



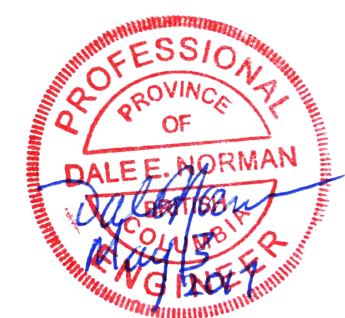
Fisheries and Oceans
Canada

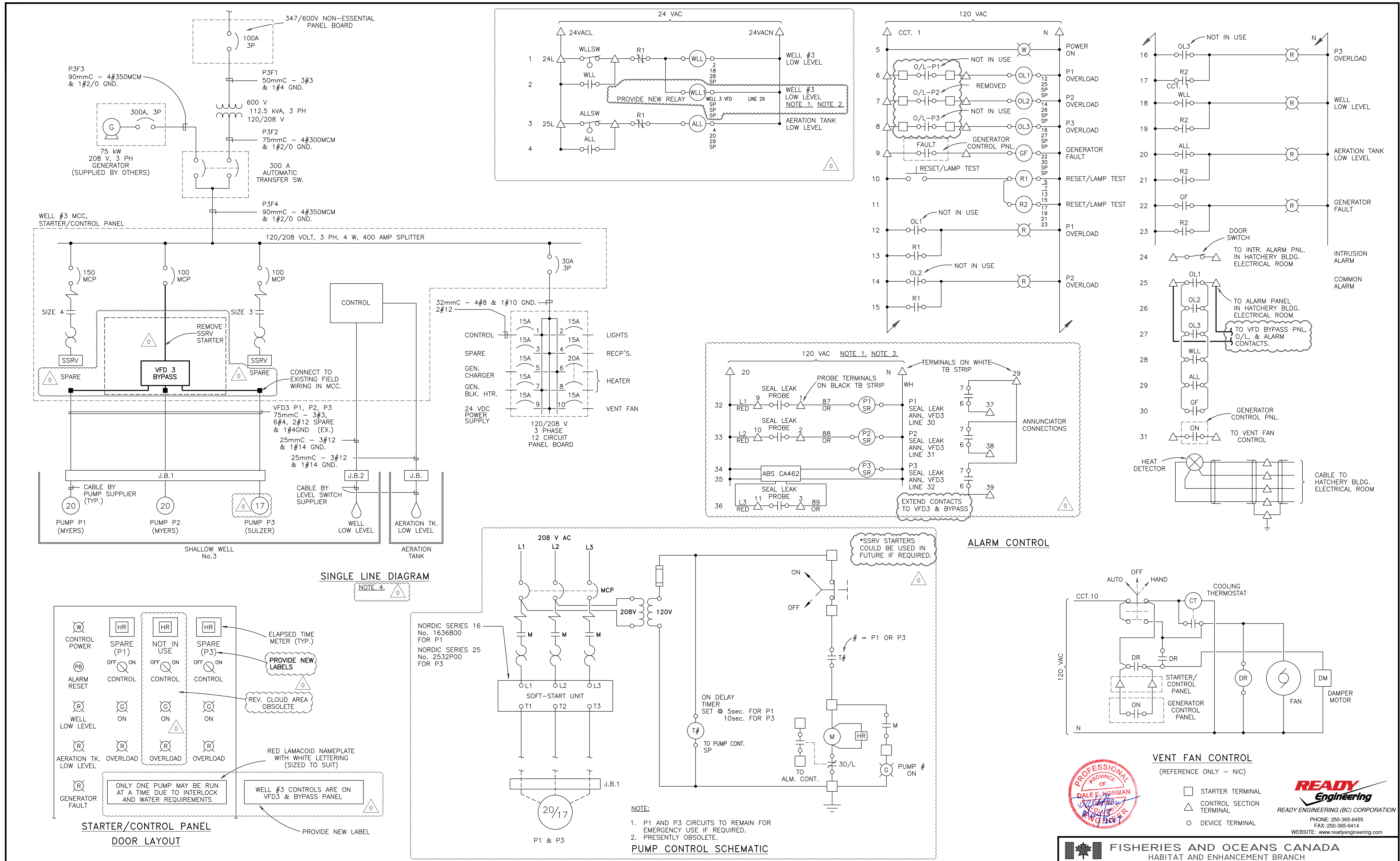
Pêches et Océans
Canada

INCH CREEK HATCHERY WELL 3 VFD UPGRADE

LIST OF ELECTRICAL AND CONTROL DRAWINGS

<u>DRAWING #</u>	<u>DRAWING TITLE</u>
11-31-351 REV 0	WELL 3 - CONTROLS DRAWING
11-31-398 REV 4	PUMPHOUSE #3 DETAILS
11-31-422 REV 2	SINGLE LINE DIAGRAM
