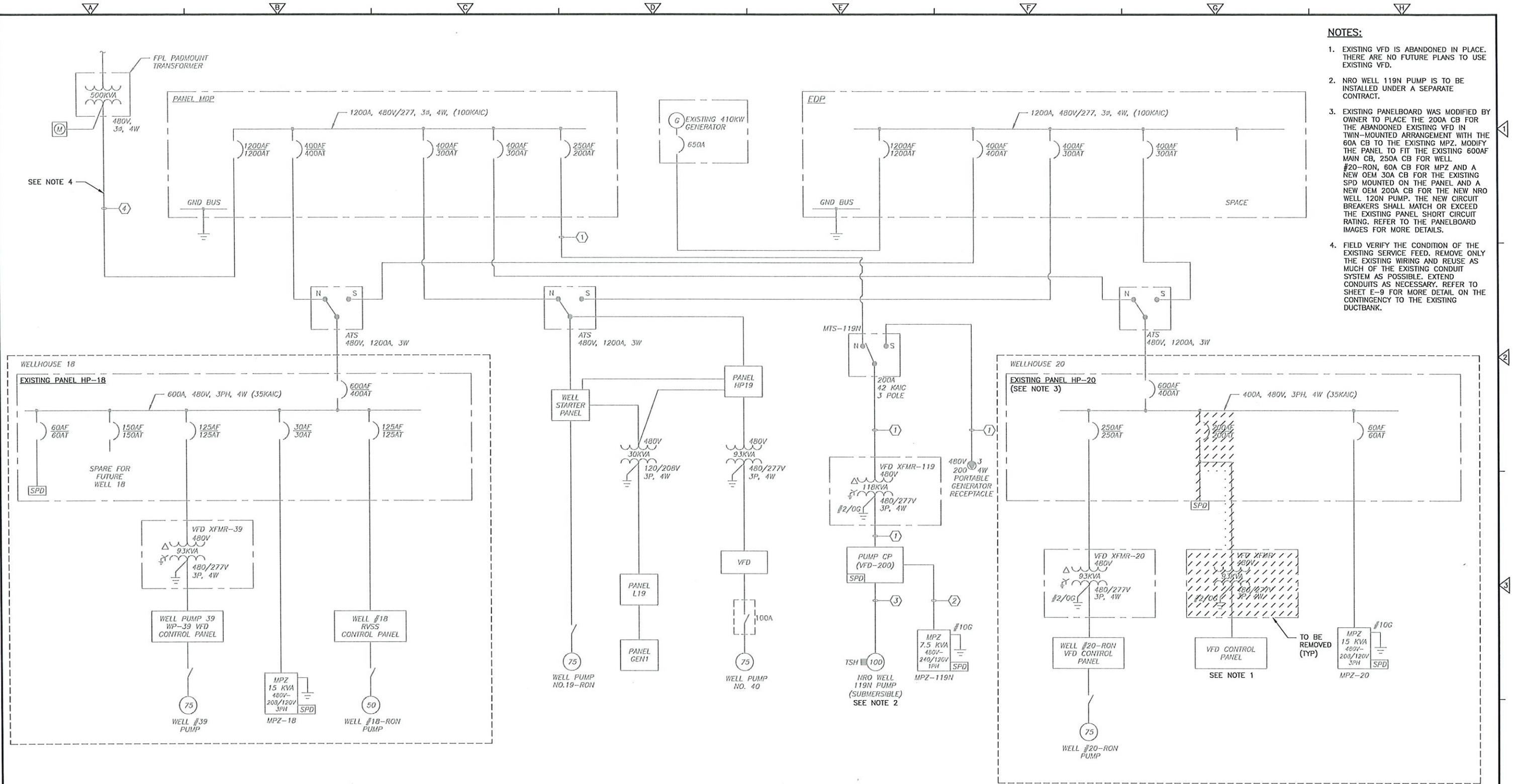


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- NOTES:**
1. EXISTING VFD IS ABANDONED IN PLACE. THERE ARE NO FUTURE PLANS TO USE EXISTING VFD.
 2. NRO WELL 119N PUMP IS TO BE INSTALLED UNDER A SEPARATE CONTRACT.
 3. EXISTING PANELBOARD WAS MODIFIED BY OWNER TO PLACE THE 200A CB FOR THE ABANDONED EXISTING VFD IN TWIN-MOUNTED ARRANGEMENT WITH THE 60A CB TO THE EXISTING MPZ. MODIFY THE PANEL TO FIT THE EXISTING 600AF MAIN CB, 250A CB FOR MPZ AND A NEW OEM 30A CB FOR THE EXISTING SPD MOUNTED ON THE PANEL AND A NEW OEM 200A CB FOR THE NEW NRO WELL 120N PUMP. THE NEW CIRCUIT BREAKERS SHALL MATCH OR EXCEED THE EXISTING PANEL SHORT CIRCUIT RATING. REFER TO THE PANELBOARD IMAGES FOR MORE DETAILS.
 4. FIELD VERIFY THE CONDITION OF THE EXISTING SERVICE FEED. REMOVE ONLY THE EXISTING WIRING AND REUSE AS MUCH OF THE EXISTING CONDUIT SYSTEM AS POSSIBLE. EXTEND CONDUITS AS NECESSARY. REFER TO SHEET E-9 FOR MORE DETAIL ON THE CONTINGENCY TO THE EXISTING DUCTBANK.

CONDUIT AND WIRE LEGEND	
(NUMBERS REFERENCE THIS SHEET ONLY)	
NO.	DESCRIPTION
①	EXISTING 2" C., 3#3/0, 1#6G
②	EXISTING 3/4" C., 2#10, 1#10G
③	EXISTING 2" C., MFR PUMP CABLE
④	EXISTING (2) 4" C., 500Kcmil, 1#3/0 N & (1) 4" C. SPARE

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: L. YANG
DRAWN BY: M. OTTO
SHEET CHK'D BY: L. YANG
CROSS CHK'D BY: C. STELLMACK
APPROVED BY: S. PERRY
DATE: APRIL 2025

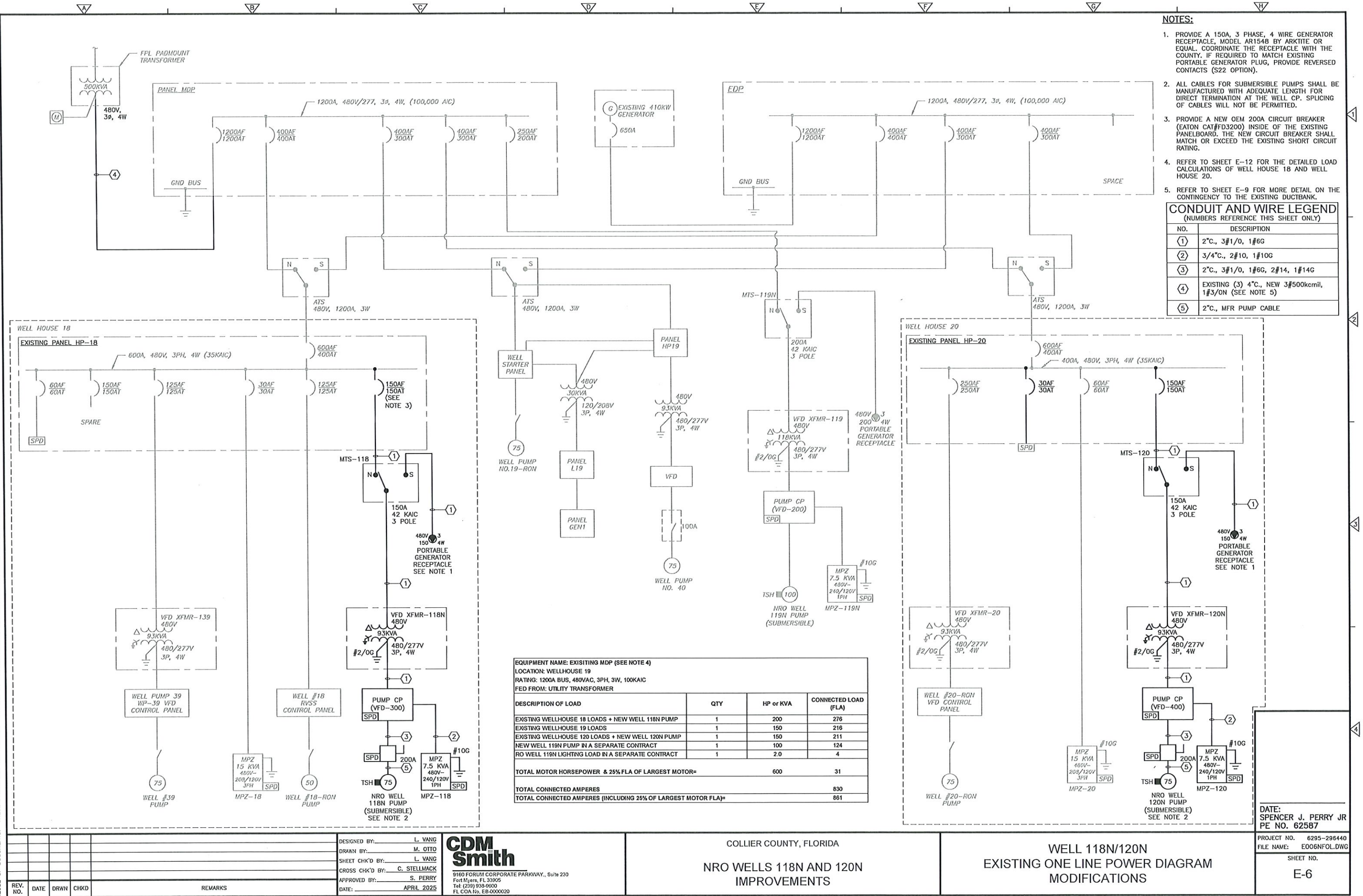
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Tel: (239) 938-8600
FL COA No. EB-0000020

COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

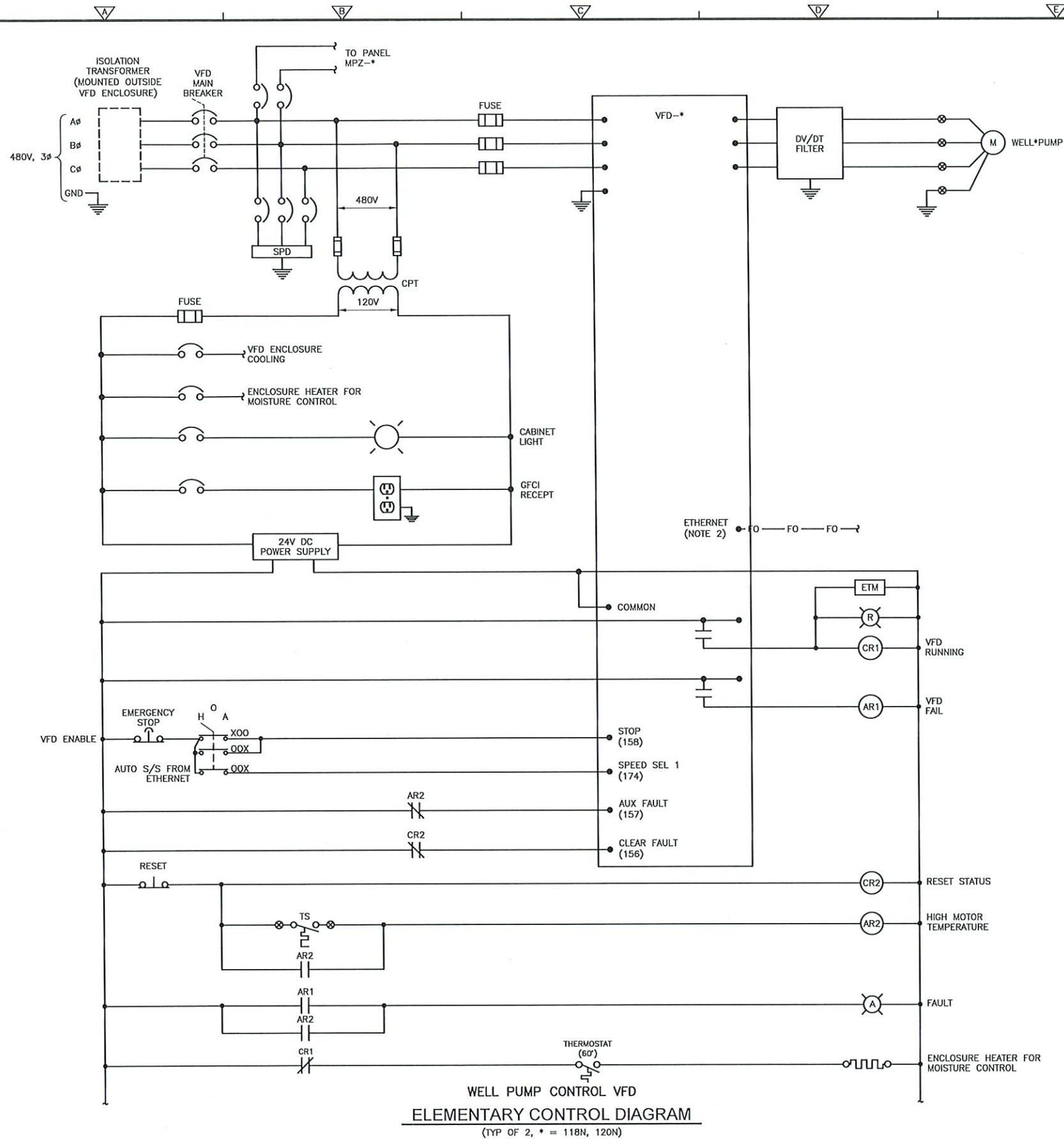
WELL 118/120
EXISTING ONE LINE POWER DIAGRAM
DEMOLITION

DATE: SPENCER J. PERRY JR
PE NO. 62587
PROJECT NO. 6295-296440
FILE NAME: E005NFOL.DWG
SHEET NO. E-5

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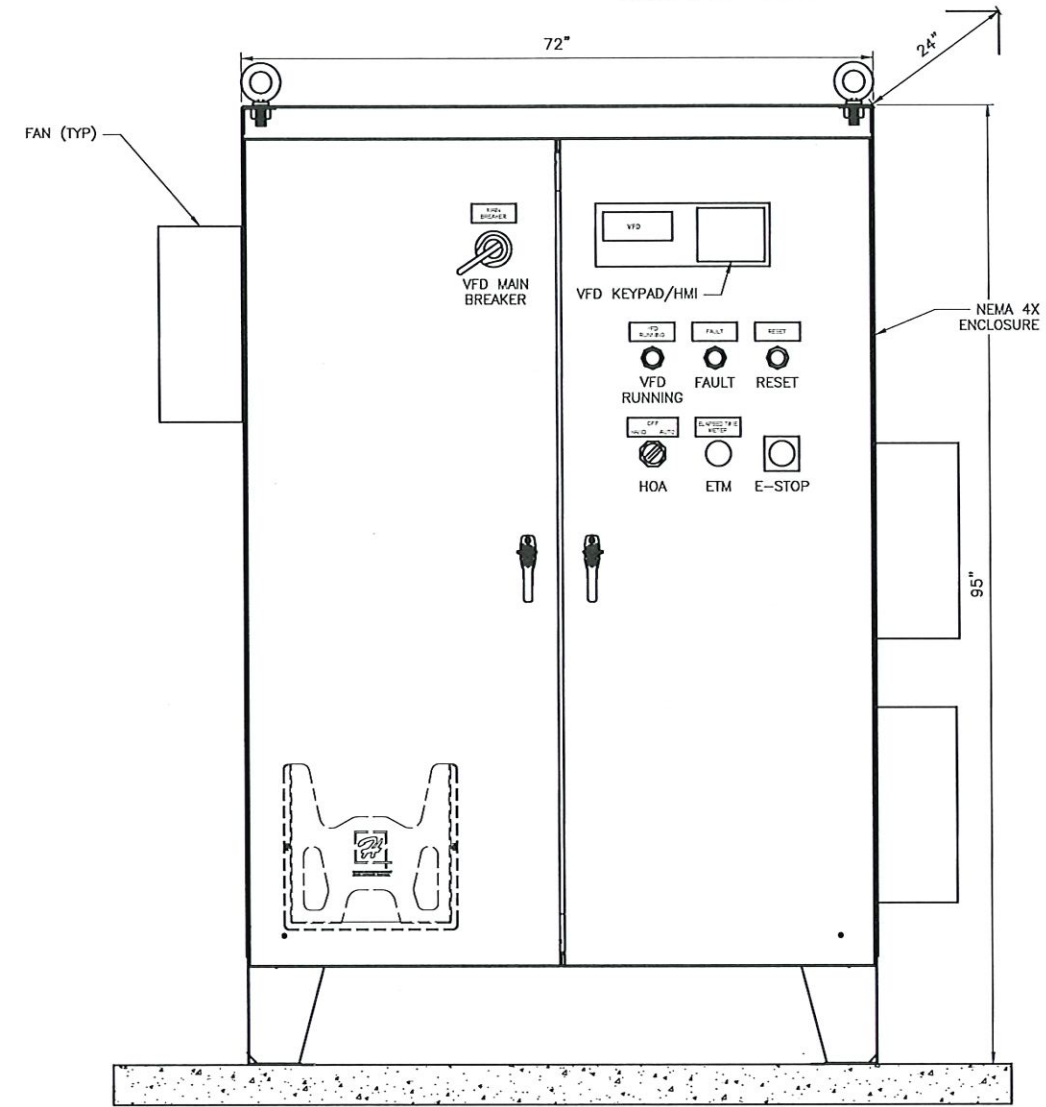


