Contract 2 2019 Phase 18 Water and Sewer System Improvements WWTP Influent Lift Station Improvements

Columbia-Adair Utilities District Columbia, Adair County, Kentucky

PROJECT NO. 19013

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JUNE , 2020





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INDE OF DRAWINGS

SHT. NO.	DESCRIPTION:

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E-00-03

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- COVER LOCATION MAP, LEGEND, UTILITY OWNERS and INDE OF DRAWINGS
- WWTP SITE PLAN E ISTING INFLUENT LIFT STATION MODIFICATIONS
- PROPOSED INFLUENT LIFT STATION
- STANDARD DETAILS
- EROSION CONTROL DETAILS
- ELECTRICAL SITE PLAN CONTROL CIRCUIT 1
- CONTROL CIRCUIT 2
- ELECTRICAL DEMOLITION PLAN
- ELECTRICAL PLAN ELECTRICAL DETAILS



CONTRACT No. 2 2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS WWTP INFLUENT LIFT STATION IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

GENERAL NOTES

- THE CONTRACTOR SHALL FIELD LOCATE E ISTING STRUCTURES AND PIPING AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES ENCOUNTERED BEFORE BEGINNING CONSTRUCTION OPERATIONS. SITE YARD PIPING LAYOUT OR DIMENSIONS, WHERE GIVEN, ARE TO SHOW THE ENGINEER S INTENT AND TO AID THE CONTRACTOR IN PIPE INSTALLATION.
- DIMENSIONS OF E ISTING STRUCTURES AND/OR SITE RESTRICTIONS ARE APPRO IMATE. ALL NECESSARY DIMENSIONS AND ELEVATIONS OF E ISTING STRUCTURES TOPOGRAPHY SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
- GENERALLY, ALL E ISTING E UIPMENT, PIPING VALVING, ETC., SHOWN TO BE REMOVED, SHALL, AFTER REMOVAL, BE DISPOSED OF BY THE CONTRACTOR UNLESS SHOWN OTHERWISE ON THESE DRAWINGS. CONTRACTOR SHALL CONSULT PLANT REPRESENTATIVE BEFORE DISPOSAL OF ANY ITEMS.
- ALL WALL PENETRATIONS FOR PIPING SHALL CONFORM TO THE STANDARD DETAILS AS RE UIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- IT SHALL BE THE CONTRACTOR S RESPONSIBILITY TO WORK ALL APPLICABLE DRAWINGS AND THE APPROPRIATE SPECIFICATIONS AS A UNIT. ANY OMISSIONS, DELETIONS, OR CONFLICTS ARISING AS A RESULT OF FAILURE TO INCORPORATE ALL DRAWINGS AND SPECIFICATIONS THAT APPLY SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER.
- PIPE AND CONDUIT SUPPORTS ARE TYPICALLY NOT SHOWN. HOWEVER ALL PIPING, INSIDE AND OUTSIDE, SHALL BE ADE UATELY SUPPORTED AND BLOCKED SO AS NOT TO PRODUCE UNDUE STRAIN OR VIBRATION ON PIPE JOINTS OR E UIPMENT, SEE SPECIFICATIONS.
- ALL PIPING ABANDONED IN PLACE SHALL BE PROPERLY CAPPED OR PLUGGED AT EACH END AND RENDERED LEAKPROOF.
- 8. E ACT LOCATIONS OF DUCTS, CONDUITS, LIGHT FI TURES AND PIPES SHALL BE FIELD LOCATED AND COORDINATED WITH THE WORK OF SUBCONTRACTORS FOR THE VARIOUS TRADES INVOLVED.
- 9. ELECTRICAL AND INSTRUMENTATION SUBCONTRACTORS SHALL NOTIFY THE CONTRACTOR AND COORDINATE THE SIZES AND LOCATIONS OF ALL OPENINGS AND RECESSES IN STRUCTURES RE UIRED FOR THEIR WORK.
- 10. CONTRACTOR SHALL FIELD LOCATE AND E POSE UTILITIES BEFORE INSTALLING PIPE OR CONDUITS.
- 11. THE CONTRACTOR SHALL SCHEDULE ALL WORK TO ALLOW PLANT OPERATION TO BE MAINTAINED THROUGHOUT CONSTRUCTION CONTRACT TIME PERIOD.
- 12. E TREME CARE SHALL BE TAKEN TO PROTECT UNDERGROUND PIPING AND UNDER SLAB PIPING FROM SURFACE LOADS E ERTED BY CONSTRUCTION E UIPMENT TRUCKS, LOADERS, CRANES, ETC. .
- 13. THE RENOVATION WILL BE ACCOMPLISHED IN PHASES, THEREFORE THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT COMPLETED WORK FROM ONGOING RENOVATION WORK.
- 14. THE CONTRACTOR SHALL CONFIRM THE CONTENTS OF ANY AND ALL PIPING INVOLVED IN DEMOLITION RE UIREMENTS AND PROVIDE AND WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE PROTECTION.

