



Phone. +27 15 293 0547
Email. Info@vennic.co.za

NORTHERN ENCLOSURES & POWDER COATERS PTY LTD

Company / customer	Lepelle Northern Water
Project description	Burgersfort WWTW
Job number	17556
Commission	2022

Lepelle Northern Water
Burgersfort WWTW
17556
2022

Manufacturer (company)	NORTHERN ENCLOSURES & POWDER COATERS PTY LTD
Project name	Burgersfort WWTW
Place of installation	
Responsible for project	Barend Muller B.Eng

NORTHERN ENCLOSURES & POWDER COATERS PTY LTD
Burgersfort WWTW

Barend Muller B.Eng



JN Water
TEL: 083 302 9703
FAX: 086 671 0250
P.O. Box 12414
Hatfield
0028

Created on	2020/12/02
Edit date	2021/11/22

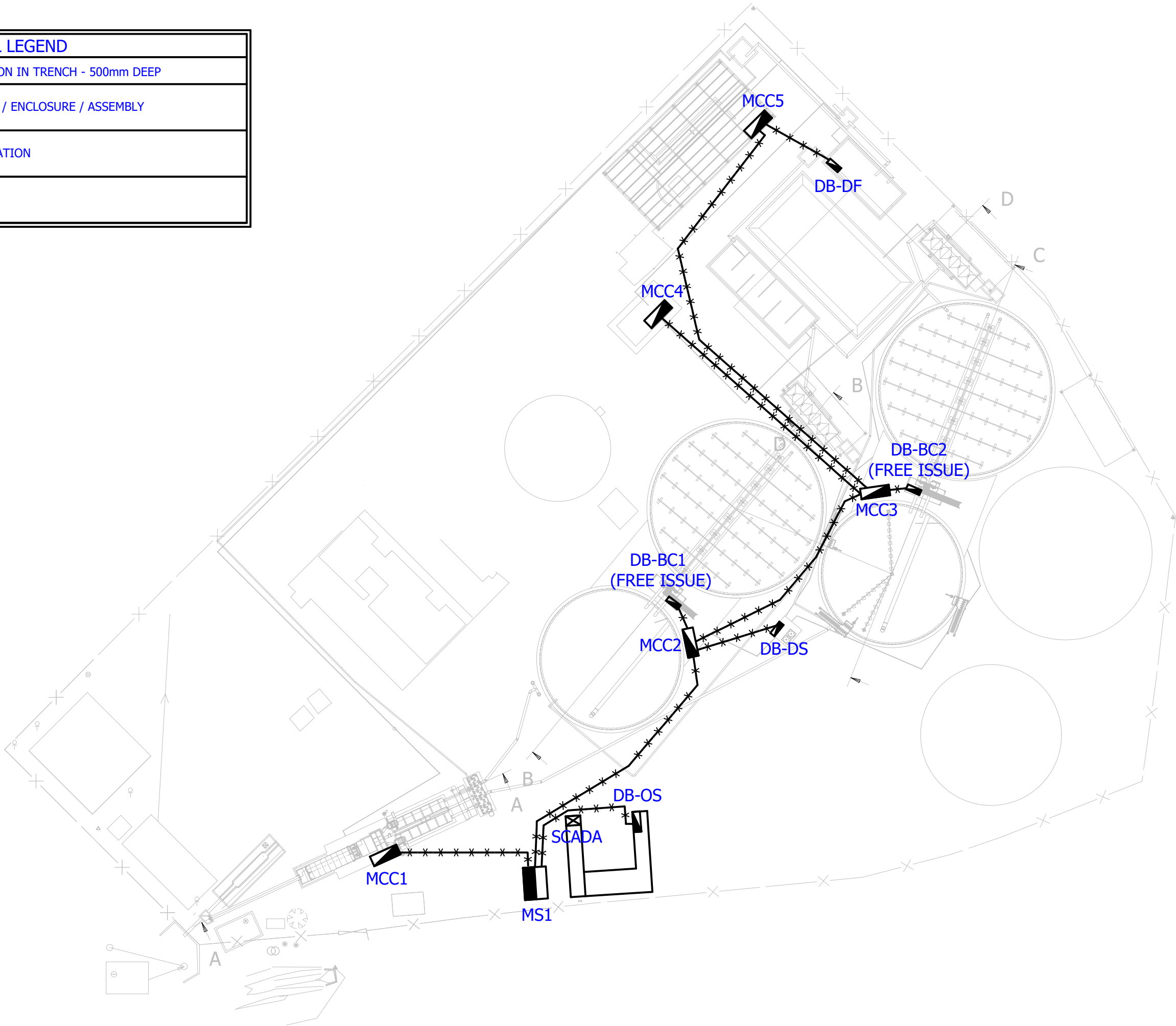
2020/12/02

2021/11/22

Number of pages 13

22/11/21	0	FOR APPROVAL	Revision	0	 015 293 0547 info@vennic.co.za www.vennic.co.za	Project: Burgersfort WWTW		Job Number: 17556	=	
			Design date	2021/11/22		Title: Cover Page	Customer: Water Skills & Lepelle Northern Water	+	/	1
			Designed by	Barend Muller				Sheet	2	
			Approved by					of	13	
Date	Rev	Description	Approved date							

PANEL LEGEND	
— x x x x x —	CABLE INSTALLATION IN TRENCH - 500mm DEEP
	ELECTRICAL PANEL / ENCLOSURE / ASSEMBLY
	MINIATURE SUBSTATION
	SCADA SYSTEM





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22/11/21	0	FOR APPROVAL	Revision	0
			Design date	2021/11/22
			Designed by	Barend Muller
			Approved by	
Date	Rev	Description	Approved date	



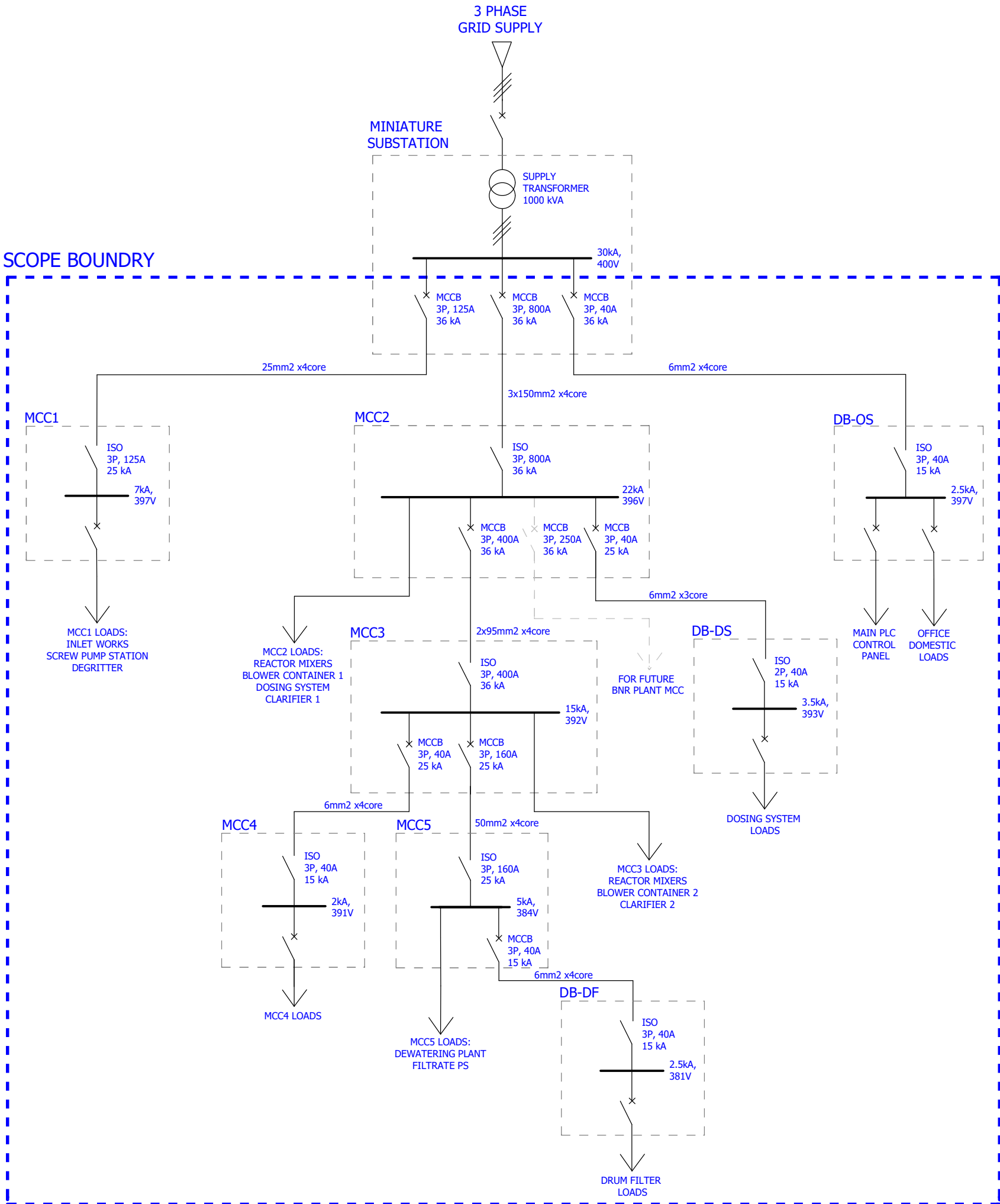
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Project:	Burgersfort WWTW	Job Number:	17556	=
Title:	Site Electrical Layout	Customer:	Water Skills & Lepelle Northern Water	+ / 2
				Sheet 2
				of 13

