DOCUMENT 00910

ADDENDUM NUMBER 1

DATE: August 12, 2025

PROJECT: Contract 4 – Walnut Creek Wastewater Treatment Plant Improvements

PROJECT NUMBER: R021022458
CWSRF Project No. CS010835-03

OWNER: City of Troy

ENGINEER: Three Notch Group, Inc.
1962 West Main Street
Dothan, Alabama 36301

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated July 25, 2025.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of twenty-five (25) pages.

ITEMS DISCUSSED AT PRE-BID CONFERENCE:

1. The City of Troy requires the contractor to obtain a Business License through the City Clerk's Office (334-566-0177); the fee will be waived.
2. Relocation of existing overhead electric lines and poles in the area of the proposed Filtration Equipment (Bid Item No. 3) to Clarifier 3 is being handled by the City.
3. Clarifier 3's electrical feed comes from the existing motor control center (MCC) room in the existing administration building.
4. Pilot testing required for Filtration Equipment (Bid Item No. 3) prior to final equipment ordering.

CLARIFICATIONS:

1. Question – *"Is there SCADA on this project?"*
    a. Response – The City of Troy will handle all SCADA system tie in and wiring. The Contractor shall provide instrumentation and wiring schedule with point lists as outlined on Sheet E-106 for the City of Troy to pick up and tie into their existing SCADA system.

2. Question – *"Can you clarify that we can use the 12" plug valve that the owner already has for bid item #2?"*
    a. Response – The Contractor may examine the existing 12" plug valve on site and utilize as part of Bid Item No. 2 should it be confirmed to be in working order. A stainless-steel operating chain shall be provided of sufficient length to operate the chain wheel.

3. Question – *"Do you have more information on the gates that are to be replaced on sheet C-409?"*
    a. Response – No additional information is available for the gate called out for replacement on Sheet C-409. The Contractor is encouraged to coordinate with the Owner and visit the site to gather necessary details prior to bidding the project.

4. Question – *"What is the flow rate into the main lift station that we would need to bypass?"*
    a. Response – Per the Plant's Superintendent, flow rates average 3.2 MGD and peak around 5.7 MGD.

5. Question – *"ALT Bid Item #7: Vegetation and air piping in the clarifier was not removed prior to the pre-bid meeting so the contractor could price repairs accordingly. How can we give a good price on surface repairs if we can't see?"*
    a. Response – For bidding purposes, assume that the structure requires minimal repair for hairline leaks consisting of up to 20 gallons of chemical grouting (Primeflex 900 XLV or equal).

6. Question – *"ALT Bid Item #5 calls for the replacement of 2 each transfer pumps. Can you provide more information on these and what all is involved with this?"*
    a. Response – Replacement of transfer pumps includes all labor, materials and equipment necessary to remove and replace base elbows, existing pumps (estimated to be no larger than 15 hp by the Plant's Superintendent), stainless-steel guide rails and upper support brackets.

7. Question – *"ALT Bid Items #3 & #4: Would bypassing be required for the replacement of these gates?"*
    a. Response – Bypassing is not required. The contractor shall coordinate with the wastewater treatment plant superintendent for any temporary isolation or pump-down needs.

8. Question – *"ALT Bid Item #7: Can you provide a spec for the clarifier?"*
    a. Response – See Specification Section 11351 notated as Addendum 1.

9. Question – *"Is it necessary to have 2 each OCP insurance policies?"*
    a. Response – Insurance policies shall be provided in accordance with Article 5 of the General Conditions (00700).

10. Question – *"For the under-ground sludge piping you call for 2" D.I. fitting. Those are hard to come by. What should be use in lieu of D.I. fitting?"*
    a. Response – 2-inch fittings for underground sludge piping should be PVC.

11. Question – *"The plans call for the under-ground sludge piping to be SDR 11 on one sheet and SDR 21 on another. Which should be used?"*
    a. Response – All underground sludge piping should be SDR 21.

