



**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:

\* 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, UNLESS NOTED OTHERWISE.
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, MWOMEN 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.
12. DURING DEMOLITION AND CONSTRUCTION, THE CONTRACTOR SHALL USE TRAFFIC CONTROL AND PROTECTION STANDARD 701201, AS DIRECTED BY THE ENGINEER.

**STRUCTURAL NOTES**

- DESIGN LOADS:
- A. OCCUPANCY CATEGORY II
  - B. ROOF LOADS
    - I. DEAD LOAD = 100 PSF (SELF WEIGHT)
    - II. \* LIVE LOAD = 60 PSF
  - C. ROOF SNOW LOAD
    - I. \* GROUND SNOW LOAD, PG = 20 PSF
- \* DESIGN IS BASED ON MOST CRITICAL EFFECT OF ROOF LIVE LOAD OR ROOF SNOW LOAD.
- D. WIND LOADING
    - I. BASIC WIND SPEED (3 SECOND GUST) = 115 MPH
    - II. EXPOSURE CATEGORY B
    - III. IMPORTANCE FACTOR, IW = 1.0
    - IV. DIRECTIONAL FACTOR, KD = 0.85
    - IV. TOPOGRAPHIC EFFECT, KZ = 1.0
    - V. INTERNAL PRESSURE COEFFICIENT, GCPI = ±0.55 (PARTIALLY ENCLOSED)
  - E. SEISMIC LOADING - EQUIVALENT LATERAL FORCE PROCEDURE
    - I. IMPORTANCE FACTOR, IE = 1.0
    - II. SITE CLASS D
    - III. SDS = 0.199 (SS = 18.7%)
    - IV. SD1 = 0.098 (S1 = 9.8%)
    - V. SEISMIC DESIGN CATEGORY B
    - VI. BASE SHEAR
      - A. RESISTING SYSTEM - ORDINARY REINFORCED MASONRY SHEAR WALLS
      - B. RESPONSE COEFFICIENT, R = 2
      - C. DEFLECTION AMPLIFICATION FACTOR, CD = 1.75
      - D. SYSTEM OVERSTRENGTH FACTOR, ΩO = 2.5
      - E. BASE SHEAR, V = 0.099W

**STRUCTURAL STEEL**

1. DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC SPECIFICATIONS AND STANDARD CODE OF PRACTICE.
2. STEEL FABRICATION AND ERECTION SHALL FOLLOW OSHA REQUIREMENTS.
3. STRUCTURAL STEEL:
  - a. STEEL ANGLES, RODS, AND PLATES - ASTM A36 (Fy=36 ksi)
  - b. WASHERS - ASTM F436
  - c. NUTS - ASTM A563
  - d. ANCHOR BOLTS - ASTM F1554 GRADE 36 (Fy=36 ksi)
4. ALL STEEL SHALL BE HOT DIPPED GALVANIZED.
5. REPAIR GALVANIZED SURFACES PER ASTM A780.
6. ALL STEEL SHALL BE FURNISHED IN ACCORDANCE WITH ARTICLE 505 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
7. EPOXY ANCHORS SHALL FOLLOW ARTICLE 584 OF THE STANDARD SPECIFICATIONS.

**MASONRY**

1. ALL MASONRY SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530/ASCE 5/TMS 402) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1/ASCE 6/TMS 602).
2. GROUT TO FILL CORES SHALL BE ASTM C476, COARSE GROUT (3/8" MAXIMUM AGGREGATE) WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
3. CONCRETE MASONRY UNITS SHALL BE UNITS CONFORMING TO ASTM C90, GRADE N, TYPE I, NORMAL WEIGHT (DENSITY OF UNIT=135 pcf), MIN. BLOCK COMPRESSIVE STRENGTH = 2400 psi, SPECIFIED DESIGN STRENGTH OF MASONRY, fm'=1500.
4. ASTM C270 TYPE "S" MORTAR WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI SHALL BE USED FOR ALL MASONRY.
5. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
6. ALL CORES WITH REINFORCEMENT SHALL BE FILLED SOLID WITH GROUT. PLACE REINFORCEMENT BARS BEFORE GROUTING. CONSOLIDATE GROUT BY MECHANICAL VIBRATION.
7. PROPERLY SECURE VERTICAL REINFORCEMENT BARS TO ENSURE BAR IS LOCATED IN THE CENTER OF THE CMU CELL.
8. ALL CMU SHALL BE TEMPORARILY BRACED DURING CONSTRUCTION. TEMPORARY BRACING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. COST SHALL BE INCLUDED IN "MASONRY WALL CONSTRUCTION". THE CONTRACTOR IS RESPONSIBLE FOR ALL COST ASSOCIATED WITH REPAIRS RESULTING FROM IMPROPER OR INSUFFICIENT BRACING.
9. THE COST OF THE EXISTING BRICK MASONRY DEMOLITION SHALL BE INCLUDED IN "MASONRY REMOVAL".

**PRECAST STRUCTURAL CONCRETE**

1. PRECAST STRUCTURAL CONCRETE CONSTRUCTION SHALL CONSIST OF THE DESIGN, MANUFACTURE, TRANSPORTATION, AND ERECTION OF THE STRUCTURAL PRECAST ROOF PANEL.
2. DESIGN OF PRECAST MEMBERS SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF 1042 OF THE STANDARD SPECIFICATIONS
3. PRECAST MEMBERS MAY BE CONVENTIONALLY REINFORCED AND/OR PRESTRESSED, CONSISTENT WITH THE DESIGN LOADS, SPANS, HANDLING STRESSES, ETC. DESIGN LOADS ARE SHOWN ON DRAWINGS.
4. PRECAST CONTRACTOR SHALL FURNISH COMPLETE DESIGN CALCUALTIONS SIGNED BY A LICENSED STRUCTURAL ENGINEER LICENSED IN ILLINOIS, INCLUDING DETAILS OF CONNECTIONS.
5. PRECAST CONTRACTOR SHALL FURNISH AND PLACE ANY TEMPORARY SHORING, BRACING, ETC. REQUIRED FOR ERECTION OF PRECAST WORK.
6. PRECAST CONTRACTOR SHALL FURNISH ALL THREADED INSERTS, LIFTING ANCHORS, LIFTING COVERS, ETC., REQUIRED TO CONNECT THE PRECAST TO THE STRUCTURAL STEEL ANGLES.
7. PRECAST MANUFACTURER SHALL CAST IN STRUCTURAL INSERTS AND LIFTING ANCHORS AS SHOWN ON THE STRUCTURAL DESIGN PLANS.

△ REVISED SHEET 6-3-2019

D:\17files\170264\Work\_Dr-dar\_02 - Phase II Pump Station Blanket Agreement\Homeland Security\_Satch Projects\Documents\District 8\0646528-ahz-gennotes.dgn

<p><b>KLINGNER</b> Engineers • Architects • Surveyors 616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223.3670 STATE OF ILLINOIS DESIGN FIRM NO. 1398738</p>	USER NAME = oms PLOT SCALE = 210' = 1" = 1/4" = 1/8" = 1/16" = 1/32" = 1/64" = 1/128" = 1/256" = 1/512" = 1/1024" = 1/2048" = 1/4096" = 1/8192" = 1/16384" = 1/32768" = 1/65536" = 1/131072" = 1/262144" = 1/524288" = 1/1048576" = 1/2097152" = 1/4194304" = 1/8388608" = 1/16777216" = 1/33554432" = 1/67108864" = 1/134217728" = 1/268435456" = 1/536870912" = 1/1073741824" = 1/2147483648" = 1/4294967296" = 1/8589934592" = 1/17179869184" = 1/34359738368" = 1/68719476736" = 1/137438953472" = 1/274877906944" = 1/549755813888" = 1/1099511627776" = 1/2199023255552" = 1/4398046511104" = 1/8796093022208" = 1/17592186044416" = 1/35184372088832" = 1/70368744177664" = 1/140737488355328" = 1/281474976710656" = 1/562949953421312" = 1/1125899906842624" = 1/2251799813685248" = 1/4503599627370496" = 1/9007199254740992" = 1/18014398509481984" = 1/36028797018963968" = 1/72057594037927936" = 1/144115188075855872" = 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ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	100% STATE		CONSTRUCTION TYPE CODE	
				LOGAN	0044		
67100100	MOBILIZATION	L SUM	1	1			
X0325528	REMOVE AND REINSTALL LIGHTING EQUIPMENT	L SUM	1	1			
X0783300	PUMP STATION ELECTRICAL WORK	L SUM	1	1			
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1			
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	186	186			
58700300	CONCRETE SEALER	SQ FT	330	330			
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1			
X0335700	PUMP STATION GENERAL WORK	L SUM	1	1			
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	0.8	0.8			
Z0034100	MASONRY WALL CONSTRUCTION	SQ FT	130	130			



△ REV. 6-3-2019

REV. - MS

D:\171511as\170264\Work\0-dur\_02 - Phase II Pump Station Blanket Agreement\Nominal\Secur1\1\Transfer\_Switch\_Projects\Documents\Drawings\00164628-111-001.dgn

**KLINGNER ASSOCIATES, P.C.**  
 Engineers • Architects • Surveyors  
 616 N. 24th St., Quincy, Illinois 62351-2123, 618-291-1313  
 STATE OF ILLINOIS DESIGN FIRM NO. 184-2754

USER NAME = rmb	DESIGNED - JNN	REVISED -
PLOT SCALE = 2:0 1" = 10'	DRAWN - AMS	REVISED -
PLOT DATE = 3/24/2019	CHECKED - JNN	REVISED -
	DATE -	REVISED -

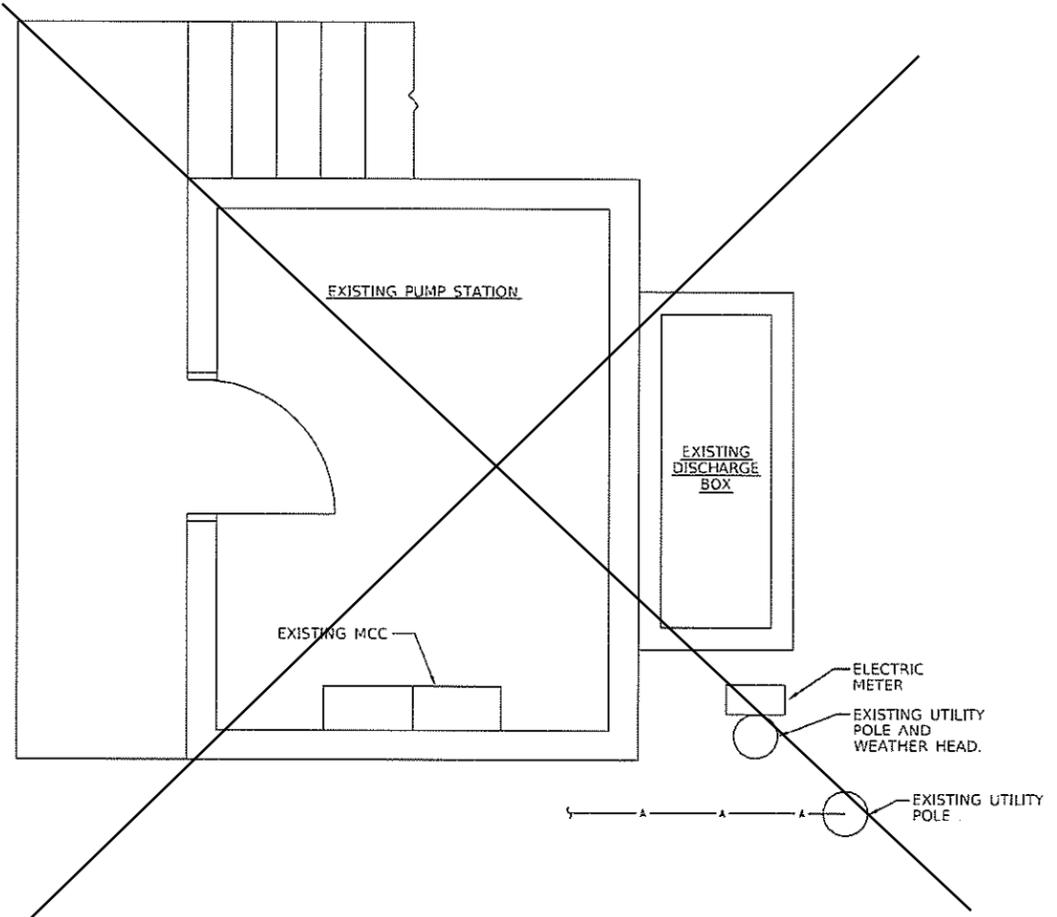
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES**

