- 2. PROVIDE POWER SYSTEM STUDIES IN ACCORDANCE WITH SPECIFICATION 260573
- 3. PROVIDE A LIGHTNING PROTECTION SYSTEM IN ACCORDANCE WITH SPECIFICATION 264113.

#### **GENERAL NOTES:**

- ELECTRICAL DRAWINGS ARE INTENDED TO SHOW THE GENERAL LAYOUT OF WORK TO BE INSTALLED UNDER THIS CONTRACT WITHOUT ATTEMPTING TO SHOW ALL DETAILS, FURNISH LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE CONTRACT DOCUMENTS.
- COORDINATE WORK WITH OTHER TRADES AND THE OWNER.
- 3. MAINTAIN EXISTING PROCESS OPERATIONS. POWER INTERRUPTIONS TO ELECTRICAL EQUIPMENT SHALL BE AT OWNER'S CONVENIENCE WITH 72 HOURS MINIMUM NOTICE. EACH INTERRUPTION SHALL HAVE PRIOR WRITTEN APPROVAL.
- FIELD VERIEY EXISTING LINDERGROLIND FLECTRICAL CONDUIT. CONCRETE DUCT BANKS, MANHOLES, PULL BOXES, ETC. AND MECHANICAL PIPING, CONTRACTOR SHALL INCLUDE IN BID COSTS ASSOCIATED WITH RELOCATION OR REMOVAL OF UNDERGROUND EQUIPMENT AS REQUIRED BY THIS CONTRACT, USE DUE CARE IN CONGESTED AREAS TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES.
- 5. CONTRACTOR'S WORK SHALL INCLUDE COMPLETE TESTING OF EQUIPMENT AND WIRING INCLUDING MAKING MINOR CORRECTIONS, CHANGES, OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY; SUBSTANDARD WORK WILL BE REJECTED.
- 6. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR EXACT LOCATION OF EQUIPMENT. EXCEPT WHERE DIMENSIONS ARE SHOWN, LOCATIONS OF EQUIPMENT, FIXTURES, OUTLETS, AND SIMILAR DEVICES ARE APPROXIMATE.
- 7. WORK SHALL COMPLY WITH NEC AND LOCAL CODES
- 8. DO NOT SPLICE CONDUCTORS EXCEPT AS NOTED.
- 9. POWER AND CONTROL CONDUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR WIRE SIZED PER TABLE 250.122 OF THE NEC
- 10. COORDINATE SEQUENCE OF CONSTRUCTION WITH CIVIL, MECHANICAL, AND STRUCTURAL DISCIPLINES. PROVIDE TEMPORARY POWER AND CONTROL CIRCUITS AS REQUIRED TO MAINTAIN FACILITY OPERATION. VERIFY EXISTING UTILITIES IN AREA OF CONSTRUCTION. REFER TO CIVIL DRAWINGS FOR ADDITIONAL LINDERGROUND INFORMATION
- 11. REPAIR, IN ACCORDANCE WITH SPECIFICATIONS, SIDEWALKS, WALLS, ROADWAYS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES WHETHER
- 12. CONCEAL CONDUITS TO GREATEST EXTENT PRACTICABLE. CONDUITS RUN AT EXISTING STRUCTURES SHALL BE RUN EXPOSED
- 13. WHERE LOCAL DISCONNECTS AND CONTROL PANELS ARE SHOWN ON PLAN VIEWS, LOCATIONS ARE APPROXIMATE. ADJUST LOCATION AS REQUIRED TO COMPLY WITH NEC ARTICLE 110 FOR WORKING CLEARANCES.
- 14. DO NOT INSTALL MAJOR CONDUIT RUNS THROUGH AREAS DESIGNATED FOR FUTURE STRUCTURES.

## SUBMITTALS (AS APPLICABLE):

- 1. SUBMIT SHOP DRAWINGS FOR EQUIPMENT, MATERIALS AND OTHER ITEMS FURNISHED UNDER DIVISION 26.
- 2. SUBMIT CONDUIT SHOP DRAWINGS FOR YARD ELECTRICAL, WITHIN AND UNDER ROADS, BUILDINGS AND STRUCTURES PRIOR TO COMMENCING WORK. DO NOT POUR CONCRETE UNTIL ENGINEER HAS APPROVED THE ASSOCIATED SHOP
- 3. SUBMIT POWER SYSTEM STUDIES IN ACCORDANCE WITH SECTION 260573.
- 4. SUBMIT OPERATION AND MAINTENANCE MANUALS FOR EQUIPMENT FURNISHED UNDER DIVISION 26.
- 5. SUBMIT STARTUP/COMMISSIONING PLANS FOR EQUIPMENT FURNISHED UNDER DIVISION 26.
- 6. SUBMIT TESTING AND SERVICE REPORTS FOR EQUIPMENT AND MATERIALS FURNISHED UNDER DIVISION 26.
- 7. SUBMIT TRAINING PLANS FOR EQUIPMENT FURNISHED UNDER DIVISION 26.
- 8. SUBMIT RECORD DOCUMENTATION TO ACCURATELY SHOW COMPLETED INSTALLATION. INCLUDE MODIFICATIONS TO CONTRACT DOCUMENTS (ONE LINE POWER DIAGRAMS, EQUIPMENT ELEVATIONS, PANEL SCHEDULES, ELEMENTARY CONTROL DIAGRAMS, RISER DIAGRAMS, PLANS, CONDUIT AND DUCTBANK ROUTING, ETC) ALONG WITH ADDITIONAL DRAWINGS OR SKETCHES CREATED TO CONVEY COMPLETED INSTALLATION.

### INTERPRETATION OF CONTRACT DOCUMENTS:

- IF DURING PERFORMANCE OF WORK, THERE IS A CONFLICT, ERROR, OR DISCREPANCY BETWEEN OR AMONG CONTRACT DOCUMENTS AND LAWS AND REGULATIONS, PROVIDE THE HIGHER PERFORMANCE STANDARD UNLESS OTHERWISE DIRECTED BY
- PRIORITY OF DOCUMENTS: FIGURED DIMENSIONS GOVERN OVER SCALED DIMENSIONS, DETAILED DRAWINGS GOVERN OVER GENERAL DRAWINGS, LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS, CHANGE ORDER DRAWINGS SUPERCEDE ORIGINAL CONTRACT DRAWINGS, AND CONTRACT DRAWINGS GOVERN SHOP DRAWINGS.
- IN GENERAL, DRAWINGS DO NOT SHOW CONDUIT ROUTING. PLAN AND ROUTE CONDUITS IN COMPLIANCE WITH SPECIFICATIONS AND DRAWING DETAILS. COORDINATE INSTALLATION WITH OTHER TRADES AND ACTUAL SUPPLIED EQUIPMENT.
- DUCTBANK ROUTING SHOWN ON ELECTRICAL SITE PLANS IS DIAGRAMMATIC IN NATURE AND MAY NOT INCLUDE INTERFERENCES THAT MAY BE PRESENT.

REMARKS

5. SEE ADDITIONAL NOTES ON ELECTRICAL LEGEND I SHEET.

## **ENCLOSURE TYPES:**

 $\sqrt{c}$ 

PROVIDE THE FOLLOWING NEMA TYPE ELECTRICAL ENCLOSURES, UNLESS OTHERWISE NOTED:

- 1. NEMA 1 IN DRY, NON-PROCESS INDOOR LOCATIONS
- 3. NEMA 4X IN OUTDOOR LOCATIONS, ROOMS BELOW GRADE INCLUDING BASEMENTS AND BURIED VAULTS AND "DAMP" OR "WET" LOCATIONS SHOWN ON THE DRAWINGS. ENCLOSURES SHALL BE 316 STAINLESS STEEL.
- 4. NEMA 4X IN "CORROSIVE" LOCATIONS SHOWN ON THE DRAWINGS. ENCLOSURES SHALL BE 316 STAINLESS STEEL.

### MATERIALS AND EQUIPMENT:

- 1. PROVIDE NEW MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY NOTED OTHERWISE.
- ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC., AND SHALL BEAR
  APPROPRIATE UL LISTING MARK OR CLASSIFICATION MARKING. EQUIPMENT, MATERIALS, ETC. UTILIZED NOT BEARING A UL CERTIFICATION SHALL BE FIELD OR FACTORY UL CERTIFIED PRIOR TO EQUIPMENT ACCEPTANCE AND USE.
- PROVIDE MAJOR ELECTRICAL EQUIPMENT BY A SINGLE MANUFACTURER: I.E. UNIT SUBSTATIONS, SWITCHGEAR, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, PANELBOARDS, ETC.