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NOTES:

- SEE SPECIFICATIONS AND INSTRUMENTATION LOOP DIAGRAMS FOR ADDITIONAL CONTROL REQUIREMENTS.
- REMOTE CONTROL INCLUDING FIELD DEVICES ARE WIRED DIRECTLY INTO LOCAL PLC CABINET. VFD CONTROL IS VIA ETHERNET FROM PLC. ETHERNET CABLE CONNECTED TO ETHERNET SWITCH IN EXISTING PLC CONTROL PANEL. PROVIDE THE FOLLOWING SIGNALS AS A MINIMUM:
 - START/STOP
 - RUN
 - IN AUTO
 - FAULT
 - RESET
 - SPEED COMMAND / FEEDBACK
 - OTHERS AS SHOWN IN THE INSTRUMENTATION LOOP DIAGRAMS AND AS DIRECT BY OWNER
- CONTRACTOR TO VERIFY ALL CIRCUIT BREAKERS AND FUSES.
- VERIFY GROUND BAR IS BONDED TO CONTROL PANEL ENCLOSURE AND CONTROL PANEL BACK PANEL.



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: L. YANG
DRAWN BY: M. OTTO
SHEET CHK'D BY: L. YANG
CROSS CHK'D BY: C. STELLMACK
APPROVED BY: S. PERRY
DATE: APRIL 2025

CDM Smith
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Fort Myers, FL 33905
Tel: (239) 938-6900
FL COA No. EB-00000020

COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

ELEMENTARY CONTROL DIAGRAMS

DATE:
SPENCER J. PERRY JR
PE NO. 62587
PROJECT NO. 6295-296440
FILE NAME: E007NFC0.DWG
SHEET NO.
E-7

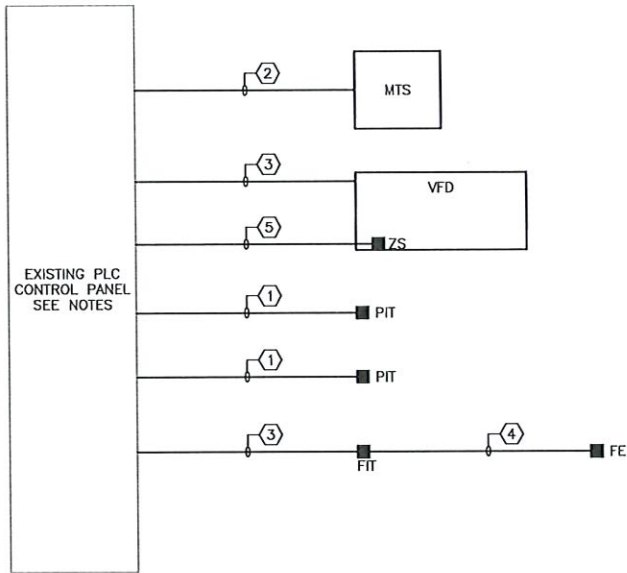
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WELL ** CONTROL RISER DIAGRAM

TYP OF 2 (** = 118N, 120N)

NOTES:

- SCADA SOURCE TO WELL NO. 118 EQUIPMENT IS FROM EXISTING RO-18 PLC CONTROL PANEL.
- SCADA SOURCE TO WELL NO. 120 EQUIPMENT IS FROM EXISTING RO-20 PLC CONTROL PANEL.



CONDUIT AND WIRE LEGEND (NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
①	3/4" C., 1-2/C#16SH
②	3/4" C., 2#14, 1#14G
③	3/4" C., W/CAT6 ETHERNET CABLE
④	3/4" C., W/CABLE PER MFR
⑤	3/4" C., 4#14, 1#14G

LIGHTING FIXTURE SCHEDULE

TYPE	WATT	DESCRIPTION	MFR (OR APPROVED EQUAL)
A	30	1'x4' FULLY ENCLOSED, GASKETED INDUSTRIAL LED LUMINAIRE; 4,000 NOMINAL LUMENS; 82 CRI, 4,000K; 5VA (F1) FIBERGLASS HOUSING, RATED FOR FLAME AND WEATHER RESISTANCE; .050" ALUMINUM INTERNAL HOUSING; STAINLESS STEEL LATCHES; REFLECTIVE WHITE POLYESTER POWDER COAT FINISH; WATERTIGHT HUBS; FROSTED, RIBBED, UV STABILIZED POLYCARBONATE LENS; HIGH QUALITY MID-POWER LED'S AND LED BOARDS ARE REPLACEABLE ;SURFACE OR SUSPENDED MOUNTING; UNIVERSAL VOLTAGE (120-277V); ETL CONFORMS TO UL STD 1598 AND UL STD 8750; LISTED AS SUITABLE FOR WET LOCATIONS, IP65, IP66, AND IP67 CERTIFIED, AND RATED FOR NEMA 4X; 5 YEAR WARRANTY	METALUX VAPORTITE LED PART #: 4VT2-LD5-4-FR50-UNV-L840-CD1-WL-SSL-TH-U
A1	30	SAME AS TYPE 'A' ABOVE WITH INTEGRAL 10W EMERGENCY LED BATTERY	METALUX VAPORTITE LED PART #: 4VT2-LD5-4-FR50-UNV-EL10W-L840-CD1-WL-SSL-TH-U

FED FROM: SEE ONE LINES SEE NOTE 1		NEW MPZ**		LOCATION: UNDER CANOPY, SEE PLANS ENCLOSURE TYPE: NEMA 3R SS SURFACE MOUNTED	
7.5 KVA TRANSFORMER		20 AMP PRIMARY C/B		10 POLES	
480-120/240 VOLTS		40 AMP SECONDARY C/B		PRIMARY AIC RATING: 18,000A	
1 PHASE		3 WIRE 60 HZ		SECONDARY AIC RATING: 10,000A	
DESCRIPTION	NOTES	VA	AMP/	CKT	VA
RECEPTACLE	2	180	20/1	1	2
SPARE		20/1	3	4	20/1
SPARE		20/1	5	6	20/1
FIT	2	100	20/1	7	8
SPARE		20/1	9	10	20/2
TOTAL CONNECTED VA:		TOTAL CONNECTED AMPS:			
PHASE A: 180		PHASE A: 2			
PHASE B: 220		PHASE B: 2			

NOTES:

- PANELBOARD SCHEDULE TYPICAL FOR ALL WELL SITES. ** = 118N, 120N (TYP OF 2)
- BRANCH CIRCUIT WIRING: 3/4" C., 2#12, 1#12G
- CONNECT VIA NIPPLE, KEEP LEAD LENGTH UNDER 24-INCHES.

COLLIER COUNTY, FLORIDA

NRO WELLS 118N AND 120N
IMPROVEMENTS

RISER DIAGRAMS, PANEL SCHEDULE
AND LIGHTING FIXTURE SCHEDULE

DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO. 6295-296440
FILE NAME: E008NFMU.DWG

SHEET NO.

E-8

BID SET

XREF: [CDMS_2234, 12390 - ASS - FO_119 record, CHPOOOST, MWPOOOWE, C002STPL, EMP000WE19] Images: ☐
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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:	L. VANG
DRAWN BY:	M. OTTO
SHEET CHK'D BY:	L. VANG
CROSS CHK'D BY:	C. STELLMACK
APPROVED BY:	S. PERRY
DATE:	APRIL 2025

CDM
Smith

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Tel. (239) 939-6600
FL COA No. EB-0000020

