

**ADDENDUM NO. 1****DATE:** July 22, 2026**PROJECT:** I-30 Water and Sewer Relocations
Malvern Water Works
Malvern, Arkansas**BID DATE:** August 4, 2026, 2:00 PM

This Addendum forms a part of the Contract Documents and modifies the original documents provided to Bidders, as noted below. Acknowledge receipt of this Addendum in the space provided in the BID FORM. Failure to do so may subject the Bidder to disqualification.

The Contract Documents for the above Project are hereby amended as follows:

Item No. 1 SPECIFICATIONS

- A. 272000 – Instrumentation and Controls
 - i. Delete in its entirety and replace with 272000 – Instrumentation and Controls, Addendum No. 1, attached hereto.

Item No. 2 SPECIFICATIONS

- A. 333216 – Submersible Wastewater Pumps
 - i. Part 2.2.J: Delete in its entirety.
 - ii. Part 2.2.P: Modify as follows:
 - a. ~~The pump housing shall be prepared for the assembling of a sump mixing valve.~~ The discharge flange of the pump housing shall be 4".
 - iii. Part 2.5: Delete in its entirety.

Item No. 3 DRAWINGS

- A. Sheet 10 – Sewer Plan & Profile - Force Main A – STA. 48+00 To 59+00
 - i. Modify this drawing as shown on the Addendum No. 1 – Sewer Plan & Profile - Force Main A – STA. 48+00 To 59+00, attached hereto:
- B. Sheet 11– Sewer Plan & Profile - Force Main A - STA. 59+00 To 70+45
 - i. Modify this drawing as shown on the Addendum No. 1 – Sewer Plan & Profile - Force Main A - STA. 59+00 To 70+45, attached hereto:
- C. Sheet 18 – Water Plan & Profile - Main A - STA. 34+00 To 46+00
 - i. Modify this drawing as shown on the Addendum No. 1 - Water Plan & Profile - Main A - STA. 34+00 To 46+00, attached hereto:

END OF ITEMS

All other provisions of the Contract Documents remain unchanged. Acknowledge receipt of this addendum on the Bid Form. Bids must be received by Malvern Water Works at 506 Overman Street, Malvern, Arkansas 72104 by 2:00 PM, August 4, 2026.

CRIST ENGINEERS, INC.



Mason Allen, P.E.

SECTION 272000

INSTRUMENTATION AND CONTROLS

PART 1 - GENERAL

1.1 SCOPE

The pump supplier shall furnish and place into operation a complete duplex pump control panel for two (2) new submersible wastewater pumps at the happy hollow lift station. The control panel shall be configured for the specific pumps being utilized and shall contain, in a common enclosure, a pump controller, all required level controls, pump protection and other circuits, alarms and communications, surge protection, motor and control short circuit protection, motor starters and overload protection for duplex wastewater pump down operation. Components and operational requirements shall be as described in these specifications and accompanying drawings.

1.2 CODES

All work, materials, and equipment as provided and/or installed by the I&C Supplier must be in full conformance with the latest edition of the NEC, OSHA requirements, and state and local codes. All materials and equipment as furnished and/or installed must be in conformance with the requirements of the Underwriters Laboratories (UL) for the character and type of service for which it is specified.

1.3 SUBMITTALS

- A. Specific Requirement: The Materialman will submit to the Engineer for review and approval six (6) complete sets of Shop Drawings for review and approval prior to the installation of any electrical components.
- B. Content of Drawings: Shop Drawings must be comprehensive with regard to major items of equipment so as to provide adequate basis for the Engineer's judgment as to conformance with the intent of the Drawings and these Specifications. Shop drawings shall include but not be limited to proposed panel layouts, wiring diagrams ("ladder diagrams"), equipment manufacturer's description and specification sheets including programmable controllers and operator interfaces, and bill of materials of panel components for review and approval by the Engineer prior to construction of the panels. Submittal wiring diagram shall include numbering on all control wires (not on power circuit conductors), one number per circuit point. Control wire numbers shall be unique within each building or structure, with wire numbers used in the Control Panels being assigned first. Materialman and his Vendor(s) will be expected to provide additional information upon request by the Engineer if submittal is found to be deficient in scope by the Engineer.