PANEL LEGEND	
MCC1:	INLET WORKS
MCC2:	BIOLOGICAL NUTRIANT REACTOR 1
MCC3:	BIOLOGICAL NUTRIANT REACTOR 2
MCC4:	CHLORINATION
MCC5:	DEWATERING PLANT
DB-OS:	OFFICE BUILDING
DB-DS:	DOSING SYSTEM
DB-DF:	DRUM FILTER BUILDING

SCOPE BOUNDRY





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22/11/21	0	FOR APPROVAL	Revision	0
			Design date	2021/11/22
			Designed by	Barend Muller
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Date	Rev	Description	Approved date	

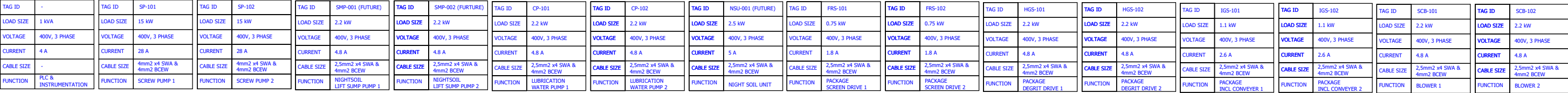


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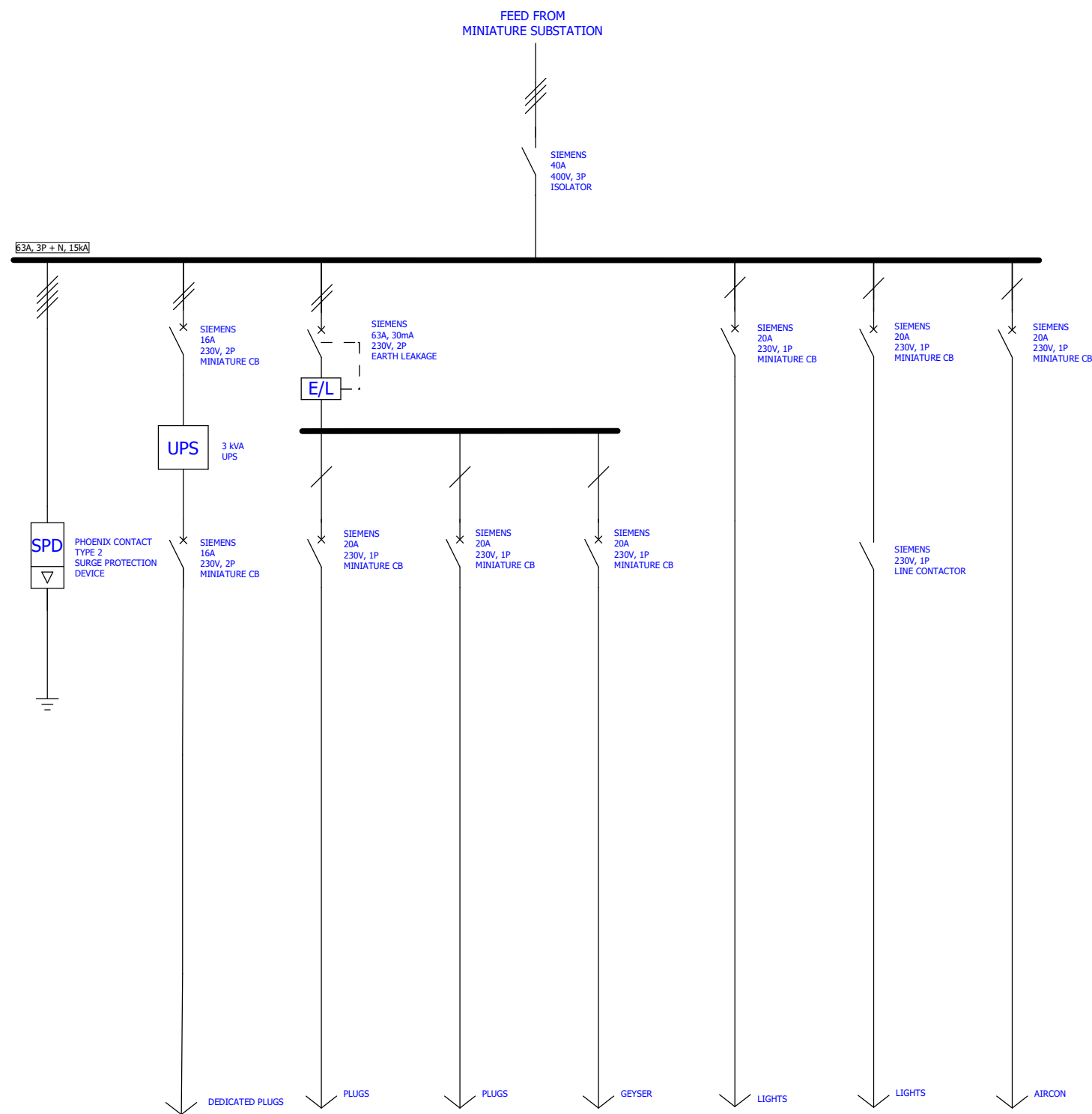
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Project:	Burgersfort WWTW	Job Number:	17556	=
Title:	SLD - Electrical Network	Customer:	Water Skills & Lepelle Northern Water	+ / 3
				Sheet 2
				of 13



22/11/21	0	FOR APPROVAL	Revision	0	 015 293 0547 info@vennic.co.za	Project:	Burgersfort WWTW	Job Number:	17556	=
			Design date	2021/11/22		Title:	SLD - MCC1: Inlet Works	Customer:	Water Skills & Lepelle Northern Water	+ / 4
			Designed by	Barend Muller						
			Approved by							
Date	Rev	Description	Approved date							
										Sheet 2
										of 13



TAG ID	-
LOAD SIZE	1 kW
VOLTAGE	230V, 1 PHASE
CURRENT	13 A
CABLE SIZE	2.5mm2 x2+E SURFIX
TYPE	SCADA AND COMPUTERS

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	2.5mm2 x2+E SURFIX
TYPE	PLUGS

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	2.5mm2 x2+E SURFIX
TYPE	PLUGS

TAG ID	-
LOAD SIZE	3 kW
VOLTAGE	230V, 1 PHASE
CURRENT	13 A
CABLE SIZE	2.5mm2 x2+E SURFIX
TYPE	GEYSER

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	1.5mm2 x2+E SURFIX
TYPE	LIGHTS

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	1.5mm2 x2+E SURFIX
TYPE	EXTERNAL LIGHTS

