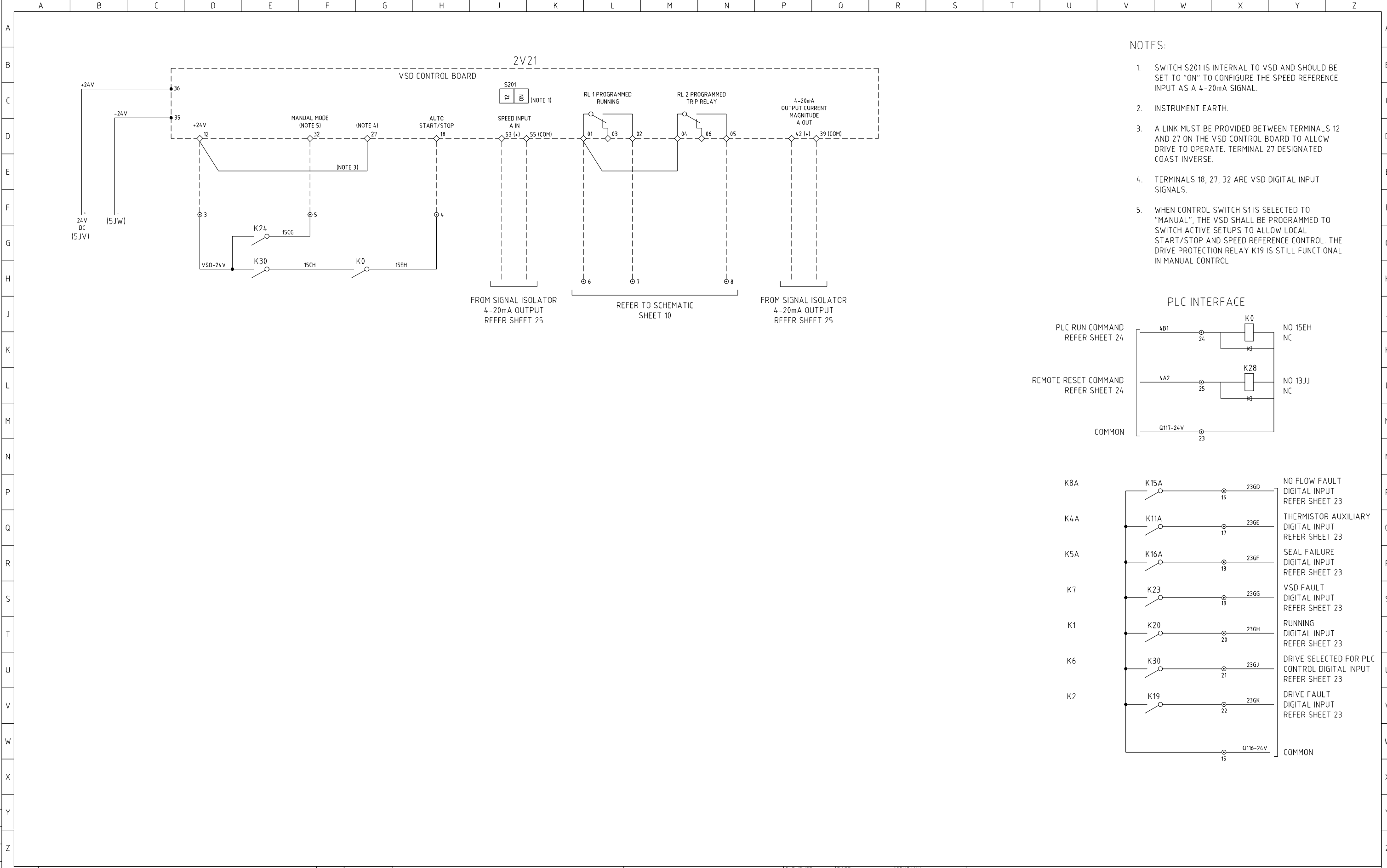


- NOTES:
- SWITCH S201 IS INTERNAL TO VSD AND SHOULD BE SET TO "ON" TO CONFIGURE THE SPEED REFERENCE INPUT AS A 4-20mA SIGNAL.
 - INSTRUMENT EARTH.
 - A LINK MUST BE PROVIDED BETWEEN TERMINALS 12 AND 27 ON THE VSD CONTROL BOARD TO ALLOW DRIVE TO OPERATE. TERMINAL 27 DESIGNATED COAST INVERSE.
 - TERMINALS 18, 27, 32 ARE VSD DIGITAL INPUT SIGNALS.
 - WHEN CONTROL SWITCH S1 IS SELECTED TO "MANUAL", THE VSD SHALL BE PROGRAMMED TO SWITCH ACTIVE SETUPS TO ALLOW LOCAL START/STOP AND SPEED REFERENCE CONTROL. THE DRIVE PROTECTION RELAY K19 IS STILL FUNCTIONAL IN MANUAL CONTROL.

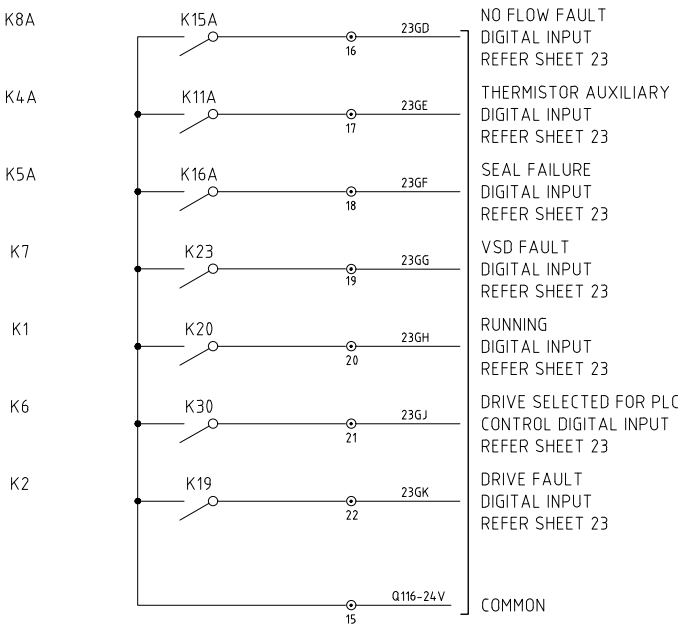
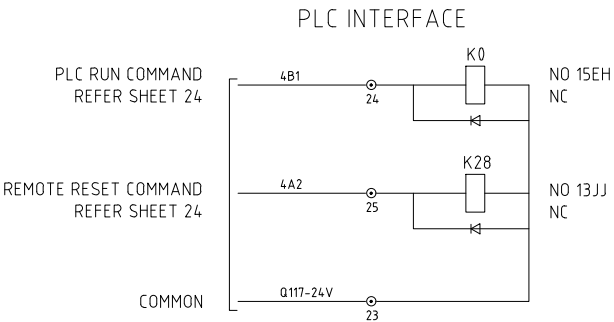


				CONSULTANT DETAILS:			Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) PUMP 1 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 3 OF 3				
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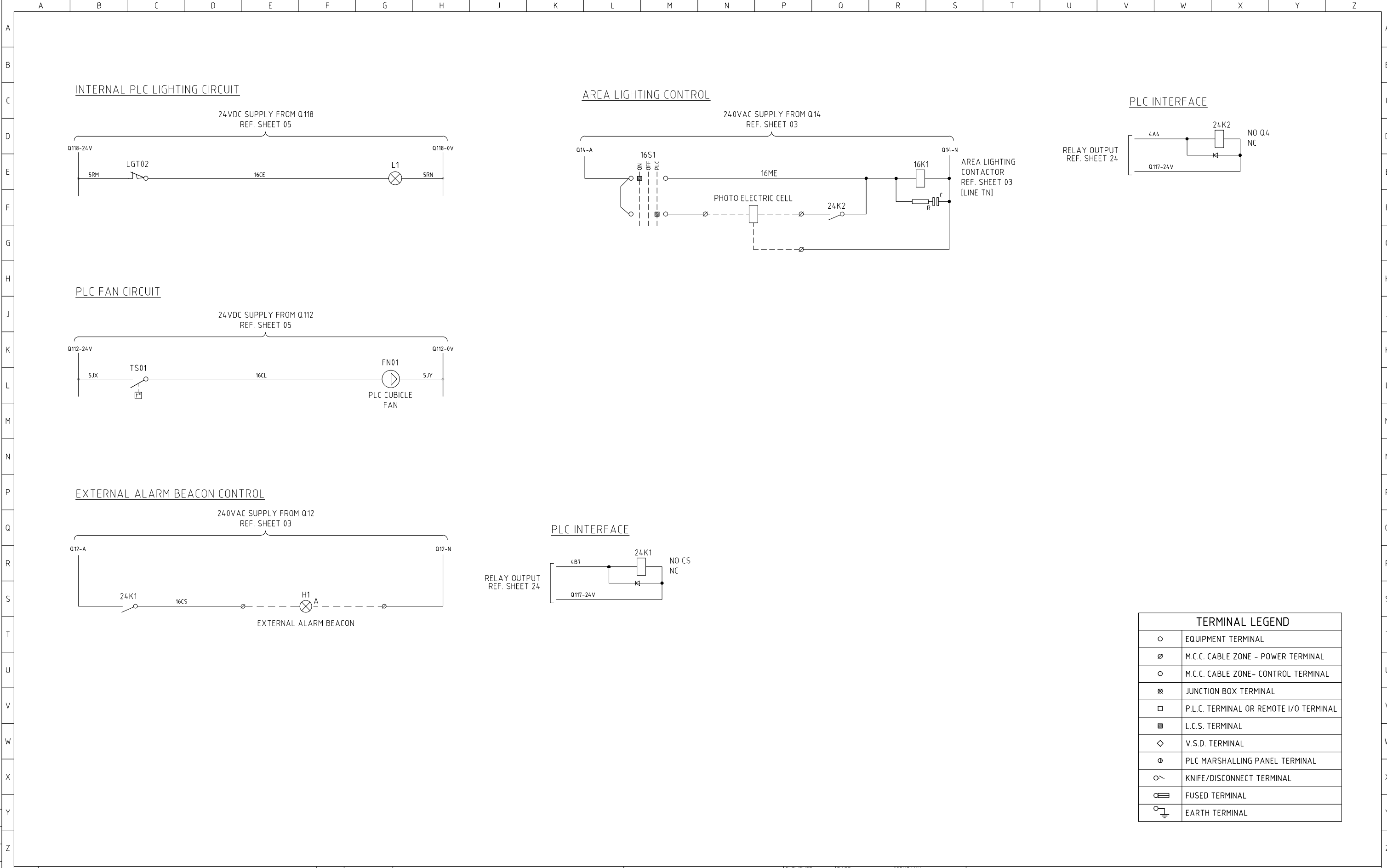




- NOTES:
- 1. SWITCH S201 IS INTERNAL TO VSD AND SHOULD BE SET TO "ON" TO CONFIGURE THE SPEED REFERENCE INPUT AS A 4-20mA SIGNAL.
 - 2. INSTRUMENT EARTH.
 - 3. A LINK MUST BE PROVIDED BETWEEN TERMINALS 12 AND 27 ON THE VSD CONTROL BOARD TO ALLOW DRIVE TO OPERATE. TERMINAL 27 DESIGNATED COAST INVERSE.
 - 4. TERMINALS 18, 27, 32 ARE VSD DIGITAL INPUT SIGNALS.
 - 5. WHEN CONTROL SWITCH S1 IS SELECTED TO "MANUAL", THE VSD SHALL BE PROGRAMMED TO SWITCH ACTIVE SETUPS TO ALLOW LOCAL START/STOP AND SPEED REFERENCE CONTROL. THE DRIVE PROTECTION RELAY K19 IS STILL FUNCTIONAL IN MANUAL CONTROL.



				CONSULTANT DETAILS:				Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au				SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) PUMP 2 POWER AND CONTROL SCHEMATIC DIAGRAM SHEET 3 OF 3				
												DESIGNED:	DATE:	COMPANY:					
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No.	REVISION DETAILS	DWN	DATE	A1	NTS	HEIGHT DATUM:		AHD				47662E		23557	60	015	0		



PLC FAN CIRCUIT

24VDC SUPPLY FROM Q112
REF. SHEET 05

Q112-24V

5JX

TS01

16CL

FN01

5JY

Q112-0V

PLC CUBICLE FAN

EXTERNAL ALARM BEACON CONTROL

240VAC SUPPLY FROM Q12
REF. SHEET 03

Q12-A

24K1

16CS

H1

Q12-N

EXTERNAL ALARM BEACON

PLC INTERFACE

RELAY OUTPUT
REF. SHEET 24

4B7

24K1

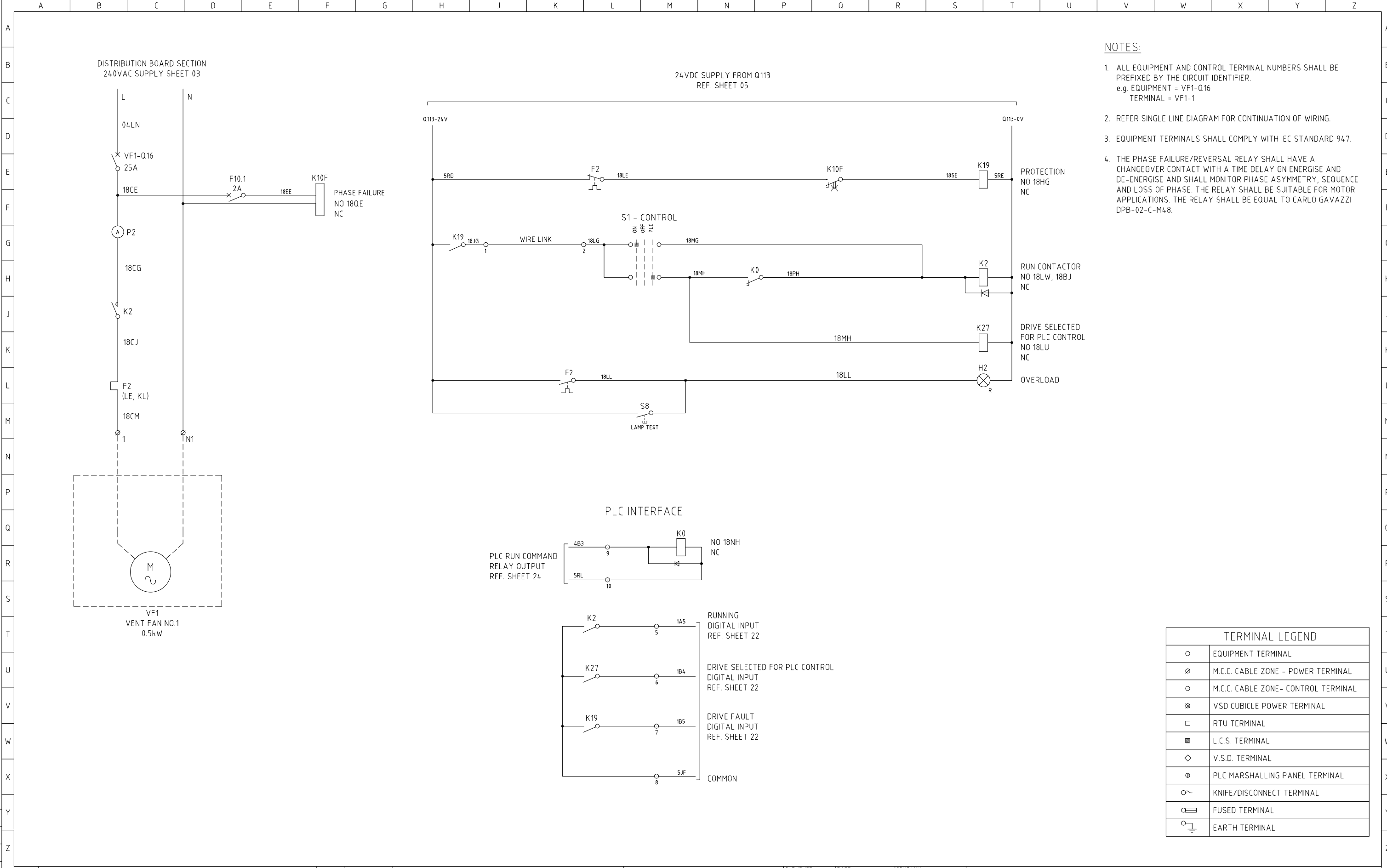
NO CS

NC

Q117-24V

TERMINAL LEGEND	
	EQUIPMENT TERMINAL
	M.C.C. CABLE ZONE - POWER TERMINAL
	M.C.C. CABLE ZONE- CONTROL TERMINAL
	JUNCTION BOX TERMINAL
	P.L.C. TERMINAL OR REMOTE I/O TERMINAL
	L.C.S. TERMINAL
	V.S.D. TERMINAL
	PLC MARSHALLING PANEL TERMINAL
	KNIFE/DISCONNECT TERMINAL
	FUSED TERMINAL
	EARTH TERMINAL

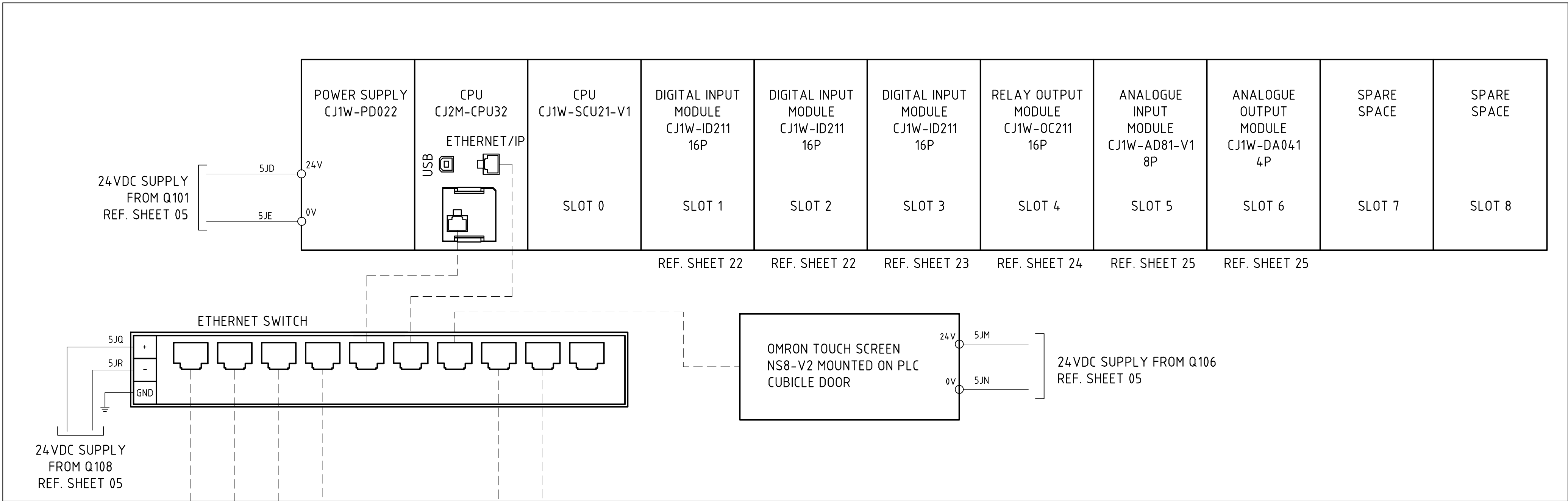
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										INDEX No. 23557		DRAWING No. 61		SHEET 016		REV No. 0	



PLC RACK LAYOUT

NOTES

- 1
- THE DIGITAL OUTPUTS SHALL BE RELAY TYPE.
- 2
- WHERE MORE THAN ONE POWER SUPPLY IS USED FOR THE INPUTS AND OUTPUTS THE INPUTS AND OUTPUTS SHALL BE SUPPLIED IN A LOGICAL MANNER.
- 3
- THE TOUCH SCREEN AND SIGNAL ISOLATORS ARE SUPPLIED FROM THE I/O POWER SUPPLY. WHERE NOISE IS A PROBLEM SEPARATE POWER SUPPLIES SHALL BE USED.
- 4
- ALL WIRES SHALL BE FITTED WITH CABLE MARKERS, WHERE THE WIRE NUMBER IS NOT INDICATED THE WIRE NUMBER SHALL AGREE WITH THE TERMINAL NUMBER OF THE TERMINAL OF WHICH THE WIRE IS INSERTED.

