

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

**FISHERIES AND OCEANS CANADA**  
 REAL PROPERTY, SAFETY AND SECURITY

**ROBERTSON CREEK HATCHERY  
 COLD WATER PUMP STATION  
 ELECTRICAL DRAWINGS  
 SITE PLAN**

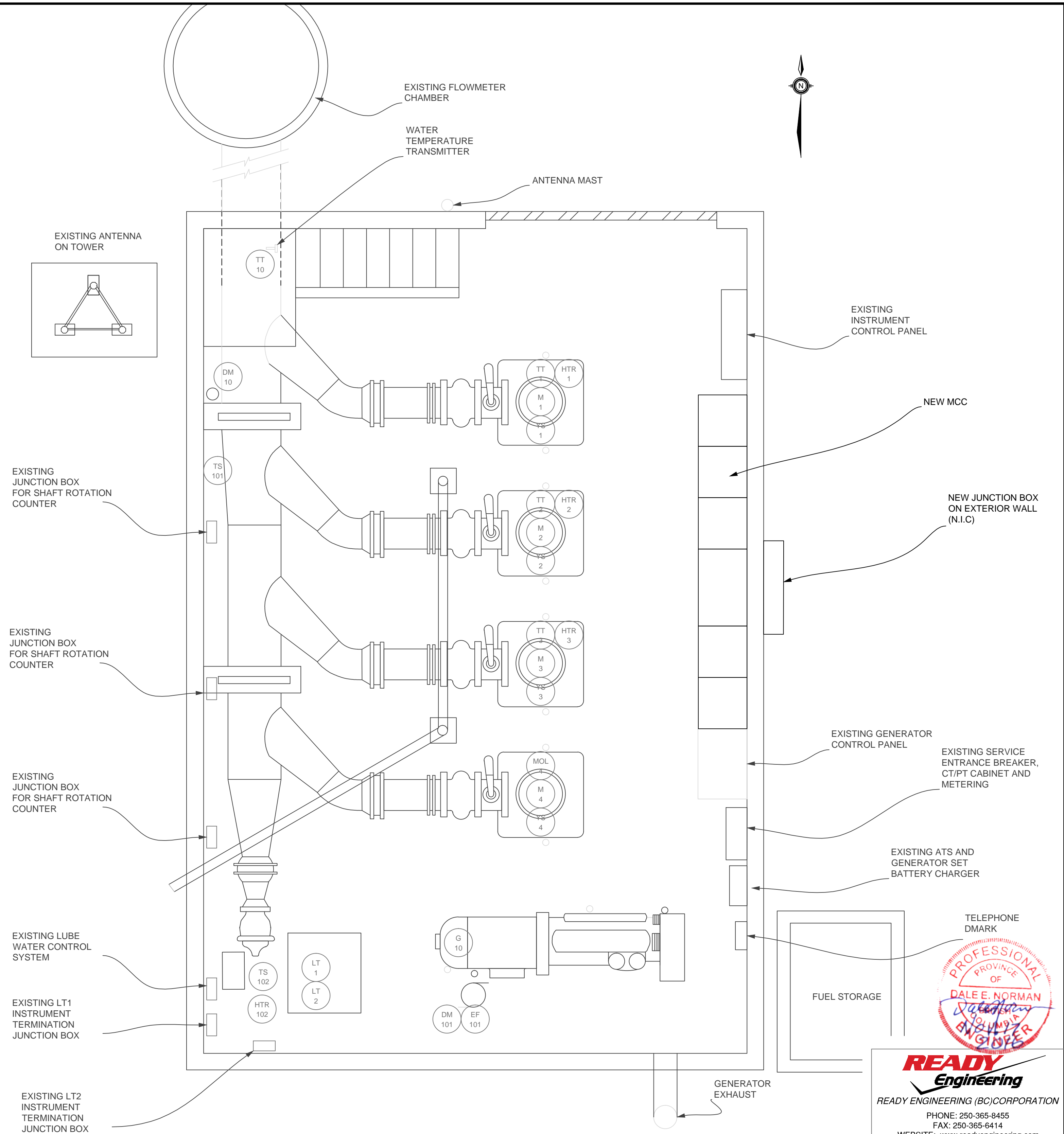
SCALE	AS NOTED
DATE	11/08/16
DRAWING NUMBER	31-16-930
REVISION	0

DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS	DESIGNED LCR	DRAWN LCR	CHECKED DJM	RECOMMENDED DN	APPROVED
			0	11/18/16	ISSUED FOR TENDER					

**NOTES**

- EXISTING CABLE RUNS FROM MOTORS TO MCC ARE NOT EXPECTED TO REACH THE NEW VFD LOCATIONS. CONTRACTORS ARE TO BID AS IF MOTOR FEED CABLES WILL BE REPLACED IN EXISTING CONDUIT.
- N.I.C: NOT IN CONTRACT (BY OTHERS IN A SEPARATE CONTRACT)

SYMBOL LEGEND				
EQUIPMENT # OR INSTRUMENT TAG	QUANTITY	DESCRIPTION	NEW OR EXISTING	COMMENTS
M 1 HTR 1	1 OF EACH	3φ, 600V VERTICAL PUMP WITH ELECTRIC MOTOR. MOTOR INCLUDES ANTI-CONDENSATION STRIP HEATER	EXISTING	EXISTING INSTRUMENTS TO BE RE-CONNECTED TO THE NEW MCC AND CONTROL CABINET. RE-USE EXISTING CONDUITS WHERE SUITABLE. RE-USE EXISTING CONDUCTORS AND CABLES WHERE SUITABLE AND ONLY WHERE THE CONDUCTORS ARE IN CONTINUOUS LENGTH BETWEEN THE INSTRUMENT CONNECTION POINT AND THE MCC OR CONTROL CABINET CONNECTION POINT. (SPLICING ON SHORT EXTENSION SHALL NOT BE PERMITTED)
M 2 HTR 2	1 OF EACH	3φ, 600V VERTICAL PUMP WITH ELECTRIC MOTOR. MOTOR INCLUDES ANTI-CONDENSATION STRIP HEATER	EXISTING	
M 3 HTR 3	1 OF EACH	3φ, 600V VERTICAL PUMP WITH ELECTRIC MOTOR. MOTOR INCLUDES ANTI-CONDENSATION STRIP HEATER	EXISTING	
M 4	1 OF EACH	3φ, 600V VERTICAL PUMP WITH ELECTRIC MOTOR. MOTOR INCLUDES INTEGRAL MOTOR OVER LOAD CONTACT. MOTOR OVER LOAD CONTACT NO LONGER NEEDED DUE TO VFD INSTALLATION.	EXISTING	
M 5 LT 5	1 OF EACH	3φ, 600V SUBMERSIBLE PUMP WITH ELECTRIC MOTOR. WELL INCLUDES DIFFERENTIAL PRESSURE TRANSMITTER.	N.I.C	PRESSURE TRANSMITTER TO INCLUDE VENTILATED CABLE, BELLOWS OR EQUIVALENT, AND ANALOG SURGE PROTECTION.
M 6 LT 6	1 OF EACH	3φ, 600V SUBMERSIBLE PUMP WITH ELECTRIC MOTOR. WELL INCLUDES DIFFERENTIAL PRESSURE TRANSMITTER.	N.I.C	PRESSURE TRANSMITTER TO INCLUDE VENTILATED CABLE, BELLOWS OR EQUIVALENT, AND ANALOG SURGE PROTECTION.
G 10 DM 10	1 OF EACH			
FT 10 FE 10	1 OF EACH	SIERRA SERIES 205 STRAP-ON FLOW METER, WITH EXTERNAL DISPLAY AND 4-20mA OUTPUT FROM DISPLAY UNIT	N.I.C	120VAC POWER SUPPLY TO FLOW METER DISPLAY UNIT FROM CONTROL PANEL, AND 4-20mA ANALOG SIGNAL FROM FLOW METER DISPLAY UNIT TO THE CONTROL PANEL
LT 1	1	HYDROSTATIC PRESSURE TRANSDUCER FOR LEVEL MEASUREMENT	EXISTING	
LT 2	1	HYDROSTATIC PRESSURE TRANSDUCER FOR LEVEL MEASUREMENT	EXISTING	
EF 101 DM 101 TS 101	1 OF EACH	BUILDING SYSTEMS: EXHAUST FAN, DAMPER MOTOR FOR LOUVER CONTROL.	EXISTING	THE EXISTING EXHAUST FAN, DAMPER MOTOR AND LOUVERS ARE TO BE INTEGRATED INTO THE NEW MCC. THE CONTRACTOR IS TO CONFIRM SYSTEM OPERATION PRIOR TO ORDERING THE NEW MCC AND PRIOR TO ANY EXISTING MCC DEMOLITION WORK. THE CONTRACTOR IS TO REPORT THE SYSTEM OPERATION FINDINGS TO THE ENGINEER AND REQUEST SITE INSTRUCTIONS IF ASSISTANCE IS REQUIRED.
SCRTY 101 FIRE 101	1 OF EACH	BUILDING SECURITY AND FIRE PROTECTION SYSTEM ALARM STATUS SIGNAL CONTACTS	EXISTING	
RADIO 101 MODEM 101	1 OF EACH	RADIO EQUIPMENT AND TELEPHONE MODEM	EXISTING	
TS 102 HTR 102	1 OF EACH	BUILDING SYSTEMS: ELECTRIC HEATER AND THERMOSTAT	EXISTING	THE EXISTING BUILDING HEATING SYSTEM IS TO BE INTEGRATED INTO THE NEW MCC. THE CONTRACTOR IS TO CONFIRM SYSTEM OPERATION PRIOR TO ORDERING THE NEW MCC AND PRIOR TO ANY EXISTING MCC DEMOLITION WORK. THE CONTRACTOR IS TO REPORT THE SYSTEM OPERATION FINDINGS TO THE ENGINEER AND REQUEST SITE INSTRUCTIONS IF ASSISTANCE IS REQUIRED.
TT 10	1	STATION DISCHARGE WATER TEMPERATURE TRANSDUCER	EXISTING	



