048

INDEX OF SHEETS

1

HIGHWAY STANDARDS

000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED
HIGHWAY PLANS

VARIOUS ROUTES
SECTION D7 PUMP STATION 2019
NEW AUTOMATIC TRANSFER SWITCHES
AND MISC. IMPROVEMENTS
LAWRENCE, EFFINGHAM, AND MACON COUNTIES

C-30-010-19

* 9 + 4 = 13 TOTAL SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	*	9	1
	ILLINOIS	CONTRACT NO. 46529		

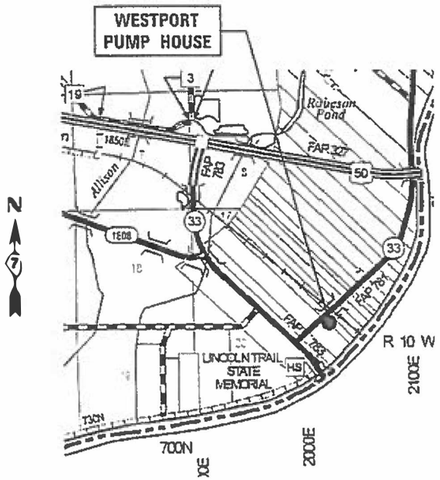
* LAWRENCE/EFFINGHAM/MACON

1

D-7

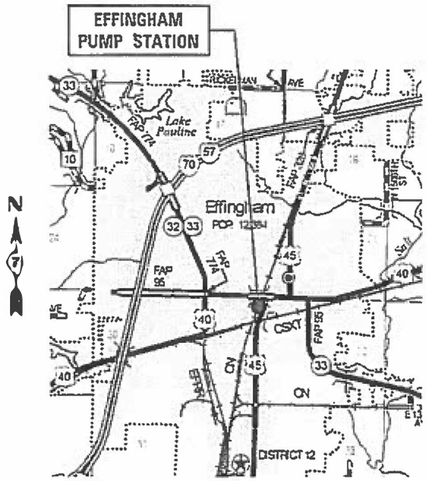
LOCATION OF SECTION INDICATED THUS:-

WESTPORT PUMP HOUSE



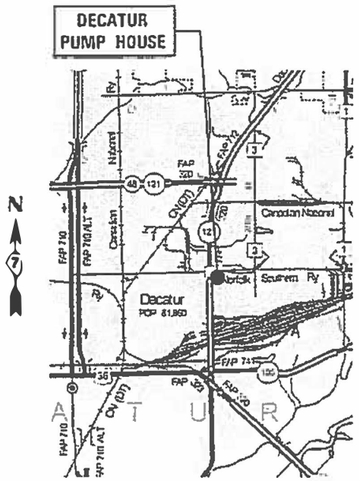
LAWRENCE COUNTY

EFFINGHAM PUMP STATION



EFFINGHAM COUNTY

DECATUR PUMP HOUSE

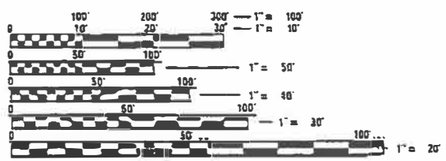


MACON COUNTY

GROSS LENGTH = N/A

NET LENGTH = N/A

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



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.

PROJECT MANAGER: KIMBERLY BLAIR 217-342-8265

CONTRACT NO. 46529

1 REV. 6-3-2019

JOHN J. NEYENS
062.063295
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS

3/22/19
DATE

JOHN J. NEYENS
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 062-063295
LICENSE EXPIRES NOVEMBER 30, 2019

PLANS PREPARED BY:

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

Quincy, Illinois
618 North 24th Street
217.223.3570

www.klingner.com
Gaithersburg, MD Bolingbrook, IL
Peoria, IL Hannibal, MO Columbia, MO

STATE OF ILLINOIS DESIGN FIRM NO. 184-2728

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED April 04 20 19

Jeffrey M. Smith /ca
REGIONAL ENGINEER

May 10 20 19

ENGINEER OF DESIGN AND ENVIRONMENT

May 10 20 19

DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV. - MS

D:\Files\70281463\Web Edge 82 - Pump II Pump Station Blanket Agreement\Standard Security Transfer Switch Projects\Documents\District 7\D7463529-plt-cover.dgn

GENERAL NOTES

1. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES HAVE BEEN TAKEN FROM EXISTING PLANS 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. THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION FOR THE PROJECT IN A MANNER AND SEQUENCE THAT ARE BASED ON ACCEPTED INDUSTRY STANDARDS THAT RECOGNIZE THE INTERACTION OF THE COMPONENTS THAT COMPRISE THE STRUCTURE, WITHOUT CAUSING DISTRESS, UNANTICIPATED MOVEMENTS OR IRREGULAR LOAD PATHS AS A RESULT OF THE CONSTRUCTION MEANS AND METHODS EMPLOYED.

4. CONSTRUCTION LOADS SHALL NOT EXCEED DESIGN LIVE LOAD. THE CONTRACTOR IS RESPONSIBLE FOR ALL DESIGN REQUIRED TO SUPPORT CONSTRUCTION EQUIPMENT USED IN CONSTRUCTING THIS PROJECT. SHORING AND RESHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.

5. UTILITIES - LOCATIONS / INFORMATION ON PLANS

ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE TO BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

1

* AMEREN ILLINOIS

*

*

*

MEMBERS OF J.U.L.I.E. CALL TOLL FREE (800) 892-0123 OR 811 AND ARE INDICATED BY *. NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY

6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENFORCE ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

7. ALL CONTRACTORS ARE REQUIRED TO EXAMINE THE DRAWINGS AND SPECIAL PROVISIONS CAREFULLY, VISIT THE SITE AND FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS, PRIOR TO AGREEING TO PERFORM THE WORK. FAILURE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND LIMITATIONS WILL IN NO WAY RELIEVE THE CONTRACTOR FROM FURNISHING ANY MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO THE OWNER.

8. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE EXISTING PUMP STATION BUILDING.

9. DRAWINGS ARE NOT TO SCALE.

10. THE DEPARTMENT RESERVES THE RIGHT TO NOTIFY THE CONTRACTOR TO CHANGE THE CONSTRUCTION SCHEDULE IF NEEDED TO ENSURE PROPER DEWATERING NEEDS FOR THE DEPARTMENT.

11. ~~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.~~

1

PAINTING

1. COLOR OF THE FINISH COAT SHALL BE GRAY, MUNSELL 5B 7/1.

2. CLEANING AND PAINTING OF THE STRUCTURAL STEEL ROOF BEAMS SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". STRUCTURAL STEEL TO BE CLEANED BY SSPC-SP10 - NEAR WHITE METAL BLAST CLEANING. ALL BEAMS IN THEIR ENTIRETY.

3. THE DESIGNATED AREAS TO BE CLEANED PER NEAR WHITE METAL BLAST CLEANING SSPC-SP10 SHALL BE PAINTED ACCORDINGLY TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U.

4. THE EXISTING STRUCTURAL STEEL COATING MAY CONTAIN LEAD. THE CONTRACTOR SHALL TEST THE EXISTING PAINT AND TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT.