## EQUIPMENT SIZE, HANDLING AND STORAGE:

- 1. COORDINATE WITH EQUIPMENT MANUFACTURER SHIPPING SPLITS TO PERMIT SAFE HANDLING AND PASSAGE OF EQUIPMENT TO FINAL INSTALLATION LOCATION.
- 2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS FOR UPRIGHT EQUIPMENT ORIENTATION DURING TRANSPORTATION.
- 3. PROTECT EQUIPMENT FROM MECHANICAL INJURY, OR EXPOSURE TO MOISTURE, CHEMICALS, OR CORROSIVE GASES. DO NOT STORE ELECTRICAL EQUIPMENT OUTDOORS.
- 4. PROVIDE AND ENERGIZE TEMPORARY SPACE HEATERS IF REQUIRED TO CONTROL MOISTURE DURING STORAGE.

#### CUTTING AND PATCHING:

- 1. CUT AND PATCH IN A WORKMANLIKE MANNER AS REQUIRED TO INSTALL ELECTRICAL WORK
- 2. CUTTING OF STRUCTURAL MEMBERS SUCH AS JOISTS, BEAMS, GIRDERS OR COLUMNS IS PROHIBITED.
- 3. PATCH SURFACES TO RESTORE TO ORIGINAL INTEGRITY (WATERPROOF OR FIREPROOF AS REQUIRED) AND APPEARANCE.
- 4. CORE DRILL HOLES IN CONCRETE FLOORS AND WALLS AS REQUIRED. PRIOR TO CORING CONCRETE, SCAN SLAB OR WALL USING RADAR TO LOCATE AND IDENTIFY REBAR AND/OR CONDUIT AND WIRING. LOCATE CORES AS TO AVOID CUTTING OR DRILLING THROUGH REBAR AND/OR CONDUITS. SPACE CONDUITS SO AS NOT TO ALTER THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE BEING CORE DRILLED, NOTIFY ENGINEER IMMEDIATELY IF ANY REBARS ARE CUT OR UPON BECOMING

## **CLEANING:**

- 1. REMOVE ALL RUBBISH AND DEBRIS FROM INSIDE AND AROUND ELECTRICAL EQUIPMENT AND ENCLOSURES.
- REMOVE DIRT, DUST OR CONCRETE SPATTER FROM INTERIOR AND EXTERIOR OF EQUIPMENT USING BRUSHES, VACUUM CLEANER OR CLEAN LINT-FREE RAGS. DO NOT USE COMPRESSED AIR.

## DELEGATED DESIGN / PROFESSIONAL ENGINEERING SERVICES:

- 1. WHEN ENGINEERING SERVICES ARE SPECIFIED TO BE PROVIDED BY CONTRACTOR, CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO PERFORM THE SERVICES, ENGINEER SHALL BE LICENSED AT THE TIME SERVICES ARE PERFORMED AND LICENSED IN THE STATE ISSUES DISCIPILINE SPECIFIC LICENSES, ENGINEER SHALL BE LICENSED IN THE APPLICABLE DISCIPILINE. ENGINEER SHALL BE EXPERIENCED IN THE TYPE
- ENGINEERING WORK SHALL BE DONE ACCORDING TO THE APPLICABLE REGULATIONS FOR PROFESSIONAL ENGINEERS TO INCLUDE SIGNING, SEALING AND DATING DOCUMENTS.

## **DEMOLITION AND DISPOSITION OF EQUIPMENT:**

- DRAWING PLANS SHOWING REMOVAL OF MAJOR MECHANICAL AND ELECTRICAL EQUIPMENT IS NOT INTENDED TO SHOW ALL COMPONENTS TO BE DEMOLISHED. NOT ALL PIPING, CONDUITS, DUCTS, EQUIPMENT, ANCILLARY DEVICES, ETC. ARE SHOWN. THE CONTRACTOR IS TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
- UNLESS OTHERWISE SPECIFICALLY NOTED, REMOVE UNUSED EXPOSED CONDUIT AND SUPPORT SYSTEMS BACK TO SOURCE AND/OR POINT OF CONCEALMENT INCLUDING ABOVE ACCESSIBLE CEILING FINISHES. WIRING SHALL BE REMOVED.
- 3. CUT FLUSH WITH SLAB, CEILING, OR WALL ABANDONED CONCEALED CONDUIT, SUITABLY PLUG CONDUITS.
- 4. REPAIR AND RESTORE ADJACENT CONSTRUCTION AND FINISHES AFTER DEMOLITION IS COMPLETE.
- MATERIAL AND EQUIPMENT INDICATED FOR REMOVAL OR DEMOLITION IS TO BECOME CONTRACTOR'S PROPERTY UPON REMOVAL, UNLESS NOTED OTHERWISE. REMOVED MATERIAL TO BE PROPERLY HANDLED AND DISPOSED.

м. отто HEET CHK'D BY L. VANG ROSS CHK'D BY: C. STELLMACK S. PERRY PROVED BY: APRIL 2025

ESIGNED BY

CDM Smith

COLLIER COUNTY, FLORIDA

NRO WELLS 118N AND 120N **IMPROVEMENTS** 

**ELECTRICAL GENERAL NOTES** 

W

ARRANGEMENTS WITH POWER COMPANY TO OBTAIN SERVICE, PAY POWER COMPANY FEES, AND PROVIDE LABOR AND MATERIALS REQUIRED FOR ELECTRICAL SERVICE.

1. ELECTRIC POWER COMPANY SERVING THIS PROJECT IS FLORIDA POWER AND LIGHT. POWER COMPANY CONTACT IS PATRICK DOLAN, TELEPHONE 239-231-8824, EMAIL PATRICK.DOLAN@FPL.COM. COMPLY WITH POWER COMPANY STANDARDS

3. PAY FEES AND CHARGES FOR PERMANENT SERVICE VIA BID ALLOWANCE AND SUBMIT POWER COMPANY INVOICES TO OWNER

2. PAY FOR FEES AND CHARGES AS REQUIRED FOR TEMPORARY/CONSTRUCTION POWER FOR CONTRACTOR'S USE.

TERMINATE UNDERGROUND PRIMARY CABLES AT THE UTILITY TRANSFORMER(S).
TERMINATE UNDERGROUND SECONDARY CABLES AT THE UTILITY TRANSFORMER(S) PROVIDE METERING CURRENT TRANSFORMERS (CT'S), METER(S) AND METER WIFE

SERVICE AND METERING:

4. POWER COMPANY WORK:

PROVIDE SECONDARY UNDERGROUND CONDUITS AND CABLE FROM UTILITY TRANSFORMER(S) TO SERVICE ENTRANCE EQUIPMENT.
 PROVIDE EMPTY CONDUIT WITH PULL LINE FROM THE METERING CT ENCLOSURE TO THE METER BASE ENCLOSURE.