12. Question – *"Spec section 11341 Magnetic Flow Meter calls for a 12" flow meter, on plan sheet C-403 it shows this as an 8" flow meter."*
    a. Response – Flow meter to filtration equipment shall be 8-inch.

13. Question – *"What all piping is to be heat traced and insulated? In the Electrical plans it says (on all exposed piping as directed by civil engineer)."*
    a. Response – Heat tracing and insulation shall be provided for all piping 4 inches in diameter

and smaller.

14. Question – *"Who is the Troy's current SCADA provider?"*
   a. Response – The City of Troy handles their own SCADA.

CHANGES TO THE PROJECT MANUAL:

DOCUMENT 00412 – BID FORM
1. Replace the published document with the attached document notated as Addendum 1 (3 pages).

DOCUMENT 01200 – PRICE AND PAYMENT PROCEDURES
1. Replace the published document with the attached document notated as Addendum 1 (7 pages).

DOCUMENT 11341 – MAGNETIC FLOW METER
1. Update 2.4, A. Pipe Size and Material to "8-inch Ductile Iron" for Filter Equipment Influent Flow.

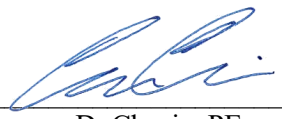
DOCUMENT 11351 – CLARIFIER EQUIPMENT
1. Insert the attached document notated as Addendum 1 (10 pages).

DOCUMENT – REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNCIAL ENIGNEERING EVALUATION
1. Insert the attached document notated as Addendum 1 (2 pages).

CHANGES TO CONSTRUCTION PLANS:

1. Sheet C-416 : Sludge Press Layout
   a. Update Note 4 to "Existing piping to remain unless otherwise shown to be removed. Contractor to protect during construction."

ISSUED THIS 12th DAY OF AUGUST 2025.



Carmen D. Chosie, PE
Project Manager

END OF DOCUMENT

ADDENDUM NO. 1

DOCUMENT 00412

BID FORM

To: **City of Troy**

Project: Contract No. 4 –Walnut Creek Wastewater Treatment Plant Improvements
ADEM ARPA Project Not. CS010835-01

Date: _____

Submitted by: _____
(full name)

(full address) _____

_____

1. OFFER

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Engineer for the above-mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Unit Prices listed in this bid form in lawful money of the United States of America.

We have included the Bid Bond as required by the Instruction to Bidders.

All applicable federal and State of Alabama taxes are included in the Unit Prices.

Explanations of Bid Items are described in Section 01200 - Price and Payment Procedures.

2. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty (60) days from the bid closing date.

If this bid is accepted by the Owner within the time period stated above, we will, unless otherwise allowed by the Owner:

- Execute the Agreement within seven (7) days of receipt of Notice of Award.

- Furnish the required bonds and insurance within fourteen (14) days of receipt of Notice of Award.

- Commence work within seven (7) days after written Notice to Proceed

If this bid is accepted within the time stated, and we fail to commence the Work, or we fail to provide the required bonds, the security deposit shall be forfeited as damages to the Owner by

reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
In the event our bid is not accepted within the time stated above, the required security deposit will be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

3. CONTRACT TIME AND LIQUIDATED DAMAGES

If this Bid is accepted:

- The Work will be substantially completed in **three hundred and thirty (330)** calendar days from the Notice to Proceed.
- Liquidated damages of **$500.00** shall be paid by Contractor for each day beyond the agreed upon substantial completion date.

4. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Price.