TAG ID	-
LOAD SIZE	3 kW
VOLTAGE	230V, 1 PHASE
CURRENT	13 A
CABLE SIZE	2.5mm2 x2+E SURFIX
TYPE	AIRCON



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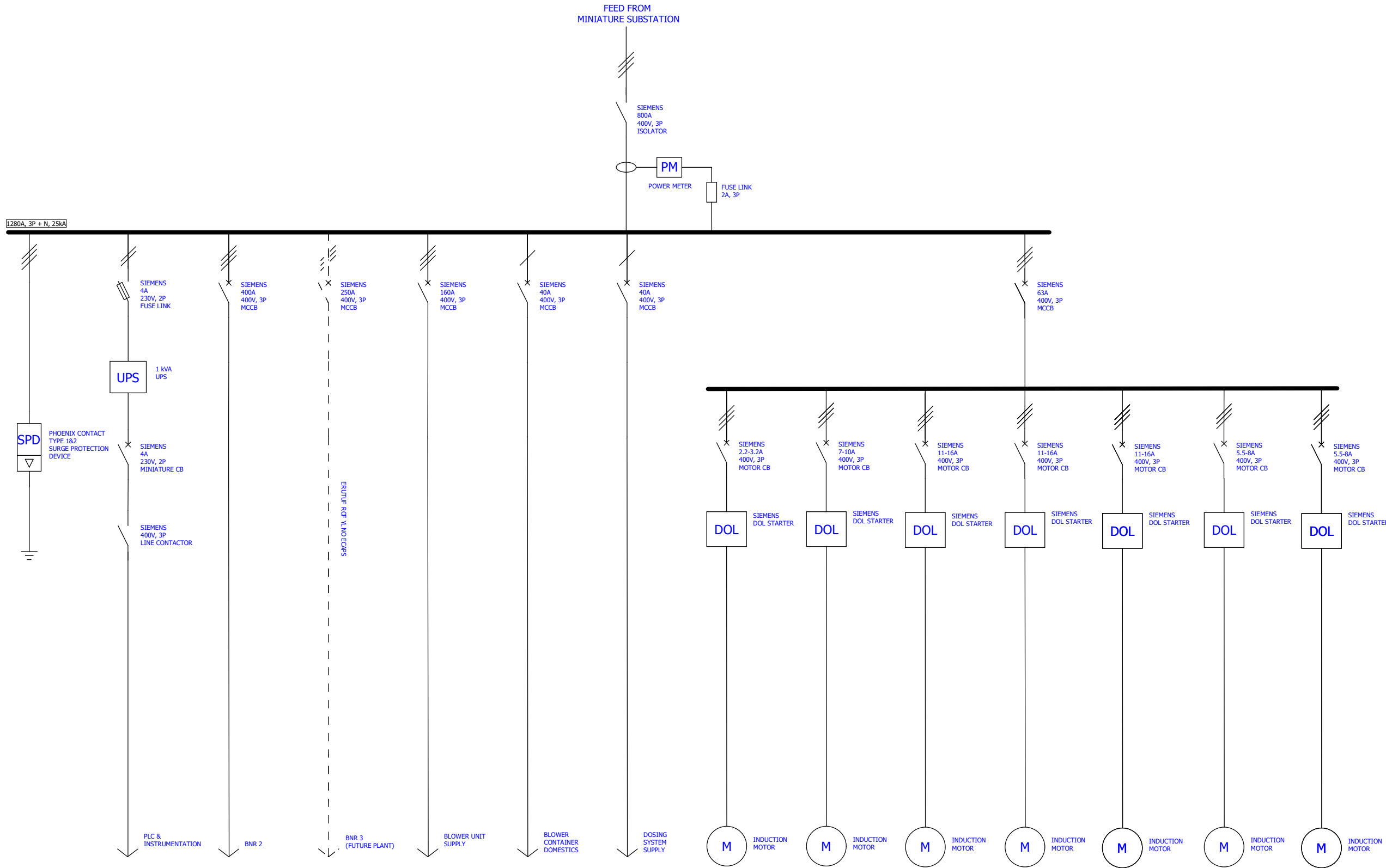


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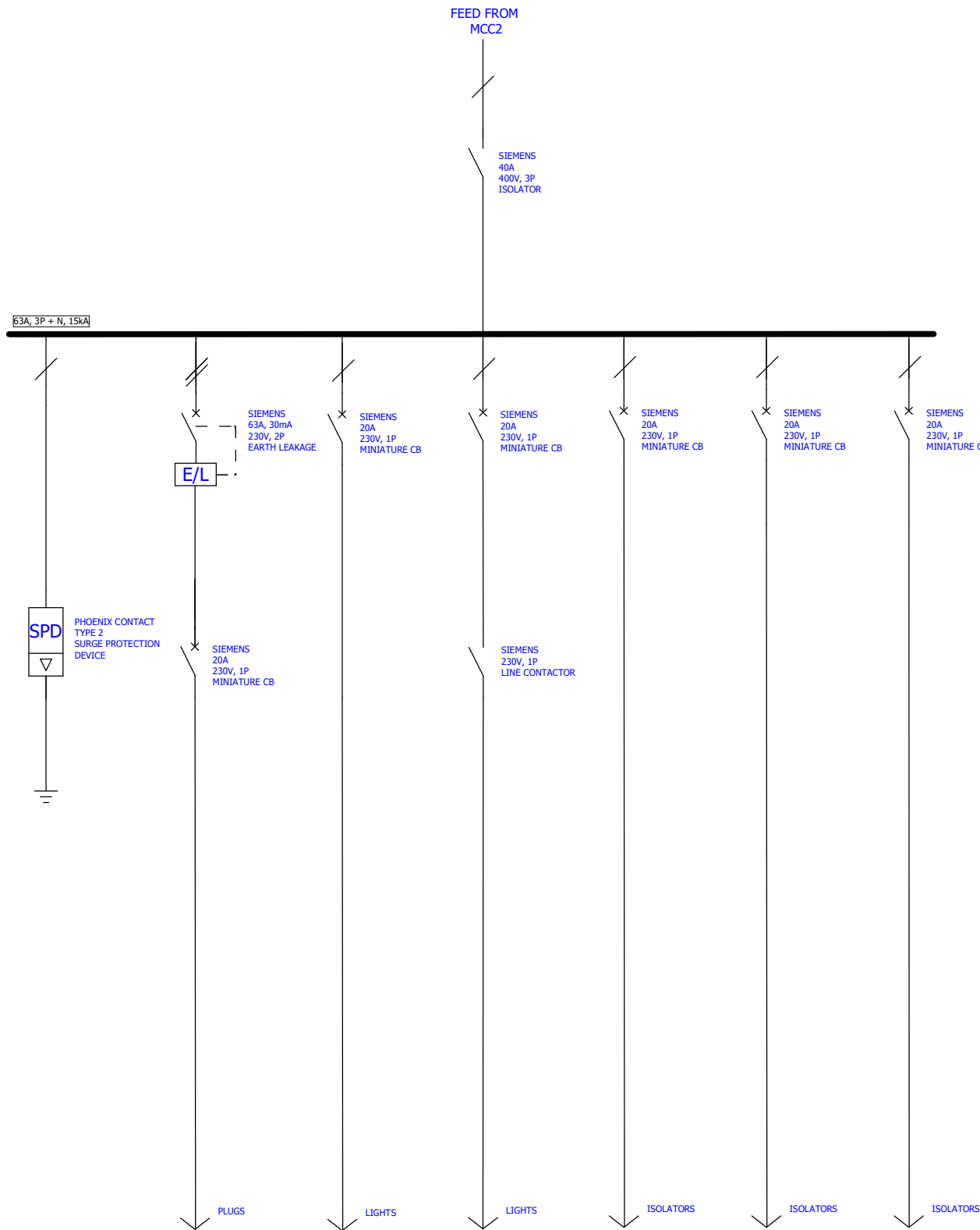
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TAG ID	-	TAG ID	MCC3	TAG ID	MCC6 (FUTURE)	TAG ID	B-301	TAG ID	DB-BC1	TAG ID	DB-DS	TAG ID	SM-301	TAG ID	SM-302	TAG ID	SM-303	TAG ID	AFP-301	TAG ID	AFP-302	TAG ID	SP-301	TAG ID	SP-302
LOAD SIZE	1 kVA	LOAD SIZE	170 kW	LOAD SIZE	95 kW	LOAD SIZE	75 kW	LOAD SIZE	1 kW	LOAD SIZE	3 kW	LOAD SIZE	1.1 kW	LOAD SIZE	4 kW	LOAD SIZE	7.5 kW	LOAD SIZE	7.5 kW	LOAD SIZE	7.5 kW	LOAD SIZE	3 kW	LOAD SIZE	3 kW
VOLTAGE	230V, 1 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE
CURRENT	4 A	CURRENT	308 A	CURRENT	170 A	CURRENT	131 A	CURRENT	4.3 A	CURRENT	13 A	CURRENT	2.6 A	CURRENT	8.3 A	CURRENT	15 A	CURRENT	15 A	CURRENT	15 A	CURRENT	6.4 A	CURRENT	6.4 A
CABLE SIZE	-	CABLE SIZE	2x95mm2 x4 SWA & 70mm2 BCEW	CABLE SIZE	95mm2 x4 SWA & 70mm2 BCEW	CABLE SIZE	35mm2 x4 SWA & 25mm2 BCEW	CABLE SIZE	6mm2 x3 SWA	CABLE SIZE	6mm2 x3 SWA	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW
FUNCTION	PLC & INSTRUMENTATION	FUNCTION	BNR 2	FUNCTION	BNR 3 (FUTURE PLANT)	FUNCTION	BLOWER 1	FUNCTION	BLOWER CONTAINER DOMESTICS	FUNCTION	DOSING SYSTEM	FUNCTION	ANOXIC MIXER 1	FUNCTION	ANOXIC MIXER 2	FUNCTION	ANEAROBIC MIXER 1	FUNCTION	AXIAL FLOW PUMP 1	FUNCTION	AXIAL FLOW PUMP 2	FUNCTION	RAS PUMP 1	FUNCTION	RAS PUMP 2



TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-
LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE
CURRENT	2 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A
CABLE SIZE	2.5mm ² x2+E SURFIX	CABLE SIZE	1.5mm ² x2+E SURFIX	CABLE SIZE	1.5mm ² x2+E SURFIX	CABLE SIZE	2.5mm ² x2+E SURFIX	CABLE SIZE	2.5mm ² x2+E SURFIX	CABLE SIZE	2.5mm ² x2+E SURFIX
FUNCTION	PLUGS	FUNCTION	LIGHTS	FUNCTION	EXTERIOR LIGHTS	FUNCTION	PLYMERE DOSING PUMPS	FUNCTION	METHANOL DOSING PUMPS	FUNCTION	ISOLATORS



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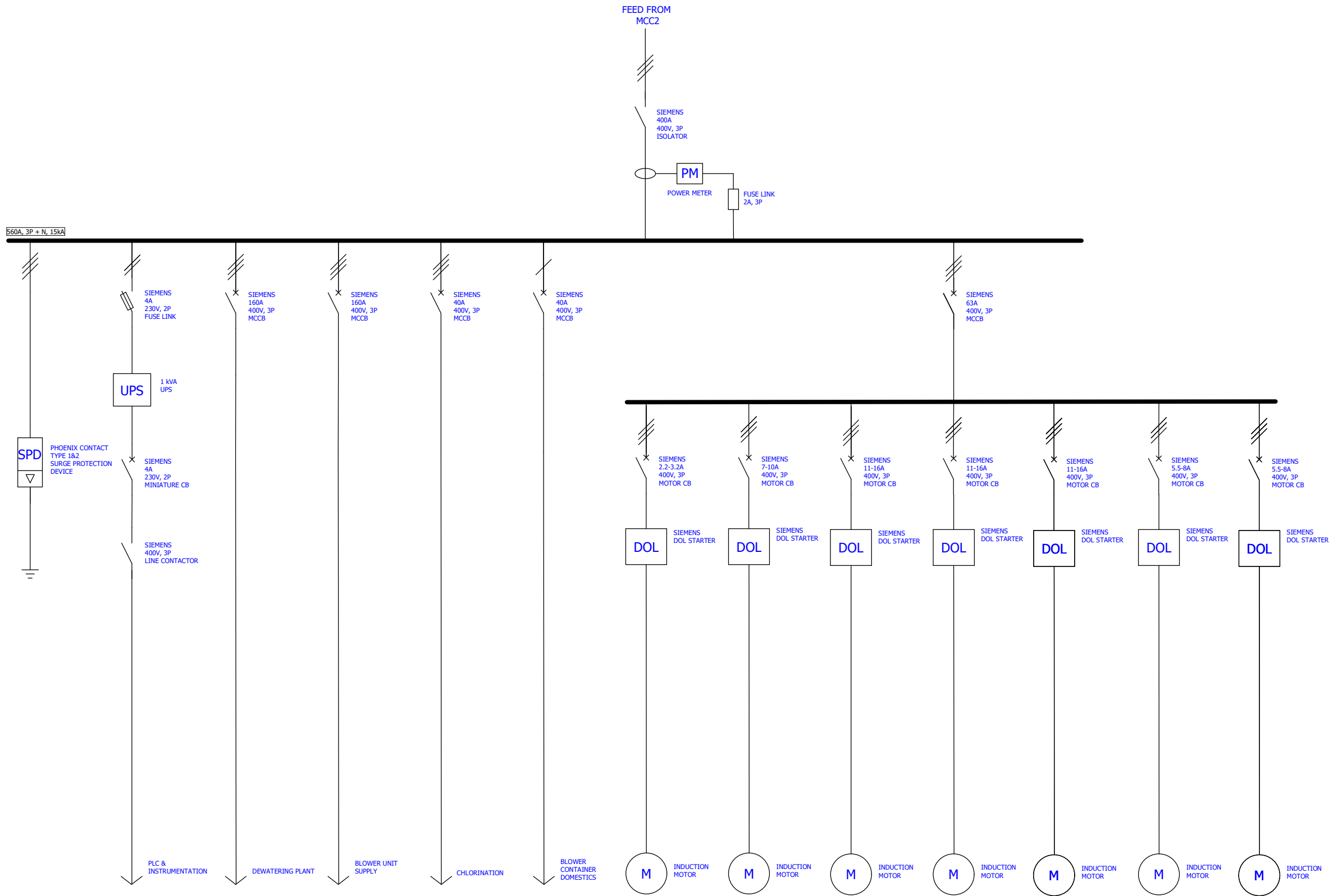