LOCATION MAP, INDE OF DRAWINGS, LEGEND, UTILITIES



PROJECT NO. 19013

SHEET NO. G-00-01



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EFERENCE NOTES:

- SED SUBMERSIBLE PUMPS
- SED VALVE VAULT
- G WASTE SLUDGE METER VAULT
- G RETURN SLUDGE METER VAULT
- G 12" FORCE MAIN
- G 16" FORCE MAIN
- G INFLUENT SCREW PUMPS
- G VALVE VAULT
- G STORM WATER PUMP STATION
- G 8" RETURN ACTIVATED SLUDGE LINE PUMPING QUICK CONNECTION
- G WASTE ACTIVATED SLUDGE LINE
- G GRIT CHAMBER
- ARD

GENERAL NOTES:

- 1. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ALL EXISTING STRUCTURES AND UTILITIES IN THE VICINITY OF THE NEW VALVE VAULT. IF ANY CONFLICTS ARE FOUND THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY
- 2. EXISTING FORCE MAIN SHALL BE REMOVED TO ALLOW FOR THE INSTALLATION OF THE NEW VALVE VAULT. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL OTHER UTILITIES IN THE AREA DURING CONSTRUCTION
- 3. CONTRACTOR SHALL COORDINATE WORK WITH OWNER IN ORDER TO HAVE SCREW PUMPS IN OPERATION FOR INSTALLATION OF THE NEW SUBMERSIBLE PUMPS.
- 4. COMPLETE SHUTDOWN OF INFLUENT LIFT STATION FOR THE INSTALLATION OF BASE ELBOWS SHALL BE COMPLETED DURING LOW FLOW PERIODS WHEN THE EXISTING INFLUENT SCREW PUMPS HAVE ADEQUATE CAPACITY.
- 5. THE CONTRACTOR SHALL HAVE ON SITE BYPASS PUMPING EQUIPMENT CAPABLE OF 3.0 MGD PUMPING FROM THE EXISTING SCREW PUMP WELL TO THE QUICK CONNECT IN CASE OF UNEXPECTED HIGH FLOWS.
- 6. ACTIVATED SLUDGE IS CURRENTLY RETURNED TO THE INFLUENT STATION. CONTRACTOR SHALL PROVIDE PUMPING EQUIPMENT OR MODIFY EXISTING YARD PIPING TO RETURN SLUDGE TO THE OXIDATION DITCH DURING PERIOD OF COMPLETE SHUTDOWN OF THE INFLUENT STATION.







PROJECT NO. 19013

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CONTRACT No. 2 2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS WWTP INFLUENT LIFT STATION IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

GENERAL NOTES:

- 1. CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF ALL EQUIPMENT SHOWN.
- 2. YARD PIPING SHALL BE REMOVED TO ALLOW INSTALLATION OF A NEW VALVE VAULT.
- 3. CONTRACTOR SHALL COORDINATE WORK WITH OWNER IN ORDER TO PROVIDE ADEQUATE PUMPING. WHILE STATION IS OUT OF SERVICE
- 4. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EQUIPMENT TO REMAIN IN SERVICE. 5. CONTRACTOR SHALL BE RESPONSIBLE FOR PLUGGING THE INFLUENT AND ALL
- DEWATERING OF THE STATION NECESSARY FOR COMPLETION OF THE MODIFICATIONS.



EXISTING INFLUENT PUMP STATION MODIFICATIONS



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CONTRACT No. 2 2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS WWTP INFLUENT LIFT STATION IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

SCALE: 1/4"=1'-0"



SHEET NO. C-01-02















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				PROJECT MGR:	MAU	P.O. Box 1034 VERSAILLES, KENTUCKY 40383	2019 PHASE 18
				DRAWN BY:	MAU		WATER AND SEWER SYSTEM IMPROVEMENT
				CHECKED BY:	RCC	(KENTUCKY	WWTP INFLUENT LIFT STATION IMPROVEMENT
				SCALE:	AS NOTED		COLUMBIA ADAIR UTILITIES DISTRICT
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- BACKFILL TO BE CRUSHED STONE, FINE GRAVEL OR SAND

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- DROP INLET SECTION
- 3/4"ø DRAIN GRAVEL-<u>PLAN</u>
- SEDIMENT TO SEPARATE FROM RUNOFF.

