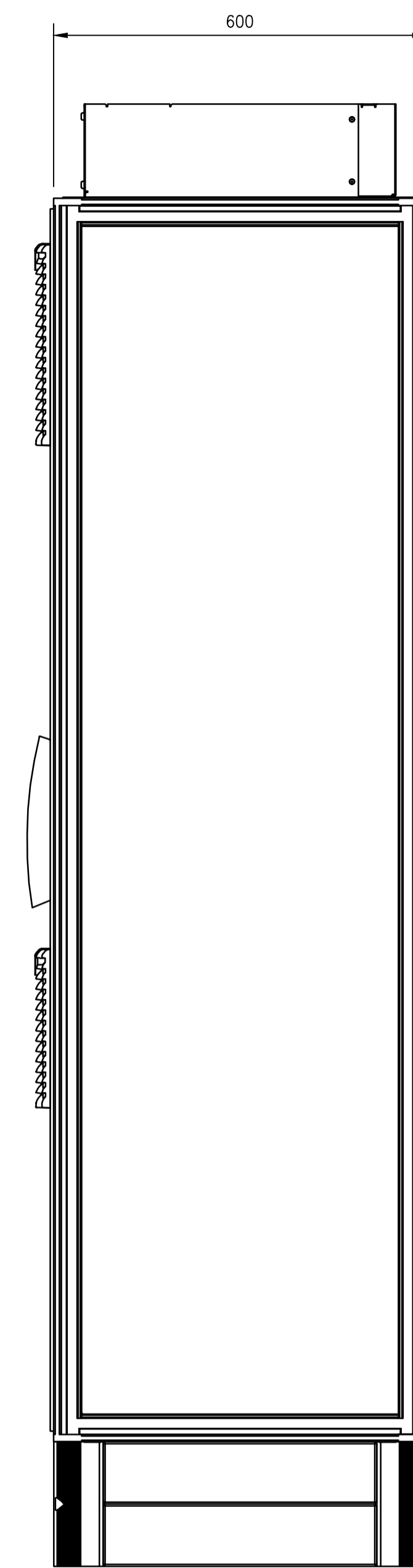
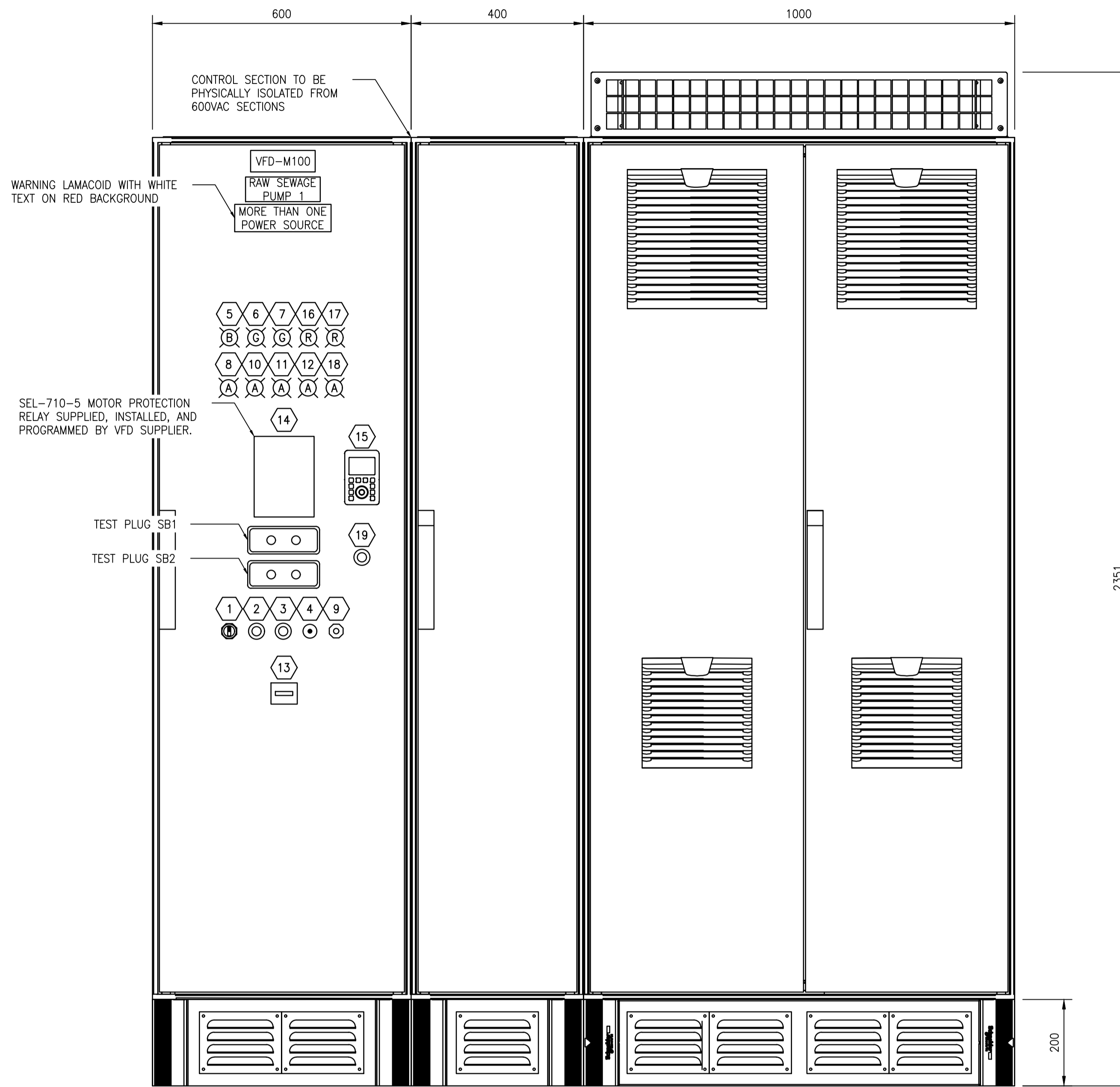
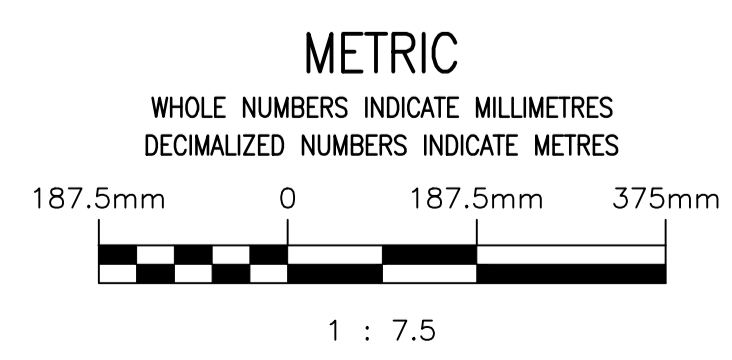


LAMACOID SCHEDULE	
1	MANUAL OFF AUTO
2	MANUAL START
3	MANUAL STOP
4	EMERGENCY STOP
5	READY
6	FORWARD RUNNING
7	REVERSE RUNNING
8	FAULT
9	VFD MANUAL SPEED CONTROL
10	HIGH BEARING VIBRATION (INDICATION ONLY)
11	HIGH BEARING TEMPERATURE (INDICATION ONLY)
12	HIGH MOTOR TEMPERATURE (INDICATION ONLY)
13	MOTOR RUN TIME
14	MOTOR PROTECTION RELAY
15	VFD HMI
16	VFD MODE
17	RVMS MODE
18	SEAL WATER FAIL
19	RESET



CONTROL SECTION INCOMING POWER SECTION APM MODULE SECTION RIGHT SIDE VIEW



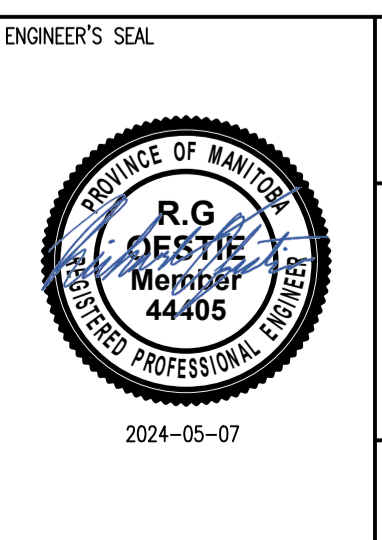
**ENGINEERS
 GEOSCIENTISTS
 MANITOBA**
 Certificate of Authorization
 MPE, a division of Englobe Corp.
 No. 4968 Date: **MAY 07, 2024**

NO.	REVISIONS	DATE	DESIGN	CHECK
1	FOR CONSTRUCTION	2024-05-07		

MPE
 a division of Englobe

DESIGNED BY: J.A.S., R.G.O.	CHECKED BY: R.G.O.
DRAWN BY: N.O.W., J.A.S.	APPROVED BY: R.G.O.
SCALE: 1:7.5	RELEASED FOR CONSTRUCTION BY: DATE: 2024/03/19

CONSULTANT NO.:

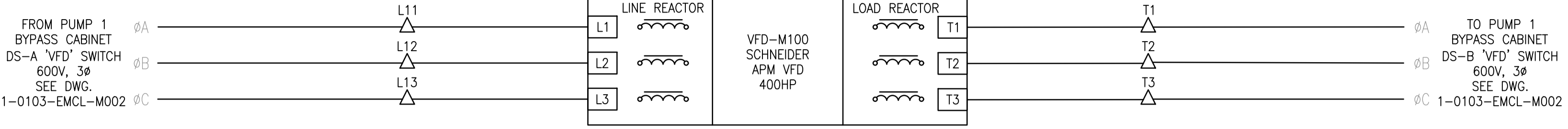
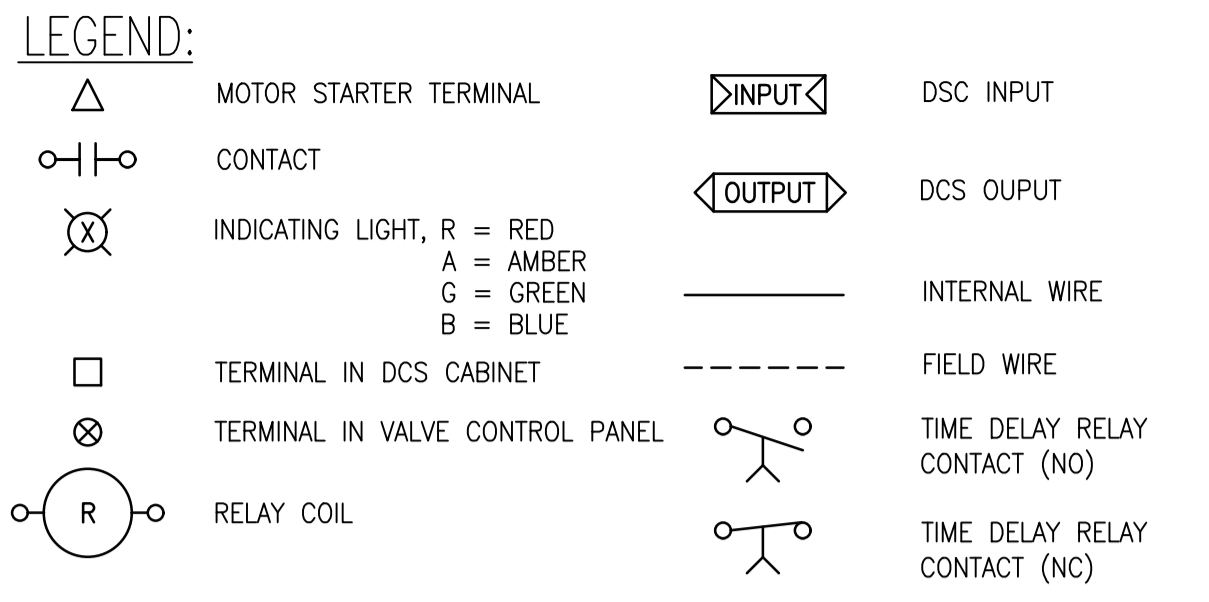