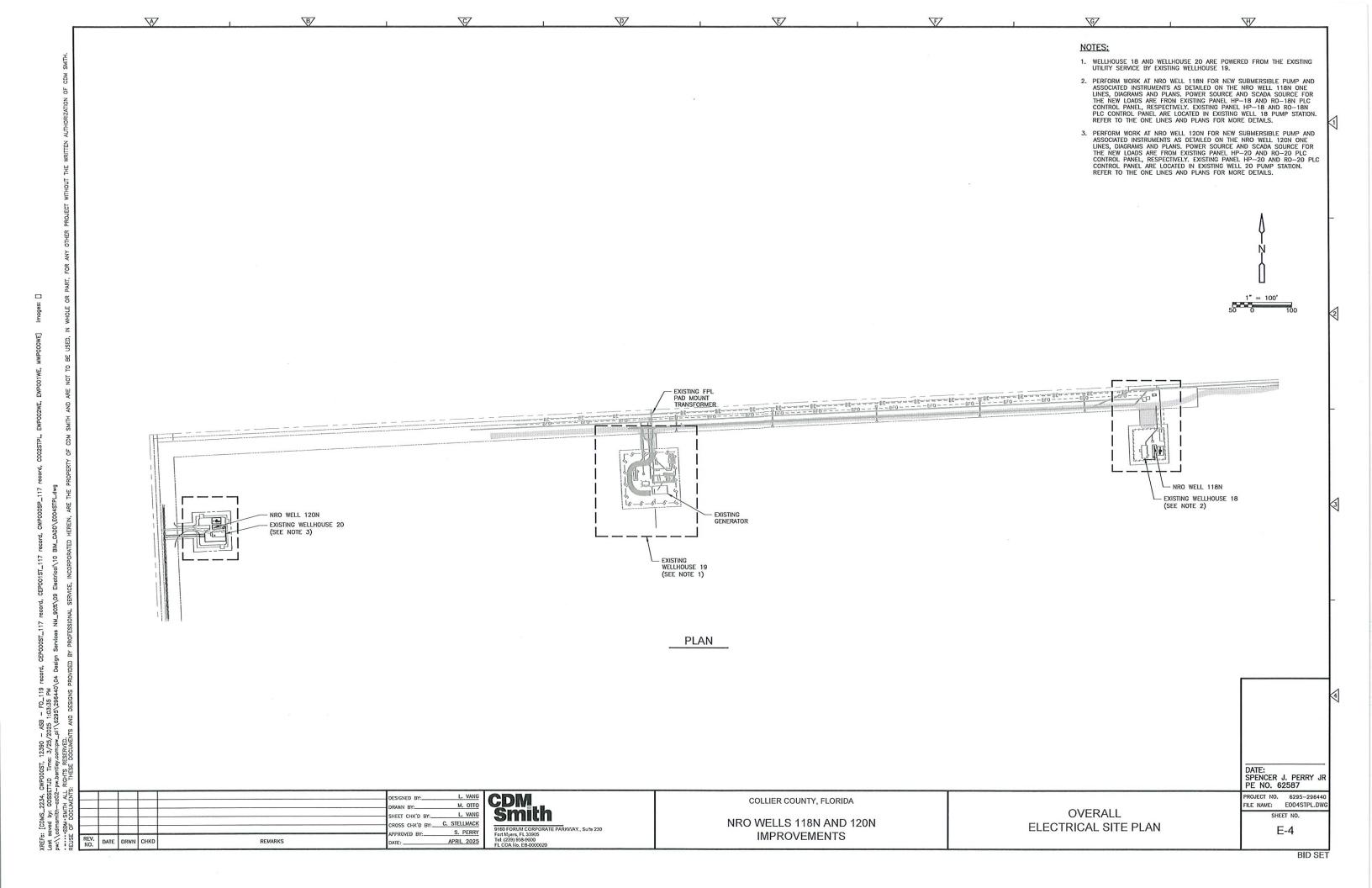
DATE: SPENCER J. PERRY PE NO. 62587 PROJECT NO 6295-29644

