

051

08-02-2019 LETTING ITEM 051

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

F.A.P. REF.	SECTION	COUNTY	TOTAL SHEET NO.
320	D6 PUMP STATIONS 2019	LOGAN	12
			1
CONTRACT NO. 4652B			

INDEX OF SHEETS

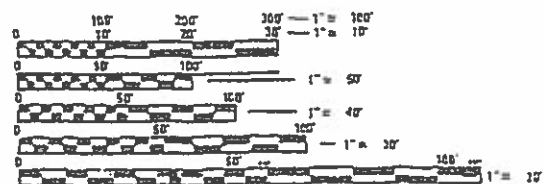
- 1 COVER SHEET
- 2 GENERAL NOTES
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HIGHWAY STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 701201-05 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >= 45 MPH

F.A.P. 320 (IL 121)
SECTION D6 PUMP STATION 2019
NEW AUTOMATIC TRANSFER SWITCH
AND MISC. IMPROVEMENTS
LOGAN COUNTY

C-30-011-19



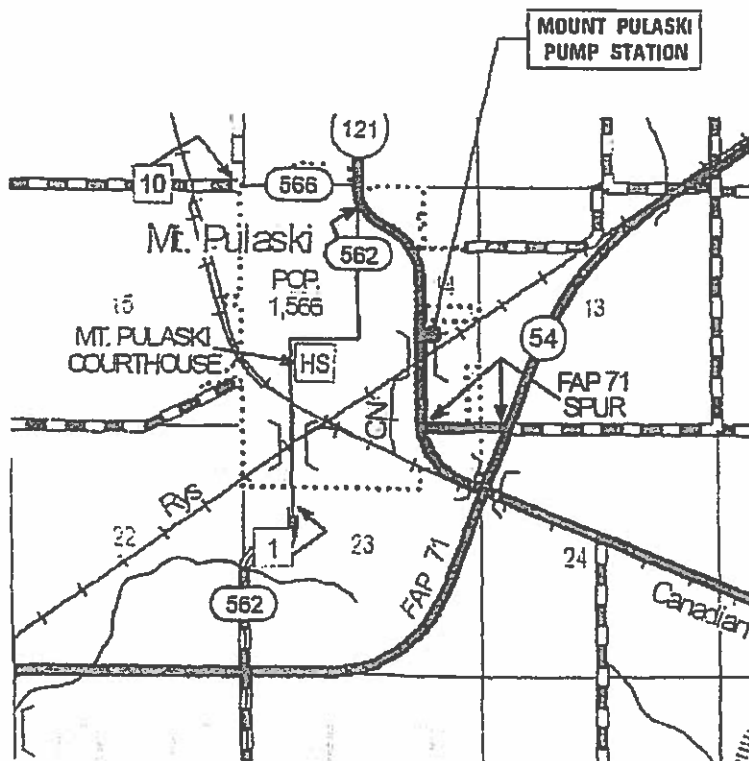
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

JULIE.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT MANAGER: MICHAEL IRWIN, PE
SQUAD LEADER: TIMOTHY SHARP

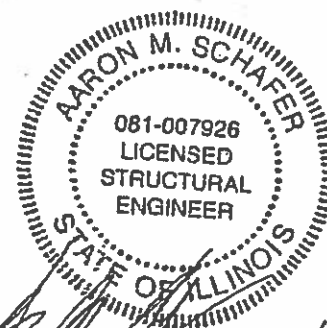
217-524-7165
217-524-9160

CONTRACT NO. 4652B

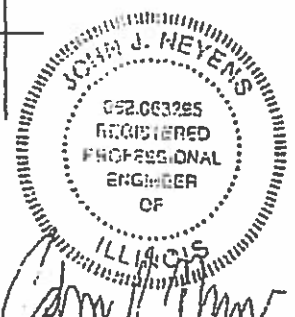


LOGAN COUNTY

GROSS LENGTH = NA
NET LENGTH = NA



AARON M. SCHAEFER
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS NO. 081-007926
LICENSE EXPIRES NOVEMBER 30, 2020



JOHN J. MEYERS
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 052-063295
LICENSE EXPIRES NOVEMBER 30, 2019

PLANS PREPARED BY:

**KLINGNER
& ASSOCIATES, P.C.**
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STATE OF ILLINOIS DESIGN FIRM NO. 13A-2739

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 22 April 2019

[Signature]
REGIONAL ENGINEER

[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

D:\MIS\17251\Work D-46-21 - Phase II Pump Station Blanket Agreement\Illustrated\Stationing Transfer - Switch Project\Documents\Stationing E084652B.dwg

GENERAL NOTES

- 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.
- THE CONTRACTOR SHALL SECURE ANY LOCAL, STATE, COUNTY PERMITS NEEDED FOR THIS PROJECT.
- 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.
- 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.
- 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
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENFORCE ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- 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.
- DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE EXISTING PUMP STATION BUILDING.
- DRAWINGS ARE NOT TO SCALE, UNLESS NOTED OTHERWISE.
- THE DEPARTMENT RESERVES THE RIGHT TO NOTIFY THE CONTRACTOR TO CHANGE THE CONSTRUCTION SCHEDULE IF NEEDED TO ENSURE PROPER DEWATERING NEEDS FOR THE DEPARTMENT.
- 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.
- DURING DEMOLITION AND CONSTRUCTION, THE CONTRACTOR SHALL USE TRAFFIC CONTROL AND PROTECTION STANDARD 701201, AS DIRECTED BY THE ENGINEER.

STRUCTURAL NOTES

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

STRUCTURAL STEEL

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


MASONRY

- 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).
- 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.
- 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.
- ASTM C270 TYPE "S" MORTAR WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI SHALL BE USED FOR ALL MASONRY.
- REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
- ALL CORES WITH REINFORCEMENT SHALL BE FILLED SOLID WITH GROUT. PLACE REINFORCEMENT BARS BEFORE GROUTING. CONSOLIDATE GROUT BY MECHANICAL VIBRATION.
- PROPERLY SECURE VERTICAL REINFORCEMENT BARS TO ENSURE BAR IS LOCATED IN THE CENTER OF THE CMU CELL.
- 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.
- THE COST OF THE EXISTING BRICK MASONRY DEMOLITION SHALL BE INCLUDED IN "MASONRY REMOVAL".

PRECAST STRUCTURAL CONCRETE

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

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 KLINGNER Engineers • Architects • Surveyors 616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223.3670 STATE OF ILLINOIS DESIGN FIRM NO. 1398738	USER NAME = oms	DESIGNED - AMS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A.P. RTE. = 320	SECTION = D6 PUMP STATION 2019	COUNTY = LOGAN	TOTAL SHEETS = 12	SHEET NO. = 2	
	PLOT SCALE = 210' = 1" = 1/4"	CHECKED - KTH	REVISED -			SCALE: NONE	SHEET 1 OF 1 SHEETS	STA. TO STA.	CONTRACT NO. 46528		ILLINOIS FED.AID PROJECT
PLOT DATE = 5/21/2019	DATE = 5/16/2019	REVISED -									

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION TYPE CODE		
				LOGAN		
				0044		
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	186	186		
58700300	CONCRETE SEALER	SQ FT	330	330		
67100100	MOBILIZATION	L SUM	1	1		
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1		
X0335700	PUMP STATION GENERAL WORK	L SUM	1	1		
X0783300	PUMP STATION ELECTRICAL WORK	L SUM	1	1		
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	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		

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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
	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
	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

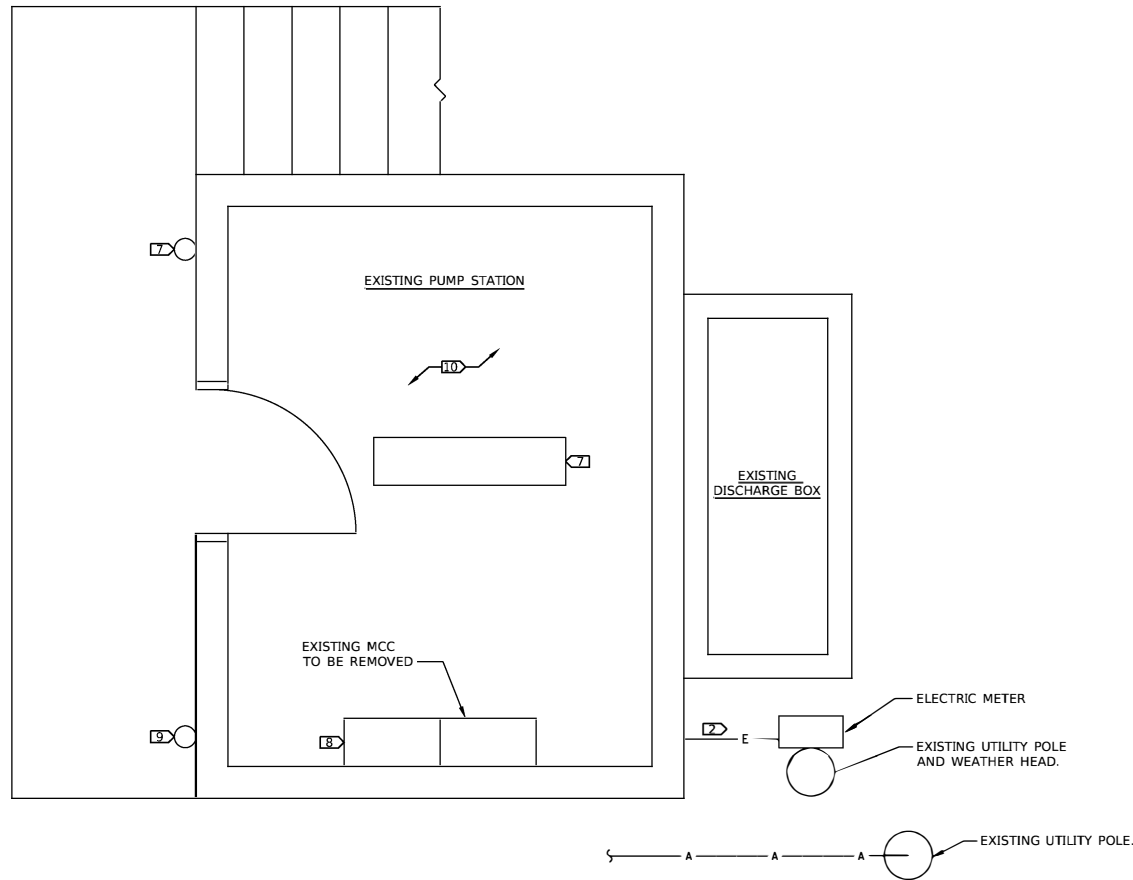
	LIGHT SWITCH
	LIGHT SWITCH, X WAY
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX FOR DATA/COMMUNICATION
	WALL BOX FOR DATA/COMMUNICATION
	DUPLEX RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT INTERRUPTER
	WEATHERPROOF RECEPTACLE OUTLET WITH GFCI PROTECTION
	QUAD RECEPTACLE OUTLET
	CIRCUITING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

