

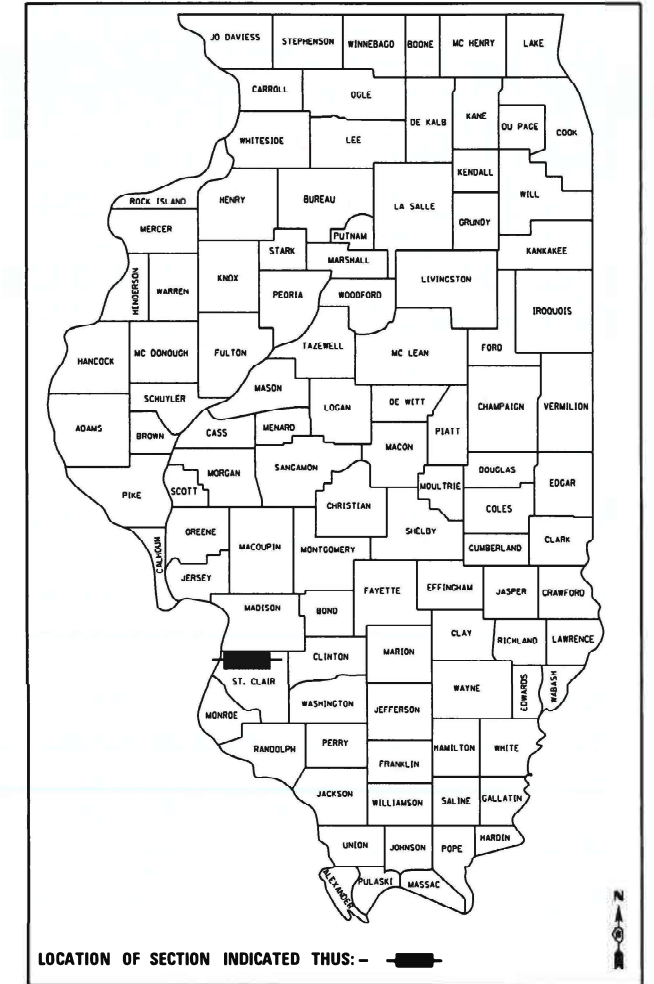
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PROPOSED
HIGHWAY PLANS**

F.A.U. 9153 EXCHANGE AVENUE
SECTION 82-1PS-1
BOWMAN PUMP STATION
DEEP WELLS & PUMPS – ELECTRICAL UPGRADE
ST. CLAIR COUNTY

C-98-072-21

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9153	82-1PS-1	ST. CLAIR	8	1
		ILLINOIS	CONTRACT NO. 76L89	

D-98-041-21

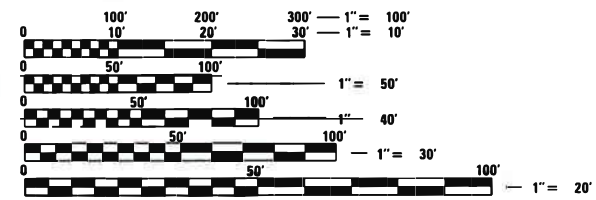


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- 6 BOWMAN PUMP STATION MCC ONE LINE DIAGRAM
- 7 BOWMAN PUMP STATION SCHEMATIC
- 8 BOWMAN PUMP STATION SCHEMATIC