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 REAL PROPERTY, SAFETY AND SECURITY

**ROBERTSON CREEK HATCHERY  
 COLD WATER PUMP STATION  
 ELECTRICAL DRAWINGS  
 BUILDING LAYOUT**

SCALE	AS NOTED
DATE	11/08/16
DRAWING NUMBER	<b>31-16-931</b>
REVISION	0

DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS

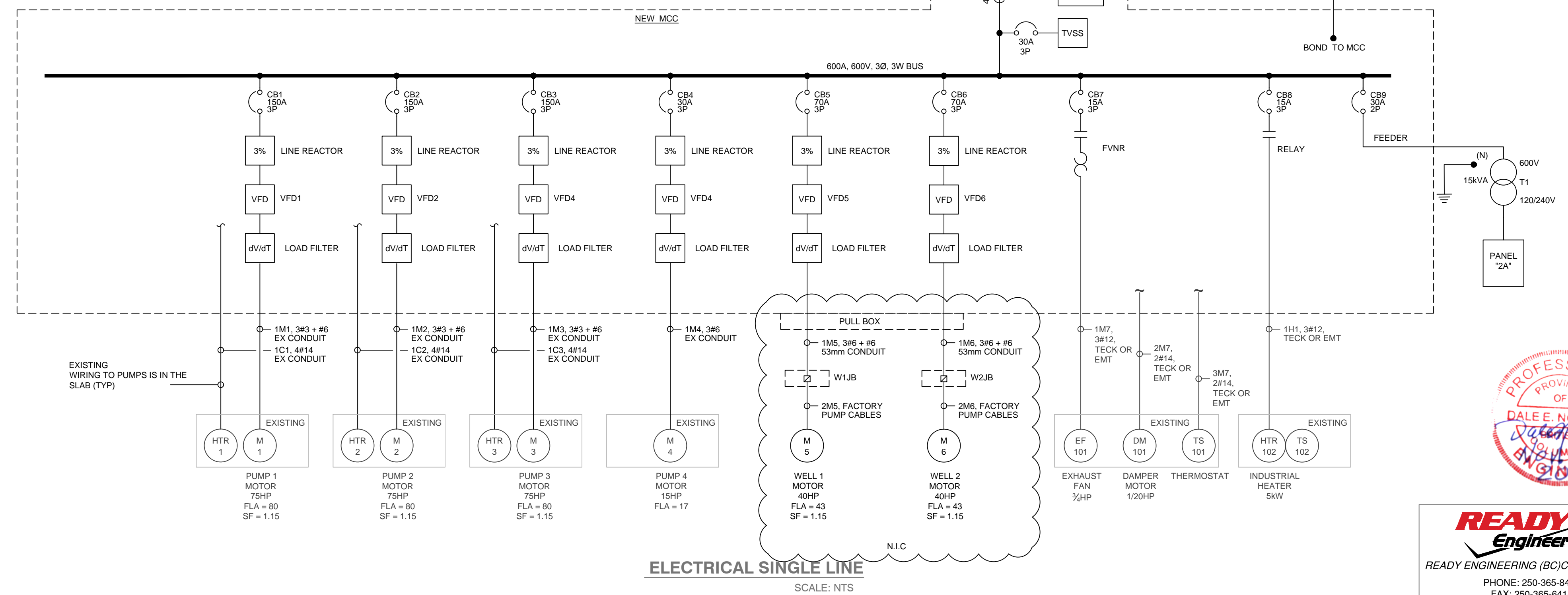
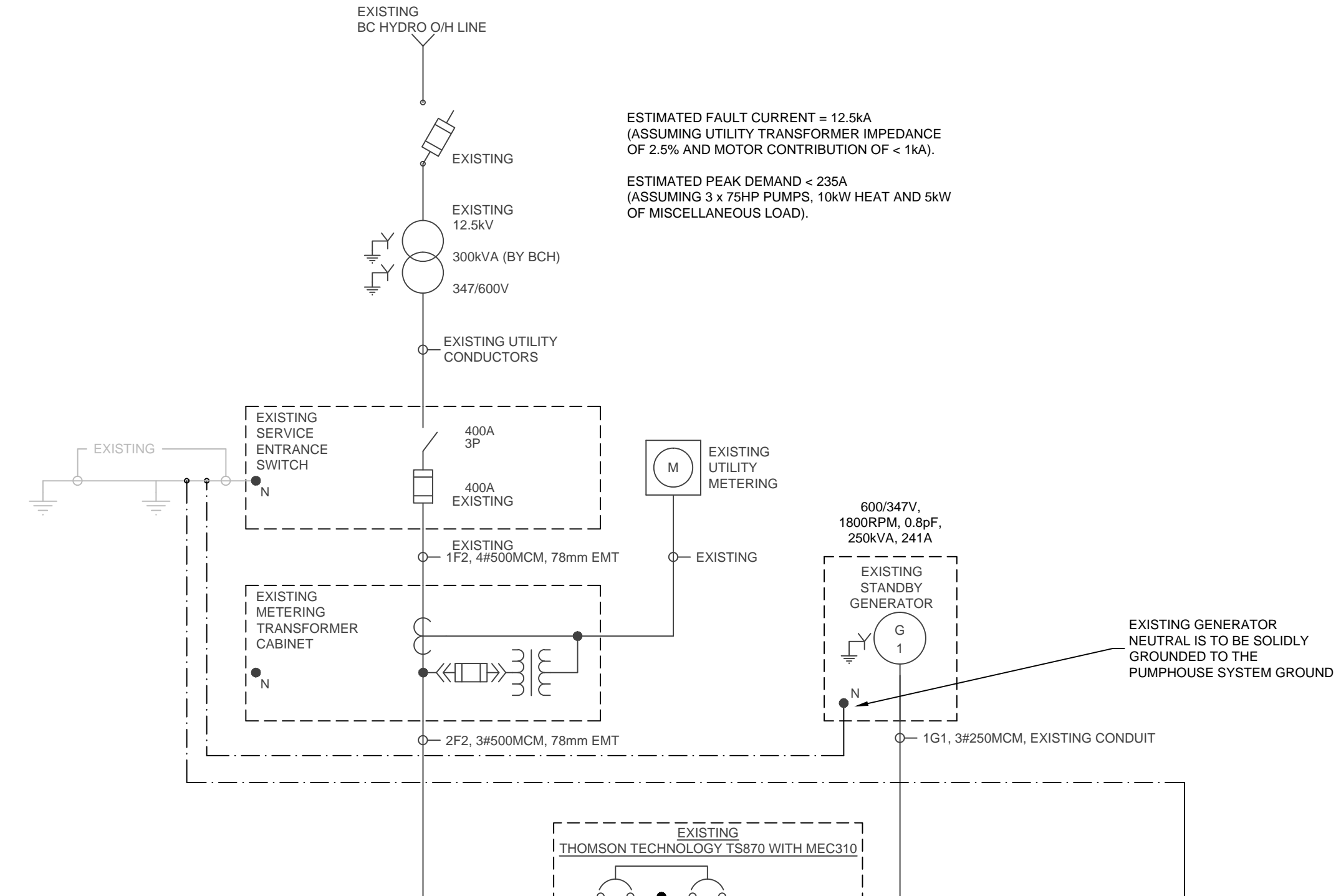
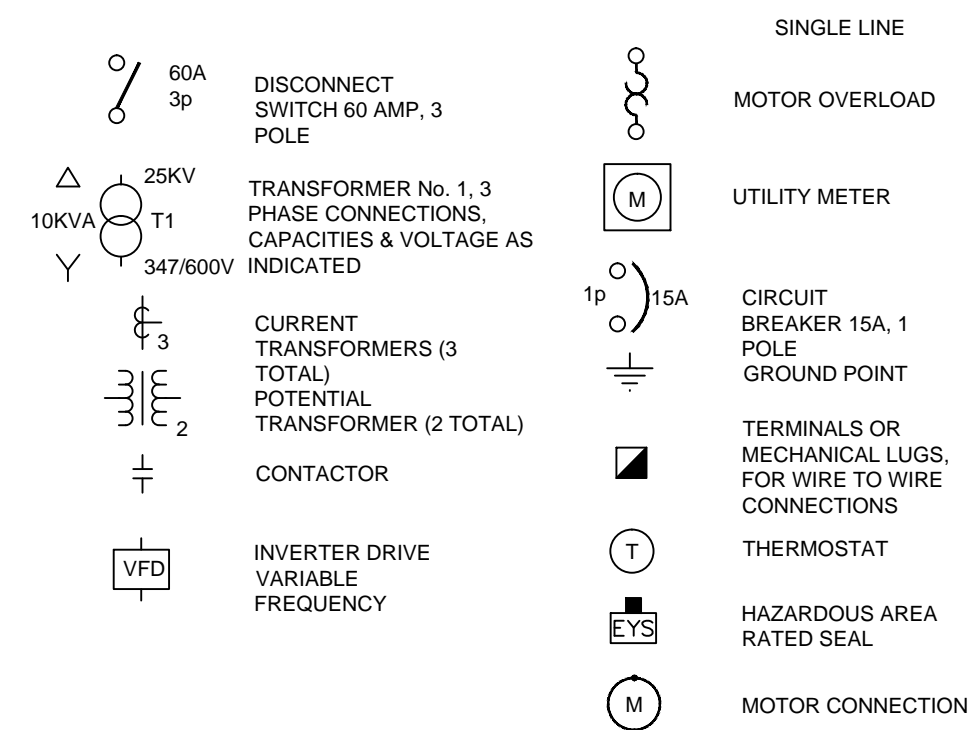
DESIGNED	LCR
DRAWN	LCR
CHECKED	DJM
RECOMMENDED	DN
APPROVED	
APPROVED	