PART 2 - PRODUCTS

2.1 PANEL MANUFACTURER REQUIREMENTS

- A. All materials shall comply with the requirements, terms and conditions of Build America, Buy America Act (BABA) (23 U.S.C. 313, 23 CFR 635.410) under the Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law (BIL) (Pub. Law 117-58, Nov. 15, 2021).
- B. The control panel manufacturer must hold a current UL508A/698A certification with staffed personnel holding current Underwriters Laboratory Manufacturers Technical Representatives (UL MTR) certification.

- C. The control panel manufacturer must have completed UL certifications for designing for compliance in industrial control panels and short-circuit current ratings.
- D. Service personnel must be available for technical assistance by phone or on-site troubleshooting within 100 miles of installation.

2.2 ACCEPTABLE PANEL MANUFACTURERS

- A. AEON Industrial Control Systems or approved equal.

2.3 ELECTRICAL AND CONTROL REQUIREMENTS

- A. All electrical equipment shall be of the highest quality, free from defects from the factory, new in condition, and installed in accordance with Underwriters Laboratories 508A and/or 698A standards.
- B. All field wiring terminations to and from the control panel shall be finger-safe in design or contain individual covers to reduce the risk of injury to operators and technicians. Inner doors used as protection to open components are not accepted under this section.
- C. Control panels shall be assembled by means of drilling and tapping. Self-tapping screws are not acceptable. No special or customized tools for assembly shall be used.
- D. Control panels shall be assembled using NEMA or IEC rated components. HP rated components are not acceptable.
- E. Control panels shall bear a marking to indicate the Short-Circuit Current Rating (SCCR) of the final assembly. Control panel SCCR markings shall be determined by the guidelines set forth by Underwriters Laboratories. All control panels shall be a minimum of 14,000 VA rated. Panels that do not meet this requirement must be pre-approved before acceptance of compliance with these specifications.
- F. Final control panel UL Type rating shall be the same as the highest enclosure rating from the enclosures manufacturing label. Devices penetrating the enclosure shall maintain the original rating. The use of NEMA ratings shall not be used when determining the final enclosure rating.

2.4 CONTROL PANEL GENERAL REQUIREMENTS

- A. The control panel shall contain the following components as a minimum.
 - 1. Single enclosure with sufficient room for all components.
 - 2. Outer door stops with manual defeaters.
 - 3. Steel interior swing panel painted white to contain lights and switches.
 - 4. Surge Suppression Device.
 - 5. Phase/Voltage monitor.
 - 6. Separate circuit breakers for controls and pumps.
 - 7. Motor starters with overload protection.
 - 8. Transformer, sized as required.
 - 9. Ground fault circuit interrupting receptacle.
 - 10. Control relays with LED indication and test buttons.
 - 11. Alternator.
 - 12. Condensation heater and vapor protection.
 - 13. Pilot lights and switches.
 - 14. Visual alarm light.
 - 15. Audible alarm horn.
 - 16. RTU System.
 - 17. Dry contacts for status and alarm.

18. Intrinsically safe inputs for level devices.
19. Field wiring terminal blocks.
20. Wiring diagrams and bill of materials.
21. UL listed for installation.
22. Warranty of not less than 1 year from startup and acceptance