11-31-423 REV 2	SITE PLAN
11-31-425 REV 0	MOTOR STARTER SCHEMATIC
11-31-426 REV 0	SINGLE LINE DIAGRAM - P1, P2, & P3





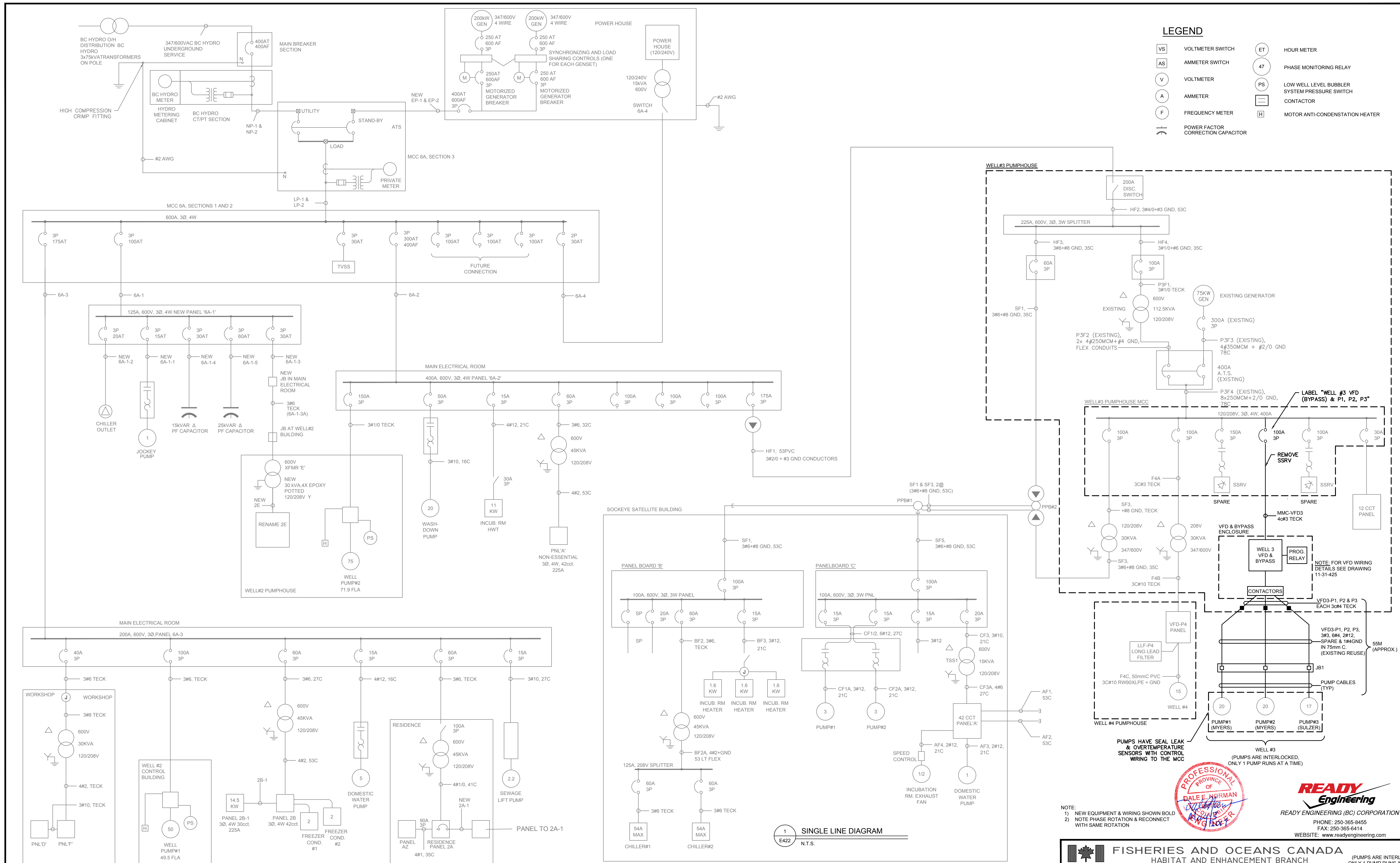
- REFER TO DRAWING 11-31-425 FOR MCC #3 VFD SCHEMATIC WITH INTERCONNECTING WIRING.
- THE 24VAC SUPPLY WAS ADDED PER A PREVIOUS ON SITE CONTRACTOR MARK UP OF EXISTING EQUIPMENT AND IS NOT GUARANTEED TO BE ACCURATE. WLL1 IS A NEW RELAY TO BE ADDED TO THE CONTROL PANEL.
- THE PUMP SEAL LEAK WIRING WAS ADDED PER A PREVIOUS ON SITE CONTRACTOR MARK UP OF EXISTING EQUIPMENT AND NEW INSTALLATION SKETCH AND IS NOT GUARANTEED TO BE ACCURATE.
- REFER TO DRAWING 11-31-422 FOR ADDITIONAL SINGLE LINE DETAILS.
- RECENTLY INCLUDED WELL #3 SEAL LEAK/OVERTEMP WIRING IS NOT SHOWN.