1 REV. 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

D:\17files\170264\Work Order 02 - Phase II Pump Station Blanket Agreement\Homeland Security Transfer Switch Projects\Documents\District 7\D746529-sht-gennotes.dgn

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

USER NAME = ams	DESIGNED - AMS	REVISED -	
	DRAWN - ADL	REVISED -	
PLOT SCALE = 2:0 '-1' / in.	CHECKED - AMS	REVISED -	
PLOT DATE = 5/24/2019	DATE - 5/16/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	2
		CONTRACT NO. 46529		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	100% STATE	CONSTRUCTION TYPE CODE		
						LAWRENCE	EFFINGHAM	MACON
						0044	0044	0044
						RURAL	URBAN	URBAN
*	50606701	CLEANING AND PAINTING STRUCTURAL STEEL, LOCATION 1	L SUM	1		1		
*	50606702	CLEANING AND PAINTING STRUCTURAL STEEL, LOCATION 2	L SUM	1				1
	67100100	MOBILIZATION	L SUM	1		0.33	0.34	0.33
	X0783300	PUMP STATION ELECTRICAL WORK	L SUM	1		0.08	0.81	0.11
*	Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1		1		
*	Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1				1

1

* SPECIALTY ITEM

1 REV. 6-3-2019

REV. - MS

• LAWRENCE/EFFINGHAM/MACON

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

USER NAME = bgj

PLOT SCALE = 100 '-0" / in.

PLOT DATE = 3/25/2019

DESIGNED - JNN	REVISED -	
DRAWN - AMS	REVISED -	
CHECKED - JNN	REVISED -	
DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	3
		CONTRACT NO. 46529		
	ILLINOIS FED. AID PROJECT			

Q:\77files\178264\Work Order 02 - Phase II Pump Station Blanket Agreement\Homeland Security Transfer Switch Projects\Documents\District 7\D746529-sht-500.dgn

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
- A / CD / B & A / CD / B — MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MOTOR STARTER
- D / CD & D / CD — 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

- 3 / 30 — NON-FUSED DISCONNECT OR SAFETY SWITCH. SIZE AND NUMBER OF POLES AS NOTED
- 3 / X / 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 CFCI PROTECTION
- QUAD RECEPTACLE OUTLET
- X:## — CIRCUITING NOTATION: X DENOTES PANEL AND ## DENOTES CIRCUIT NUMBER
- DENOTES CIRCUITING FOR STANDARD ELECTRICAL DEVICES
- E — UNDERGROUND ELECTRIC
- A — OVERHEAD ELECTRIC

CONTROL SYMBOLS

- ELECTRICAL CONNECTION
- NO ELECTRICAL CONNECTION
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- NORMALLY OPEN TIME DELAY RELAY CONTACT. CLOSES 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. CLOSES UPON TIME DELAY AFTER DE-ACTIVATING COIL
- NORMALLY OPEN TEMPERATURE SWITCH: CLOSES ON RISING TEMPERATURE
- NORMALLY CLOSED TEMPERATURE SWITCH: OPENS ON RISING TEMPERATURE
- NORMALLY OPEN FLOW SWITCH: CLOSES ON INCREASING FLOW
- NORMALLY CLOSED FLOW SWITCH: OPENS ON INCREASING FLOW
- NORMALLY OPEN LEVEL SWITCH: CLOSES ON INCREASING LEVEL
- NORMALLY CLOSED LEVEL SWITCH: OPENS ON INCREASING LEVEL
- NORMALLY OPEN PRESSURE SWITCH: CLOSES ON INCREASING PRESSURE
- NORMALLY CLOSED PRESSURE SWITCH: OPENS ON INCREASING PRESSURE
- NORMALLY OPEN LIMIT SWITCH: CLOSES UPON REACHING LIMIT
- NORMALLY CLOSED LIMIT SWITCH: OPENS ON REACHING LIMIT
- PLC — MICROPROCESSOR INPUT
- PLC — MICROPROCESSOR OUTPUT
- FIELD WIRING EXTERNAL TO CONTROL PANEL
- H / O / A / XOO / OOX — 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

LENS COLOR:

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

1 SHEET ADDED 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

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

$FILE$

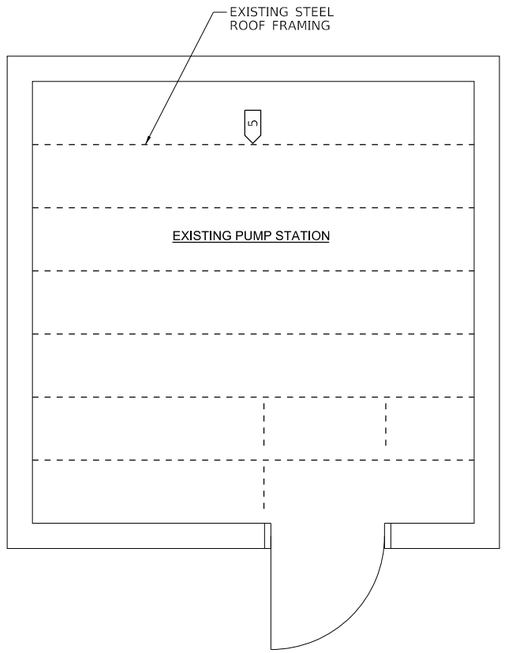
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELECTRICAL LEGEND

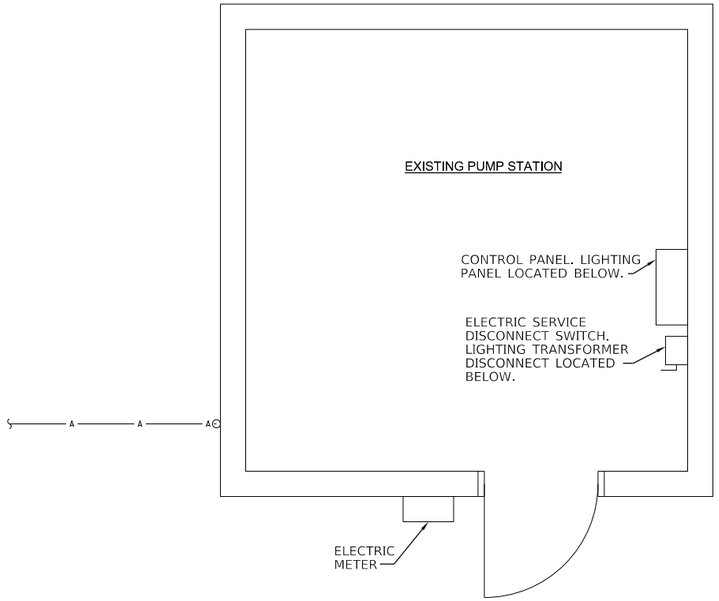
SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	3A
		CONTRACT NO. 46529		
	ILLINOIS FED. AID PROJECT			