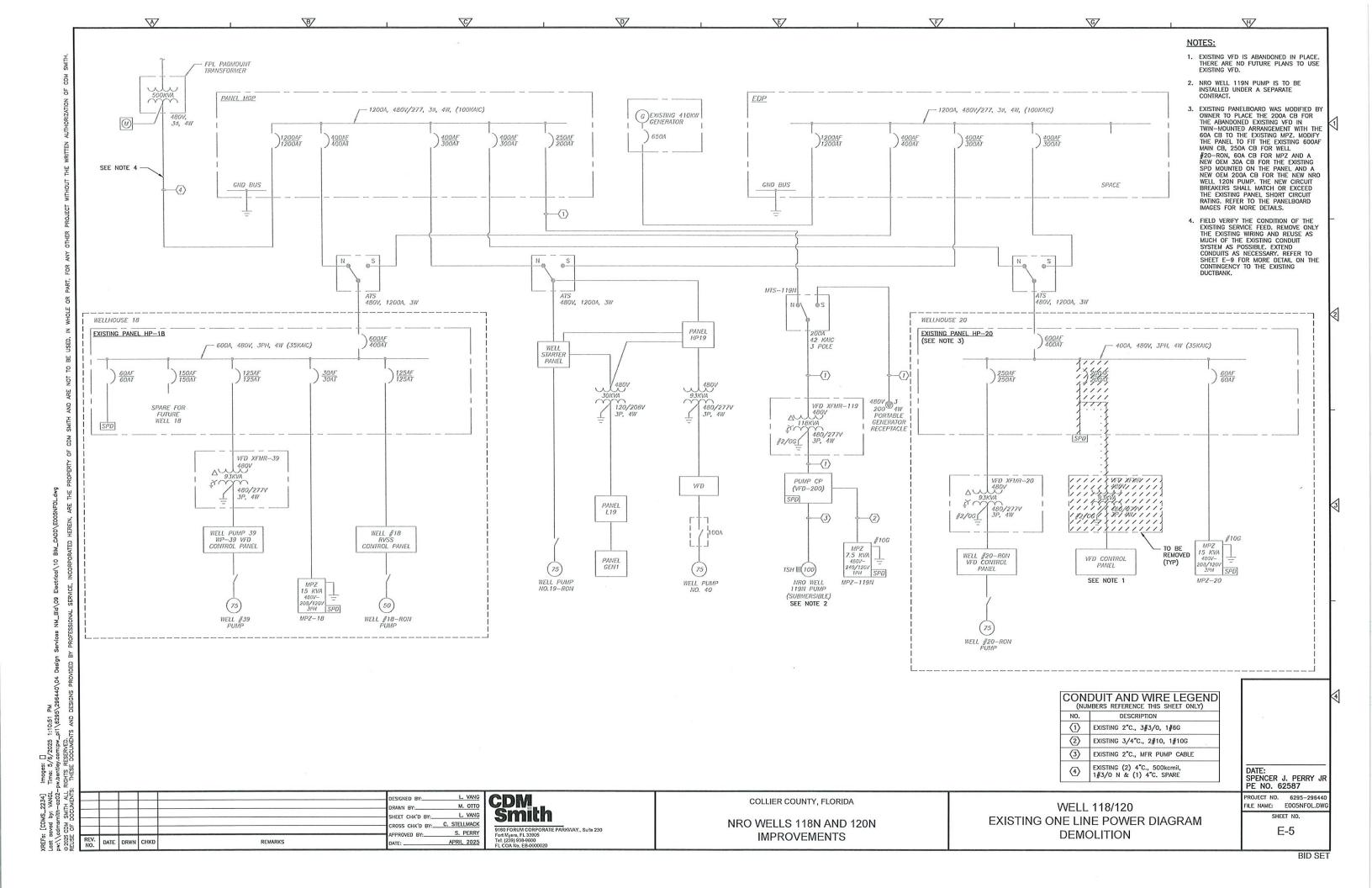
FILE NAME: E003NFNT.DW SHEET NO

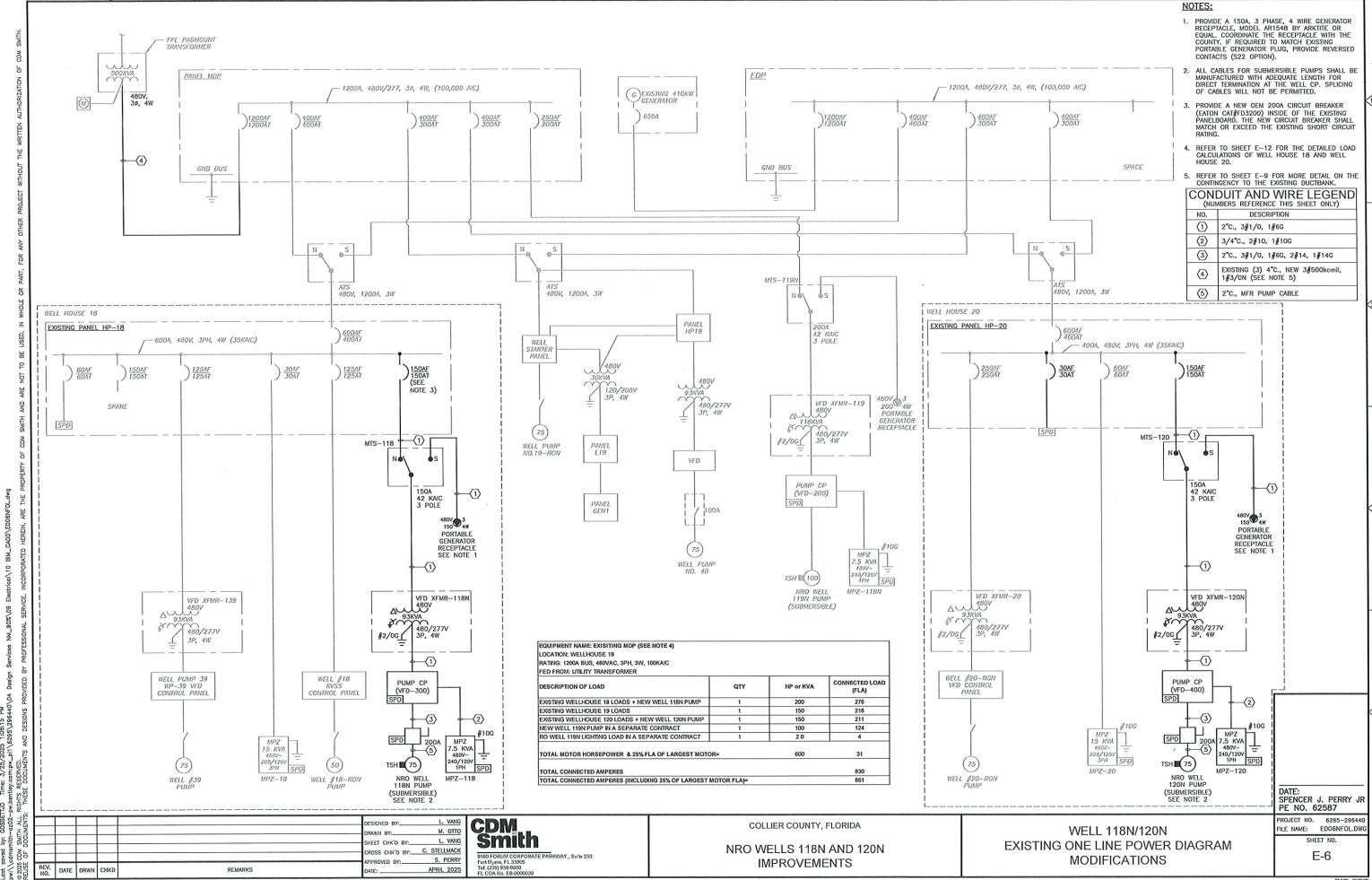
E-3

BID SE

OP OF







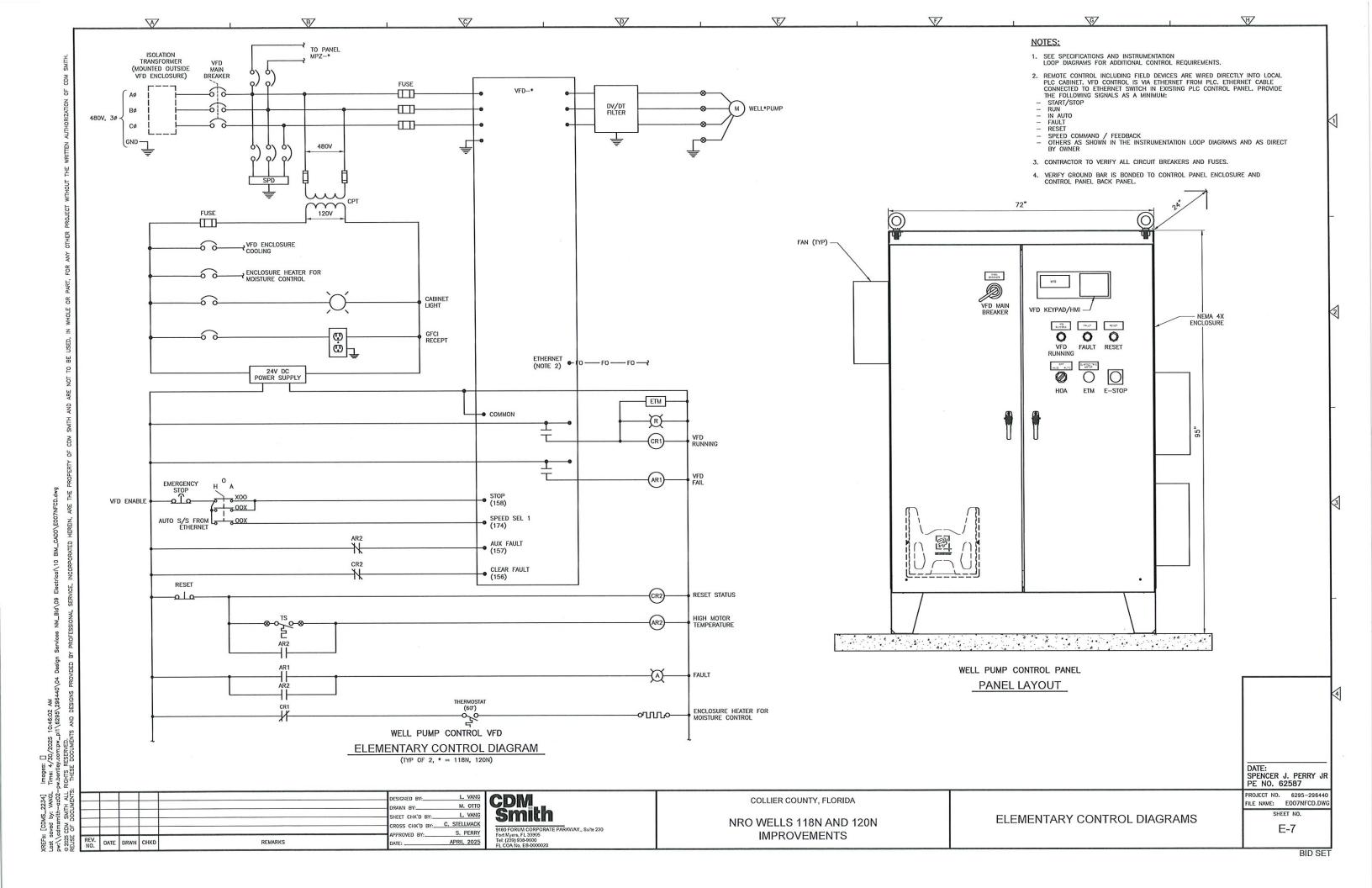
W

B

BID SET

G/

W



EXISTING PLC CONTROL PANEL SEE NOTES

# WELL \*\* CONTROL RISER DIAGRAM

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

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

CON	DUIT AND WIRE LEGEND MBERS 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)					
Α	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 #: 4VIZ-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				NE	EW				LOCATION: UNDER CANOPY, SEE PLANS	
SEE NOTE 1		MPZ-**							ENCLOSURE TYPE: NEMA 3R SS	
									SURFACE MOUNTED	
	7.5	KVA TRA	NSFOR	MER	20	AMP PE	RIMARY (	C/B	10 POLES	
		40 AMP SECONDARY C/B					RY C/B	PRIMARY AIC RATING: 18,000A		
	480-120/240	VOLTS	1 PHAS	E	3	WIRE	60 HZ		SECONDARY AIC RATING: 10,000A	
		VA	AMP/	CKT	CKT	AMP/	VA			
DESCRIPTION	NOTES	LOAD	POLES	#	#	POLES	LOAD	NOTES	DESCRIPTION	
RECEPTACLE	2	180	20/1	1	2	20/1			SPARE	
SPARE			20/1	3	4	20/1	120	2	CANOPY LIGHTS	
SPARE			20/1	5	6	20/1			SPARE	
FIT	2	100	20/1	7	8	20/2		3	SPD	
SPARE			20/1	9	10	20/2			01.5	
	TOTAL CONNEC	CTED VA	:	TO	TAL CO	NNECTE	DAMPS			
	PHASE A:	180			PI	ASE A:	2			
	PHASE B:	220			PI	HASE B:	2			

- NOTES:

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

					DESIGNED BY: L VANG DRAWN BY: M. OTTO SHEET CHIX'D BY: L VANG CROSS CHIX'D BY: C. STELLMACK
REV. NO.	DATE	DRWN	CHKD	REMARKS	APPROVED BY: S. PERRY DATE: APRIL 2025