COLLIER COUNTY, FLORIDA

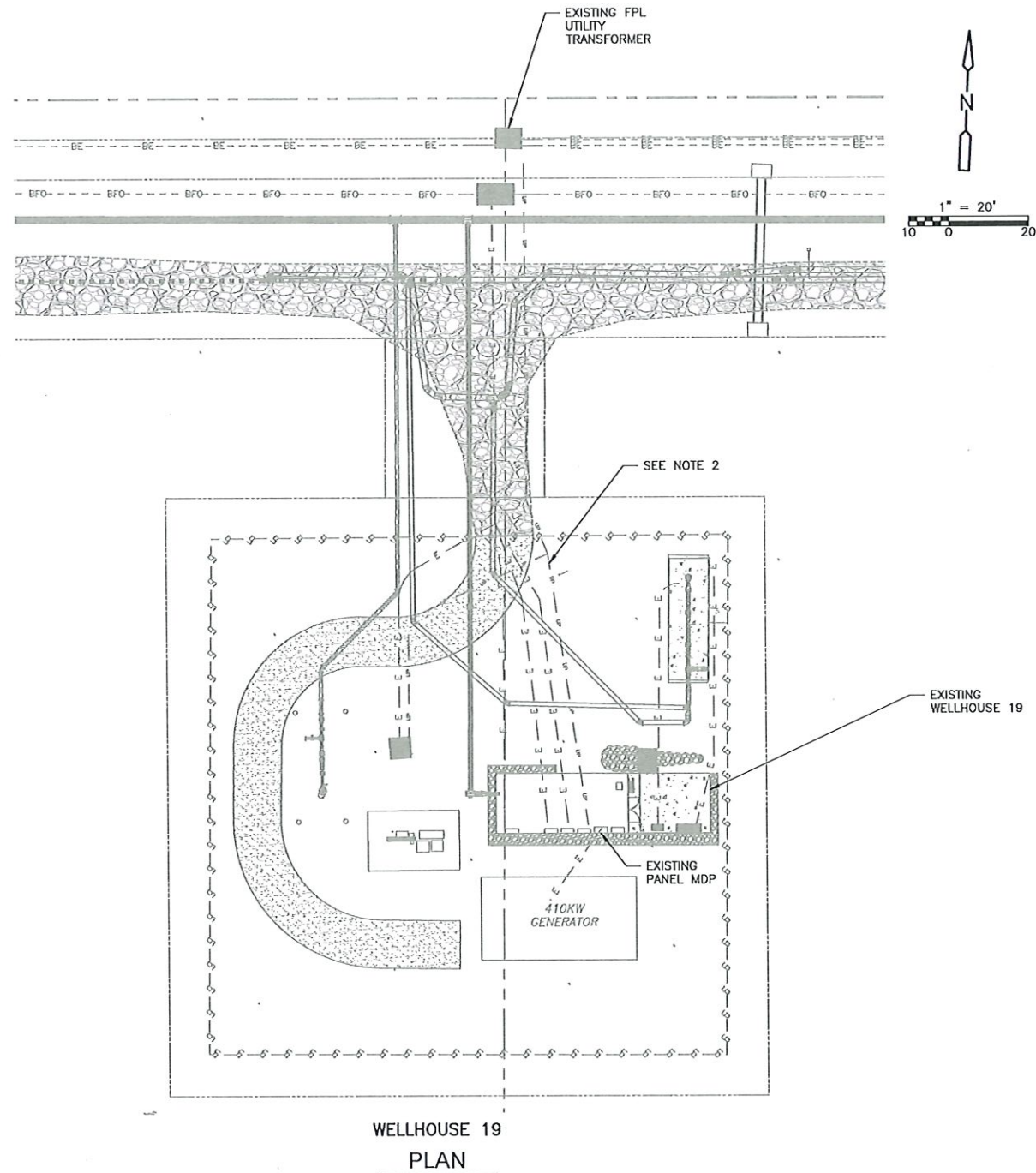
NRO WELLS 118N AND 120N
IMPROVEMENTS

DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO. 6295-296440
FILE NAME: E009NFPL.DWG
SHEET NO.
E-9

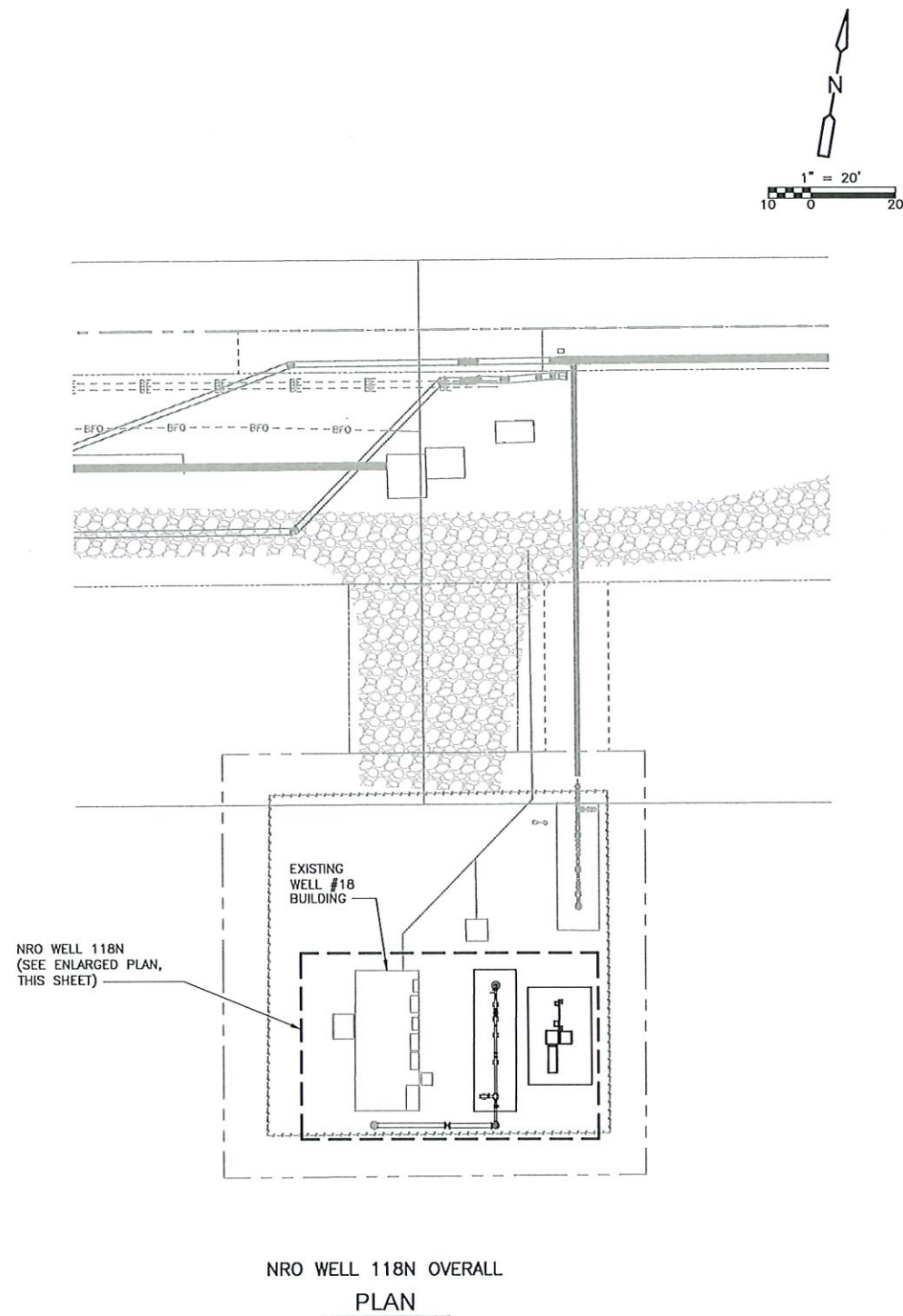
DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO. 6295-296440
FILE NAME: E009NFPL.DWG
SHEET NO.
E-9