11-31-309	SINGLE LINE DIAGRAM - 1983 MODIFICATIONS	DESIGNED JCK / LR	0	MAY 3 2017	RE-ISSUED FOR TENDER	APPROVED DN	SCALE N.T.S.
DWG. NO.	REFERENCE DRAWINGS	DRAWN JCK/RS	NO.	DATE	REVISIONS	APPROVED	DATE JUNE, 1991
		CHECKED DJM					DRAWING NUMBER 11-31-351
		RECOMMENDED					REVISION 0

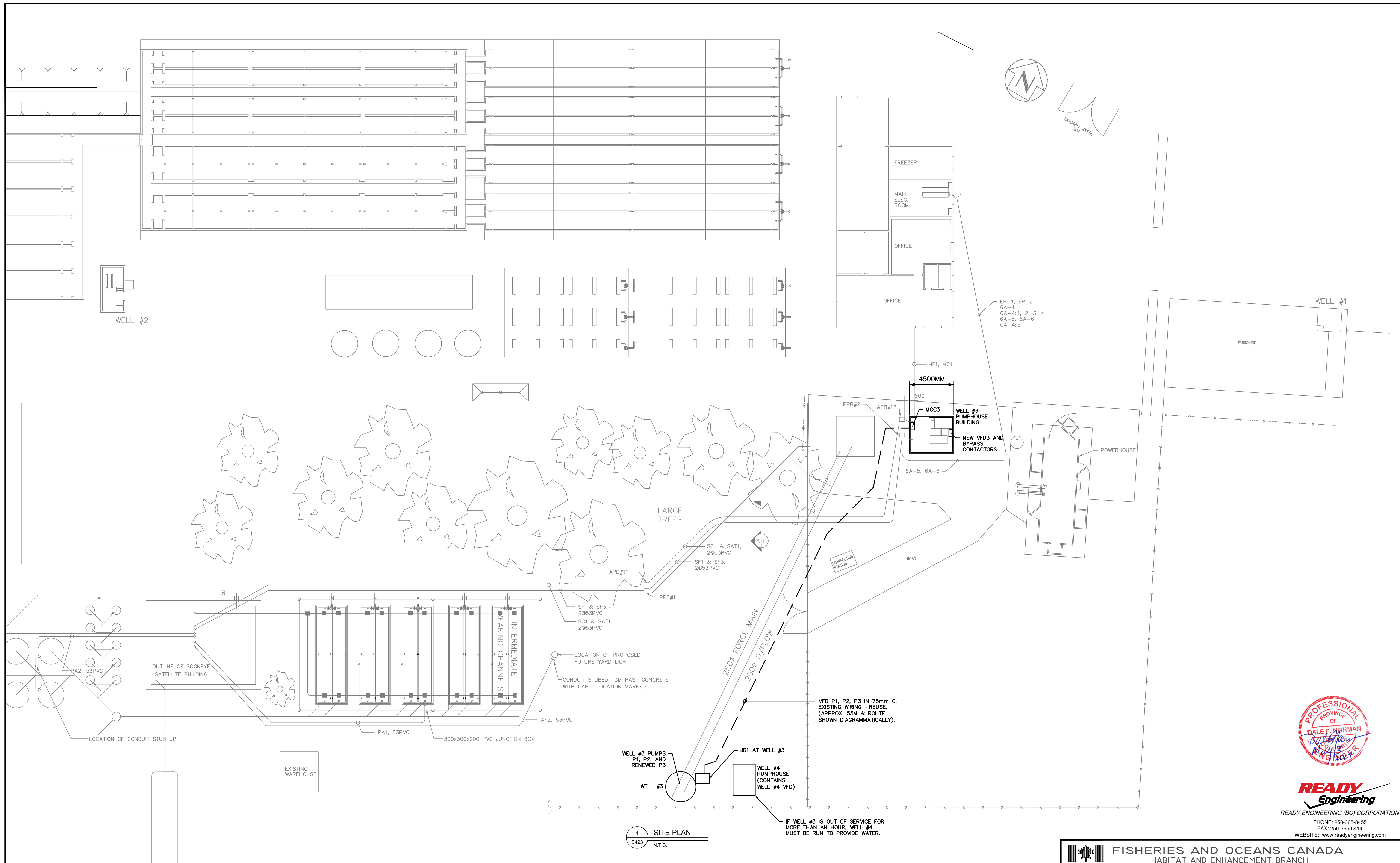
FISHERIES AND OCEANS CANADA
HABITAT AND ENHANCEMENT BRANCH

INCH CREEK HATCHERY
WELL 3 VFD UPGRADE
ELECTRICAL - WELL 3
CONTROLS DRAWING

READY Engineering
READY ENGINEERING (BC) CORPORATION
PHONE: 250-365-8455
FAX: 250-365-6414
WEBSITE: www.readyengineering.com



DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS	DESIGNED JCK / LR	INCH CREEK HATCHERY WELL 1&2 PUMP UPGRADE ELECTRICAL - WELL 3 SINGLE LINE DIAGRAM	SCALE AS SHOWN
			2	MAY 3 2017	UPDATED AND ISSUED FOR TENDER	DRAWN JCK/RS		DATE JAN 2010
			1	MAY 16 2014	FOR RECORD COPY	CHECKED DJM		DRAWING NUMBER 11-31-422
			0	JAN 31 2013	FOR TENDER	RECOMMENDED		REVISION 2
						APPROVED DN		