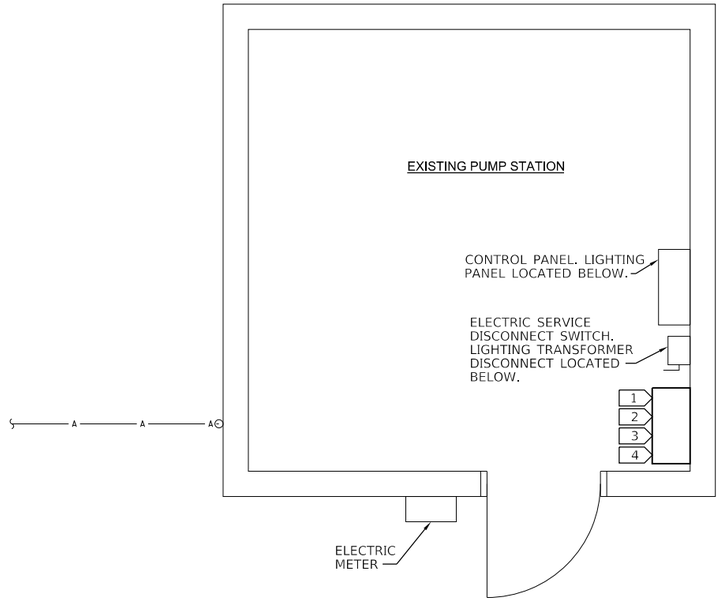


EXISTING STRUCTURAL STEEL ROOF FRAMING PLAN
SCALE: 1/2"=1'-0"

* CONTRACTOR SHALL FIELD VERIFY STEEL FRAMING



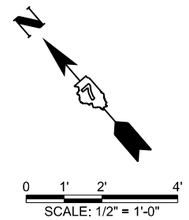
EXISTING ELECTRICAL PLAN
SCALE: 1/2"=1'-0"



PROPOSED ELECTRICAL PLAN
SCALE: 1/2"=1'-0"

KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

1. INSTALL NEW CONUIT/CONDUCTORS FROM SERVICE DISCONNECT TO NEW TRANSFER SWITCH.
2. NEW AUTOMATIC TRANSFER SWITCH.
3. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
4. INSTALL NEW CONUIT/CONDUCTORS FROM TRANSFER SWITCH TO CONTROL PANEL AND LIGHTING TRANSFORMER DISCONNECT.
5. CLEAN AND PAINT EXISTING STRUCTURAL STEEL ROOF BEAMS. COST INCLUDED IN CLEANING AND PAINTING STRUCTURAL STEEL, LOCATION 1. THE CONTRACTOR SHALL FIELD VERIFY QUANTITY.



⚠1 REVISED SHEET 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

$FILE$

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

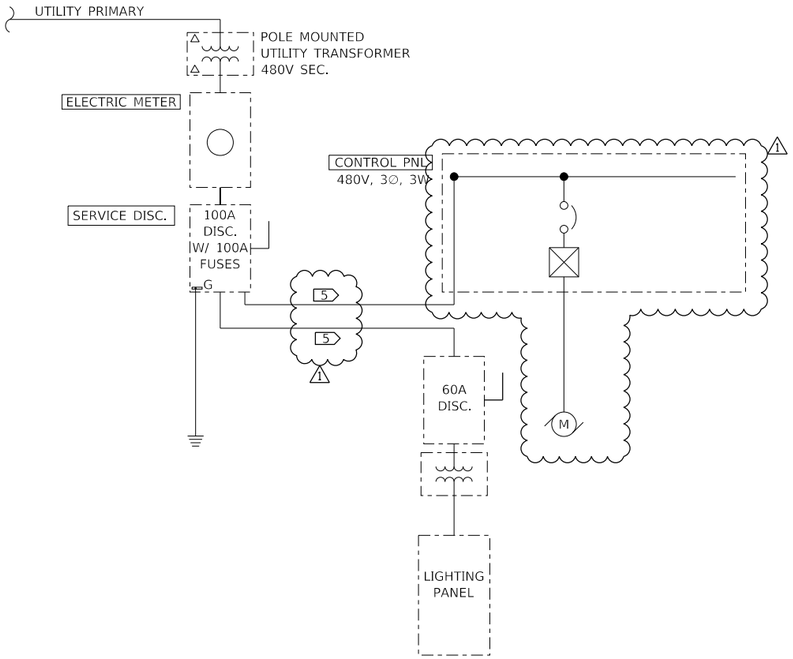
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

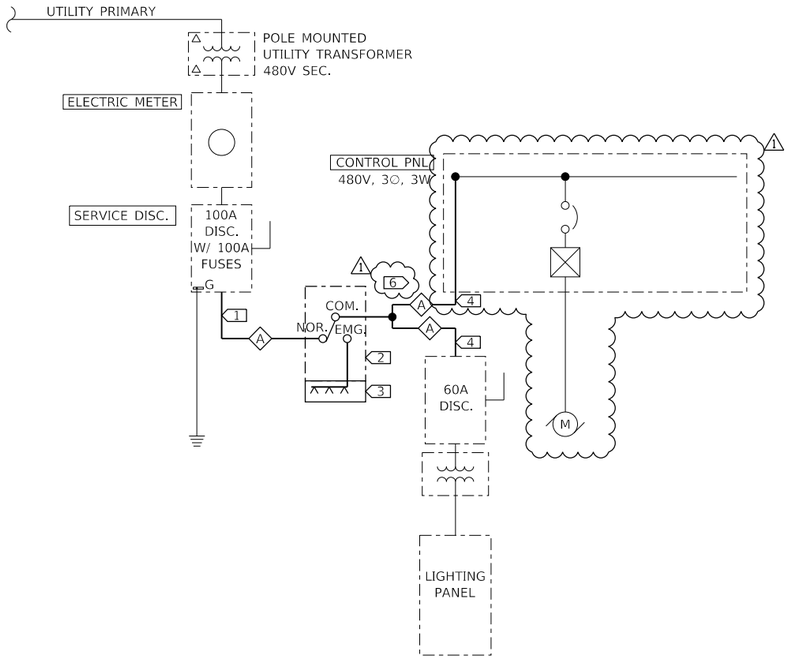
WESTPORT PUMP STATION
ELECTRICAL PLAN AND DETAILS

SCALE: AS NOTED | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	4
			CONTRACT NO. 46529	
		ILLINOIS	FED. AID PROJECT	



EXISTING ONE–LINE DIAGRAM
NTS



PROPOSED ONE–LINE DIAGRAM
NTS

KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

1. INSTALL NEW CONUIT/CONDUCTORS FROM SERVICE DISCONNECT TO NEW TRANSFER SWITCH.
2. NEW AUTOMATIC TRANSFER SWITCH.
3. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
4. INSTALL NEW CONUIT/CONDUCTORS FROM TRANSFER SWITCH TO CONTROL PANEL AND LIGHTING TRANSFORMER DISCONNECT.
5. REMOVE EXISTING FEEDERS / CONDUIT.
6. USE PARALLEL TAP CONNECTOR FOR CONNECTION. LOCATE TAP CONNECTION IN NEW JUNCTION BOX SIZED PER THE NATIONAL ELECTRIC CODE IF SUITABLE SPACE DOES NOT EXIST IN CURRENT ENCLOSURES.