2.5 CONTROL PANEL DESCRIPTION & MATERIALS

- A. The control panel shall be duplex in design, with a final UL Type Rating of 4X. The following component requirements are specific to this application and shall contain the requirements stated in this specification.
 1. Be constructed of high quality 14 gauge stainless steel type 304.
 2. Have #4 brush finish on all exterior surfaces.
 3. Have seams continuously welded and ground smooth.
 4. Have a door opening greater than 90 degrees for complete access to equipment.
 5. Have a door with stainless steel concealed hinges.
 6. Have a door secured with easily removable and replaceable stainless steel hinge pins that allow door removal.
 7. Have a keylocking/padlocking handle and 3-point latching mechanism.
 8. Have optional Pad-locking provisions.
 9. Manufacturer shall have the ability to add cut-outs and change paint color.
 10. Have oil resistant gasket that meets type 4, 4X and 12 rating requirements.
 11. Have flange trough collar around all sides of door opening.
 12. Have collar studs for mounting optional sub-panels.
 13. Have mounting holes in the back of enclosure.
 14. Have easily removable and interchangeable doors .
 15. Have ground studs on door and body.
 16. Have the ability to add front swing-out or dead front panel.
 17. Have a drip shield attached to the top of the enclosure.
 18. Be available in sizes ranging from 24" x 20" x 10" to 72" x 36" x 24".
 19. Be approved by UL for type 3R, 4, 4X and 12 rating.
- B. Distribution Blocks
 1. Rated for 600VAC, 175A minimum, with protective cover. Single inlet with distribution outlet.
 2. Multiport load side terminals.
- C. Surge Suppression Device
 1. UL1449 Listed.
 2. Short Circuit Rating of 200 kA.
 3. Peak SCR per phase of 40 kA.
 4. Suitable for indoor or outdoor applications.
 5. Factory available mounting bracket.
 6. LED lights for each phase.
- D. Phase/Voltage monitor.
 1. Eight pin plug in design.
 2. Micro-controller based
 3. Rated for under-voltage, over-voltage, voltage unbalance, reverse phase, and single phasing detection, even when regenerated voltage is present.
 4. Includes adjustable trip and restart delays.
 5. LED indications.
 6. Fused disconnect for protection.

E. Transformer

1. Multi-Tap for 208/240/480 volt primary.
2. 120vac secondary.
3. Primary fusing with fusible disconnect.
4. Secondary protection with circuit breaker or fuses.
5. All fuses holders must be fingersafe. Transformers with fusing attached are not acceptable.
6. Machine tool or dry type.

F. Motor circuit breakers

1. 80% continuous NEMA rated thermal magnetic breakers with 14 kA ratings @ 600VAC.
2. Single toggle for all phases. Toggle ties will not be accepted.
3. Line and load side box lugs or distribution lugs.
4. Sized for the motor load per UL calculations. Circuit breakers shall be operable and pad-lockable through the inner door.

G. Full voltage non-reversing starter

1. NEMA rated, size 1 minimum. Fractional ratings will not be accepted.
2. 3 phase with a 600VAC rating.
3. Aux contacts for motor running and elapsed run time indications.
4. Solid state overload class 10/20 with adjustable trip settings, set to motor FLA.
5. 100 kA rating when used with a circuit breaker.
6. Overload reset shall be accomplished from the inner door via push rod or electronic reset.

H. Control circuit breakers

1. Line and load side lugs.
2. UL489 rated and listed.
3. Single toggle for all phases. Toggle ties will not be accepted.
4. Snap on finger safe lug covers or finger safe designed.
5. 120/240 volt rated, 10 kA.

I. Ground Fault Circuit Interrupter

1. NEMA 5-15R, 15A, 125vac, 10kA rated.
2. Duplex configuration.
3. Class A, 5mA +/- 1mA
4. Self-monitoring unit.
5. Status indication.
6. Available in ivory or white colors.

J. Mounted on the inner swing panel or through the outer wall of the enclosure with in-use cover, or as indicated by the specification drawings. Moisture and over temperature safety relays.

1. Moisture and over temperature safety relays must be those supplied by the pump manufacturer or directly recommended for compatibility and warranty implications. No 'after-market' or 3rd party relays shall be used or accepted unless written documentation is provided to the Engineer for approval prior to acceptance of bid.

K. Control Relays.

1. 120VAC or 24VDC coil as required, 4 pole configurations.