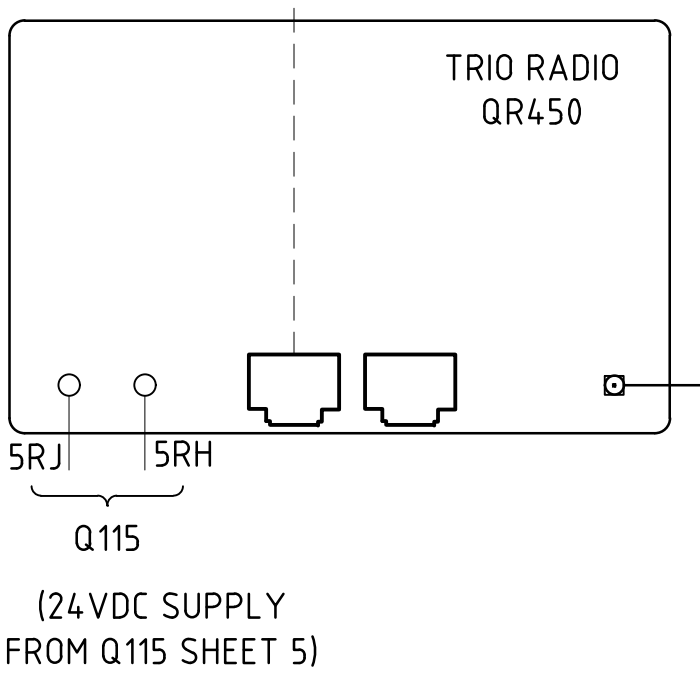
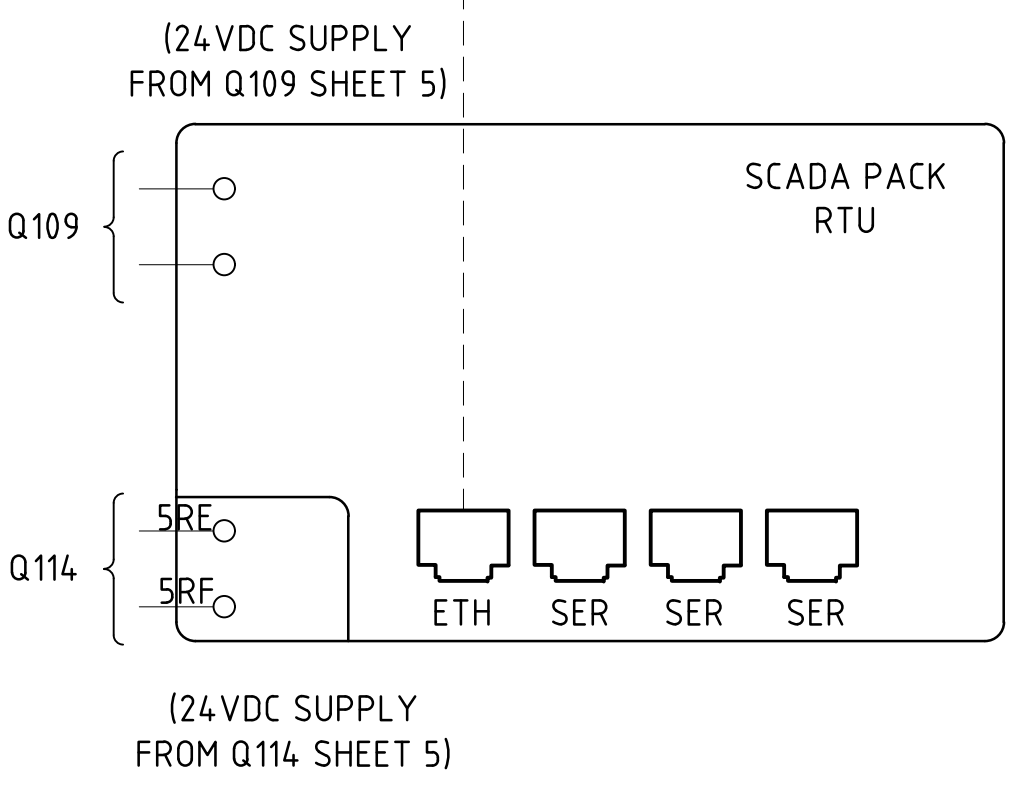
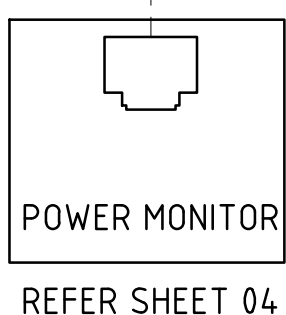


PUMP 1 VSD
REFER SHEET 10

PUMP 2 VSD
REFER SHEET 13

ACTIVE HARMONIC FILTER
REFER SHEET 04

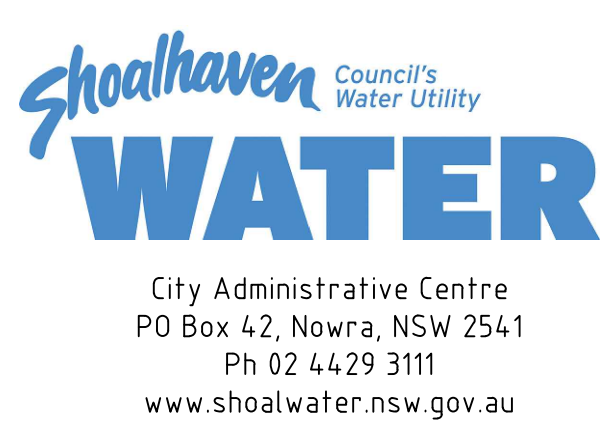
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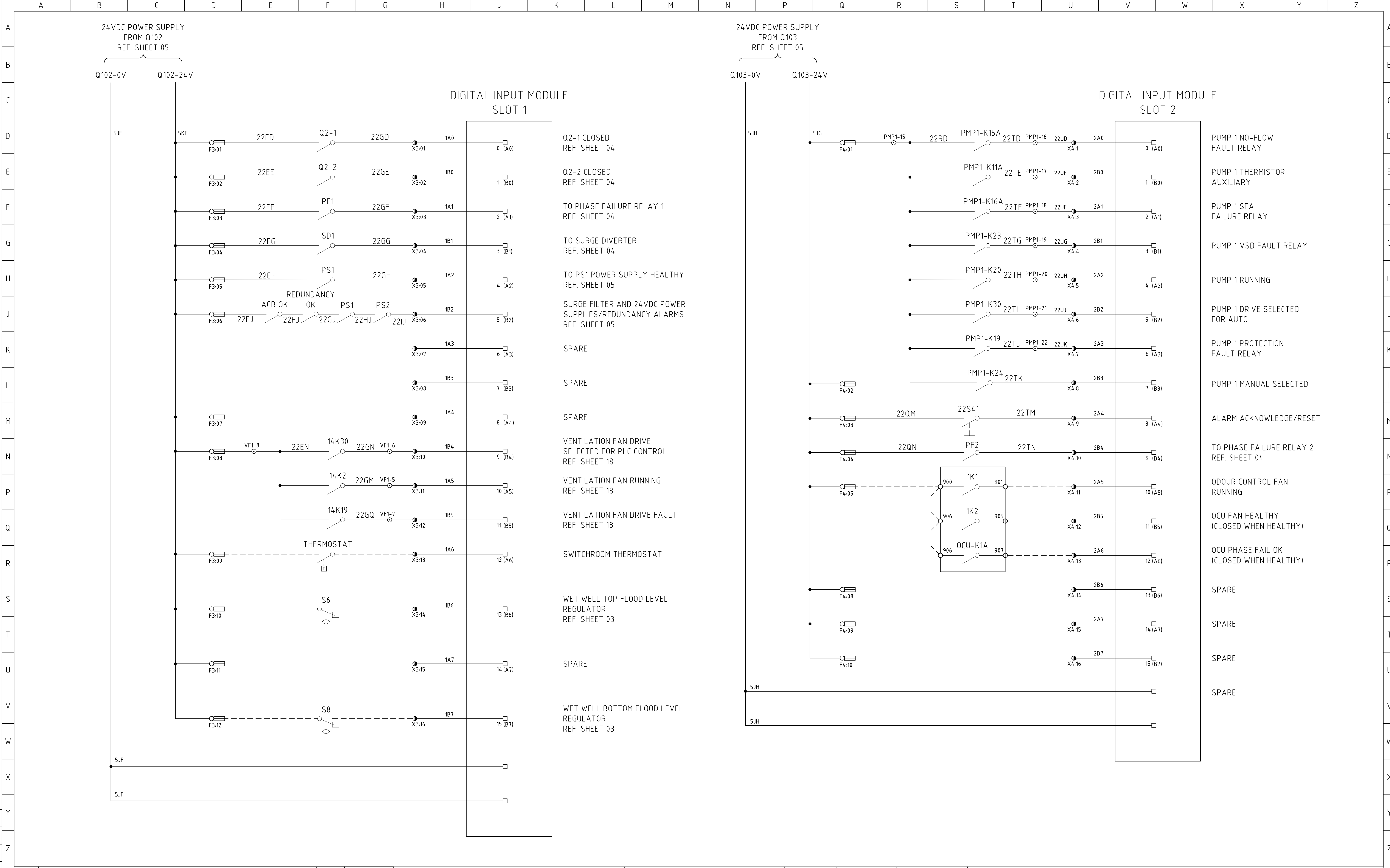


ANTENNA

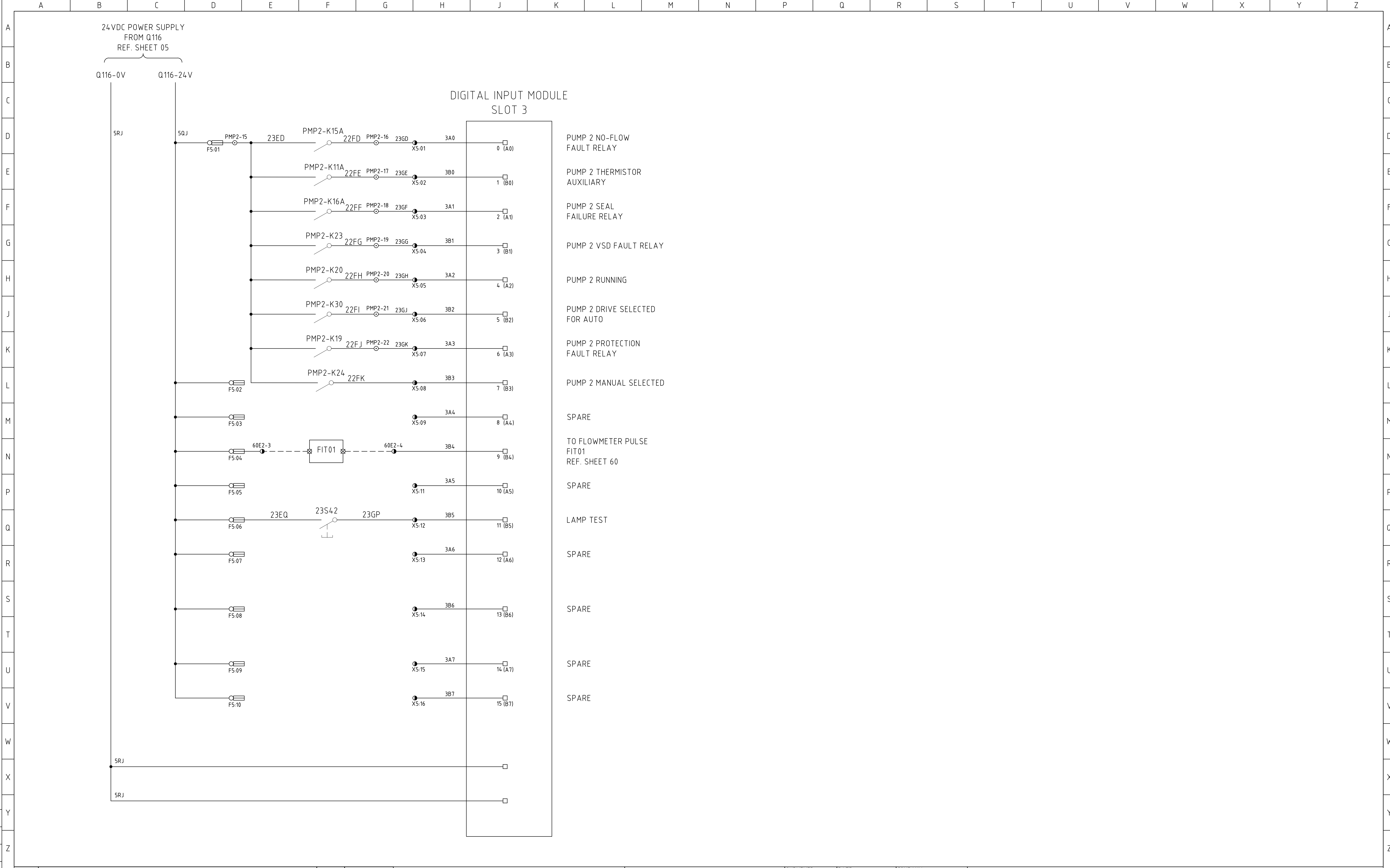
SURGE
DIVERTER

				CONSULTANT DETAILS:			Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) PLC LAYOUT				
								DESIGNED:	DATE:	COMPANY:					
								DRAWN: GJ	DATE: 01/03/24	COMPANY: SW					
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No.	REVISION DETAILS	DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD	TRIM REFERENCE No.		INDEX No.		DRAWING No.		SHEET	REV No.
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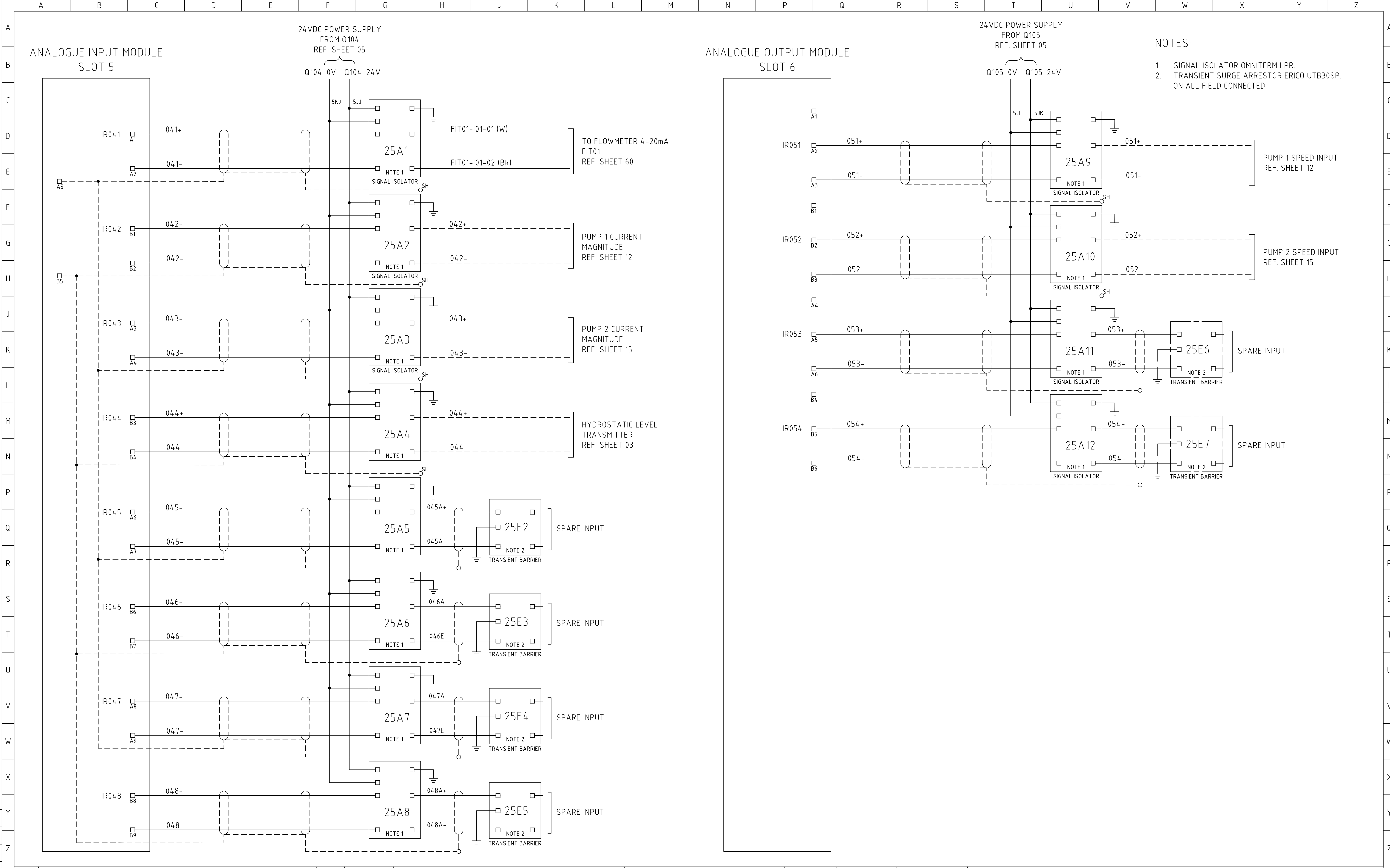




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No.	REVISION DETAILS			DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD									
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											47662E		23557		64		022	0



				CONSULTANT DETAILS:			Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) DIGITAL INPUT MODULE				
								DESIGNED:	DATE:	COMPANY:					
								DRAWN:	DATE:	COMPANY:					
								CHECKED:	DATE:	COMPANY:					
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No.	REVISION DETAILS		DWN	DATE	A1	NTS	HEIGHT DATUM:				47662E	23557	65	023	0