Addendum No._____ Dated _____

Addendum No._____ Dated _____

5. BID FORM SIGNATURES

The Corporate Seal of

_____
(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

_____
(Authorized signing officer Title)

(Seal)

_____
(Authorized signing officer Title)

(Seal)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

ADDENDUM NO. 1

Bid Form
Contract No. 4 - Walnut Creek Wastewater Treatment Plant Improvements
ADEM ARPA Project No. CS010835-01
City of Troy

BASE BID

NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENSION PRICE
1.	Mobilization	LS	1	$	$
2.	Influent Lift Station Plug Valve and Base Elbow Replacement	EACH	1	$	$
3.	Filtration Equipment	LS	1	$	$
4.	Ultraviolet Disinfection Equipment Replacement	LS	1	$	$
5.	Dewatering Equipment Improvements	LS	1	$	$
6.	Miscellaneous Construction Allowance	LS	1	$ 150,000.00	$ 150,000.00
				TOTAL BASE BID:	$

ADDITIVE ALTERNATE

NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
1.	Emergency Standby Generator with ATS	LS	1	$	$
2.	Influent Lift Station Rehabilitation	LS	1	$	$
3.	Oxidation Ditch Slide Gate Replacement	LS	1	$	$
4.	Clarifier Splitter Box Slide Gate Replacement	LS	1	$	$
5.	Septage/Grit Receiving Pit Rehabilitation	LS	1	$	$
6.	Clarifier Launder Covers	LS	1	$	$
7.	Out of Service Clarifier Rehabilitation	LS	1	$	$
8.	Tractor with Front-End Loader	LS	1	$	$
9.	Biosolids Spreader Truck	LS	1	$	$
10.	Water Jetting Trailer	LS	1	$	$

END OF DOCUMENT

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Schedule of values.

B. Applications for payment.

C. Change procedures.

D. Defect assessment.

E. Unit prices.

F. Alternates.

1.2 SCHEDULE OF VALUES

A. Submit printed schedule on Contractor's standard form or electronic media printout.

B. Submit Schedule of Values in duplicate within 15 days after date established in Notice to Proceed.

C. Include in each line item, amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.

D. Revise schedule to list approved Change Orders, with each Application for Payment.

1.3 APPLICATIONS FOR PAYMENT

A. Submit four copies of each application on Contractor's electronic media driven form.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Submit updated construction schedule with each Application for Payment.

D. Payment Period: Contractor to submit Pay Request, with the agreed upon quantities shown, on the first working day of the month for the previous month.

E. Submit with transmittal letter as specified for Submittals in Section 01330.

F. Substantiating Data: When submitting Pay Request that includes a pay request for stored materials, Contractor must also submit a paid invoice for all materials listed for reimbursement.

1.4 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions.

C. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.

D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation.

E. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis.

F. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

G. Correlation Of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
3. Promptly enter changes in Project Record Documents.

1.5 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Engineer.

D. Defective Work will be partially repaired to instructions of Engineer, and unit sum/price will be adjusted to new sum/price at discretion of Engineer.

E. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.

F. Authority of Engineer to assess defects and identify payment adjustments is final.

G. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.6 UNIT PRICES

A. Authority: Measurement methods are delineated in Section 1.7 of this Specification.

B. Measurement methods delineated in individual specification sections complement criteria of this section. In event of conflict, requirements of individual specification section govern.

C. Take measurements and compute quantities. Engineer will verify measurements and quantities.

D. Unit Quantities: Quantities and measurements indicated in Bid Form are for contract purposes only. Quantities and measurements supplied or placed in the Work shall determine payment.
1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at unit sum/prices contracted.

E. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

1.7 EXPLANATION OF BID ITEMS

A. **Bid Item No. 1 – Mobilization** – See Specification Section 02050.

B. **Bid Item No. 2 – Influent Lift Station Plug Valve and Base Elbow Replacement** – Includes furnishing all labor, materials and equipment to complete the replacement of existing twelve 12-inch plug valve and 12-inch base elbow at the influent lift station. The Owner has a 12-inch plug valve on site that can be used – Contractor will be required to provide Also includes bypass pumping, as required. Payment will be made per each elbow