HIGHWAY STANDARDS

000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

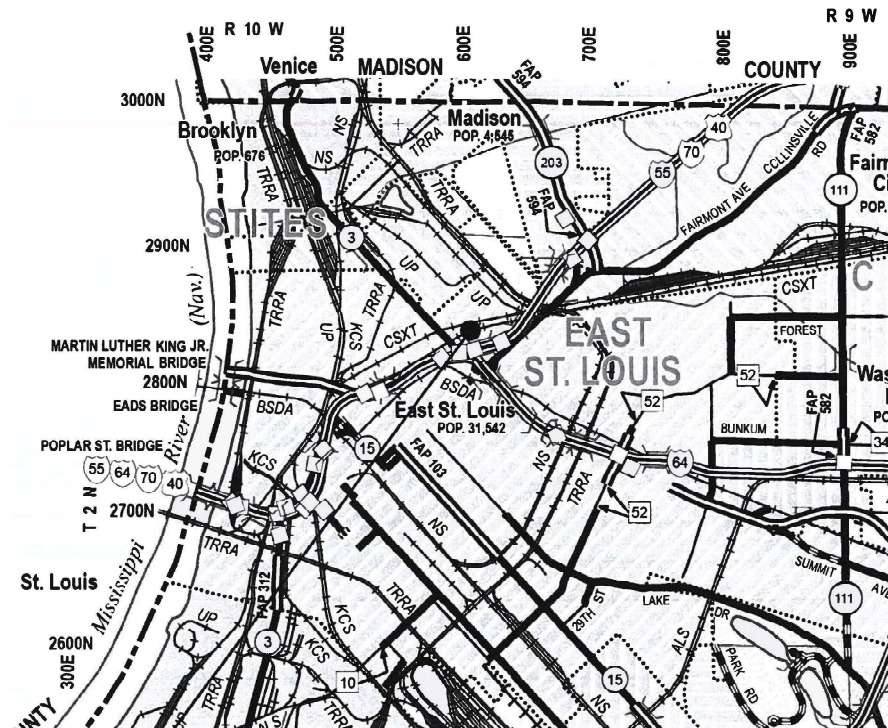


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: HERVE GELIN 618-346-3175
SQUAD LEADER: PHILLIP SAWYER 618-346-3275

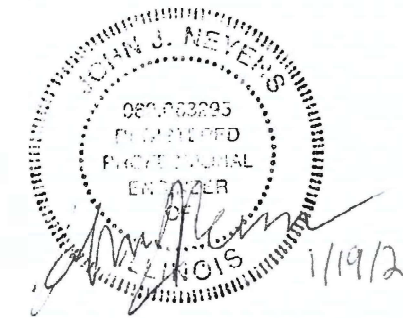
CONTRACT NO. 76L89



BOWMAN PUMP STATION

ST. CLAIR COUNTY

GROSS LENGTH = N/A
NET LENGTH = N/A



JOHN J. NEVENS
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 062-063295
LICENSE EXPIRES NOVEMBER 30, 2021

PLANS PREPARED BY:

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

Quincy, Illinois www.klingner.com
616 North 24th Street Galesburg, IL Burlington, IA
217.223.3670 Pella, IA Hannibal, MO Columbia, MO
STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Jan 22, 2021
K. Roberts REGIONAL ENGINEER

March 19, 2021 [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

March 19, 2021 [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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GENERAL NOTES

1. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES HAVE BEEN TAKEN FROM EXISTING PLANS AND FIELD MEASUREMENTS, AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD, AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS.
2. THE CONTRACTOR SHALL SECURE ANY LOCAL, STATE, COUNTY PERMITS NEEDED FOR THIS PROJECT.
3. DRAWINGS ARE NOT TO SCALE.
4. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION RELATED SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES, GRADUATES ARE WELL TRAINED AND READY TO BECOME PRODUCTIVE ENTRY LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.

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KLINGNER & ASSOCIATES, P.C.
 Engineers • Architects • Surveyors
 616 N.24TH ST. QUINCY, ILLINOIS 62301 217.223.3670
 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

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PLOT DATE = 1/19/2021	DATE 11/17/2020	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

GENERAL NOTES

SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9153	82-IPS-1	ST. CLAIR	8	2
CONTRACT NO. 76L89				
ILLINOIS FED. AID PROJECT				

ELECTRICAL SYMBOLS

	20 AMP 3P	LOW-VOLTAGE CIRCUIT BREAKER. RATING AND NUMBER OF POLES AS SHOWN
		FUSE: SIZE AND NUMBER OF FUSES AS NOTED
		FUSIBLE SWITCH: CURRENT RATING, FUSE SIZE, AND QUANTITY AS INDICATED
		NON-FUSED SWITCH: CURRENT RATING, AND NUMBER OF POLES INDICATED
		DISCONNECT OR DRAWOUT CONNECTION
		MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MOTOR STARTER MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT MOTOR STARTER AND CONTROLLER SUBSCRIPTS: A- MOTOR STARTER NEMA SIZE B-STARTER TYPE FVNR- FULL VOLTAGE NON-REVERSING FVR- FULL VOLTAGE REVERSING 2S- TWO SPEED RVAT- REDUCED VOLTAGE AUTO TRANSFORMER CD- CONTROL DIAGRAM D- CONTROLLER TYPE VFD- VARIABLE FREQUENCY DRIVE SS- SOLID STATE SOFT STARTER
	30 3	NON-FUSED DISCONNECT OR SAFETY SWITCH, SIZE AND NUMBER OF POLES AS NOTED
	X 3 Y	FUSED DISCONNECT OR SAFETY SWITCH. X INDICATES SIZE, Y INDICATES FUSE SIZE, AND NUMBER OF POLES AS NOTED
	CB	SEPARATELY MOUNTED CIRCUIT BREAKER
	M 60 HP	MOTOR WITH DESIGN HORSEPOWER
	G	GENERATOR
		TRANSFORMER Δ 3-PHASE, 3 WIRE DELTA CONNECTION Y 3-PHASE, 4 WIRE WYE CONNECTION
		VOLTAGE TRANSFORMER (VT OR PT)
		CURRENT TRANSFORMER
		GROUND
	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	S	SELECTOR SWITCH
	PB	PUSH BUTTON
	IC	INSTRUMENTATION/CONTROL DEVICE
		CONTROL PANEL
	J	JUNCTION BOX
	T	THERMOSTAT
		PANELBOARD (250V-600V)
		PANELBOARD (LESS THAN 250V)