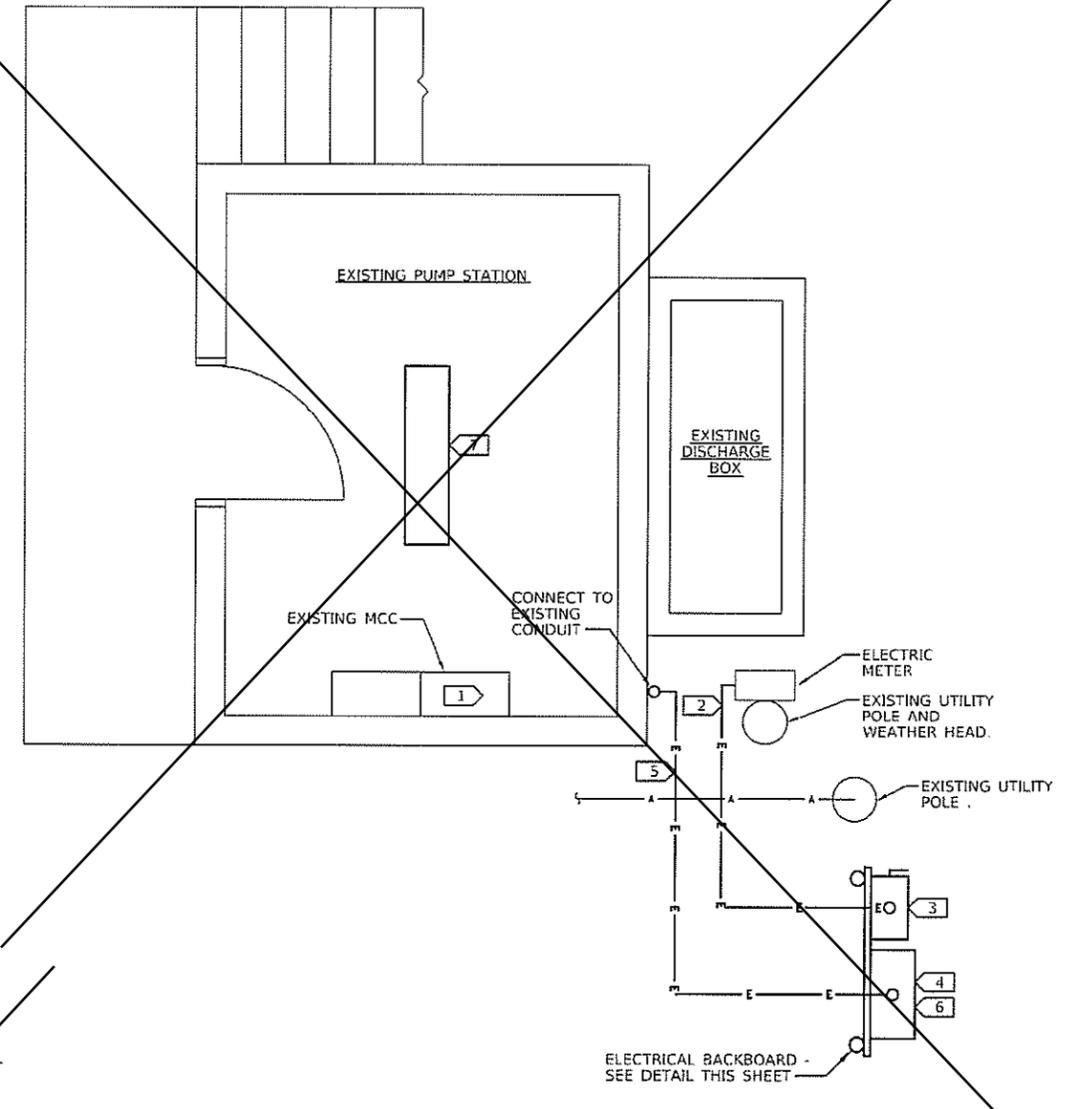
SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
329	D6 PUMP STATIONS 2019	LOGAN	5	3
CONTRACT NO. 46528			ILLINOIS FED. AID PROJECT	

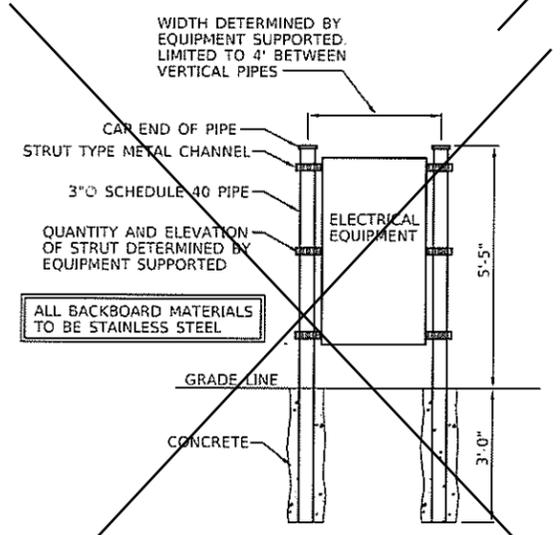
LIGHTING FIXTURE SCHEDULE										
TAG	TYPE	MANUFACTURER	MODEL NUMBER	VOLTS	LUMENS	WATTS	DISTRIBUTION	COLOR TEMP	COMMENTS	
A1	LED STRIP LIGHT	LITHONIA	CLX-L18-7000LM-SEF-RDL-WD-MVOLT-GZ10-40K-80CRI	120	7,000	49	WIDE	4,000 K		
		METALUX	4SLSTP5540DD-UNV	120	5,845	49				
		DAY BRITE	FSJ-4 70L-840-UNV-DIM	120	7,000	58				



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



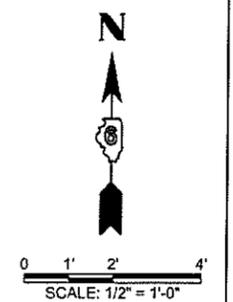
**PROPOSED ELECTRICAL PLAN**  
SCALE: 1/2"=1'-0"



**ELECTRICAL BACKBOARD DETAIL**  
NTS

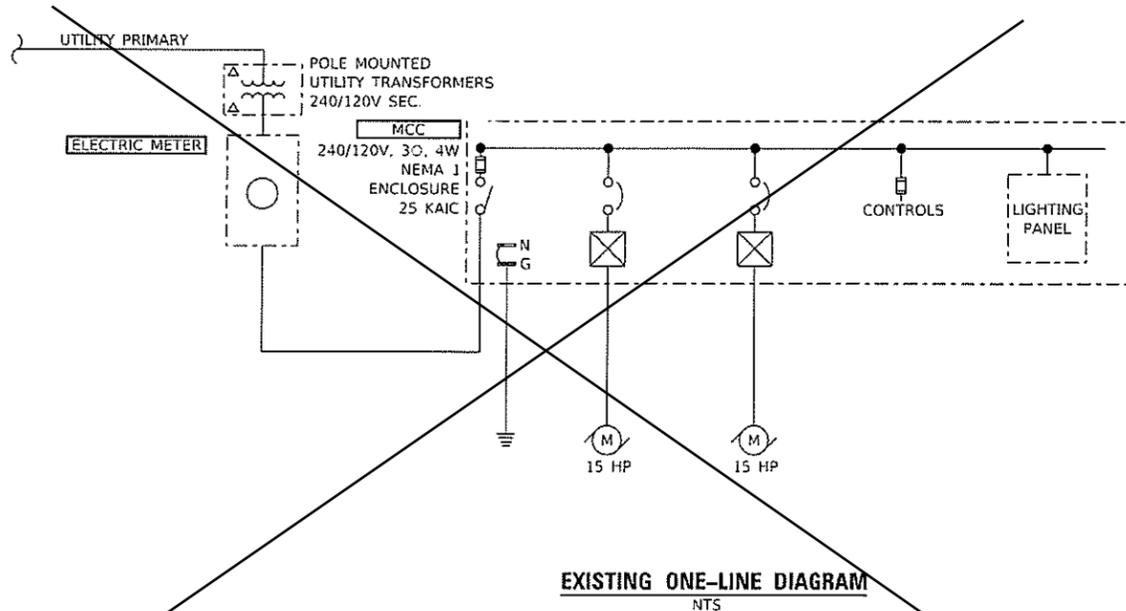
- KEY NOTES (APPLICABLE TO THIS SHEET ONLY)**
- 1 REMOVE NEUTRAL-TO-GROUND BOND IN EXISTING MCC.
  - 2 REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT AND INSTALL NEW SERVICE ENTRANCE CONDUCTORS AS SHOWN.
  - 3 NEW SERVICE DISCONNECT SWITCH.
  - 4 NEW AUTOMATIC TRANSFER SWITCH.
  - 5 REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT AND INSTALL NEW FEEDER AS SHOWN.
  - 6 NEW GENERATOR QUICK CONNECTION ENCLOSURE.
  - 7 REPLACE EXISTING LIGHT FIXTURE

⚠ SHEET DELETED 6-3-2019



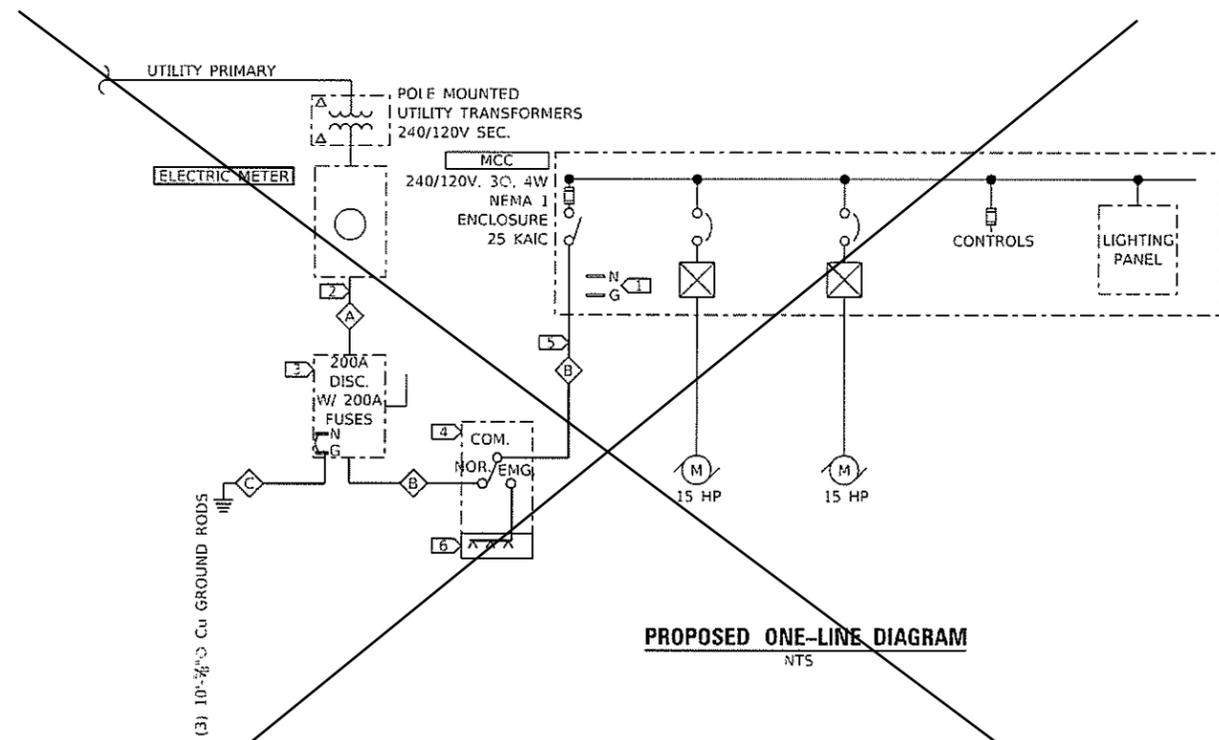
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<b>KLINGNER ASSOCIATES, P.C.</b> Engineers • Architects • Surveyors <small>90 N. 24TH ST. SUITE 400 - CLARK'S CROSSING          STATE OF ILLINOIS DESIGN FIRM NO. 154-2738</small>	USER NAME = bgy	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>MT. PULASKI PUMP STATION ELECTRICAL PLAN AND DETAILS</b>			F.A.P. RTE. 320	SECTION D6 PUMP STATIONS 2019	COUNTY LOGAN	TOTAL SHEETS 5	SHEET NO. 4	
	PLOT SCALE = 8 1/2" = 1"	DRAWN -	REVISED -		SCALE: AS NOTED	SHEET 1 OF 2 SHEETS	STA. TO STA.	CONTRACT NO. 46528					
	PLOT DATE = 3/25/2019	CHECKED -	REVISED -		ILLINOIS FED. AID PROJECT								
	DATE -	REVISED -											
		REVISED -											



EXISTING ONE-LINE DIAGRAM  
NTS

- KEY NOTES (APPLICABLE TO THIS SHEET ONLY)
- 1 REMOVE NEUTRAL-TO-GROUND BOND IN EXISTING MCC.
  - 2 REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT AND INSTALL NEW SERVICE ENTRANCE CONDUCTORS AS SHOWN.
  - 3 NEW SERVICE DISCONNECT SWITCH.
  - 4 NEW AUTOMATIC TRANSFER SWITCH.
  - 5 REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT AND INSTALL NEW FEEDER AS SHOWN.
  - 6 NEW GENERATOR QUICK CONNECTION ENCLOSURE.