1 SITE PLAN
E423 N.T.S.



READY
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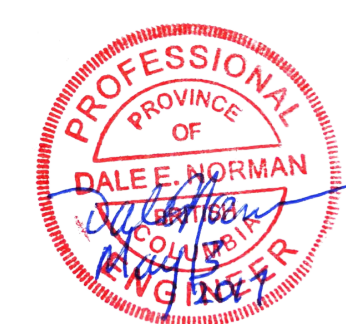
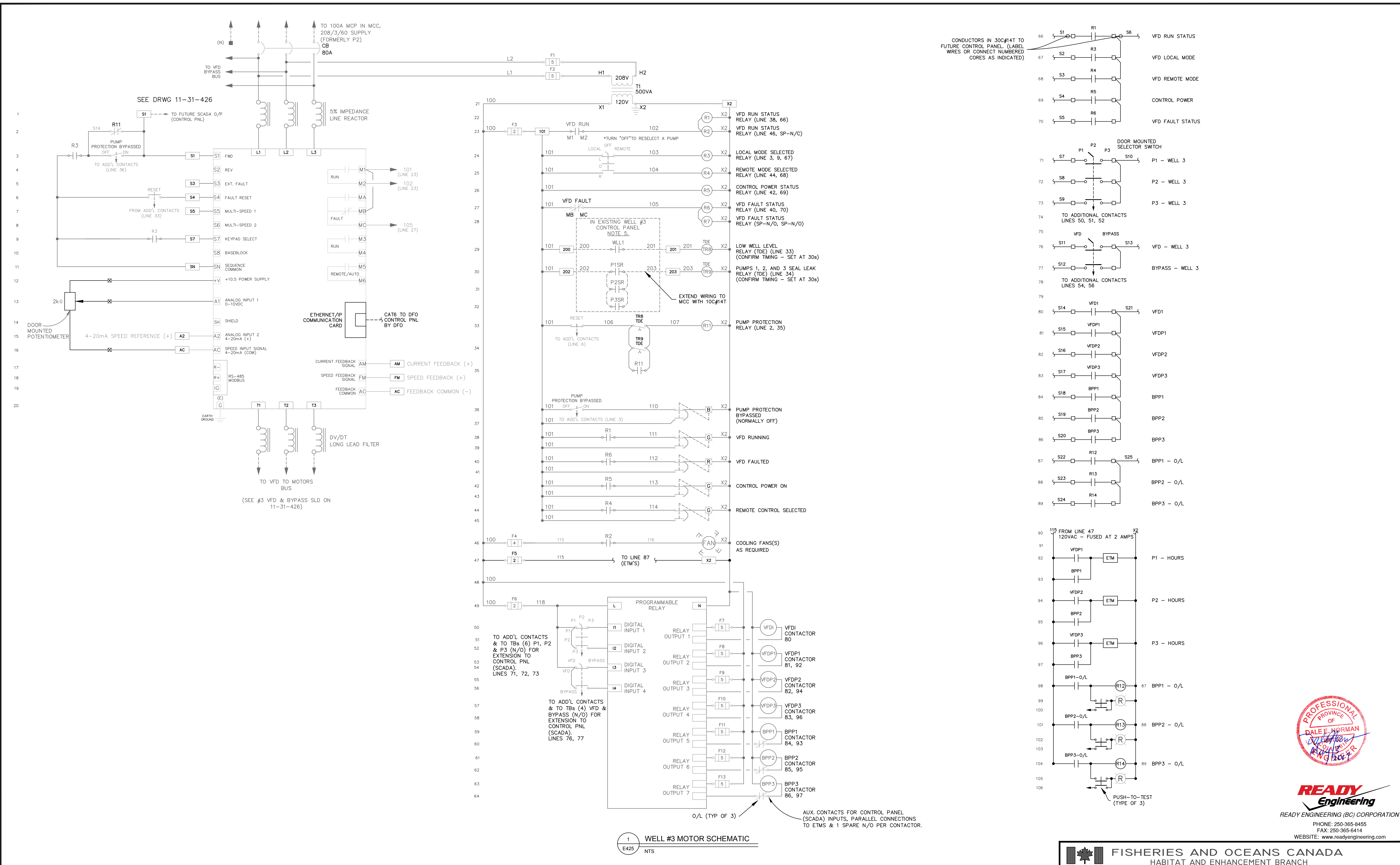
FISHERIES AND OCEANS CANADA
HABITAT AND ENHANCEMENT BRANCH

DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
			2	MAY 3 2017	UPDATED AND ISSUED FOR TENDER
			1	MAY 16 2014	FOR RECORD COPY
			0	JAN 31 2013	FOR TENDER