CONTROL SYMBOLS

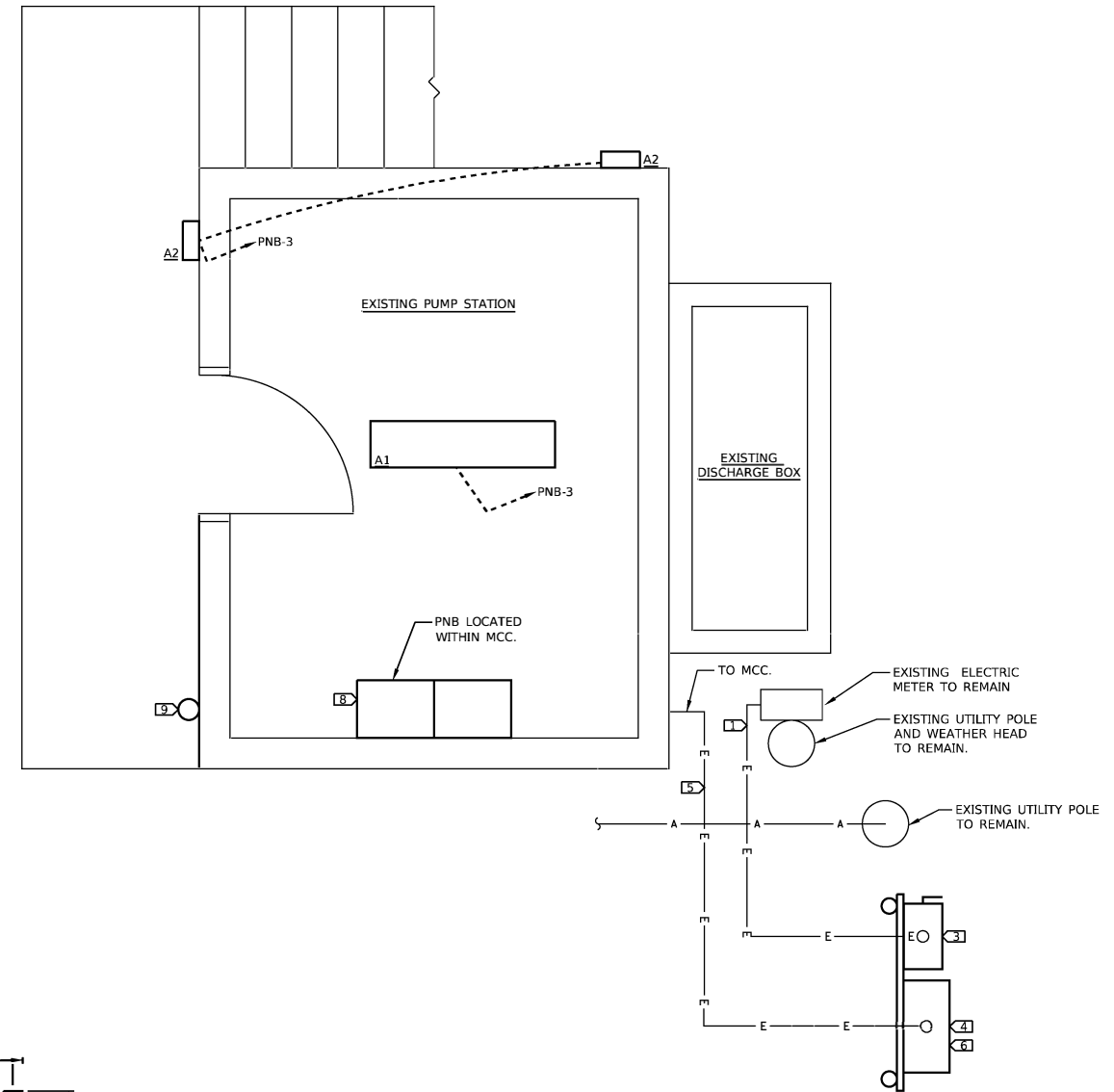
	ELECTRICAL CONNECTION
	NO ELECTRICAL CONNECTION
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	NORMALLY OPEN TIME DELAY RELAY CONTACT. CLOSING UPON TIME DELAY AFTER ACTIVATING COIL
	NORMALLY CLOSED TIME DELAY RELAY CONTACT. CLOSING UPON TIME DELAY AFTER ACTIVATING COIL
	NORMALLY OPEN TIME DELAY RELAY CONTACT. OPENING UPON TIME DELAY AFTER DE-ACTIVATING COIL
	NORMALLY CLOSED TIME DELAY RELAY CONTACT. OPENING UPON TIME DELAY AFTER DE-ACTIVATING COIL
	NORMALLY OPEN TEMPERATURE SWITCH: CLOSING ON RISING TEMPERATURE
	NORMALLY CLOSED TEMPERATURE SWITCH: OPENING ON RISING TEMPERATURE
	NORMALLY OPEN FLOW SWITCH: CLOSING ON INCREASING FLOW
	NORMALLY CLOSED FLOW SWITCH: OPENING ON INCREASING FLOW
	NORMALLY OPEN LEVEL SWITCH: CLOSING ON INCREASING LEVEL
	NORMALLY CLOSED LEVEL SWITCH: OPENING ON INCREASING LEVEL
	NORMALLY OPEN PRESSURE SWITCH: CLOSING ON INCREASING PRESSURE
	NORMALLY CLOSED PRESSURE SWITCH: OPENING ON INCREASING PRESSURE
	NORMALLY OPEN LIMIT SWITCH: CLOSING UPON REACHING LIMIT
	NORMALLY CLOSED LIMIT SWITCH: OPENING UPON 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 LENS COLOR: 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

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



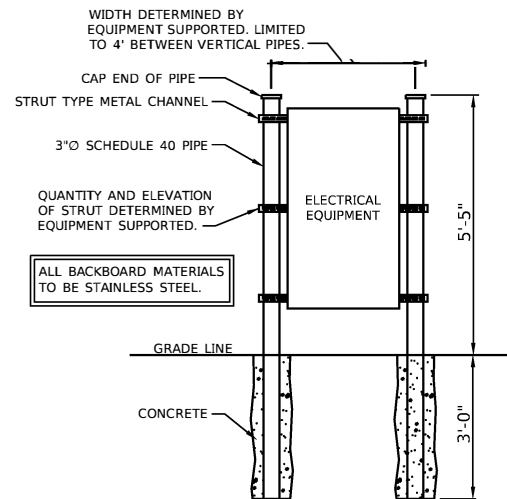
PROPOSED ELECTRICAL PLAN
SCALE: 1/2" = 1'-0"

KEY NOTES (APPLICABLE TO THIS SHEET ONLY)

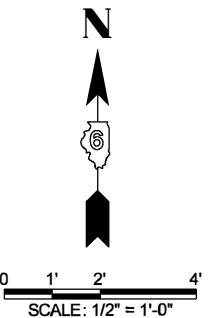
- 1. INSTALL NEW SERVICE ENTRANCE CONDUCTORS AS SHOWN
- 2. REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS/CONDUIT DOWNSTREAM OF EXISTING METER
- 3. NEW SERVICE DISCONNECT SWITCH.
- 4. NEW AUTOMATIC TRANSFER SWITCH.
- 5. INSTALL NEW FEEDER AS SHOWN.
- 6. NEW GENERATOR QUICK CONNECTION ENCLOSURE.
- 7. REMOVE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

