01-17-2020 LETTING ITEM 153

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- MT. PULASKI PUMP STATION BUILDING ELEVATIONS
- MT. PULASKI PUMP STATION STRUCTURAL DETAILS

HIGHWAY STANDARDS

000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS 701201-05 LANE CLOSURE, 2L. 2W. DAY ONLY, FOR SPEEDS ≥ 45 MPH

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

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

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

217-524-7165 217-524-9160

CONTRACT NO. 46528

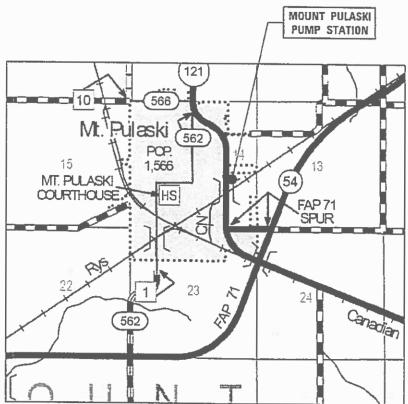
STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

F.A.P. 320 (IL 121) **SECTION D6 PUMP STATION 2019 BUILDING REHABILITATION** LOGAN COUNTY

C-30-011-19



LOGAN COUNTY GROSS LENGTH = NA NET LENGTH = N/A

LICENSED STRUCTURAL **ENGINEER** AARON M. SCHAFER

LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS NO. 081-007926 LICENSE EXPIRES NOVEMBER 30, 2020 ILLINOIS CONTRACT NO. 46528

LOCATION OF SECTION INDICATED THUS: - -

Engineers · Architects · Surveyors

Oxfesturg, R., Burlington, IA Pells, IA Hannibal, MO Columbia, MC STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

- 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.
- 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 NOT TO DISRUPT EXISTING PUMP STATION BUILDING OPERATIONS.
- 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. ADDITIONAL COMPENSATION MAY BE WARRANTED.
- 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
- 12. DURING DEMOLITION AND CONSTRUCTION, THE CONTRACTOR SHALL USE TRAFFIC CONTROL AND PROTECTION STANDARD 701201, AS DIRECTED BY THE ENGINEER.
- 13. SAMPLES WERE COLLECTED FOR ASBESTOS AND NO ASBESTOS WAS DETECTED.
- 14. SAMPLES WERE COLLECTED FOR LEAD PAINT AND <u>ONLY</u> THE CEILING I-BEAMS CONTAIN LEAD PAINT.
- 15. REMOVE/REINSTALL EXISTING CONDUIT AND ELECTRICAL EQUIPMENT LOCATED ON ROOF AND UPPER WALLS AS NECESSARY TO FACILITATE BUILDING MODIFICATIONS.

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
 - BASIC WIND SPEED (3 SECOND GUST) = 115 MPH
 - II. EXPOSURE CATEGORY B
 - II. EXPOSURE CATEGORY B III. IMPORTANCE FACTOR, IW = 1.0
 - DIRECTIONAL FACTOR, KD = 0.85
 - N. TOPOGRAPHIC EFFECT, KZ = 1.0
 - V. INTERNAL PRESSURE COEFFICIENT, GCPI = ±0.55 (PARTIALLY ENCLOSED)
 - E. SEISMIC LOADING EQUIVALENT LATERAL FORCE PROCEDURE
 - $IMPORTANCE\ FACTOR,\ IE=1.0$
 - II. SITE CLASS D III. SDS = 0.199 (SS = 18.7%)
 - $IV. \quad SD1 = 0.098 \ (S1 = 9.8\%)$
 - /. SEISMIC DESIGN CATEGORY B
 - /I. 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, $\Omega O = 2.5$
 - 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 REQUIRMENTS.
- 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.
- 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.

MASONI

- 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.
- 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, f'm=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.
- 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.
- 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 EXISITNG BRICK MASONRY DEMOLITION SHALL BE INCLUDED IN "REMOVAL OF EXISTING STRUCTURES".