replaced and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

C. **Bid Item No. 3 – Filtration Equipment** – Includes furnishing all labor, materials and equipment to install new packaged lift stations as outlined in Section 11217 and shown on Drawings, new cloth media disc filtration equipment in stainless steel tankage in accordance with Section 13200 and shown on Drawings, and new packaged granular media and resin filter system in accordance with Section 13250 and shown on Drawings, and all associated appurtenances, site improvements, concrete support slabs, pipe improvements, and support processes outlined in the Contract Documents. Also includes supplying equipment suitable to complete pilot testing of the filtration equipment to include cloth media filtration, granular media and resin filtration, transfer pumps, temporary piping and valves, controls, and all appurtenances necessary to comprise a complete and functional pilot system for a period of up to 30-days as part of the lump sum bid amount. Scale testing may be considered as long as the flow is no less than 50% of that of the designed system. Piloting efforts shall be completed as soon as practical once the project is awarded. The intent of the piloting efforts is to confirm the final design criteria selection for the equipment outlined in Sections 13200 and 13250 prior to equipment being ordered. Water sampling prior to and effluent from the filtration equipment for those design criteria constituents shall be performed at a frequency adequate to indicate system performance but in no case less than one sampling event for every 10 days of operation. Should the piloting efforts result in design criteria that vary from those outlined in the specifications, a change order will be coordinated with the Contractor to accommodate the additional or deducted work of this Bid Item. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with the plans and specifications.

D. **Bid Item No. 4 – Ultraviolet Disinfection Equipment Replacement** – Includes furnishing all labor, materials and equipment to remove and properly dispose of existing ultraviolet disinfection equipment and install new horizontal ultraviolet disinfection equipment in accordance with Section 11345. Work shall include cleaning and modifications to the existing concrete structure, including new 24-inch slide gate, and aluminum grating to support disinfection system installation and ancillary piping and/or equipment required to provide a complete and properly operation system. Payment shall be Lump Sum.

E. **Bid Item No. 5 – Dewatering Equipment Improvements** – Includes furnishing all labor, materials, and equipment necessary to install dewatering equipment as outlined in Section 11300 and shown on Drawings, metal awning, concrete overlay, drying bed modifications, trench drain, and all associated appurtenances, site improvements, pipe improvements, and support processes outlined in the Contract Documents. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with the plans and specifications.

F. **Bid Item No. 6 – Miscellaneous Construction Allowance:** The price bid for this item shall be a cash allowance for minor miscellaneous items outside the original scope of work. This item shall not be used at the discretion of the Contractor, but solely at the direction of the Owner and Engineer upon agreement with the Contractor. The use of the construction

allowance does not preclude the use of a change order for items outside the original scope of work and greater than the allowance. Payment shall be a cash allowance.

1.8 ALTERNATES

A. **Alternate No. 1 (Additive) – Emergency Standby Generator with ATS and Concrete Pad** – Includes providing all labor and furnishing all equipment and tools to install a standby generator system with automatic transfer switch and concrete equipment pad with associated wiring and other appurtenances required to form a complete and functioning system as shown on Drawings. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

B. **Alternate No. 2 (Additive) – Influent Lift Station Rehabilitation** – Includes furnishing all labor, materials and equipment to remove and properly dispose of out of service recirculation pump and piping as shown on Drawings , pressure wash and clean dry pit, and coat discharge piping in accordance with Section 09900. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

C. **Alternate No. 3 (Additive)– Oxidation Ditch Slide Gate Replacement** – Includes furnishing all labor, materials and equipment to complete the installation of a face mounted 48-inch slide gate from the existing grit channel to Oxidation Ditch No. 2. Includes removal (as applicable) and replacement of existing frame, seal, stem, slide, manual lift and operator. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

D. **Alternate No. 4 (Additive) – Clarifier Splitter Box Slide Gate Replacement** – Includes furnishing all labor, materials and equipment to complete the installation of a face mounted 24-inch slide gate from the existing clarifier splitter box to Clarifier No. 2. Includes removal (as applicable) and replacement of existing frame, seal, stem, slide, manual lift and operator. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