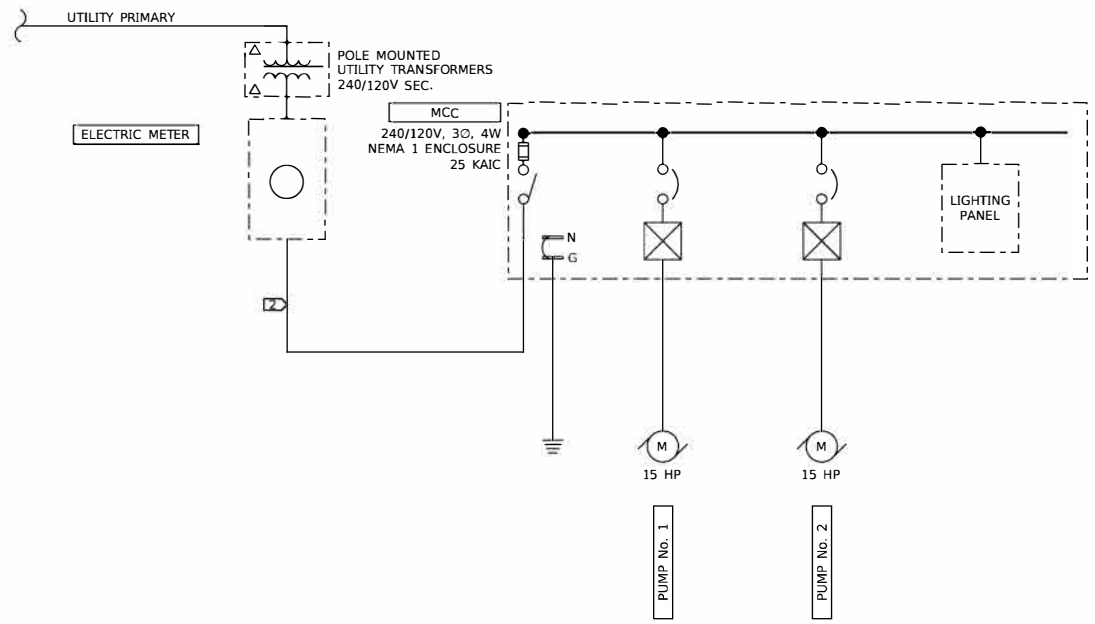


ELECTRICAL BACKBOARD DETAIL
NTS



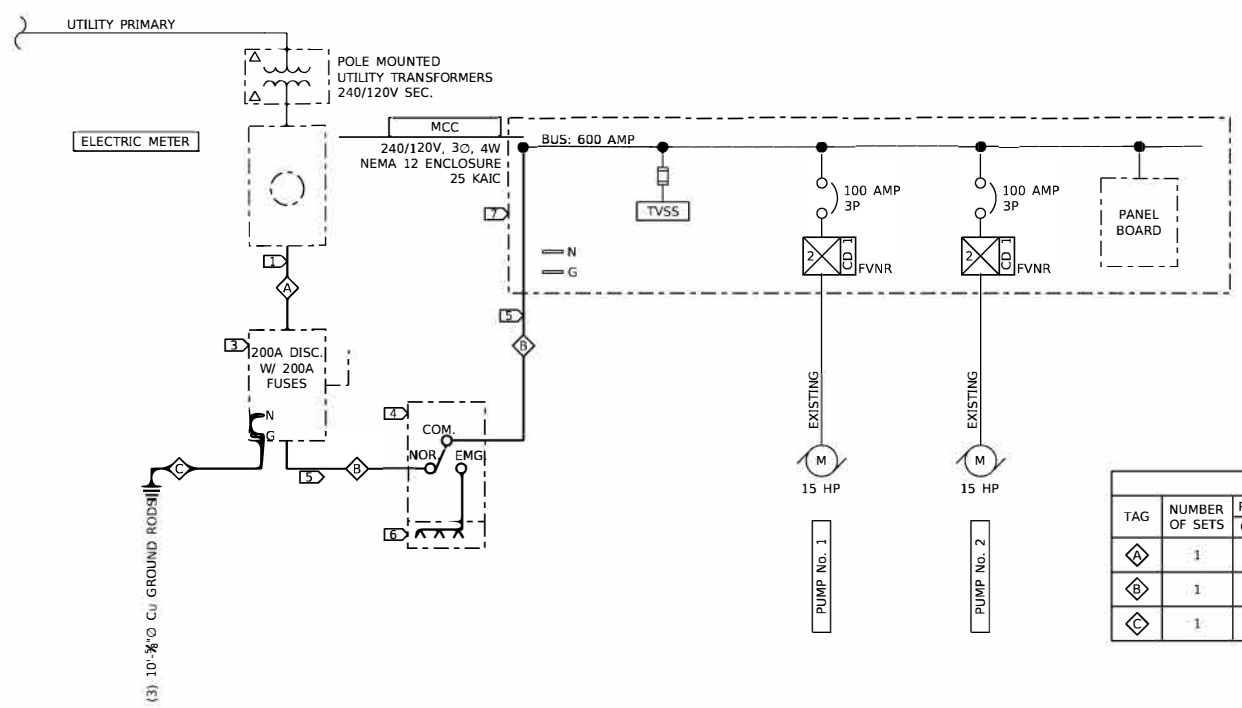
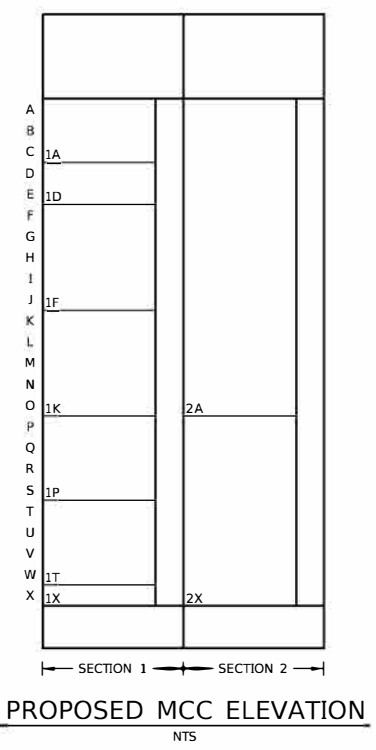
DESIGNED BY	JNN	REVISIONS	-
DRAWN BY	BGJ	REVISED	-
CHECKED BY	JNN	REVISIONS	-
DATE	5/16/2019	REVISED	-

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	12	5
CONTRACT NO 046528				
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 ONE-LINE DIAGRAM
NTS

FEEDER SCHEDULE						
TAG	NUMBER OF SETS	PHASE CONDUCTORS QUANTITY	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	-

ID		STARTER, CLASS, OR DESCRIPTION	SIZE (INCHES)	CB TRIP/FUSE CLIPS (A)	HP RATING	CONTROL DEVICES										NAMEPLATE IDENTIFICATIONS							
SECTION	CELL					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	PUMP No. 1
1	K	COMB. FVNR STARTER	15	100	15							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.
1	PANEL HEATERS	20	A	B	B	A	LEVEL MEASUREMENT	2
3	LIGHTS	20	400	500	100	20	CONTROLS	4
5	RECEPTACLES	20	720			100	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			Phase A	Phase B		Total Wattage(VA)	Capacity	
			1320	600		1920	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-G210-40K-80CRI	120	7,000	49	WIDE	4,000 K	
		METALUX	4SLSTP5540DD-UNV	120	5,845	49			
		DAY BRITE	FSI-4-70L-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 PHOTOCELL. DARK BRONZE FINISH.
		LUMARK	XTOR2B	120	2,135	18			
		RAB	SLIM18N/PC	120	2,556	18			

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STATE OF ILLINOIS DESIGNER NO. 184-2729

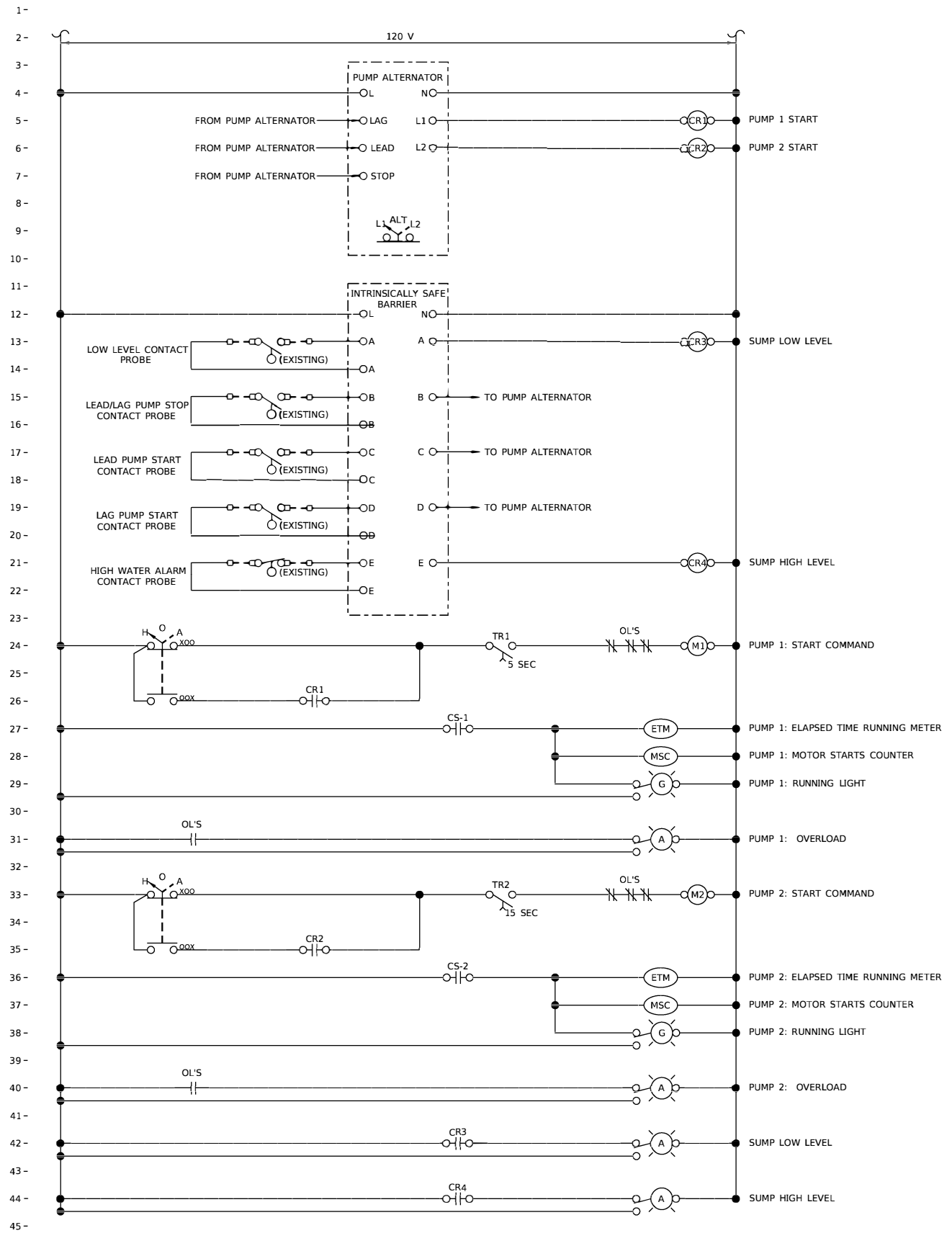
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DRAWN	BGJ	REVISED	-
CHECKED	JNN	REVISED	-
DATE	5/16/2019	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

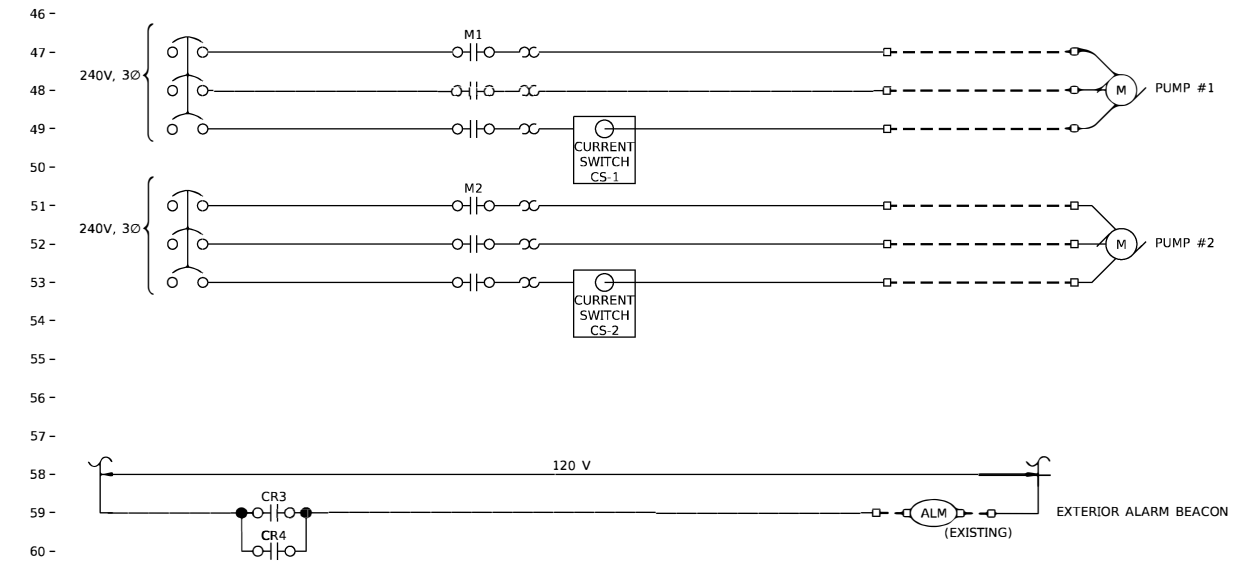
ELECTRICAL ONE-LINE DIAGRAM ELEVATION AND SCHEDULES			
SCALE	NONE	SHEET	3 OF 4 SHEETS
STA.		T O S T A .	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	12	6
C O N T R I B U T I O N				
I L U N O S , F E D . A D P R O J E C T				

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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.