0	11/18/16	ISSUED FOR TENDER
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100 Amp Main Bus		Panel 2A				120/240 VAC, 1 $\phi$	
No Main Breaker						Surface Mount	
32 circuits		Isolate the Neutral					
INTERIOR LIGHTS	15 ASP	1	2	15 ASP		SPARE	
EXTERIOR LIGHTS	15 ASP	3	4	15 ASP		SPARE	
GENERAL RECEPTACLES	15 ASP	5	6	15 ASP		BENCH RECEPTACLE	
LUBE WATER SYSTEM FOR 15HP PUMP	15 ASP	7	8	15 ASP		GENERATOR BATTERY CHARGER	
GENERAL RECEPTACLES	15 ASP	9	10	15 ASP		GENERATOR WATER HEATER	
		11	12	20 ASP		SPARE	
		13	14	20 ASP		SPARE	
		15	16				
		17	18				
		19	20				
		21	22				
		23	24				
		25	26				
		27	28				
		29	30				
		31	32				

**PANEL 2A SCHEDULE**  
SCALE: NTS

**LEGEND**



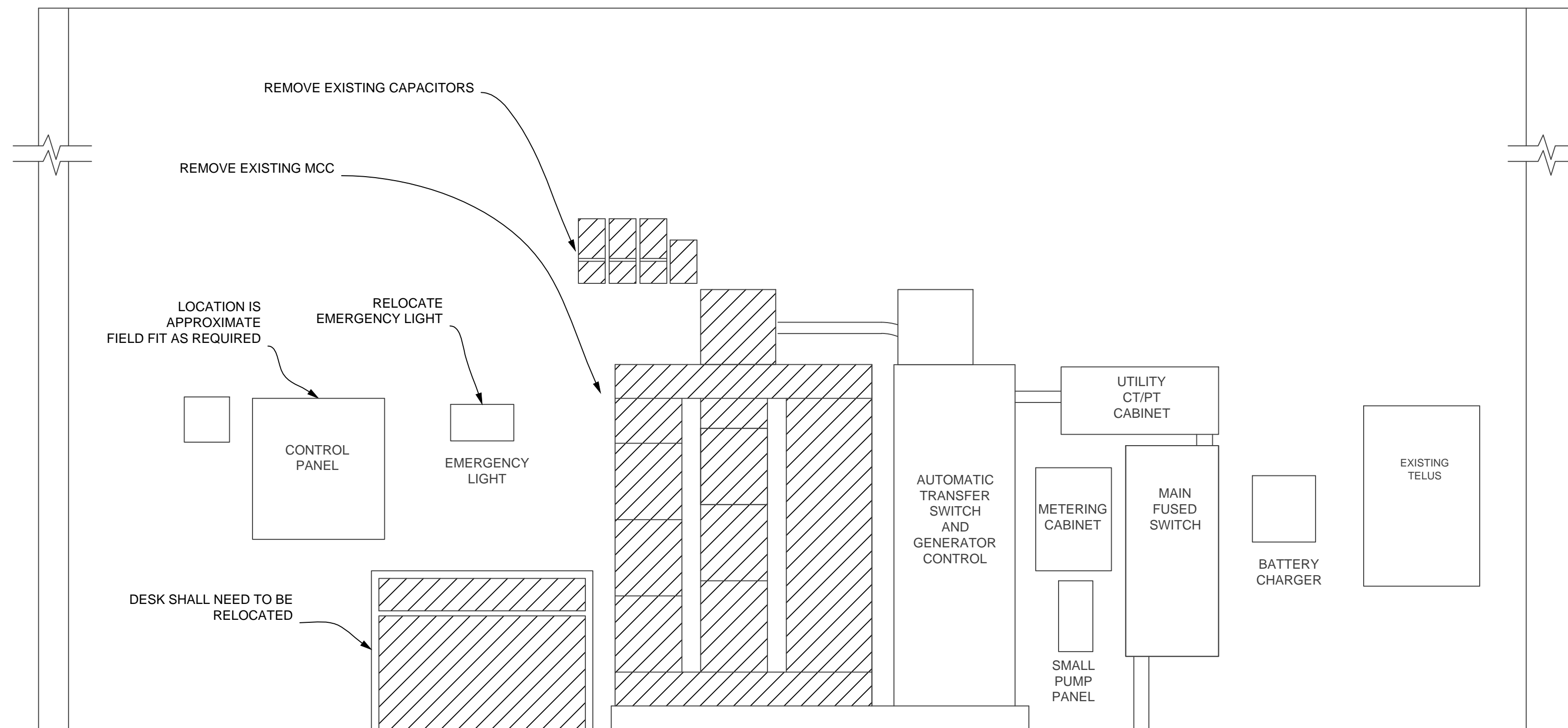
**ELECTRICAL SINGLE LINE**  
SCALE: NTS



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<b>FISHERIES AND OCEANS CANADA</b> REAL PROPERTY, SAFETY AND SECURITY		SCALE	AS NOTED
		DATE	11/08/16
<b>ROBERTSON CREEK HATCHERY</b> COLD WATER PUMP STATION ELECTRICAL DRAWINGS SINGLE LINE		DRAWING NUMBER	31-16-932
		REVISION	0