2. Test button
 3. LED indication
 4. Push In Technology relay bases
 5. Bases accept printed I.D. tags
- L. Condensation Heater and T'Stat
1. 25 watt rated at 120VAC minimum. Shall be sized by the control panel manufacturer.
 2. DIN rail mountable
 3. Thermostat shall be integral. Separate thermostat's are acceptable only if they are from the same manufacturer for compatibility.
- M. Elapsed time meters
1. Non-resettable, 6 digit time meter with tenths reading
 2. 120VAC powered from auxiliary starter contacts
 3. Outdoor time meters shall be gasketed and not reduce enclosure rating.
- N. Alternator
1. Solid state design with integral selection switch.
 2. SPDT design.
 3. 8 pin plug in style.
- O. Pilot Lights and Switches
1. 22.5 MM size
 2. NEMA 4X rated
 3. Pilot lights shall be LED, full voltage or transformer type
 4. Suitable for indoor or outdoor use.
- P. Alarm light
1. GE Lexan construction
 2. Daylight visible 360 degree LED
 3. Hermetically sealed for corrosion resistance and reliability
 4. Steady on and flashing capable
- Q. Audible alarm horn
1. 110+ decibels at 5 feet.
 2. 8 user selectable alert sounds.
 3. 2 user selectable sound output levels.
 4. Low profile protrudes less than 1" from mounting surface.
 5. Does not generate electrical noise due to piezo electronic sound element.
- R. Intrinsically safe components
1. Control panels with extensions located in a hazardous atmosphere (Class 1, Div 2) shall be designed for intrinsic safety.
 2. Components must be installed per UL698A guidelines. Components using partitions for isolation must be installed correctly and not 'surround' the entire component.
- S. Level Controls

1. The level controls shall be from an off-the-shelf, readily available float control system with a minimum of four (4) displacement switches. A 30' corrosion resistant cord shall be provided with each switch.
2. The pump operating levels in the wet well shall match what is existing unless otherwise directed by the Engineer.
3. Output relays shall be supplied for individual pump starts and stops. Level detection shall be direct to the level controller system.
4. PLC systems, or systems that required specialized programming are not allowed.
5. Interposing relays shall be used to isolate the inputs and outputs. An isolator shall be used for all analog signals that are not derived from inside the control panel.
6. An automatic backup system shall be supplied for emergency local control. The backup system shall consist of 2 points of control, with an enable/disable switch at a minimum. Time delays will be utilized to prevent the start of multiple pumps at the same time. Systems using more than 2 points of backup control shall have a manual reset to return to primary control.
7. The level controller shall be powered from an uninterruptible power supply with battery backup. Battery backup shall be replaceable.

T. Dry contacts

1. Dry contacts shall be supplied for status and alarm conditions to a terminal strip.
2. Contacts shall be rated for 6 amps @ 120VAC.
3. Contacts for critical alarms shall be fail safe. (over temperature, phase/voltage loss, etc.)

U. Terminals

1. Feed through terminals with push in connections
2. No special tools or screwdrivers for removal or attachment of wires
3. Accept 26-14 AWG stranded wire
4. 30 amp rated, 800 volt maximum.
5. Terminals for analog signals shall have a grounding terminal included.

V. Wire and terminal markers

1. Thermally printed wire markers are the standard of quality. Self-laminating, handwritten, or 'cloth' labels are not acceptable.
2. Wire markers should be sleeve type and secure. Snap-on style is not acceptable.
3. Wire and terminal markers shall be of the same manufacturers of the terminals for compatibility.

W. Wiring diagram

1. One complete set marked 'As-Built' shall be laminated and secured inside the control panel to deter removal. Size shall be 11" x 17".
2. One complete set marked 'As-Built' shall be non-laminated and inserted into an envelope and placed inside the control panel for easy access. Size shall be 11" x 17".
3. Any field changes will be sent to the panel manufacturer and corrected and marked 'Revised As-Built' and printed/laminated/inserted into the control panel for future reference.