ELECTRICAL SYMBOLS

		LIGHT SWITCH
	X	LIGHT SWITCH, X WAY
		FLOOR BOX WITH DUPLEX RECEPTACLE
		FLOOR BOX FOR DATA/COMMUNICATION
		WALL BOX FOR DATA/COMMUNICATION
		DUPLEX RECEPTACLE OUTLET
	GFCI	DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT INTERRUPTER
	WP	WEATHERPROOF RECEPTACLE OUTLET WITH CFPI PROTECTION
		QUAD RECEPTACLE OUTLET
	X:##	CIRCUITING NOTATION: X DENOTES PANEL AND ## DENOTES CIRCUIT NUMBER
		DENOTES CIRCUITING FOR STANDARD ELECTRICAL DEVICES
	A	OVERHEAD ELECTRIC
	E	UNDERGROUND ELECTRIC

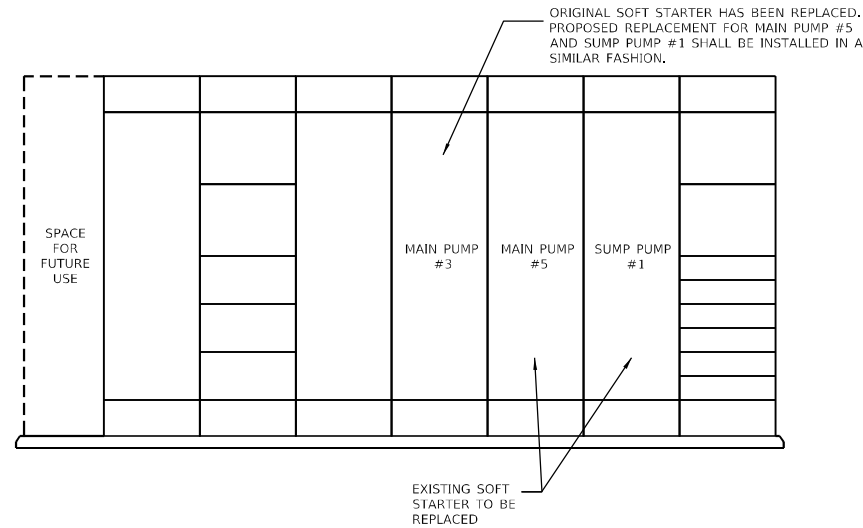
CONTROL SYMBOLS

		ELECTRICAL CONNECTION
		NO ELECTRICAL CONNECTION
		NORMALLY OPEN CONTACT
		NORMALLY CLOSED CONTACT
		NORMALLY OPEN TIME DELAY RELAY CONTACT. CLOSSES UPON TIME DELAY AFTER ACTIVATING COIL
		NORMALLY CLOSED TIME DELAY RELAY CONTACT. OPENS UPON TIME DELAY AFTER ACTIVATING COIL
		NORMALLY OPEN TIME DELAY RELAY CONTACT. OPENS UPON TIME DELAY AFTER DE-ACTIVATING COIL
		NORMALLY CLOSED TIME DELAY RELAY CONTACT. CLOSSES UPON TIME DELAY AFTER DE-ACTIVATING COIL
		NORMALLY OPEN TEMPERATURE SWITCH: CLOSSES ON RISING TEMPERATURE
		NORMALLY CLOSED TEMPERATURE SWITCH: OPENS ON RISING TEMPERATURE
		NORMALLY OPEN FLOW SWITCH: CLOSSES ON INCREASING FLOW
		NORMALLY CLOSED FLOW SWITCH: OPENS ON INCREASING FLOW
		NORMALLY OPEN LEVEL SWITCH: CLOSSES ON INCREASING LEVEL
		NORMALLY CLOSED LEVEL SWITCH: OPENS ON INCREASING LEVEL
		NORMALLY OPEN PRESSURE SWITCH: CLOSSES ON INCREASING PRESSURE
		NORMALLY CLOSED PRESSURE SWITCH: OPENS ON INCREASING PRESSURE
		NORMALLY OPEN LIMIT SWITCH: CLOSSES UPON REACHING LIMIT
		NORMALLY CLOSED LIMIT SWITCH: OPENS ON REACHING LIMIT
	PLC	MICROPROCESSOR INPUT
	PLC	MICROPROCESSOR OUTPUT
		FIELD WIRING EXTERNAL TO CONTROL PANEL
		3-POSITION SELECTOR SWITCH, MAINTAINED CONTACTS
		NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT
		NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT
	X	INDICATING LIGHT, X INDICATES COLOR
	X	PUSH TO TEST INDICATING LIGHT, X INDICATES COLOR <u>LENS COLOR:</u> R- RED Y-YELLOW G- GREEN W-WHITE B-BLUE A- AMBER
		SOLENOID VALVE
		THERMAL OVERLOAD ELEMENT
	OL	THERMAL OVERLOAD ELEMENT RELAY CONTACT
	ETM	ELAPSED TIME METER
	MSC	MOTOR STARTS COUNTER