FEEDER SCHEDULE						
TAG	NUMBER OF SETS	PHASE CONDUCTORS		NEUTRAL	EGC/ GEC	CONDUIT
		QUANTITY	SIZE			
A	1	3	#1 AWG	-	#8 AWG	1.5"

1 REV. 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

$FILE1$

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

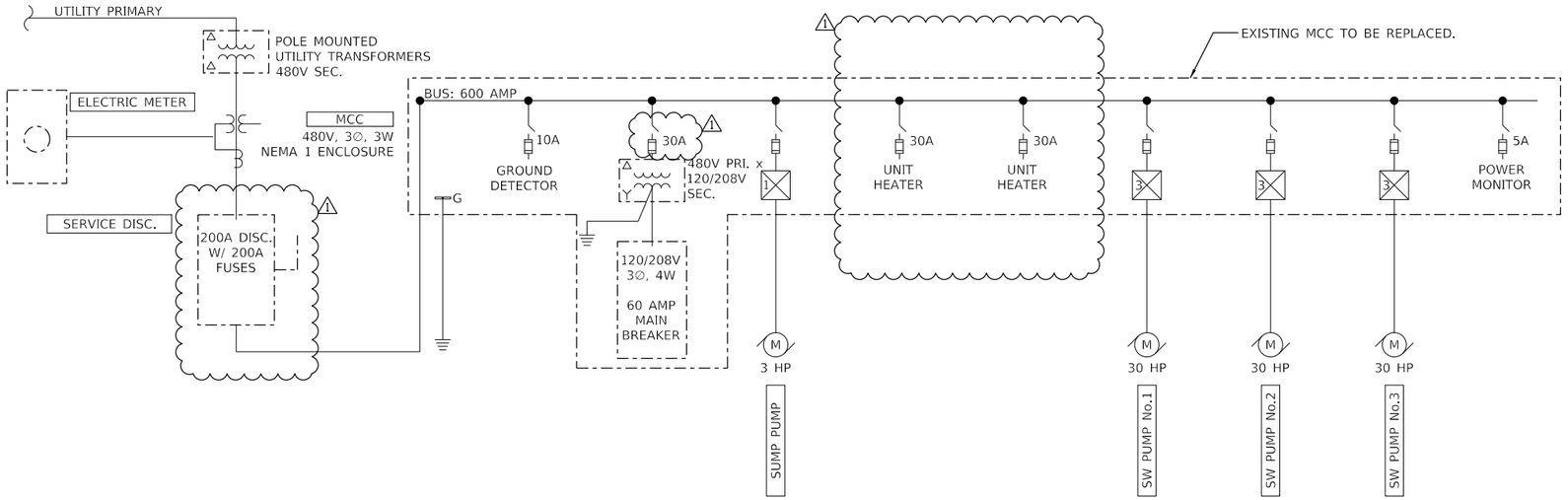
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTPORT PUMP STATION
ELECTRICAL ONE–LINE DIAGRAM

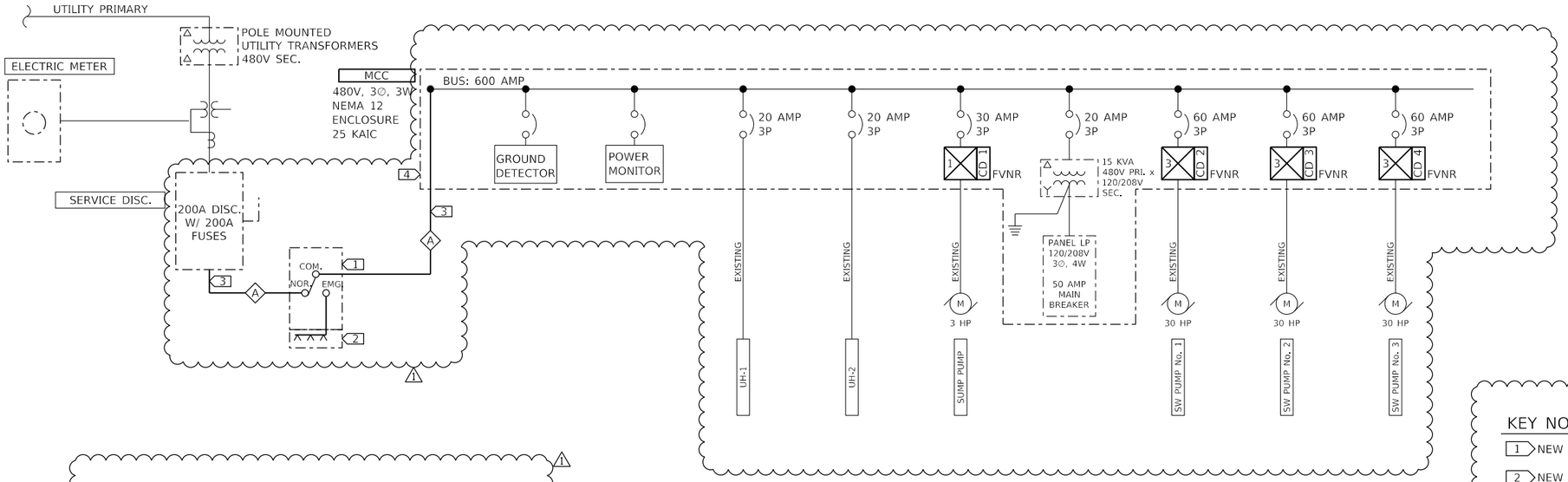
SCALE: NONE | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	5
		CONTRACT NO. 46529		
	ILLINOIS FED. AID PROJECT			



EXISTING ONE–LINE DIAGRAM

NTS



FEEDER SCHEDULE						
TAG	NUMBER OF SETS	PHASE CONDUCTORS QUANTITY	PHASE CONDUCTORS SIZE	NEUTRAL	EGC/ GEC	CONDUIT
A	1	3	3/0 AWG	-	-	2"

PROPOSED ONE–LINE DIAGRAM

NTS

KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

1. NEW MANUAL TRANSFER SWITCH.
2. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
3. COORDINATE CONDUIT/CONDUCTOR ROUTING WITH EXISTING EQUIPMENT.
4. NEW MCC.

1 REV. 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

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

$FILE$

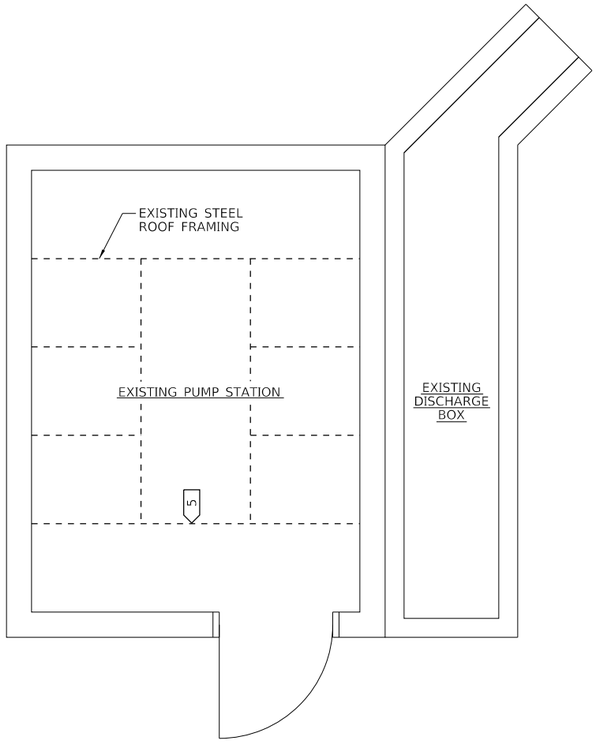
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EFFINGHAM PUMP STATION
ELECTRICAL ONE–LINE DIAGRAM

SCALE: NONE | SHEET 2 OF 5 SHEETS | STA. | TO STA.