PART 3 - EXECUTION

3.1 DELIVERY STORAGE, AND HANDLING

- A. Deliver, store and handle products with maintaining delivered quality in mind. Store equipment in conditions suitable for the equipment provided. No equipment shall be stored outdoors.

3.2 INSTALLATION AND STARTUP REQUIREMENTS

- A. Start up, and verify proper operation of all control system components; and coordinate with the Engineer and the installing materialman in final testing and commissioning of the Control System.

3.3 GROUNDING

- A. All equipment, building frames, electrical equipment shall be grounded in accordance with NEC. Grounds for telemetry equipment shall be tested using a high quality clamp on ground tester or a three point megger. Any telemetry equipment ground found to be more than three ohms shall have additional ground rods properly installed at distances of at least eight feet apart, until the tested ground resistance is less than three ohms.

3.4 NETWORK CABLING

- A. No 120VAC power shall be run in the same conduits with any low voltage signal cabling. Within enclosure, bundling of signal cabling or conductors with conductors carrying 120VAC power shall be avoided as much as possible.

3.5 SPARE PARTS REQUIREMENT

- A. Spare parts to be provided shall include:
 - 1. Five (5) of each type and size of fuse used.

3.6 AS-BUILT DRAWINGS

- A. Upon completion of the work, Contractor shall furnish to the Owner one (1) complete set of "as-built" electrical drawings including all control panel drawings. As-built drawings shall show all changes made by the Contractor in his work from that shown on the Drawings and from his approved Shop Drawings. "Pencil" corrections as made in the field will not be permissible for this purpose.

END OF SECTION

P:\2024 Projects\24037 - Malvern - Water & Sewer Relocations ARDOT 061611\06 - CADD\02 - Civil\3 - 24037 - MWW Water & Sewer Relocations ARDOT 061611 - Sewer Working Dwg.dwg