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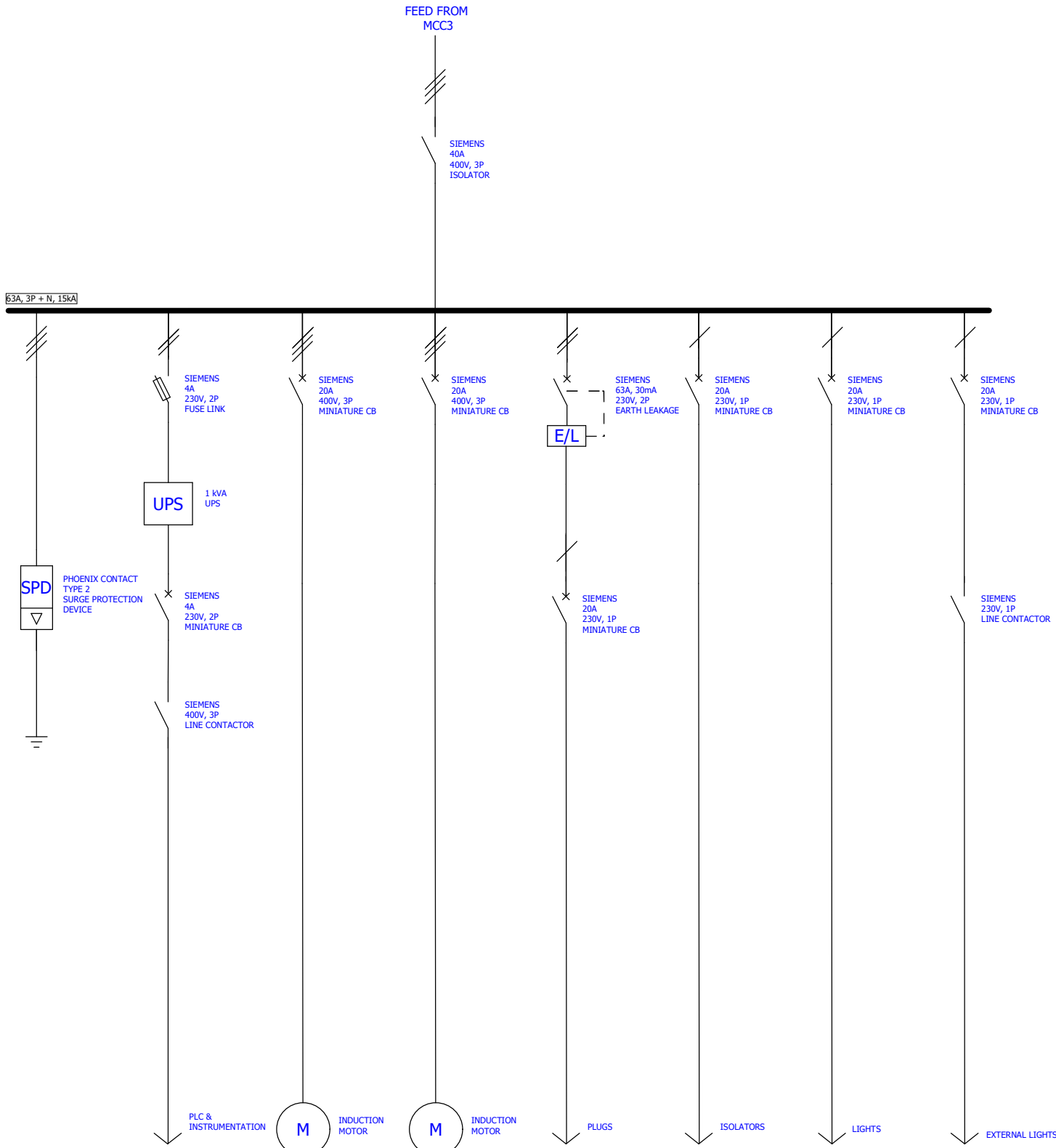
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TAG ID	-	TAG ID	MCC5	TAG ID	B-302	TAG ID	MCC4	TAG ID	DB-BC2	TAG ID	SM-304	TAG ID	SM-305	TAG ID	SM-306	TAG ID	AFP-303	TAG ID	AFP-304	TAG ID	SP-303	TAG ID	SP-304
LOAD SIZE	1 kVA	LOAD SIZE	65 kW	LOAD SIZE	75 kW	LOAD SIZE	4 kW	LOAD SIZE	1 kW	LOAD SIZE	1.1 kW	LOAD SIZE	4 kW	LOAD SIZE	7.5 kW	LOAD SIZE	7.5 kW	LOAD SIZE	7.5 kW	LOAD SIZE	3 kW	LOAD SIZE	3 kW
VOLTAGE	230V, 1 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE
CURRENT	4 A	CURRENT	116 A	CURRENT	131 A	CURRENT	7 A	CURRENT	4.3 A	CURRENT	2.6 A	CURRENT	8.3 A	CURRENT	15 A	CURRENT	15 A	CURRENT	15 A	CURRENT	6.4 A	CURRENT	6.4 A
CABLE SIZE	-	CABLE SIZE	50mm2 x4 SWA & 35mm2 BCEW	CABLE SIZE	35mm2 x4 SWA & 25mm2 BCEW	CABLE SIZE	6mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	6mm2 x3 SWA	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW
FUNCTION	PLC & INSTRUMENTATION	FUNCTION	DEWATERING PLANT	FUNCTION	BLOWER 2	FUNCTION	CHLORINATION	FUNCTION	BLOWER CONTAINER DOMESTICS	FUNCTION	ANOXIC MIXER 1	FUNCTION	ANOXIC MIXER 2	FUNCTION	ANEROBIC MIXER 1	FUNCTION	AXIAL FLOW PUMP 1	FUNCTION	AXIAL FLOW PUMP 2	FUNCTION	RAS PUMP 1	FUNCTION	RAS PUMP 2



TAG ID	-
LOAD SIZE	1 kVA
VOLTAGE	230V, 1 PHASE
CURRENT	4 A
CABLE SIZE	-
FUNCTION	PLC & INSTRUMENTATION

TAG ID	-
LOAD SIZE	1.1 kW
VOLTAGE	400V, 3 PHASE
CURRENT	1.8 A
CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW
FUNCTION	EXTRACTOR FAN

TAG ID	-
LOAD SIZE	2.2 kW
VOLTAGE	400V, 3 PHASE
CURRENT	4.8 A
CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW
FUNCTION	CHLORINE HOIST

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	2.5mm2 x2+E SURFIX
FUNCTION	PLUGS

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	2.5mm2 x2+E SURFIX
FUNCTION	PLUGS

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	1.5mm2 x2+E SURFIX
FUNCTION	LIGHTS

TAG ID	-
LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE
CURRENT	2 A
CABLE SIZE	1.5mm2 x2+E SURFIX
FUNCTION	EXTERNAL LIGHTS



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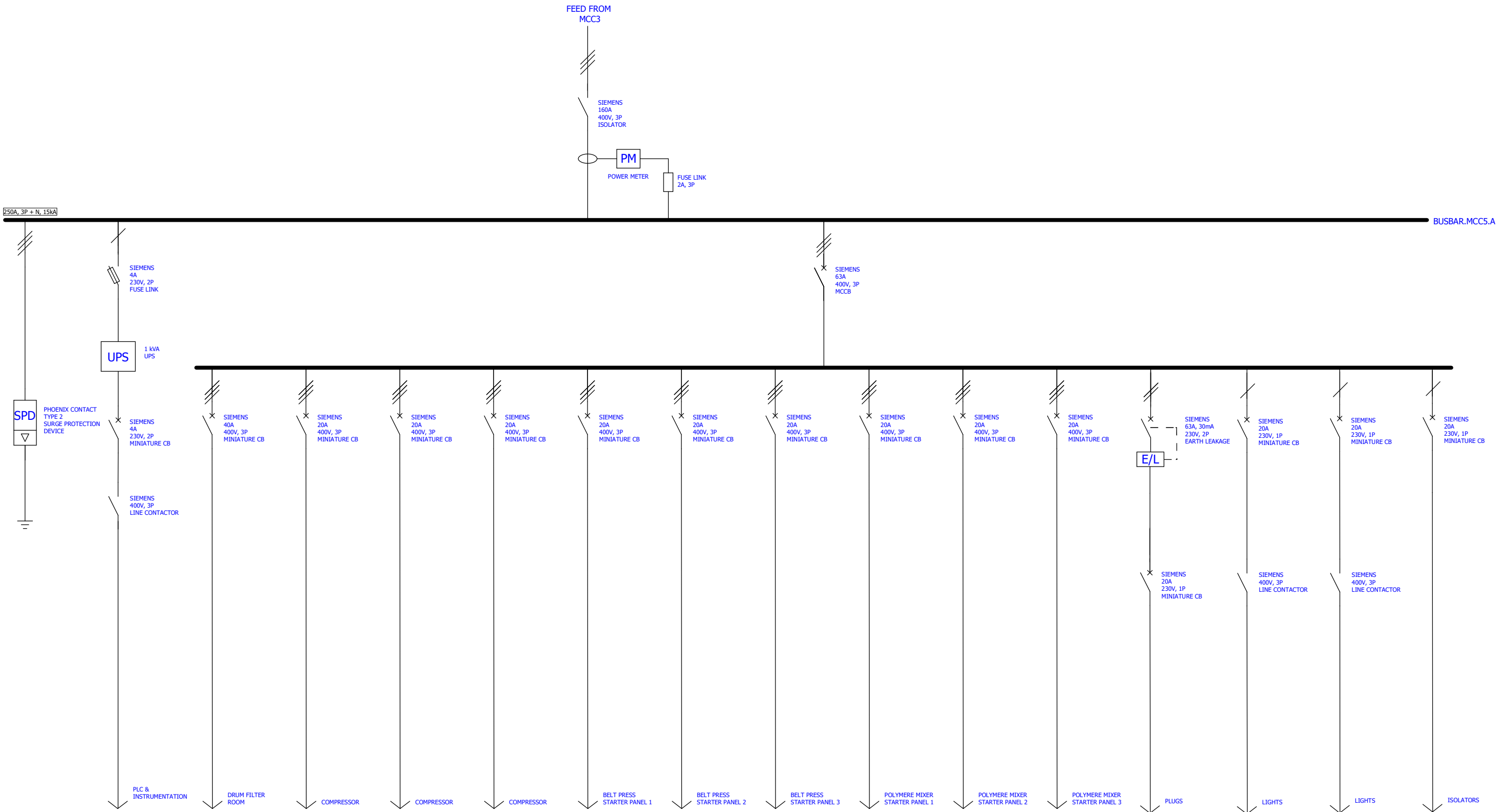