CDM Smith

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: EOOBNFMU.DWG

E-8

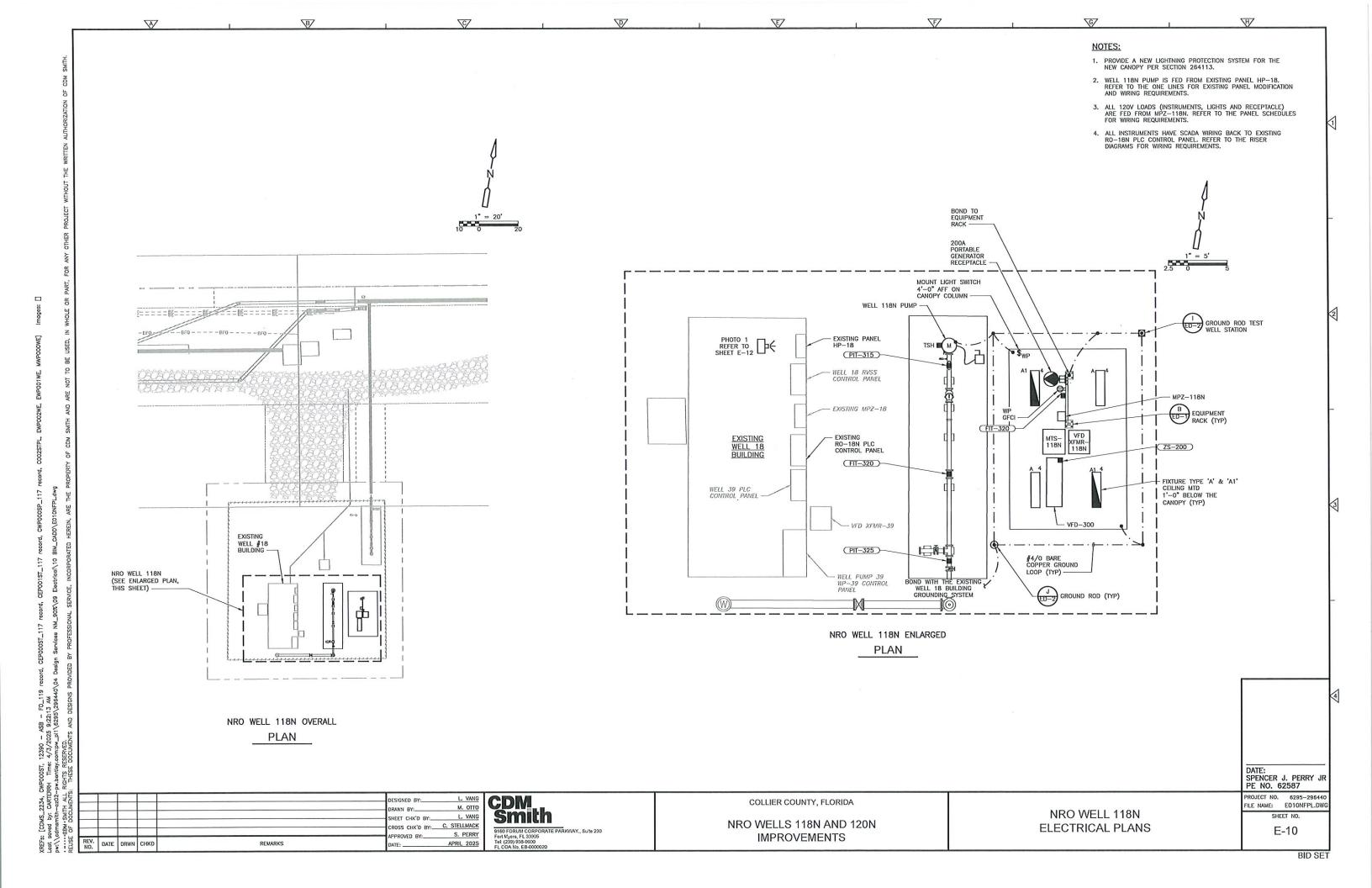
NOTES: REFER TO SHEET E-3 FOR MORE INFORMATION ON UTILITY REQUIREMENTS. INFORMATION ON UILLITY REQUIREMENTS.

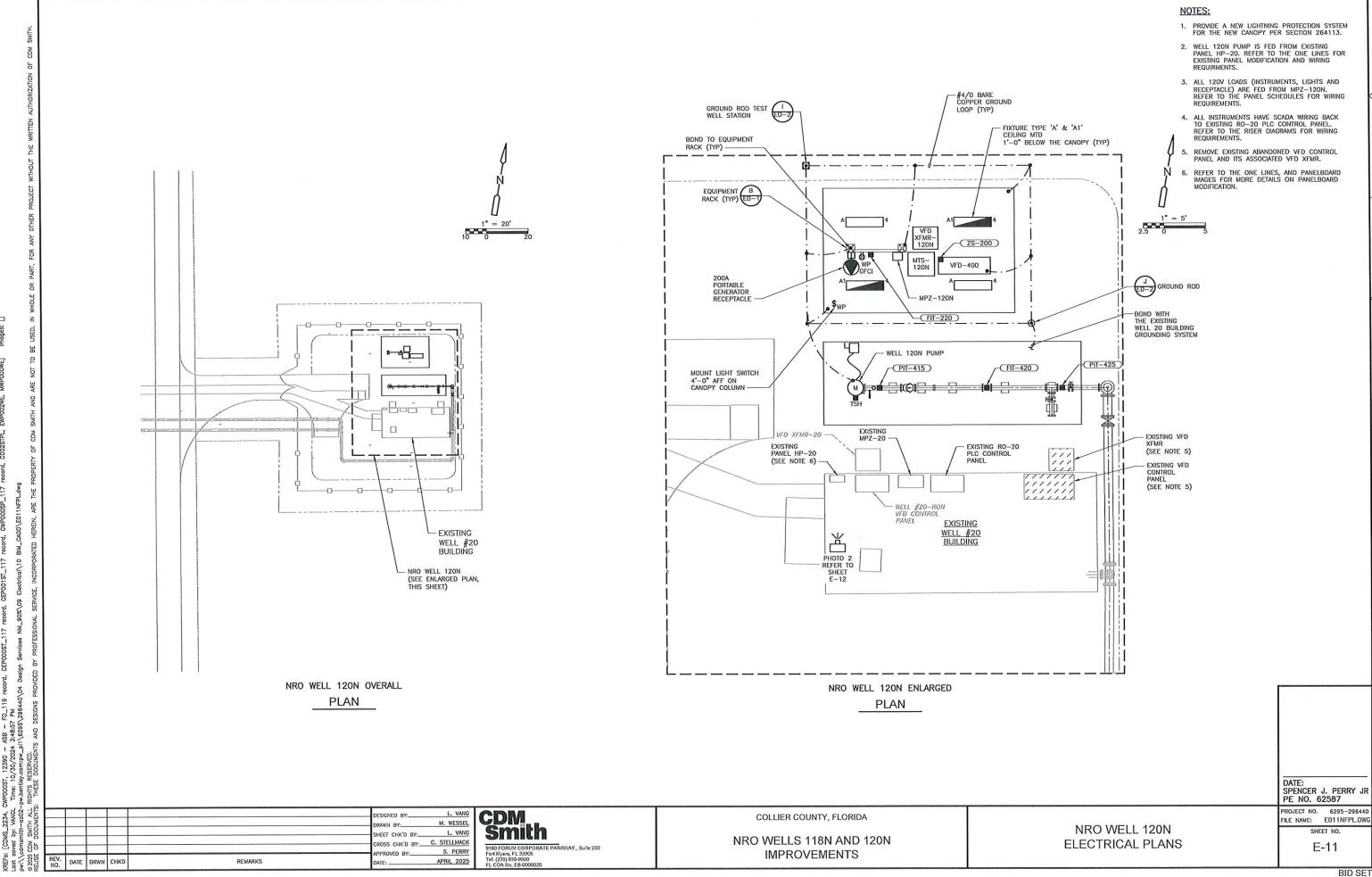
2. RECORD DRAWINGS INDICATE THAT FROM THE UTILITY TRANSFORMER TO THE SERVICE ENTRANCE PANEL MDP, THERE ARE ONLY TWO SETS OF 4°C., 3//500kcmil, 1//3/ON AND ONE SPARE 4°C. FIELD VERIFY THE CONDITION OF THE EXISTING SERVICE FEEDS. REMOVE THE EXISTING WIRING ONLY AND REUSE THE EXISTING WIRING FOR THE NEW WIRES. REFER TO THE ONE LINES FOR WIRING REQUIREMENTS. EXTEND THE EXISTING CONDUITS AS NECESSARY. IF 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. - EXISTING FPL UTILITY TRANSFORMER - BFO---- BFO---- BFO---- BFO---- BFO---- BFO------BFQ ----SEE NOTE 2 EXISTING WELLHOUSE 19 - EXISTING PANEL MDP 410KW GENERATOR 6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6 WELLHOUSE 19 PLAN DATE: SPENCER J. PERRY JR PE NO. 62587 PROJECT NO. 6295-296440 CDM ESIGNED BY:\_ COLLIER COUNTY, FLORIDA FILE NAME: E009NFPL.DWG м. отто NRO WELL 119N **Smith** SHEET NO. L. VANG SHEET CHK'D BY:\_\_\_ NRO WELLS 118N AND 120N **ELECTRICAL PLANS** CROSS CHK'D BY: C. STELLMACK 9160 FORUM CORPORATE PARKWAY., Suite 230 Fort Myers, FL 33905 Tel. (239) 938-9600 FL COA No. EB-0000020 E-9 S. PERRY **IMPROVEMENTS** PPROVED BY:\_ REMARKS