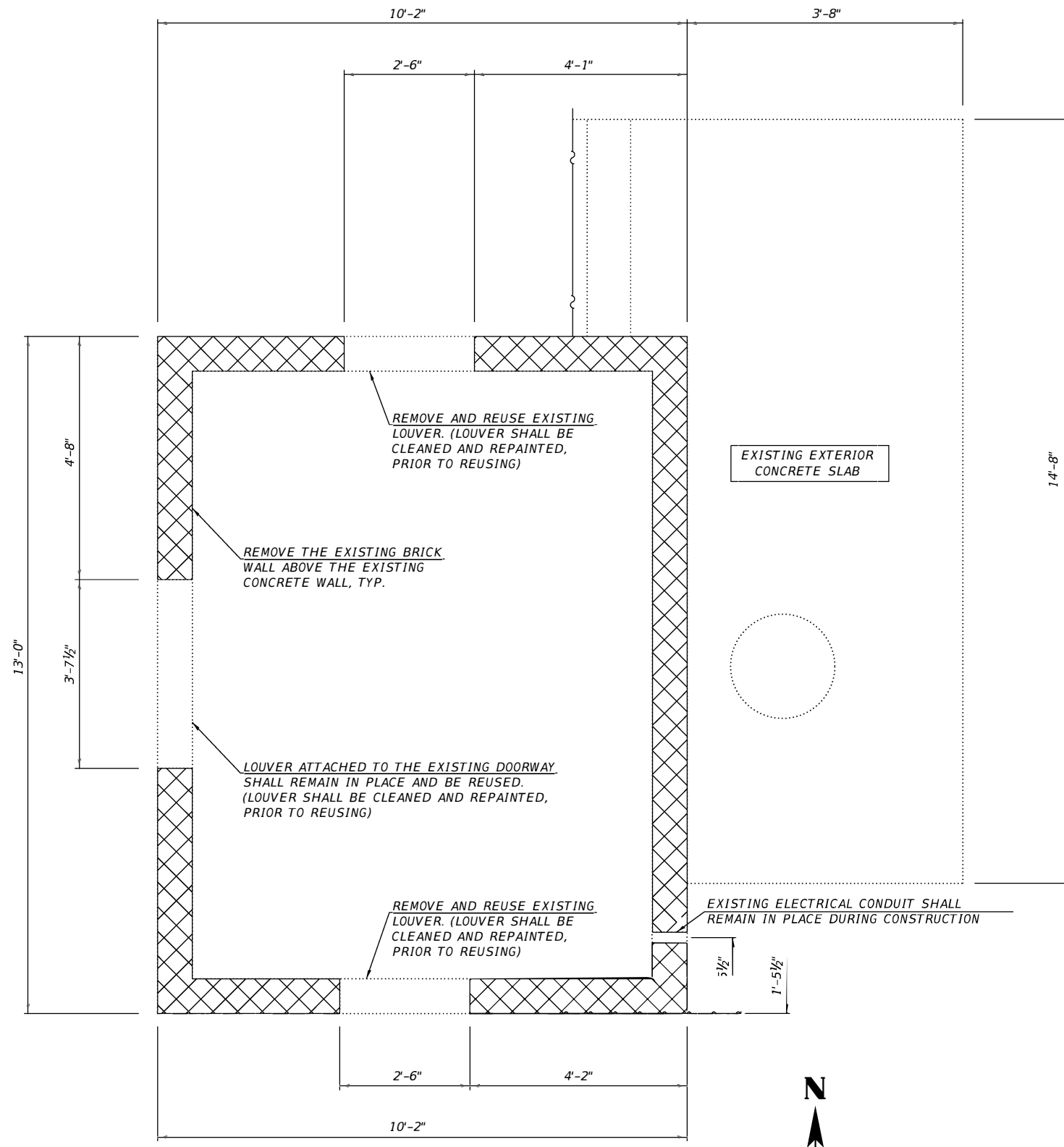
STORMWATER PUMPS CONTROL LOOP

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

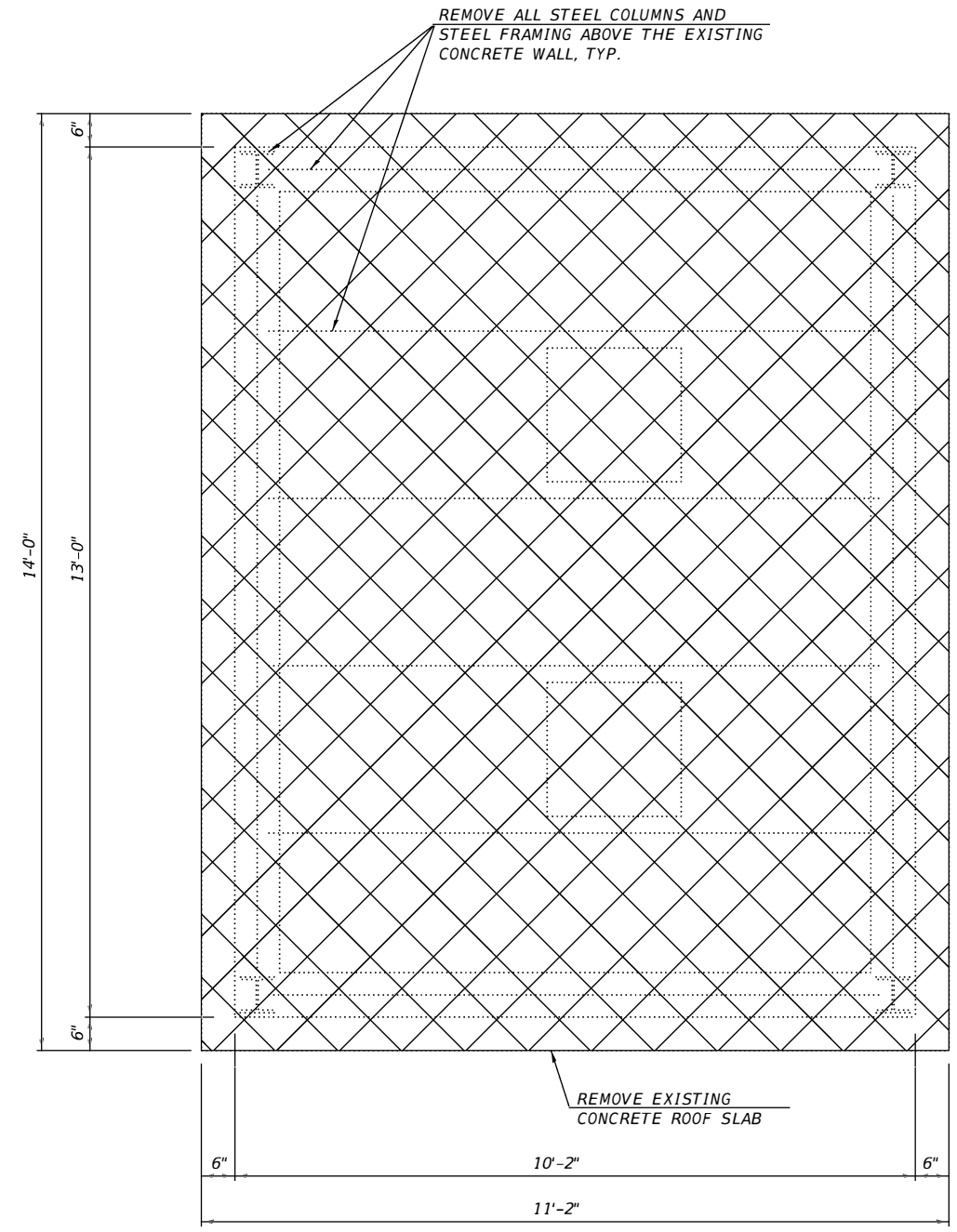
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	12	7
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

☒ 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.