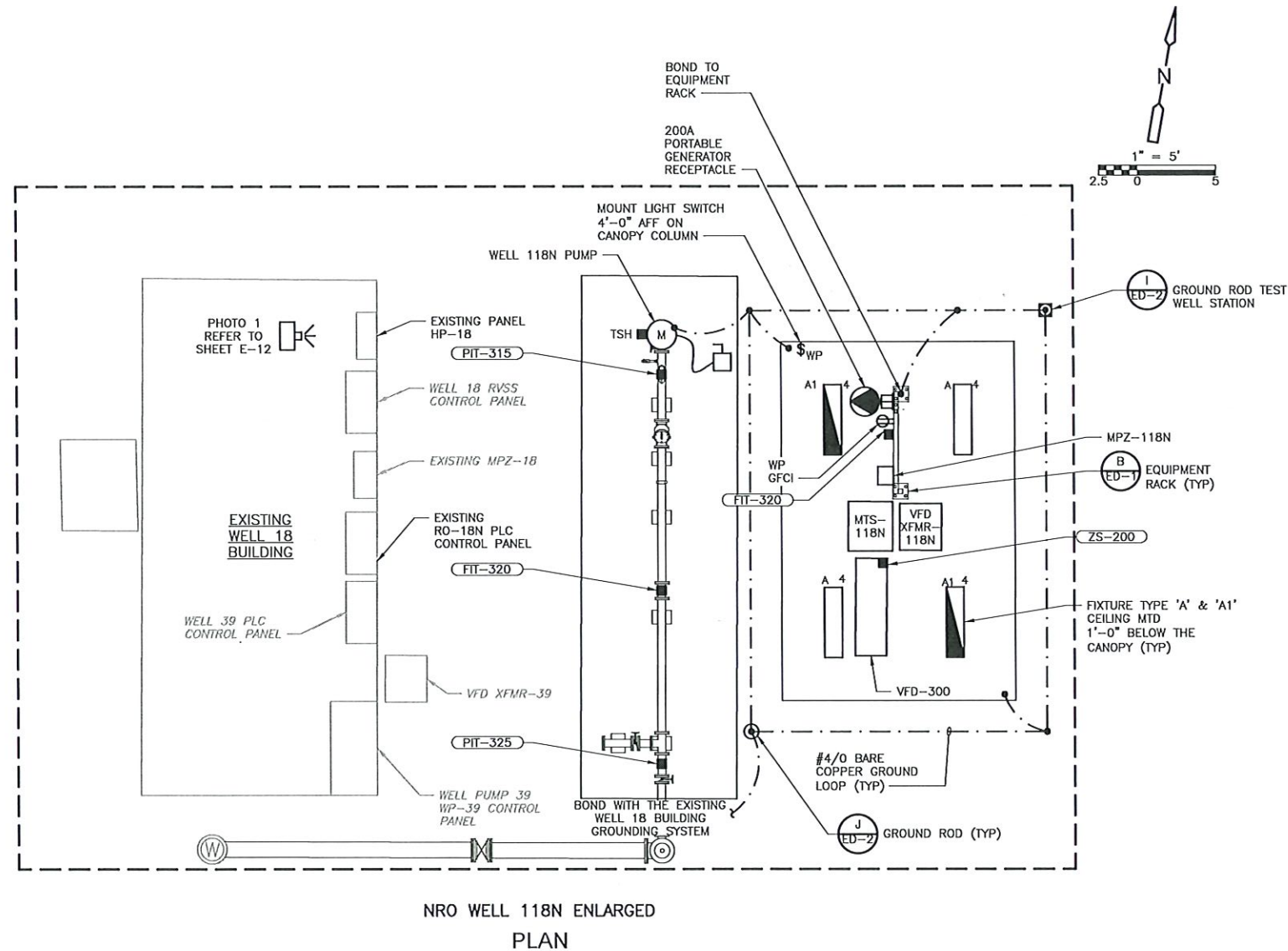


- NOTES:
1. REFER TO SHEET E-3 FOR MORE INFORMATION ON UTILITY REQUIREMENTS.
 2. RECORD DRAWINGS INDICATE THAT FROM THE UTILITY TRANSFORMER TO THE SERVICE ENTRANCE PANEL MDP, THERE ARE ONLY TWO SETS OF 4"C., 3#500kcmil, 1#3/0N AND ONE SPARE 4"C. FIELD VERIFY THE CONDITION OF THE EXISTING SERVICE FEEDS. REMOVE THE EXISTING WIRING ONLY AND REUSE THE EXISTING (3) 4"C FOR THE NEW WIRES. REFER TO THE ONE LINES FOR WIRING REQUIREMENTS. EXTEND THE EXISTING CONDUITS AS NECESSARY. IF THE EXISTING CONDUITS ARE DAMAGED AND NEW WIRES CANNOT BE PULLED THROUGH, PROVIDE A NEW CONCRETE ENCASED DUCTBANK FROM THE UTILITY TRANSFORMER TO PANEL MDP AT NO COST TO THE OWNER. REUSE AS MUCH OF THE EXISTING DUCTBANK AS POSSIBLE.

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- NOTES:**
1. PROVIDE A NEW LIGHTNING PROTECTION SYSTEM FOR THE NEW CANOPY PER SECTION 264113.
 2. WELL 118N PUMP IS FED FROM EXISTING PANEL HP-18. REFER TO THE ONE LINES FOR EXISTING PANEL MODIFICATION AND WIRING REQUIREMENTS.
 3. ALL 120V LOADS (INSTRUMENTS, LIGHTS AND RECEPTACLE) ARE FED FROM MPZ-118N. REFER TO THE PANEL SCHEDULES FOR WIRING REQUIREMENTS.
 4. ALL INSTRUMENTS HAVE SCADA WIRING BACK TO EXISTING RO-18N PLC CONTROL PANEL. REFER TO THE RISER DIAGRAMS FOR WIRING REQUIREMENTS.

[illegible]

DESIGNED BY: L. VANG
DRAWN BY: M. OTTO
SHEET CHK'D BY: L. VANG
CROSS CHK'D BY: C. STELLMACK
APPROVED BY: S. PERRY
DATE: APRIL 2025

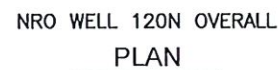
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FL COA No. EB-0000020

COLLIER COUNTY, FLORIDA

NRO WELLS 118N AND 120N
IMPROVEMENTS

NRO WELL 118N
ELECTRICAL PLANS

DATE: SPENCER J. PERRY JR PE NO. 62587	
PROJECT NO. 6295-296440 FILE NAME: E010NFPL.DWG	
SHEET NO. E-10	



-

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: L. VANG
DRAWN BY: M. WESSEL
SHEET CHK'D BY: L. VANG
CROSS CHK'D BY: C. STELLMACK
APPROVED BY: S. PERRY
DATE: APRIL 2025

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COLLIER COUNTY, FLORIDA

NRO WELLS 118N AND 120N
IMPROVEMENTS

NRO WELL 120N
ELECTRICAL PLANS

DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO.	6295-296440
FILE NAME:	E011NFPL.DWG

SHEET NO.

E-11

XREF: [CDMS_2234] Images: [EPP00P18, EPP00P20]
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PHOTO 1
EXISTING PANEL HP-18
MFG: EATON POW-R-LINE SERIES
EATON JOB NO: VONA0526X0K2-0002
RATINGS: 600A, 480V, 3PH, 3W, 35KAIC

EQUIPMENT NAME: EXISTING PANEL HP-18			
RATING: 600A BUS, NEW 480VAC, 3PH, 3W, 35KAIC			
LOCATION: WELLHOUSE 18			
FED FROM EXISTING PANEL MDP			
DESCRIPTION OF LOAD	QTY	HP or KVA	CONNECTED LOAD (FLA)
EXISTING WELL NO. 18-RON PUMP	1	50	65
EXISTING WELL NO. 39 PUMP	1	75	96
EXISTING MPZ-18	1	15	14
NEW WELL 118N PUMP	1	75	96
NEW MPZ-118N	1	2	4
TOTAL MOTOR HORSEPOWER & 25% FLA OF LARGEST MOTOR=		200	24
TOTAL CONNECTED AMPERES			276
TOTAL CONNECTED AMPERES (INCLUDING 25% OF LARGEST MOTOR FLA)=			300

EXISTING WELLHOUSE 18 LOAD CALCULATION



PHOTO 2
EXISTING PANEL HP-20
MFG: EATON POW-R-LINE SERIES
EATON JOB NO: STA1058477-001
RATINGS: 400A, 480V, 3PH, 3W, 35KAIC

EQUIPMENT NAME: EXISTING HP-20			
RATING: 400A BUS, 480VAC, 3PH, 3W, 35KAIC			
LOCATION: WELLHOUSE 20			
FED FROM EXISTING PANEL MDP			
DESCRIPTION OF LOAD	QTY	HP or KVA	CONNECTED LOAD (FLA)
EXISTING WELL NO.20-RON PUMP	1	75	96
EXISTING MPZ-20	1	15	14
NEW NRO WELL 120N PUMP	1	75	96
NEW MPZ-120	1	2	4
TOTAL MOTOR HORSEPOWER & 25% FLA OF LARGEST MOTOR=		150	24
TOTAL CONNECTED AMPERES			211
TOTAL CONNECTED AMPERES (INCLUDING 25% OF LARGEST MOTOR FLA)=			235

EXISTING WELLHOUSE 20 LOAD CALCULATION

NOTES:

1. PROVIDE A 200A, 3P OEM CIRCUIT BREAKER (EATON CAT#FD3200) IN INDICATED AVAILABLE SPACE OF EXISTING PANEL FOR THE NEW WELL 118N LOADS. CIRCUIT BREAKER SHALL MATCH OR EXCEED EXISTING PANEL SHORT CIRCUIT CURRENT RATING. PROVIDE THE NECESSARY MOUNTING HARDWARE AND COVER PLATES FOR THE INSTALLATION OF THE NEW BREAKER.
2. AS SHOWN IN THE PHOTO, THE EXISTING PANEL WAS MODIFIED BY OWNER TO PROVIDE A 200A CB IN TWIN-MOUNTED ARRANGEMENT WITH THE EXISTING MPZ-20 60A CB. MODIFY PANEL AND PROVIDE A NEW 30A 3P OEM CIRCUIT BREAKER FOR THE EXISTING SPD (MOUNTED TO THE LEFT OF THE PANEL) AND A NEW 200A, 3P OEM CB FOR THE NEW WELL 120N LOADS. CIRCUIT BREAKER SHALL MATCH OR EXCEED EXISTING PANEL SHORT CIRCUIT CURRENT RATING. PROVIDE ALL NECESSARY ACCESSORIES AND MOUNTING HARDWARE TO MOUNT THE NEW BREAKERS IN THE EXISTING PANEL.
3. UPDATE THE EXISTING PANEL SCHEDULE AND PROVIDE NAMEPLATES AND LABELS FOR THE NEW BREAKERS. NAMEPLATES SHALL BE BLACK LETTERS ON A WHITE FIELD, ENGRAVED, LAMINATED PLASTIC, 3/16-INCH HIGH LETTERING.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: L. YANG
DRAWN BY: M. WESSEL
SHEET CHK'D BY: L. YANG
CROSS CHK'D BY: C. STELLMACK
APPROVED BY: S. PERRY
DATE: APRIL 2025