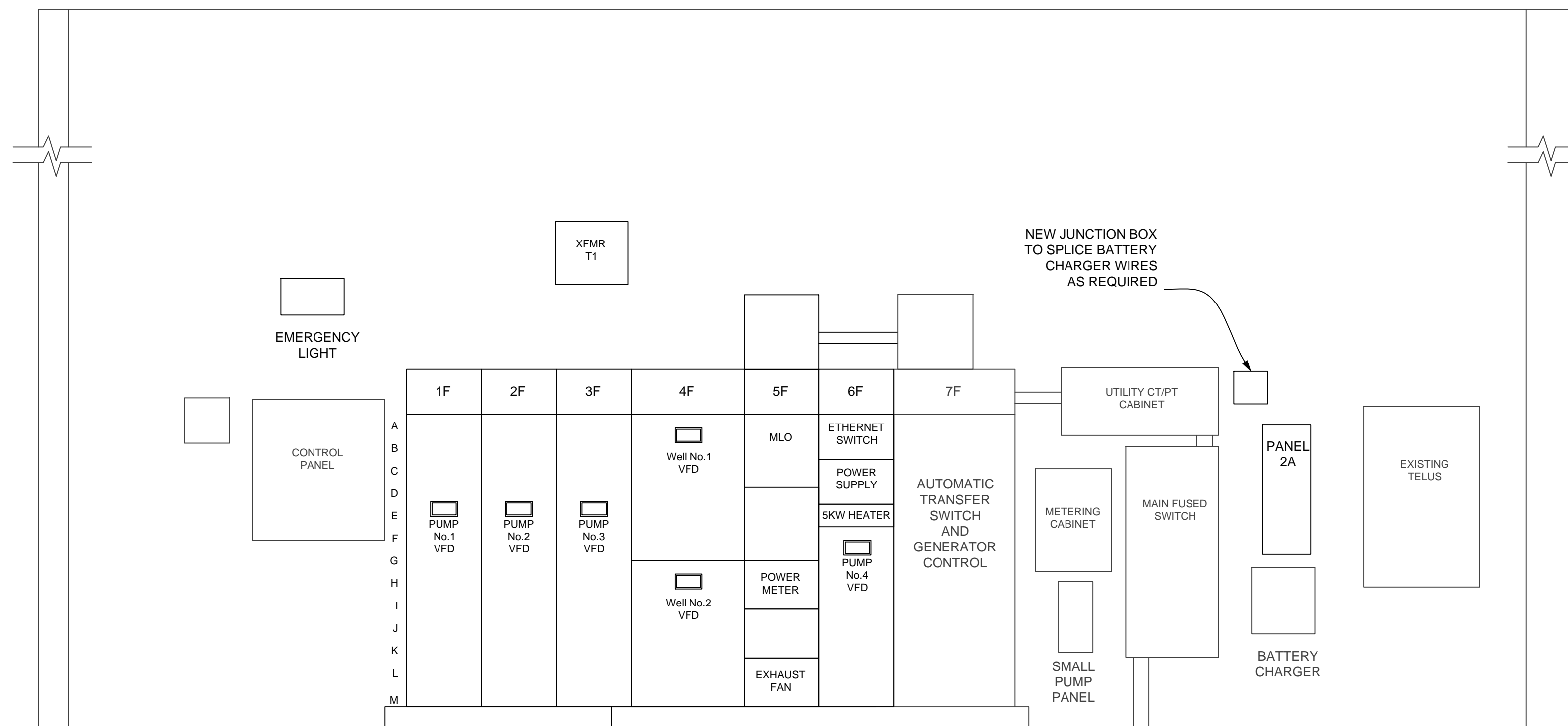
DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS	DESIGNED LCR	DRAWN LCR	CHECKED DJM	RECOMMENDED DN	APPROVED
			0	11/18/16	ISSUED FOR TENDER					



**EXISTING WALL ELEVATION**  
SCALE: NTS

**NOTES**

1. EXISTING PHONE JACK AND RECEPTACLES THAT WILL BE COVERED BY THE EXPANSION OF THE MCC ARE TO BE RELOCATED TO THE LEFT OF THE EXISTING CONTROL PANEL.
2. POWER MONITOR TO BE INCLUDED ON NEW INCOMING MCC SECTION. (ACCUCIM IIR OR EQUIV.)