EXISTING WALL DEMO PLAN



EXISTING ROOF FRAMING DEMO PLAN

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 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738



USER NAME = oms	DESIGNED - AMS	REVISED -
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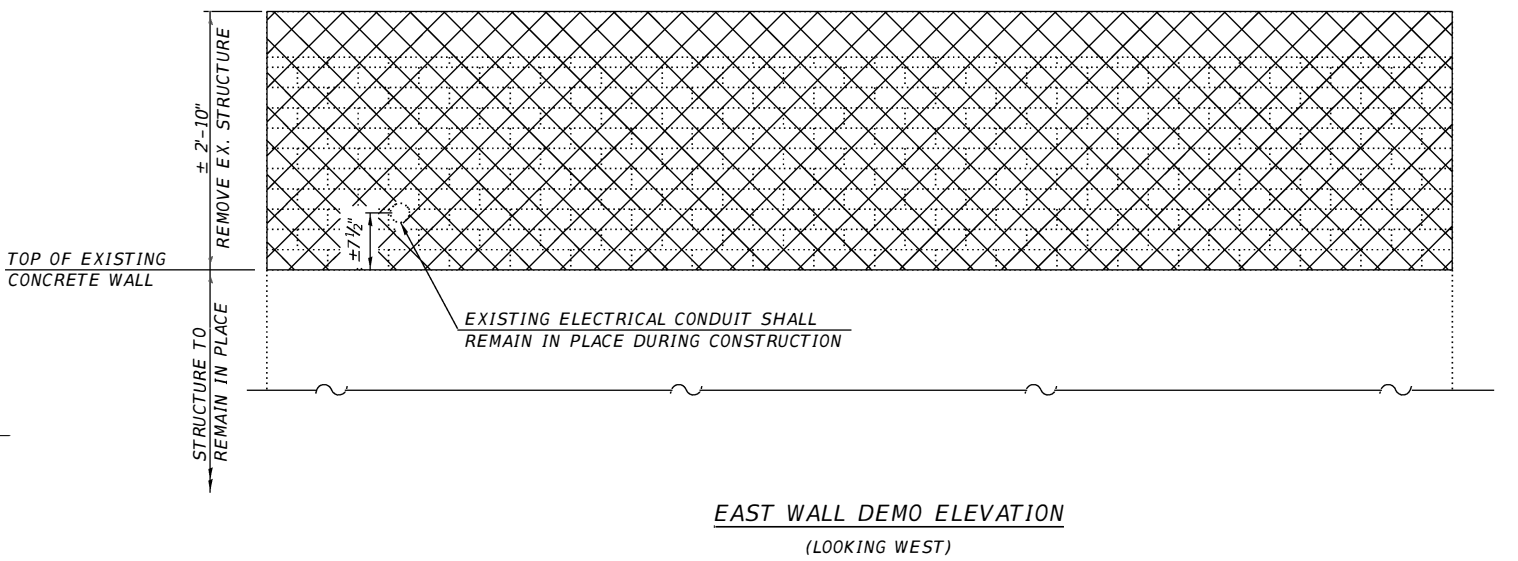
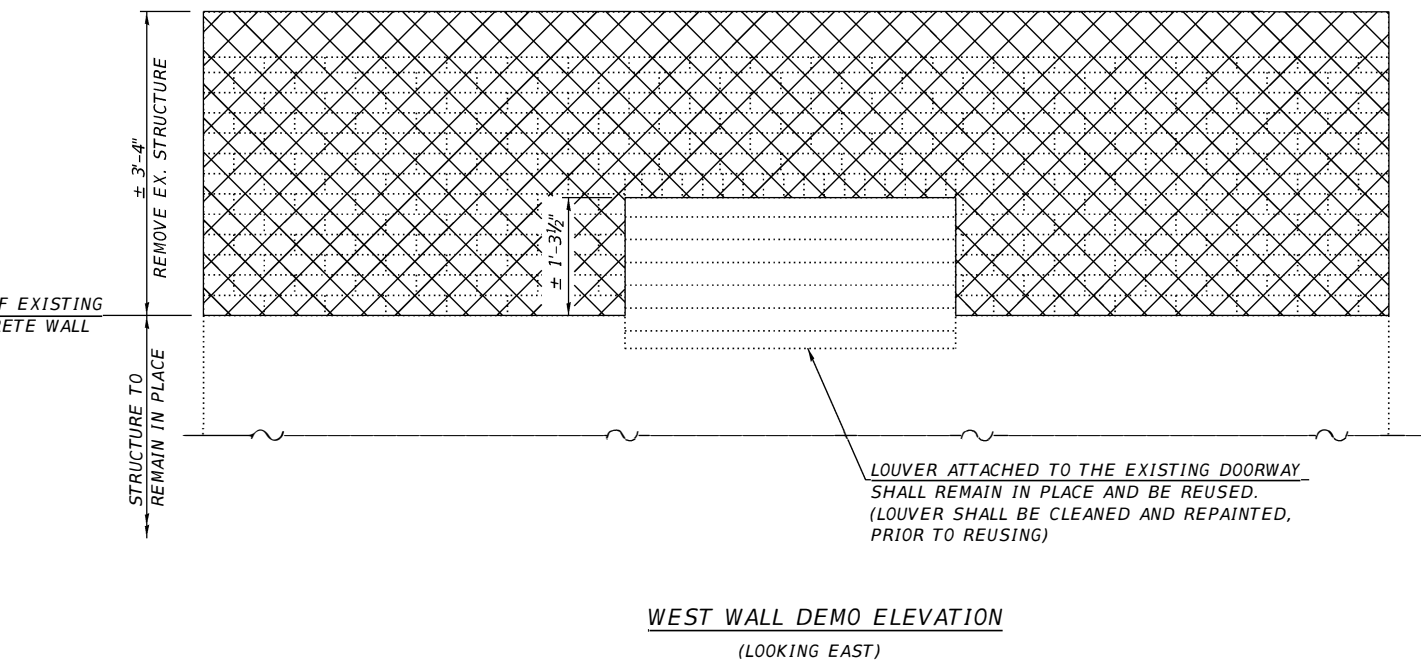
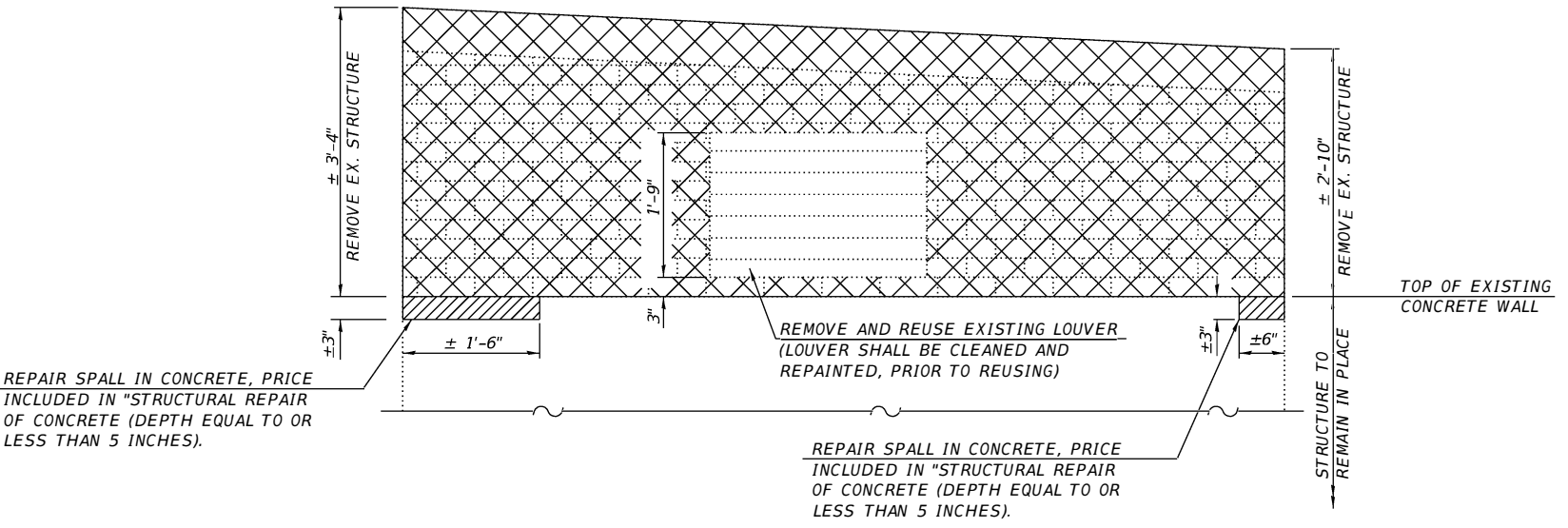
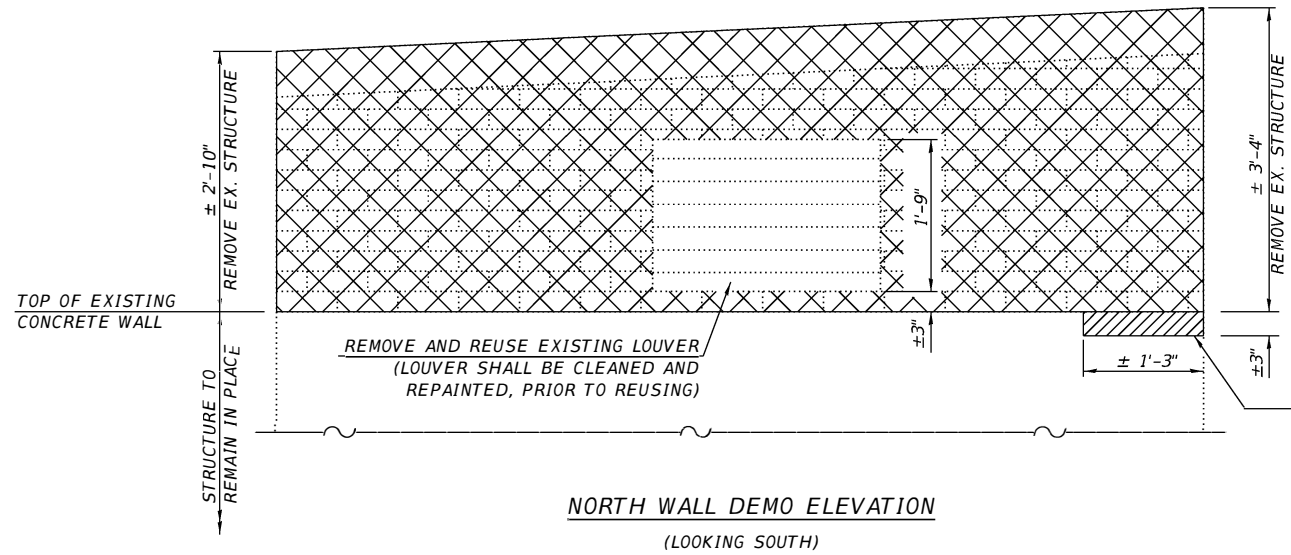
MT. PULASKI PUMP STATION
 BUILDING DEMO PLANS

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	12	8
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

-  REMOVAL OF EXISTING STRUCTURES
-  STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)

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
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 THE CONTRACTOR SHALL COORDINATE STRUCTURAL PLANS WITH THE ELECTRICAL PLANS.
 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION.