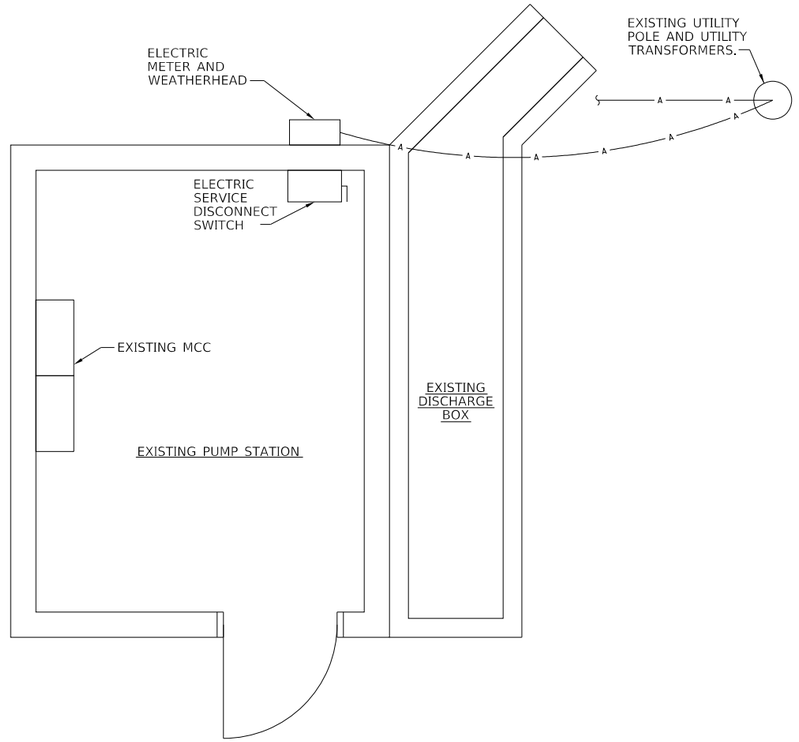
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	7
		CONTRACT NO. 46529		
	ILLINOIS FED. AID PROJECT			



EXISTING STRUCTURAL STEEL ROOF FRAMING PLAN

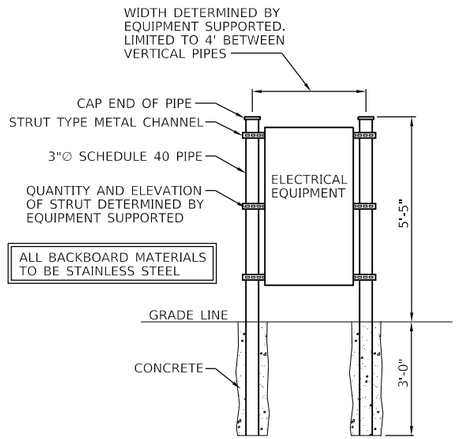
SCALE: 1/2"=1'-0"

* CONTRACTOR SHALL FIELD VERIFY STEEL FRAMING



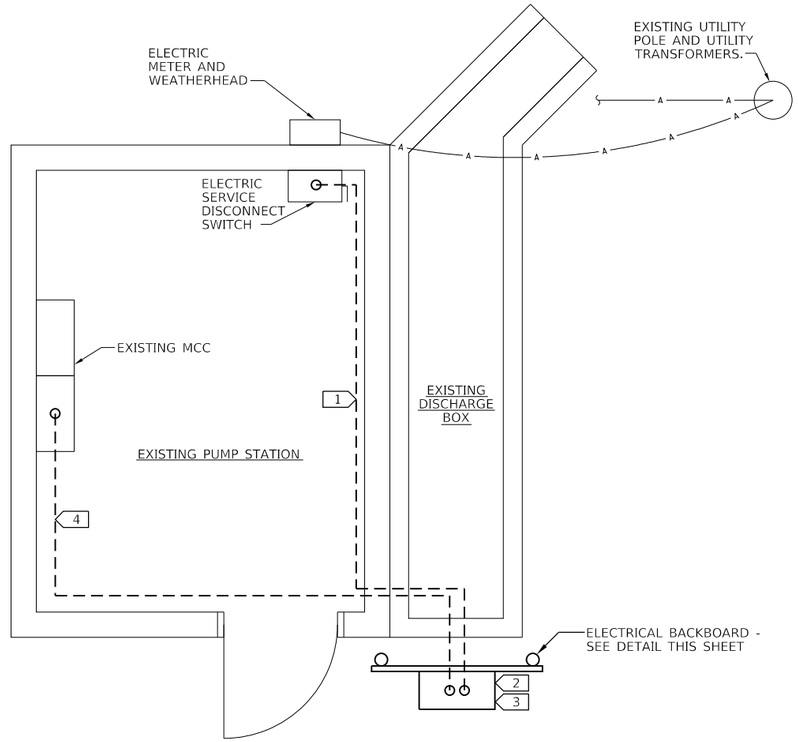
EXISTING ELECTRICAL PLAN

SCALE: 1/2"=1'-0"



ELECTRICAL BACKBOARD DETAIL

NTS

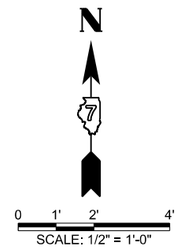


PROPOSED ELECTRICAL PLAN

SCALE: 1/2"=1'-0"

KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

1. INSTALL NEW CONUIT/CONDUCTORS FROM SERVICE DISCONNECT TO NEW TRANSFER SWITCH. COORDINATE CONDUIT ROUTING WITH EXISTING EQUIPMENT AND MAINTAIN EQUIPMENT MAINTENANCE AND REMOVAL PATHWAYS WITHIN PUMP STATION
2. NEW AUTOMATIC TRANSFER SWITCH.
3. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
4. INSTALL NEW CONUIT/CONDUCTORS FROM TRANSFER SWITCH TO MCC. COORDINATE CONDUIT ROUTING WITH EXISTING EQUIPMENT AND MAINTAIN EQUIPMENT MAINTENANCE AND REMOVAL PATHWAYS WITHIN PUMP STATION
5. CLEAN AND PAINT EXISTING STRUCTURAL STEEL ROOF BEAMS. COST INCLUDED IN CLEANING AND PAINTING STRUCTURAL STEEL, LOCATION 2. THE CONTRACTOR SHALL FIELD VERIFY QUANTITY.