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Tel: (239) 938-9600
FL COA No. EB-0000020

COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

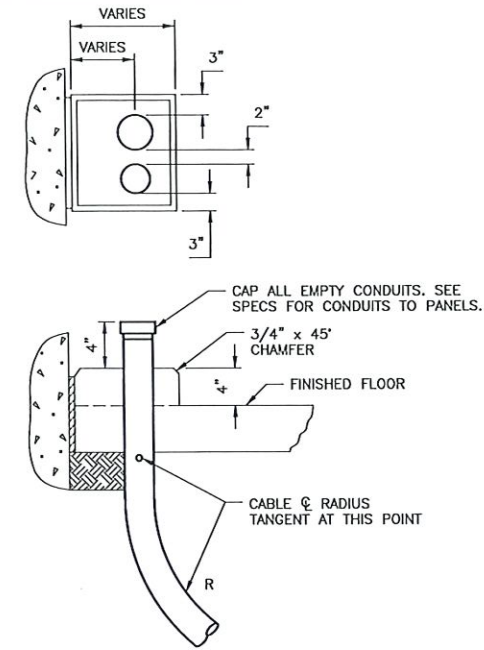
PANELBOARD IMAGES

DATE:
SPENCER J. PERRY JR
PE NO. 62587
PROJECT NO. 6295-296440
FILE NAME: E012NFPB.DWG
SHEET NO.
E-12

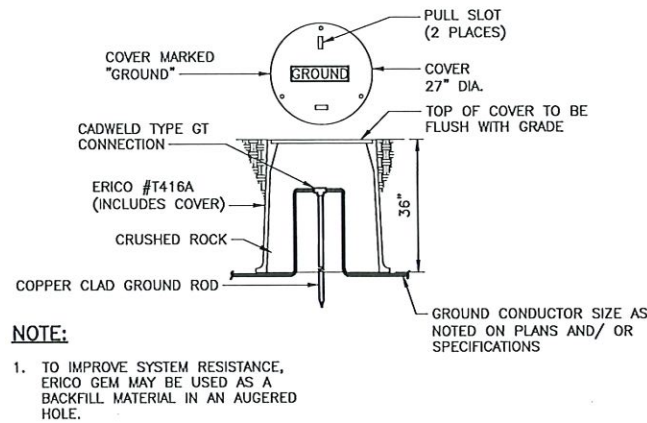
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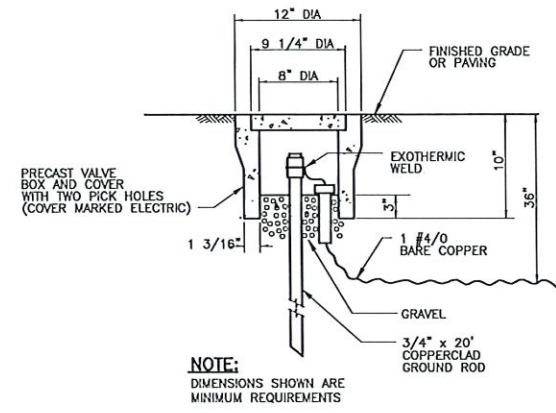
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TYPICAL CONDUIT THROUGH SLAB
DETAIL H
N.T.S.



GROUND TEST WELL STATION
DETAIL I
N.T.S.



GROUND ROD
DETAIL J
N.T.S.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: L. YANG
DRAWN BY: M. OTTO
SHEET CHK'D BY: L. YANG
CROSS CHK'D BY: C. STELLMACK
APPROVED BY: S. PERRY
DATE: APRIL 2025

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COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

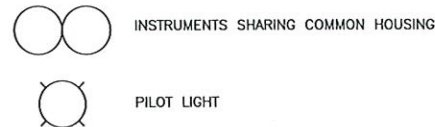
ELECTRICAL DETAILS II

DATE:
SPENCER J. PERRY JR
PE NO. 62587
PROJECT NO. 6295-296440
FILE NAME: ED02NFDT.DWG
SHEET NO.
ED-2

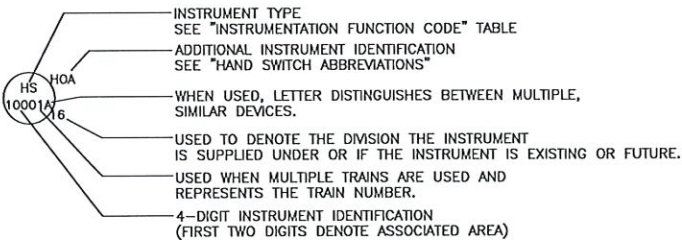
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GENERAL INSTRUMENT OR FUNCTION SYMBOLS

SHARED DISPLAY/SHARED CONTROL					LOCATION AND ACCESSIBILITY
PRIMARY CHOICE	SECONDARY CHOICE	COMPUTER SOFTWARE	DISCRETE		
					FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
					PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
					PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE
					SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
					SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE



TYPICAL TAG NUMBERS & DESIGNATION

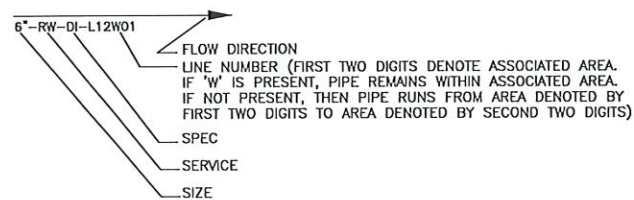


HAND SWITCH ABBREVIATIONS

AO = AUTO/OFF
AM = AUTO/MANUAL
CM = COMPUTER/MANUAL
CL = COMPUTER/LOCAL
E-STOP = EMERGENCY STOP
FR = FORWARD/REVERSE
FOR = FORWARD/OFF/REVERSE
FS = FAST SLOW
FOS = FAST/OFF/SLOW
HOA = HAND/OFF/AUTO
LLS = LEAD/LAG/STANDBY
LOC = LOCAL/OFF/COMPUTER

LOR = LOCAL/OFF/REMOTE
LOS = LOCKOUT/STOP
LA = LOCAL/AUTO
LR = LOCAL/REMOTE
OC = OPEN/CLOSE
OCA = OPEN/CLOSE/AUTO
OO = ON/OFF
OOA = ON/OFF/AUTO
OSC = OPEN/STOP/CLOSE
RSL = RAISE/STOP/LOWER
SS = START/STOP
SOR = START/OFF/RESET

TYPICAL PIPE TAG NUMBERS & DESIGNATION

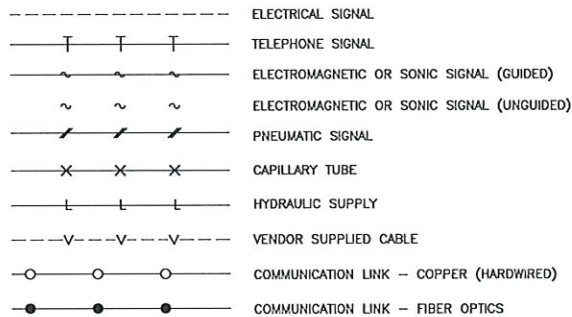


INSTRUMENTATION FUNCTION CODE

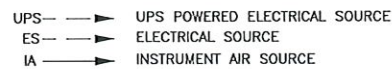
FIRST LETTERS		SUCCEEDING LETTERS		
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
MEASURED/INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A ANALYSIS		ALARM		
B BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C USER'S CHOICE			CONTROL	CLOSED
D USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E VOLTAGE		SENSOR, PRIMARY ELEMENT		
F FLOW, FLOW RATE	RATIO			
G USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H HAND				HIGH
I CURRENT		INDICATE		
J POWER		SCAN		
K TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L LEVEL		LIGHT		LOW
M MOISTURE				MIDDLE, INTERMEDIATE
N USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P PRESSURE		POINT (TEST CONNECTION)		
Q QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R RADIATION		RECORD		RUN
S SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T TEMPERATURE			TRANSMIT	
U MULTIVARIABLE		MULTIFUNCTION		
V VIBRATION, MECHANICAL, ANALYSIS			MULTIFUNCTION VALVE, DAMPER, LOUVER	
W WEIGHT, FORCE		WELL, PROBE		
X UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)	UNCLASSIFIED (1)
Y EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

TABLE NOTES:
(1) WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.