- NOTES:
- 1. SIGNAL ISOLATOR OMNITERM LPR.
 - 2. TRANSIENT SURGE ARRESTOR ERICO UTB30SP. ON ALL FIELD CONNECTED

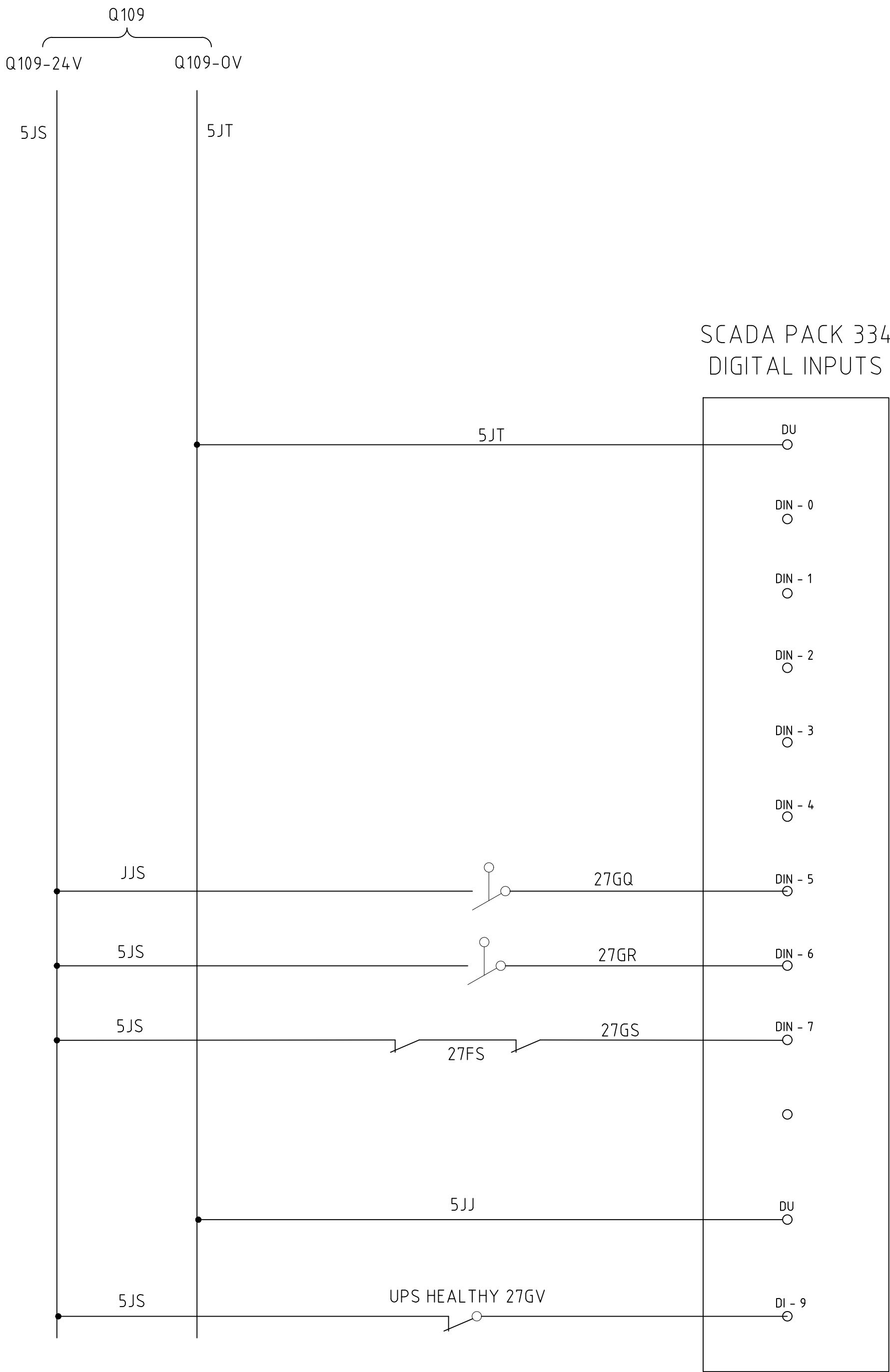
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No.	REVISION DETAILS	DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD								

NOTES:

1.
- SIGNAL ISOLATOR ON ALL ANALOGUE
2.
- TRANSIENT PROTECTION ON ALL FIELD CONNECTED ANALOGUE.

NOTES:

1.
- EQUIPMENT TERMINAL NUMBERING SHALL COMPLY WITH IEC STANDARD 947.
2.
- ALL WIRES SHALL BE FITTED WITH CABLE MARKERS, WHERE THE WIRE NUMBER IS NOT INDICATED THE WIRE NUMBER SHALL AGREE WITH THE TERMINAL NUMBER OF THE TERMINAL OF WHICH THE WIRE IS INSERTED.



EX HIGH FLOAT

OVERFLOW FLOAT

BUILDING DOOR SWITCHES

NOTE: (DI-8, DI-10 ↔ DI-15)
SPARES



0	ISSUED FOR REVIEW	GJ	01/03/24
No.	REVISION DETAILS	DWN	DATE

CONSULTANT DETAILS:			
SIZE:	SCALE FACTOR:	CO-ORDINATE SYSTEM:	MGA Zone 56
A1	NTS	HEIGHT DATUM:	AHD

Shoalhaven

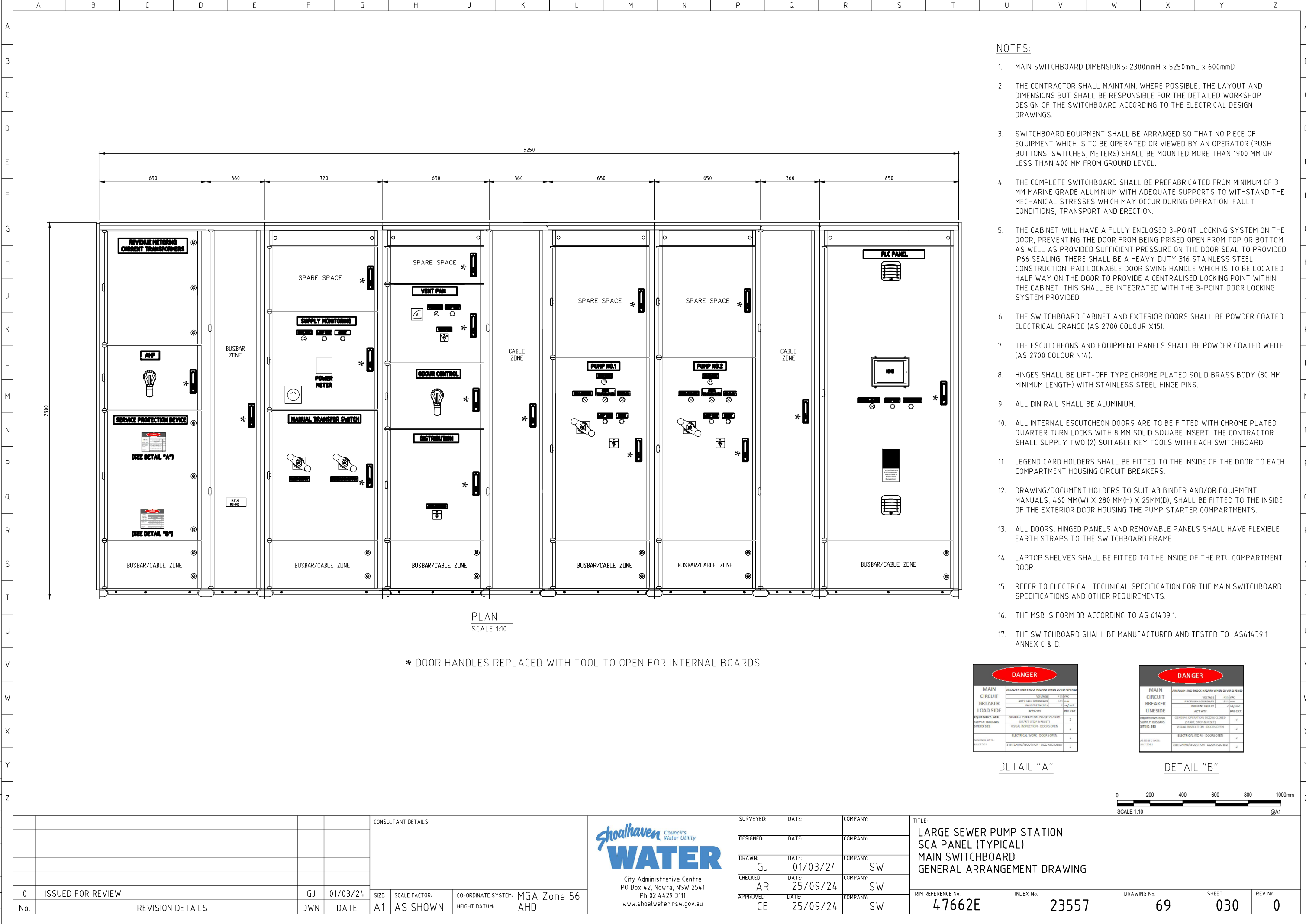
Council's Water Utility

WATER

City Administrative Centre
PO Box 42, Nowra, NSW 2541
Ph 02 4429 3111
www.shoalwater.nsw.gov.au

SURVEYED:	DATE:	COMPANY:
DESIGNED:	DATE:	COMPANY:
DRAWN: GJ	DATE: 01/03/24	COMPANY: SW
CHECKED: AR	DATE: 25/09/24	COMPANY: SW
APPROVED: CE	DATE: 25/09/24	COMPANY: SW

TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) TELEMETRY INTERFACE DETAILS				
TRIM REFERENCE No. 47662E	INDEX No. 23557	DRAWING No. 68	SHEET 027	REV No. 0



NOTES:

- 1. MAIN SWITCHBOARD DIMENSIONS: 2300mmH x 5250mmL x 600mmD
- 2. THE CONTRACTOR SHALL MAINTAIN, WHERE POSSIBLE, THE LAYOUT AND DIMENSIONS BUT SHALL BE RESPONSIBLE FOR THE DETAILED WORKSHOP DESIGN OF THE SWITCHBOARD ACCORDING TO THE ELECTRICAL DESIGN DRAWINGS.
- 3. SWITCHBOARD EQUIPMENT SHALL BE ARRANGED SO THAT NO PIECE OF EQUIPMENT WHICH IS TO BE OPERATED OR VIEWED BY AN OPERATOR (PUSH BUTTONS, SWITCHES, METERS) SHALL BE MOUNTED MORE THAN 1900 MM OR LESS THAN 400 MM FROM GROUND LEVEL.
- 4. THE COMPLETE SWITCHBOARD SHALL BE PREFABRICATED FROM MINIMUM OF 3 MM MARINE GRADE ALUMINIUM WITH ADEQUATE SUPPORTS TO WITHSTAND THE MECHANICAL STRESSES WHICH MAY OCCUR DURING OPERATION, FAULT CONDITIONS, TRANSPORT AND ERECTION.
- 5. THE CABINET WILL HAVE A FULLY ENCLOSED 3-POINT LOCKING SYSTEM ON THE DOOR, PREVENTING THE DOOR FROM BEING PRISED OPEN FROM TOP OR BOTTOM AS WELL AS PROVIDED SUFFICIENT PRESSURE ON THE DOOR SEAL TO PROVIDED IP66 SEALING. THERE SHALL BE A HEAVY DUTY 316 STAINLESS STEEL CONSTRUCTION, PAD LOCKABLE DOOR SWING HANDLE WHICH IS TO BE LOCATED HALF WAY ON THE DOOR TO PROVIDE A CENTRALISED LOCKING POINT WITHIN THE CABINET. THIS SHALL BE INTEGRATED WITH THE 3-POINT DOOR LOCKING SYSTEM PROVIDED.
- 6. THE SWITCHBOARD CABINET AND EXTERIOR DOORS SHALL BE POWDER COATED ELECTRICAL ORANGE (AS 2700 COLOUR X15).
- 7. THE ESCUTCHEONS AND EQUIPMENT PANELS SHALL BE POWDER COATED WHITE (AS 2700 COLOUR N14).
- 8. HINGES SHALL BE LIFT-OFF TYPE CHROME PLATED SOLID BRASS BODY (80 MM MINIMUM LENGTH) WITH STAINLESS STEEL HINGE PINS.
- 9. ALL DIN RAIL SHALL BE ALUMINIUM.
- 10. ALL INTERNAL ESCUTCHEON DOORS ARE TO BE FITTED WITH CHROME PLATED QUARTER TURN LOCKS WITH 8 MM SOLID SQUARE INSERT. THE CONTRACTOR SHALL SUPPLY TWO (2) SUITABLE KEY TOOLS WITH EACH SWITCHBOARD.
- 11. LEGEND CARD HOLDERS SHALL BE FITTED TO THE INSIDE OF THE DOOR TO EACH COMPARTMENT HOUSING CIRCUIT BREAKERS.
- 12. DRAWING/DOCUMENT HOLDERS TO SUIT A3 BINDER AND/OR EQUIPMENT MANUALS, 460 MM(W) X 280 MM(H) X 25MM(D), SHALL BE FITTED TO THE INSIDE OF THE EXTERIOR DOOR HOUSING THE PUMP STARTER COMPARTMENTS.
- 13. ALL DOORS, HINGED PANELS AND REMOVABLE PANELS SHALL HAVE FLEXIBLE EARTH STRAPS TO THE SWITCHBOARD FRAME.
- 14. LAPTOP SHELVES SHALL BE FITTED TO THE INSIDE OF THE RTU COMPARTMENT DOOR.
- 15. REFER TO ELECTRICAL TECHNICAL SPECIFICATION FOR THE MAIN SWITCHBOARD SPECIFICATIONS AND OTHER REQUIREMENTS.
- 16. THE MSB IS FORM 3B ACCORDING TO AS 61439.1.
- 17. THE SWITCHBOARD SHALL BE MANUFACTURED AND TESTED TO AS61439.1 ANNEX C & D.

PLAN
SCALE 1:10

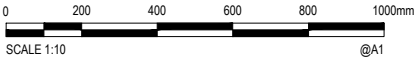
* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS

DANGER	
MAIN CIRCUIT BREAKER LOAD SIDE	ARC FLASH HAZARD: HAZARDOUS WHEN COVER OPENING
	VOLTAGE: 415V 3PH
	ARC FLASH RISK: 415V 3PH
	ARC FLASH RISK: 415V 3PH
EQUIPMENT: MSB SUPPLY BUSBARS BYPASS BUS	GENERAL OPERATION: DOORS CLOSED (START, STOP & RESET)
	VISUAL INSPECTION: DOORS OPEN
	ELECTRICAL WORK: DOORS OPEN
	SWITCHING/ISOLATION: DOORS CLOSED
REVISIONS DATE: 01/03/24	

DETAIL "A"

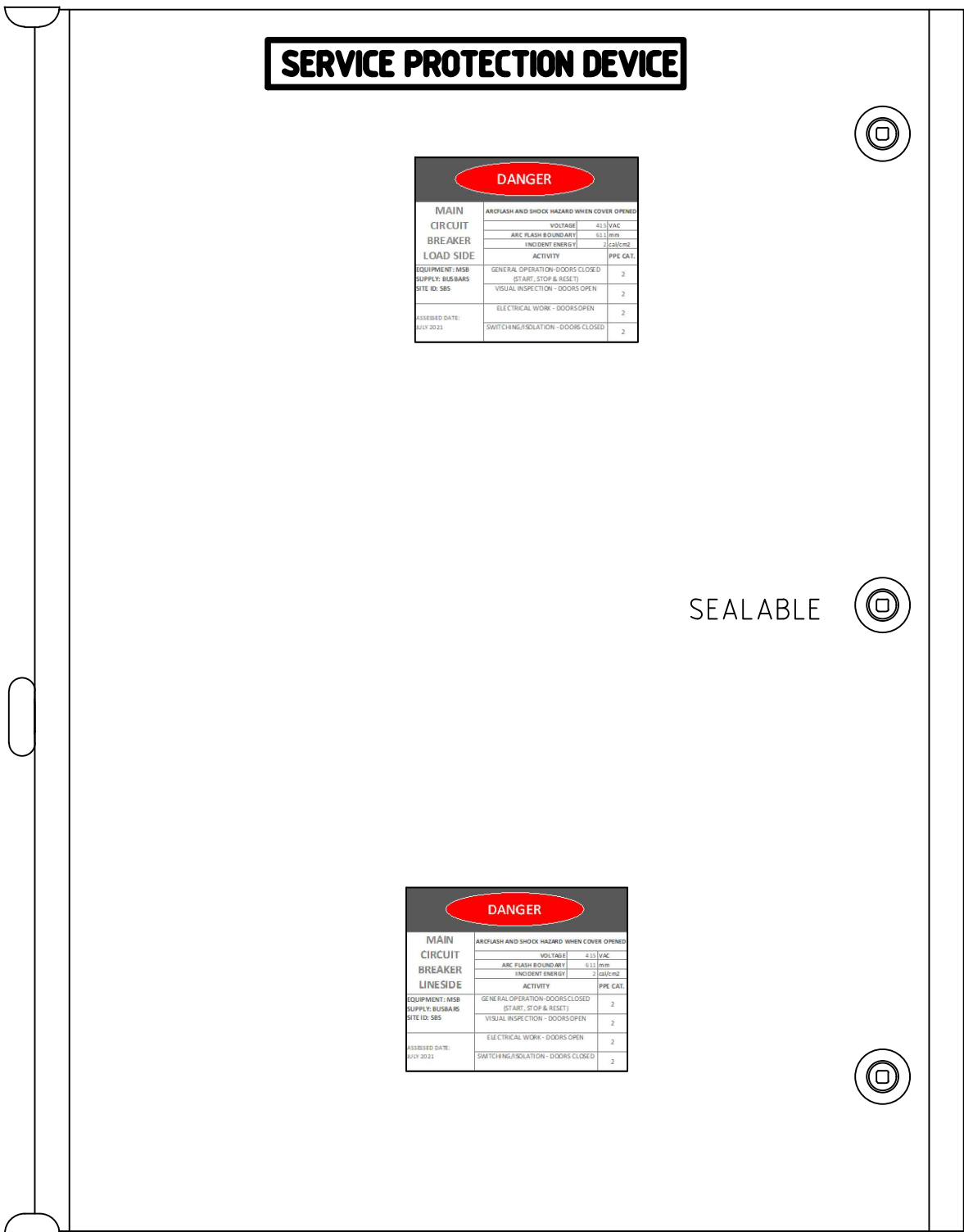
DANGER	
MAIN CIRCUIT BREAKER LINE SIDE	ARC FLASH HAZARD: HAZARDOUS WHEN COVER OPENING
	VOLTAGE: 415V 3PH
	ARC FLASH RISK: 415V 3PH
	ARC FLASH RISK: 415V 3PH
EQUIPMENT: MSB SUPPLY BUSBARS BYPASS BUS	GENERAL OPERATION: DOORS CLOSED (START, STOP & RESET)
	VISUAL INSPECTION: DOORS OPEN
	ELECTRICAL WORK: DOORS OPEN
	SWITCHING/ISOLATION: DOORS CLOSED
REVISIONS DATE: 01/03/24	

DETAIL "B"