1 REVISED SHEET 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

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

$FILE$

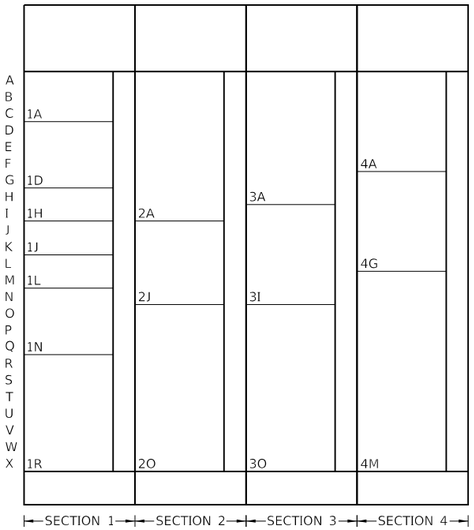
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECATUR PUMP STATION
ELECTRICAL PLAN AND DETAILS

SCALE: AS NOTED | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	8
			CONTRACT NO. 46529	
		ILLINOIS	FED. AID PROJECT	



PROPOSED MCC ELEVATION
NTS

MCC SCHEDULE

ID		STARTER, CLASS, OR DESCRIPTION	SIZE (INCHES)	CB TRIP/FUSE CLIPS (A)	HP RATING	AUX INTLKS		CONTROL DEVICES												OTHER			NAMEPLATE IDENTIFICATIONS
								PUSH BUTTONS			SELECTOR SWITCHES				INDICATING LIGHTS								
SECTION	CELL					NO	NC	START-STOP	FWD-REV-STOP	FAST-SLOW-STOP	HAND-OFF-AUTO	ON-OFF	FWD-OFF-REV	FAST-OFF-SLOW	GREEN	RED	AMBER	PUSH TO TEST	ELAPSED TIME METER	MOTOR STARTS COUNTER	CURRENT SWITCH	
1	A	MAIN LUGS	9																			MAIN LUGS
1	D	GROUND DETECTION LIGHTS	12																			GROUND DETECTION
1	H	POWER MONITOR RELAY	12																			POWER MONITOR RELAY
1	J	CIRCUIT BREAKER	6	20																		UH-1
1	F	CIRCUIT BREAKER	6	20																		UH-2
1	N	COMB, FVNR STARTER	12	30	3			X			X				X		X	X	X	X	X	SUMP PUMP
1	R	SPACE	21																			SPACE
2	A	PANELBOARD	27																			PANEL LP
2	J	SPACE	15																			SPACE
2	O	15 KVA DISTRIBUTION TRANSFORMER	30	20																		120/208V, 3 PHASE XFMR
3	A	RELAY SECTION	24																			CONTROLS
3	I	COMB, FVNR STARTER	18	100	30						X				X		X	X	X	X	X	SW PUMP No. 1
3	O	SPACE	30																			SPACE
4	A	COMB, FVNR STARTER	18	100	30						X				X		X	X	X	X	X	SW PUMP No. 2
4	G	COMB, FVNR STARTER	18	100	30						X				X		X	X	X	X	X	SW PUMP No. 3
4	M	SPACE	36																			SPACE

ELECTRICAL PANEL: LP

Area Served: PUMP STATION

Location: MCC

- | 100A 120/208 V 3 Ph 4 Wire | Fault Rating: 10,000 | 50A MAIN BREAKER -

No.	Description	Brkr. Amps	Load A	Load B	Load C	Load C	Load B	Load A	Brkr. Amps	Description	No.
1	EF-1	20							25	DEH-1	2
3	ELECTRODE RELAY	20									4
5	PUMP STATION INTERIOR LIGHTS	20							20	RECEPTACLES	6
7	PUMP STATION EXTERIOR LIGHTS	20							20	SPARE	8
9	STORMWATER PUMPS COMMON CONTROL	20							20	ENGINE BATTERY CHARGER	10
11	CONDENSATION HEATERS	20							20	EF-2	12
13	SPARE	20							20	SPARE	14
15	SPARE	20							20	SPARE	16
17	SPARE	20							20	SPARE	18
			0	0	0	0	0	0			

Totals	Phase A	Phase B	Phase C	Total Wattage(VA	Capacity
	0	0	0	0	#VALUE!

1 SHEET ADDED 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

$FILE1$

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

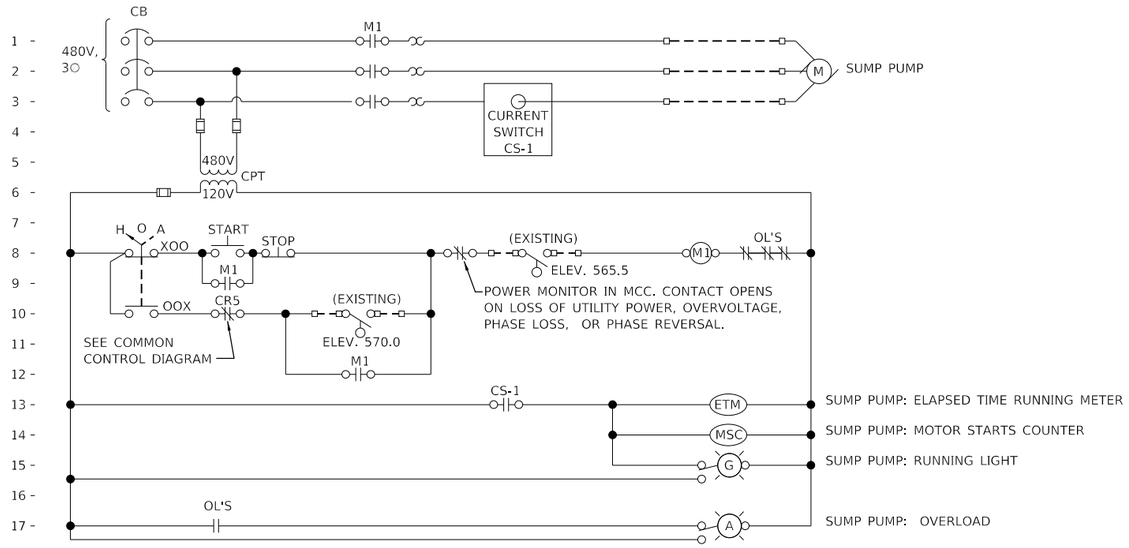
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

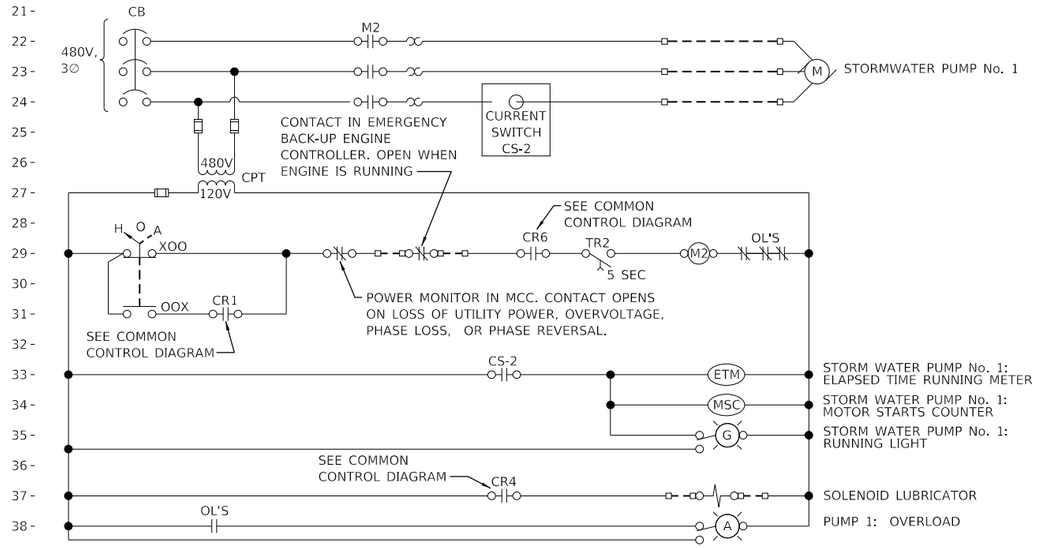
EFFINGHAM PUMP STATION
ELECTRICAL ELEVATION AND SCHEDULES

SCALE: NONE | SHEET 3 OF 5 SHEETS | STA. | TO STA.