**PROPOSED WALL ELEVATION**  
SCALE: NTS

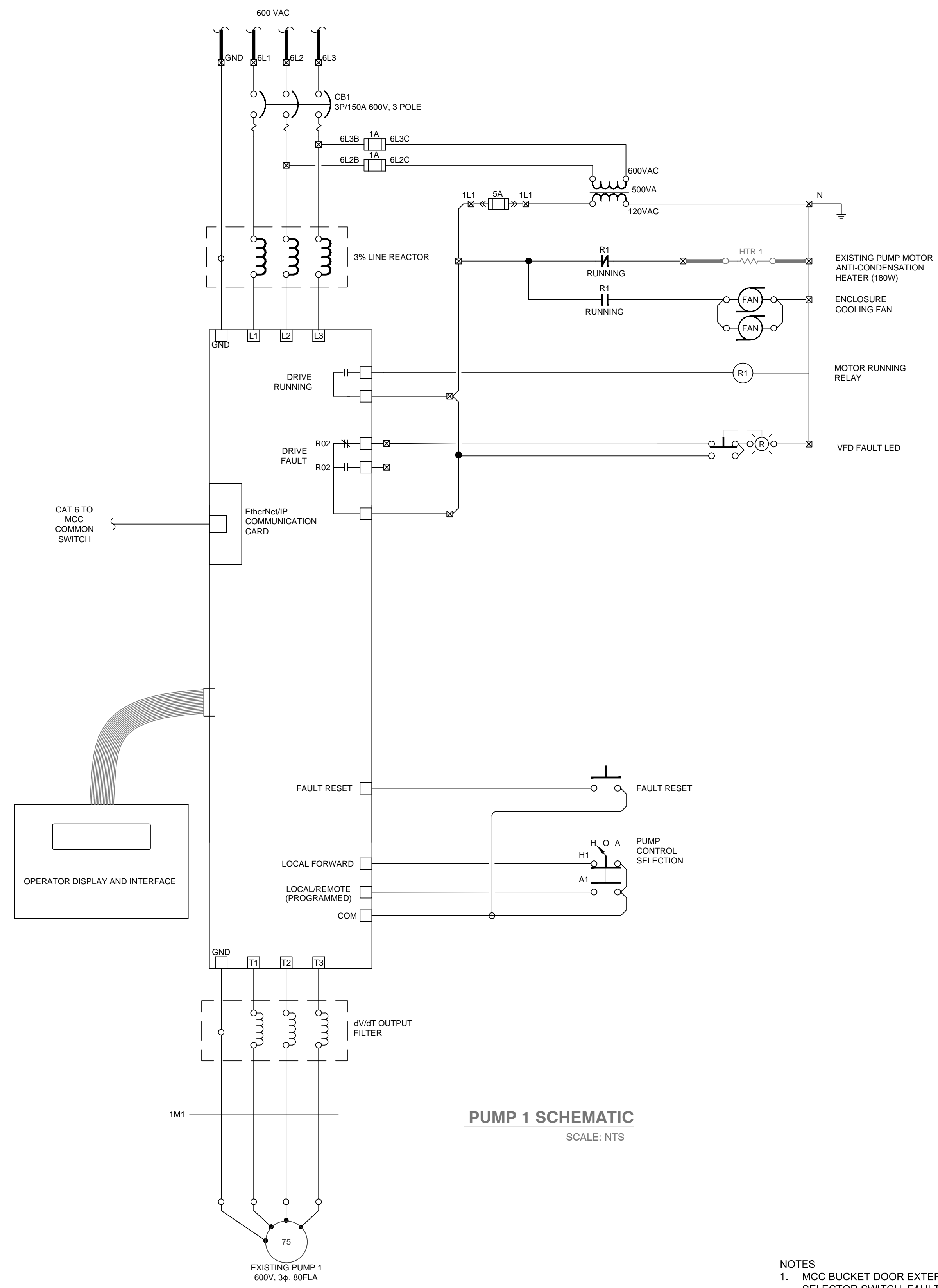


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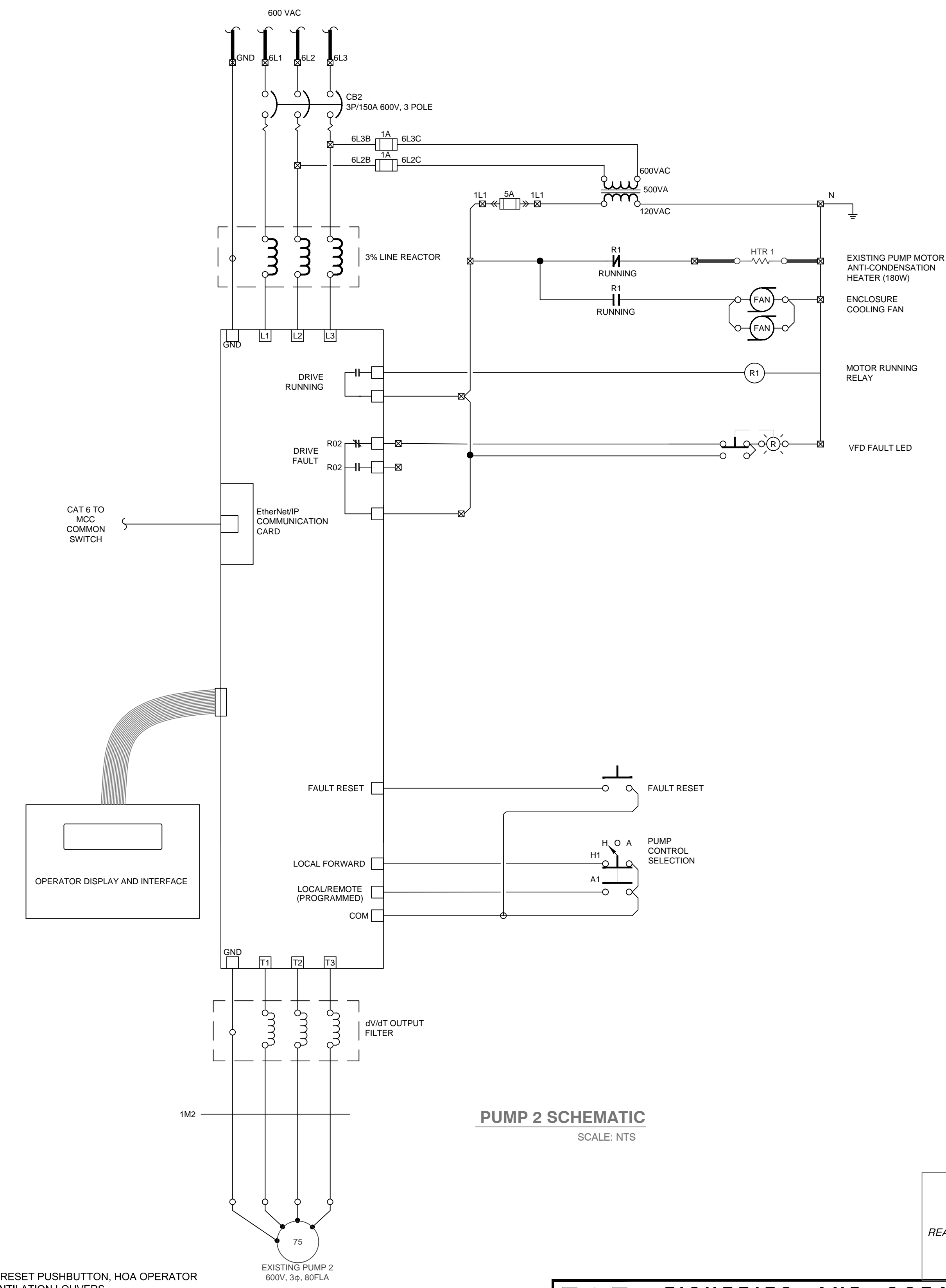
<p><b>FISHERIES AND OCEANS CANADA</b> REAL PROPERTY, SAFETY AND SECURITY</p>	<p><b>ROBERTSON CREEK HATCHERY</b> <b>COLD WATER PUMP STATION</b> <b>ELECTRICAL DRAWINGS</b> <b>WALL ELEVATIONS</b></p>	<p>SCALE AS NOTED</p>
	<p>DATE 11/08/16</p>	<p>DRAWING NUMBER <b>31-16-933</b></p>
<p>DWG. NO.</p>	<p>DRAWING REFERENCES</p>	<p>REVISION 0</p>

DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS
			0	11/18/16	ISSUED FOR TENDER