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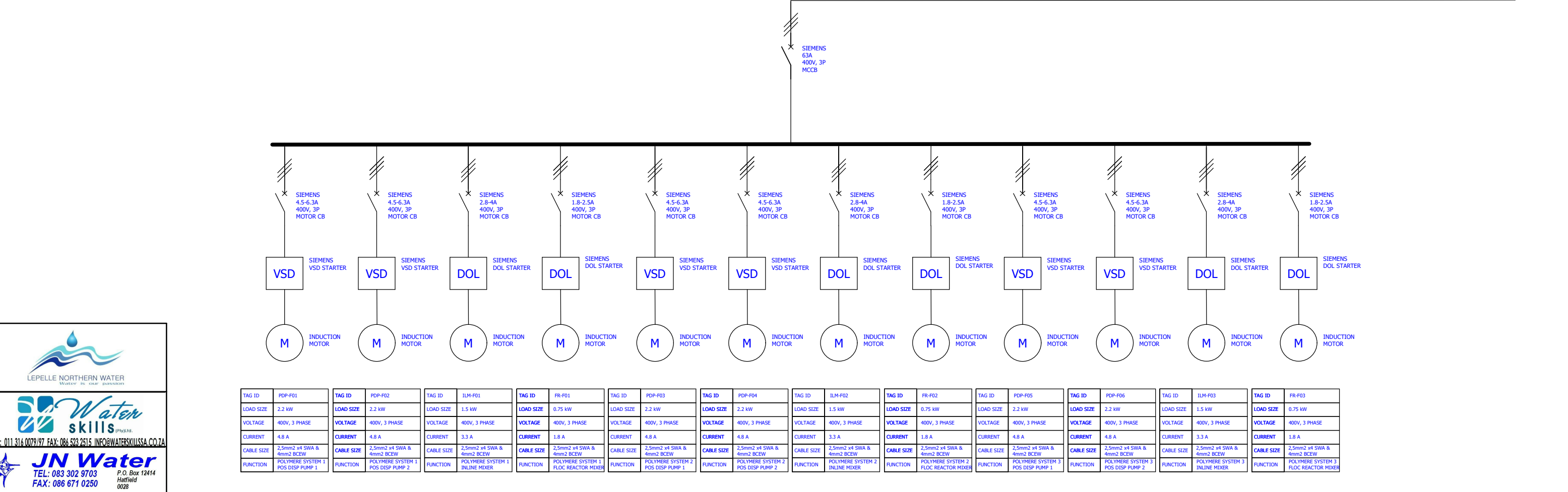
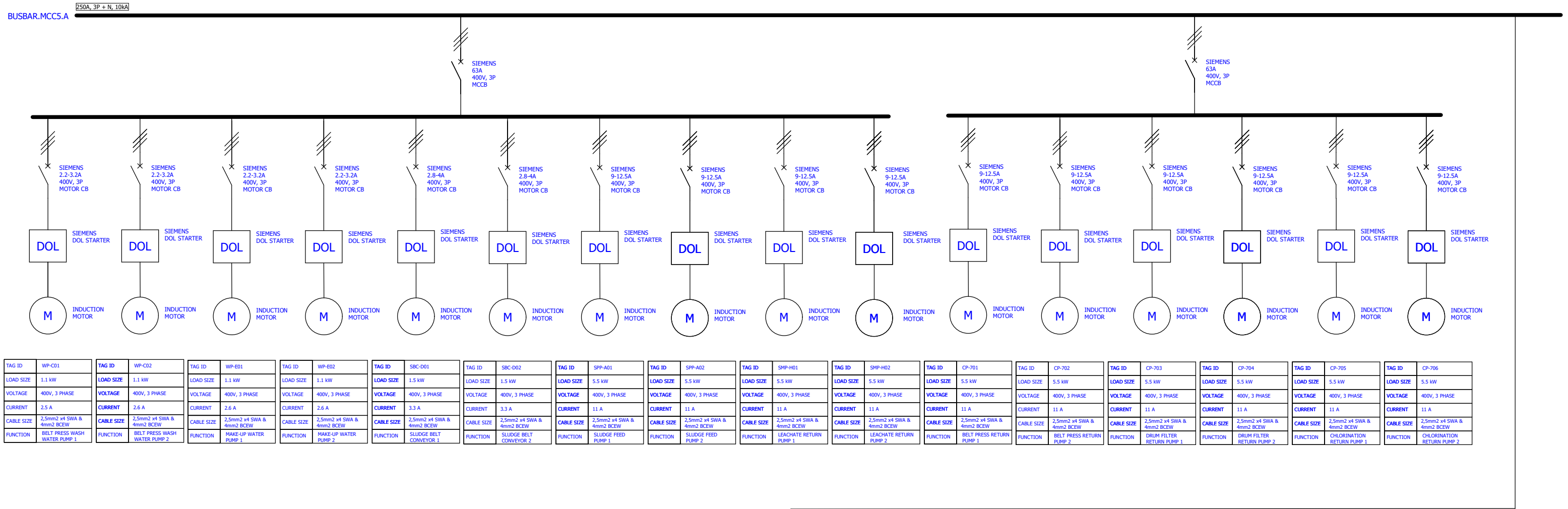
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TAG ID	-	TAG ID	DB-DF	TAG ID	AC-801	TAG ID	AC-301	TAG ID	AC-302	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-
LOAD SIZE	1 kVA	LOAD SIZE	3.5 kW	LOAD SIZE	1.5 kW	LOAD SIZE	5.5 kW	LOAD SIZE	5.5 kW	LOAD SIZE	4.65 kW	LOAD SIZE	4.65 kW	LOAD SIZE	4.65 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW
VOLTAGE	230V, 1 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE
CURRENT	4 A	CURRENT	6.5 A	CURRENT	3.3 A	CURRENT	11 A	CURRENT	11 A	CURRENT	8.3 A	CURRENT	8.3 A	CURRENT	8.3 A	CURRENT	0.9 A	CURRENT	0.9 A	CURRENT	0.9 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A
CABLE SIZE	-	CABLE SIZE	10mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x2+E SURFIX	CABLE SIZE	2.5mm2 x2+E SURFIX	CABLE SIZE	1.5mm2 x2+E SURFIX	CABLE SIZE	1.5mm2 x2+E SURFIX	CABLE SIZE	2.5mm2 x2+E SURFIX	CABLE SIZE	2.5mm2 x2+E SURFIX
FUNCTION	PLC & INSTRUMENTATION	FUNCTION	DRUM FILTER ROOM	FUNCTION	COMPRESSOR	FUNCTION	COMPRESSOR	FUNCTION	COMPRESSOR	FUNCTION	BELT PRESS STARTER PANEL 1	FUNCTION	BELT PRESS STARTER PANEL 2	FUNCTION	BELT PRESS STARTER PANEL 3	FUNCTION	POLYMERE MIXER STARTER PANEL 1	FUNCTION	POLYMERE MIXER STARTER PANEL 2	FUNCTION	POLYMERE MIXER STARTER PANEL 3	FUNCTION	PLUGS	FUNCTION	LIGHTS (DAY/NIGHT SWITCHED)	FUNCTION	LIGHTS (DAY/NIGHT SWITCHED)	FUNCTION	LIGHTS (DAY/NIGHT SWITCHED)	FUNCTION	ISOLATORS