 $\nabla$ 

W

G





V

 $\nabla$ 

# 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 LARG	EST MOTOR=	200	24
TOTAL CONNECTED AMPERES			276
TOTAL CONNECTED AMPERES (INCLUDING 25% OF	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 LARG	EST HOTOP-	150	24
TOTAL MOTOR HORSEPOWER & 25% PLA OF LARG	EST MOTOR-	100	2.1
TOTAL CONNECTED AMPERES			211
TOTAL CONNECTED AMPERES (INCLUDING 25% OF	235		

## **EXISTING WELLHOUSE 20 LOAD CALCULATION**

SIGNED BY:\_ M. WESSEL L. VANG HEET CHK'D BY:\_\_\_ CROSS CHK'D BY: C. STELLMACK S. PERRY PPROVED BY:\_ REMARKS APRIL 2025

**Smith** 9160 FORUM CORPORATE PARKWAY., Suite 230 Fort Myers, FL 33905 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 ROJECT NO. 6295-296440 FILE NAME: E012NFPB.DWG SHEET NO.

BID SET

E-12

W

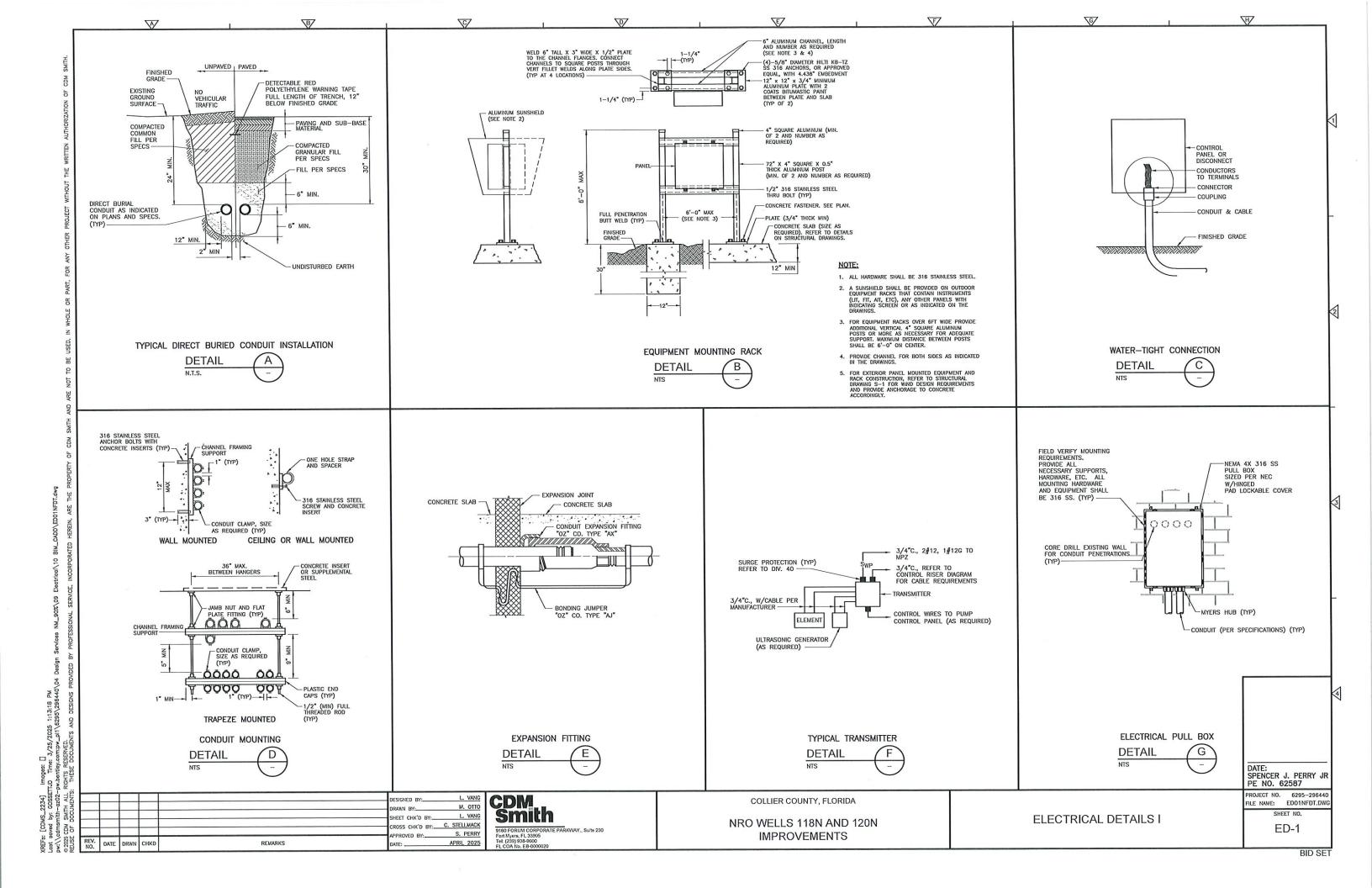
1. PROVIDE A 200A, 3P OEM CIRCUIT BREAKER
(EATON CAT#FD3200) IN INDICATED AVAILABLE
SPACE OF EXISTING PANEL FOR THE NEW
WELL 118N LOADS. CIRCUIT BREAKER SHALL
MATCH OR EXCEED EXISTING PANEL SHORT
CIRCUIT CURRENT RATING. PROVIDE THE
NECESSARY MOUNTING HARDWIRE AND COVER
PLATES FOR THE INSTALLATION OF THE NEW
BREAKER.

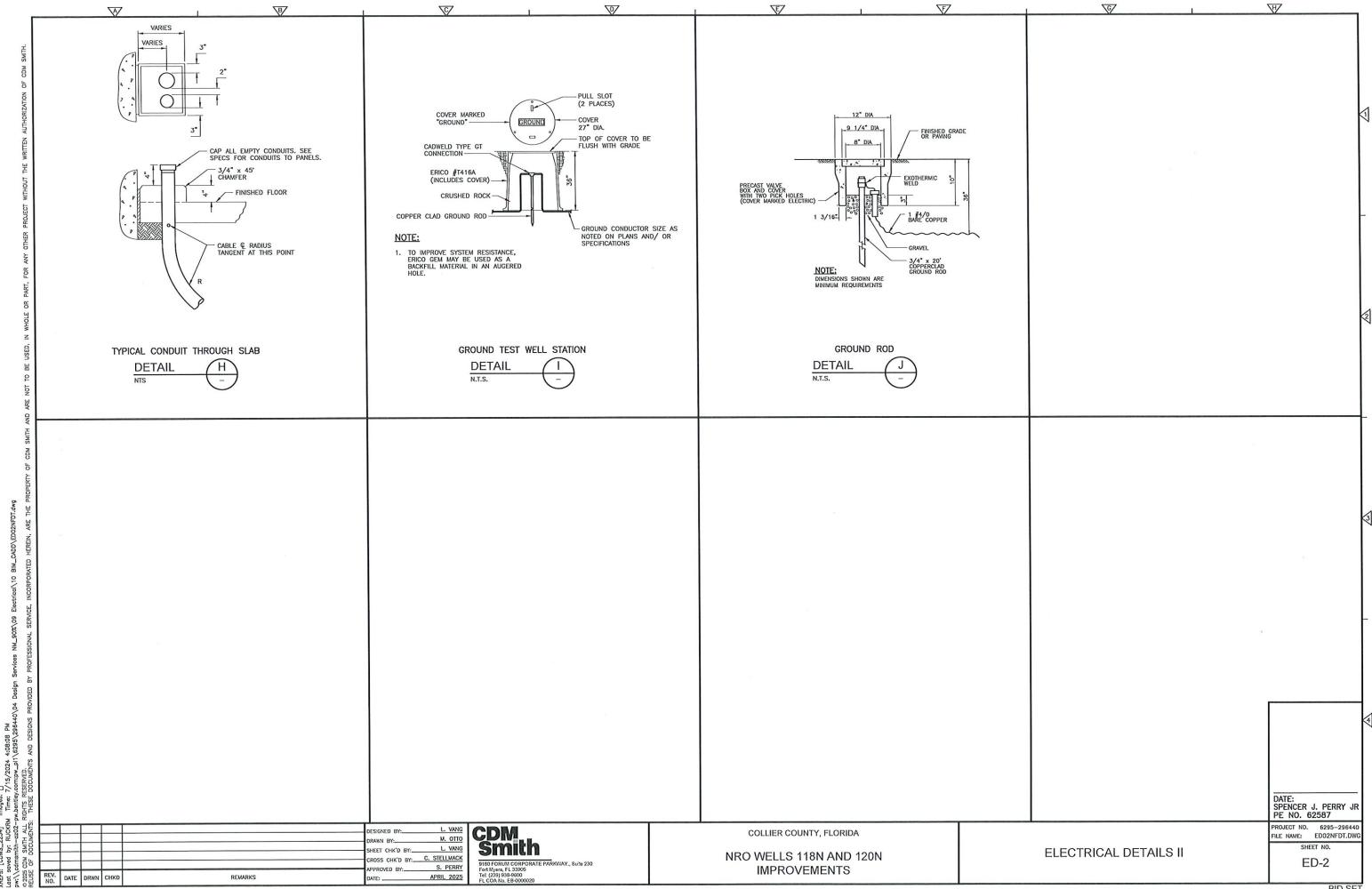
2. AS SHOWN IN THE PHOTO, THE EXISTING PANEL WAS MODIFIED BY OWNER TO PROVIDE A 200A CB IN TWIN-MOUNTED ARRANGEMENT WITH THE EXISTING MPZ-20 60A CB. MODIFY PANEL AND PROVIDE A NEW 30A 3P OEM CIRCUIT BREAKER FOR THE EXISTING SPD (MOUNTED TO THE LEFT OF THE PANEL) AND A NEW 200A, 3P OEM CB FOR THE NEW 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.