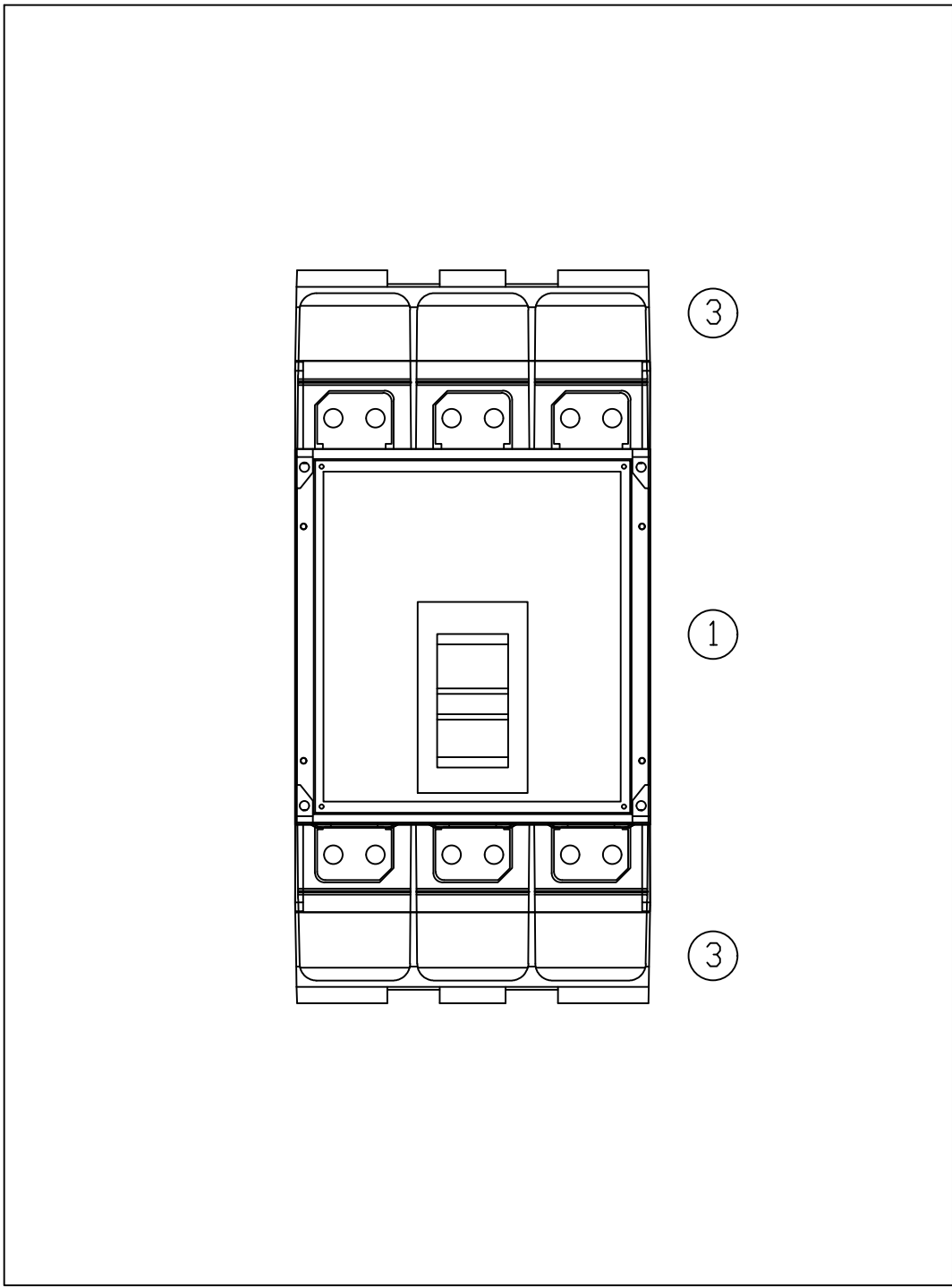


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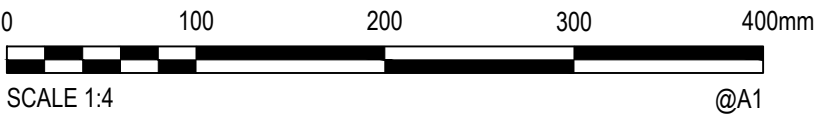
EQUIPMENT LIST (SERVICE PROTECTION DEVICE)					
ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	CIRCUIT BREAKER 630A 3 POLE	1	NS630bN / 33223	SCHNEIDER	SCHNEIDER
2	-	-	-	-	-
3	TERMINAL SHIELD	1	33628	SCHNEIDER	SCHNEIDER



DOOR LAYOUT
SCALE NTS

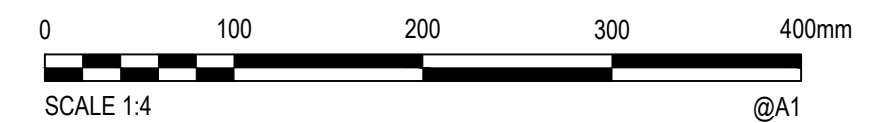
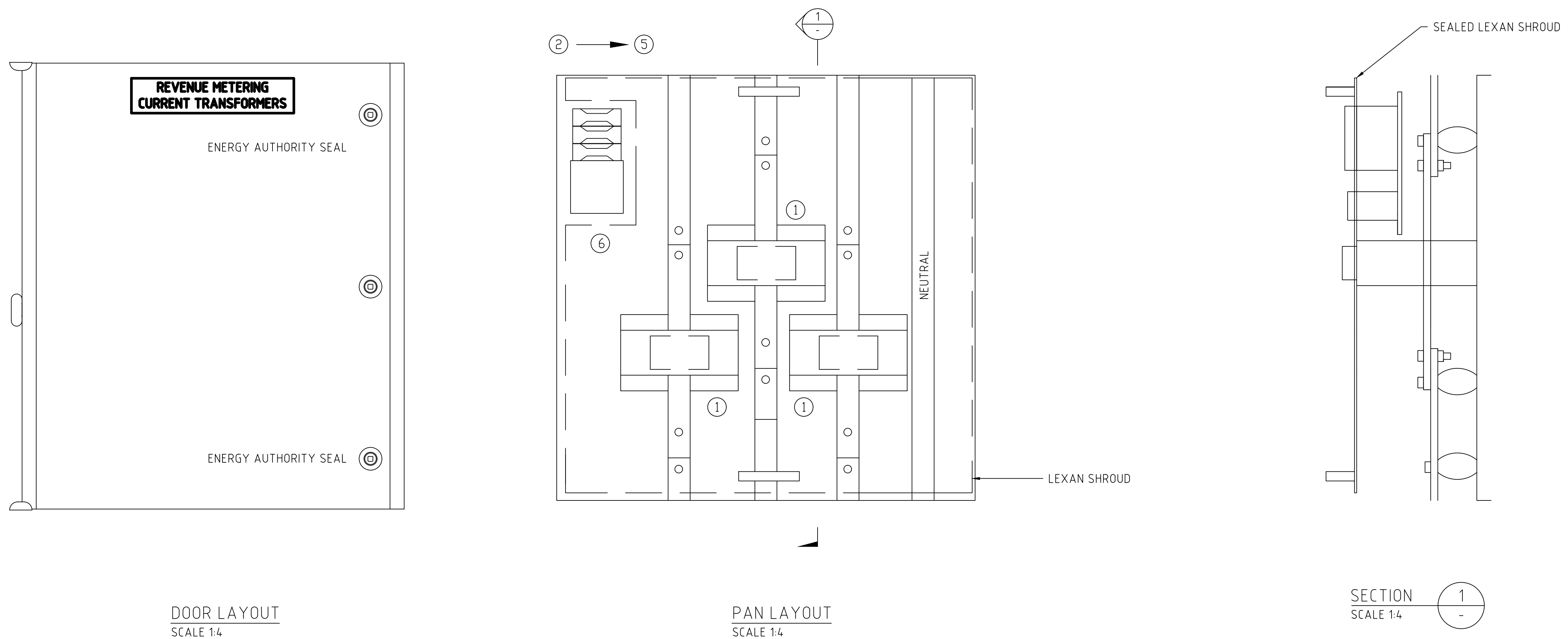


PAN LAYOUT
SCALE NTS



				CONSULTANT DETAILS:			 City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) MAIN SWITCHBOARD SERVICE PROTECTION DEVICE				
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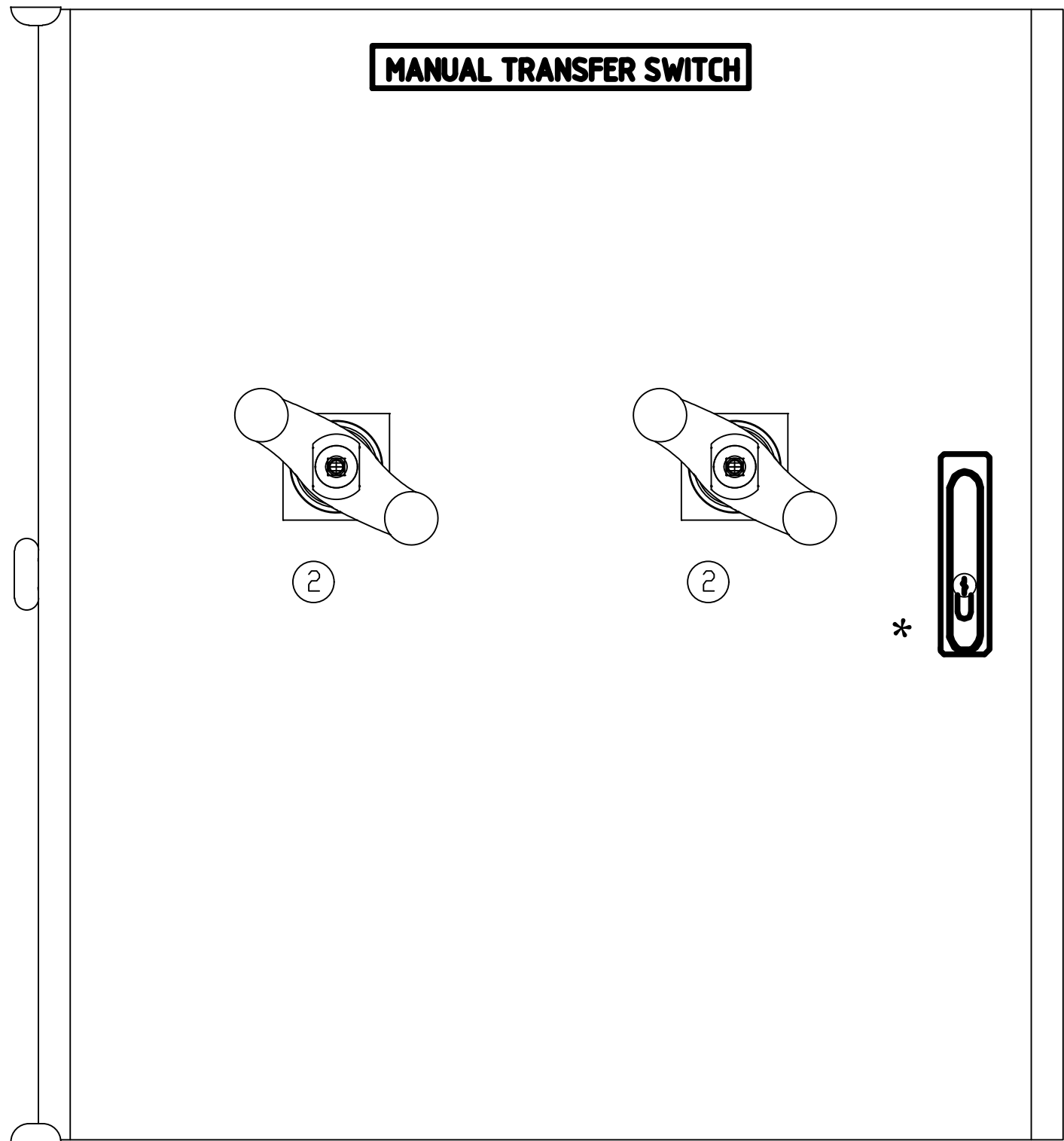
EQUIPMENT LIST (ENERGY AUTHORITY CT'S)					
ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	ENERGY AUTHORITY CURRENT TRANSFORMERS	3	TYPE T	TCA	TCA
2	FUSE HOLDER	3	SC20H	IPD	IPD
3	FUSE LINK 10A	3	NS10	IPD	IPD
4	FUSE HOLDER WHITE	1	SC20WH	IPD	IPD
5	NEUTRAL LINK	1	SSCLINK	IPD	IPD
6	TEST LINK TERMINAL BLOCK	1	CDS6U-KIT3P	IPD	IPD



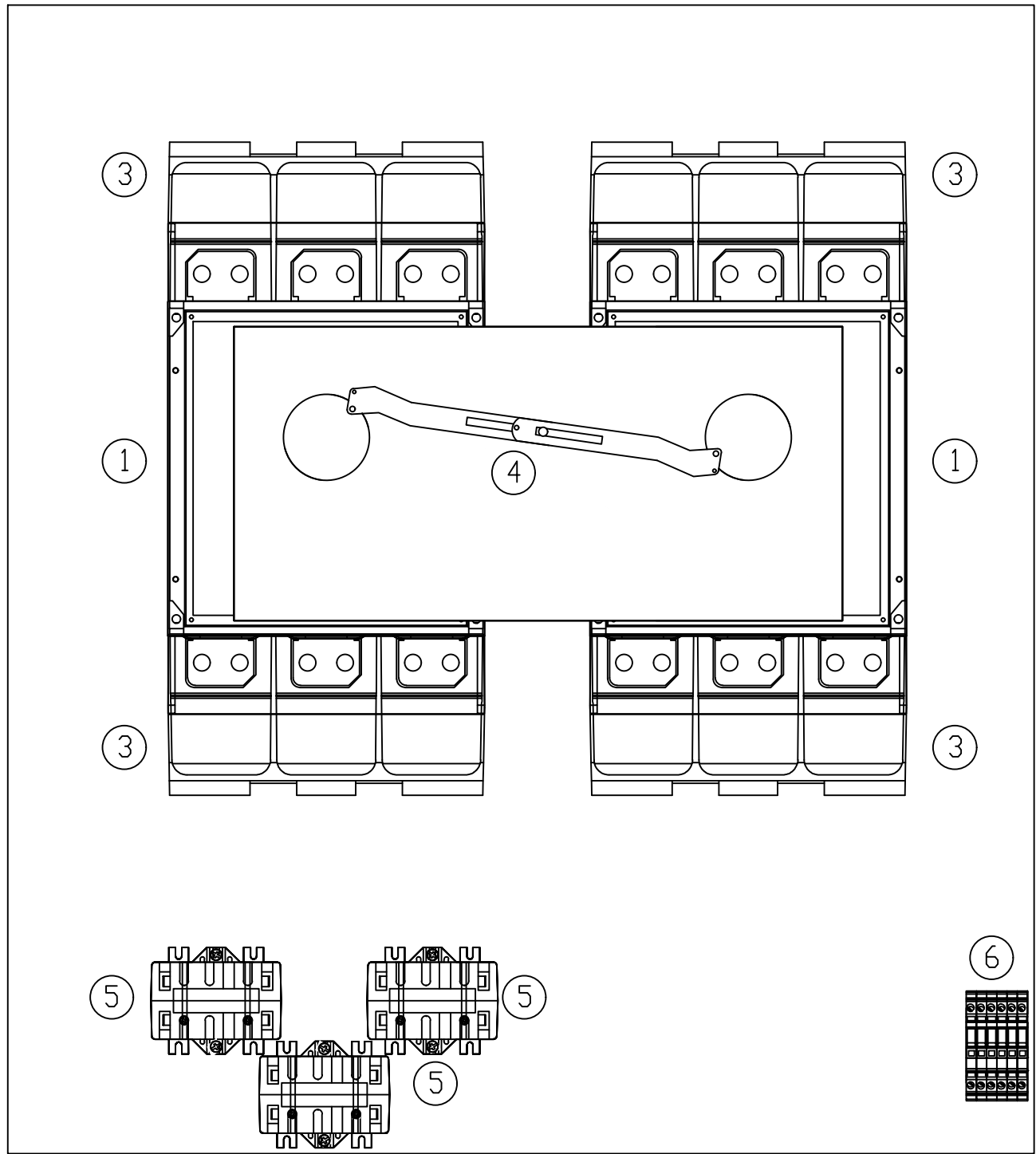
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								CHECKED:	DATE:	COMPANY:	TRIM REFERENCE No. INDEX No. DRAWING No. SHEET REV No.				
				AR	25/09/24	SW									
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No.	REVISION DETAILS	DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD								

EQUIPMENT LIST (MANUAL TRANSFER SWITCH)					
ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	CIRCUIT BREAKER 630A 3 POLE	2	NS630bN / 33223	SCHNEIDER	SCHNEIDER
2	HANDLE	2	33878	SCHNEIDER	SCHNEIDER
3	TERMINAL SHIELD	2	33628	SCHNEIDER	SCHNEIDER
4	MECHANICAL INTERLOCKING KIT	1	33890	SCHNEIDER	SCHNEIDER
5	CURRENT TRANSFORMER 800/5A	3	TA4328005A	IME	NHP
6	SHORTING TERMINALS	1	794.0008494	WEIDMULLER	PDC
7	BUSPLUG 4 POLE 800A	1	UP4800	KENTAN	KENTAN

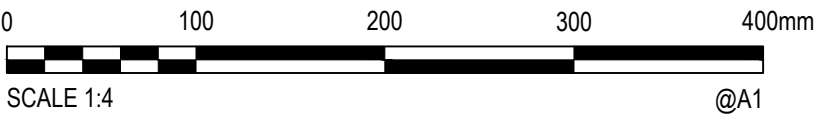
* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS



DOOR LAYOUT
SCALE NTS



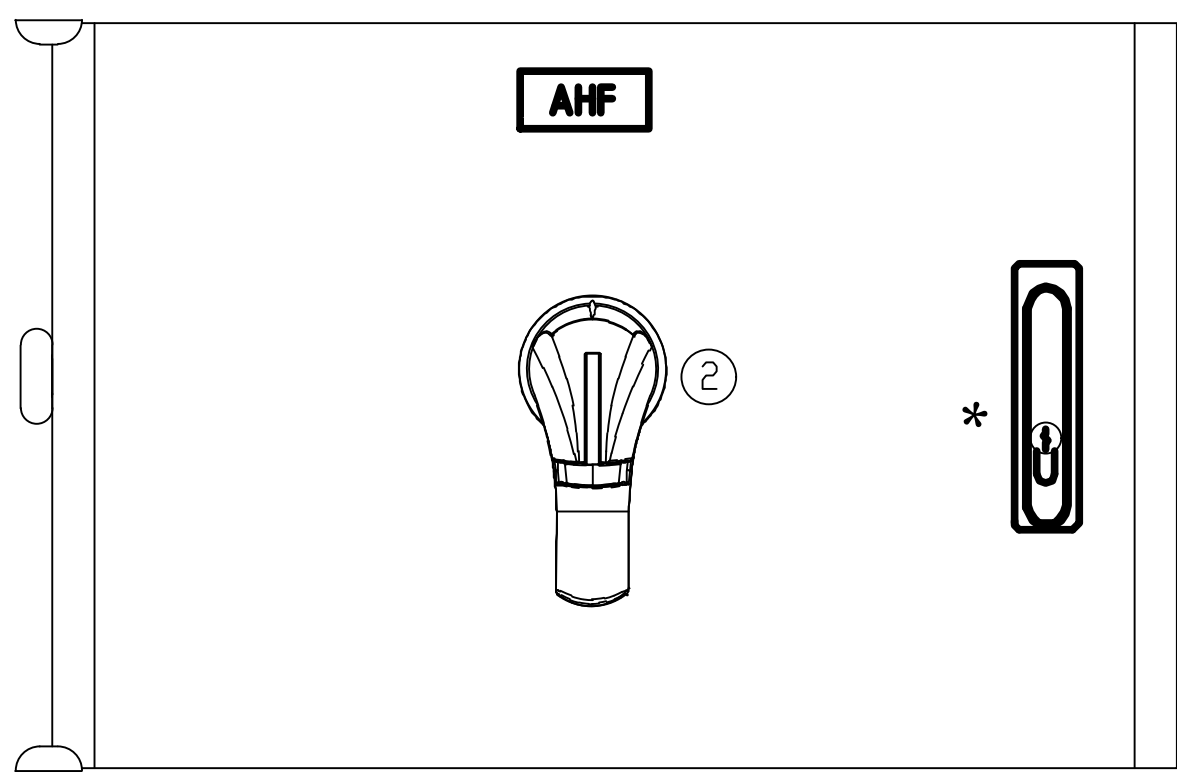
PAN LAYOUT
SCALE NTS



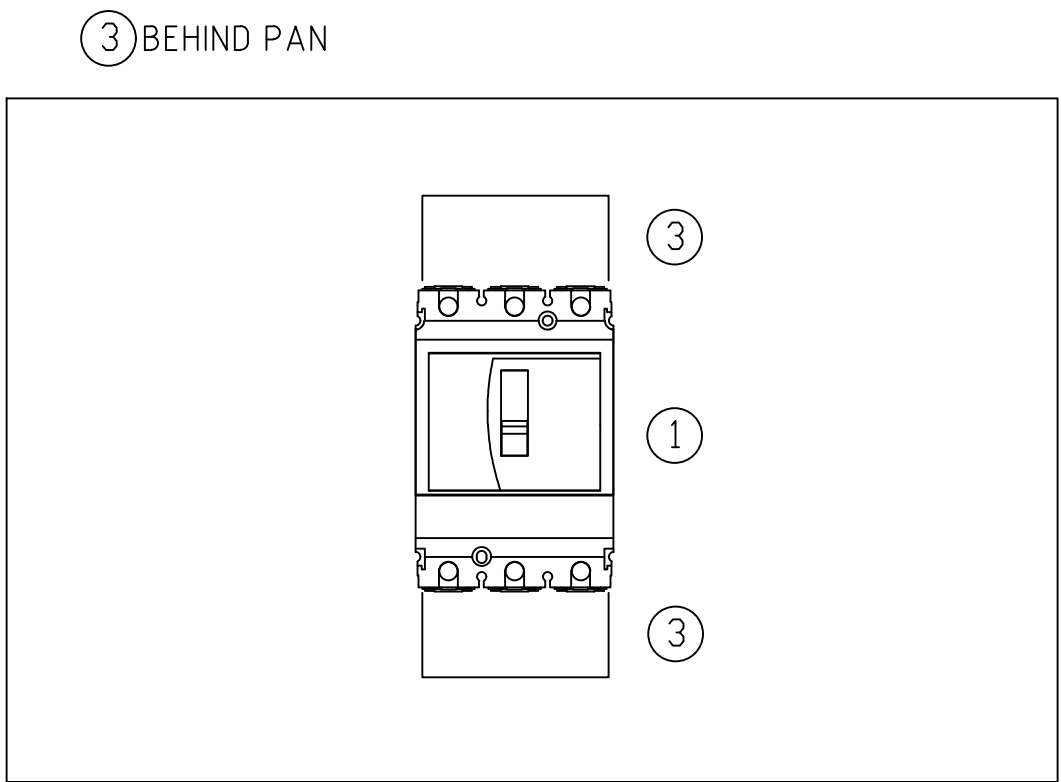
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No.	REVISION DETAILS	DWN	DATE	A1	AS SHOWN	HEIGHT DATUM: AHD	CE	25/09/24	SW	47662E	23557	72	033	0	

ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	CIRCUIT BREAKER 100A 3 POLE	1	NSX100B / TM100D	SCHNEIDER	SCHNEIDER
2	HANDLE	-	-	SCHNEIDER	SCHNEIDER
3	TERMINAL SHIELD	1	LV429517	SCHNEIDER	SCHNEIDER
4	BUSPLUG 3 POLE 250A	1	UP3250I	KENTAN	KENTAN

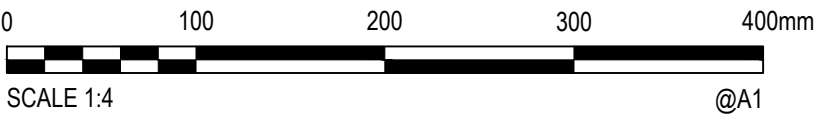
* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS



DOOR LAYOUT
SCALE NTS



PAN LAYOUT
SCALE NTS



				CONSULTANT DETAILS:			 City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) MAIN SWITCHBOARD AHF PROTECTION DEVICE				
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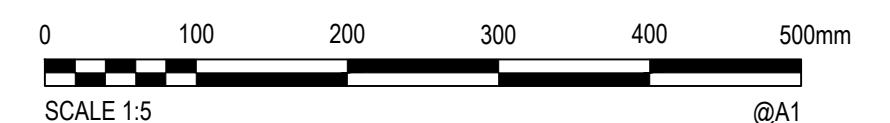


* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS





* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS



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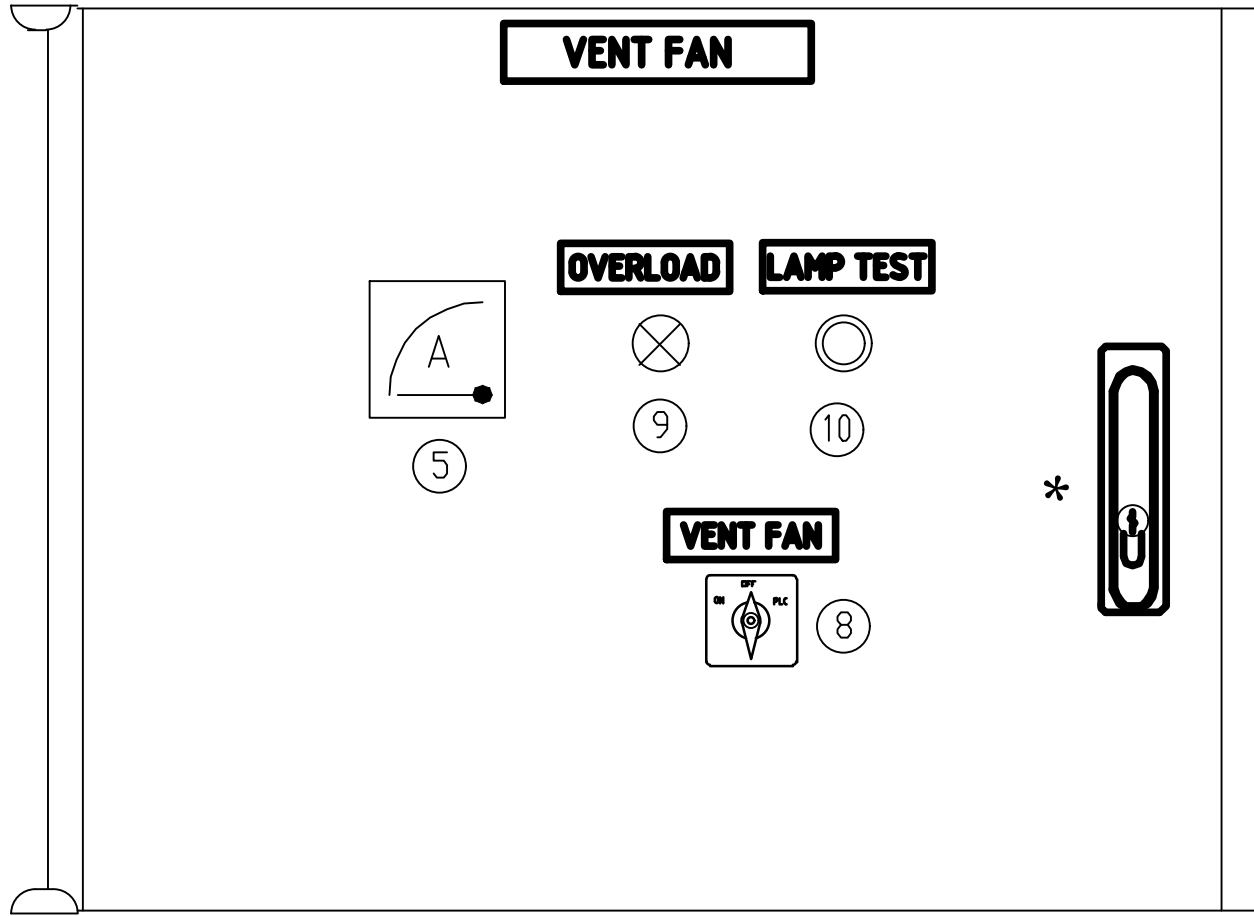


* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS

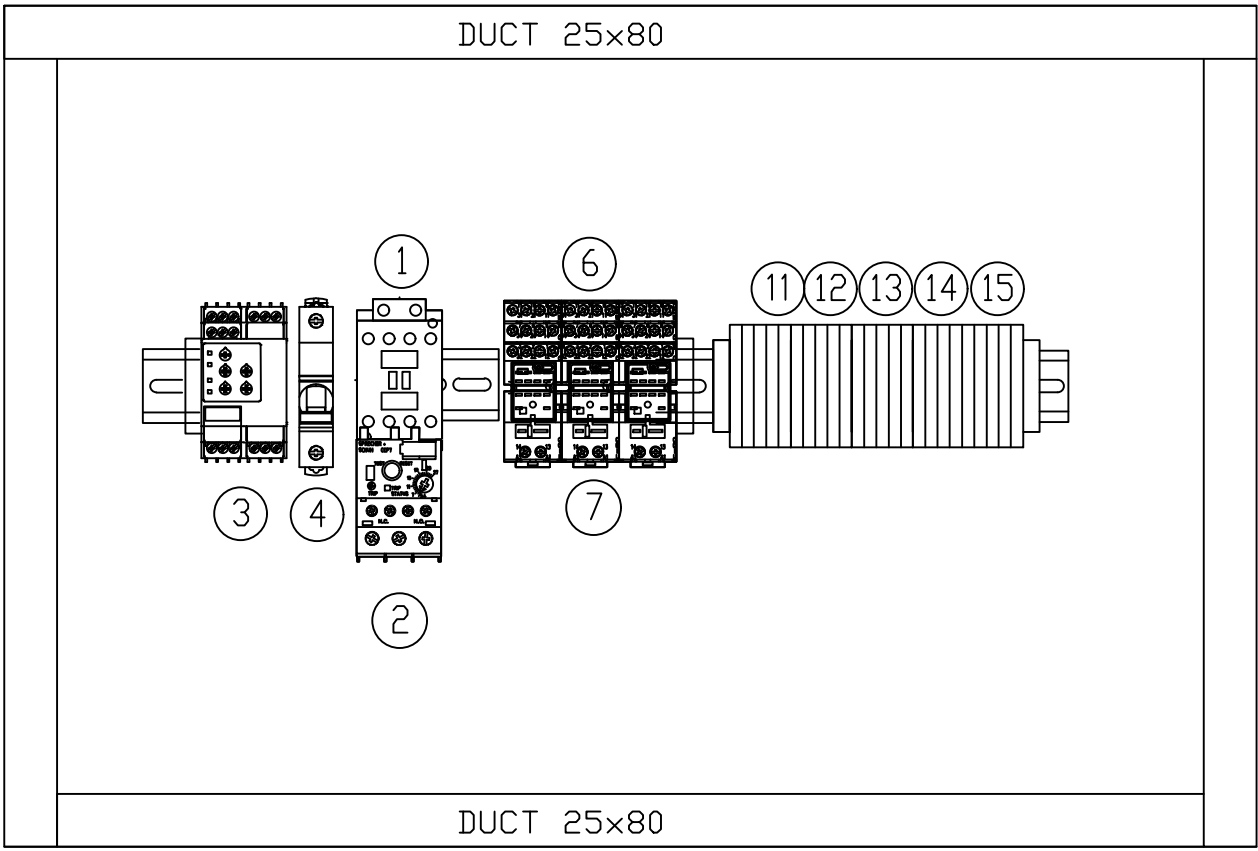
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No.	REVISION DETAILS	DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E	23557	78	039	0

EQUIPMENT LIST (VENT FAN CONTROL)					
ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	CONTACTOR RELAY 24VDC 2 POLE	1	CA7-9E-10	SPRECHER & SCHUH	NHP
2	ELECTRONIC OVERLOAD RELAY	1	CEP7-1EE	SPRECHER & SCHUH	NHP
3	PFR MCB's 1 POLE 2A 6kA	1	A9F44102	SCHNEIDER	SCHNEIDER
4	PHASE FAILURE RELAY 1 PHASE	1	250-SERIES	CROMPTON	COLTERLEC
5	AMMETER DIRECT CONNECT AC 72x72mm	1	E243-026AG	CROMPTON	COLTERLEC
6	CONTROL RELAY	3	55.34007424VDC	FINDER	NHP
7	CONTROL RELAY BASE	3	94.04	FINDER	NHP
8	SELECTOR SWITCH 3 POSITION STAYPUT 2 NO	1	CA10-A212-623FT2	KRAUS & NAMIER	COLTERLEC
9	LIGHT (RED)	1	D7M-P4-MN3R	SPRECHER + SCHUH	NHP
10	LAMP TEST PUSHBUTTON	1	D7P-F2-PX10	SPRECHER + SCHUH	NHP
11	TERMINAL FEED-THRU - BLUE	6	1020180000	WEIDMULLER	PDC
12	END PLATE BLUE	1	1050080000	WEIDMULLER	PDC
13	END CLAMP - GREY	2	9540000000	WEIDMULLER	PDC
14	TERMINAL GROUP MARKER - GREY	1	1631930000	WEIDMULLER	PDC

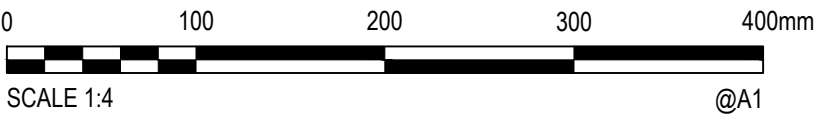
* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS



DOOR LAYOUT
SCALE NTS



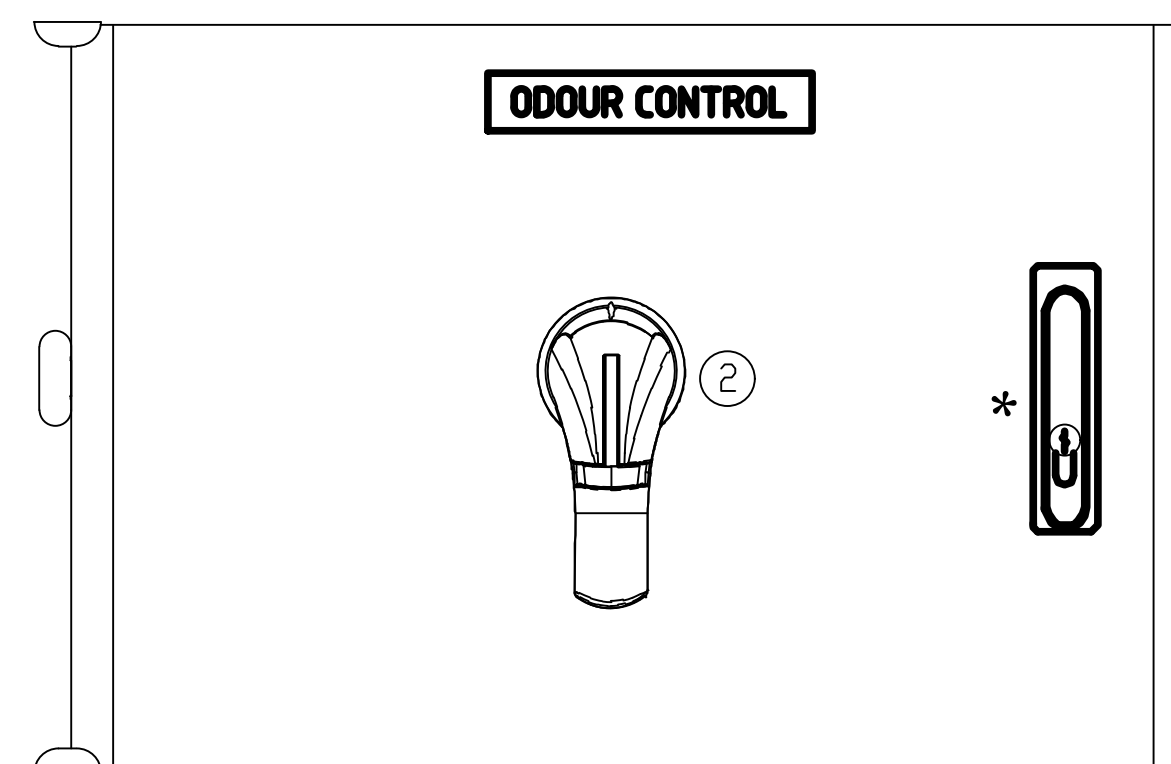
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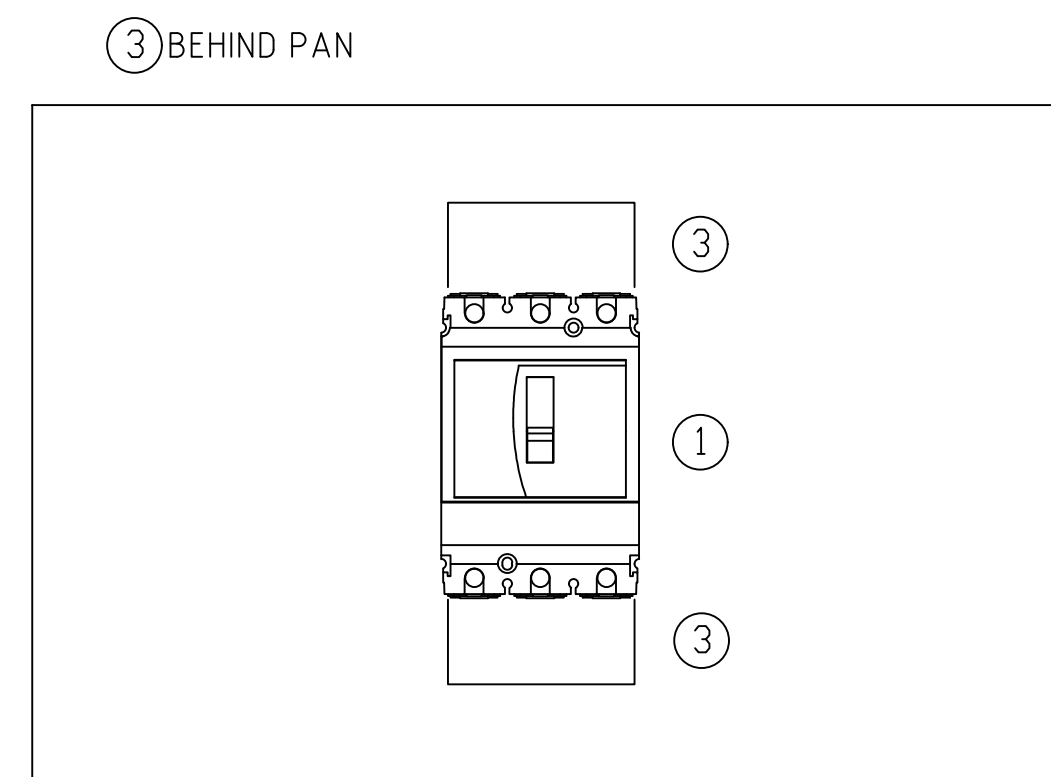
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No.	REVISION DETAILS	DWN	DATE											