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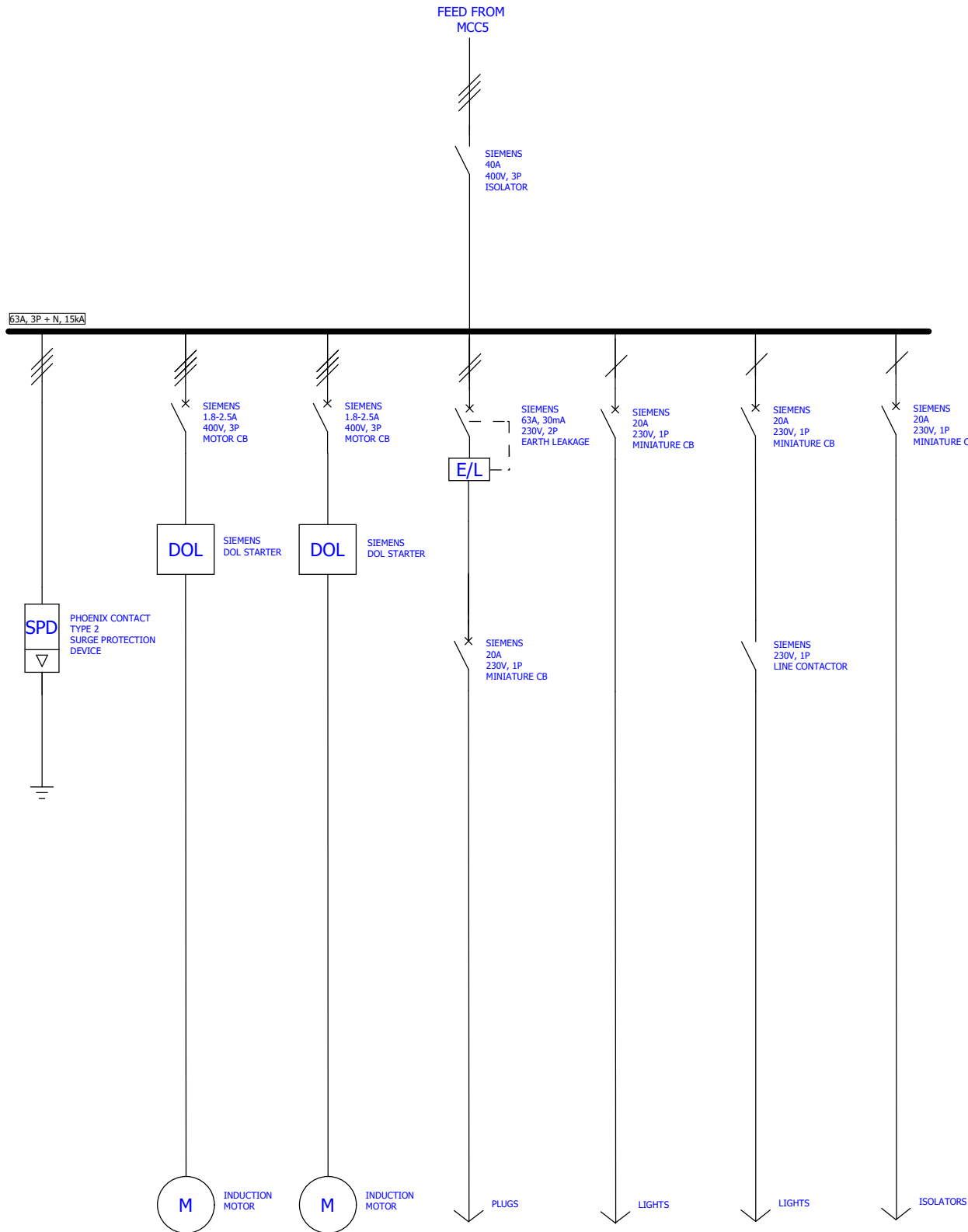


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22/11/21	0	FOR APPROVAL	Revision	0	 015 293 0547 info@vennic.co.za	Project: Burgersfort WWTW	Job Number: 17556	=
			Design date	2021/11/22				+ / 11
			Designed by	Barend Muller				
			Approved by					
Date	Rev	Description	Approved date			Title: SLD - MCC5: Dewatering Plant	Customer: JN Water	Sheet 2 of 13



TAG ID	DF-601	TAG ID	DF-602	TAG ID	-	TAG ID	-	TAG ID	-	TAG ID	-
LOAD SIZE	0.75 kW	LOAD SIZE	0.75 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW	LOAD SIZE	0.5 kW
VOLTAGE	400V, 3 PHASE	VOLTAGE	400V, 3 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE	VOLTAGE	230V, 1 PHASE
CURRENT	1.8 A	CURRENT	1.8 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A	CURRENT	2 A
CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x4 SWA & 4mm2 BCEW	CABLE SIZE	2.5mm2 x2+E SURFIX	CABLE SIZE	1.5mm2 x2+E SURFIX	CABLE SIZE	1.5mm2 x2+E SURFIX	CABLE SIZE	2.5mm2 x2+E SURFIX
FUNCTION	DRUM FILTER DRIVE 1	FUNCTION	DRUM FILTER DRIVE 2	FUNCTION	PLUGS	FUNCTION	LIGHTS	FUNCTION	EXTERNAL LIGHTS	FUNCTION	ISOLATORS



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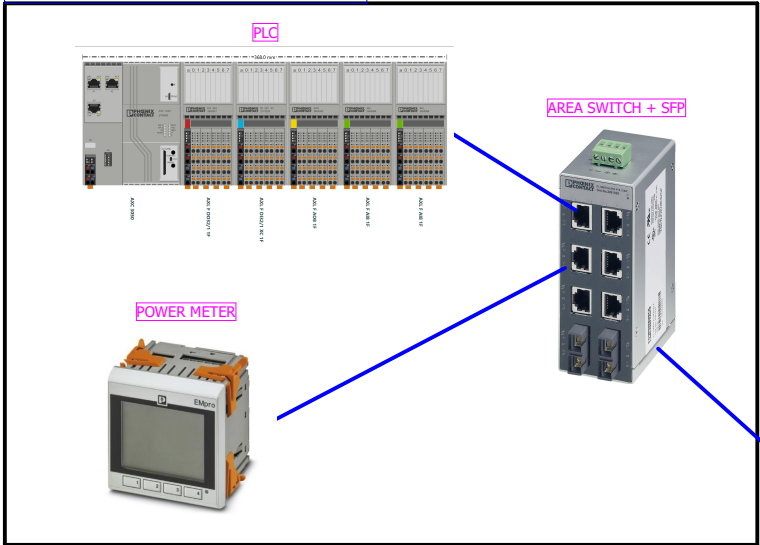
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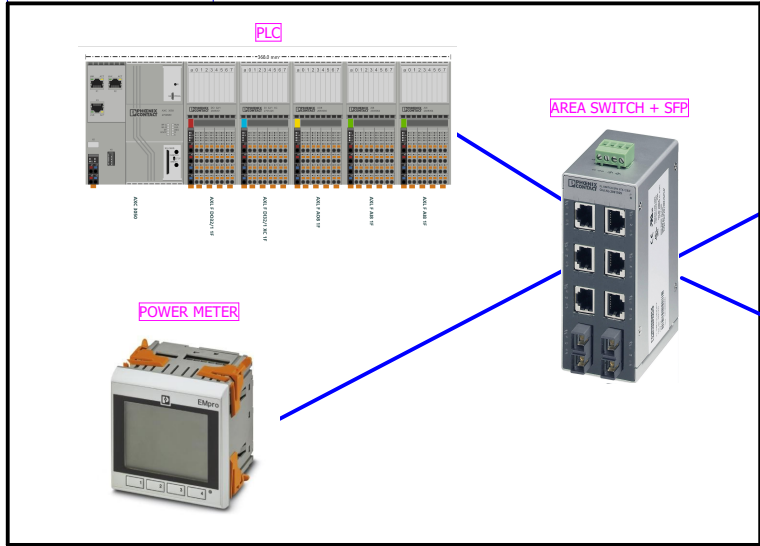
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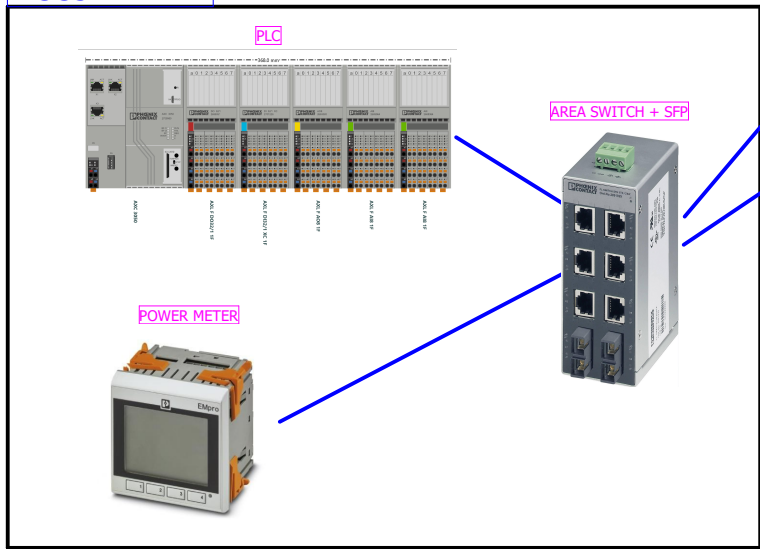
MCC1 - INLET BUILDING