PARCEL ID:
700-05877-000
HORIZON CAPITAL PARTNERS LLLP

INSTALL EROSION CONTROL BLANKET
OVER ENTIRE CLEARING PATH
SEE DETAIL B, SHEET 27

MATCHLINE - 6
AT STATION 59+00
NEXT SHEET NUMBER: 11

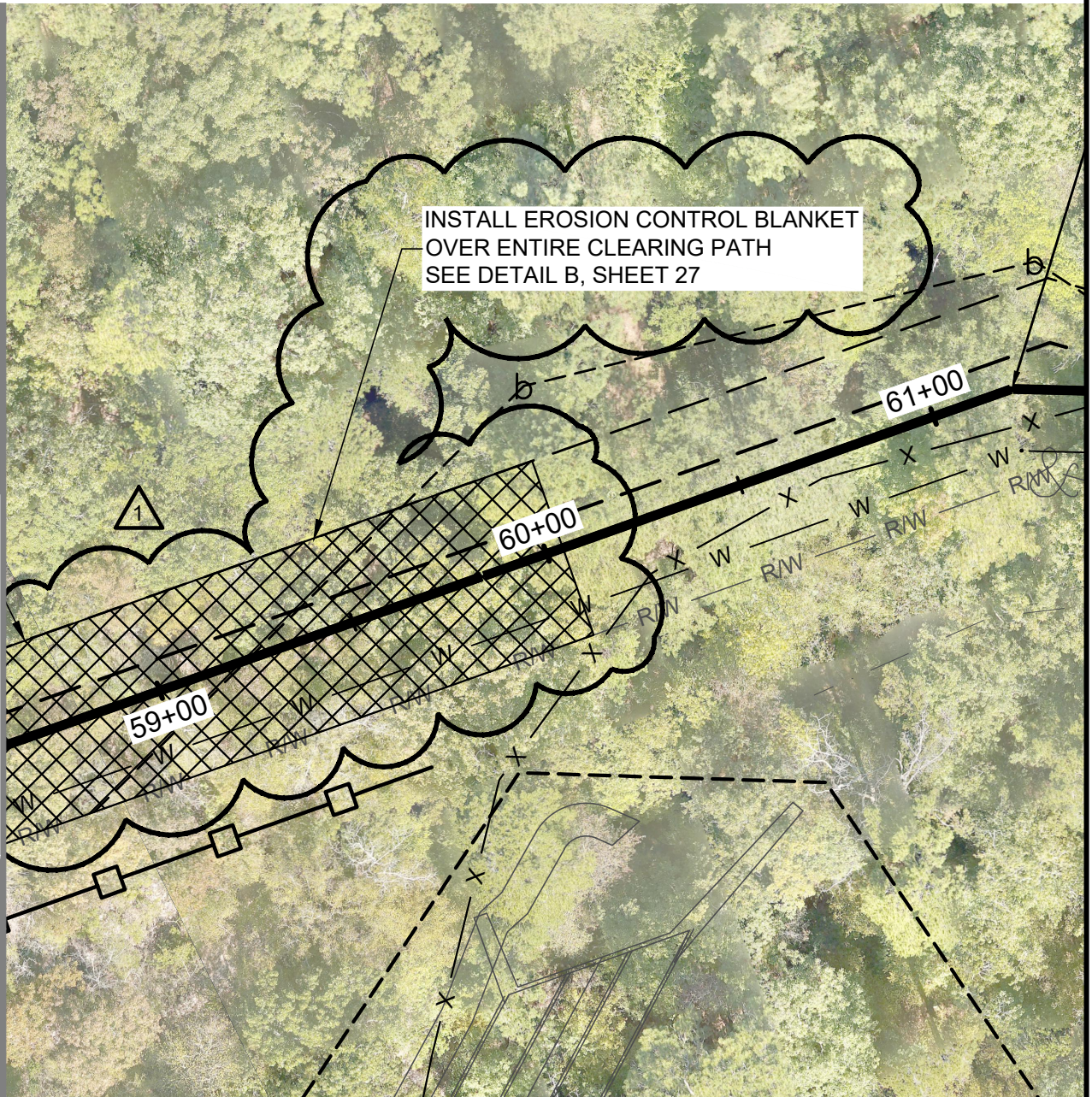
PLAN
SCALE: 1"=40'

0 1"
1" = 1"

		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
MALVERN, ARKANSAS			
I-30 WATER & SEWER RELOCATIONS			
MALVERN WATER WORKS			
SEWER PLAN & PROFILE - FORCE MAIN A-			
STA 48+00 TO 59+00			
DESIGNED: GR	JOB NO. 24037	DATE JULY 2026	ADD. NO. 1
DRAFTED: GR	SCALE: AS SHOWN	REF SHEETS 10	
CHECKED: MPA			

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MATCHLINE - 6
AT STATION 59+00
PREVIOUS SHEET NUMBER: 10



PLAN
SCALE: 1"=40'