PRECAST STRUCTURAL CONCRETE

- 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
- 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.
- 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.
- 7. PRECAST MANUFACTURER SHALL CAST IN STRUCTURAL INSERTS AND LIFTING ANCHORS AS SHOWN ON THE STRUCTURAL DESIGN PLANS.

COUNTY

LOGAN

8

CONTRACT NO. 46528

& A S S O C I A T E S, P. C.
Engineers • Architects • Surveyors
616 N24TH ST. OUNCY, ILLINOIS 62301 217,223,6970
STATE OF ILLINOIS DESION FIRM NO. 1842-738

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

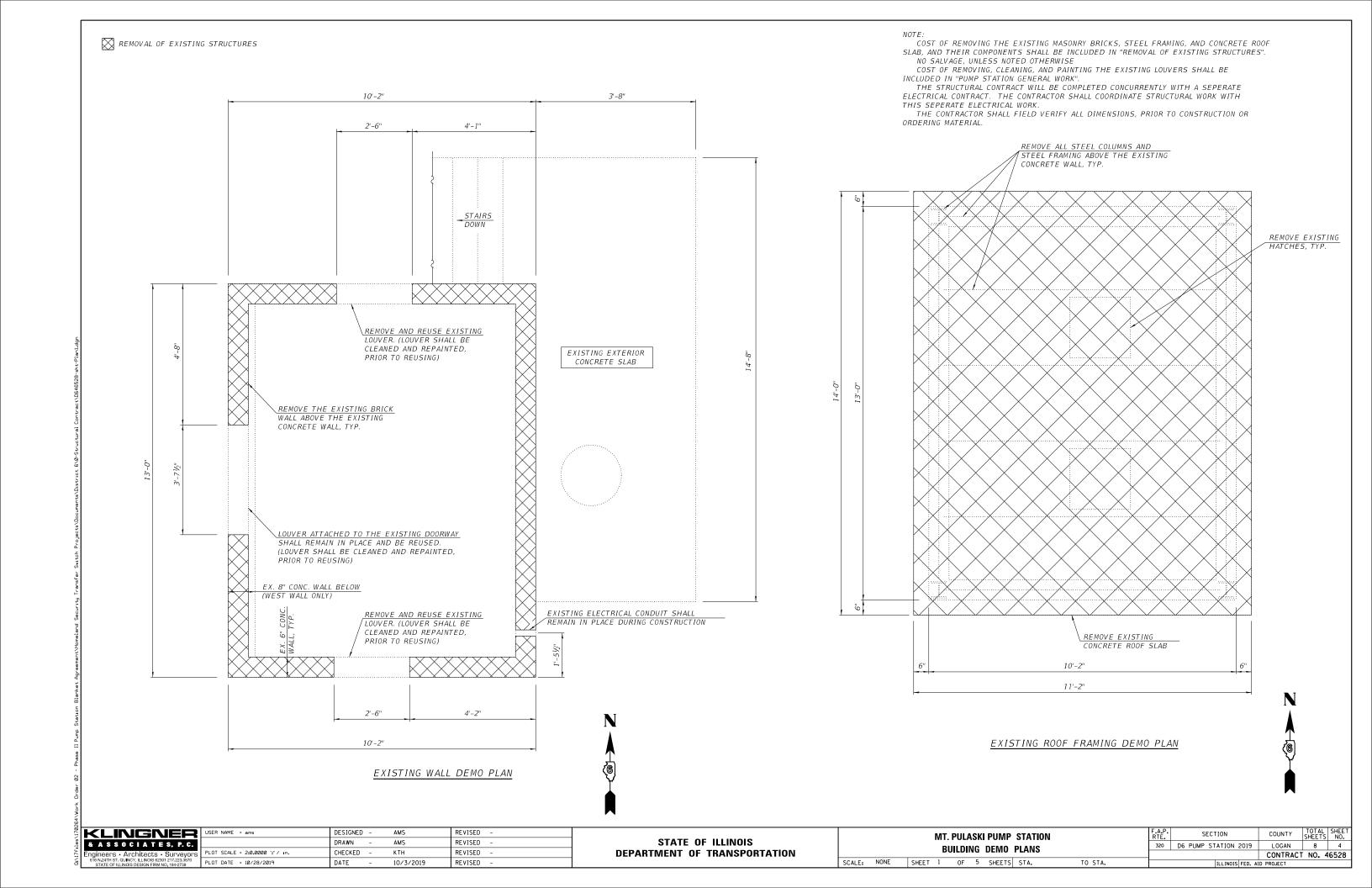
ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