EQUIPMENT LIST (ODOUR CONTROL)					
ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	CIRCUIT BREAKER NSX100B 16A 3 POLE	1	NSX100B / TM16D	SCHNEIDER	SCHNEIDER
2	HANDLE	-	-	SCHNEIDER	SCHNEIDER
3	TERMINAL SHIELD	1	LV429517	SCHNEIDER	SCHNEIDER
4	BUSPLUG 3 POLE 250A	1	UP3250I	KENTAN	KENTAN

* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS



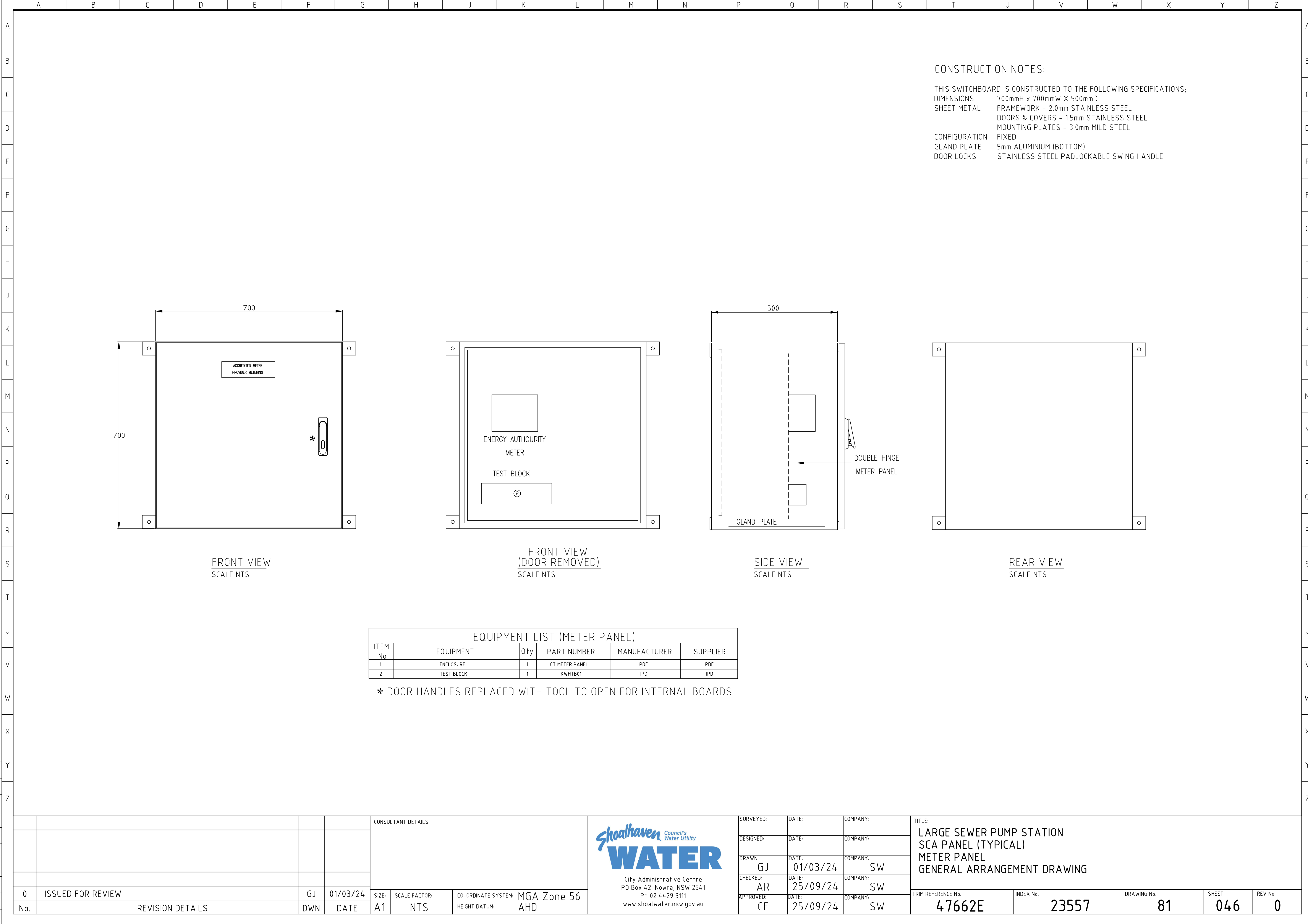
DOOR LAYOUT
SCALE NTS



PAN LAYOUT
SCALE NTS



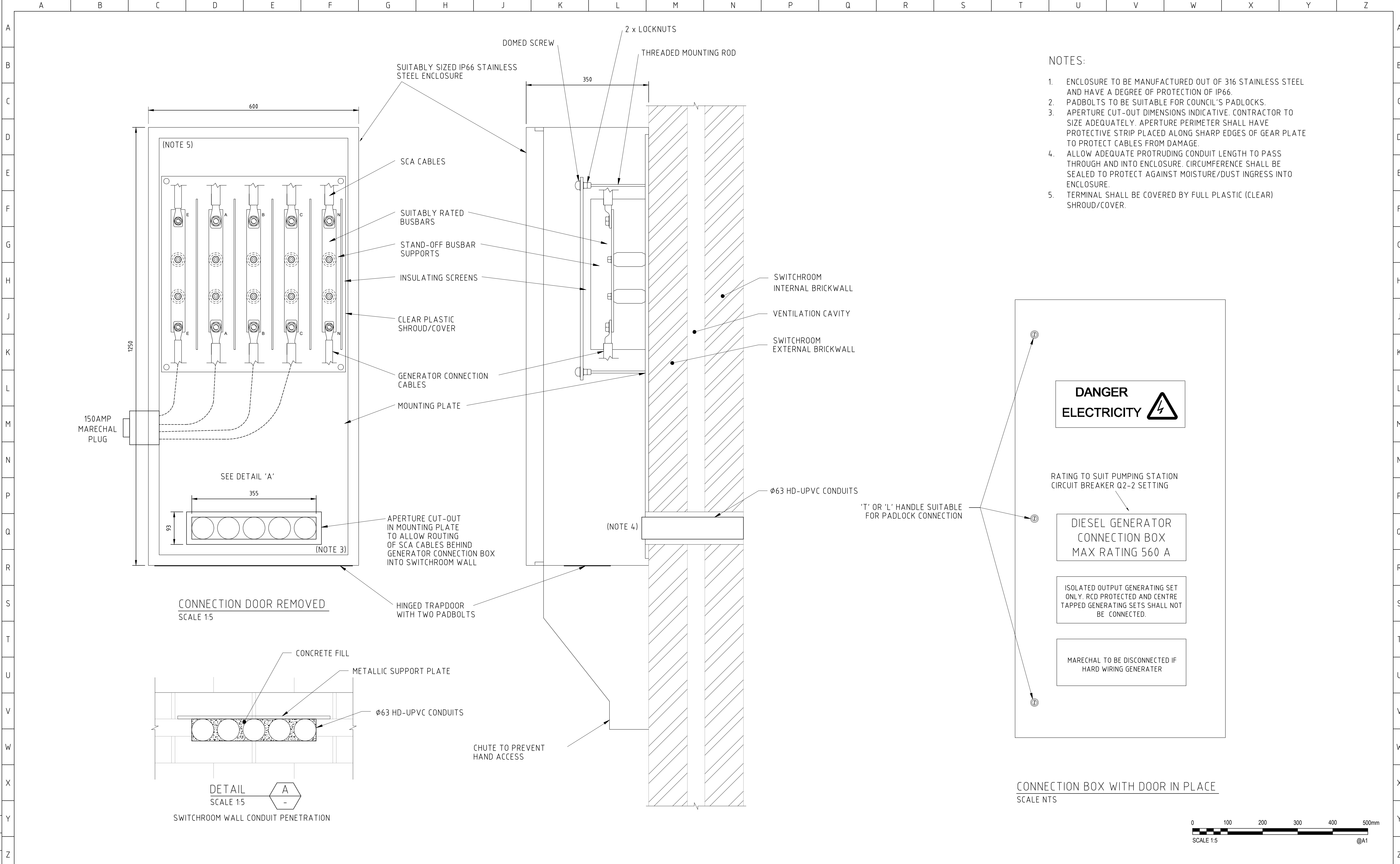
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							DESIGNED:	DATE:	COMPANY:									
							DRAWN:	DATE:	COMPANY:									
							GJ	01/03/24	SW									
							CHECKED:	DATE:	COMPANY:									
							AR	25/09/24	SW									
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No.	REVISION DETAILS			DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E		23557	80	041	0



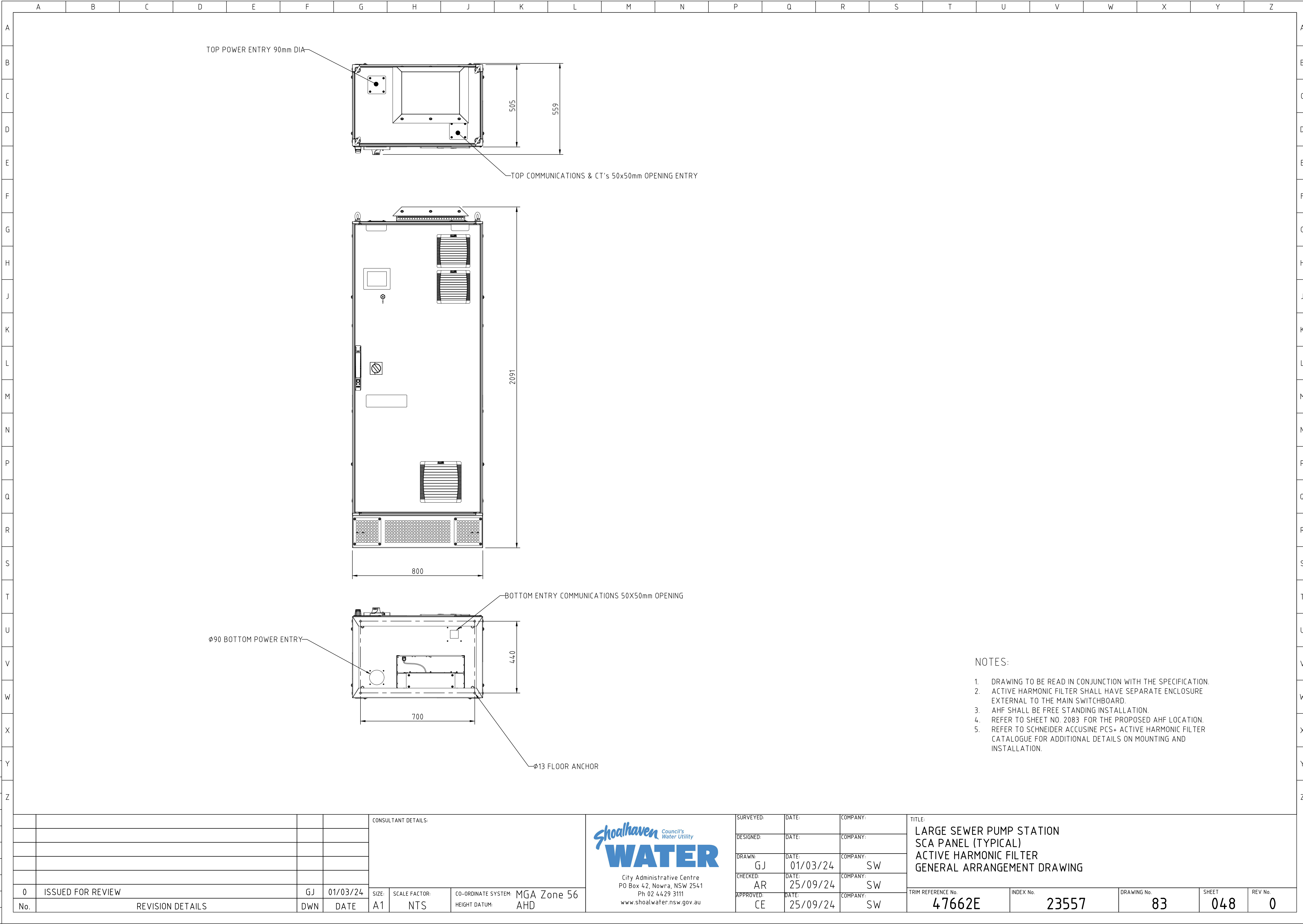
EQUIPMENT LIST (METER PANEL)					
ITEM No	EQUIPMENT	Qty	PART NUMBER	MANUFACTURER	SUPPLIER
1	ENCLOSURE	1	CT METER PANEL	PDE	PDE
2	TEST BLOCK	1	KWHTB01	IPD	IPD

* DOOR HANDLES REPLACED WITH TOOL TO OPEN FOR INTERNAL BOARDS

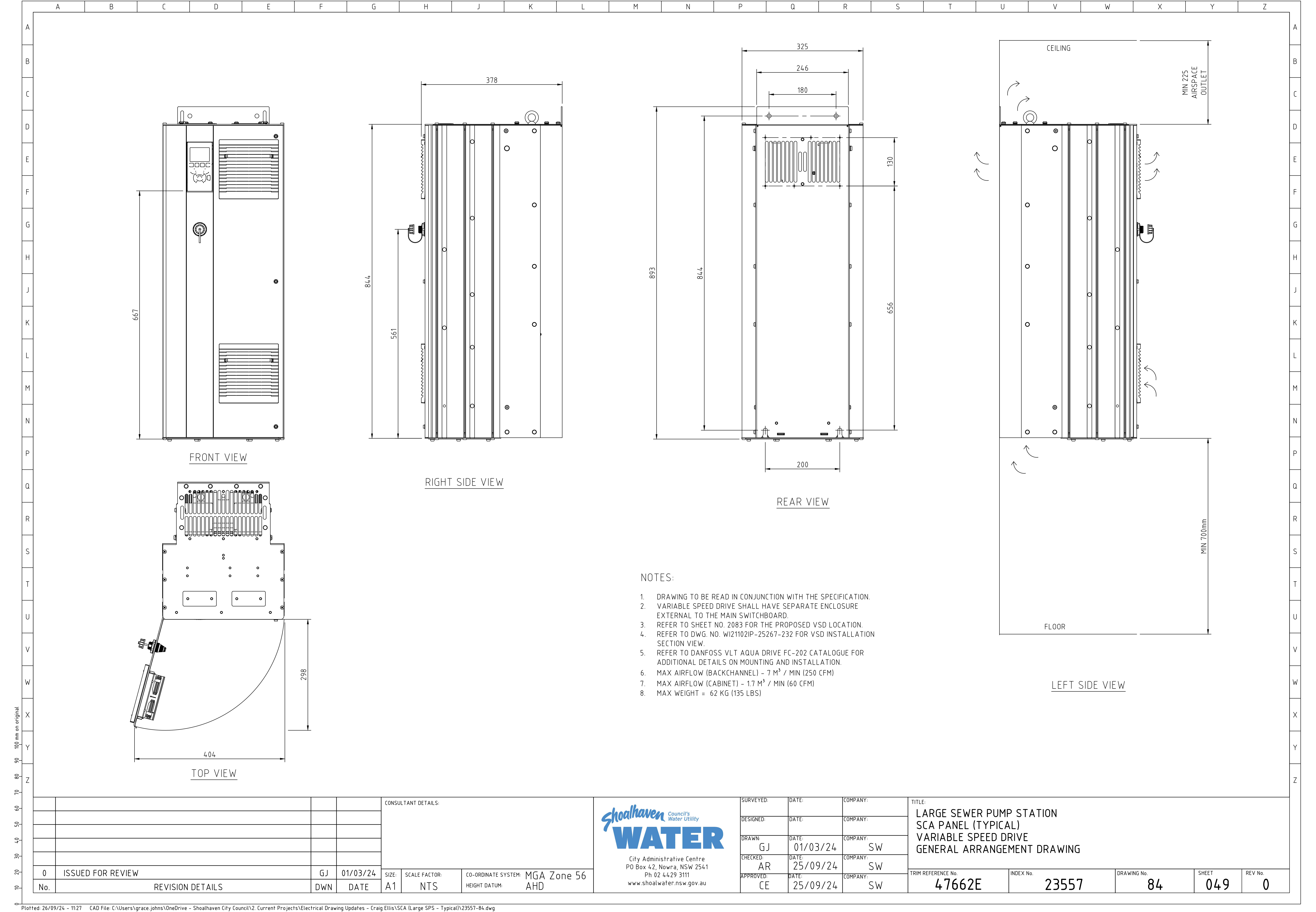
				CONSULTANT DETAILS:		Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) METER PANEL GENERAL ARRANGEMENT DRAWING				
							DESIGNED:	DATE:	COMPANY:					
							DRAWN: GJ	DATE: 01/03/24	COMPANY: SW					
							CHECKED: AR	DATE: 25/09/24	COMPANY: SW					
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										47662E	23557	81	046	0