Winnipeg THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

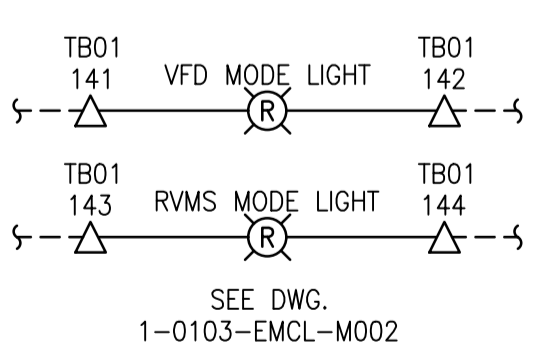
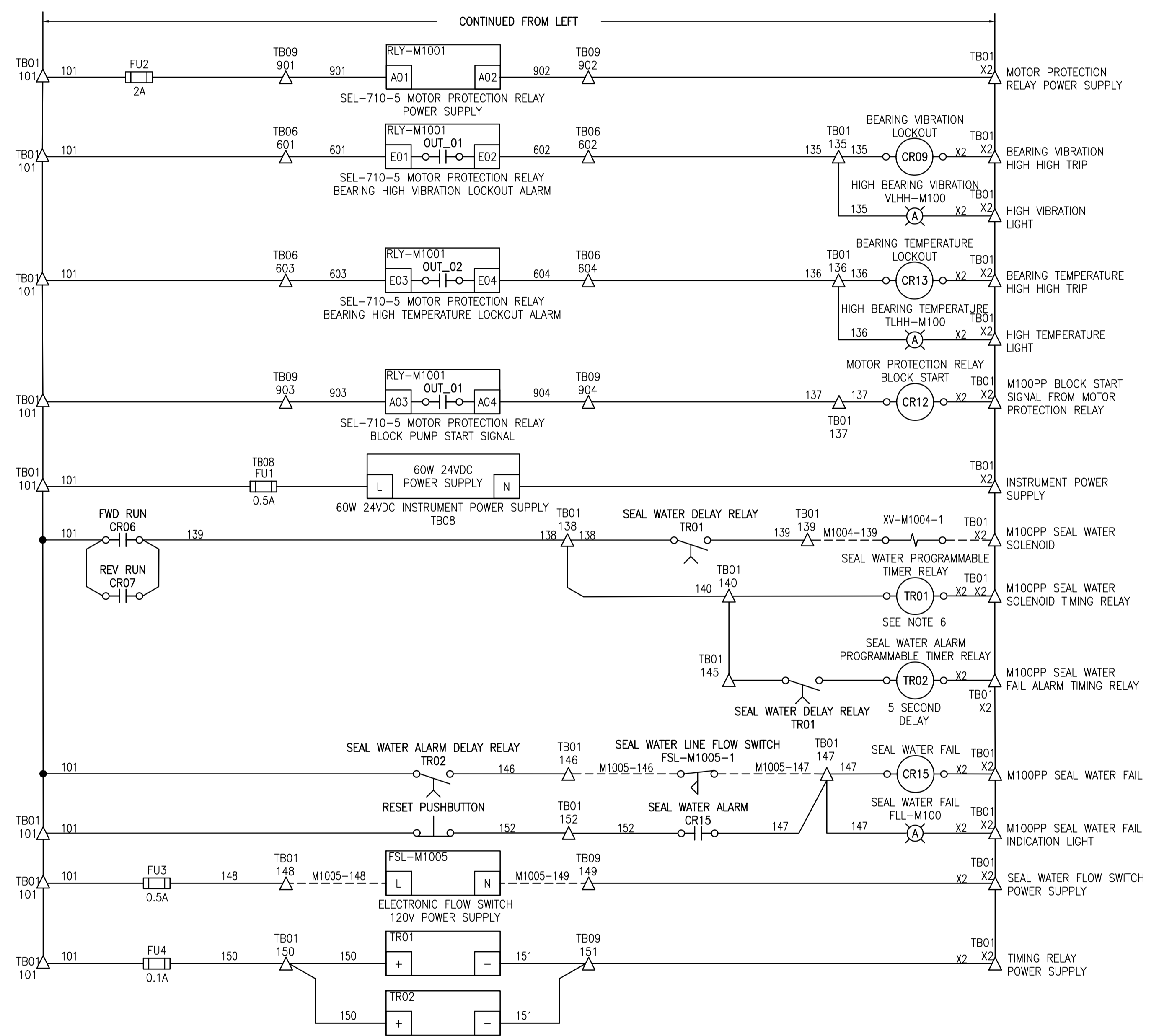
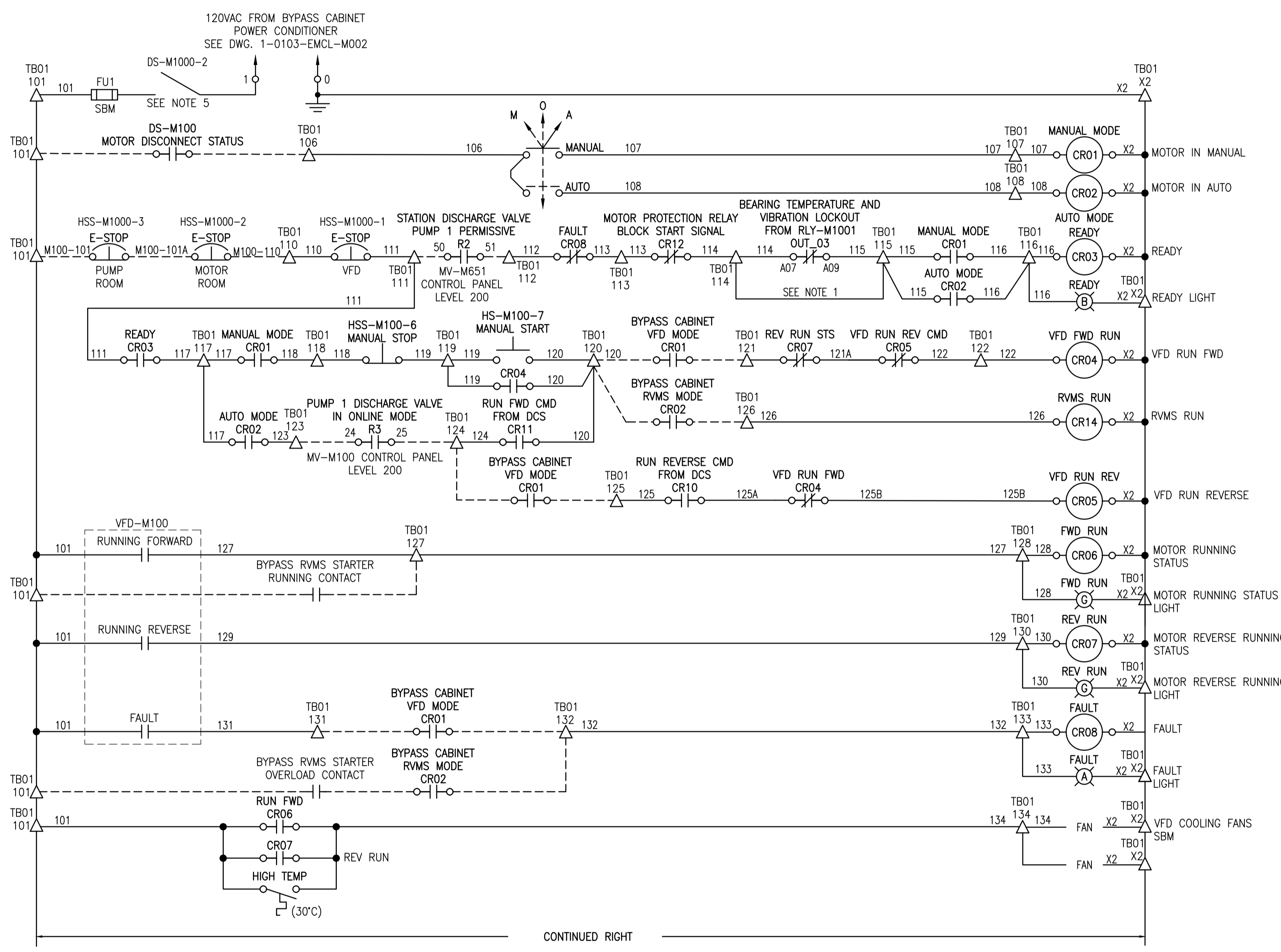
PERIMETER ROAD PUMPING STATION
 2024 UPGRADES
 STANDALONE VFD ELEVATION
 VFD-M100

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0103-ECBD-M001	001	00	A

A1 SIZE - 594mm x 841mm
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- NOTES:**
- VIBRATION AND TEMPERATURE LOCKOUTS TO BE INSTALLED JUMPERED OUT AS SHOWN.
 - STRANDED WIRE TERMINATIONS ARE NOT PERMITTED. USE APPROPRIATELY SIZED FERRULES FOR ALL TERMINATIONS.
 - THE WIRING DIAGRAM SHOWN IS FOR CONNECTION INTENT. IT IS RESPONSIBILITY OF THE SYSTEM INTEGRATOR TO VERIFY ALL EQUIPMENT LABELING AND TERMINAL CONNECTIONS AND PRODUCE A DETAILED WIRING DIAGRAM SHOP DRAWING SUBMISSION PRIOR TO FABRICATION. IT IS THE RESPONSIBILITY OF THE SYSTEM INTEGRATOR TO PROVIDE COMPONENTS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
 - SEAL WATER FLOW SWITCH TO BE CLOSED ON NO FLOW.
 - CLEARLY TAG AND INDICATE 120V DISCONNECT SWITCH WITHIN CONTROL SECTION.
 - TIMING RELAY TR01 TO BE PROGRAMMED AS SIGNAL ON/OFF-DELAY (MODE C). SEAL WATER TO ACTIVATE FOR 60 SECONDS ON PUMP START AND PUMP STOP.



DRAWING NUMBER	REFERENCE DRAWINGS
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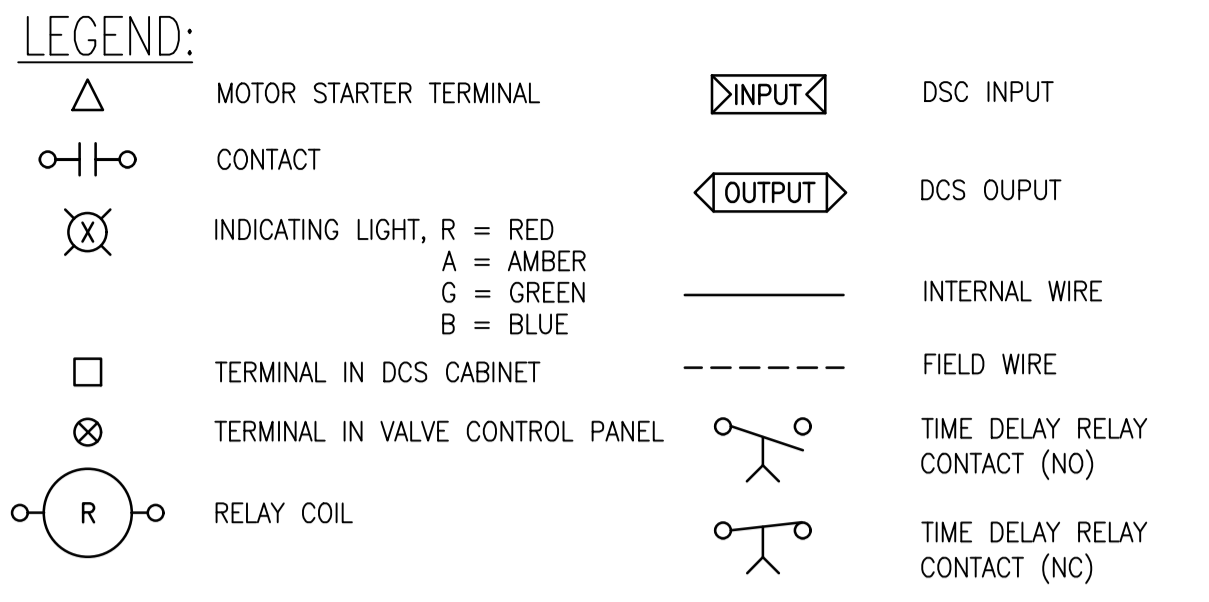
**ENGINEERS
 GEOSCIENTISTS
 MANITOBA**
 Certificate of Authorization
 MPE, a division of Englobe Corp.
 No. 4968 Date: **MAY 07, 2024**