			100% STATE	CONSTRUCTION TYPE CODE	
CODE NO.	ITEM		TOTAL QUANTITY	LOGAN	
		UNIT		0044	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	175	175	
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	
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	150	150	

& A S S O C I A T E S. P. C.
Engineers - Architects - Surveyors
616 N-24TH ST. OUNCY, ILLINOIS 62301 217.223.5670
PI

USER NAME = ams	DESIGNED	-	JNN	REVISED -
	DRAWN	-	AMS	REVISED -
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PLOT DATE = 10/24/2019	DATE	-	10/3/2019	REVISED -



REMOVAL OF EXISTING STRUCTURES COST OF REMOVING THE EXISTING MASONRY BRICKS, STEEL FRAMING, AND CONCRETE ROOF SLAB, AND THEIR COMPONENTS SHALL BE INCLUDED IN "REMOVAL OF EXISTING STRUCTURES". STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES) NO SALVAGE, UNLESS NOTED OTHERWISE COST OF REMOVING, CLEANING, AND PAINTING THE EXISTING LOUVERS SHALL BE INCLUDED IN "PUMP STATION GENERAL WORK". THE STRUCTURAL CONTRACT WILL BE COMPLETED CONCURRENTLY WITH A SEPERATE ELECTRICAL CONTRACT. THE CONTRACTOR SHALL COORDINATE STRUCTURAL WORK WITH THIS SEPERATE ELECTRICAL WORK THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, PRIOR TO CONSTRUCTION. : 3'-4" OF EXISTING UCTURES TOP OF EXISTING TOP OF EXISTING
CONCRETE WALL REMOVE AND REUSE EXISTING LOUVER
(LOUVER SHALL BE CLEANED AND REMOVE AND REUSE EXISTING LOUVER ±6" (LOUVER SHALL BE CLEANED AND STRUCTURE TO REMAIN IN PLAC STRUCTURE TO REMAIN IN PLAC REPAINTED, PRIOR TO REUSING) REPAIR SPALL IN CONCRETE, PAID FOR AS "STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES). REPAINTED, PRIOR TO REUSING) REPAIR SPALL IN CONCRETE, PAID FOR AS "STRUCTURAL REPAIR OF NORTH WALL DEMO ELEVATION CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES). (LOOKING SOUTH) SOUTH WALL DEMO ELEVATION (LOOKING NORTH) TOP OF EXISTING
CONCRETE WALL TOP OF EXISTING EXISTING ELECTRICAL CONDUIT SHALL CONCRETE WALL REMAIN IN PLACE DURING CONSTRUCTION LOUVER ATTACHED TO THE EXISTING DOORWAY SHALL REMAIN IN PLACE AND BE REUSED. (LOUVER SHALL BE CLEANED AND REPAINTED, PRIOR TO REUSING). CONTRACTOR SHALL PROTECT EAST WALL DEMO ELEVATION (LOOKING WEST) EXISTING BUILDING DURING CLEANING AND PAINTING WEST WALL DEMO ELEVATION (LOOKING EAST) KLINGNER DESIGNED -AMS REVISED USER NAME = ams SECTION MT. PULASKI PUMP STATION

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

320 D6 PUMP STATION 2019

BUILDING DEMO ELEVATIONS

TO STA.

SCALE: NONE SHEET 2 OF 5 SHEETS STA.

LOGAN

CONTRACT NO. 46528

8 5

& ASSOCIATES, P.C.

DRAWN

DATE

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PLOT DATE = 10/24/2019

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