PROPOSED ONE-LINE DIAGRAM  
NTS

FEEDER SCHEDULE						
TAG	NUMBER OF SETS	PHASE QUANTITY	CONDUCTORS SIZE	NEUTRAL	EGC/ GEC	CONDUIT
A	1	3	3/0 AWG	3/0 AWG	-	2"
B	1	3	3/0 AWG	3/0 AWG	#6 AWG	2"
C	1	-	-	-	#4 AWG	-

⚠ SHEET DELETED 6-3-2019

**ELECTRICAL SYMBOLS**

	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
<b>MOTOR STARTER AND CONTROLLER SUBSCRIPTS:</b>	
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	
	NON-FUSED DISCONNECT OR SAFETY SWITCH. SIZE AND NUMBER OF POLES AS NOTED
	FUSED DISCONNECT OR SAFETY SWITCH. X INDICATES SIZE, Y INDICATES FUSE SIZE, AND NUMBER OF POLES AS NOTED
	SEPARATELY MOUNTED CIRCUIT BREAKER
	MOTOR WITH DESIGN HORSEPOWER
	GENERATOR
	TRANSFORMER Δ 3-PHASE, 3 WIRE DELTA CONNECTION Y 3-PHASE, 4 WIRE WYE CONNECTION
	VOLTAGE TRANSFORMER (VT OR PT)
	CURRENT TRANSFORMER
	GROUND
	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	SELECTOR SWITCH
	PUSH BUTTON
	INSTRUMENTATION/CONTROL DEVICE
	CONTROL PANEL
	JUNCTION BOX
	THERMOSTAT
	PANELBOARD (250V-600V)
	PANELBOARD (LESS THAN 250V)

**ELECTRICAL SYMBOLS**

	LIGHT SWITCH
	LIGHT SWITCH, X WAY
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX FOR DATA/COMMUNICATION
	WALL BOX FOR DATA/COMMUNICATION
	DUPLEX RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT INTERRUPTER
	WEATHERPROOF RECEPTACLE OUTLET WITH CFCT PROTECTION
	QUAD RECEPTACLE OUTLET
	CIRCUITING NOTATION: X DENOTES PANEL AND ## DENOTES CIRCUIT NUMBER
	DENOTES CIRCUITING FOR STANDARD ELECTRICAL DEVICES
	UNDERGROUND ELECTRIC
	OVERHEAD 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
	MICROPROCESSOR INPUT
	MICROPROCESSOR OUTPUT
	FIELD WIRING EXTERNAL TO CONTROL PANEL
	3-POSITION SELECTOR SWITCH, MAINTAINED CONTACTS
	NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT
	NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT
	INDICATING LIGHT, X INDICATES COLOR
	PUSH TO TEST INDICATING LIGHT, X INDICATES COLOR
<b>LENS COLOR:</b>	
R- RED	Y-YELLOW
G- GREEN	W-WHITE
B-BLUE	A- AMBER
	SOLENOID VALVE
	THERMAL OVERLOAD ELEMENT
	THERMAL OVERLOAD ELEMENT RELAY CONTACT
	ELAPSED TIME METER
	MOTOR STARTS COUNTER

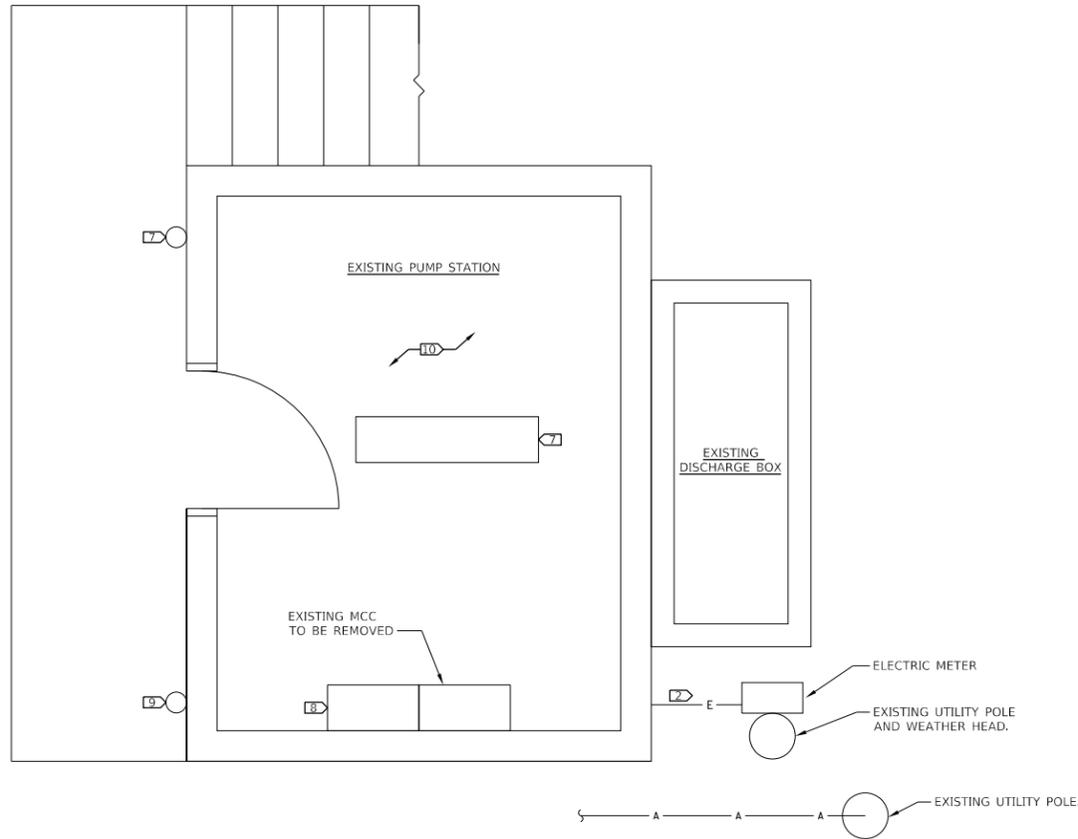
Q:\17 Files\170264\Work - Order - 02 - Phase II Pump Station Blanket Agreement\Homeland Security Transfer Station Symbol Legend.dgn

⚠ SHEET ADDED 6-3-2019

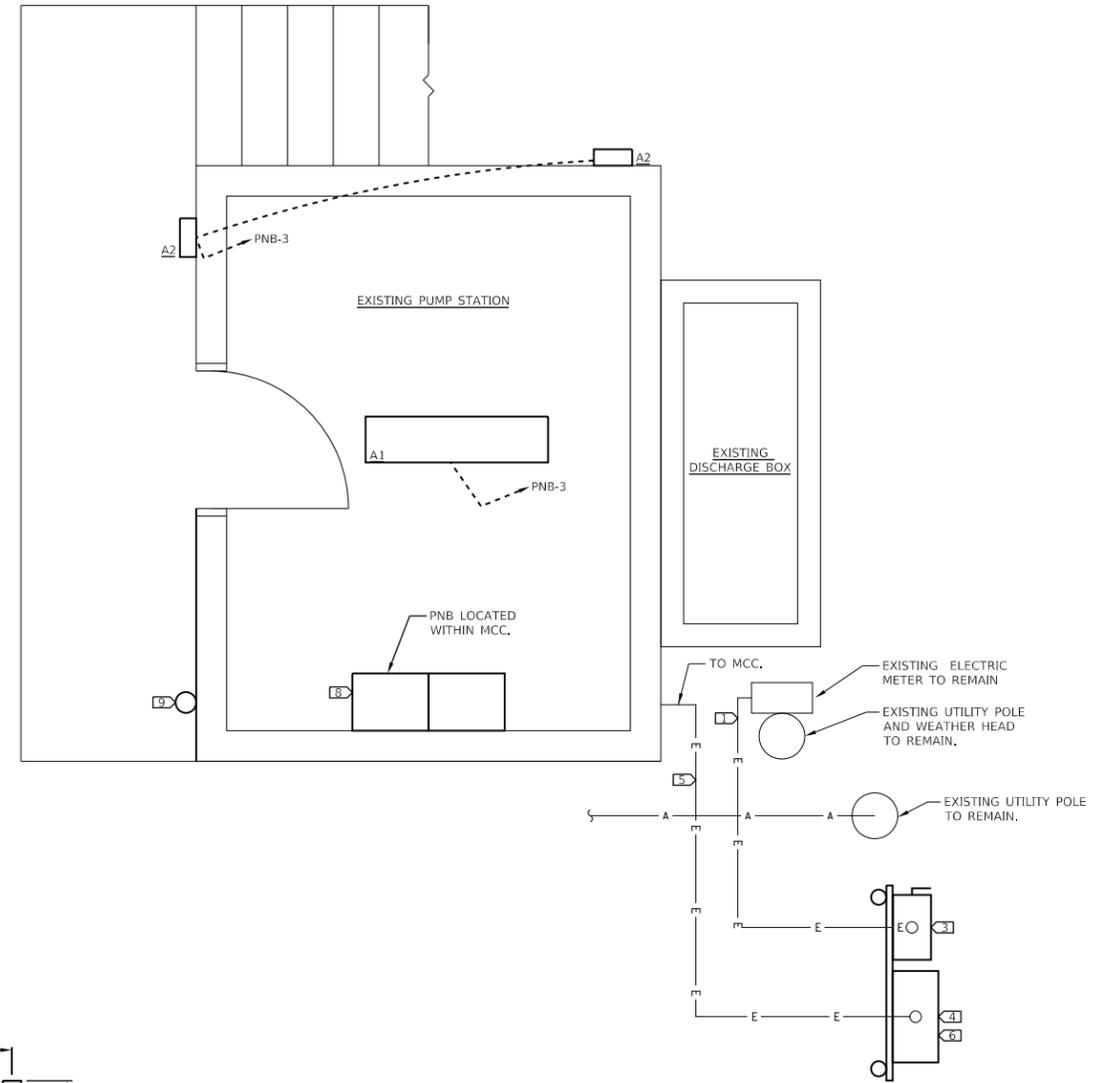
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DRAWN BGCJ	REVISED -	
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PLOT DATE = 5/21/2019	DATE 5/16/2019	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	5	5A
<b>CONTRACT NO. 46528</b>				
ILLINOIS FED. AID PROJECT				

D:\17 Files\170264\Work Order - Phase II Pump Station Blanket Agreement\Homeland Security\Projects\Switch Transfer\_Switch Projects\Documents\District 6\0646528-ah-Plan.dgn