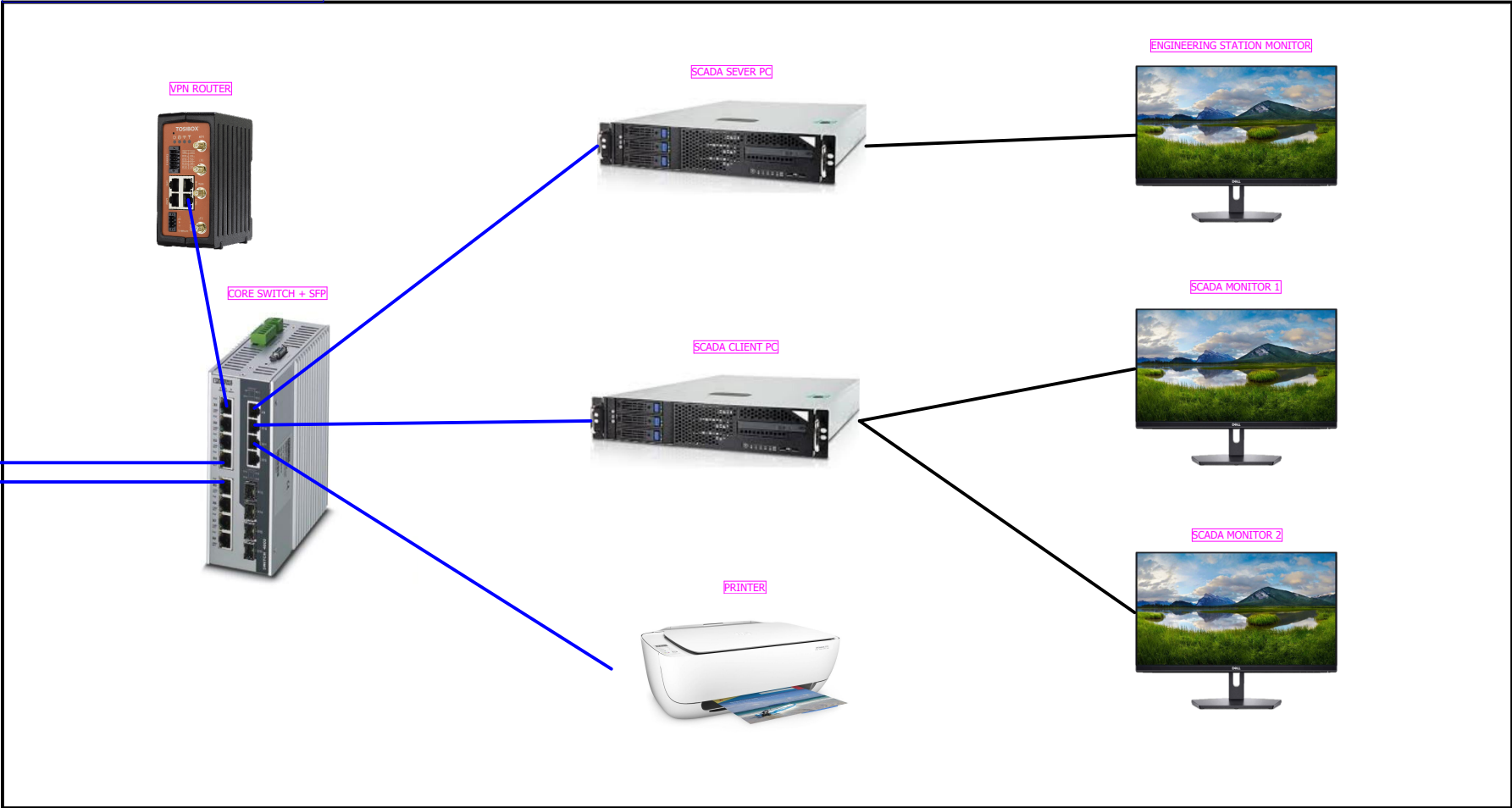
MCC2 - BNR 1



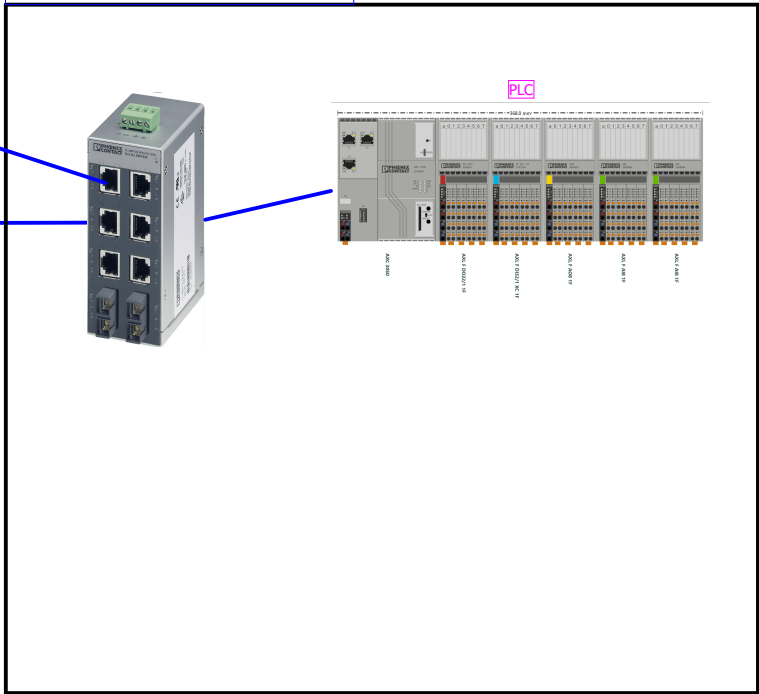
MCC3 - BNR 2



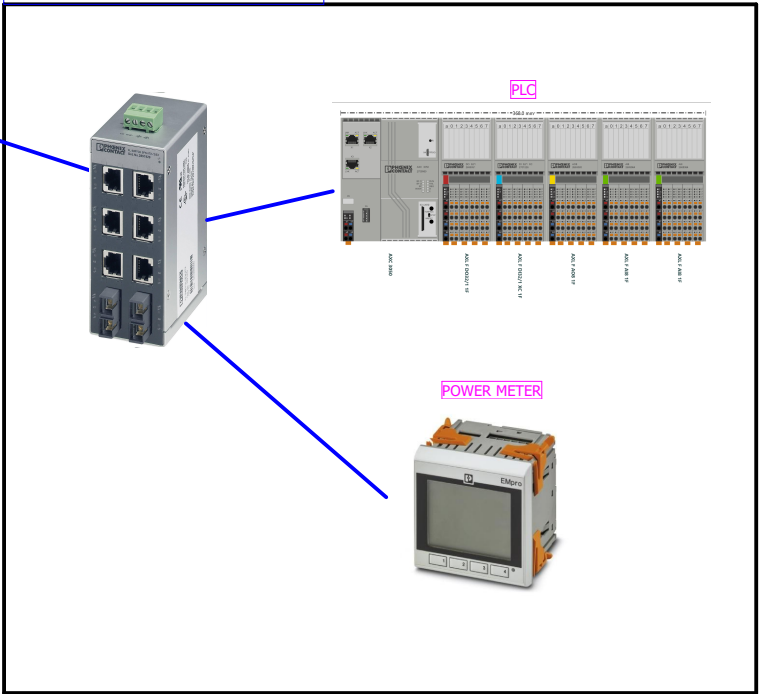
SCADA - CONTROL ROOM



MCC4 - CHLORINATION



MCC5 - DEWATERING



CAT 5 COPPER