DESIGNED BY:	J.A.S., R.G.O.	CHECKED BY:	R.G.O.
DRAWN BY:	N.O.W., J.A.S.	APPROVED BY:	R.G.O.
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	
DATE:	2024/03/19	DATE:	
CONSULTANT NO.:			

a division of Englobe
 ENGINEER'S SEAL

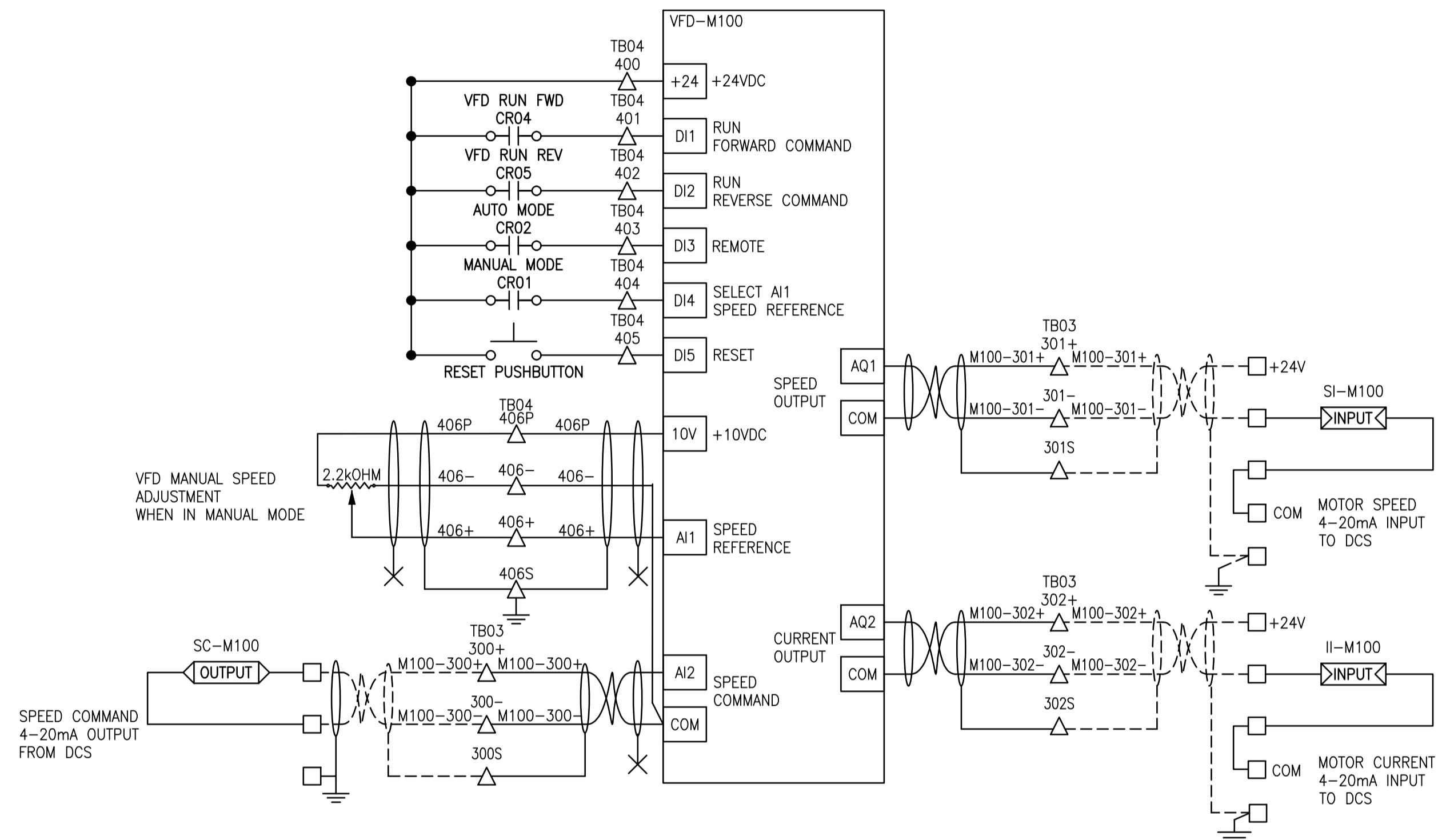
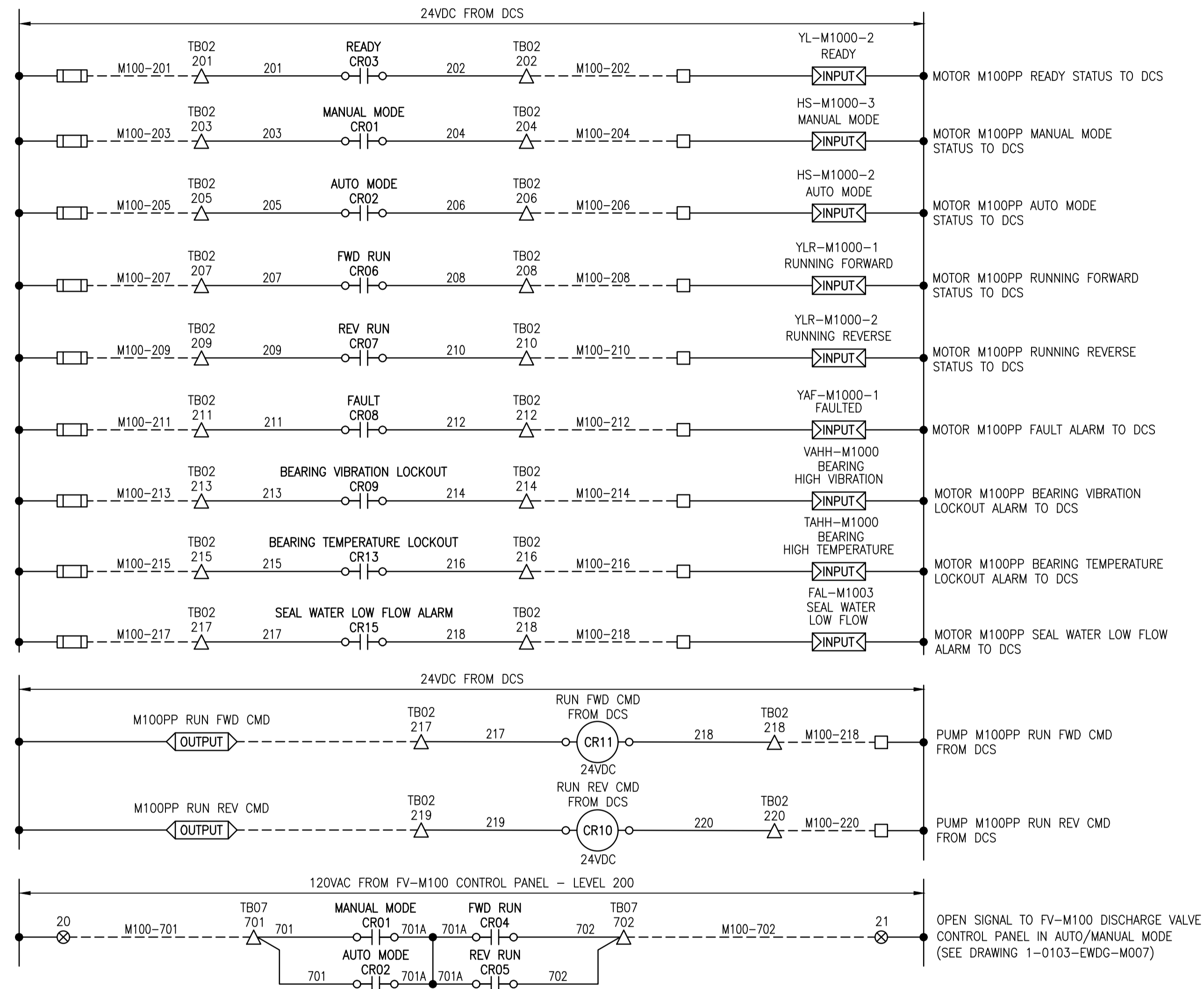
THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 PERIMETER ROAD PUMPING STATION
 2024 UPGRADES
 MOTOR STARTER SCHEMATIC
 PUMP M100PP
 CITY DRAWING NUMBER: **1-0103-EMCL-M001** SHEET: **001** REV: **00** SIZE: **A**
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NO.	REVISIONS	DATE	DESIGN	CHECK
1	FOR CONSTRUCTION	2024-05-07		



NOTES:

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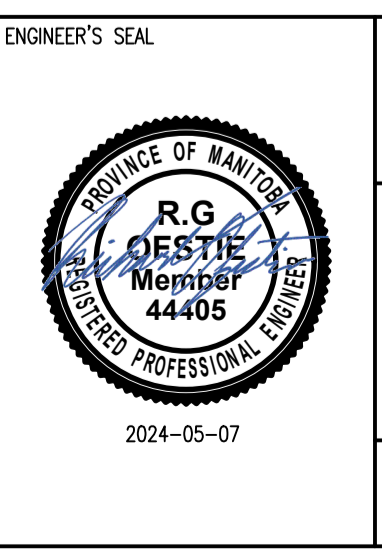


DRAWING NUMBER	REFERENCE DRAWINGS
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DESIGNED BY:	J.A.S., R.G.O.	CHECKED BY:	R.G.O.
DRAWN BY:	N.O.W., J.A.S.	APPROVED BY:	R.G.O.
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	
DATE:	2024/03/19	DATE:	
CONSULTANT NO.:			