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



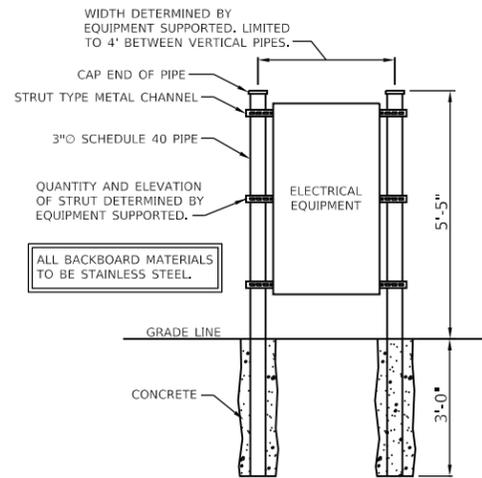
**PROPOSED ELECTRICAL PLAN**  
SCALE: 1/2"=1'-0"

**KEY NOTES** (APPLICABLE TO THIS SHEET ONLY)

- 1. INSTALL NEW SERVICE ENTRANCE CONDUCTORS AS SHOWN
- 2. REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT DOWNSTREAM OF EXISTING METER
- 3. NEW SERVICE DISCONNECT SWITCH.
- 4. NEW AUTOMATIC TRANSFER SWITCH.
- 5. INSTALL NEW FEEDER AS SHOWN.
- 6. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
- 7. REMOVE EXISTING LIGHT FIXTURE AND PREPARE CIRCUIT FOR RE-USE.
- 8. NEW MCC. MODIFY EXISTING HOUSEKEEPING PAD IF NECESSARY TO ACCOMMODATE NEW MCC DIMENSIONS.
- 9. EXISTING ALARM BEACON TO BE SALVAGED AND RE-INSTALLED.
- 10. REMOVE/REINSTALL EXISTING CONDUIT AND ELECTRICAL EQUIPMENT LOCATED ON ROOF AND UPPER WALLS AS NECESSARY TO FACILITATE BUILDING MODIFICATIONS.

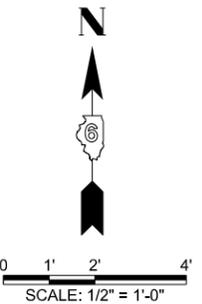
**GENERAL NOTES**

1. EXISTING ELECTRICAL EQUIPMENT, CIRCUITS, AND CONDUITS NOT NOTED TO BE MODIFIED SHALL REMAIN AND BE RECONNECTED TO NEW ELECTRICAL EQUIPMENT AS APPLICABLE. THIS INCLUDES BUT IS NOT LIMITED TO WATER LEVEL MEASUREMENT SYSTEM, RECEPTACLES, AND LOWER LEVEL LIGHTING.
2. AN ELECTRICAL SHOCK AND ARC FLASH HAZARD ANALYSIS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF NFPA-70E AND IEEE-1584 FOR ALL OWNER OWNED EQUIPMENT FROM THE SERVICE ENTRANCE UP TO AND INCLUDING THE MCC. WRITTEN RESULTS OF THE ANALYSIS SHALL BE PROVIDED TO THE OWNER AND NFPA-70 E COMPLIANT ARC FLASH WARNING LABELS APPLIED TO THE EQUIPMENT. MINIMUM INFORMATION REQUIRED FOR LABELS IS AS FOLLOWS:
  - A. VOLTAGE EXPOSURE
  - B. LIMITED APPROACH BOUNDARY
  - C. RESTRICTED APPROACH BOUNDARY
  - D. INCIDENT ENERGY AT THE WORKING DISTANCE OR ARC FLASH PPE CATEGORY
  - E. ARC FLASH PROTECTION BOUNDARIES
  - F. REQUIRED PPE AND GLOVE RATING
  - G. EQUIPMENT NAME
  - H. DATE PREPARED



**ELECTRICAL BACKBOARD DETAIL**  
NTS

⚠ SHEET ADDED 6-3-2019



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

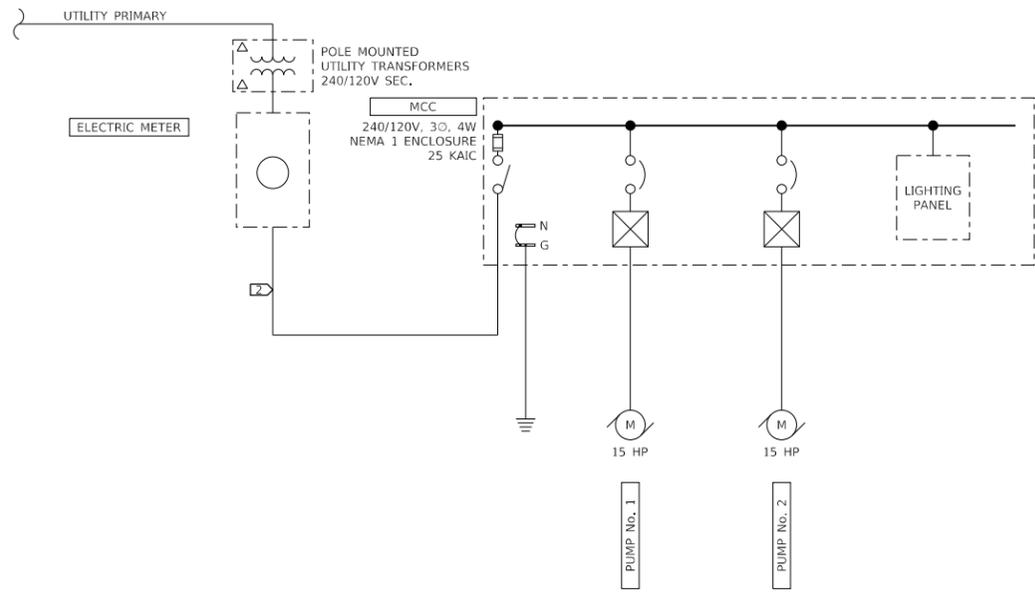
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DRAWN -BGJ	REVISED -	REVISED -
CHECKED -JNN	REVISED -	REVISED -
DATE 5/16/2019	REVISED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ELECTRICAL PLAN AND DETAILS**

SCALE: 1/2" = 1'-0" SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	5	5B
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

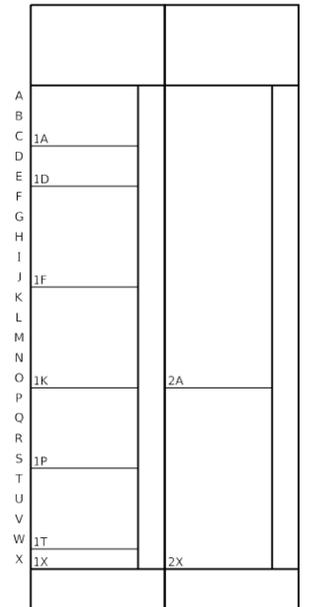


EXISTING ONE-LINE DIAGRAM

NTS

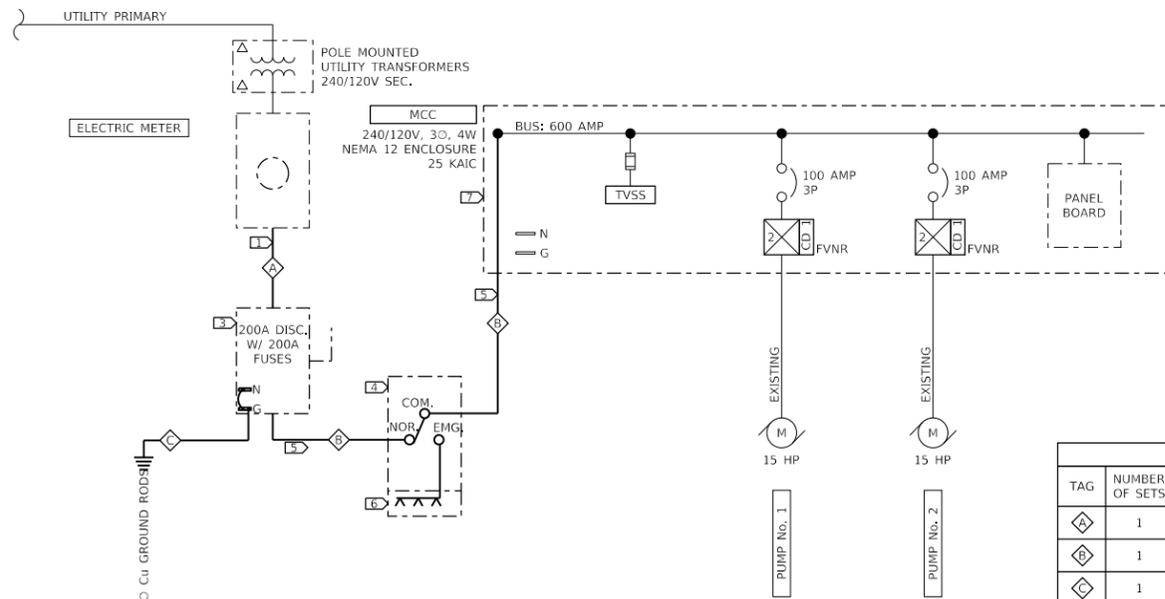
KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

- 1 INSTALL NEW SERVICE ENTRANCE CONDUCTORS AS SHOWN.
- 2 REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT DOWNSTREAM OF EXISTING METER.
- 3 NEW SERVICE DISCONNECT SWITCH.
- 4 NEW AUTOMATIC TRANSFER SWITCH.
- 5 INSTALL NEW FEEDER AS SHOWN.
- 6 NEW GENERATOR QUICK CONNECTION ENCLOSURE.
- 7 NEW MCC



PROPOSED MCC ELEVATION

NTS



PROPOSED ONE-LINE DIAGRAM

NTS

FEEDER SCHEDULE						
TAG	NUMBER OF SETS	PHASE CONDUCTORS QUANTITY	PHASE CONDUCTORS SIZE	NEUTRAL	EGC/ GEC	CONDUIT
1	1	3	3/0 AWG	3/0 AWG	-	2"
2	1	3	3/0 AWG	3/0 AWG	#6 AWG	2"
3	1	-	-	-	#4 AWG	-

MCC SCHEDULE																							
SECTION	CELL	STARTER, CLASS, OR DESCRIPTION	SIZE (INCHES)	CB TRIP/FUSE CLIPS (A)	HP RATING	CONTROL DEVICES										NAMEPLATE IDENTIFICATIONS							
						AUX INTLKS	PUSH BUTTONS	SELECTOR SWITCHES	INDICATING LIGHTS	OTHER	NO	NC	START-STOP	FWD-REV-STOP	FAST-SLOW-STOP		HAND-OFF-AUTO	ON-OFF	FWD-OFF-REV	FAST-OFF-SLOW	RED	AMBER	PUSH TO TEST
1	A	MAIN LUGS	9																				MAIN LUGS
1	D	TVSS	6																				TVSS
1	F	COMB. FVNR STARTER	15	100	15							X				X	X	X	X	X	X	X	PUMP No. 1
1	K	COMB. FVNR STARTER	15	100	15							X				X	X	X	X	X	X	X	PUMP No. 2
1	P	SPACE	12																				SPACE
1	T	SPACE	12																				SPACE
1	X	SPACE	3																				SPACE
2	A	RELAY SECTION	45																				CONTROLS
2	X	PANELBOARD	27	100																			PANELBOARD

PANELBOARD		Area Served:				PUMP STATION			
Location:		100 A 120/240 V 1 Ph 3 Wire				100AMP MAIN BREAKER			
MCC		Fault Rating: 25,000							
No.	Description	Brkr. Amps	Load			Brkr. Amps	Description	No.	
			A	B	A				
1	PANEL HEATERS	20	400		20		LEVEL MEASUREMENT	2	
3	LIGHTS	20		500	100	20	CONTROLS	4	
5	RECEPTACLES	20	720			20	ALARM BEACON	6	
7	SPARE	20				20	SPARE	8	
9	SPARE	20				20	SPARE	10	
11	SPACE						SPACE	12	
13	SPACE						SPACE	14	
15	SPACE						SPACE	16	
17	SPACE						SPACE	18	
Totals			1120	500	100	200			
		Phase A	1320	Phase B	600	Total Wattage(VA)	1920	Capacity	24000