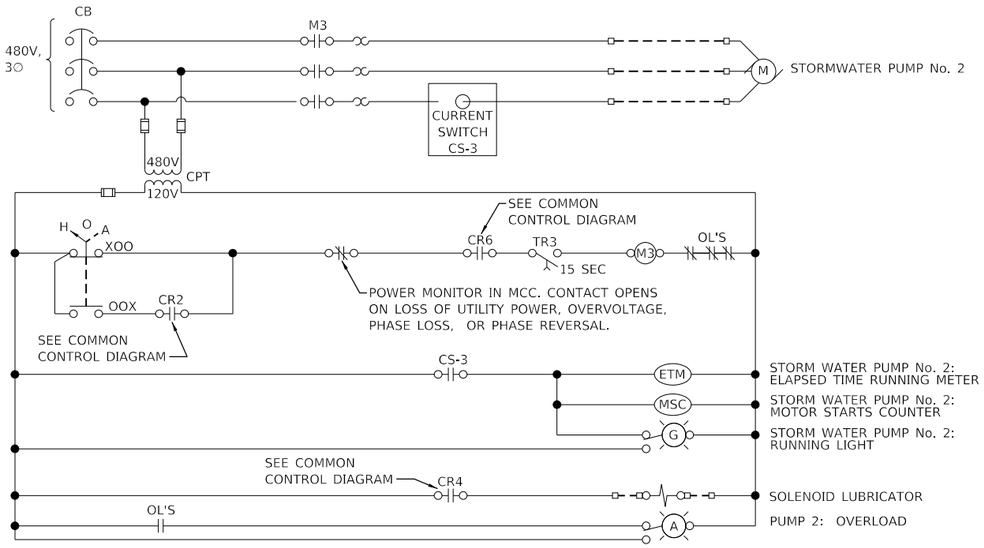
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	8A
			CONTRACT NO. 46529	
	ILLINOIS	FED. AID PROJECT		



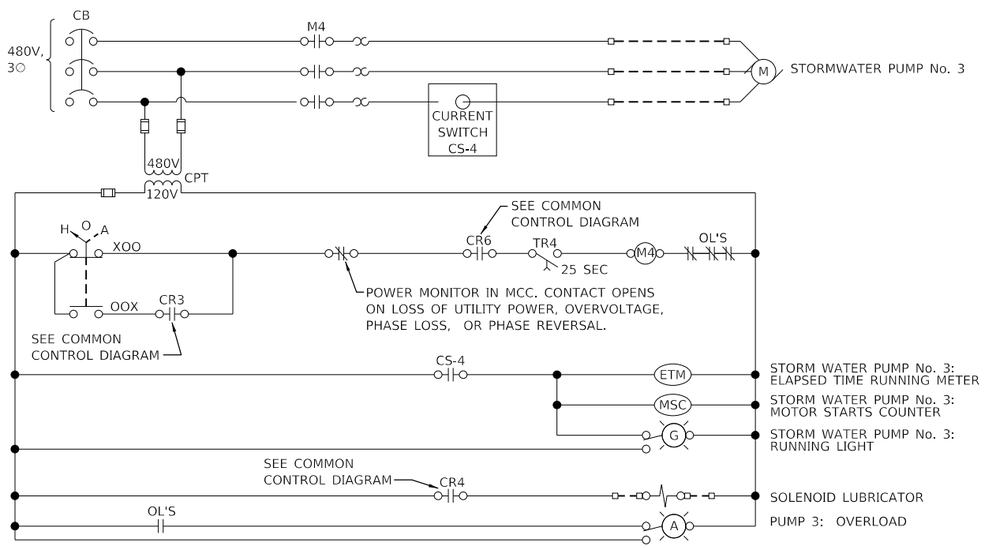
CONTROL DRAWING No. 1
TYPICAL FOR PUMPS: SUMP PUMP



CONTROL DRAWING No. 2
TYPICAL FOR PUMPS: STORM WATER PUMP No. 1



CONTROL DRAWING No. 3
TYPICAL FOR PUMPS: STORM WATER PUMP No. 2



CONTROL DRAWING No. 4
TYPICAL FOR PUMPS: STORM WATER PUMP No. 3

1 SHEET ADDED 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

$FILE$

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

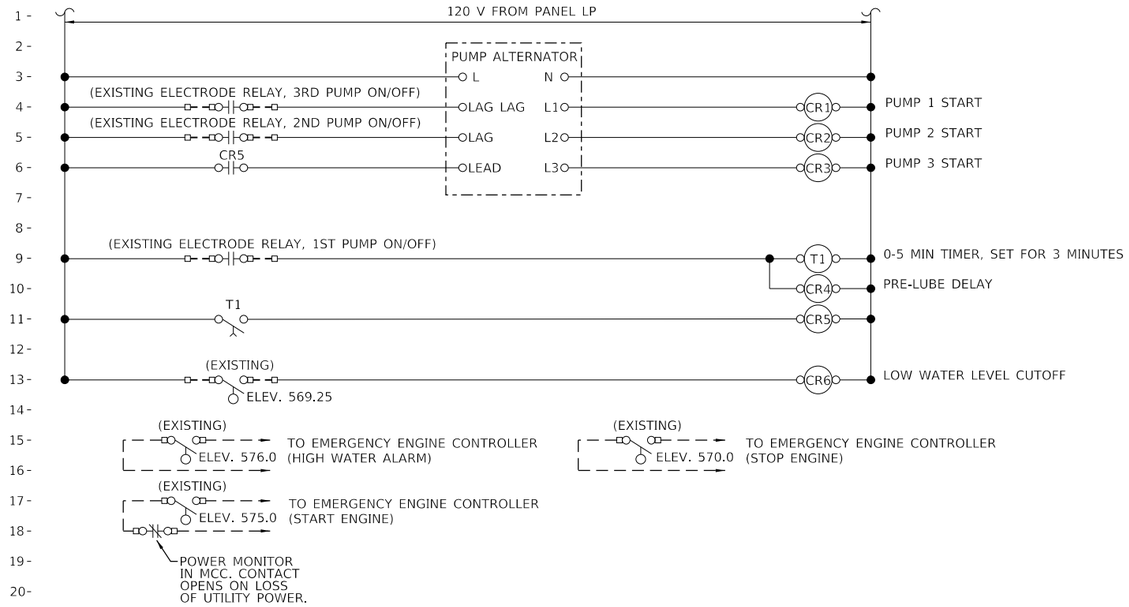
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EFFINGHAM PUMP STATION
ELECTRICAL CONTROL DIAGRAM

SCALE: NONE | SHEET 4 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	8B
			CONTRACT NO. 46529	
		ILLINOIS	FED. AID PROJECT	



COMMON PUMP CONTROLS

THE CONTROL LOOP DESCRIPTIONS ARE NOT INTENDED TO BE AN INCLUSIVE LISTING OF ALL ELEMENTS AND APPURTENANCES REQUIRED TO EXECUTE LOOP FUNCTIONS, BUT ARE RATHER INTENDED TO SUPPLEMENT AND COMPLEMENT THE DRAWINGS AND OTHER SPECIFICATION SECTIONS.