DESIGNED JCK / LR
DRAWN JCK/RS
CHECKED DJM
RECOMMENDED
APPROVED DN
APPROVED

INCH CREEK HATCHERY
WELL 3 VFD UPGRADE
ELECTRICAL - WELL 3
SITE PLAN

SCALE	AS SHOWN
DATE	JAN 2010
DRAWING NUMBER	11-31-423
REVISION	2



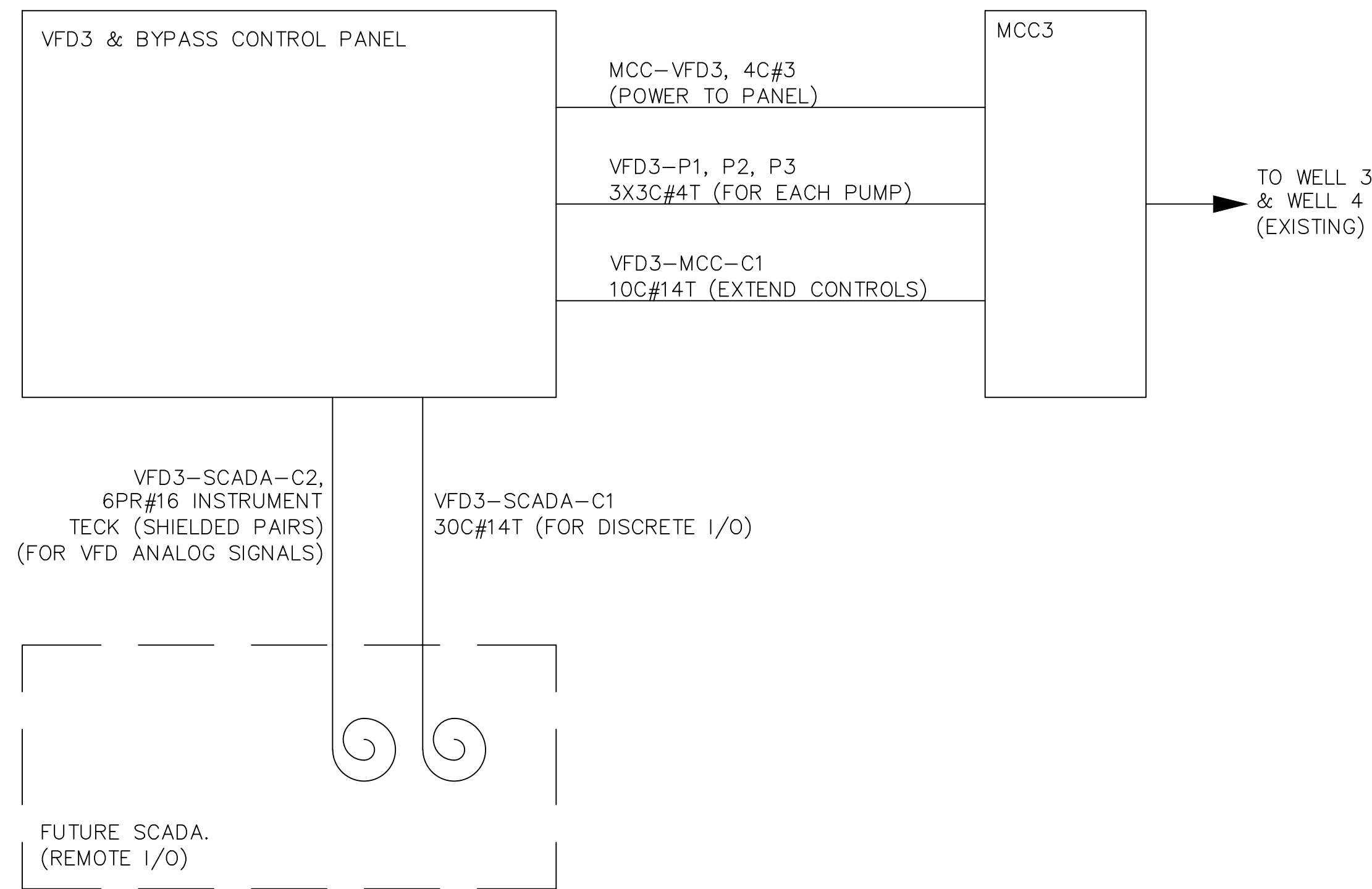
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FISHERIES AND OCEANS CANADA
 HABITAT AND ENHANCEMENT BRANCH

DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS	DESIGNED	JCK / LR	SCALE	AS SHOWN
						DRAWN	JCK/RS		
						CHECKED	DJM	DRAWING NUMBER	11-31-425
						RECOMMENDED		REVISION	0
						APPROVED	DN		
						APPROVED			