LIGHTING FIXTURE SCHEDULE									
TAG	TYPE	MANUFACTURER	MODEL NUMBER	VOLTS	LUMENS	WATTS	DISTRIBUTION	COLOR TEMP	COMMENTS
A1	LED STRIP LIGHT	LITHONIA	CLX-L48-7000LM-SEF-RDL-WD-MVOLT-GZ10-40K-80CRI	120	7,000	49	WIDE	4,000 K	
		METALUX	4SLSTP5540DD-UNV	120	5,845	49			
		DAY BRITE	FSI-I-70L-840-UNV-DIM	120	7,000	58			
A2	LED WALL PACK	LITHONIA	OLWX1 LED 20W 40K PE	120	2,697	20		4,000 K	PROVIDE WITH INTEGRAL PHOTOCCELL. DARK BRONZE FINISH.
		LUMARK	XTOR2B	120	2,135	18			
		RAB	SLIM18N/PC	120	2,556	18			

△ SHEET ADDED 6-3-2019

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		DRAWN BQJ	REVISED -
	PLOT SCALE = 0.2" = 1' or 1/4"	CHECKED JNN	REVISED -
	PLOT DATE = 5/21/2019	DATE 5/16/2019	REVISED -

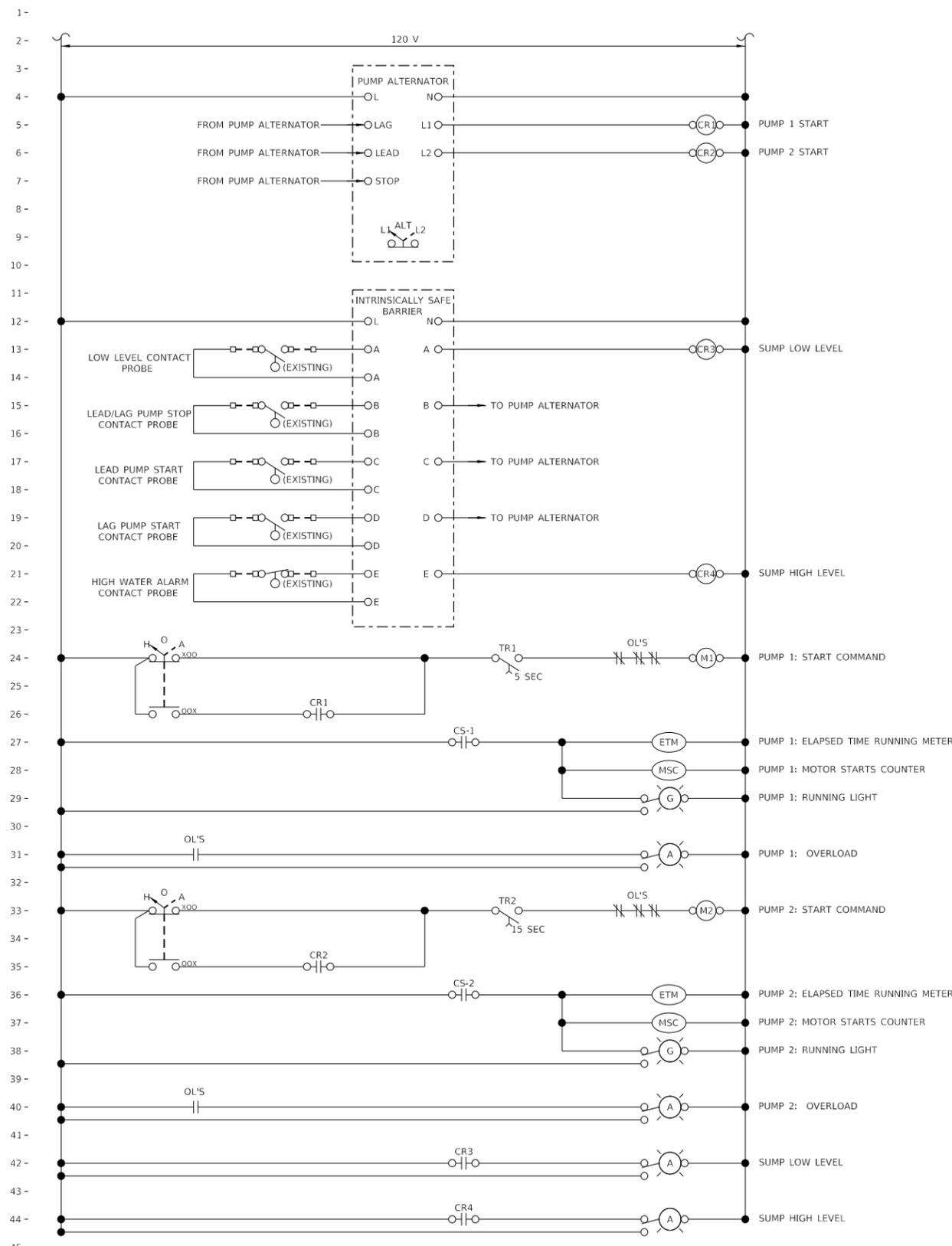
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ELECTRICAL ONE-LINE DIAGRAM  
ELEVATION AND SCHEDULES

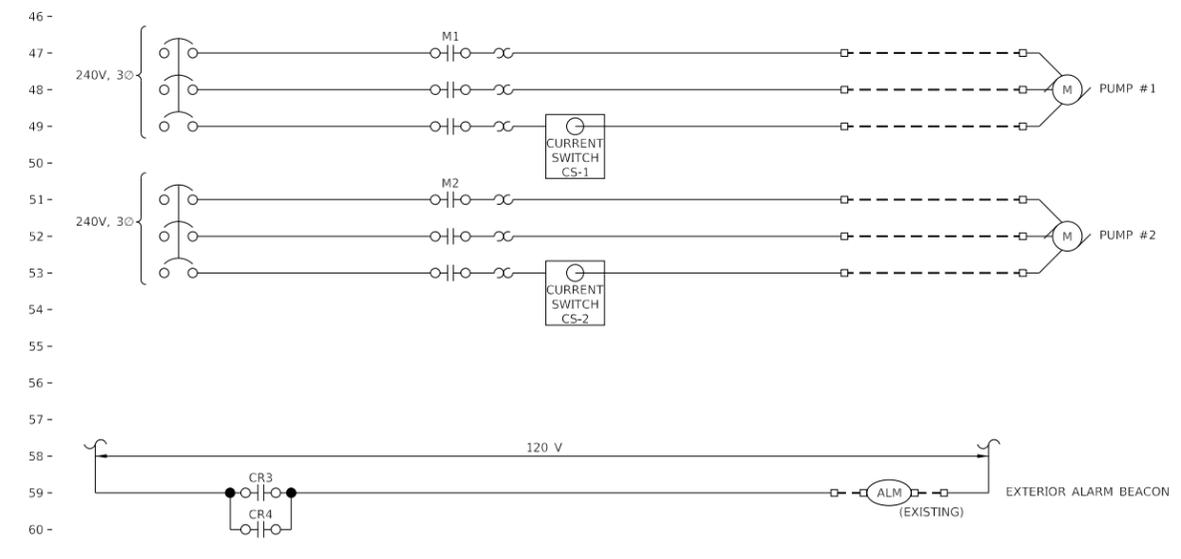
SCALE: NONE SHEET 3 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	5	5C
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

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**CONTROL DIAGRAM No. 1**  
NTS



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 SECTION.

- STORMWATER PUMPS**
1. Major Equipment:
    - a. Pumps:
      - 1) Existing Pump No. 1 and Pump No. 2
    - b. Water level measurement system
      - 1) Existing system is to be re-used
    - c. Exterior alarm beacon
      - 1) Existing system is to be re-used
  2. Control Logic:
    - a. Stormwater Pumps Nos. 1 and 2
      - 1) When HAND is selected at the MCC, the pump shall run.
      - 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

**Falling Wetwell Water Level:**  
-Stop pumps when water level falls to pump stop level
      - 4) Lead and Lag Pump shall be automatically alternated between Pump 1 and Pump 2 following each pumping cycle.
      - 5) Alternator shall include a selector switch to remove one pump from service.
      - 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) Alarm beacon on exterior of building shall be illuminated when the sump water level is at low or high levels.

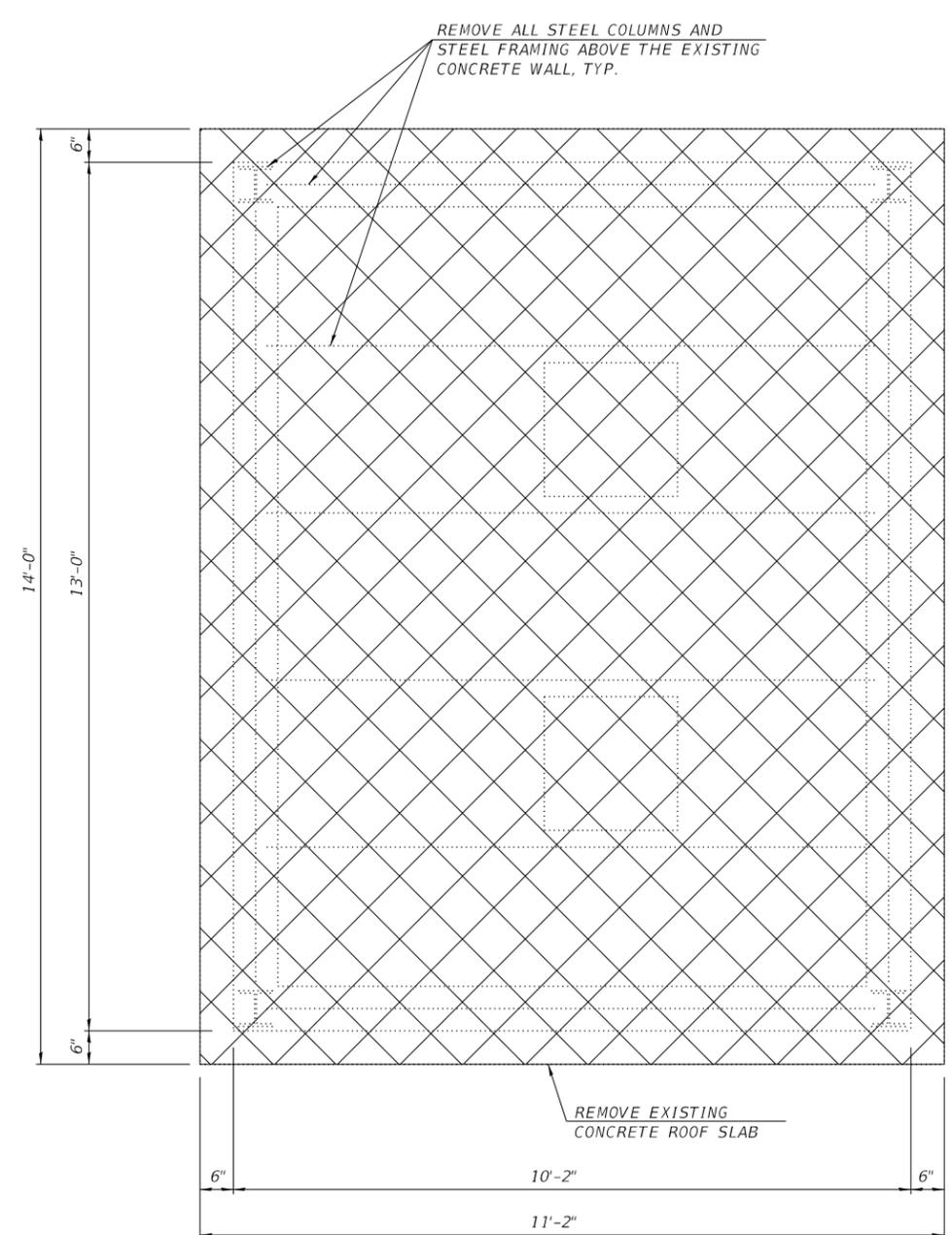
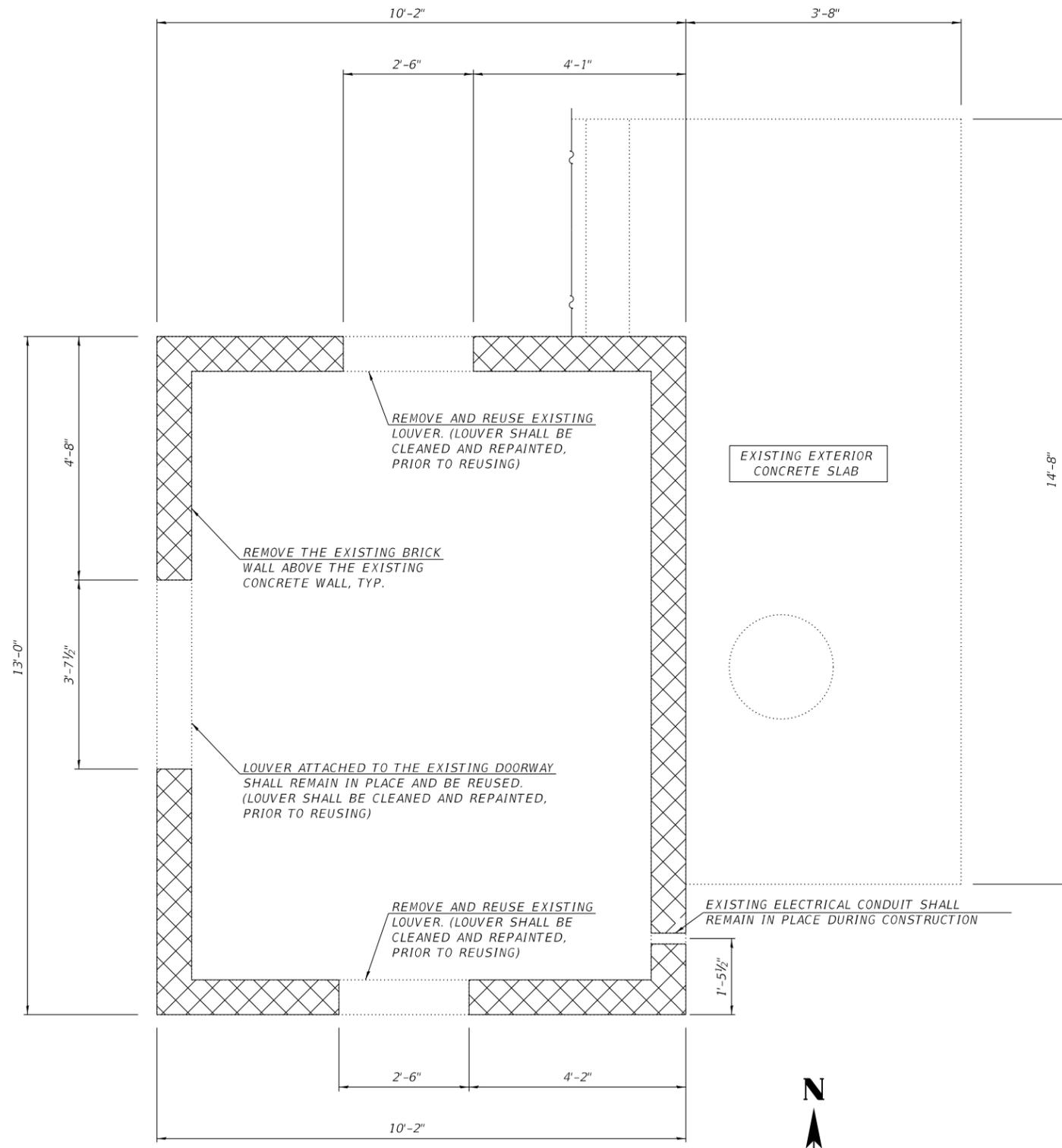
**STORMWATER PUMPS CONTROL LOOP**