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EROSION CONTROL DETAILS

NO.	DATE	REVISIONS

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TYPICAL TYPE A STARTER POWER WIRING

BY	DATE:	OCTOBER 2019
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CONTRACT No. 2 2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

CONTROL CIRCUIT 1

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- MOLDED CASE CIRCUIT BREAKERS (SQUARE D CLASS TYPE QO OR EQUAL). PANEL LEGEND PLATE
- VULCANIZED TO AN ALUMINUM MOUNTING PLATE
- RECEPTACLE (PHOENIX CONTACT EM-DUO 120/20
- UNINTERRUPTIBLE POWER SUPPLY (UPS) WITH
- AND 3 N.O. AND 3 N.C. 10A CONTACTS (SQUARE D
- MANUAL OPERATOR, PILOT LIGHT, AND BLADE-TYPE TERMINALS AND DIN RAIL MOUNT SOCKET (SQUARE
- PLUG-IN INTRINSICALLY-SAFE RELAY W/SPST N.O. DIVERSIFIED ELECTRONICS P/N ISO-120-AFA OR
- SCREW-TYPE TERMINAL BLOCKS W/ TERMINALS MADE OF CORROSION-RESISTANT COPPER ALLOYS

- 11. FLOAT SWITCHES
- 12. NON-RESETTABLE ELAPSED TIME METER
- 13. SEAL LEAK RELAY PER SUPPLIED PUMP MFGR. REVISE AS NEEDED TO ACCOMMODATE SPECIFIC PUMP MFRG. REQUIREMENTS.
- 14. 2 OR 3-POSITION, 30MM, NEMA 4/13 MAINTAINED SELECTOR SWITCH W/600V, 10A CONTACTS, STANDARD KNOB, AND "HAND-OFF-AUTO" LEGEND PLATE (SQUARE D CLASS 9001 TYPE K OR EQUAL).
- 15. LED PILOT LIGHT, GREEN, PUSH-TO-TEST
- 16. LED PILOT LIGHT, RED, PUSH-TO-TEST
- 17. PHASE LOSS, UNDER VOLTAGE AND PHASE SEQUENCE PLUG-IN MONITOR WITH SCREW DRIVER ADJUSTABLE DROP OUT VOLTAGE, LED INDICATOR, BLADE-TYPE TERMINALS & DIN RAIL SOCKET AND SPDT 10A CONTACT (ATC DIVERSIFIED ELECTRONICS SLA SERIES OR EQUAL).
- 18. 600V, 30A, 3-POLE FUSE HOLDER CLASS H AND R FUSEHOLDER WITH CLASS CC FUSES (SQUARE D CLASS 9080 TYPE FB OR EQUAL).
- 19. 120V MOMENTARY PUSHBUTTON WITH FLUSH OPERATOR (SQUARE D CLASS 9001 TYPE K OR EQUAL).
- 20. 120V, NEMA 4X, 103dB @ 10 FT. ALARM HORN (EDWARDS SIGNALING MODEL 870P SERIES OR EQUAL)
- 21. 120V, NEMA 4X, LED FLASHING ALARM LIGHT
- 22. HYDROSTATIC LEVEL TRANSDUCER/TRANSMITTER
- 23. 125V, 20A, GFCI RECEPTACLE.

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PROJECT NO. 19013 SHEET NO. E-00-03

CONTROL CIRCUIT 2

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ELECTRICAL DEMOLITION PLAN SCALE: 1/4"=1'-0" 0 2' 4'

DATE:

DRAWN BY:

SCALE:

CONTRACT No. 2 2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

\bigcirc REFERENCE NOTES

- 1. DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT INSIDE FIBERGLASS PREFAB BUILDING FOR COMPLETE DEMOLITION, INCLUDING LIGHTS, SWITCHES, RECEPTACLES, CONDUCTORS/CONDUITS, ETC.
- 2. DISCONNECT AND REMOVE EXISTING PUMP CONTROL PANEL.
- 3. DISCONNECT AND REMOVE EXISTING 5 KVA TRANSFORMER AND ASSOCIATED CONDUCTORS/CONDUITS. 4. DISCONNECT AND REMOVE EXISTING 10 HP MOTORS ALONG
- WITH ASSOCIATED FEEDER/CONDUITS. (TYPICAL OF 3)
- 5. DISCONNECT AND REMOVE EXISTING WIREWAY.
- 6. DISCONNECT AND REMOVE EXISTING SUMP PUMP.
- 7. DISCONNECT AND REMOVE EXISTING VACUUM PUMPS. (TYPICAL OF 3)
- 8. DISCONNECT AND REMOVE EXISTING UNIT HEATER ALONG WITH ASSOCIATED BRANCH CIRCUIT CONDUCTORS/CONDUITS.
- 9. DISCONNECT AND REMOVE EXISTING EXHAUST FAN ALONG WITH ASSOCIATED BRANCH CIRCUIT CONDUCTORS/CONDUITS.
- 10. DISCONNECT AND REMOVE EXISTING MOTORIZED DAMPER ALONG WITH ASSOCIATED BRANCH CIRCUIT CONDUCTORS/CONDUITS.
- 11. DISCONNECT AND REMOVE EXISTING FEEDERS, CONTROL CONDUCTORS AND CONDUITS BETWEEN EXISTING JUNCTION BOX AND PUMP CONTROL PANEL.
- 12. DISCONNECT AND REMOVE EXISTING JUNCTION BOX, CONDUITS, FLOAT SWITCHES WITH CABLES.
- 13. DISCONNECT AND REMOVE EXISTING ALARM LIGHT/HORN, SWITCH AND ASSOCIATED CONDUCTORS/CONDUITS.
- 14. EXISTING CONTROL PANEL SHALL REMAIN.
- 15. EXISTING JUNCTION BOX, FEEDERS FROM PANEL EDP, AND CONTROL CONDUCTORS FROM CONTROL PANEL MCP TO BE REUSED.