 UPDATE THE EXISTING PANEL SCHEDULE AND PROVIDE NAMEPLATES AND LABELS FOR THE NEW BREAKERS. NAMEPLATES SHALL BE BLACK LETTERS ON A WHITE FIELD, ENGRAYED, LAMINATED PLASTIC, 3/16-INCH HIGH LETTERING.

G

NOTES:





BID SET

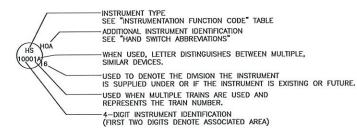
# GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	DISPLAY/ CONTROL			
PRIMARY CHOICE	SECONDARY CHOICE	COMPUTER SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY
				FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
		$\bigcirc$	$\ominus$	PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
0		$\langle \cdot \rangle$	$\ominus$	PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE
		$\ominus$	$\ominus$	SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
0		$\left\langle \cdot \right\rangle$	$\Theta$	SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE

INSTRUMENTS SHARING COMMON HOUSING

PILOT LIGHT

# TYPICAL TAG NUMBERS & DESIGNATION



## HAND SWITCH ABBREVIATIONS

 $\Delta O = \Delta UTO / OFF$ AM = AUTO/MANUAL CM = COMPUTER/MANUAL CL = COMPUTER/LOCAL E-STOP = EMERGENCY STOP FR = FORWARD/REVERSE FOR = FORWARD/OFF/REVERSE FS = FAST SLOWFOS = 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

REMARKS

	FIRST I	ETTERS		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			
	ANALYSIS		ALARM					
В	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE			
С	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					
Н	HAND				HIGH			
Т	CURRENT		INDICATE					
J	POWER		SCAN					
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION				
L	LEVEL		LIGHT		LOW			
	MOISTURE				MIDDLE, INTERMEDIATE			
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE			
0	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN			
Р	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	MULTIFUNCTION				
٧	VIBRATION, MECHANICAL, ANALYSIS			VALVE, DAMPER, LOUVER				
W	WEIGHT, FORCE		WELL, PROBE					
X	UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)	UNCLASSIFIED (1)			
Υ	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES				
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL				

TABLE NOTES:

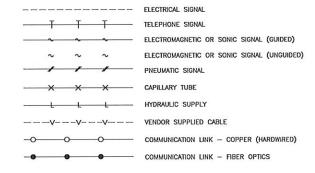
(1) WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.

## INSTRUMENT LINE SYMBOLS

FLEMENT

 $\nabla$ 

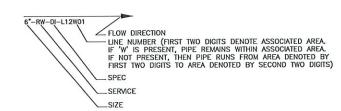
INSTRUMENTATION FUNCTION CODE



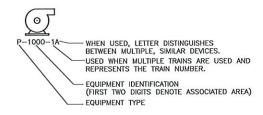
## ELECTRICAL / AIR SOURCES

UPS- --- UPS POWERED ELECTRICAL SOURCE ES-- ELECTRICAL SOURCE ■ INSTRUMENT AIR SOURCE

## TYPICAL PIPE TAG NUMBERS & DESIGNATION



## TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



#### ESIGNED BY:\_ R. CHARITY M. GRAHAM SHEET CHK'D BY:\_ CROSS CHK'D BY: G. CZERNIEJEWSKI M. GRAHAM PPROVED BY:\_ APRIL 2025

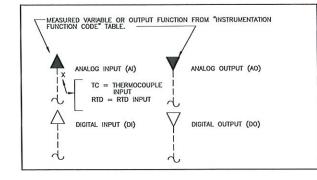
CDM **Smith** 9160 FORUM CORPORATE PARKWAY., Suite 230

# COLLIER COUNTY, FLORIDA

NRO WELLS 118N AND 120N **IMPROVEMENTS** 

## I/O SIGNALS

E



## GENERAL NOTES

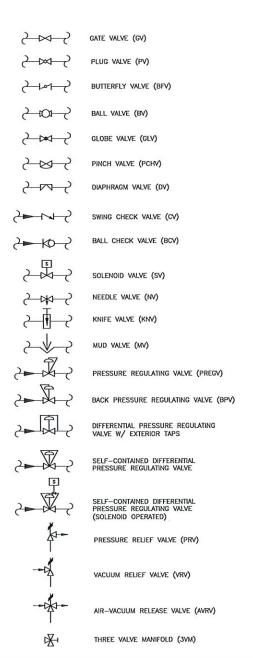
G

1. THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.

W

- 2 IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE IN GENERAL THIS LEGEND SHEET AND THE PAIDS AND RECOMMENDED 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.
- 3. 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.
- 4. SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.
- 5. 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.

# VALVE SYMBOLS



## PRIMARY ELEMENTS







# **GENERAL ABBREVIATIONS**

ANALOG IN

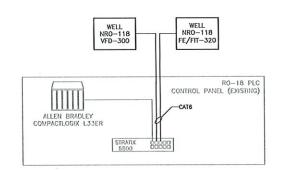
OA	ANALOG OUT
CPU	CENTRAL PROCESSOR UNIT
DI	DIGITAL OR DISCRETE INPUT
DO	DIGITAL OUTPUT
FC	FAIL CLOSED
FO	FAIL OPEN OR FIBER OPTIC
HMI	HUMAN MACHINE INTERFACE
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NPW	NON-POTABLE WATER
NO	NORMALLY OPEN
PLC	PROGRAMMABLE LOGIC
	CONTROLLER
PW	PLANT WATER
RIO	REMOTE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