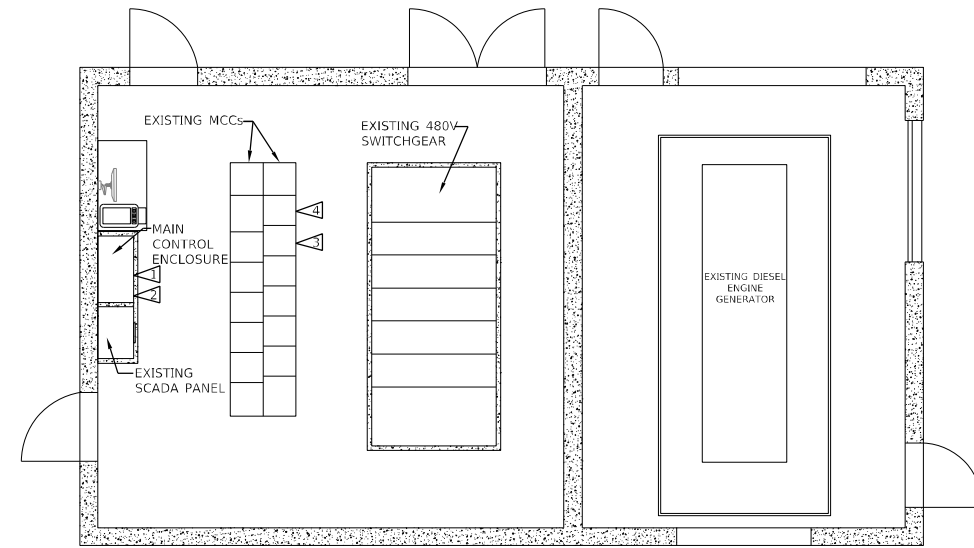
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PLOT DATE = 1/6/2021	DATE 11/17/2020	REVISED -

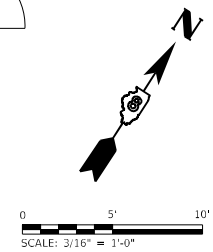
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9153	82-IPS-1	ST. CLAIR	8	4
CONTRACT NO. 76L89				
ILLINOIS FED. AID PROJECT				



MCC 1 ELEVATION
NTS



ELECTRICAL ROOM PLAN VIEW
3/16" = 1'-0"



ELECTRICAL KEYED NOTES

(APPLICABLE TO THIS SHEET ONLY)