▲ SHEET ADDED 6-3-2019

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	PLOT SCALE = 0.2" = 1'-0"	DRAWN BGJ	REVISIED -			320	D6 PUMP STATION 2019	LOGAN	5	5D
PLOT DATE = 5/21/2019	CHECKED JNN	REVISIED -		SCALE: NONE    SHEET 4 OF 4 SHEETS    STA.    TO STA.		CONTRACT NO. 46528				
	DATE 5/16/2019	REVISIED -		ILLINOIS FED. AID PROJECT						

☒ REMOVAL OF EXISTING STRUCTURES

NOTE:  
 COST OF REMOVING THE EXISTING MASONRY BRICKS, STEEL FRAMING, AND CONCRETE ROOF SLAB, AND THEIR COMPONENTS SHALL BE INCLUDED IN "REMOVAL OF EXISTING STRUCTURES".  
 NO SALVAGE, UNLESS NOTED OTHERWISE  
 COST OF REMOVING, CLEANING, AND PAINTING THE EXISTING LOUVERS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK".  
 THE CONTRACTOR SHALL COORDINATE STRUCTURAL PLANS WITH THE ELECTRICAL PLANS.  
 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION.



1 SHEET ADDED 6-3-2019

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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

USER NAME = oms	DESIGNED - AMS	REVISED -
PLOT SCALE = 2:8.0000 '1' / in.	DRAWN - AMS	REVISED -
PLOT DATE = 5/21/2019	CHECKED - KTH	REVISED -
	DATE - 5/16/2019	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

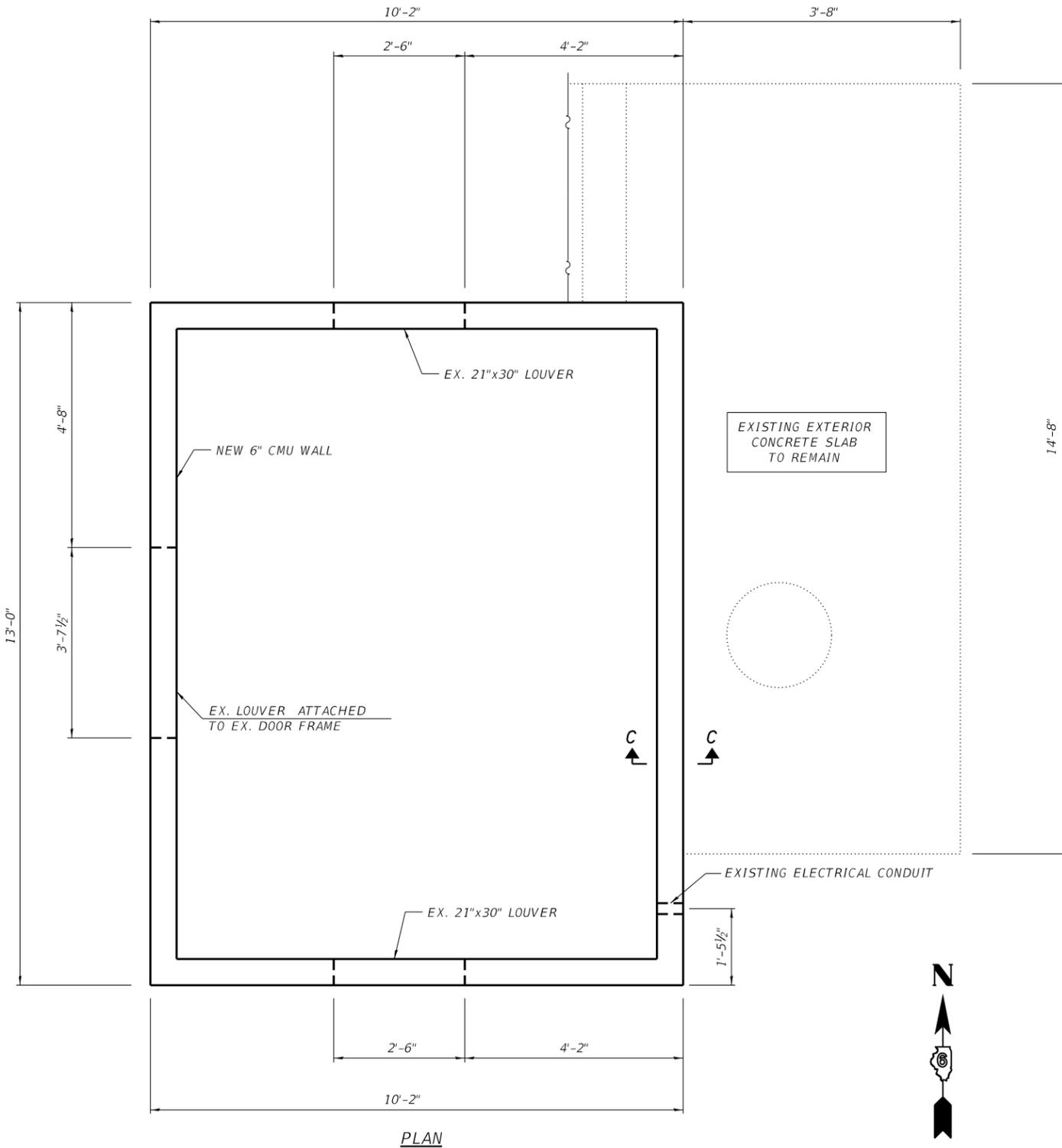
MT. PULASKI PUMP STATION  
 BUILDING DEMO PLANS

SCALE: NONE SHEET 1 OF 5 SHEETS STA. TO STA.

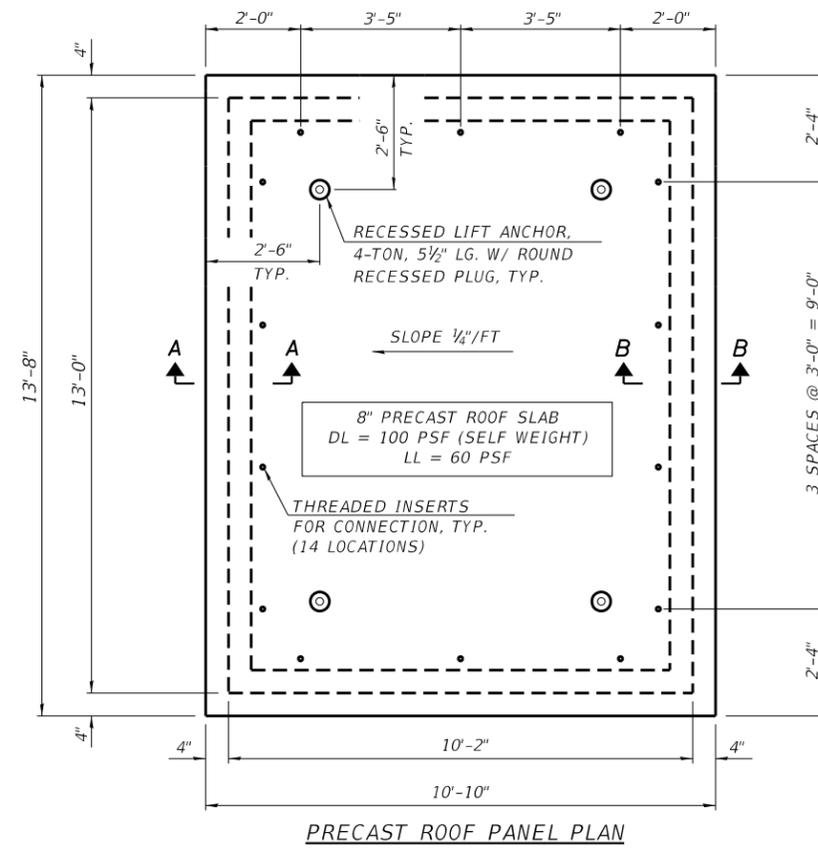
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	5	5E
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				