NO.	REVISIONS	DATE	DESIGN	CHECK
1	FOR CONSTRUCTION	2024-05-07		



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a division of Englobe

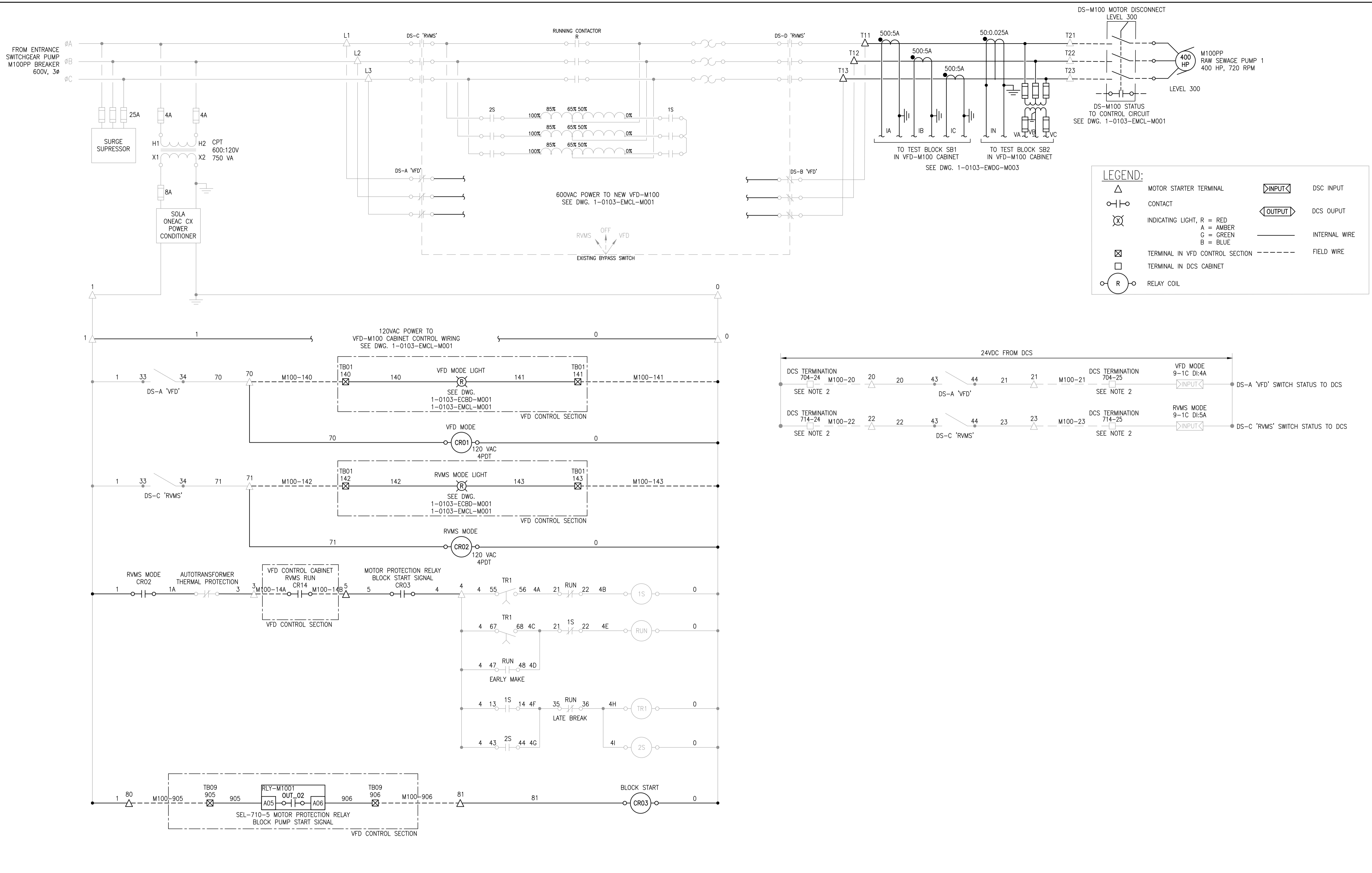
ENGINEER'S SEAL

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

PERIMETER ROAD PUMPING STATION
2024 UPGRADES
MOTOR STARTER SCHEMATIC
PUMP M100PP

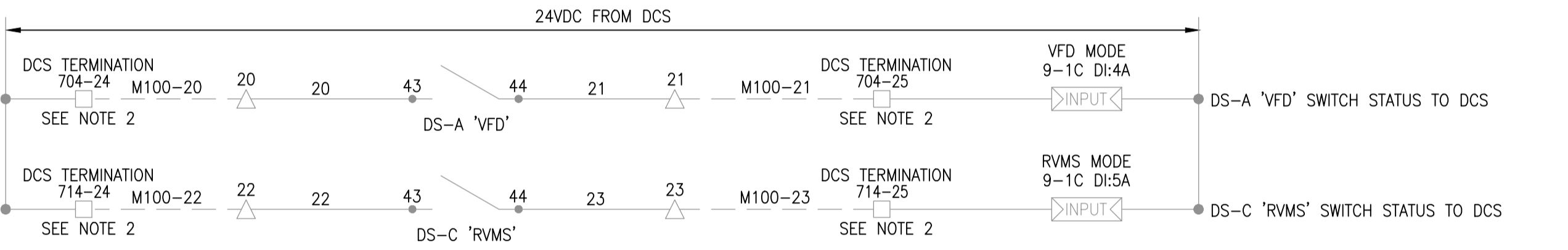
CITY DRAWING NUMBER: 1-0103-EMCL-M001
SHEET: 002
REV: 00
SIZE: A

1-0103-EMCL-M001-001-PC.dwg



LEGEND:

- MOTOR STARTER TERMINAL
- CONTACT
- INDICATING LIGHT, R = RED
A = AMBER
G = GREEN
B = BLUE
- TERMINAL IN VFD CONTROL SECTION
- TERMINAL IN DCS CABINET
- RELAY COIL
- DSC INPUT
- DCS OUTPUT
- INTERNAL WIRE
- FIELD WIRE



- NOTES:**
- LIGHT INDICATES EXISTING, BOLD INDICATES NEW.
 - DCS TERMINAL NUMBERING BASED ON HISTORICAL DRAWINGS, CONTRACTOR TO TRACE WIRING AND CONFIRM EXISTING DCS TERMINAL NUMBERING.

**ENGINEERS
GEOSCIENTISTS
MANITOBA**
Certificate of Authorization
MPE, a division of Englobe Corp.
No. 4968 Date: **MAY 07, 2024**

NO.	REVISIONS	DATE	DESIGN	CHECK
1	FOR CONSTRUCTION	2024-05-07		

MPE
a division of Englobe

DESIGNED BY: J.A.S., R.G.O. CHECKED BY: R.G.O.
 DRAWN BY: N.O.W., J.A.S. APPROVED BY: R.G.O.
 SCALE: NTS RELEASED FOR CONSTRUCTION BY: _____
 DATE: 2024/03/19 DATE: _____

CONSULTANT NO.:

ENGINEER'S SEAL

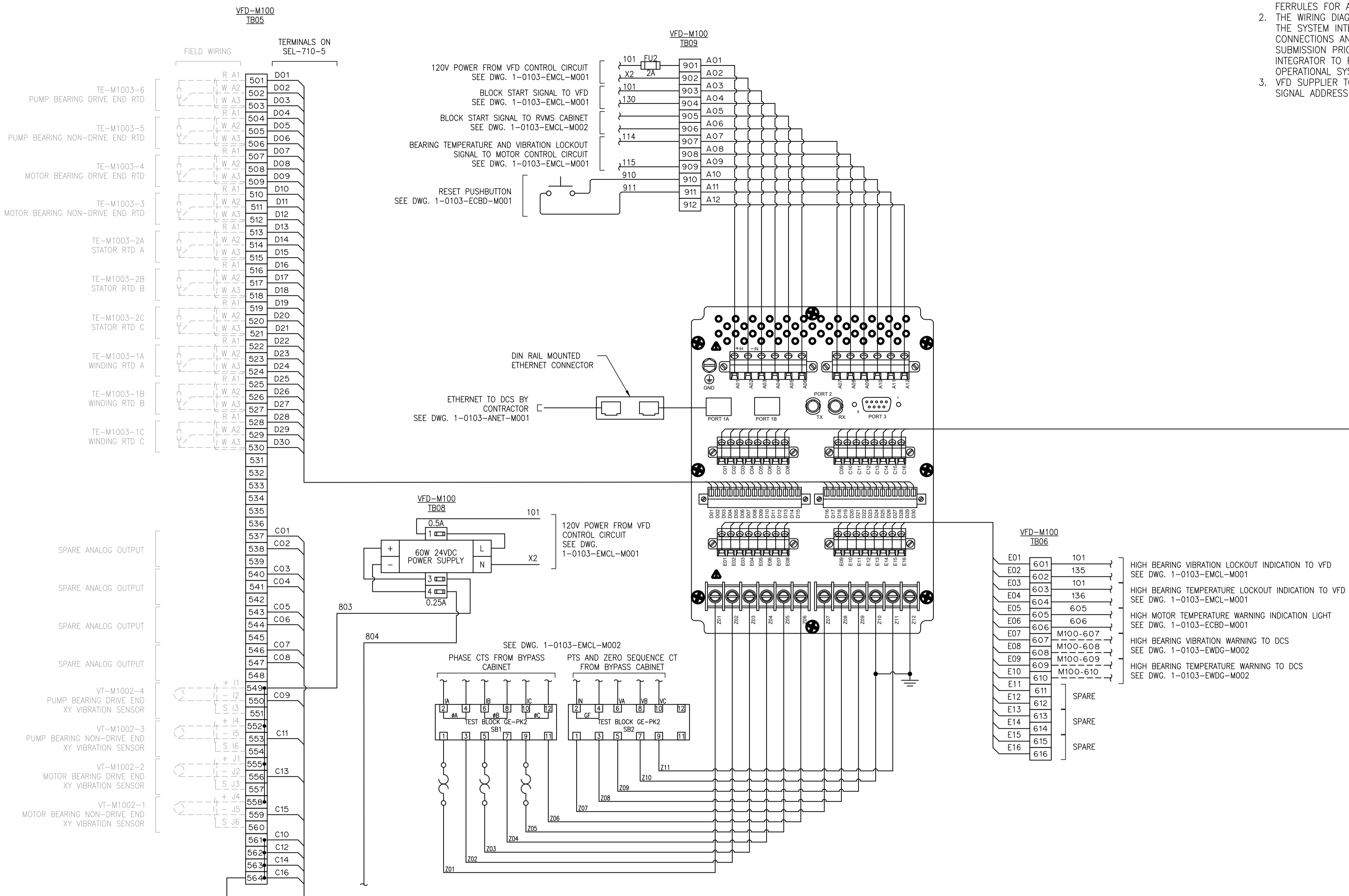
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