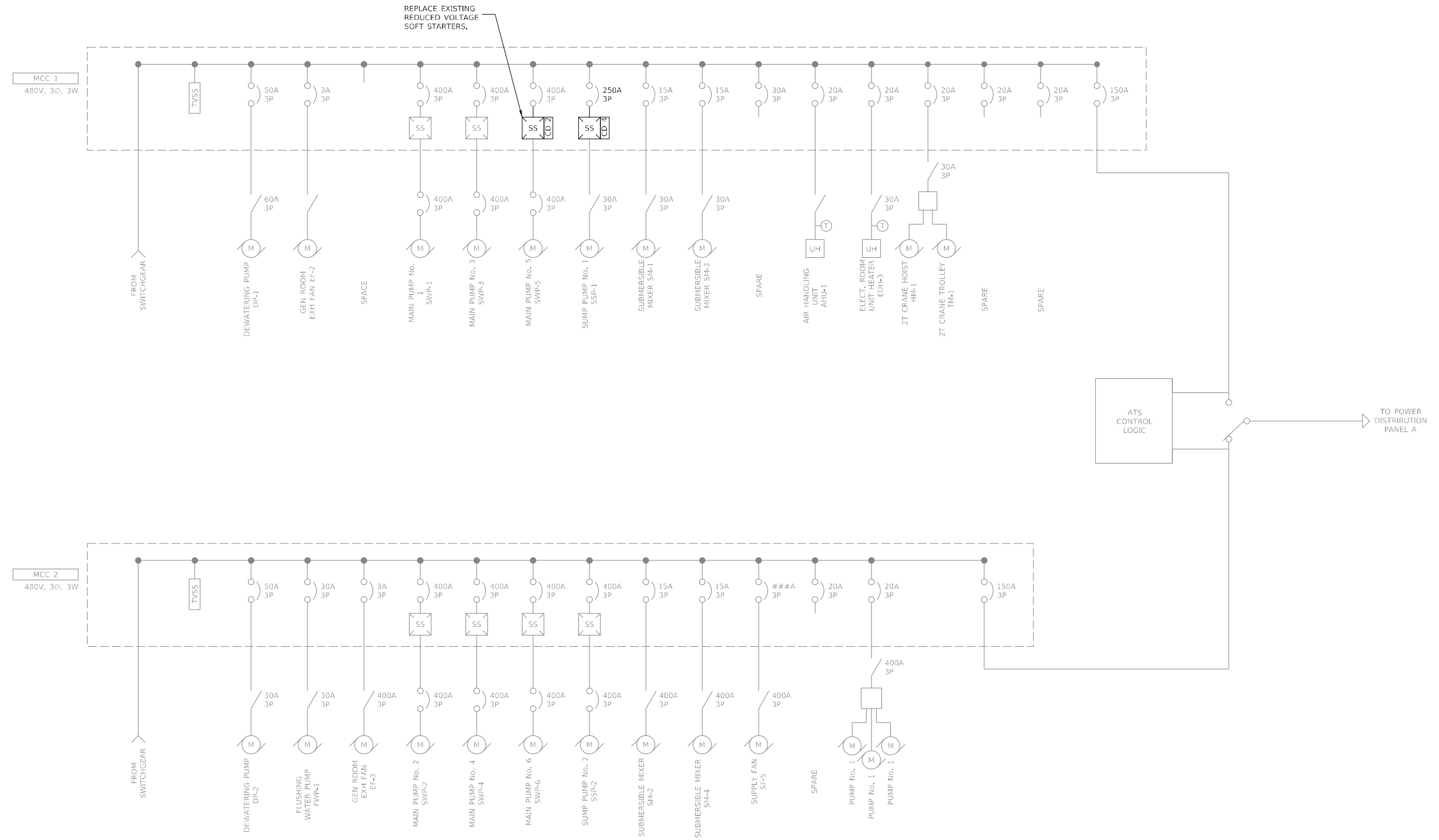
- ▶ REPLACE EXISTING GENERATOR COMMUNICATION CONVERTER MODULE WITH "PROTONODE" (A054V134) MODBUS COMMUNICATION MODULE FROM ORIGINAL ENGINE GENERATOR MANUFACTURER. TRANSFER ALL PROGRAMMING FUNCTIONALITY FROM CURRENT COMMUNICATION MODULE TO NEW COMMUNICATION MODULE.
- ▶ REPLACE EXISTING ALLEN BRADLEY 1757-L61 PROCESSORS WITH NEW ALLEN BRADLEY 1757-L71 PROCESSORS AND TRANSFER ALL PROGRAMMING AND CONFIGURATION FIRMWARE TO NEW PROCESSORS.
- ▶ REPLACE SOFT STARTER FOR MAIN PUMP No. 5.
- ▶ REPLACE SOFT STARTER FOR SUMP PUMP No. 1.

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CONTRACT NO. 76L89				
ILLINOIS FED. AID PROJECT				