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 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

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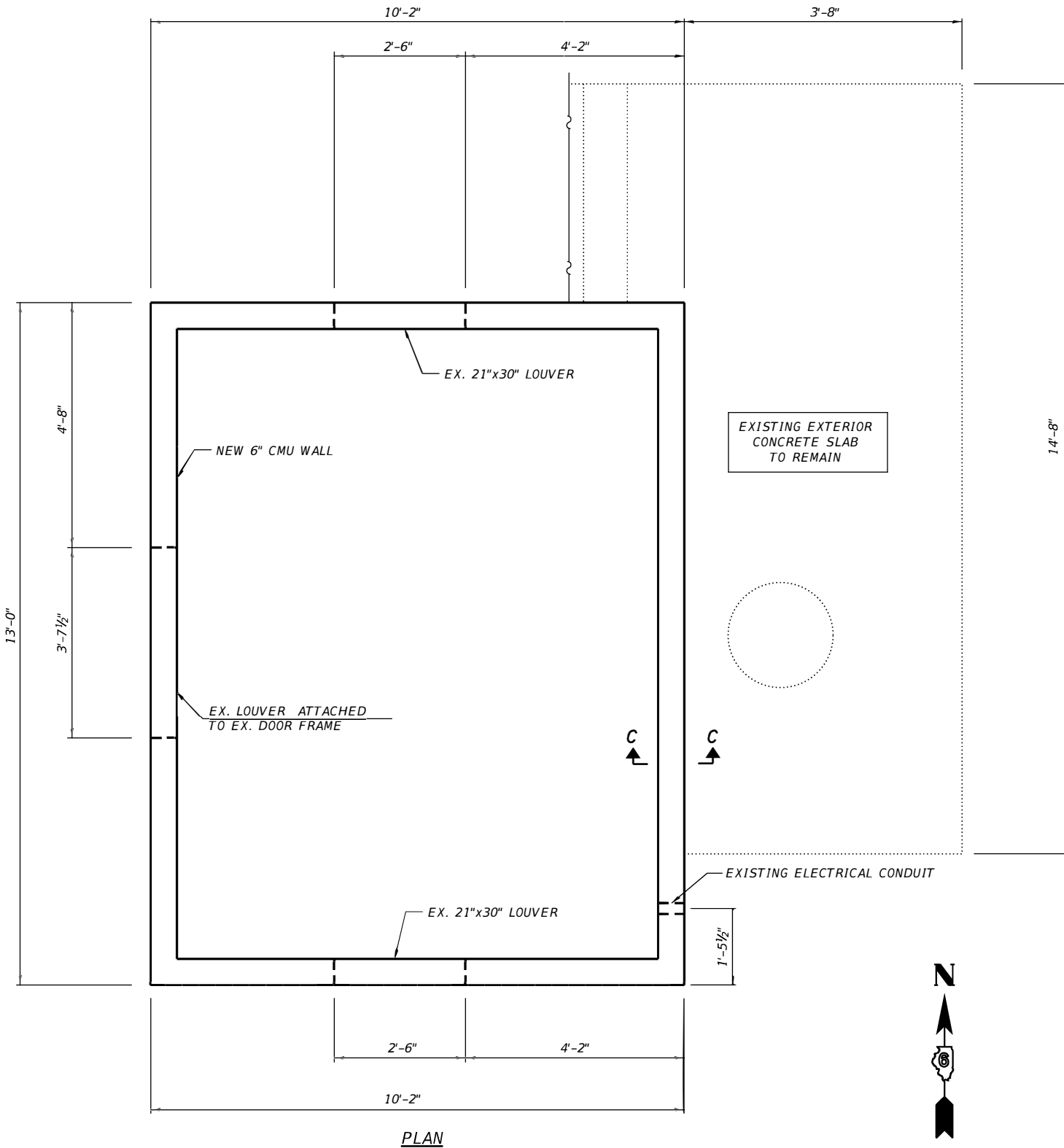
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

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

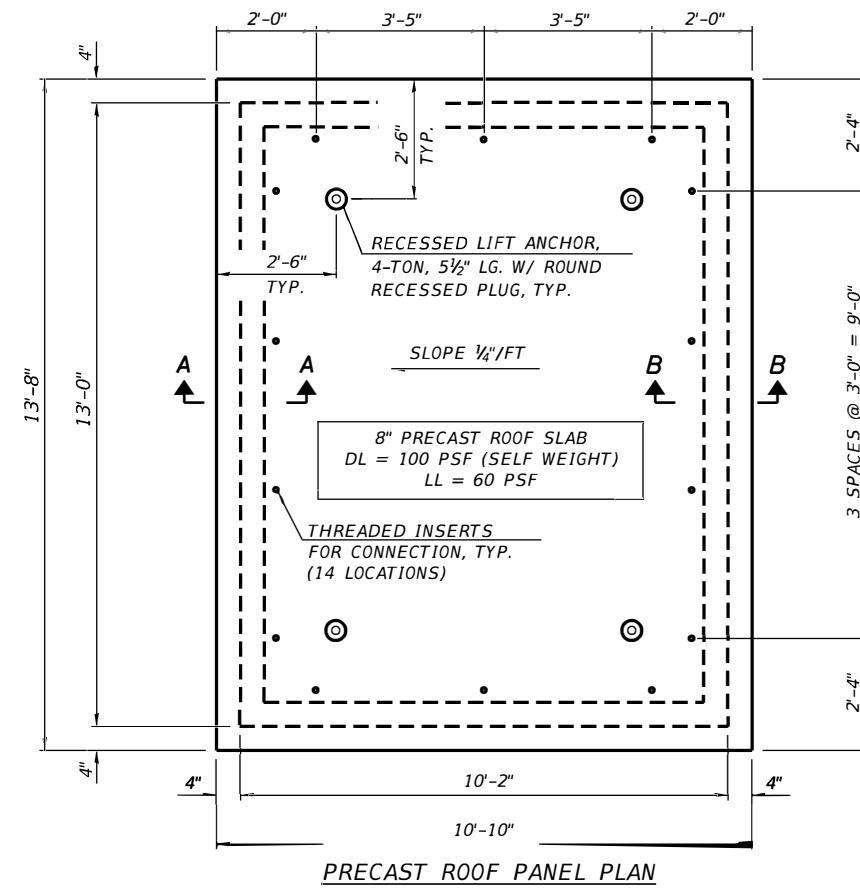
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	12	9
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

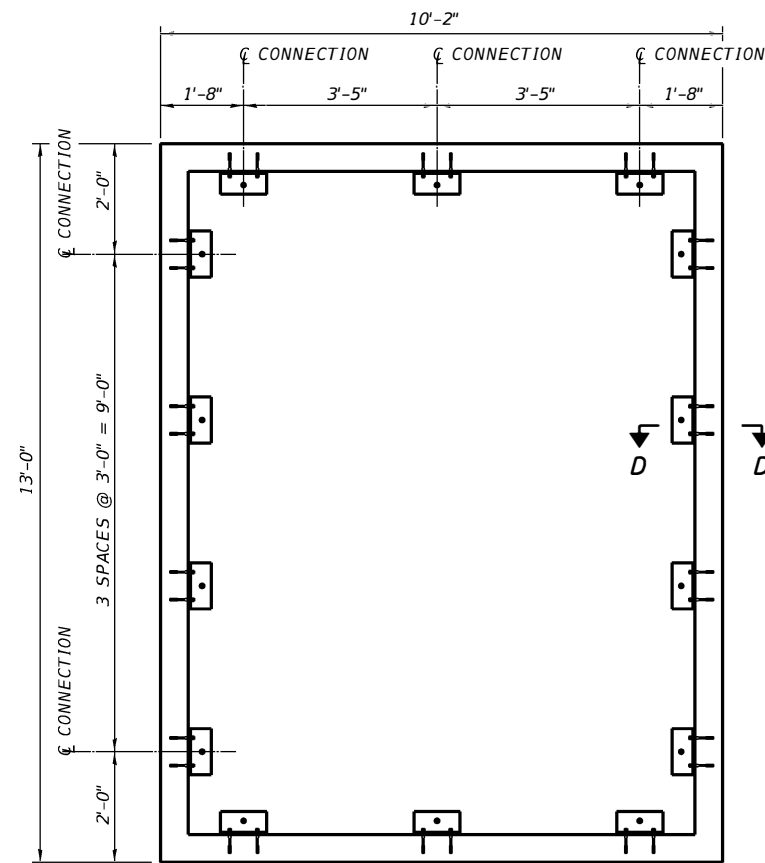
NOTE:
 THE COST OF CONSTRUCTING THE NEW CMU WALL, INCLUDING THE REINFORCEMENT AND GROUT SHALL BE INCLUDED IN "MASONRY WALL CONSTRUCTION".
 THE COST OF THE STRUCTURAL STEEL ANGLES, ANCHOR BOLTS, THREADED RODS, AND EPOXY SHALL BE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".
 THE COST OF THE 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

D:\17\files\170264\Work_Dr-dar-02 - Phase II Pump Station Blanket Agreement\Homeland Security Transfer_Switch_Projects\Documents\District 6\0646528-ahc-Plan3.dgn

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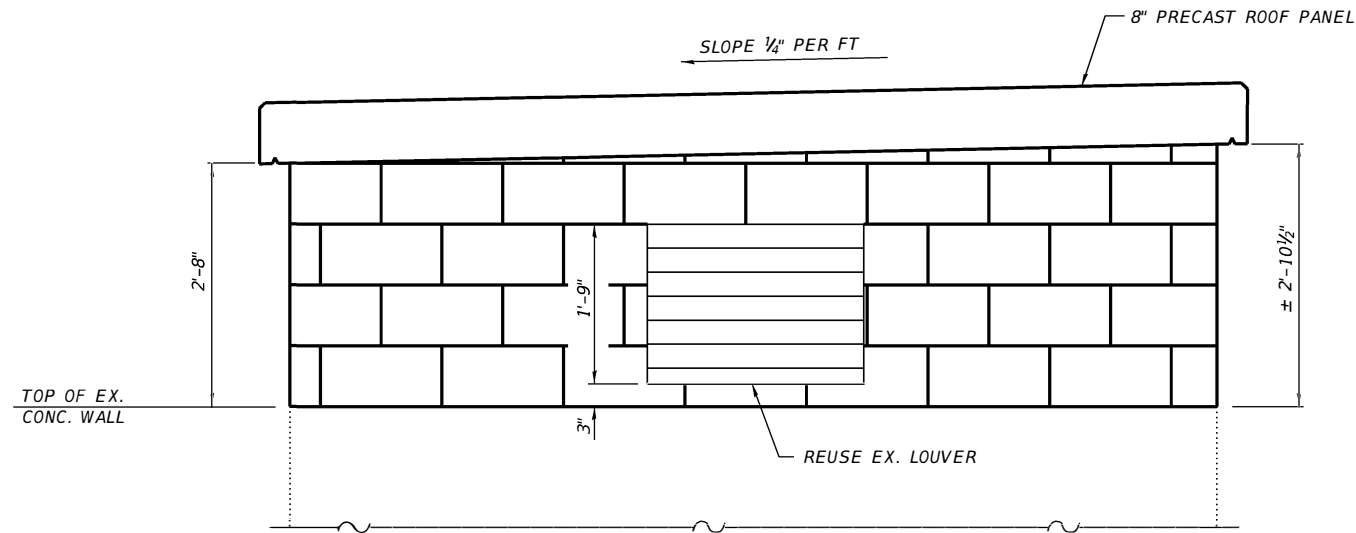
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