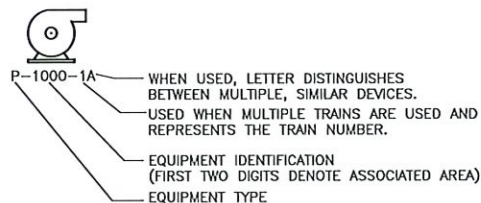
INSTRUMENT LINE SYMBOLS



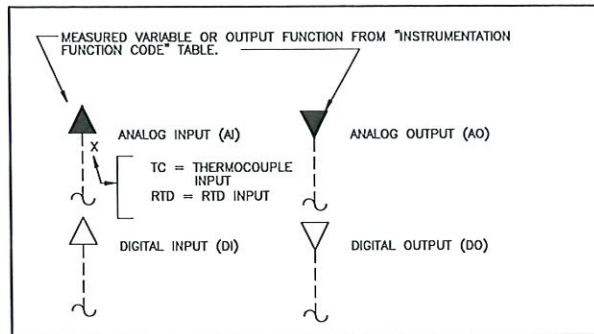
ELECTRICAL / AIR SOURCES



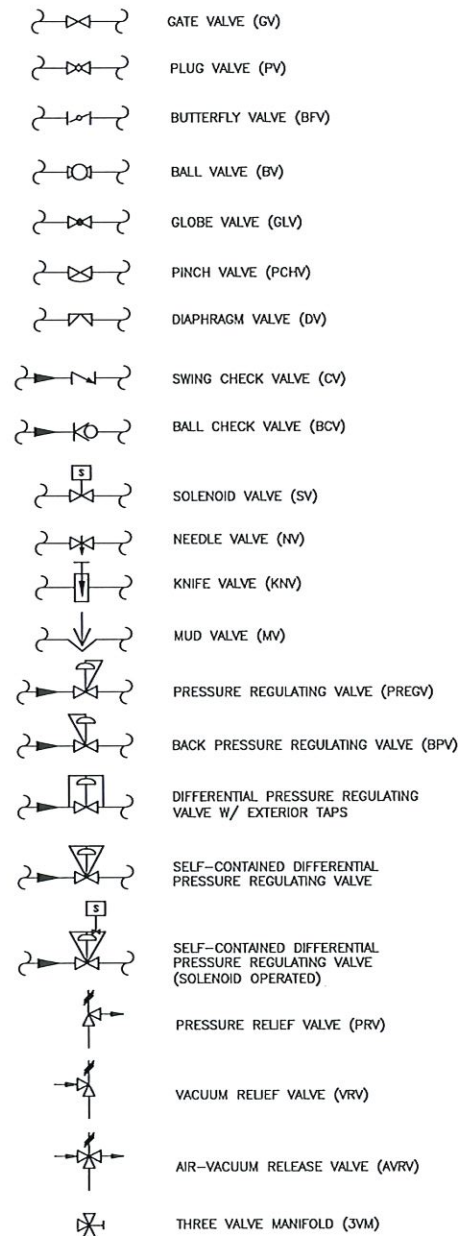
TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



I/O SIGNALS



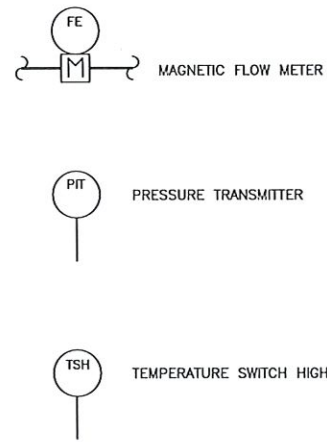
VALVE SYMBOLS



GENERAL NOTES

- THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
- IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS AND RECOMMENDED PRACTICES FOR INSTRUMENTATION AND CONTROL. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS.
- SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE P&IDS.
- SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.
- LIGHTER WEIGHT LINES, SHOWN AS _____, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE EXISTING. WEIGHTED LINES, SHOWN AS _____ OR HEAVIER _____, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE NEW. DASHED WEIGHTED LINES, SHOWN AS _____, INDICATED EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE GROUPED AS A PACKAGE.

PRIMARY ELEMENTS



GENERAL ABBREVIATIONS

AI ANALOG IN
AO ANALOG OUT
CPU CENTRAL PROCESSOR UNIT
DI DIGITAL OR DISCRETE INPUT
DO DIGITAL OUTPUT
FC FAIL CLOSED
FO FAIL OPEN OR FIBER OPTIC
HMI HUMAN MACHINE INTERFACE
MCC MOTOR CONTROL CENTER
NC NORMALLY CLOSED
NPW NON-POTABLE WATER
NO NORMALLY OPEN
PLC PROGRAMMABLE LOGIC CONTROLLER
PW PLANT WATER
RIO REMOTE INPUT/OUTPUT
UPS UNINTERRUPTIBLE POWER SUPPLY
VFD VARIABLE FREQUENCY DRIVE

DESIGNED BY: M. GRAHAM	DATE: APRIL 2025
DRAWN BY: R. CHARITY	
SHEET CHK'D BY: M. GRAHAM	
CROSS CHK'D BY: G. CZERNIEJEWSKI	
APPROVED BY: M. GRAHAM	

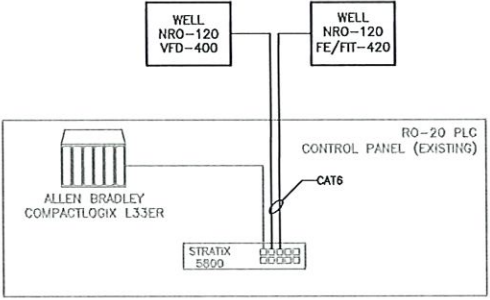
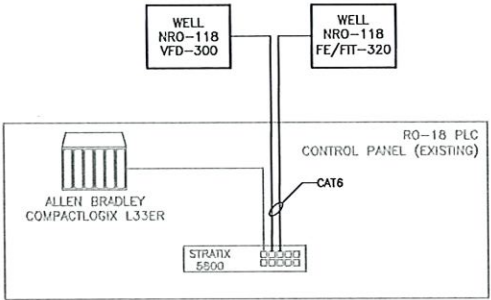
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Tel (239) 938-5600
FL COA No. EB-0000020

COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

INSTRUMENTATION LEGEND

DATE: MICHAEL GRAHAM
PE NO. 71194
PROJECT NO. 6295-296440
FILE NAME: 1001SYMB.DWG
SHEET NO. 1-1

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. GRAHAM
DRAWN BY: R. CHARITY
SHEET CHK'D BY: M. GRAHAM
CROSS CHK'D BY: G. CZERNIEJEWSKI
APPROVED BY: M. GRAHAM
DATE: APRIL 2025

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COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

CONTROL BLOCK DIAGRAM

DATE: MICHAEL GRAHAM
PE NO. 71194
PROJECT NO. 6295-296440
FILE NAME: I002PIDT.DWG
SHEET NO.
I-2

The diagram illustrates the control system and piping layout for the North Collier Reverse Osmosis Water Treatment Plant. The control system is divided into three main sections: SCADA, EXISTING RO-18 PLC, and a new control panel.

Control System Components:

- SCADA Section:** Includes digital inputs (ZI 331, ZI 330) and digital outputs (ZI 331, ZI 330). It also features a series of analog inputs (KI 300B, KI 300A, EI 300B, EI 300A, II 300, SI 300B, SI 300A, XA 300C, HS 300E, ZL 300A, XA 300B, RL 300, ZL 300B, HS 300D) and analog outputs (PIR 315A, PK 315, FK 315, HS 300F, FIRQ 320, PIR 325, EI 118).
- EXISTING RO-18 PLC Section:** Includes digital inputs (ZI 331, ZI 330) and digital outputs (ZI 331, ZI 330). It also features a series of analog inputs (KI 300B, KI 300A, EI 300B, EI 300A, II 300, SI 300B, SI 300A, XA 300C, HS 300E, ZL 300A, XA 300B, RL 300, ZL 300B, HS 300D) and analog outputs (PIR 315A, PK 315, FK 315, HS 300F, FIRQ 320, PIR 325, EI 118).
- New Control Panel:** Includes a VFD-300 VARIABLE FREQUENCY DRIVE with inputs for RESET, H/O/A, FAULT, RUN, E-STOP, and RUN TIME. It also features a MTS-118 MANUAL TRANSFER SWITCH.