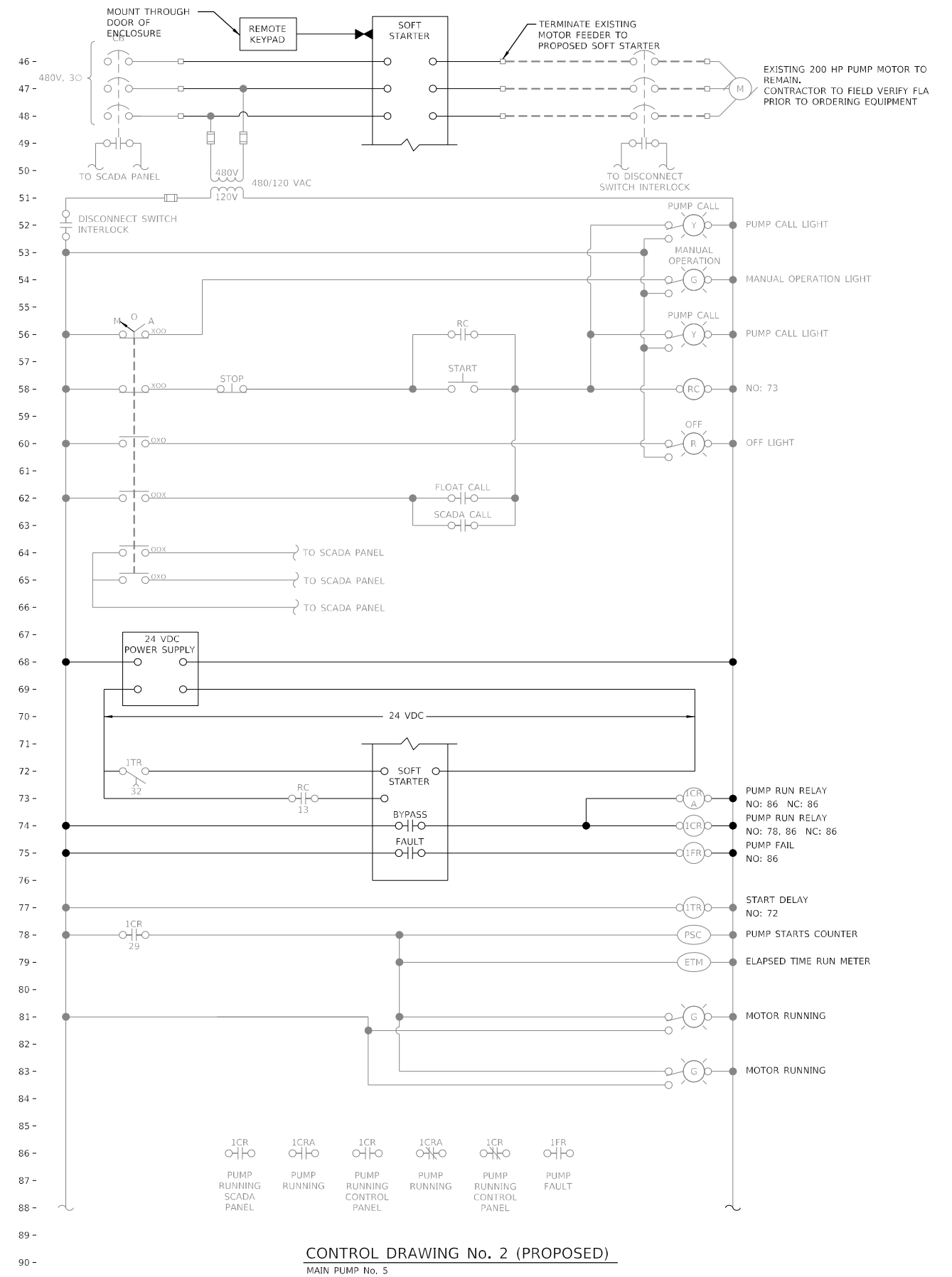
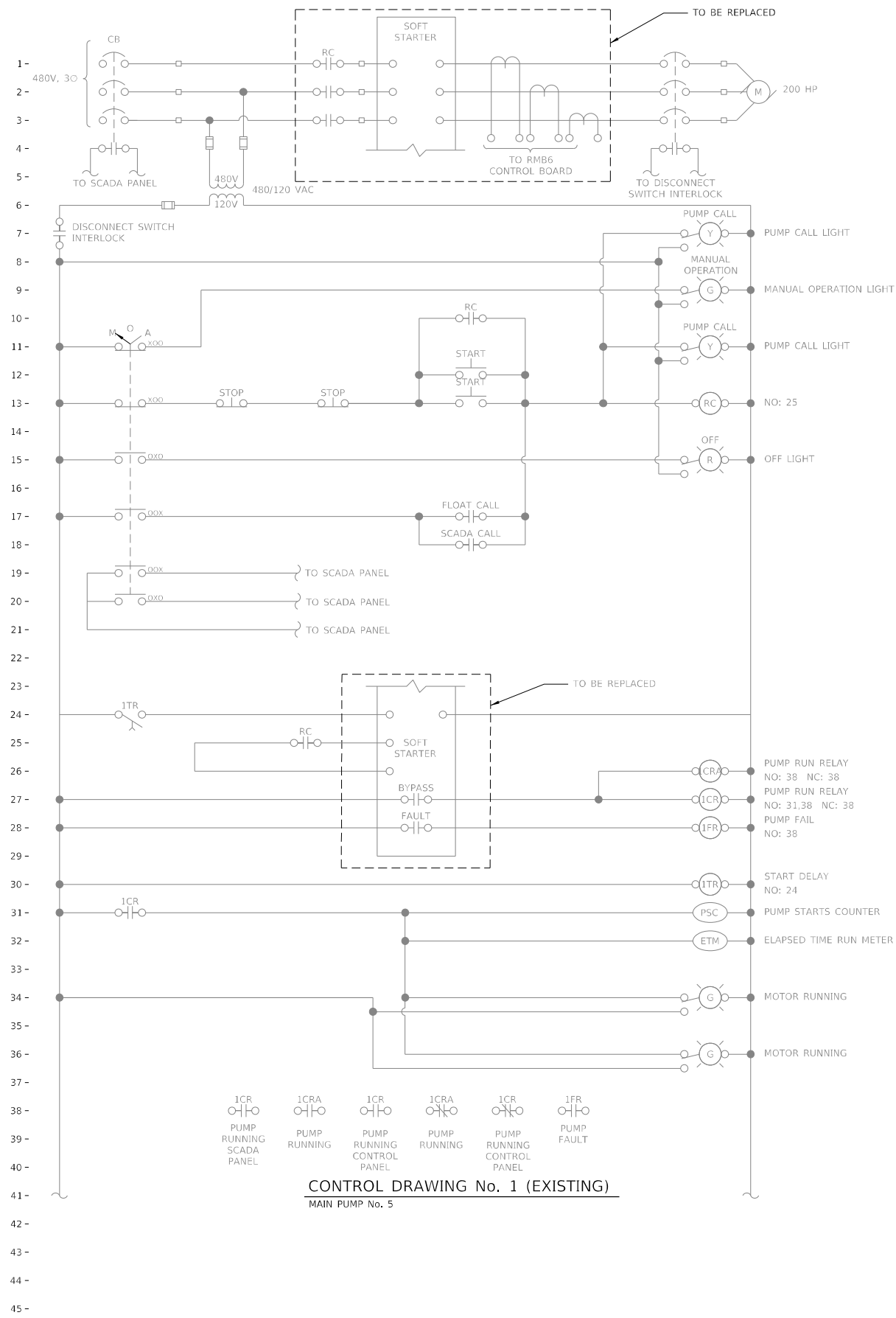
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MCC ONE-LINE DIAGRAM
NTS