MT. PULASKI PUMP STATION
 BUILDING PLANS

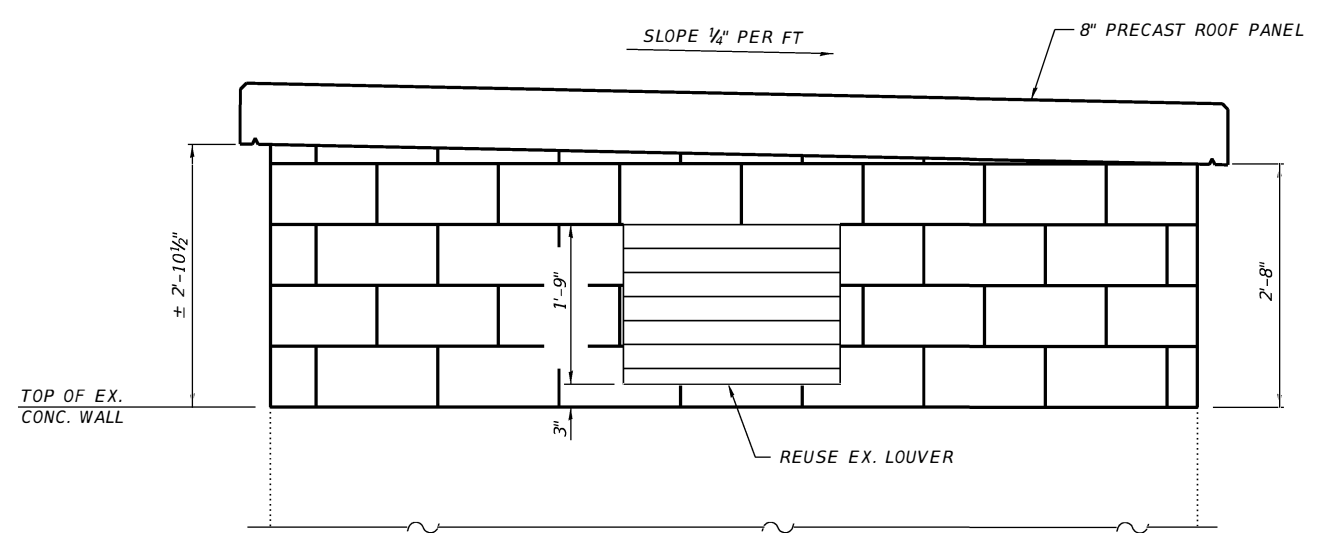
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F.A.P. RTE. 320	SECTION D6 PUMP STATION 2019	COUNTY LOGAN	TOTAL SHEETS 12	SHEET NO. 10
CONTRACT NO. 46528				ILLINOIS FED. AID PROJECT

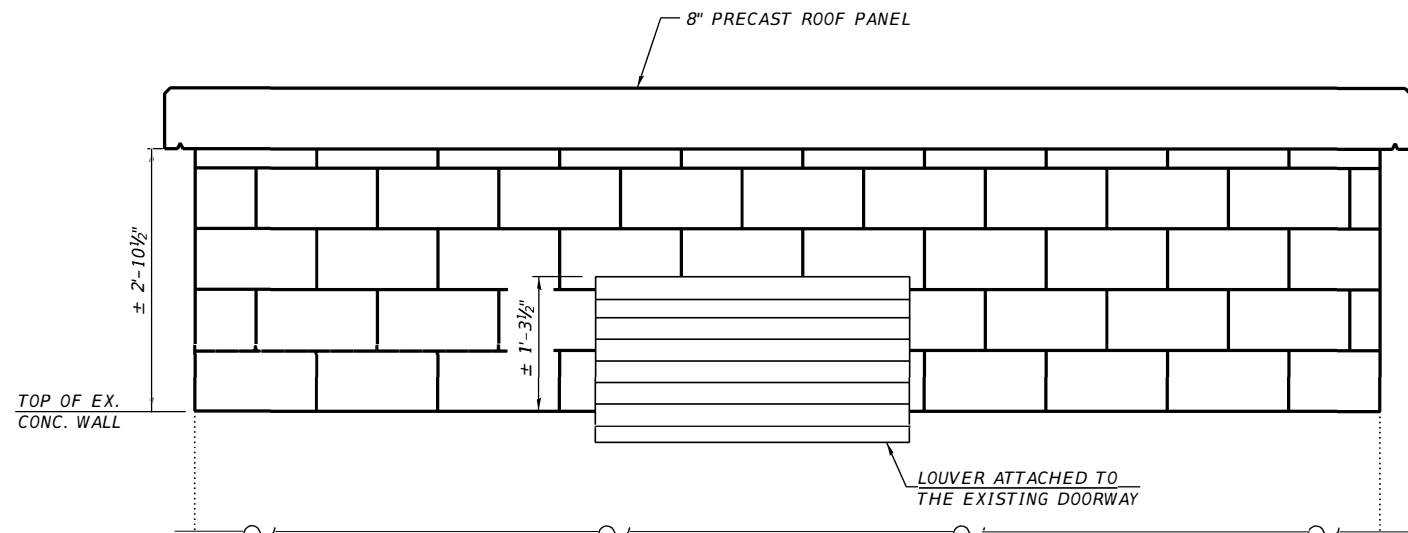
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 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION.
 CONCRETE SEALER SHALL BE APPLIED TO THE TOP, SIDES, AND BOTTOM OF THE PRECAST CONCRETE ROOF PANEL.
 MASONRY WALL FINISH AND COLOR SHALL BE SELECTED BY THE "OWNER".
 MASONRY UNITS SHALL BE FABRICATED WITH INTEGRAL WATER REPELLANT ADDITIVE.



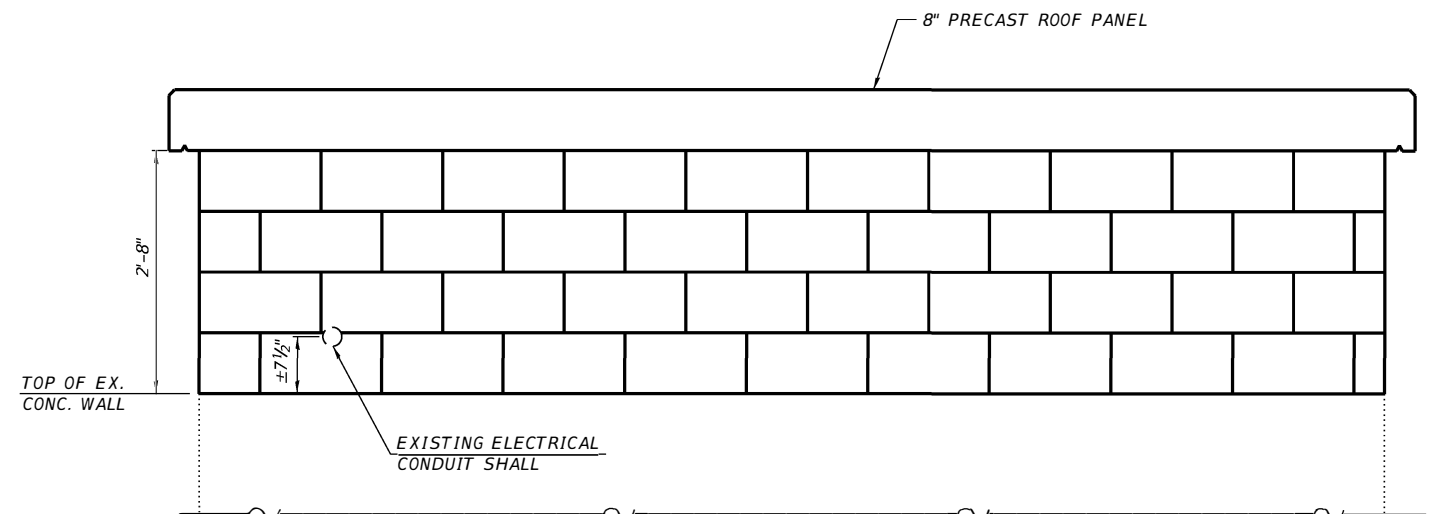
NORTH ELEVATION
 (LOOKING SOUTH)



SOUTH ELEVATION
 (LOOKING NORTH)



WEST ELEVATION
 (LOOKING EAST)



EAST ELEVATION
 (LOOKING WEST)

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 STATE OF ILLINOIS DESIGN FIRM NO. 164-2738