DESIGNED	LCR
DRAWN	LCR
CHECKED	DJM
RECOMMENDED	DN
APPROVED	
APPROVED	



**PUMP 1 SCHEMATIC**  
SCALE: NTS



**PUMP 2 SCHEMATIC**  
SCALE: NTS

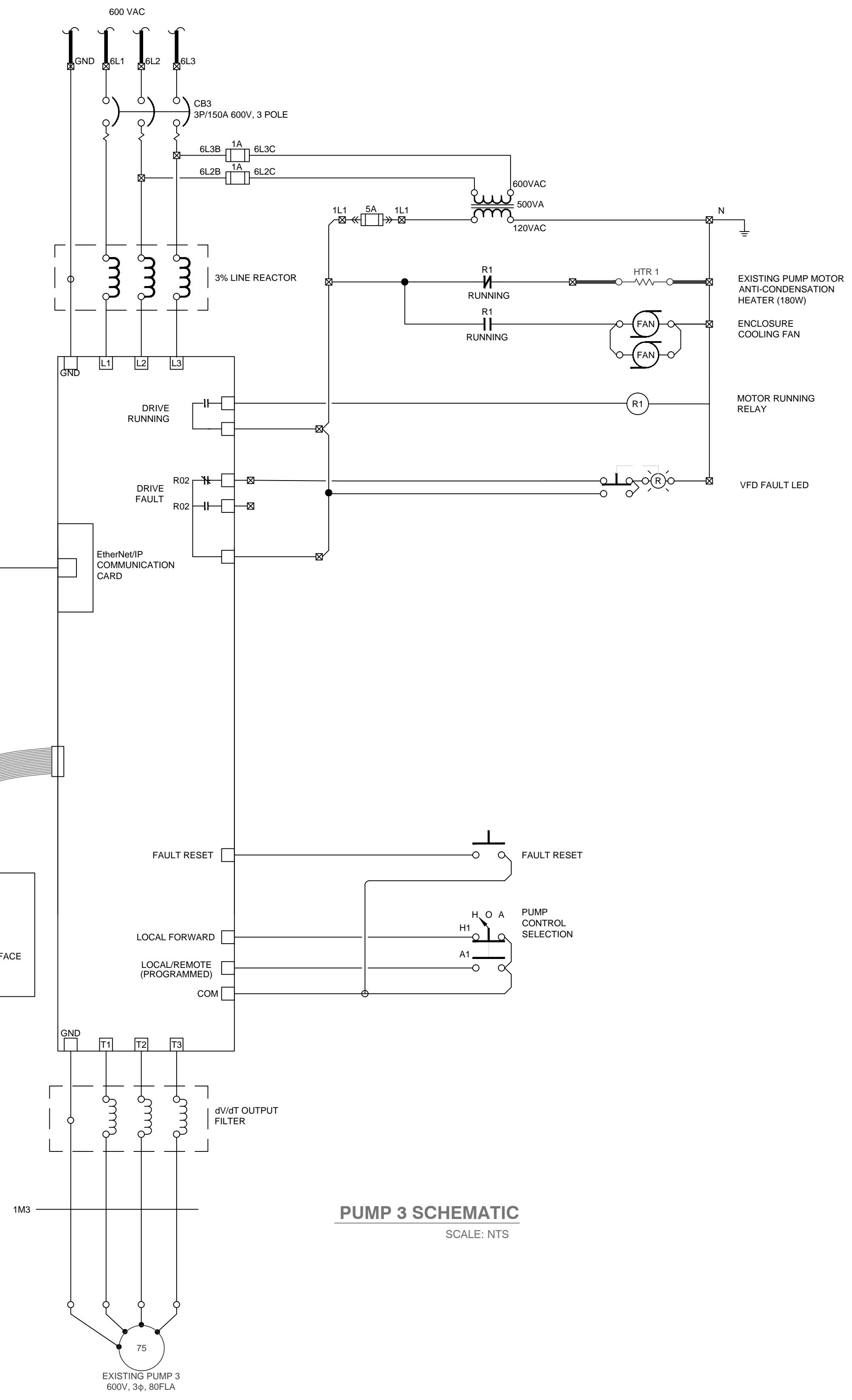
- NOTES**
- MCC BUCKET DOOR EXTERNAL TO HAVE VFD DISPLAY/OPERATOR INTERFACE, RESET PUSHBUTTON, HOA OPERATOR SELECTOR SWITCH, FAULTED LED (PUSH TO TEST), BREAKER HANDLE, AND VENTILATION LOUVERS.
  - ALL VFDs TO COMMUNICATE OVER ETHERNET/IP. MCC TO BE WIRED BY THE MANUFACTURER WITH A COMMON ETHERNET SWITCH FOR ALL DEVICES AND A SINGLE ACCESS POINT FOR DFO CONNECTION



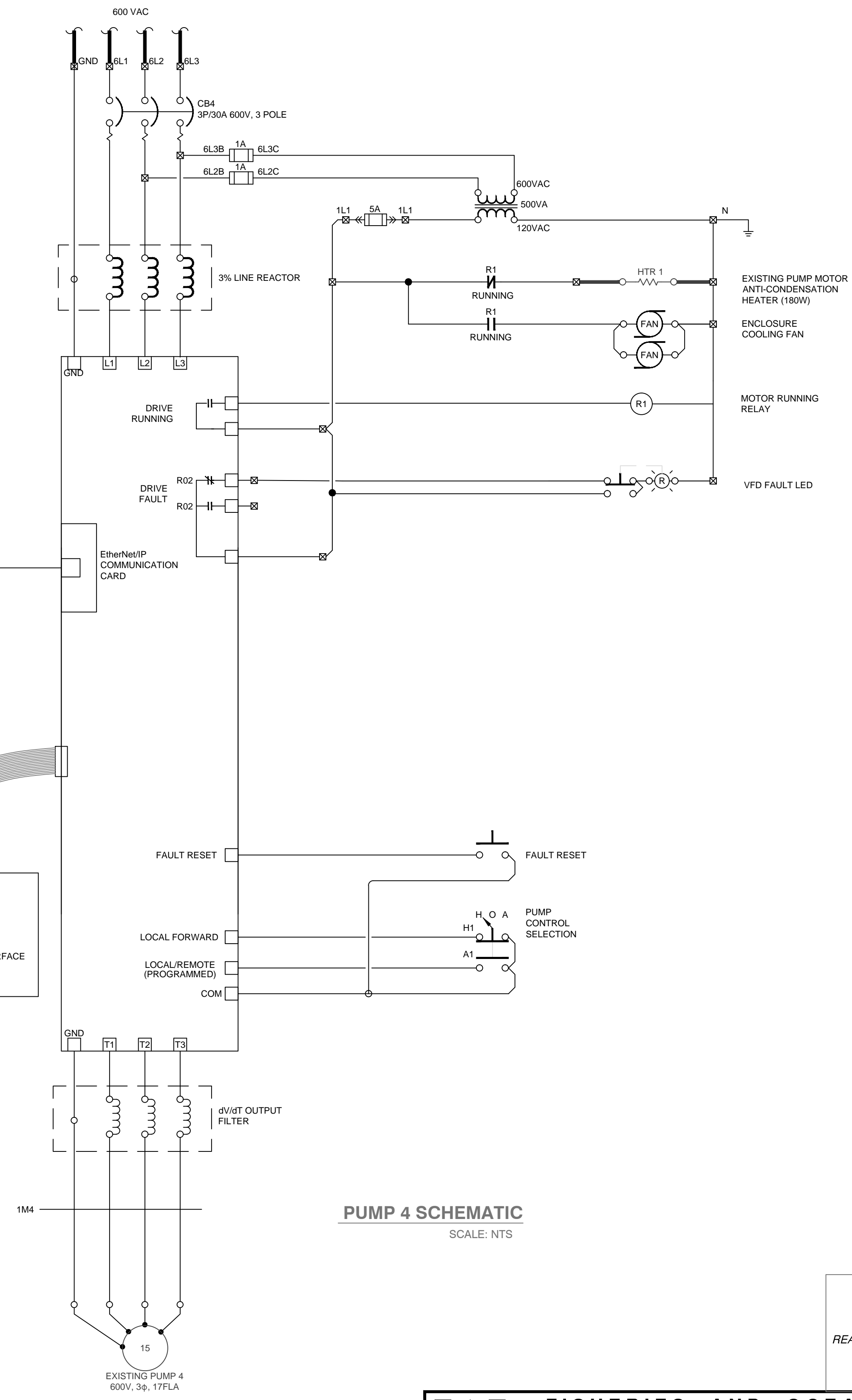
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		DATE 11/08/16
		DRAWING NUMBER <b>31-16-934</b>
		REVISION 0

DWG. NO.	DRAWING REFERENCES	NOTES	N.O.	DATE	REVISIONS	DESIGNED LCR	DRAWN LCR	CHECKED DJM	RECOMMENDED DN	APPROVED
			0	11/18/16	ISSUED FOR TENDER					