PERIMETER ROAD PUMPING STATION
2024 UPGRADES
MOTOR STARTER SCHEMATIC
EXISTING M100PP RVMS STARTER

CITY DRAWING NUMBER: **1-0103-EMCL-M002** SHEET: **001** REV: **00** SIZE: **A**

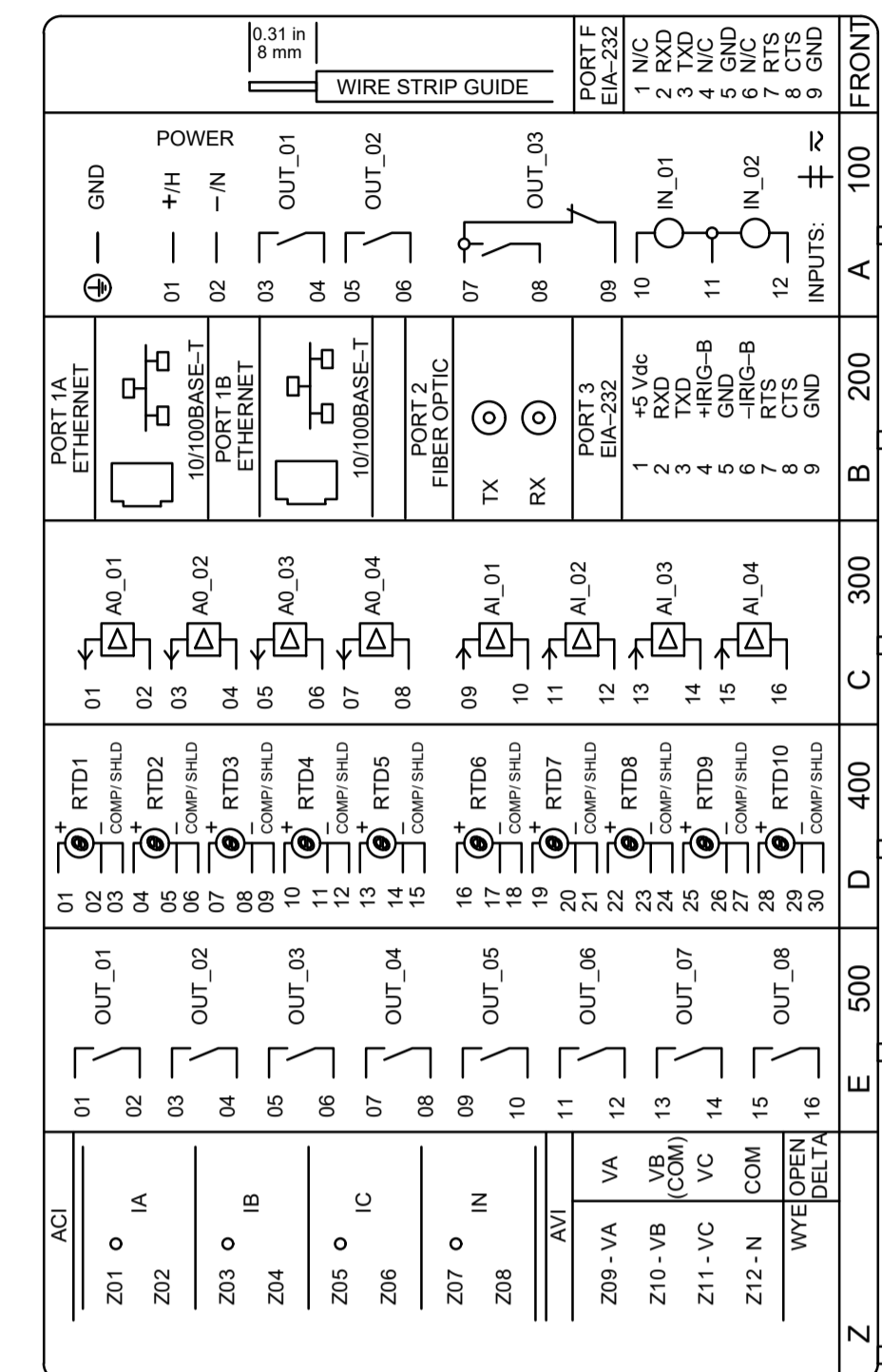
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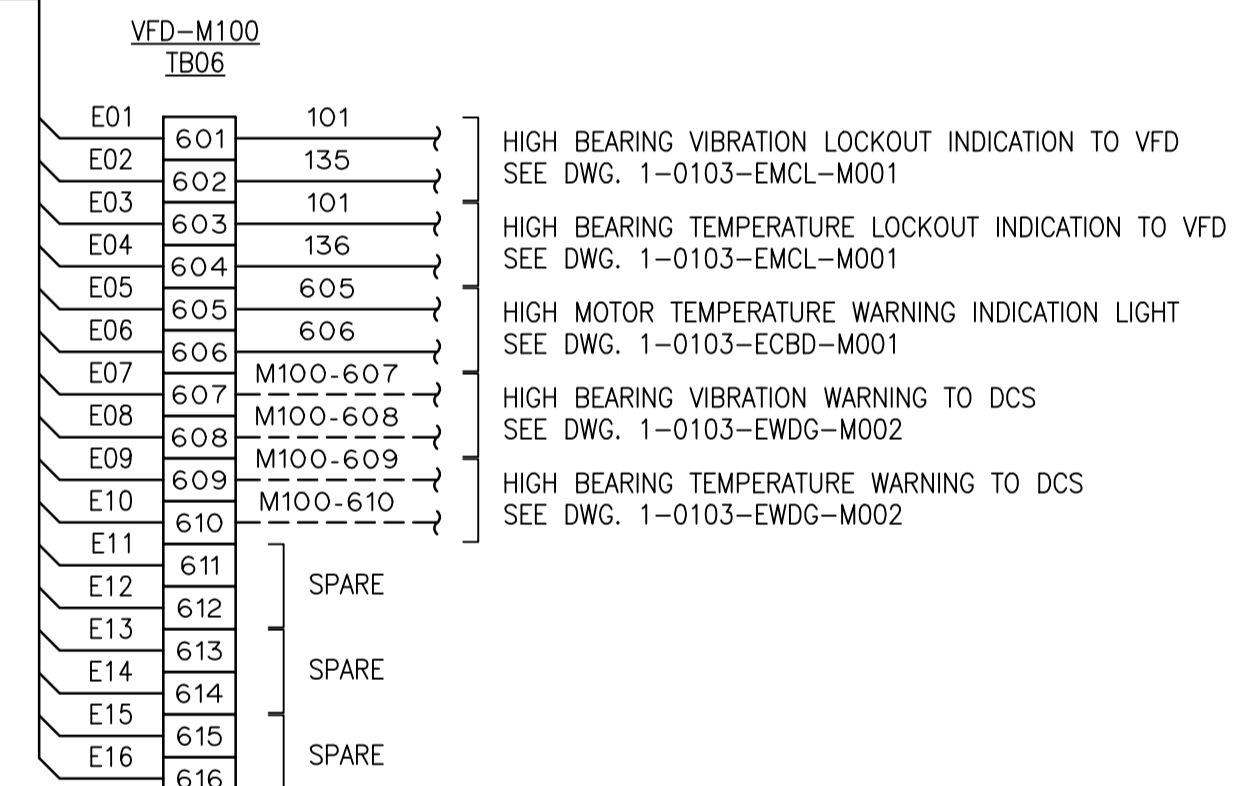


NOTES:

1. STRANDED WIRE TERMINATIONS ARE NOT PERMITTED. USE APPROPRIATELY SIZED FERRULES FOR ALL TERMINATIONS.
2. THE WIRING DIAGRAM SHOWN IS FOR CONNECTION INTENT. IT IS RESPONSIBILITY OF THE SYSTEM INTEGRATOR TO VERIFY ALL EQUIPMENT LABELING AND TERMINAL CONNECTIONS AND PRODUCE A DETAILED WIRING DIAGRAM SHOP DRAWING SUBMISSION PRIOR TO FABRICATION. IT IS THE RESPONSIBILITY OF THE SYSTEM INTEGRATOR TO PROVIDE COMPONENTS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
3. VFD SUPPLIER TO COORDINATE PROTECTION RELAY PROGRAMMING AND SOFTWARE SIGNAL ADDRESSING WITH MPE AND CITY REPRESENTATIVES.



SEL-710-5 TERMINAL LEGEND



DRAWING NUMBER	REFERENCE DRAWINGS

**ENGINEERS
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MANITOBA**
Certificate of Authorization
MPE, a division of Englobe Corp.
No. 4968 Date: MAY 07, 2024

NO.	REVISIONS	DATE	DESIGN	CHECK
1	FOR CONSTRUCTION	2024-05-07		

MPE
a division of Englobe

DESIGNED BY: J.A.S., R.G.O. CHECKED BY: R.G.O.

DRAWN BY: N.O.W., J.A.S. APPROVED BY: R.G.O.

SCALE: NTS RELEASED FOR CONSTRUCTION

DATE: 2024/03/19 BY:

CONSULTANT NO.:

ENGINEER'S SEAL

R.G. OSTIE
Member
44405
PROFESSIONAL ENGINEER
PROVINCE OF MANITOBA

2024-05-07

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

PERIMETER ROAD PUMPING STATION
2024 UPGRADES
WIRING DIAGRAM
M100PP MOTOR PROTECTION RELAY

CITY DRAWING NUMBER
1-0103-EWDG-M003

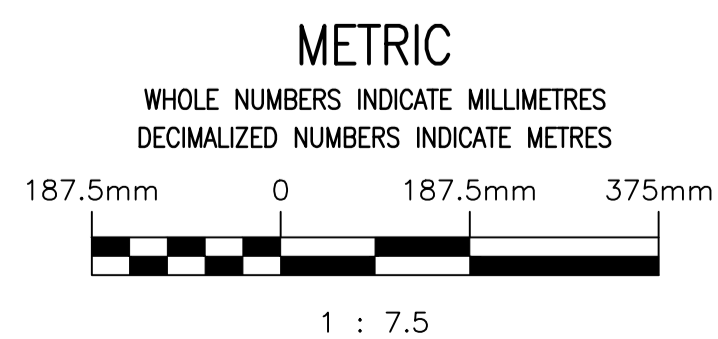
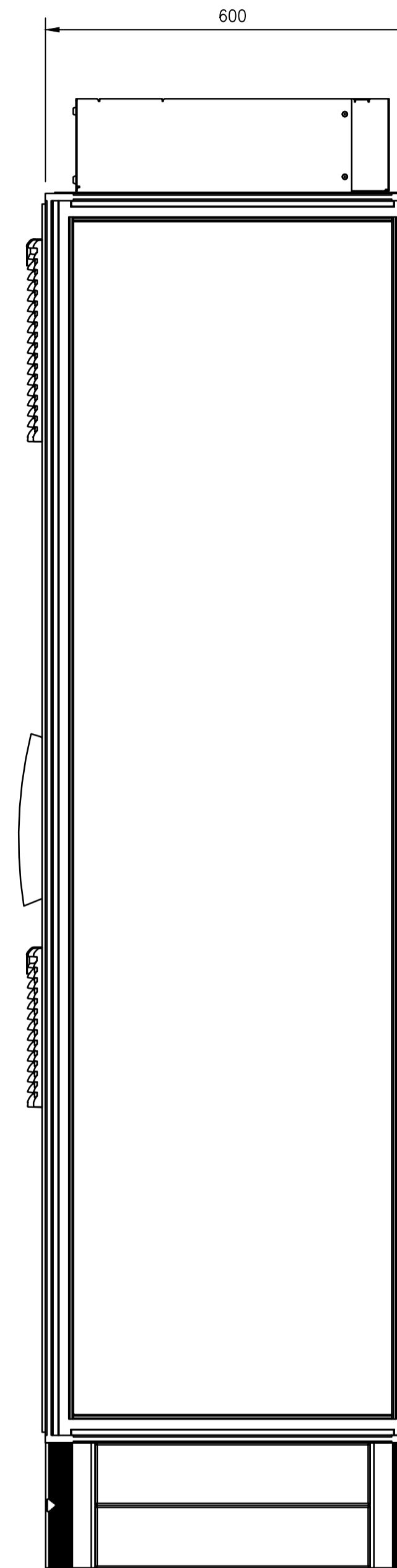
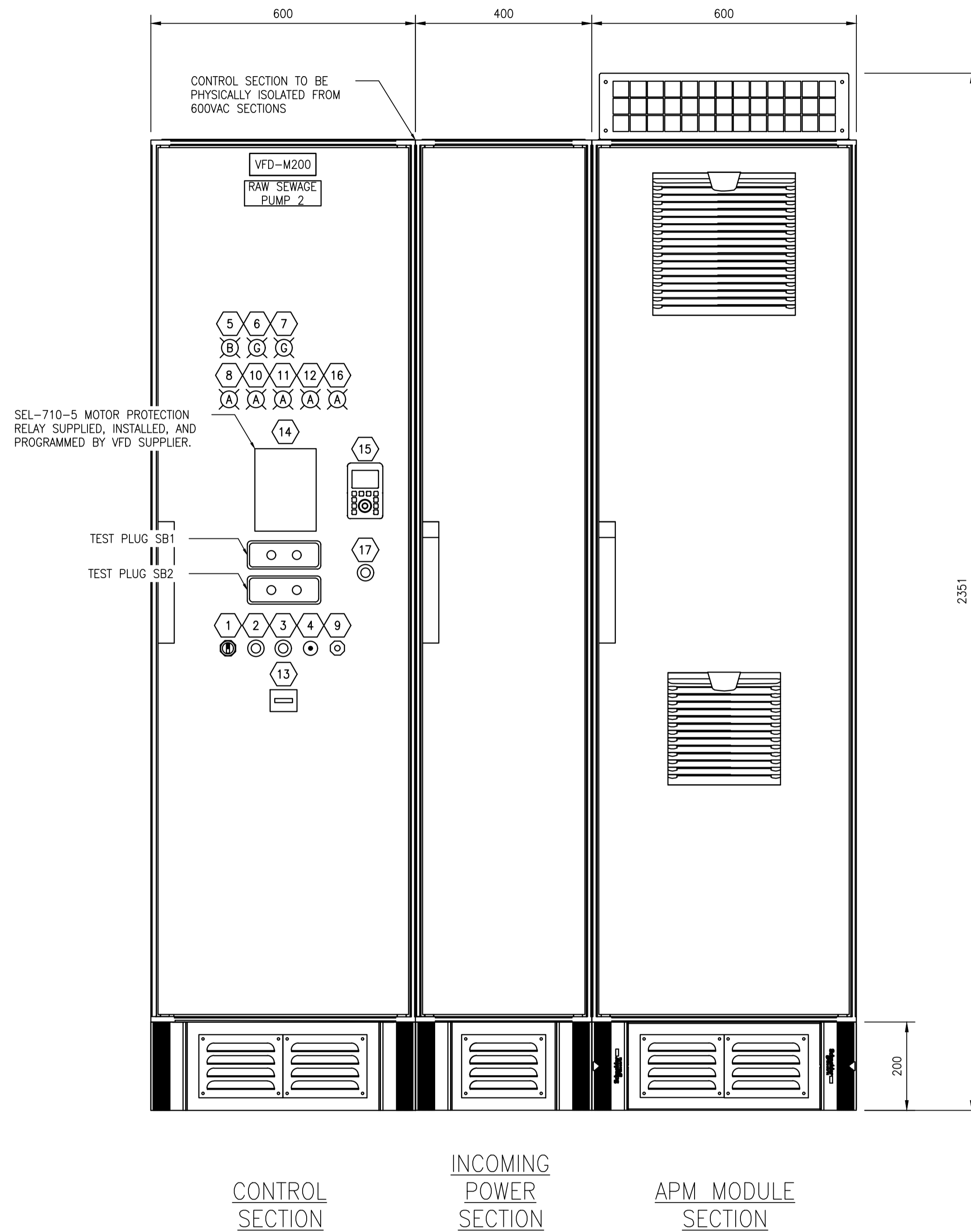
SHEET
001