INCH CREEK HATCHERY
 WELL 3 VFD UPGRADE
 ELECTRICAL - WELL 3
 MOTOR STARTER SCHEMATIC

0 MAY 2 2017 ISSUED FOR TENDER



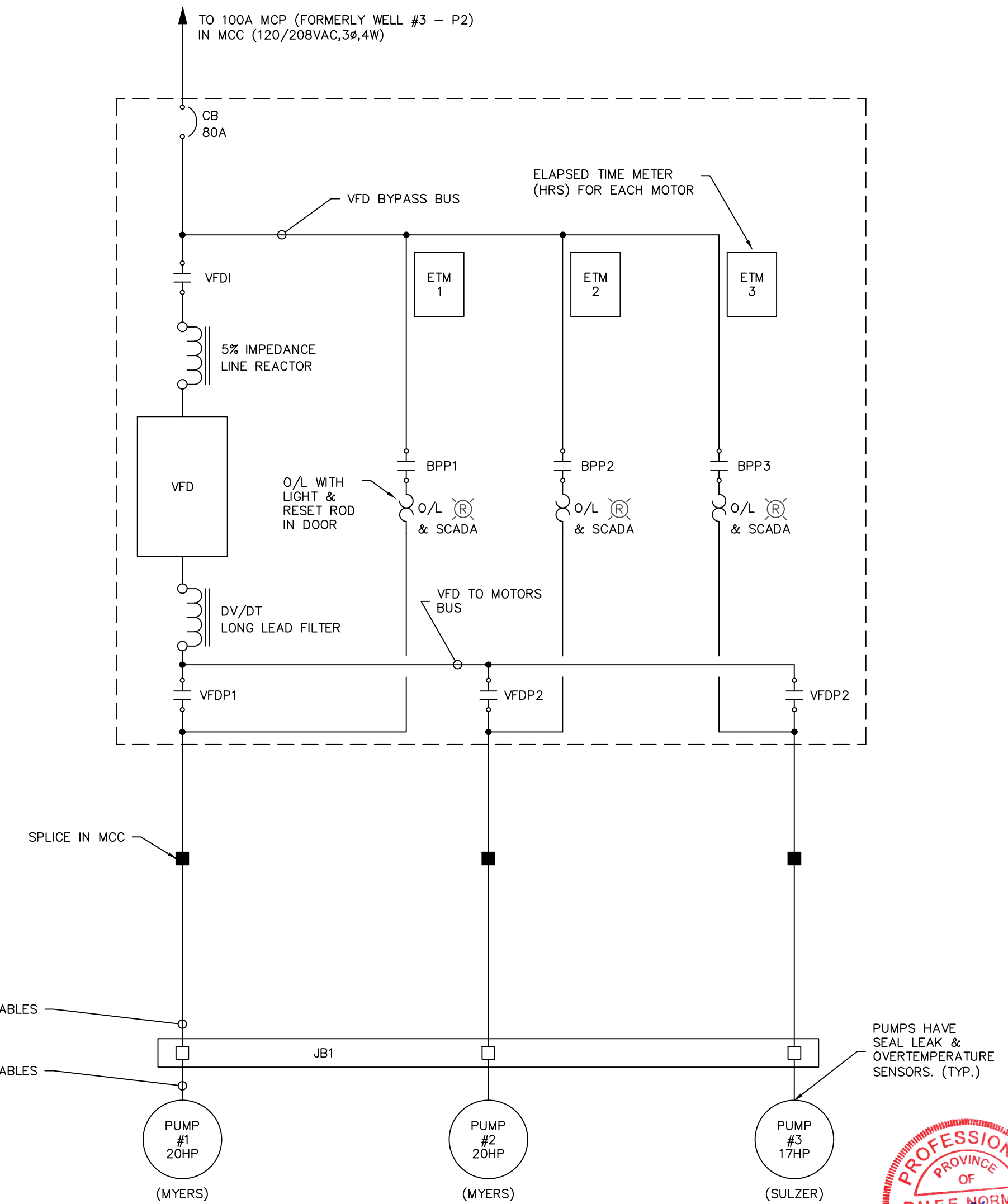
1 CABLING BLOCK DIAGRAM
E426 NTS

STARTER LEGEND AND ABBREVIATIONS

- DEVICE CONNECTION POINT INSIDE THE STARTER ENCLOSURE
- TERMINAL CONNECTION POINT INSIDE THE STARTER ENCLOSURE
- WIRING INSIDE THE STARTER ENCLOSURE — BY THE PANEL SHOP
- WIRING ORIGINATING OUTSIDE OF THE STARTER ENCLOSURE WITH ONE END TERMINATING INSIDE THE STARTER ENCLOSURE
- DEVICE OR TERMINAL CONNECTION POINT OUTSIDE THE STARTER ENCLOSURE
- L LOCAL
- R REMOTE
- VFD MLT SP VFD MANUAL SPEED SELECTION AT KEYPAD

NOTES:

1. VFD CONTROL BOARD JUMPERS ARE SHOWN IN THE DEFAULT POSITION. SS MUST BE CHANGED FOR 4-20mA OUTPUTS.
2. 20% SPARE TERMINAL BLOCKS PROVIDED.
3. ALL INDICATING LIGHTS ARE PUSH TO TEST LED STYLE.
4. CARRIER FREQUENCY MUST BE SET FOR PROPER OPERATION WITH DV/DT FILTER
5. CONNECT TO EXISTING SPARE RELAY CONTACTS IN THE WELL #3 MCC CONTROL PANEL. IF SPARE RELAY CONTACTS ARE NOT AVAILABLE THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO DETERMINE A SUITABLE ALTERNATIVE AND CONSULT WITH THE PROJECT ENGINEER BEFORE PERFORMING WORK. THE WELL LOW LEVEL RELAY (WLL1) IS NEW TO THE CONTROL PANEL IN THE WELL #3 MCC. SEE DRAWING 11-31-351 FOR DETAILS.
6. PROGRAMMABLE RELAY TO CONTROL VFD PUMP SELECTION AND BYPASS CONTACTS (VFD1, VFDP1, VFDP2, VFDP3, BPP1, BPP2, BPP3). WHEN THERE IS A CHANGE IN THE SELECTED PUMP THE VFD MUST HAVE SUFFICIENT TIME TO RAMP DOWN AND DISCONNECT FROM THE CURRENT PUMP BEFORE SWITCHING TO THE NEWLY SELECTED PUMP. THE SAME APPLIED TO THE CONTACTS WHEN SWITCHING TO THE BYPASS MODE. THE VFD MUST HAVE TIME TO RAMP DOWN BEFORE LOSING ITS CONNECTION AND THE SYSTEM CAN BE PUT INTO BYPASS MODE. THESE TIMES ARE TO BE DETERMINED BY THE VFD MANUFACTURER AND MUST NOT BE CHANGED.



NOTE: PUMPS ARE INTERLOCKED IN BOTH VFD AND BYPASS MODE VIA THE CONTACTORS AND PROGRAMMABLE RELAY. ONLY ONE PUMP CAN RUN AT A TIME DUE TO INTERLOCK AND WATER REQUIREMENTS.

1 WELL # 3 P1, P2 & P3 VFD & BYPASS SLD
E426 NTS



GENERAL	GENERAL ABBREVIATIONS
<ul style="list-style-type: none"> ⊗ CROSS REFERENCE DETAIL INDICATOR ⊗ DETAIL # ⊗ DRAWING # 	<ul style="list-style-type: none"> AFG = ABOVE FINISHED GRADE AFF = ABOVE FINISHED FLOOR PC = PHOTO CONTROLLED WP = WEATHERPROOF EX = EXISTING

SCHEMATIC	DESCRIPTION
	CONTROL RELAY CR3 = CONTROL RELAY 3 2CR3 = CONTROL RELAY 3, CONTACT 2 TDE = TIME DELAY TO ENERGIZED TDDE = TIME DELAY TO DE-ENERGIZED (TIME DELAY AS INDICATED FOR TDE & TDDE) L3 = LATCHING RELAY 3 UL3 = UNLATCHING RELAY 3
	NORMALLY OPEN (N/O) CONTACT
	NORMALLY CLOSED (N/C) CONTACT
	SELECTOR SWITCH SHOWN IN THE AUTO POSITION H = HAND O = OFF A = AUTO
	OPERATOR INDICATOR - LETTER INDICATES COLOR: R = RED G = GREEN A = AMBER B = BLUE
	CONTROL CIRCUIT BREAKER C/W AUXILIARY ALARM CONTACT
	CONTROL FUSE (5 AMP)
	N.O. PUSHBUTTON
	N.C. PUSHBUTTON
	CP-N/O CONTACT FOR EXTENSION TO CONTROL PANEL (NORMALLY OPEN)
	SP-N/C SPARE CONTACT N/O OR N/C
	WHEN ENERGIZED, N/C TIMED TO OPEN
	WHEN DE-ENERGIZED, N/O TIMED TO OPEN
	WHEN DE-ENERGIZED, N/C TIMED TO CLOSE
	THERMAL SWITCH (NORMALLY OPEN)
	FLOAT SWITCH (NORMALLY OPEN)
	PRESSURE SWITCH (NORMALLY OPEN)
	LIMIT SWITCH (NORMALLY OPEN)
	WHEN ENERGIZED, N/O TIMED TO CLOSE

DESIGNED	JCK / LR
DRAWN	JCK/RS
CHECKED	DJM
RECOMMENDED	
APPROVED	DN
APPROVED	

<p>FISHERIES AND OCEANS CANADA HABITAT AND ENHANCEMENT BRANCH</p>	<p>INCH CREEK HATCHERY WELL 3 VFD UPGRADE ELECTRICAL - WELL 3 SINGLE LINE DIAGRAM - P1, P2, & P3</p>	SCALE AS SHOWN
		DATE APR 25 2017
		DRAWING NUMBER 11-31-426
		REVISION 0

DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
			0	MAY 2 2017	ISSUED FOR TENDER