Piping and Instrumentation:

- W-300 NRO WELL 118N:** The water source for the system.
- 6" BFV:** Backflow preventer valve.
- 6" SS316:** Stainless steel pipe.
- 6" CV:** Check valve.
- 6" TEE:** Tee fitting.
- 6" FLOW METER:** Flow meter.
- 6" BFV:** Backflow preventer valve.
- 12" x 6" TEE:** Tee fitting.
- 12" PVC:** Polyvinyl chloride pipe.
- 12" GV:** Gate valve.
- 2" CAV:** Check and shut-off valve.
- 3/4" BV:** Ball valve.
- 3/4" SAMPLE TAP:** Sample tap.
- 120V:** Voltage supply.
- FE 320:** Flow element.
- PIT 315:** Pressure indicator transmitter.
- PIT 320:** Pressure indicator transmitter.
- PIT 325:** Pressure indicator transmitter.

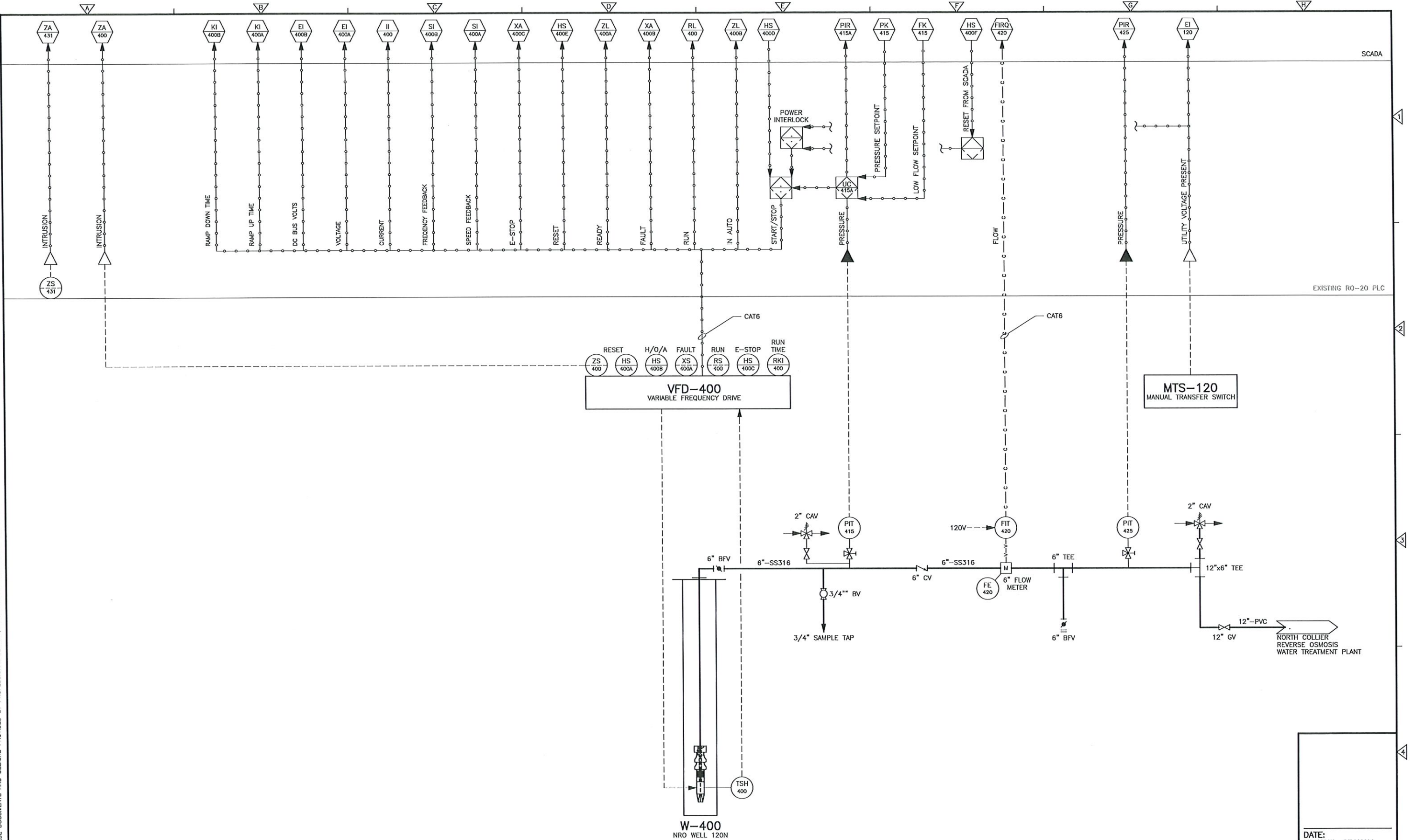
Legend:

- ▲: Intrusion
- ▲: Ramp Down Time
- ▲: Ramp Up Time
- ▲: DC BUS VOLTS
- ▲: VOLTAGE
- ▲: CURRENT
- ▲: FREQUENCY FEEDBACK
- ▲: SPEED FEEDBACK
- ▲: E-STOP
- ▲: RESET
- ▲: READY
- ▲: FAULT
- ▲: RUN
- ▲: IN AUTO
- ▲: START/STOP
- ▲: PRESSURE
- ▲: PRESSURE SETPOINT
- ▲: LOW FLOW SETPOINT
- ▲: RESET FROM SCADA
- ▲: FLOW
- ▲: PRESSURE
- ▲: UTILITY VOLTAGE PRESENT

DATE: MICHAEL GRAHAM

						DESIGNED BY: M. GRAHAM	 9160 FORUM CORPORATE PARKWAY., Suite 230 Fort Myers, FL 33905 Tel. (239) 938-8600 FL COA No. EB-0000020	COLLIER COUNTY, FLORIDA	PROCESS & INSTRUMENTATION DIAGRAM WELL 118N	PROJECT NO.	6295--296440
					DRAWN BY: R. CHARITY	FILE NAME:				I003PIDI.DWG	
					SHEET CHK'D BY: M. GRAHAM	SHEET NO.					
					CROSS CHK'D BY: G. CZERNIEJEWSKI	I-3					
					APPROVED BY: M. GRAHAM						
					DATE: APRIL 2025						
REV. NO.	DATE	DRWN	CHKD	REMARKS							

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DATE: APRIL 2025

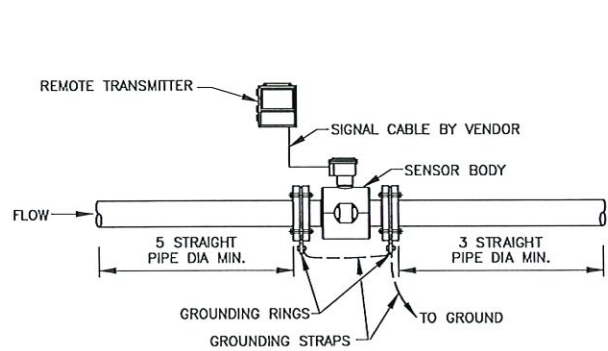
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NRO WELLS 118N AND 120N
IMPROVEMENTS

PROCESS & INSTRUMENTATION DIAGRAM
WELL 120N

DATE: MICHAEL GRAHAM
PE NO. 71194
PROJECT NO. 6295-296440
FILE NAME: 1004PID.DWG
SHEET NO.
1-4

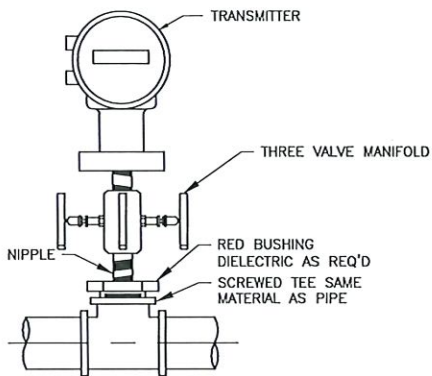
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- NOTES:
1. PROVIDE GROUNDING RING(S) AS RECOMMENDED BY MANUFACTURER.
 2. PROVIDE SENSOR LINING TO PREVENT BUILDUP ON METER.

MAGNETIC FLOW METER
DETAIL
NTS

A



PRESSURE TRANSMITTER/SWITCH/GAUGE
(WITHOUT DIAPHRAGM SEAL)
DETAIL
NTS

B

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. GRAHAM
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COLLIER COUNTY, FLORIDA
NRO WELLS 118N AND 120N
IMPROVEMENTS

INSTRUMENTATION DETAILS

DATE:
MICHAEL GRAHAM
PE NO. 71194
PROJECT NO. 6295-296440
FILE NAME: 1005PIDT.DWG
SHEET NO.
I-5