STORMWATER PUMPS

1.Major Equipment:

a.Pumps:

1)Existing Storm Water Pumps Nos. 1, 2, and 3

2)Sump Pump

b.Water level measurement system

1)Existing system is to be re-used

2.Control Logic:

a.Storm Water Pumps Nos. 1, 2, and 3

1)When HAND is selected at the MCC , the pump shall run if the water level is above the low water level cut off elevation.

2)When OFF is selected at the MCC, the pump shall be off.

3)When AUTO is selected at the MCC, the pumps shall be controlled as follows:

Rising Wetwell Water Level:
- -Start Lead Pump when water level reaches lead pump water level
- -Start Lag Pump when water level reaches lag pump water level
- -Start Lag-Lag Pump when water level reaches lag-lag pump water level

Falling Wetwell Water Level:
- -Stop Lag-Lag Pump when water level drops below lag-lag off water level
- -Stop Lag Pump when water level drops below lag off water level
- -Stop Lead Pump when water level drops below lead off water level

4)Lead, Lag and Lag-Lag Pumps shall be automatically alternated to equalize runtime following each pumping cycle.

5)All pumps shall be pre-lubricated when the water level reaches the Lead pump start water level for 3 minutes (adjustable) prior to pump activation.

6)Pump start delay timers shall prevent more than one pump starting concurrently after a power outage.

7)Pump Running Pilot Light, Pump Starts Counter, and Pump Operating Hours shall be activated by CT switch on motor power circuit.

8)Pump No. 1 electric motor shall be prevented from operating when the back-up engine is operating.

b.Sump Pump

1)When HAND is selected at the MCC, the pump shall operate according to the START/STOP pushbuttons on the MCC when the water level is above the sump pump off level.

2)When OFF is selected at the MCC, the pump shall be off.

3)When AUTO is selected at the MCC, the pump shall be controlled as follows:

Rising Wetwell Water Level:
- -Start Sump Pump when water level reaches sump pump start water level
- -Sump Pump shall be shut off when LEAD Storm Water Pump is operating

Falling Wetwell Water Level:
- -Start Sump Pump when water level falls below LEAD Storm Water Pump operating level.
- -Stop Sump Pump when water level drops below sump pump off water level

4)Pump Running Pilot Light, Pump Starts Counter, and Pump Operating Hours shall be activated by CT switch on motor power circuit.

STORMWATER PUMPS CONTROL LOOP

⚠1 SHEET ADDED 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

$FILE$

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

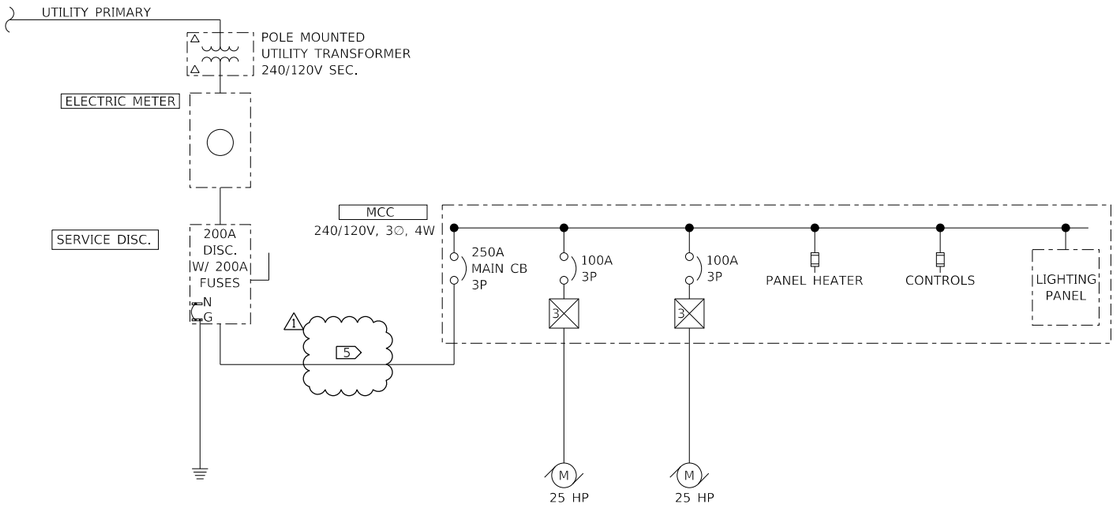
USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EFFINGHAM PUMP STATION
ELECTRICAL CONTROL DIAGRAM

SCALE: NONE | SHEET 5 OF 5 SHEETS | STA. | TO STA.

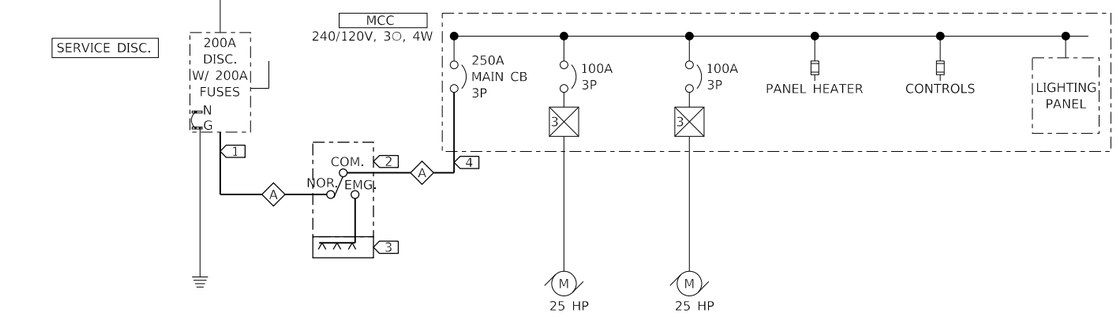
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	8C
			CONTRACT NO. 46529	
	ILLINOIS	FED. AID PROJECT		



EXISTING ONE–LINE DIAGRAM
NTS

KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

1. INSTALL NEW CONUIT/CONDUCTORS FROM SERVICE DISCONNECT TO NEW TRANSFER SWITCH.
2. NEW AUTOMATIC TRANSFER SWITCH.
3. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
4. INSTALL NEW CONUIT/CONDUCTORS FROM TRANSFER SWITCH TO MCC.
5. REMOVE EXISTING FEEDERS / CONDUIT.



PROPOSED ONE–LINE DIAGRAM
NTS

FEEDER SCHEDULE						
TAG	NUMBER OF SETS	PHASE CONDUCTORS QUANTITY	PHASE CONDUCTORS SIZE	NEUTRAL	EGC/ GEC	CONDUIT
A	1	3	3/0 AWG	3/0 AWG	#6 AWG	2"

1 REV. 6-3-2019

• LAWRENCE/EFFINGHAM/MACON

$FILE$

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

USER NAME = $USER$	DESIGNED - JJN	REVISED -
	DRAWN - BGJ	REVISED -
PLOT SCALE = $SCALE$	CHECKED - JJN	REVISED -
PLOT DATE = $DATE$	DATE - 05/16/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECATUR PUMP STATION
ELECTRICAL ONE–LINE DIAGRAM

SCALE: NONE | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D7 PUMP STATIONS 2019	•	9	9
		CONTRACT NO. 46529		
	ILLINOIS FED. AID PROJECT			