PROJECT NO. 19013 SHEET NO. ELECTRICAL DEMOLITION PLAN E-01-01

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CONTRACT No. 2 2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

GENERAL NOTES:

1. THE AREA INSIDE WETWELL IS CLASS 1, DIVISION 1, GROUP D. THE AREA 18" ABOVE HATCH AND 10' IN DIAMETER HORIZONTALLY IS CLASS 1, DIVISION 2, GROUP D. ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC.

\bigcirc REFERENCE NOTES

- 1. PUMP CONTROL PANEL IN NEMA 4X ENCLOSURE FLOOR MOUNTED WITH LEGS MINIMUM 18" HIGH. SEE DETAIL 6 ON SHEET E-01-03. COORDINATE FINAL LOCATION WITH HOIST/TROLLEY.
- 2. SPLICE EXISTING FEEDERS 3#1/0, 1#6 GND FROM EXISTING PANEL EDP WITH NEW CONDUCTORS AT EXISTING JUNCTION BOX. SPLICE EXISTING CONTROL CONDUCTORS FROM TELEMETRY PANEL MCP WITH NEW CONDUCTORS. CAP UNUSED HOLES IN JUNCTION BOX.
- 3. HOIST/TROLLEY NEMA 4X CONTROL PANEL/JUNCTION BOX. SUPPORT USING STRUTS MINIMUM 18" TOP OF PUMP STATION SLAB. COORDINATE FINAL LOCATION WITH FURNISHED EQUIPMENT.
- 4. PUMP CABLES THROUGH 2-2°C SLEEVES INTO CONTROL PANEL USING CROUSE HINDS CBGS CABLE GLAND CONNECTORS.
- 5. PUMP/FLOAT SWITCH CABLE SUPPORT BRACKET UNDER HATCH. SEE DETAIL 1 ON SHEET E-01-03.
- LED CLASS 1, DIVISION 2 HAZARDOUS LOCATION RATED LIGHTING FIXTURE AND WEATHERPROOF SWITCH MOUNTED ON STANCHION USING SWIVEL BRACKET PER DETAIL 2 ON SHEET E-01-03. LIGHTING FIXTURE BY ARCUS LIGHT, MODEL PRO-HL-SB-PPC-RV-120°-5K-120W-S.
- 7. WALL MOUNTED STAINLESS STEEL NEMA 4X DOUBLE JUNCTION BOX. SEE DETAIL 4 ON SHEET E-01-03.
- 8. 3#1/0, 1#6 GND, 1 1/2"C. 8#14, 1#14 GND, 3/4"C.
- SUPPORT CONDUIT ALONG OUTSIDE OF PUMP STATION WALL.
 9. 2-2" CONDUIT SLEEVES WITH END BUSHING FOR LEVEL TRANSDUCER AND FLOAT SWITCH CABLES. CORE DRILL SIDE OF
- PUMP STATION WALL. 10. LEVEL TRANSDUCER STILLING WELL PER DETAIL 5 ON SHEETE-01-03.
- 11. FOUR FLOAT SWITCHES PER DETAIL 5 ON SHEET E-01-03.
- 12. 3#12, 3/4"C TO FLOODLIGHT. SUPPORT CONDUIT ALONG OUTSIDE OF PUMP STATION WALL.
- 13. 3#12, 3/4"C TO HOIST/TROLLEY CONTROL PANEL. SUPPORT CONDUIT AS REQUIRED.
- 14. 8#14, 1#14 GND IN 3/4"C.
 1#18 SHIELDED TWISTED PAIR CABLE IN 3/4"C.
 SUPPORT CONDUITS ALONG OUTSIDE OF PUMP STATION WALL.

PROJECT NO. 19013 SHEET NO. E-01-02

ELECTRICAL PLAN

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2019 PHASE 18 WATER AND SEWER SYSTEM IMPROVEMENTS COLUMBIA ADAIR UTILITIES DISTRICT COLUMBIA, ADAIR COUNTY, KENTUCKY

SHEET NO.
E-01-03

ELECTRICAL DETAILS