				CONSULTANT DETAILS:		Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au			SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) GENERATOR CONNECTION PANEL GENERAL ARRANGEMENT DRAWING				
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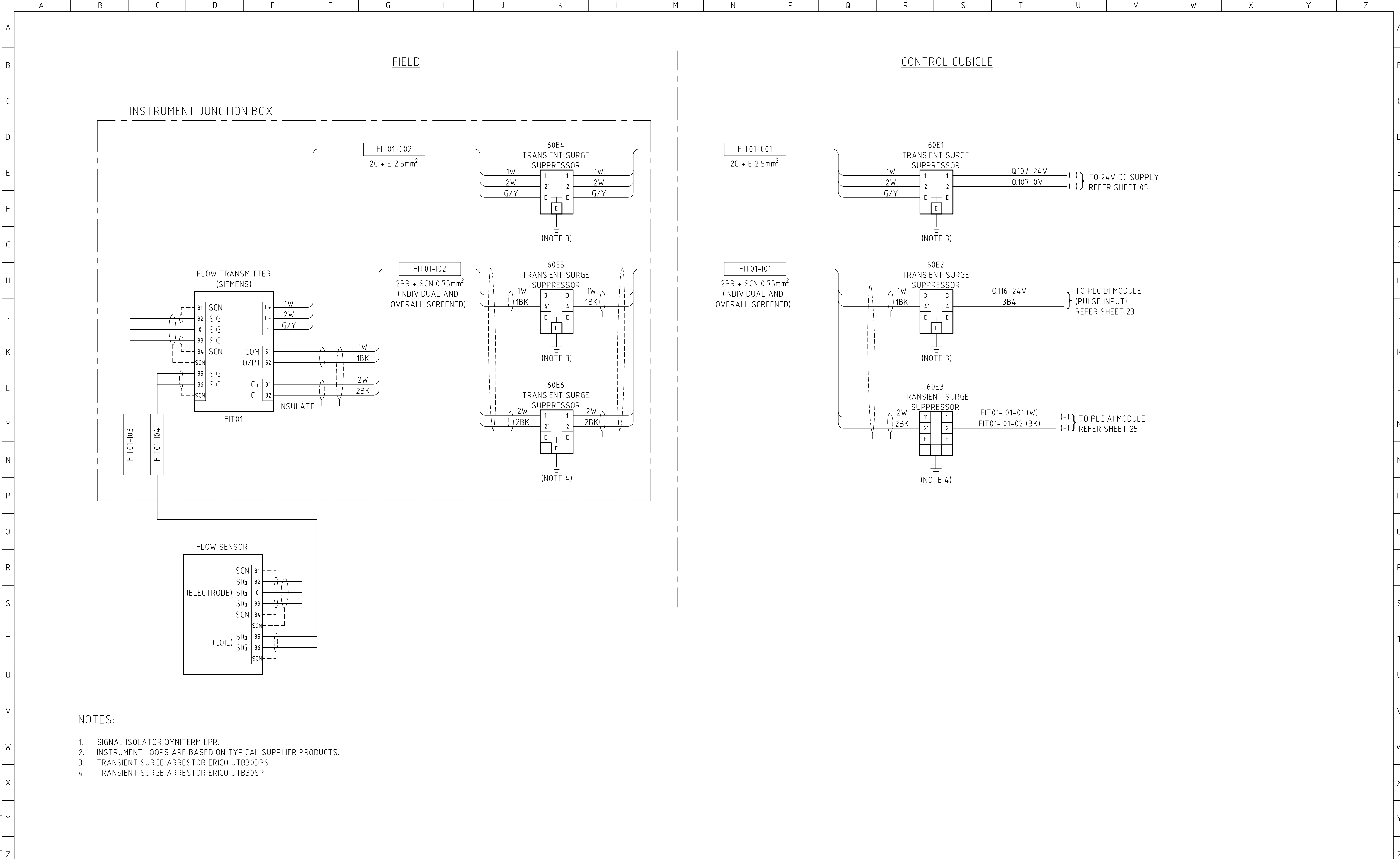
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No.	REVISION DETAILS	DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD	47662E		23557	83	048	0		



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	
A																								A
B																								B
C																								C
D																								D
E	CABLE SCHEDULE (POWER)																							E
F	CABLE NUMBER	CABLE SOURCE	CABLE DESTINATION	VOLTAGE (VOLTS)	SIZE (mm ²)	CABLE CONSTRUCTION	ESTIMATED DISTANCE (m)	INSTALLATION																F
G	UNDERGROUND MAINS	CONSUMER TRANSFORMER	MSB	415	500	4C, CU, XLPE 110	TBC	Conduit																G
H	GEN-P01	Generator Link Box	MSB	415	400	4C+E, CU, XLPE 110	10	Conduit																H
J	AF1-P1	MSB	AHF Panel	415	25	3C+E, Cu, PVC/PVC	10	Conduit																J
K	PMP1-P01	MSB	VSD	415	185	3C+E, Cu, XLPE/PVC	10	Conduit																K
L	PMP1-P02	VSD	Pump 1	415	185	3C+3E, Varolex, Cu, XLPE/PVC	35	Conduit																L
M	PMP2-P01	MSB	VSD	415	185	3C+E, Cu, XLPE/PVC	10	Conduit																M
N	PMP2-P02	VSD	Pump 2	415	185	3C+3E, Varolex, Cu, XLPE/PVC	35	Conduit																N
P	Q11-P1	DISTRIBUTION BOARD SECTION	3 Phase GPO	415	2.5	3C+E, Cu, PVC/PVC	10	Conduit																P
Q	Q12-P1	DISTRIBUTION BOARD SECTION	External Alarm Beacon	240	2.5	2C+E, Cu, PVC/PVC	10	Conduit																Q
R	Q13-P1	DISTRIBUTION BOARD SECTION	15A GPO	240	2.5	2C+E, Cu, PVC/PVC	10	Conduit																R
S	Q14-P1	DISTRIBUTION BOARD SECTION	Area Lighting	240	2.5	6C+E, Cu, PVC/PVC	30	Conduit																S
T	Q15-P1	DISTRIBUTION BOARD SECTION	A.C. No.1	240	2.5	2C+E, Cu, PVC/PVC	15	Conduit																T
U	Q17-P1	DISTRIBUTION BOARD SECTION	Internal Lights	240	2.5	2C+E, Cu, PVC/PVC	15	Conduit																U
V	VF1-P1	DISTRIBUTION BOARD SECTION	Vent Fan	240	2.5	2C+E, Cu, PVC/PVC	20	Conduit																V
W	OCU-P1	MSB	Odour Control Unit Control Panel	415	4	3C+E, Cu, XLPE/PVC	45	Conduit																W
X																								X
Y																								Y
Z																								Z
					CONSULTANT DETAILS:			Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au			SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) CABLE SCHEDULE										
					DESIGNED:	DATE:	COMPANY:																	
					DRAWN:	DATE:	COMPANY:																	
					CHECKED:	DATE:	COMPANY:																	
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No.	REVISION DETAILS			DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E	23557	85	050	0							

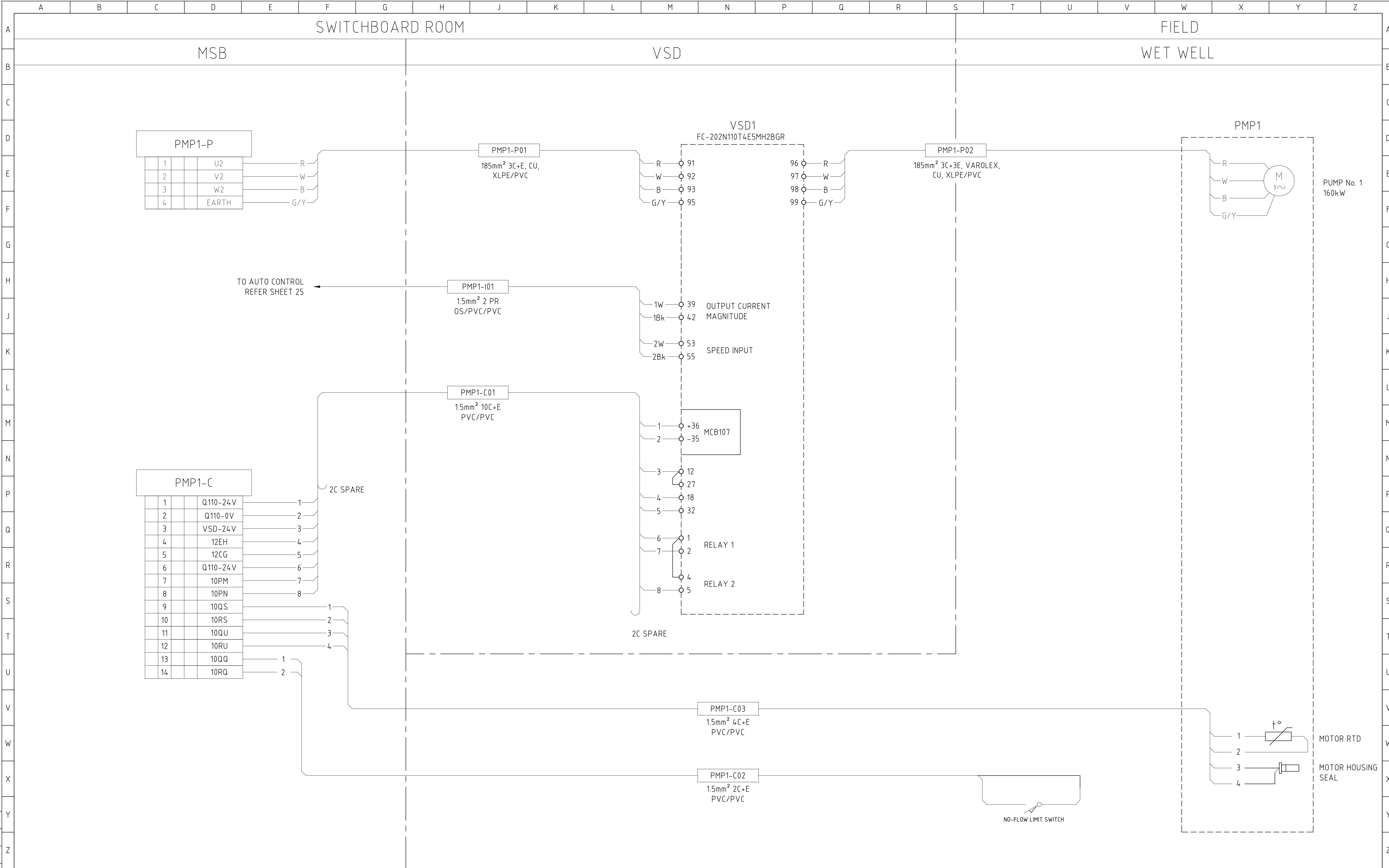
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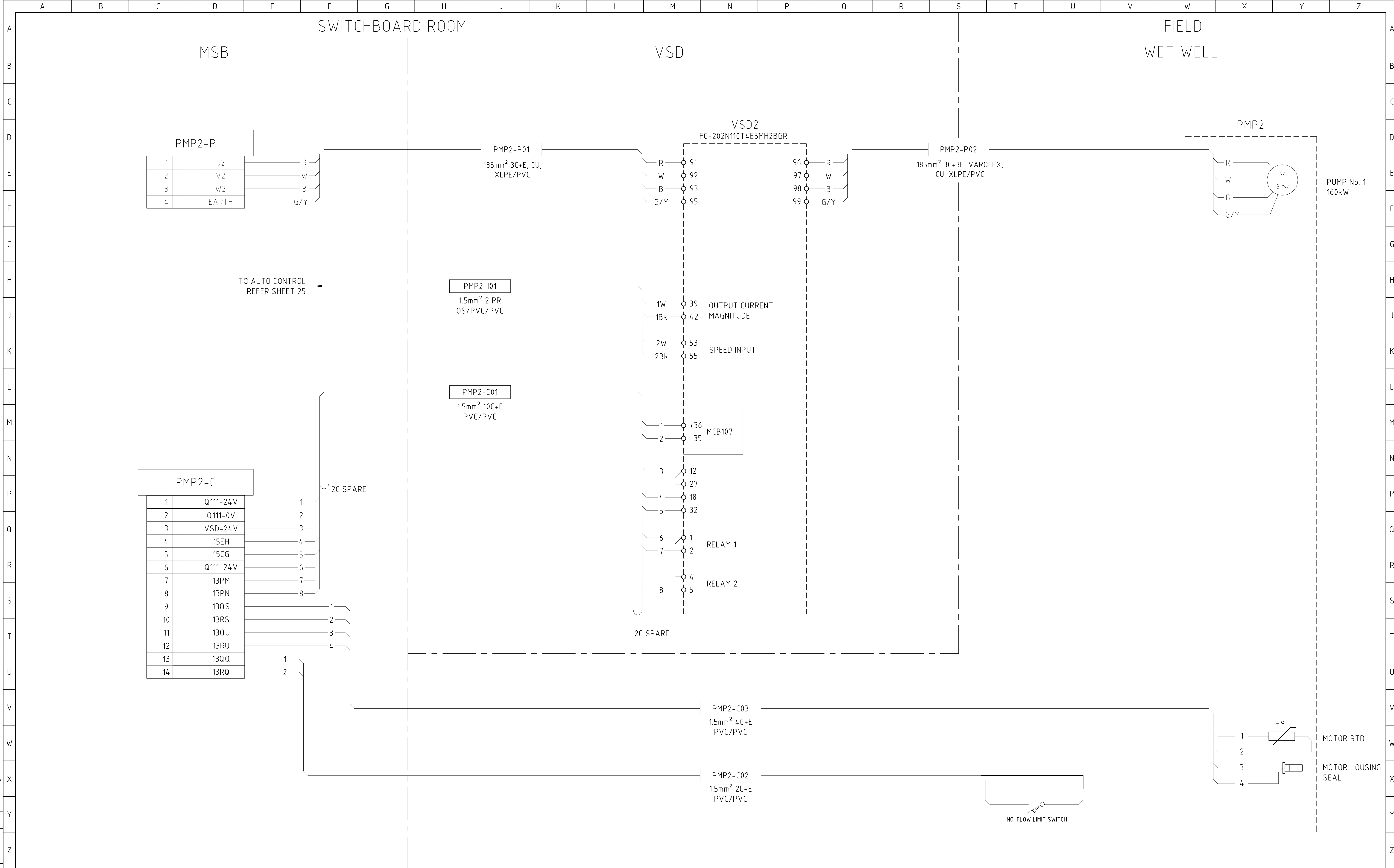


- NOTES:
- 1. SIGNAL ISOLATOR OMNITERM LPR.
 - 2. INSTRUMENT LOOPS ARE BASED ON TYPICAL SUPPLIER PRODUCTS.
 - 3. TRANSIENT SURGE ARRESTOR ERICO UTB30DPS.
 - 4. TRANSIENT SURGE ARRESTOR ERICO UTB30SP.

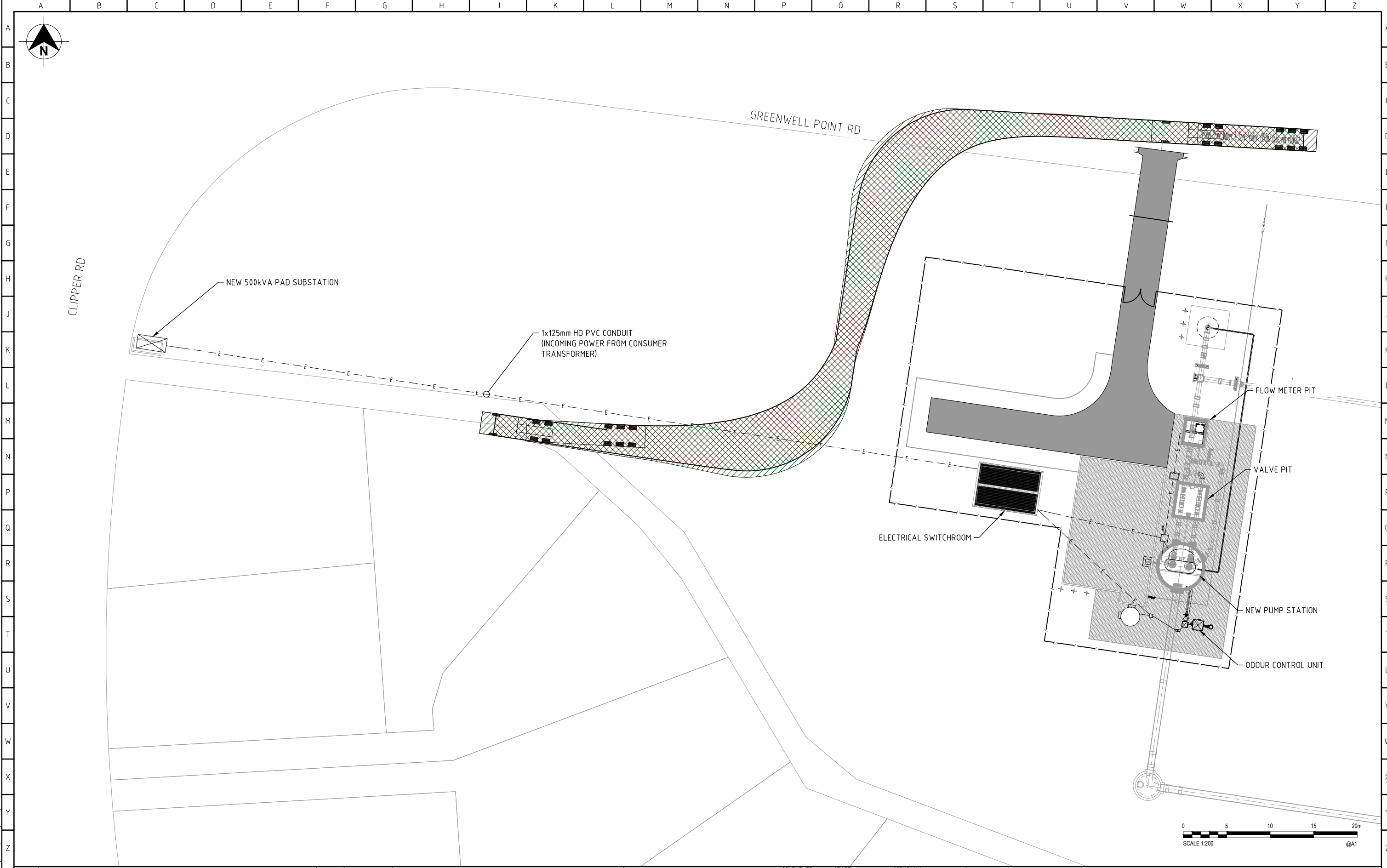
				CONSULTANT DETAILS:			 City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) INSTRUMENTATION LOOP DIAGRAM						
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No.	REVISION DETAILS			DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E	23557	86	060	0