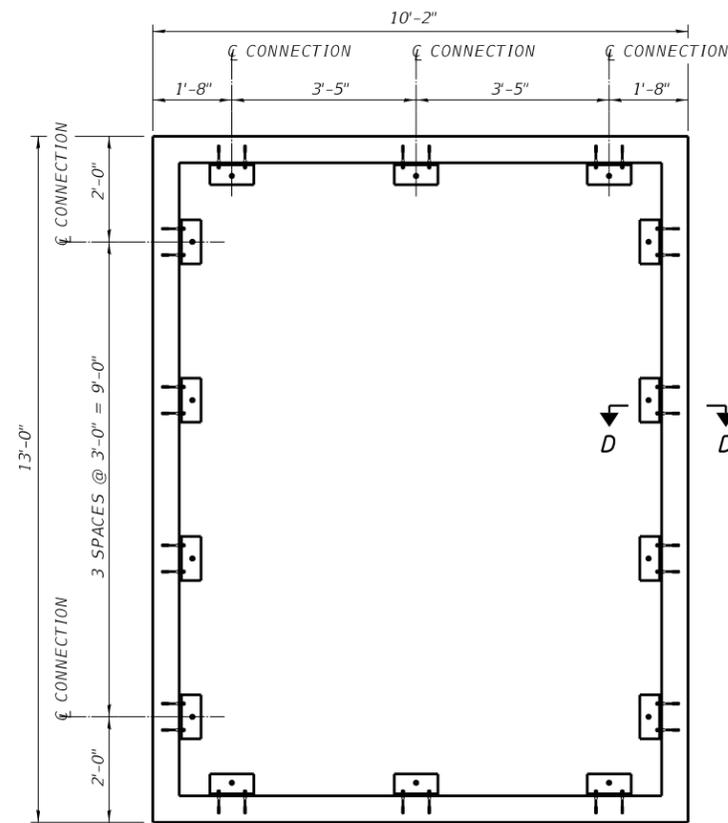
NOTE:  
 THE COST OF CONSTRUCTING THE NEW CMU WALL, INCLUDING THE REINFORCEMENT AND GROUT SHALL BE INCLUDED IN "MASONRY WALL CONSTRUCTION".  
 THE COST OF THE STRUCTURAL STEEL ANGLES, ANCHOR BOLTS, THREADED RODS, AND EPOXY SHALL BE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".  
 THE COST OF THE 8" PRECAST CONCRETE ROOF PANEL, RECESSED LIFT ANCHORS, RECESS ANCHOR PLUGS, AND THREADED INSERTS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK".  
 COST OF REMOVING, CLEANING, AND PAINTING THE EXISTING LOUVERS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK".  
 THE CONTRACTOR SHALL COORDINATE STRUCTURAL PLANS WITH THE ELECTRICAL PLANS.  
 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION.  
 CONCRETE SEALER SHALL BE APPLIED TO THE TOP, SIDES AND BOTTOM OF THE PRECAST CONCRETE ROOF SLAB.  
 SEE SHEET 10 OF 10 FOR SECTIONS A-A, B-B, C-C, AND D-D.



PLAN



PRECAST ROOF PANEL PLAN



ROOF FRAMING PLAN

△ SHEET ADDED 6-3-2019

D:\17files\170264\Work Order - Phase II Pump Station Blanket Agreement\Homeland Security Projects\Documents\District 6\0646528-ah-Plan3.dgn

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 Engineers • Architects • Surveyors  
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 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

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 PLOT SCALE = 2:8.0000 '1' = 1/8"  
 PLOT DATE = 5/21/2019

DESIGNED - AMS  
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 DATE - 5/16/2019

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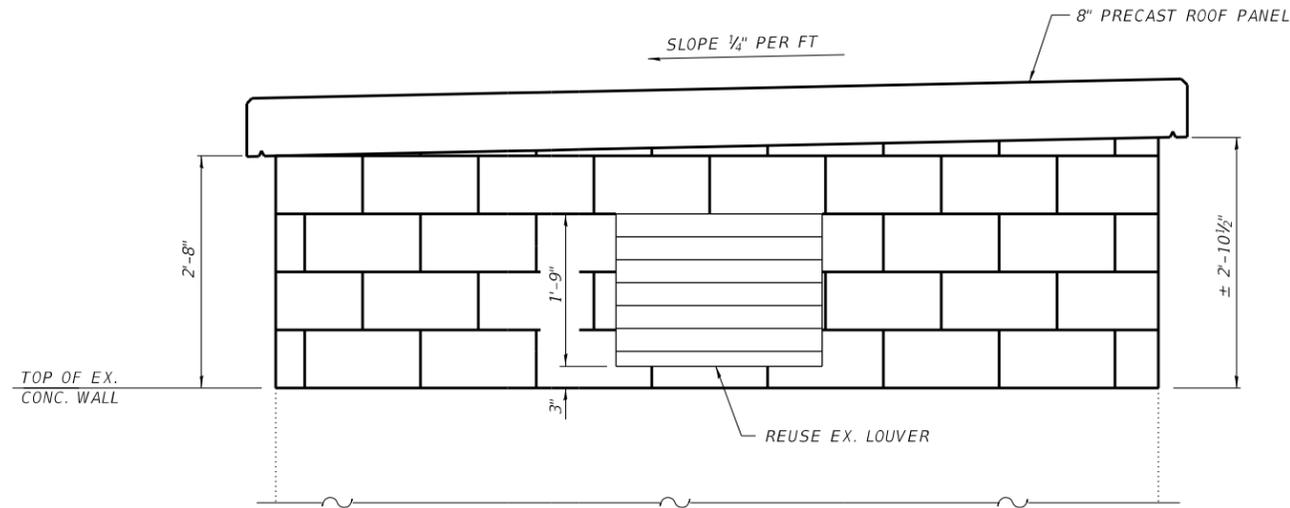
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

MT. PULASKI PUMP STATION  
 BUILDING PLANS

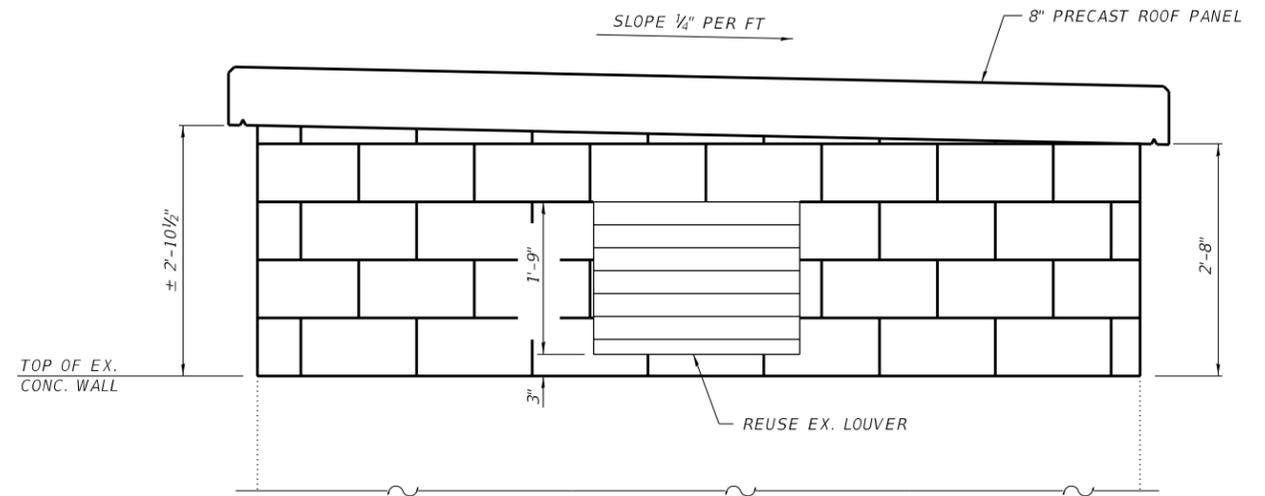
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	5	56
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

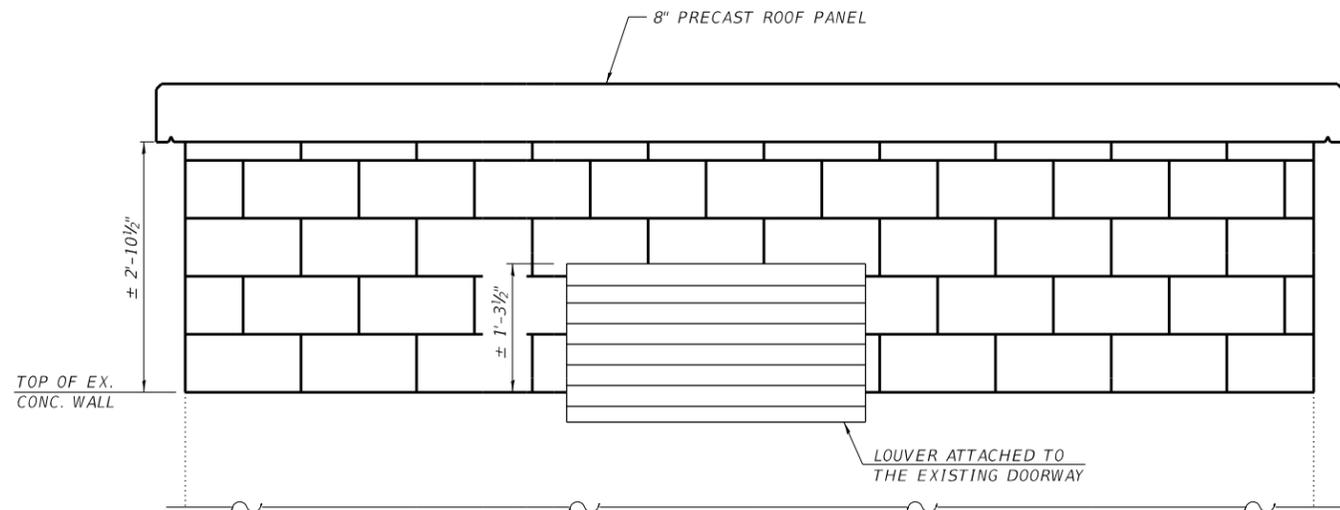
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 COST OF REMOVING, CLEANING, AND PAINTING THE EXISTING LOUVERS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK".  
 THE CONTRACTOR SHALL COORDINATE STRUCTURAL PLANS WITH THE ELECTRICAL PLANS.  
 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION.  
 CONCRETE SEALER SHALL BE APPLIED TO THE TOP, SIDES, AND BOTTOM OF THE PRECAST CONCRETE ROOF PANEL.  
 MASONRY WALL FINISH AND COLOR SHALL BE SELECTED BY THE "OWNER".  
 MASONRY UNITS SHALL BE FABRICATED WITH INTEGRAL WATER REPELLANT ADDITIVE.



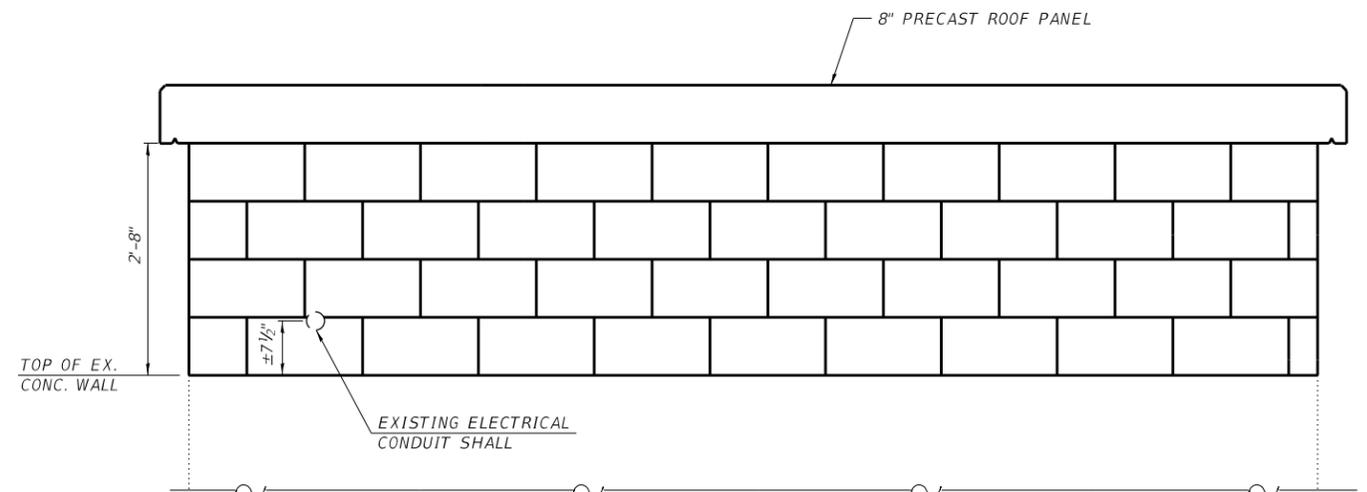
**NORTH ELEVATION**  
 (LOOKING SOUTH)