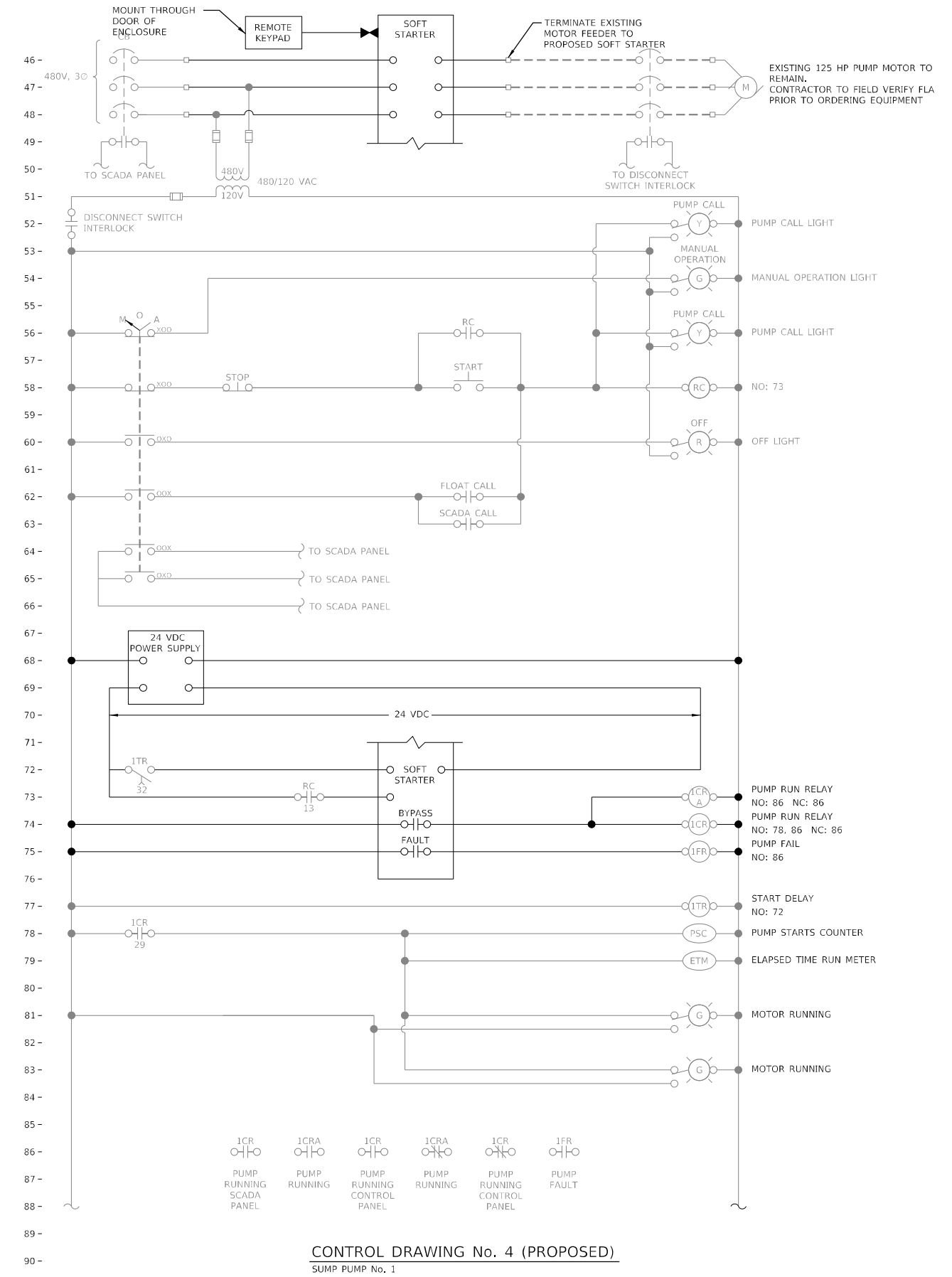
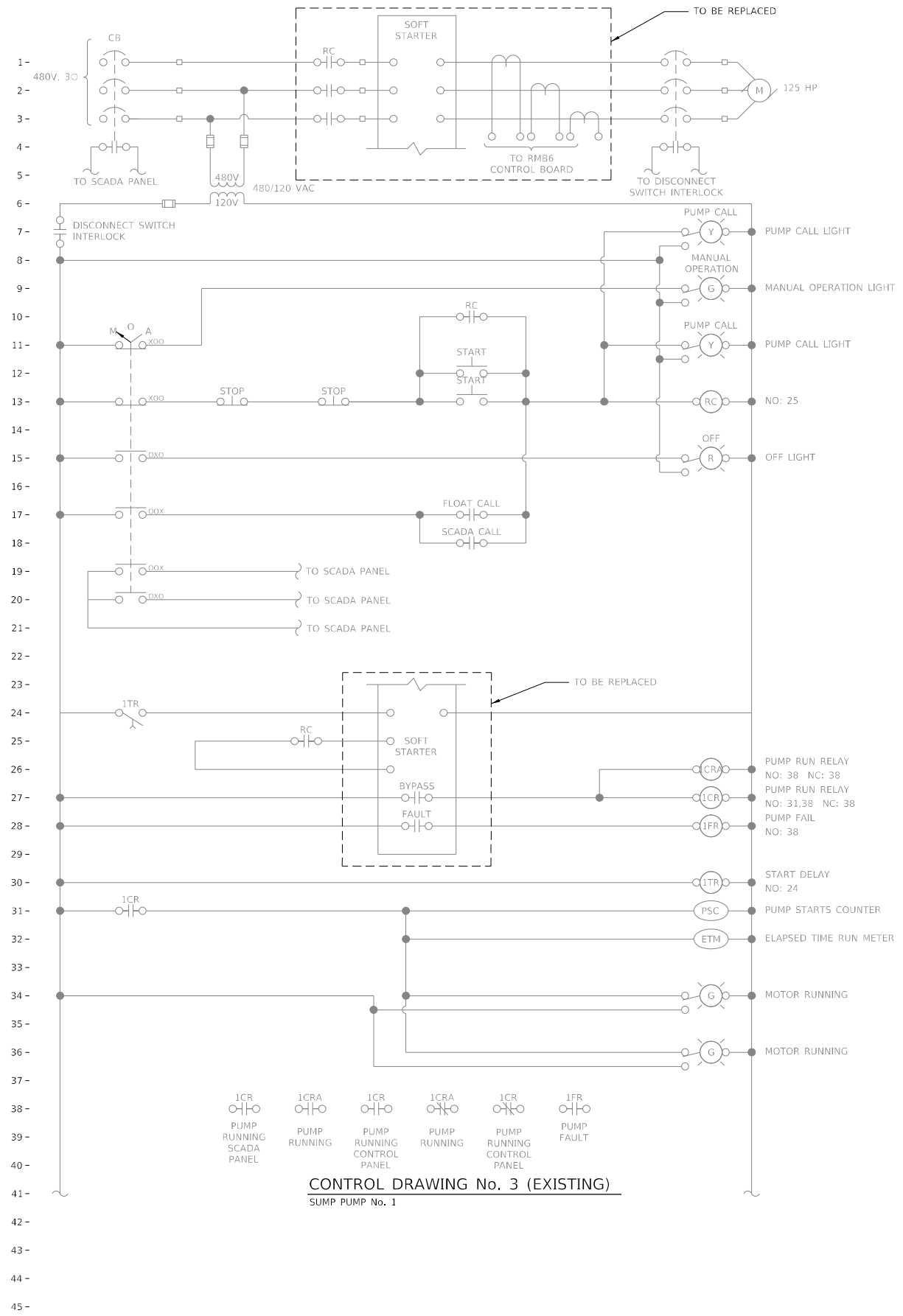
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F.A.U. RTE. 9153	SECTION 82-IPS-1	COUNTY ST. CLAIR	TOTAL SHEETS 8	SHEET NO. 6
CONTRACT NO. 76L89			ILLINOIS FED. AID PROJECT	



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DATE 11/17/2020	REVISED -	

F.A.U. RTE. 9153	SECTION 82-1PS-1	COUNTY ST. CLAIR	TOTAL SHEETS 8	SHEET NO. 8
CONTRACT NO. 76L89				
ILLINOIS FED. AID PROJECT				