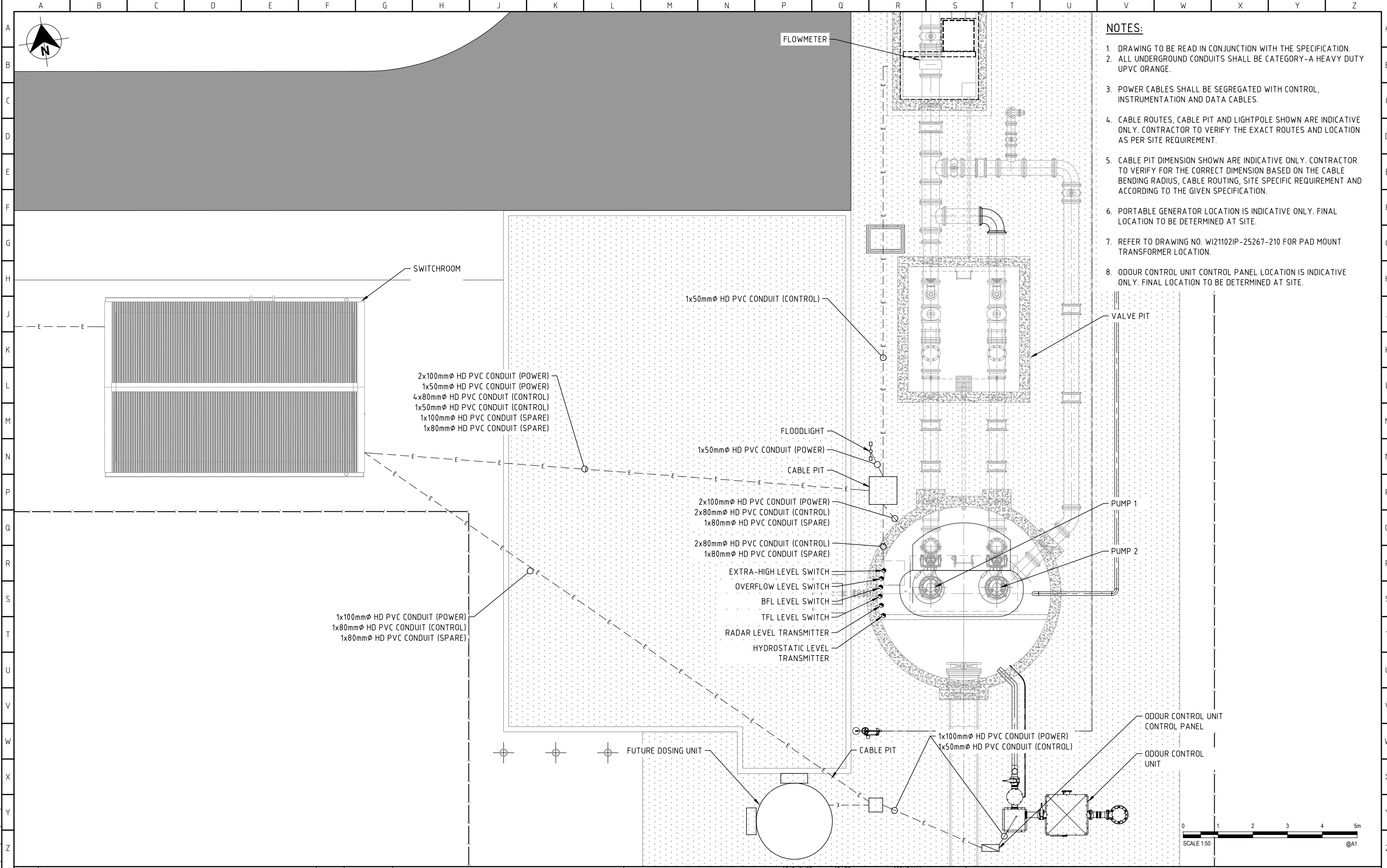
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No. REVISION DETAILS				DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD	47662E				23557	87
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				CONSULTANT DETAILS:				SURVEYED: DATE: COMPANY:				TITLE:			
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No. REVISION DETAILS				DWN	DATE	A1	NTS	HEIGHT DATUM:	AHD	47662E		23557		DRAWING No.	
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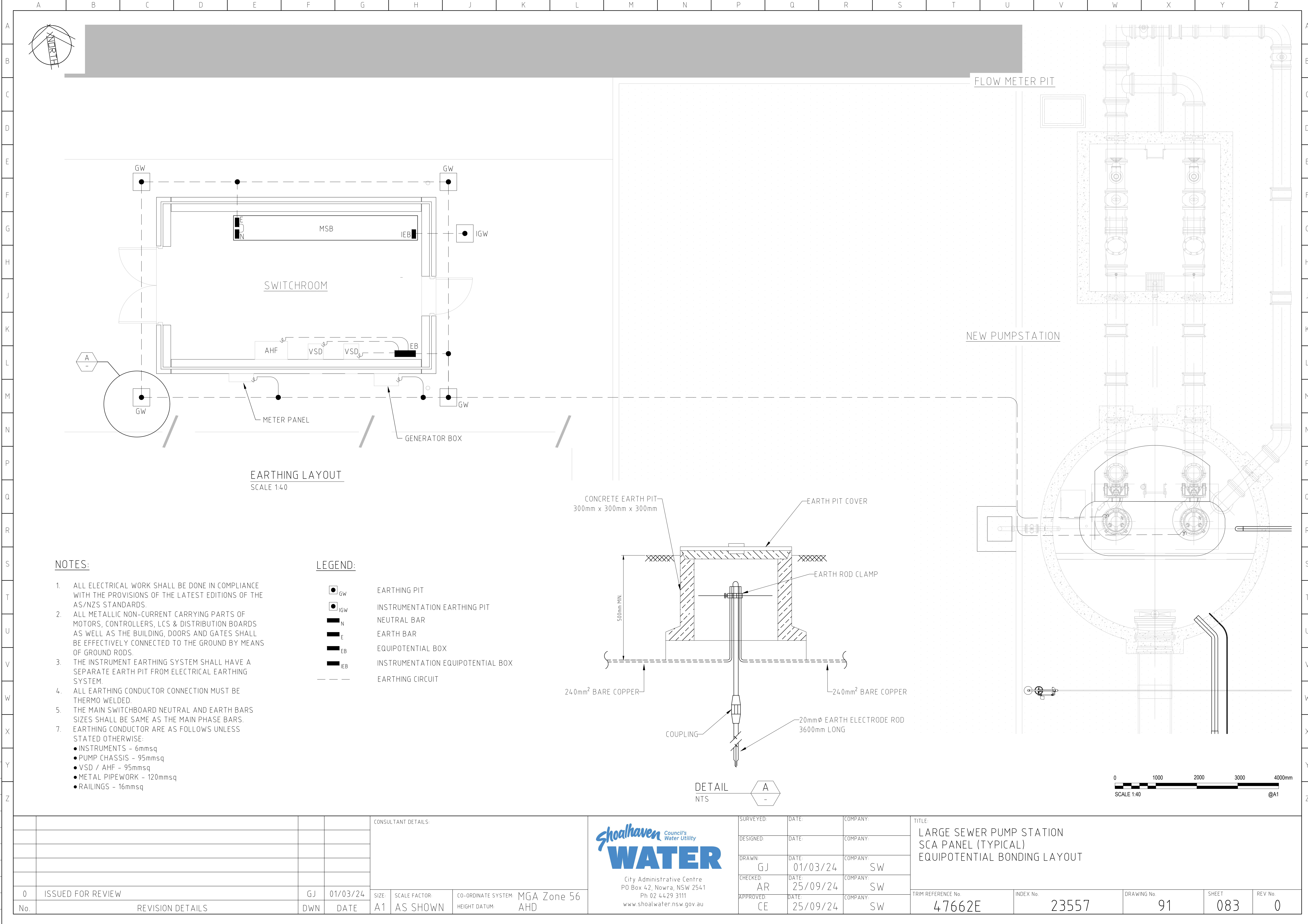


				CONSULTANT DETAILS: Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au				SURVEYED:			DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) CONDUIT ROUTING LAYOUT SHEET 1 OF 2													
								DESIGNED:			DATE:	COMPANY:														
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												TRIM REFERENCE No.			INDEX No.			DRAWING No.			SHEET			REV No.		
												47662E			23557			89			080			0		



- NOTES:**
- DRAWING TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.
 - ALL UNDERGROUND CONDUITS SHALL BE CATEGORY-A HEAVY DUTY UPVC ORANGE.
 - POWER CABLES SHALL BE SEGREGATED WITH CONTROL, INSTRUMENTATION AND DATA CABLES.
 - CABLE ROUTES, CABLE PIT AND LIGHTPOLE SHOWN ARE INDICATIVE ONLY. CONTRACTOR TO VERIFY THE EXACT ROUTES AND LOCATION AS PER SITE REQUIREMENT.
 - CABLE PIT DIMENSION SHOWN ARE INDICATIVE ONLY. CONTRACTOR TO VERIFY FOR THE CORRECT DIMENSION BASED ON THE CABLE BENDING RADIUS, CABLE ROUTING, SITE SPECIFIC REQUIREMENT AND ACCORDING TO THE GIVEN SPECIFICATION.
 - PORTABLE GENERATOR LOCATION IS INDICATIVE ONLY. FINAL LOCATION TO BE DETERMINED AT SITE.
 - REFER TO DRAWING NO. W121102IP-25267-210 FOR PAD MOUNT TRANSFORMER LOCATION.
 - ODOUR CONTROL UNIT CONTROL PANEL LOCATION IS INDICATIVE ONLY. FINAL LOCATION TO BE DETERMINED AT SITE.

				CONSULTANT DETAILS: Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au				SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) CONDUIT ROUTING LAYOUT SHEET 2 OF 2					
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No.	REVISION DETAILS	DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E	23557	90	081	0	



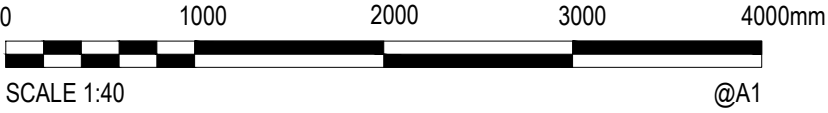
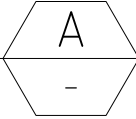
NOTES:

- ALL ELECTRICAL WORK SHALL BE DONE IN COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITIONS OF THE AS/NZS STANDARDS.
- ALL METALLIC NON-CURRENT CARRYING PARTS OF MOTORS, CONTROLLERS, LCS & DISTRIBUTION BOARDS AS WELL AS THE BUILDING, DOORS AND GATES SHALL BE EFFECTIVELY CONNECTED TO THE GROUND BY MEANS OF GROUND RODS.
- THE INSTRUMENT EARTHING SYSTEM SHALL HAVE A SEPARATE EARTH PIT FROM ELECTRICAL EARTHING SYSTEM.
- ALL EARTHING CONDUCTOR CONNECTION MUST BE THERMO WELDED.
- THE MAIN SWITCHBOARD NEUTRAL AND EARTH BARS SIZES SHALL BE SAME AS THE MAIN PHASE BARS.
- EARTHING CONDUCTOR ARE AS FOLLOWS UNLESS STATED OTHERWISE:
 - INSTRUMENTS - 6mmsq
 - PUMP CHASSIS - 95mmsq
 - VSD / AHF - 95mmsq
 - METAL PIPEWORK - 120mmsq
 - RAILINGS - 16mmsq

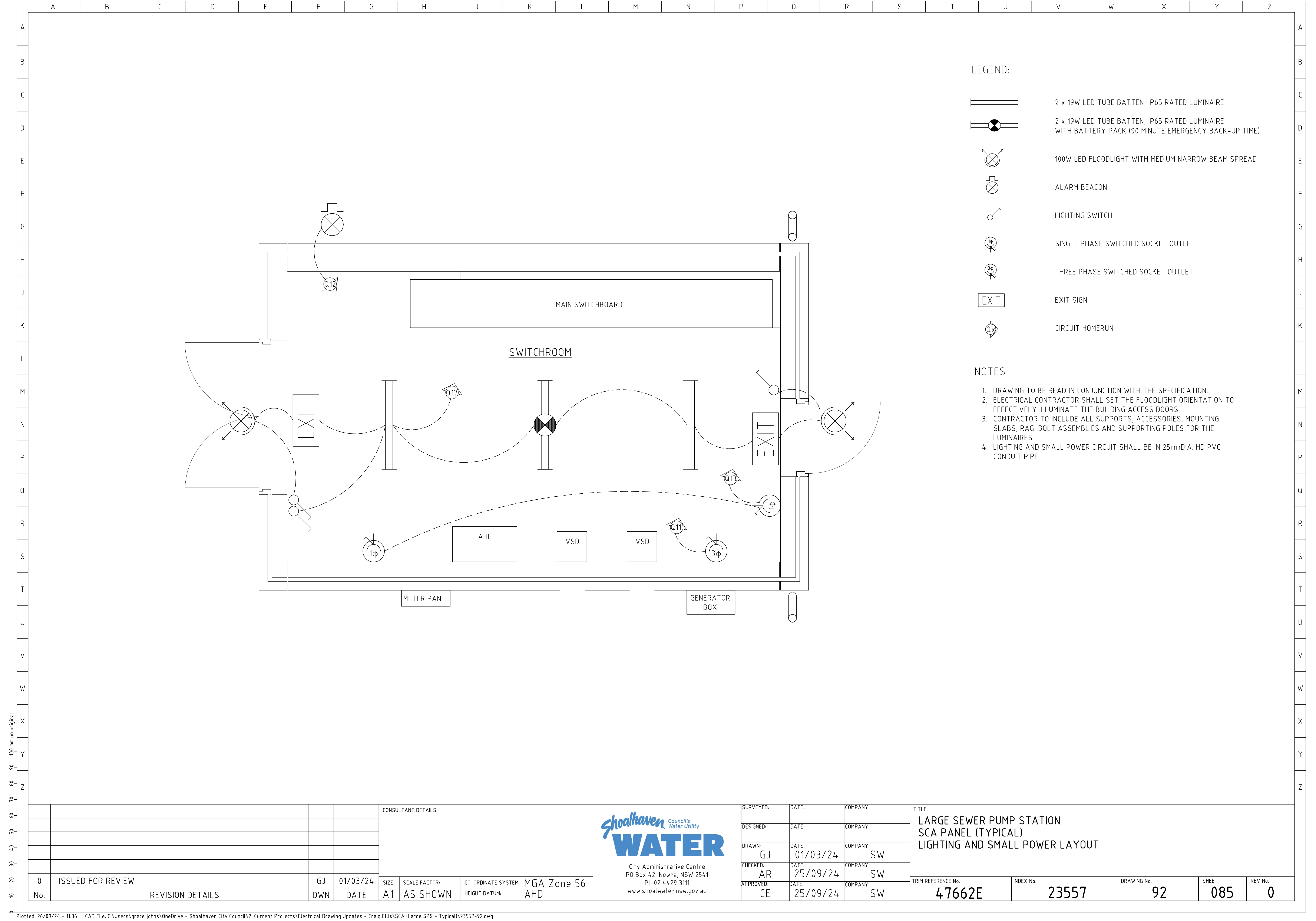
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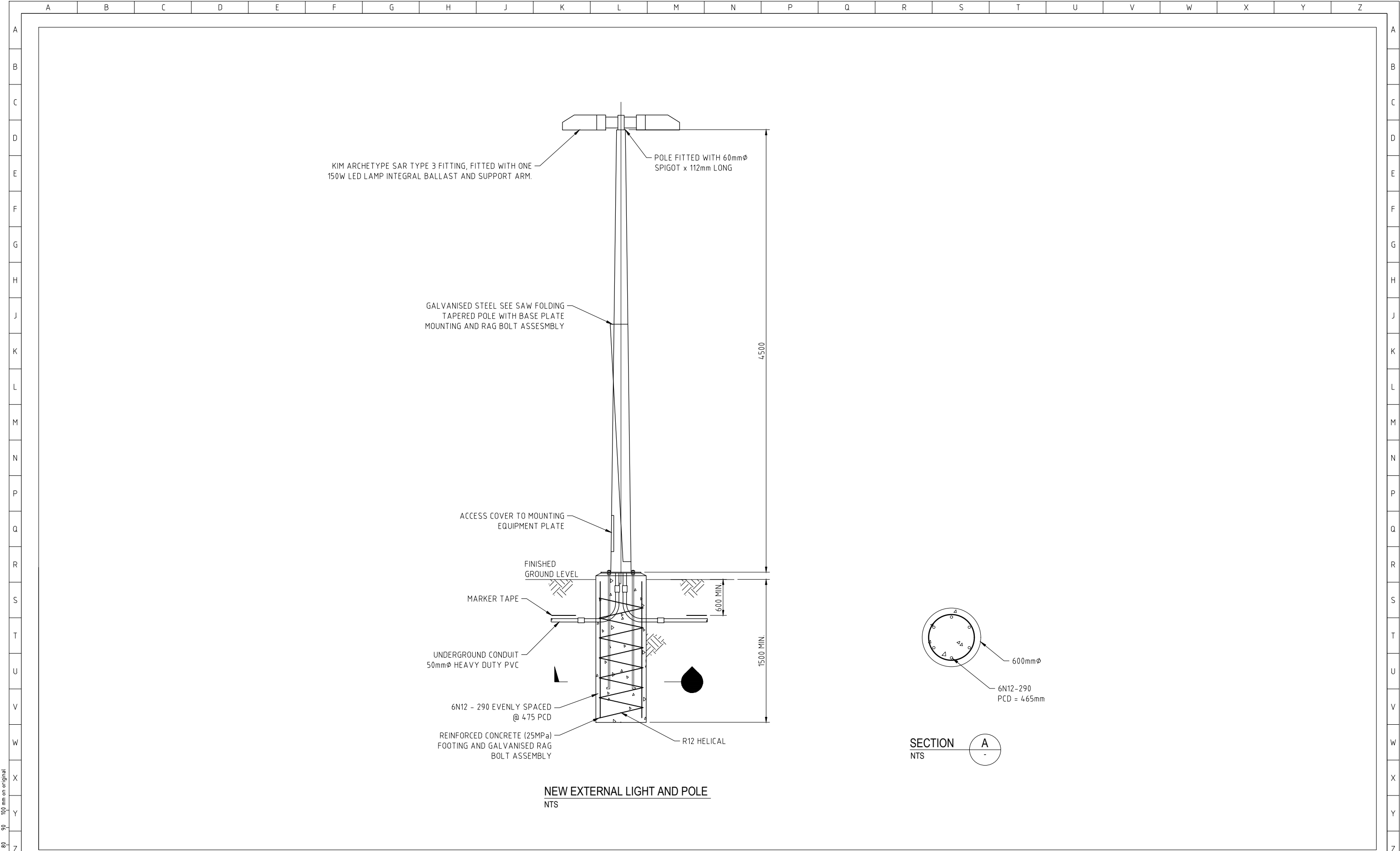
- | | |
|--|-----------------------------------|
| | EARTHING PIT |
| | INSTRUMENTATION EARTHING PIT |
| | NEUTRAL BAR |
| | EARTH BAR |
| | EQUIPOTENTIAL BOX |
| | INSTRUMENTATION EQUIPOTENTIAL BOX |
| | EARTHING CIRCUIT |

DETAIL
NTS



				CONSULTANT DETAILS:			Shoalhaven Council's Water Utility WATER City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) EQUIPOTENTIAL BONDING LAYOUT				
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No.	REVISION DETAILS	DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD								
								TRIM REFERENCE No.		INDEX No.		DRAWING No.		SHEET	REV No.
								47662E		23557		91		083	0





SECTION A
NTS

				CONSULTANT DETAILS:			 City Administrative Centre PO Box 42, Nowra, NSW 2541 Ph 02 4429 3111 www.shoalwater.nsw.gov.au	SURVEYED:	DATE:	COMPANY:	TITLE: LARGE SEWER PUMP STATION SCA PANEL (TYPICAL) LIGHT POLE DETAIL						
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								DRAWN:	DATE:	COMPANY:							
								GJ	01/03/24	SW							
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								AR	25/09/24	SW							
0	ISSUED FOR REVIEW			GJ	01/03/24	SIZE:	SCALE FACTOR:	CO-ORDINATE SYSTEM:	MGA Zone 56	APPROVED:	DATE:	COMPANY:	TRIM REFERENCE No.	INDEX No.	DRAWING No.	SHEET	REV No.
No.	REVISION DETAILS			DWN	DATE	A1	AS SHOWN	HEIGHT DATUM:	AHD	CE	25/09/24	SW	47662E	23557	93	086	0