REV.
00

SIZE
A

1-0103-EWDG-M003-001-PC.dwg

LAMACOID SCHEDULE	
1	MANUAL OFF AUTO
2	MANUAL START
3	MANUAL STOP
4	EMERGENCY STOP
5	READY
6	FORWARD RUNNING
7	REVERSE RUNNING
8	VFD FAULT
9	MANUAL SPEED CONTROL
10	HIGH BEARING VIBRATION (INDICATION ONLY)
11	HIGH BEARING TEMPERATURE (INDICATION ONLY)
12	HIGH MOTOR TEMPERATURE (INDICATION ONLY)
13	MOTOR RUN TIME
14	MOTOR PROTECTION RELAY
15	VFD HMI
16	SEAL WATER FAIL
17	RESET



**ENGINEERS
 GEOSCIENTISTS
 MANITOBA**
 Certificate of Authorization
 MPE, a division of Englobe Corp.
 No. 4968 Date: **MAY 07, 2024**

NO.	REVISIONS	DATE	DESIGN	CHECK
1	FOR CONSTRUCTION	2024-05-07		

MPE
 a division of Englobe

DESIGNED BY: J.A.S., R.G.O.	CHECKED BY: R.G.O.
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SCALE: 1:7.5	RELEASED FOR CONSTRUCTION BY: DATE:
DATE: 2024/03/19	DATE:

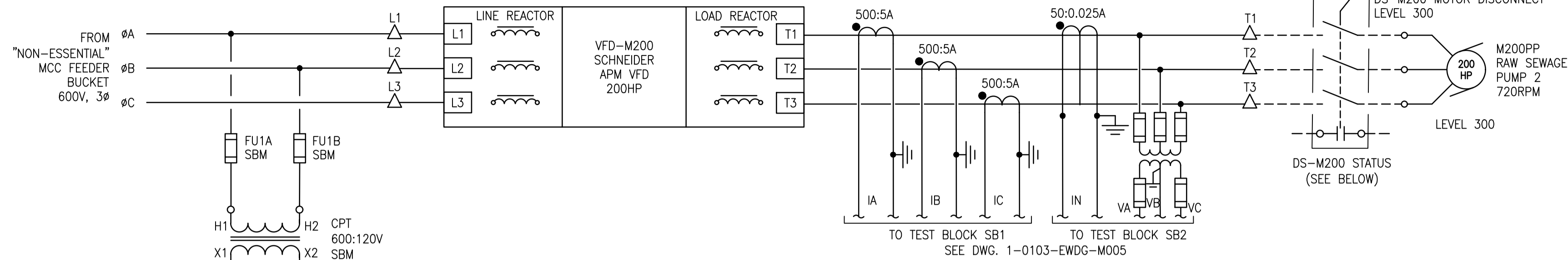
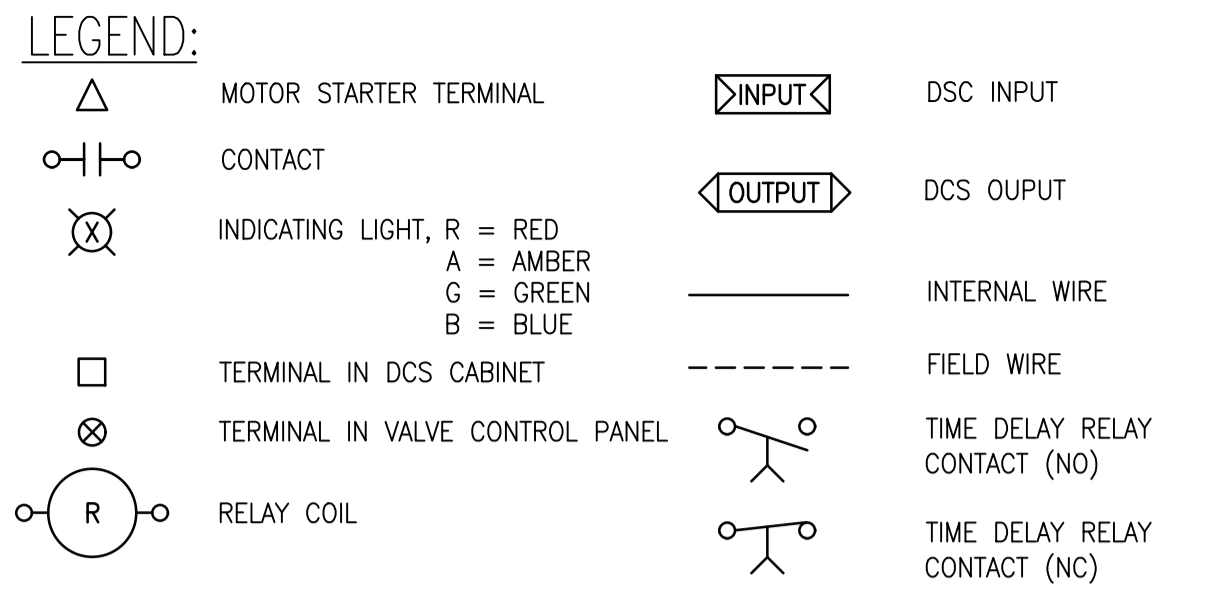
CONSULTANT NO.:

ENGINEER'S SEAL

Winnipeg THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

PERIMETER ROAD PUMPING STATION
 2024 UPGRADES
 STANDALONE VFD ELEVATION
 VFD-M200

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0103-ECBD-M002	001	00	A



NOTES:

- 1. VIBRATION AND TEMPERATURE LOCKOUTS TO BE INSTALLED JUMPED OUT AS SHOWN.
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4. SEAL WATER FLOW SWITCH TO BE CLOSED ON NO FLOW.
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6. TIMING RELAY TR01 TO BE PROGRAMMED AS SIGNAL ON/OFF-DELAY (MODE C). SEAL WATER TO ACTIVATE FOR 60 SECONDS ON PUMP START AND PUMP STOP.

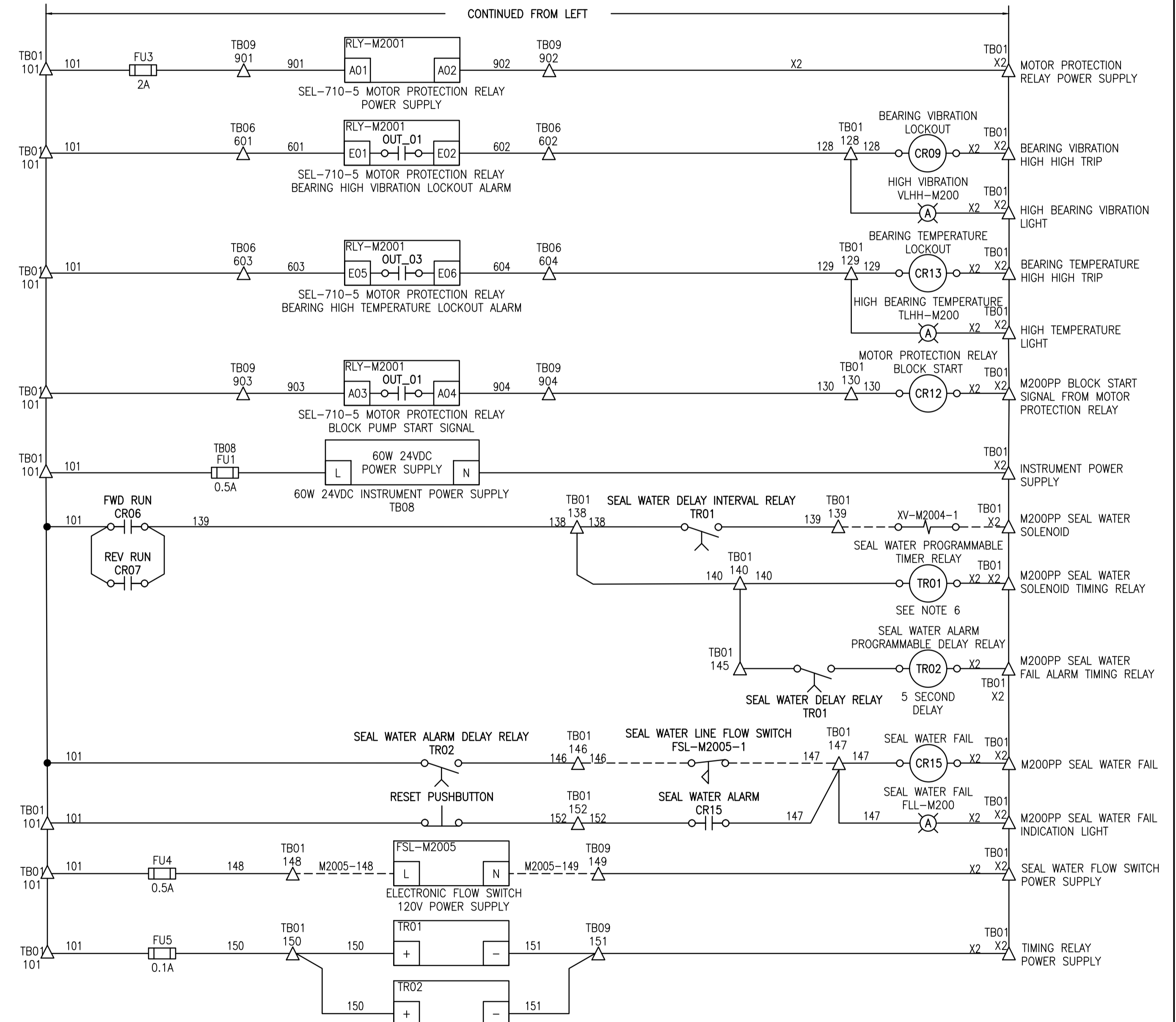
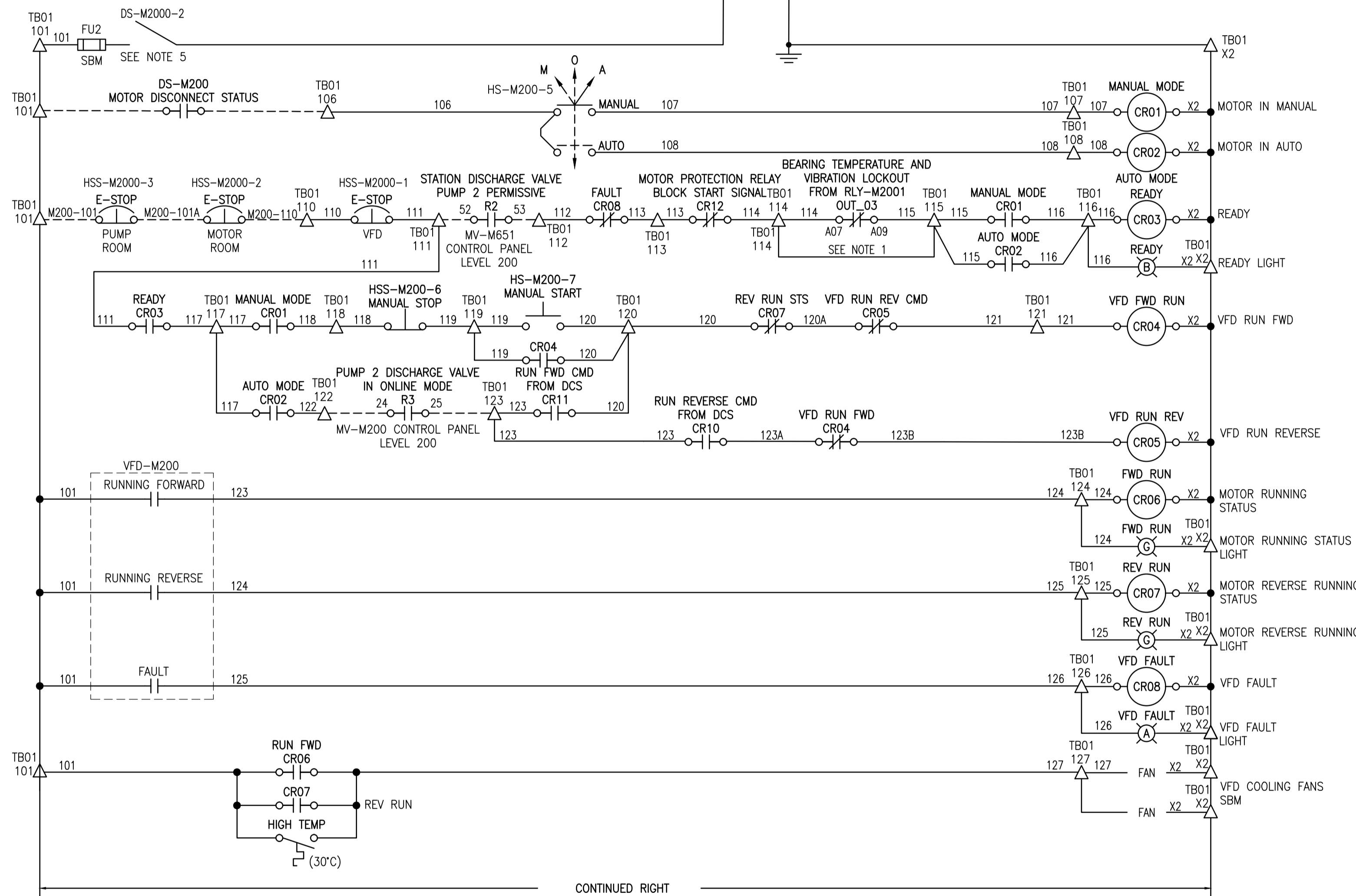