**PUMP 3 SCHEMATIC**  
SCALE: NTS



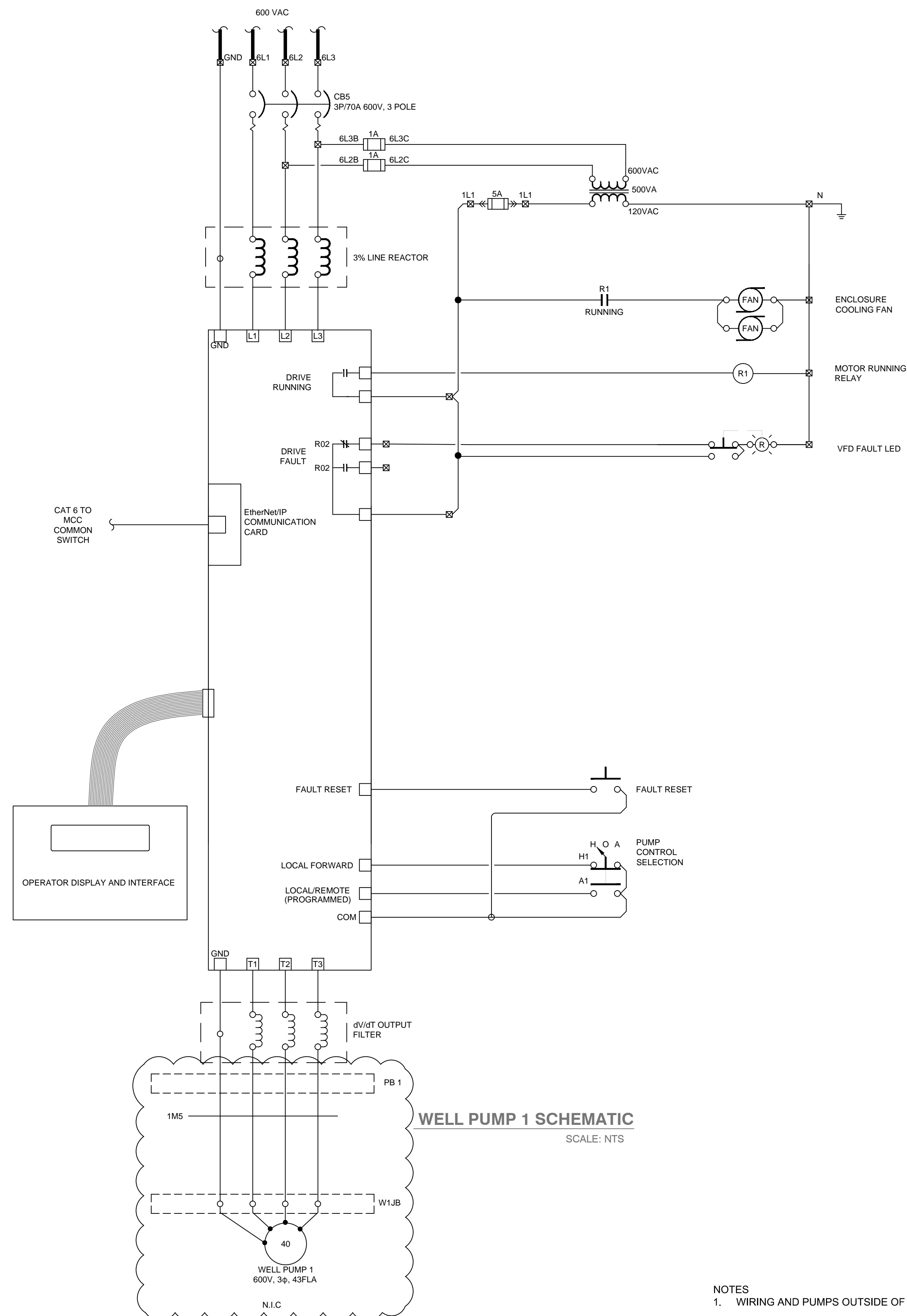
**PUMP 4 SCHEMATIC**  
SCALE: NTS



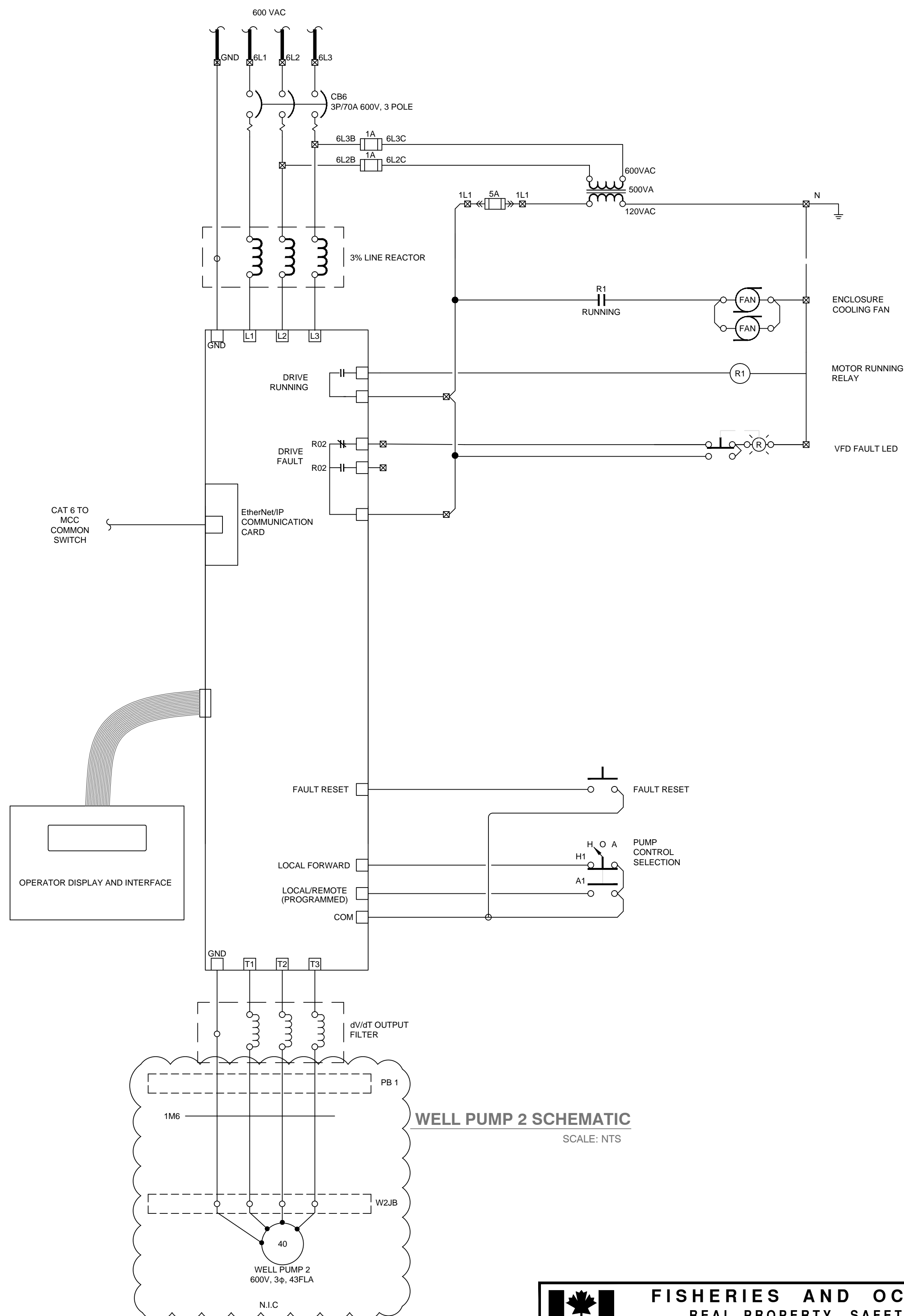
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		DATE	11/08/16
<b>ROBERTSON CREEK HATCHERY</b> COLD WATER PUMP STATION ELECTRICAL DRAWINGS PUMPS 3 AND 4		DRAWING NUMBER	31-16-935
		REVISION	0