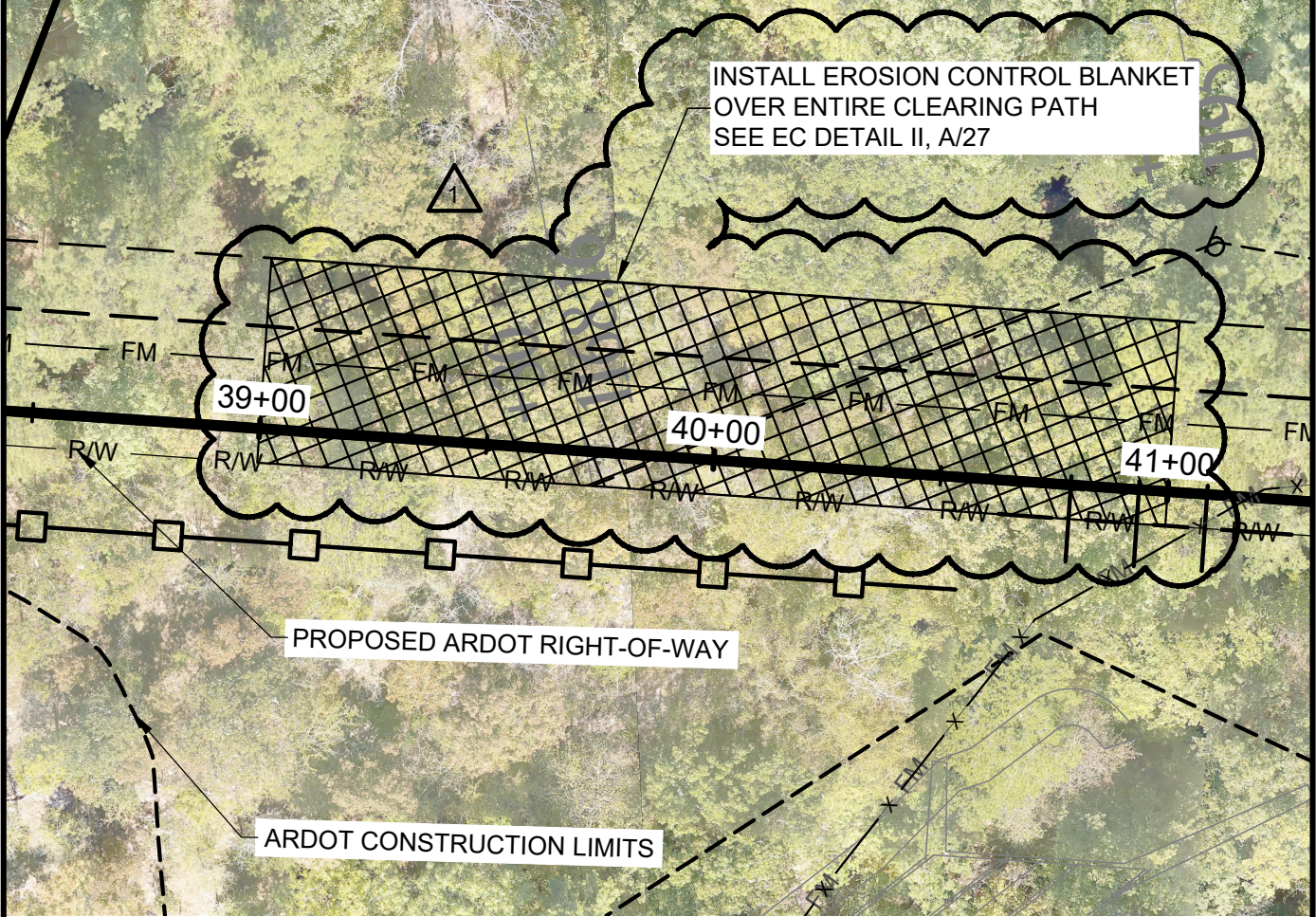
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		CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS		LITTLE ROCK, ARKANSAS	
MALVERN, ARKANSAS			
I-30 WATER & SEWER RELOCATIONS			
MALVERN WATER WORKS			
SEWER PLAN & PROFILE - FORCE MAIN A-			
STA 59+00 TO 75+00			
DESIGNED: GR	JOB NO. 24037	DATE JULY 2026	ADD. NO. 1
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CHECKED: MPA			

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INSTALL MAIN A - 8" PVC WATER LINE
(C900 DR 18)

INSTALL EROSION CONTROL BLANKET
OVER ENTIRE CLEARING PATH
SEE EC DETAIL II, A/27



PLAN
SCALE: 1"=40'



				CRIST ENGINEERS, INC.	
CONSULTING ENGINEERS				LITTLE ROCK, ARKANSAS	
MALVERN, ARKANSAS					
I-30 WATER & SEWER RELOCATIONS					
MALVERN WATER WORKS					
WATER PLAN & PROFILE - MAIN A					
STA 34+00 TO 46+00					
DESIGNED: GR	JOB NO. 24037	DATE JULY 2026	ADD. NO. 1		
DRAFTED: GR	SCALE: AS SHOWN	REF SHEET		18	
CHECKED: MPA					