**SOUTH ELEVATION**  
 (LOOKING NORTH)



**WEST ELEVATION**  
 (LOOKING EAST)



**EAST ELEVATION**  
 (LOOKING WEST)

1 SHEET ADDED 6-3-2019

D:\17files\170264\Work Order - Phase II Pump Station Blanket Agreement\Homeland Security\Transfer\_Satch\Projects\Documents\District 6\0646528-ah-Elev.dgn

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DRAWN - AMS	REVISED -	
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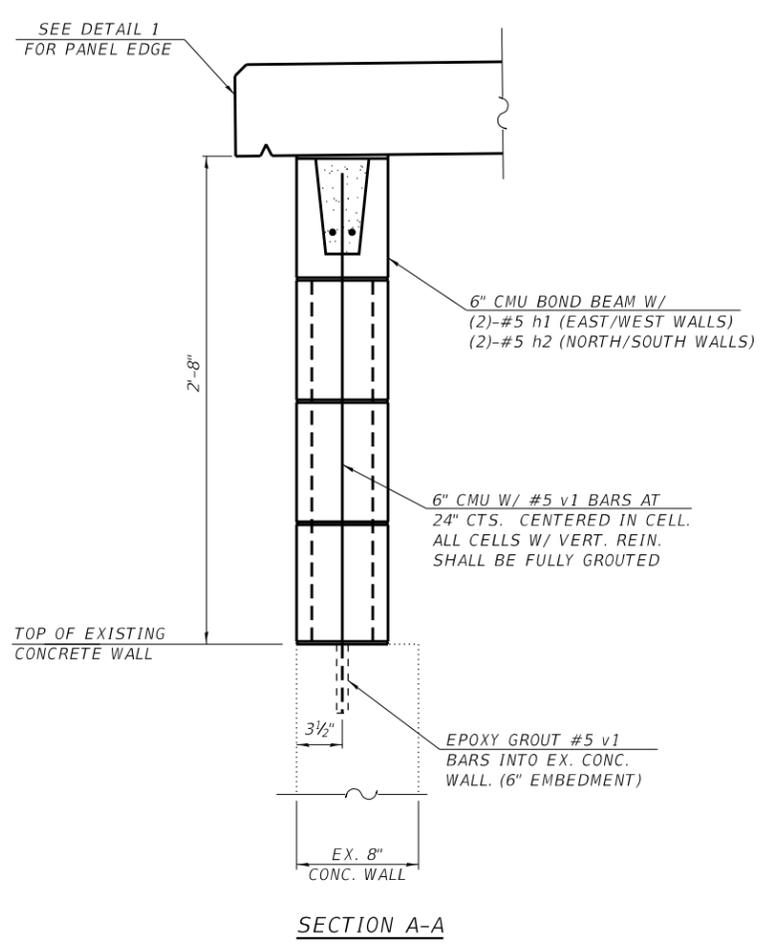
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**MT. PULASKI PUMP STATION**  
**BUILDING ELEVATIONS**

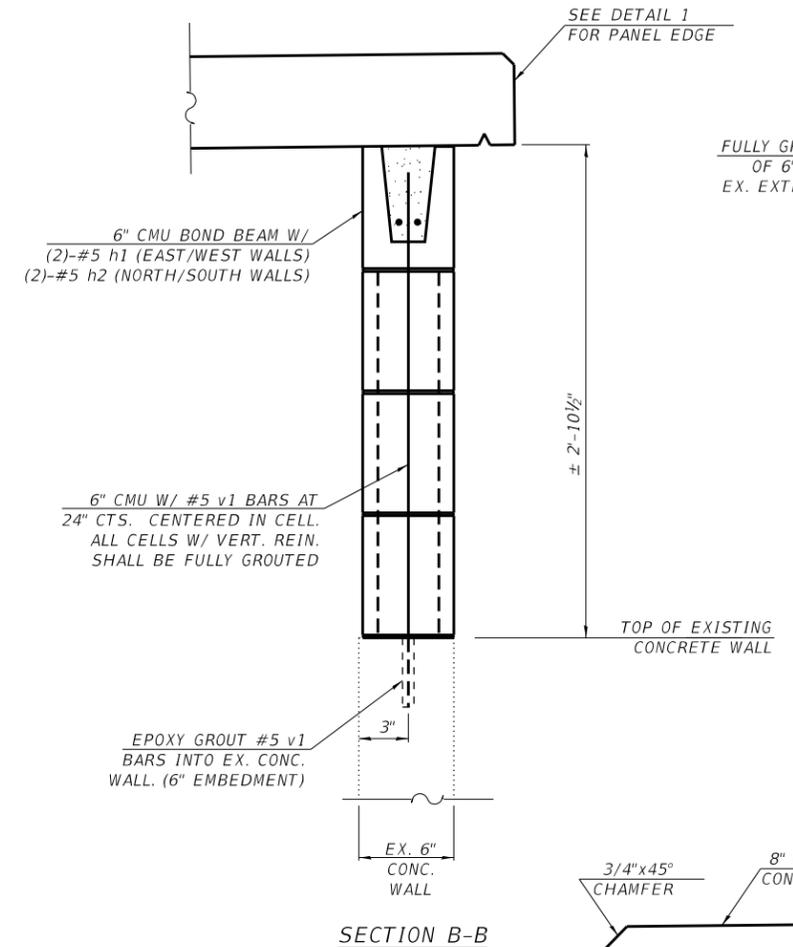
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	5	5H
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

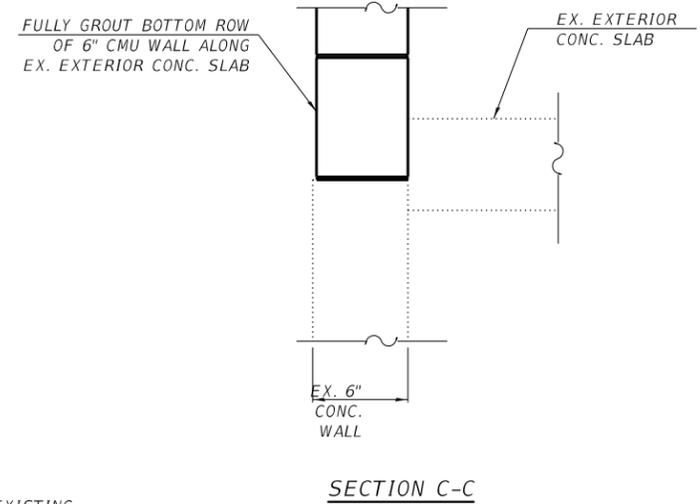
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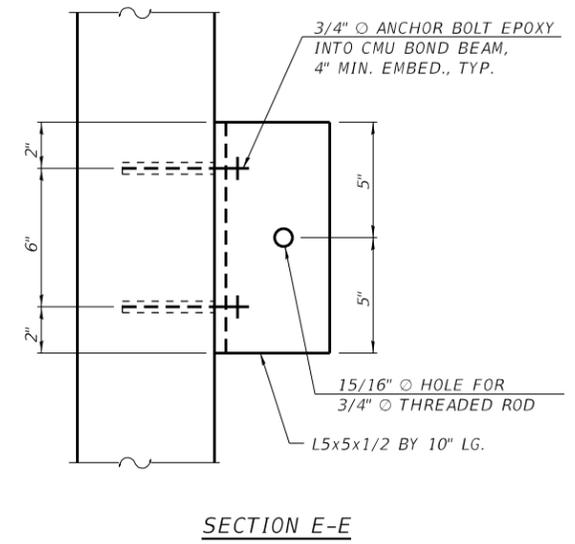
SECTION A-A



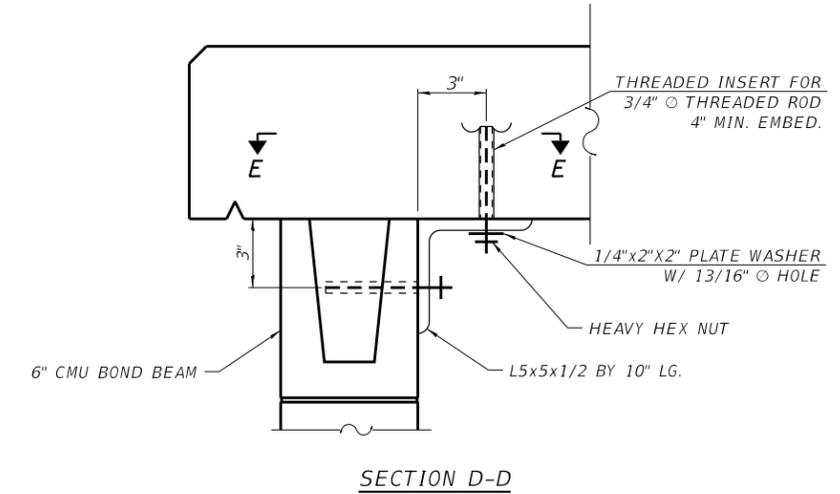
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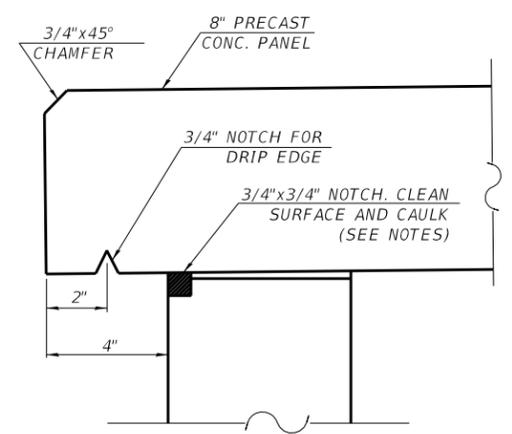
SECTION C-C



SECTION E-E

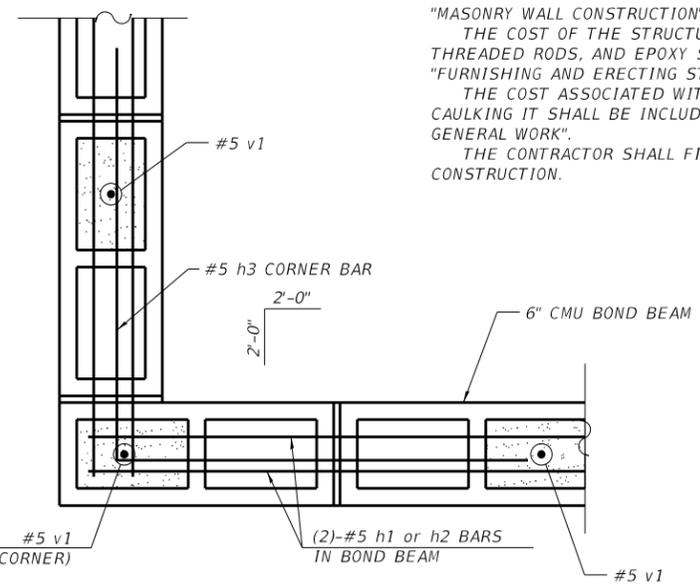


SECTION D-D



DETAIL 1

NOTE:  
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 THE COST OF THE STRUCTURAL STEEL ANGLES, ANCHOR BOLTS, THREADED RODS, AND EPOXY SHALL BE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".  
 THE COST ASSOCIATED WITH CLEANING THE MASONRY NOTCH AND CAULKING IT SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK".  
 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION.



MASONRY WALL CORNER DETAIL



MASONRY WALL LOUVER OPENING DETAIL

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h1	4	#5	12'-8"	—
h2	4	#5	9'-10"	—
h3	4	#5	4'-0"	└
* v1	28	#5	3'-0"	—
REINFORCEMENT BARS			LBS.	200

\* CUT AS NEEDED.

1 SHEET ADDED 6-3-2019

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	DATE - 5/16/2019	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

MT. PULASKI PUMP STATION  
 STRUCTURAL DETAILS

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

F.A.P. RTE. 320	SECTION D6 PUMP STATION 2019	COUNTY LOGAN	TOTAL SHEETS 5	SHEET NO. 51
ILLINOIS FED. AID PROJECT				CONTRACT NO. 46528