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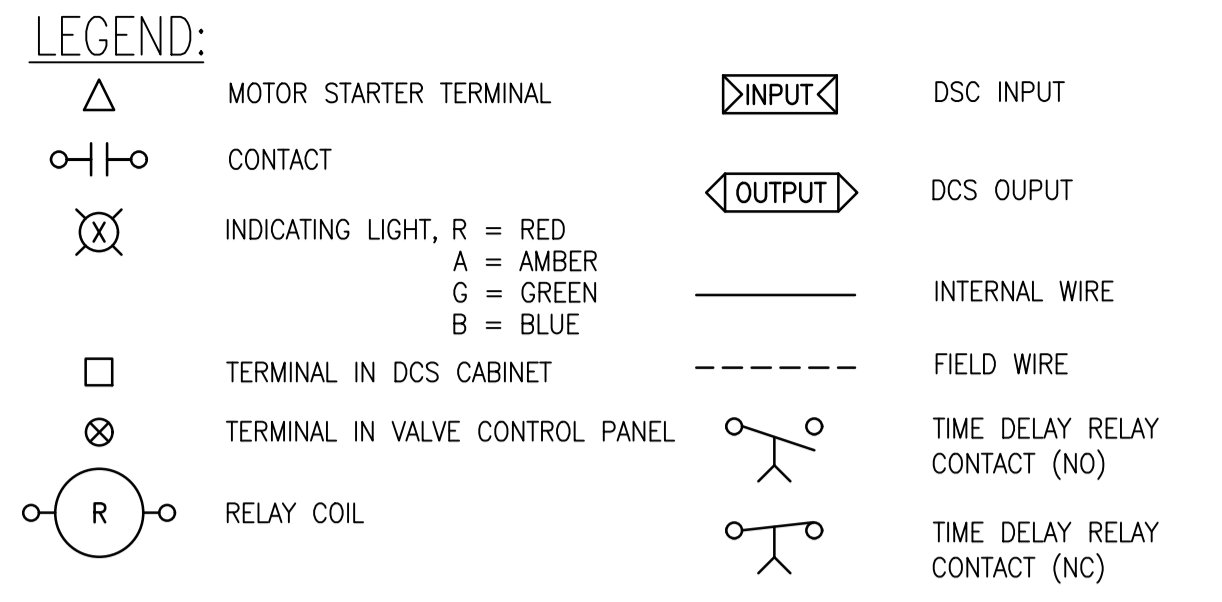
ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
MPE, a division of Englobe Corp.
No. 4968 Date: MAY 07, 2024

Table with 4 columns: NO., REVISIONS, DATE, DESIGN CHECK

MPE a division of Englobe
DESIGNED BY: J.A.S., R.G.O.
CHECKED BY: R.G.O.
DRAWN BY: N.O.W., J.A.S.
APPROVED BY: R.G.O.
SCALE: NTS
RELEASED FOR CONSTRUCTION BY:
DATE: 2024/03/19

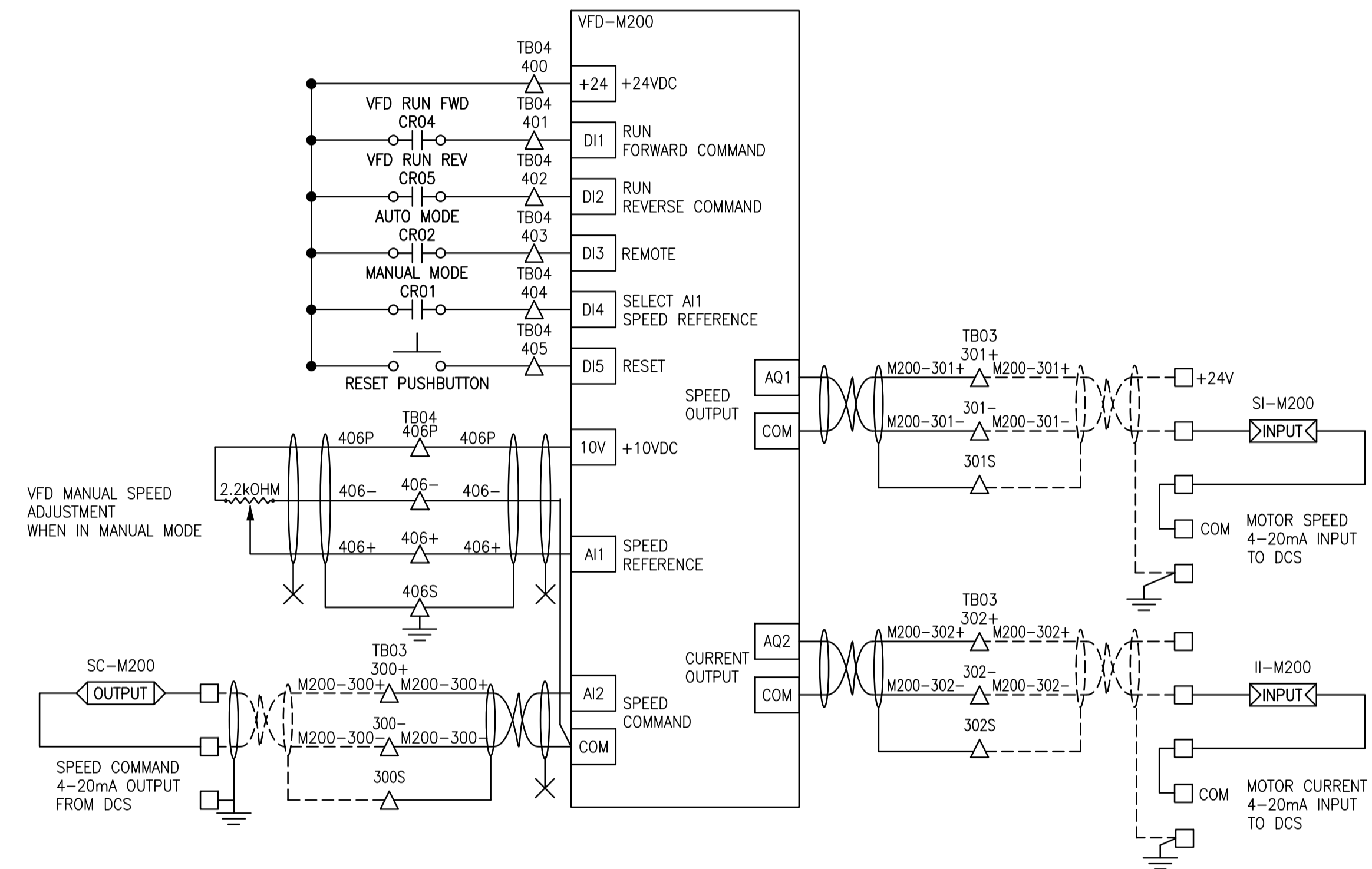
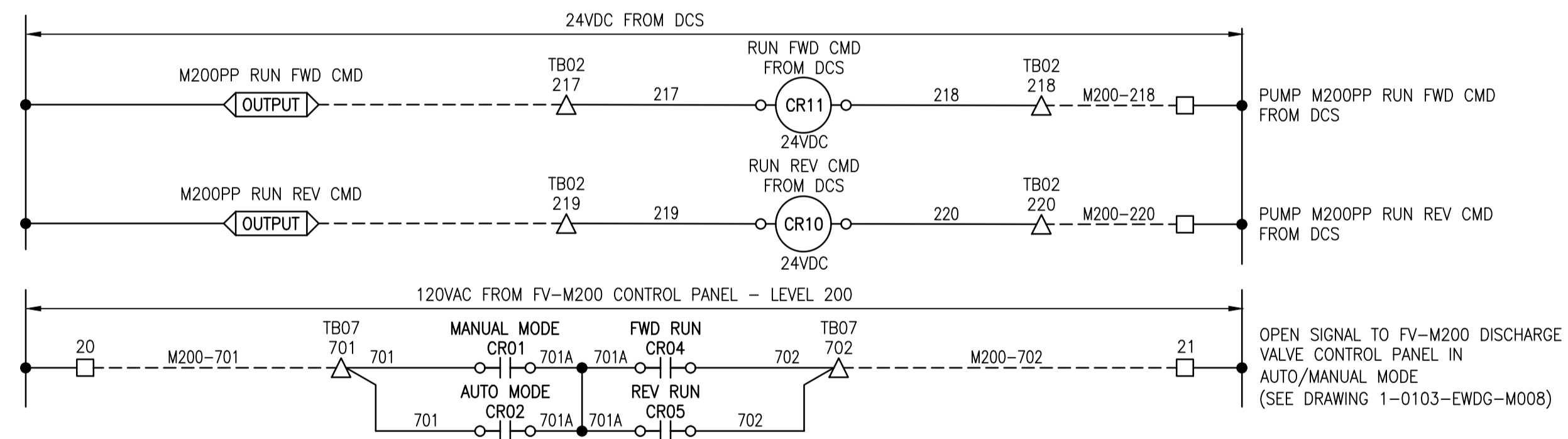
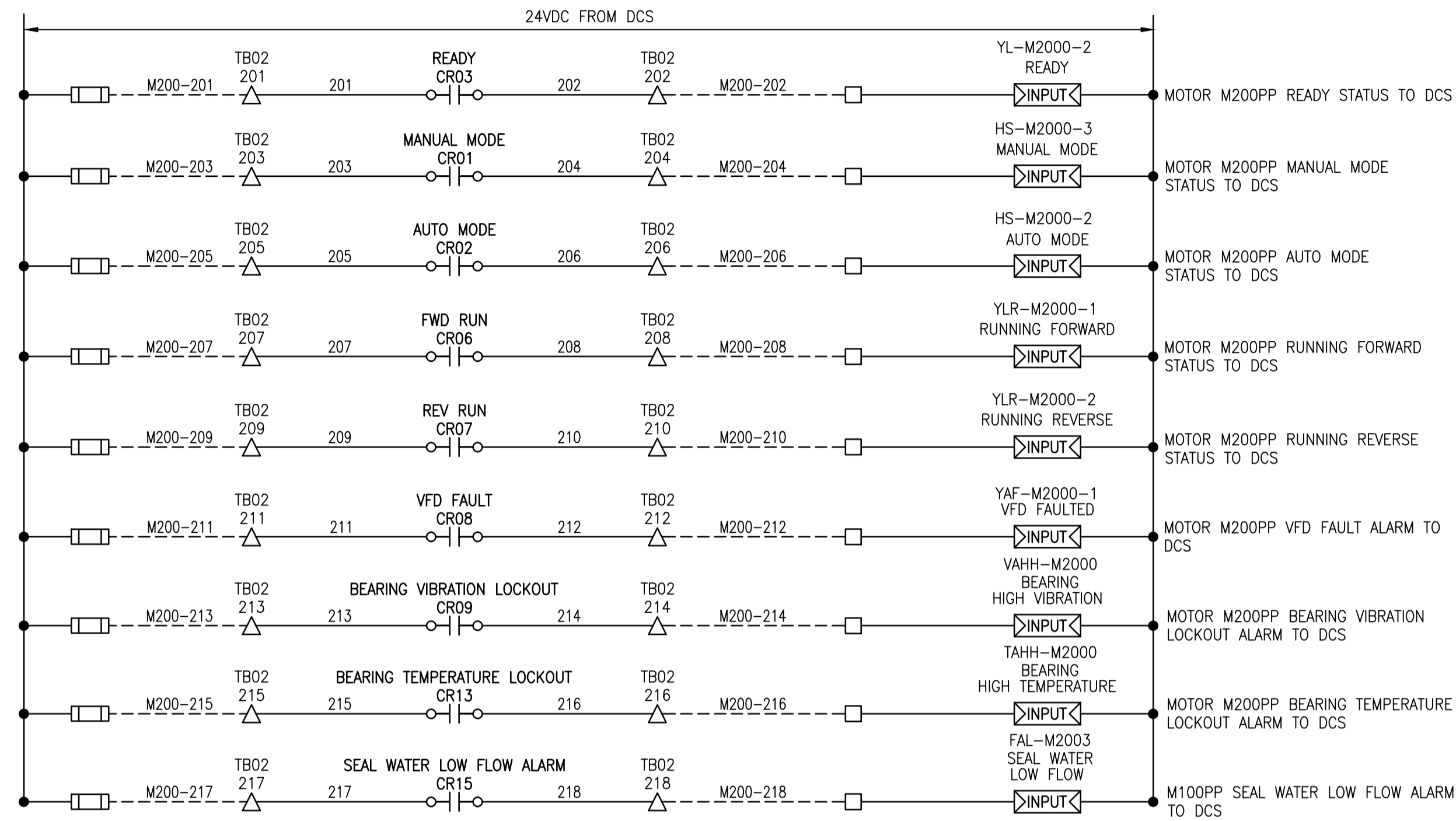
ENGINEER'S SEAL
R.G. OSTIE
Member
44405
2024-05-07

THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT
PERIMETER ROAD PUMPING STATION
2024 UPGRADES
MOTOR STARTER SCHEMATIC
PUMP M200PP
CITY DRAWING NUMBER: 1-0103-EMCL-M003
SHEET: 001
REV: 00
SIZE: A



NOTES:

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 SCALE: NTS RELEASED FOR CONSTRUCTION
 DATE: 2024/03/19 BY: DATE:

CONSULTANT NO.:



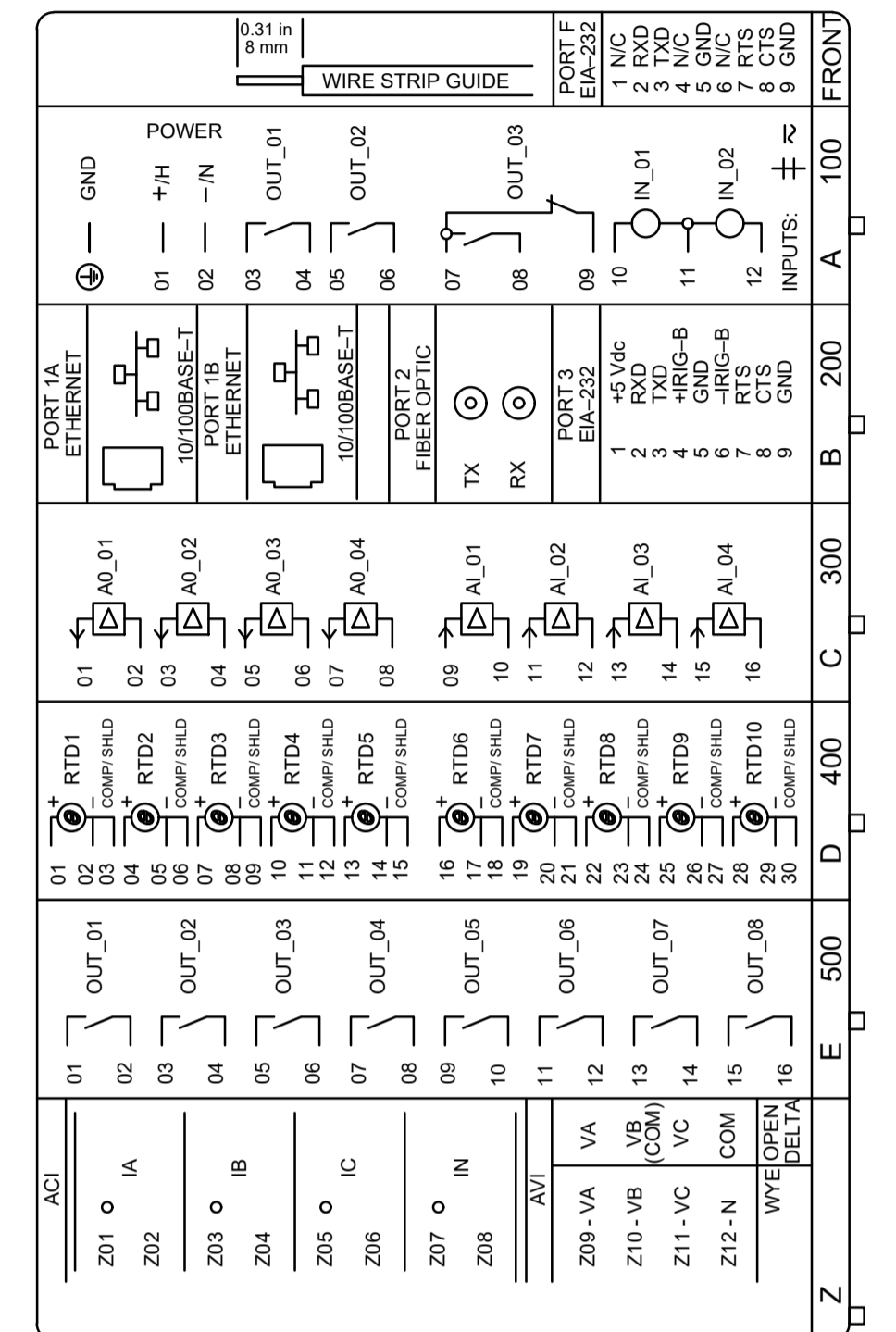
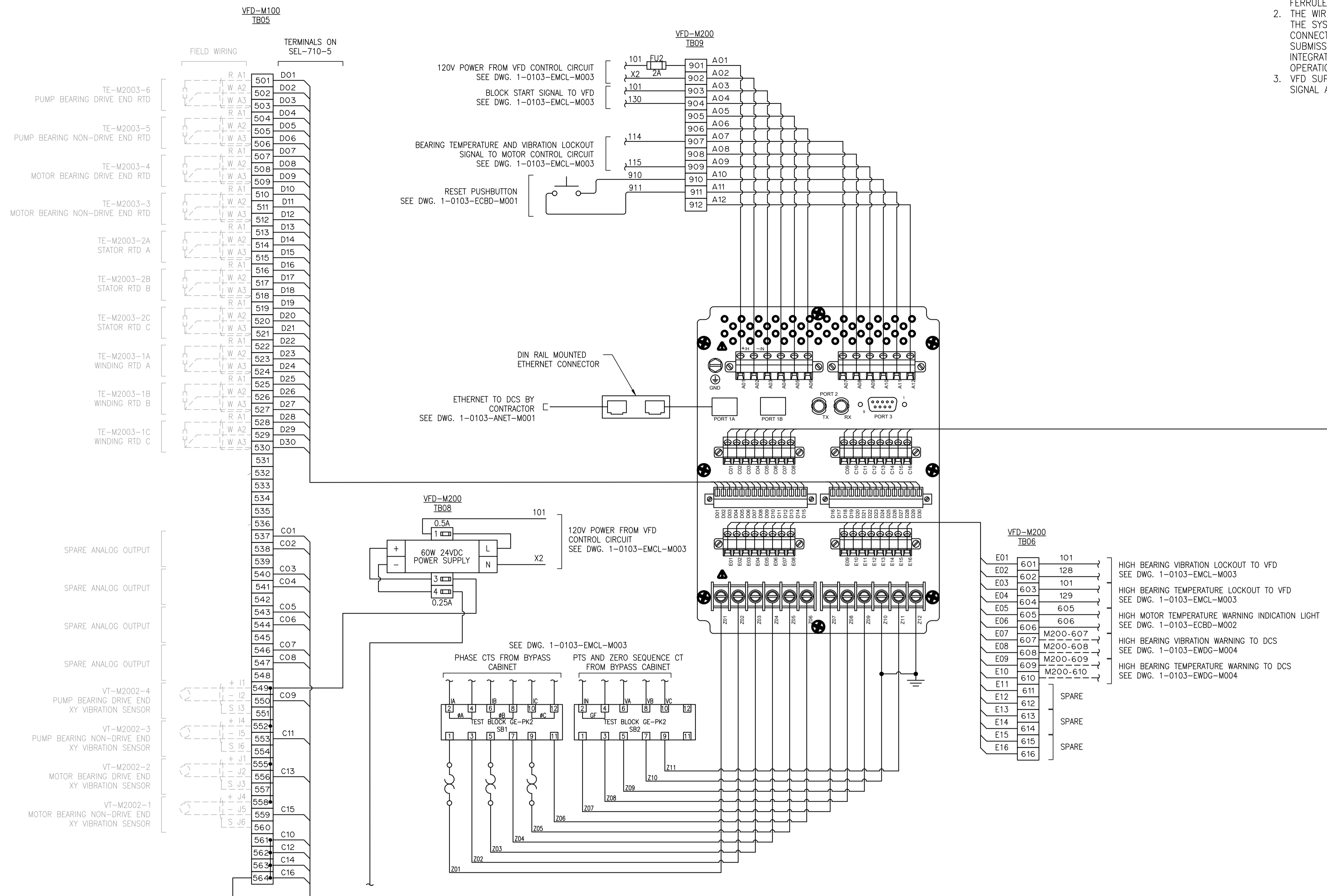
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

PERIMETER ROAD PUMPING STATION
2024 UPGRADES
MOTOR STARTER SCHEMATIC
PUMP M200PP

CITY DRAWING NUMBER: 1-0103-EMCL-M003 SHEET: 002 REV: 00 SIZE: A

NOTES:

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SEL-710-5 TERMINAL LEGEND

DRAWING NUMBER	REFERENCE DRAWINGS
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ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
MPE, a division of Englobe Corp.
No. 4968 Date: MAY 07, 2024

NO.	REVISIONS	DATE	DESIGN	CHECK
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DRAWN BY: N.O.W., J.A.S. APPROVED BY: R.G.O.
SCALE: NTS RELEASED FOR CONSTRUCTION BY: DATE: 2024/03/19

ENGINEER'S SEAL
PROVINCE OF MANITOBA
R.G. OSTIE
Member
44405
2024-05-07

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

PERIMETER ROAD PUMPING STATION
2024 UPGRADES
WIRING DIAGRAM
M200PP MOTOR PROTECTION RELAY

CITY DRAWING NUMBER: 1-0103-EWDG-M005
SHEET: 001
REV: 00
SIZE: A