DWG. NO.	DRAWING REFERENCES	NOTES	N.O.	DATE	REVISIONS	DESIGNED	LCR
			0	11/18/16	ISSUED FOR TENDER		



WELL PUMP 1 SCHEMATIC  
SCALE: NTS



WELL PUMP 2 SCHEMATIC  
SCALE: NTS

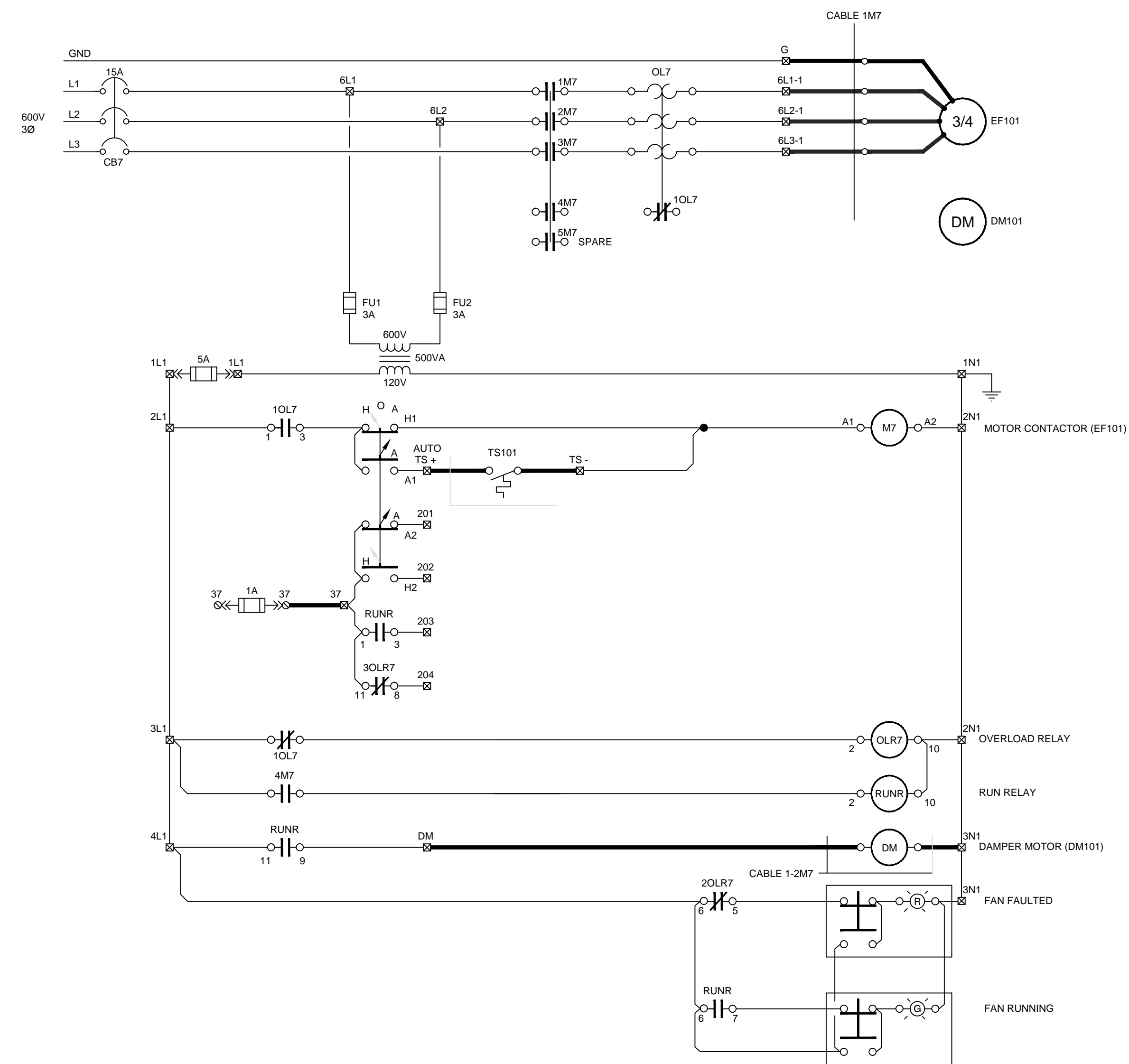
NOTES  
1. WIRING AND PUMPS OUTSIDE OF BUILDING IS NOT IN CONTRACT



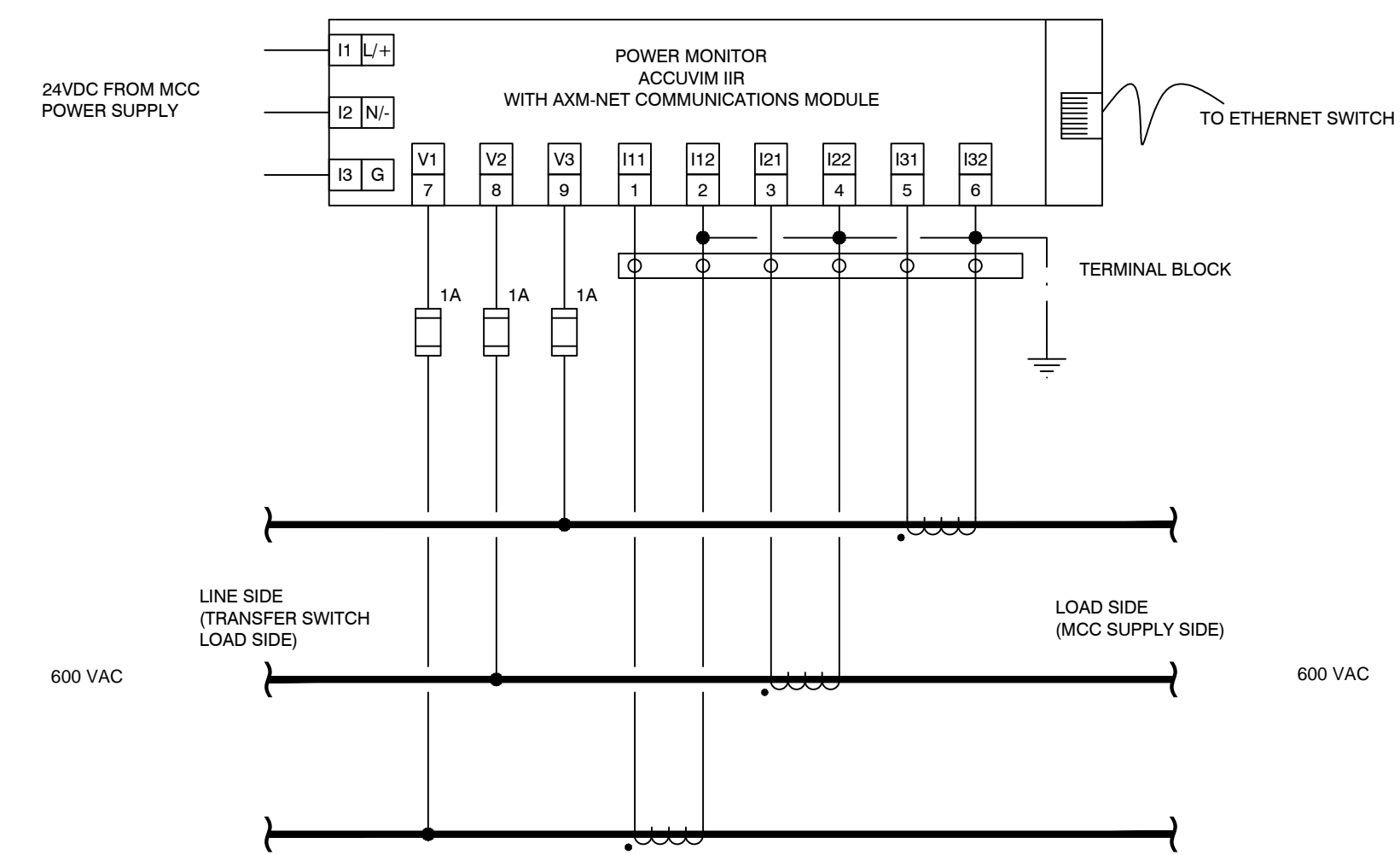
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		DATE	11/08/16
<b>ROBERTSON CREEK HATCHERY</b> COLD WATER PUMP STATION ELECTRICAL DRAWINGS WELL PUMPS 1 AND 2		DRAWING NUMBER	31-16-936
		REVISION	0

DWG. NO.	DRAWING REFERENCES	NOTES	NO.	DATE	REVISIONS	DESIGNED	LCR
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**EXHAUST FAN SCHEMATIC**  
SCALE: NTS



**POWER MONITOR SCHEMATIC**  
SCALE: NTS



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<b>ROBERTSON CREEK HATCHERY</b> <b>COLD WATER PUMP STATION</b> <b>ELECTRICAL DRAWINGS</b> <b>EXHAUST FAN</b>	
DESIGNED LCR	SCALE AS NOTED
DRAWN LCR	DATE 11/08/16
CHECKED DJM	DRAWING NUMBER 31-16-937
RECOMMENDED DN	REVISION 0
APPROVED	
APPROVED	

DWG. NO.	DRAWING REFERENCES	NOTES	N.O.	DATE	REVISIONS
			0	11/18/16	ISSUED FOR TENDER