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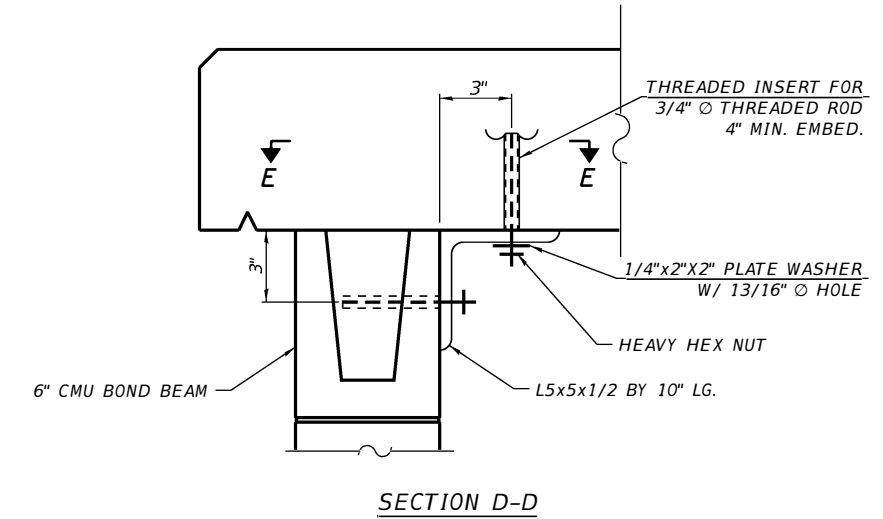
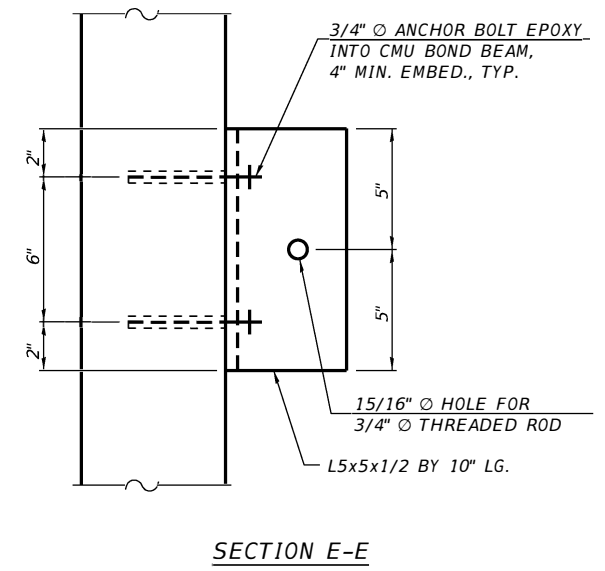
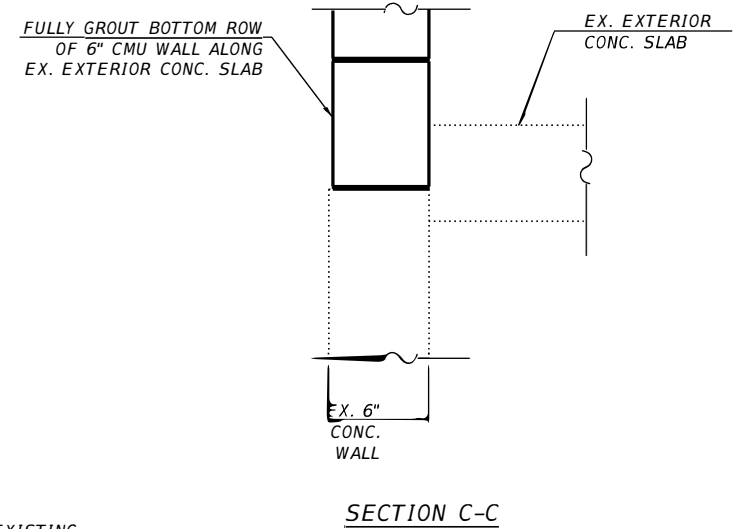
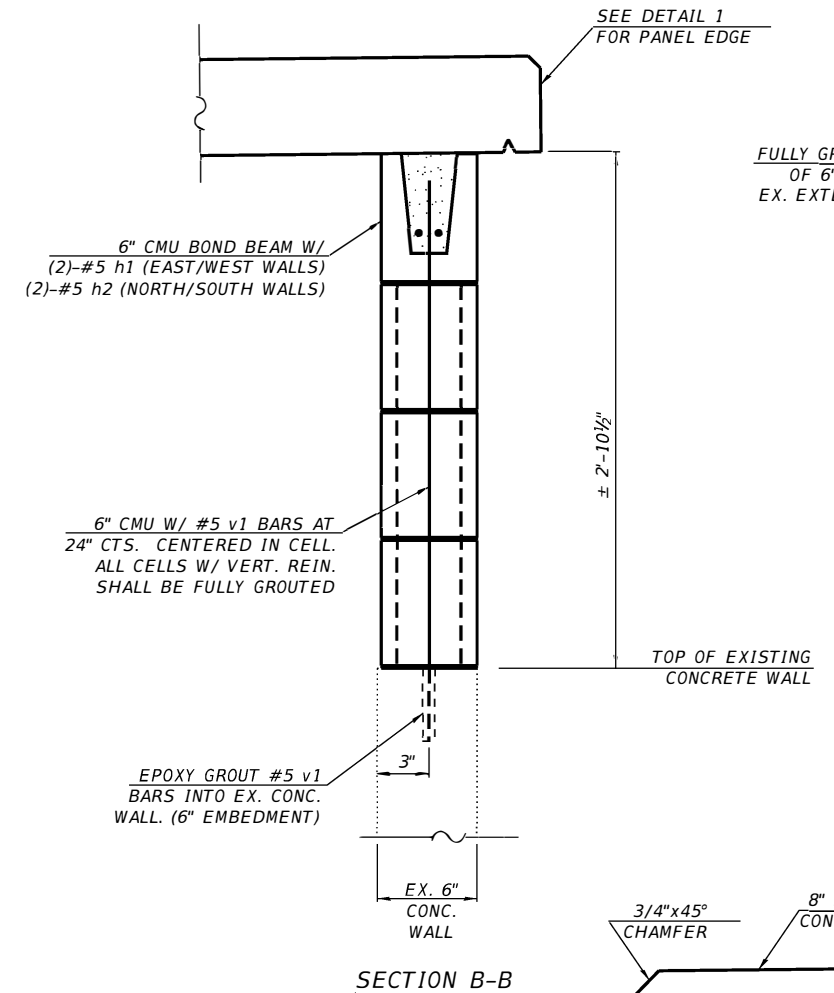
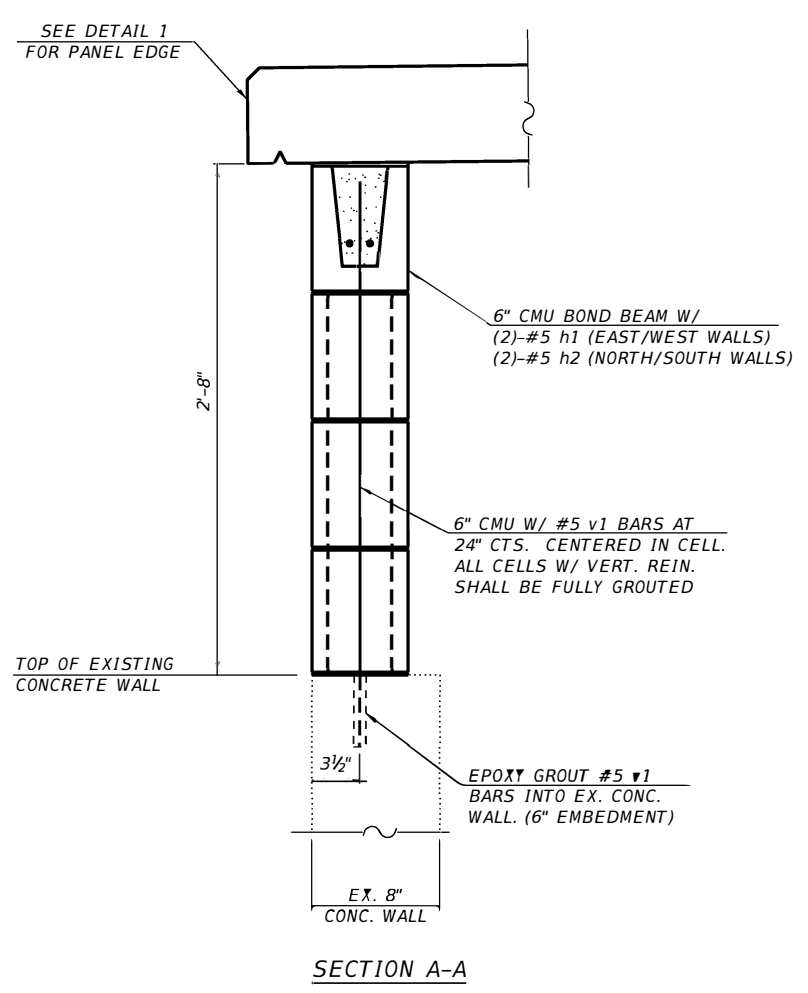
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MT. PULASKI PUMP STATION
BUILDING ELEVATIONS

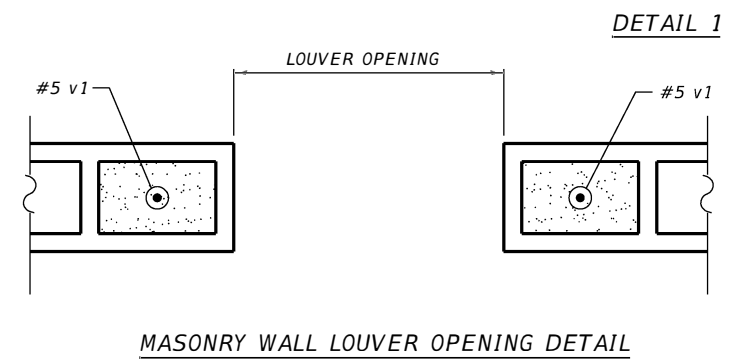
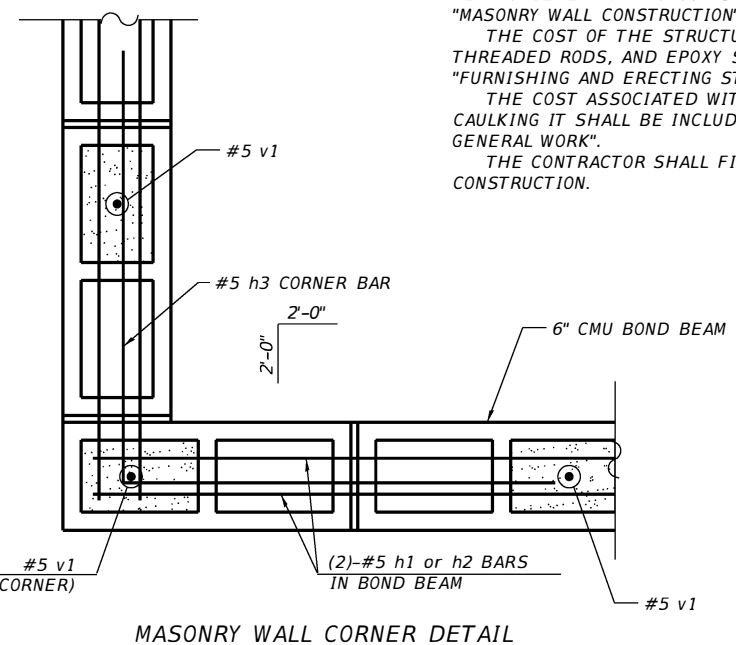
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	D6 PUMP STATION 2019	LOGAN	12	11
CONTRACT NO. 46528				
ILLINOIS FED. AID PROJECT				

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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.



DETAIL 1

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.