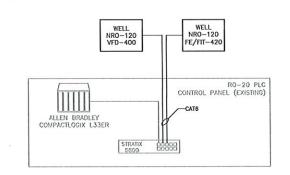
INSTRUMENTATION LEGEND

DATE: MICHAEL GRAHAM PE NO. 71194

PROJECT NO. 6295-296440 FILE NAME: 1001SYMB.DWG SHEET NO. 1-1

BID SET





CDM Smith

9160 FORUM CORPORATE PARKYVAY., Su'ho 230
Fot llysers, Fl. 339050
Tet (239) 93-94-9500

COLLIER COUNTY, FLORIDA

NRO WELLS 118N AND 120N IMPROVEMENTS CONTROL BLOCK DIAGRAM

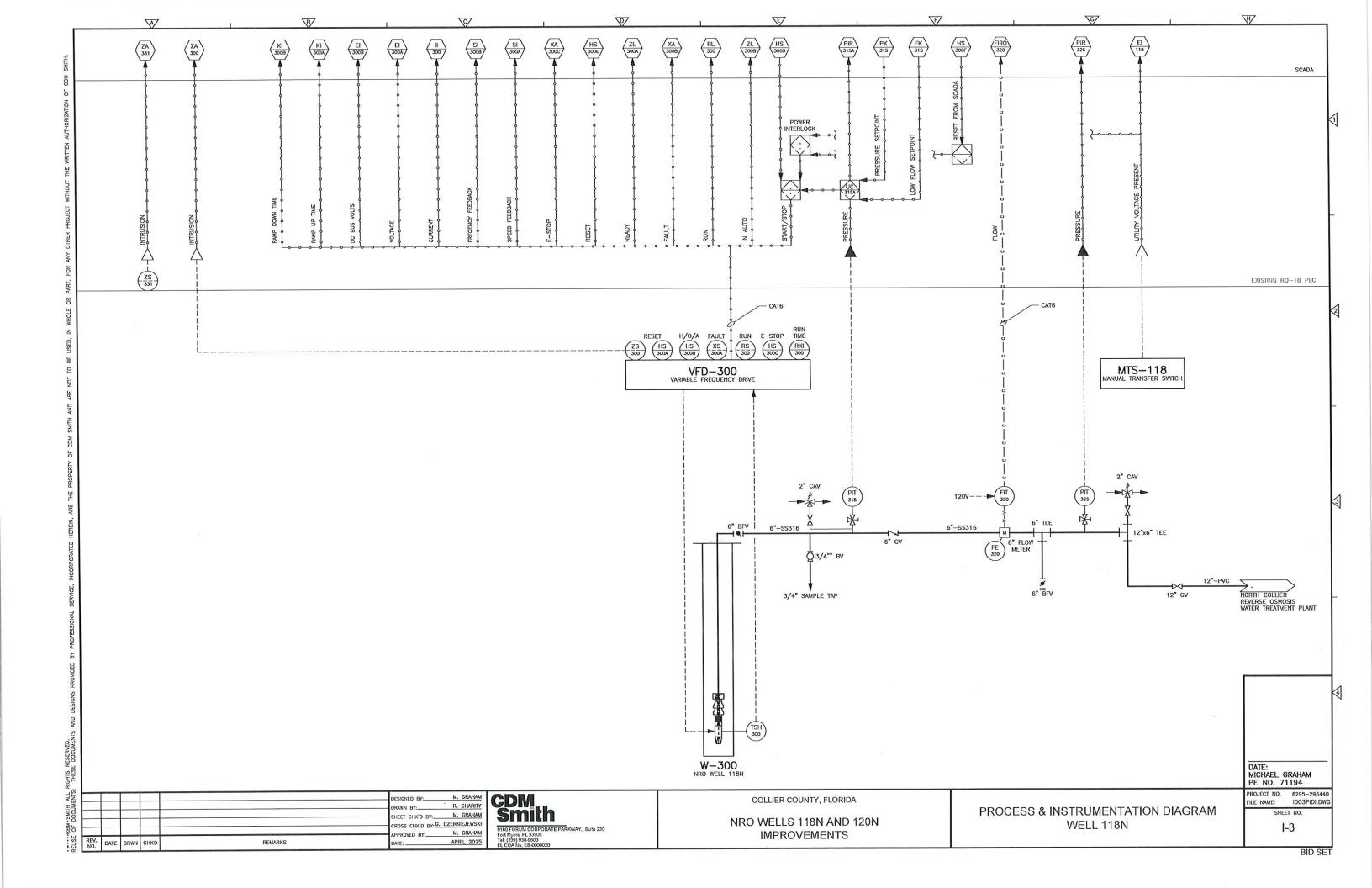
DATE:
MICHAEL GRAHAM
PE NO. 71194

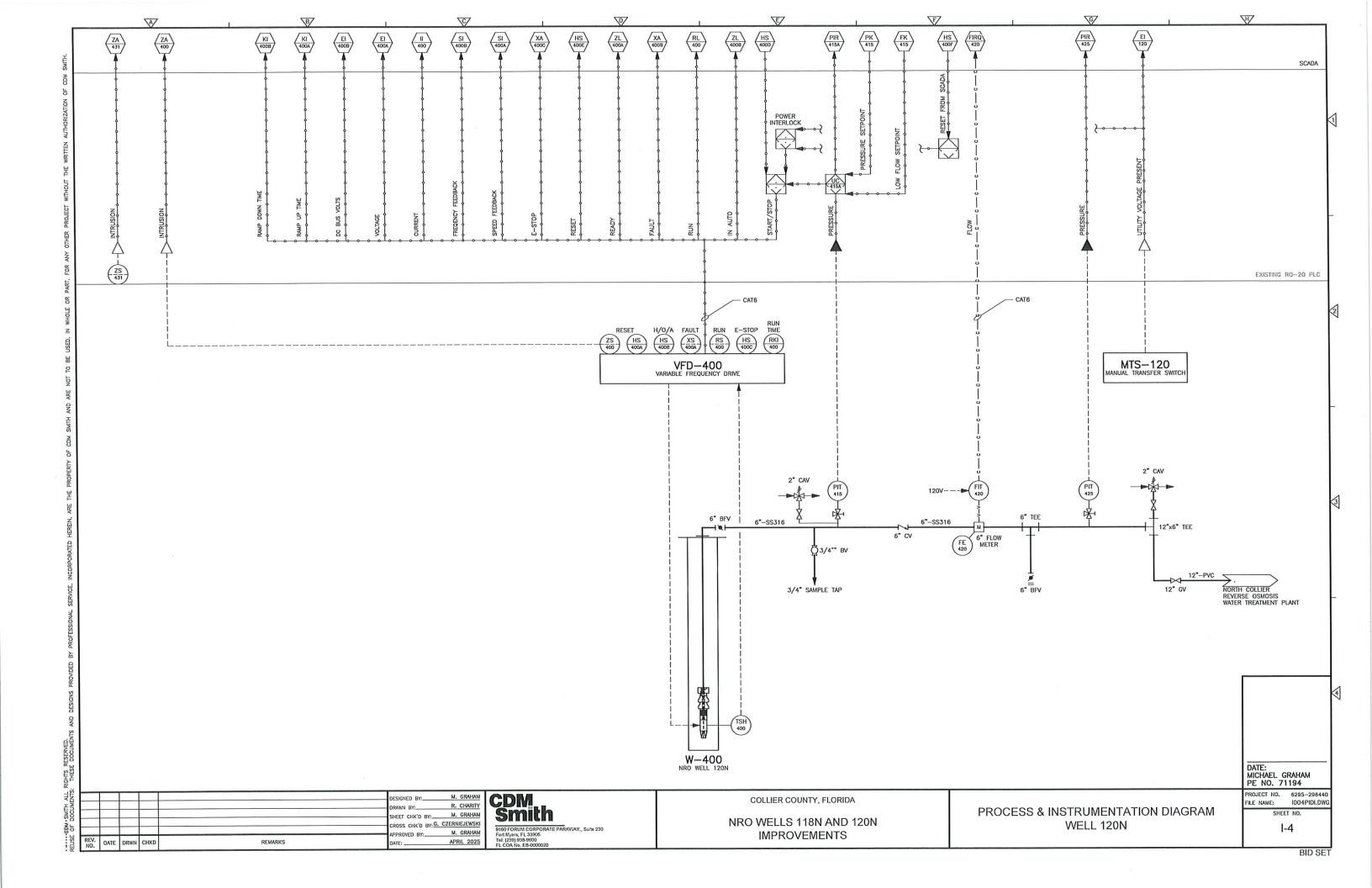
PROJECT NO. 6295–296440
FILE NAME: 1002PIDT.DWG

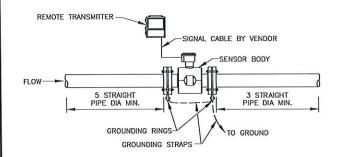
SHEET NO.

1-2

BID SE

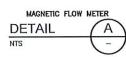


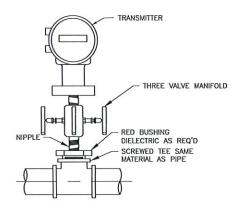




NOTES

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





PRESSURE TRANSMITTER/SWITCH/GAUGE
(WITHOUT DIAPHRAGM SEAL)

DETAIL B

					DESIGNED BY: M. GRAHAM DRAWN BY: R. CHARITY SHEET CHK'D BY: M. GRAHAM CROSS CHK'D BY: G. CZERNIEJEWSKI
REV. NO.	DATE	DRWN	CHKD	REMARKS	APPROVED BY: M. GRAHAM DATE: APRIL 2025



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.

1-5

BID SET

F