E. **Alternate No. 5 (Additive) – Septage/Grit Receiving Pit Rehabilitation** – Includes furnishing all labor, materials and equipment necessary cleaning and lining of the two (2) existing receiving pits and replacement of existing transfer pump. Contractor shall verify field dimensions of pits and make/model of transfer pump prior to bidding. Pits shall be cleaned and coated in accordance with Section 09961. Once the pits are fully cleaned to the satisfaction of the Engineer, then the contractor shall apply the approved lining system to all surfaces to include side walls, and bottom of the pits. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

F. **Alternate No. 6 (Additive) – Clarifier Launder Covers** – Includes furnishing all labor, materials and equipment to install clarifier launder covers for existing Clarifiers 1 and 2

currently in operation. Launder covers shall be fiberglass (FRP) weir wall mount configuration designed for algae control by MFG, NEFCO or compatible approved equal. Contractor shall visit the site prior to bidding on the project to confirm dimensions of launder cover systems required. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

G. **Alternate No. 7 (Additive) – Out of Service Clarifier Rehabilitation** – Includes furnishing all labor, materials and equipment to complete rehabilitation of Clarifier 3 as outlined in Section 11351. Work shall include, but not be limited to, surface repairs to structure, as necessary, and replacement of equipment including center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts, controls for operation of the clarifier, new launder covers (FRP weir wall mount configuration designed for algae control by MFG, NEFCO or compatible approved equal), and all accessories and appurtenances to provide a complete and functioning system. Contractor shall visit the site prior to bidding on the project to confirm dimensions of equipment required. Payment will be made at the contract lump sum price bid and shall include any incidentals necessary to complete the work in accordance with these plans and specifications.

H. **Alternate No. 8 (Additive) – Tractor with Front-End Loader** – Shall reflect the lump sum total to furnish a new tractor with front end loader attachment (John Deere 5075M 4WD Tractor with open station and front-end loader attachment, or compatible approved equal) to provide management of dewatered biosolids at the wastewater treatment plant and land application sites, as needed.

I. **Alternate No. 9 (Additive) – Biosolids Spreader Truck** – Shall reflect the lump sum total to furnish a new biosolids spreader truck (Stahly NL5034G4 Compost**,** or compatible approved equal) to provide management of dewatered biosolids at the wastewater treatment plant and land application sites, as needed.

J. **Alternate No. 10 (Additive) – Water Jetting Trailer** – Shall reflect the lump sum total to furnish a new water jetting trailer (Vactor Ram Jet USJ 4025-750, or compatible approved equal) to provide cleaning of influent sanitary sewer trunk lines to wastewater treatment plant, as needed.

K. The items in the Bid Form are intended to provide full compensation to the Contractor for providing a complete and functional project. Any major items deemed by the proposed bidder to be missing in the Bid Form shall be called to the attention of the Engineer prior to the bid so that an Addendum can be considered. Payment for any minor items necessary to satisfactorily complete the project which are not listed in the Bid Form shall be included in the prices bid for items in the Bid Form. No additional payment will be made for these minor items.

L. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.

M. Coordinate related work and modify surrounding work.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 11351

CLARIFIER EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. Contractor shall furnish all labor, equipment, materials, tools, and incidental items required to install and place into proper operation one (1) pier supported, spiral blade clarifier in existing concrete structure to replace a non-operational segmented blade system. All equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes, and regulations.

B. The clarifier shall be furnished complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.

C. Contractor shall be responsible for coordination of all related parts of work. Contractor shall verify all structures, piping, wiring, and components are compatible. Contractor shall be responsible for all structural and other alterations required to accommodate equipment differing in dimensions or other characteristics from these specifications and drawings.

1.2 RELATED SECTIONS

A. Section 01300 – Submittals

B. Section 03300 – Concrete

C. Section 05500 – Miscellaneous Metals

D. Section 09900 – Special Coatings and Painting

E. Section 11352 – Weirs and Baffles

F. Division 16 – Electrical

1.3 SUBMITTALS

A. Provide shop drawings and product data in accordance with section 01300 for the equipment being furnished, to include at minimum the following:

1. Certified shop drawings showing the details of construction, dimensions, and anchor bolt requirements.
2. Complete wiring diagrams detailing all required field connections.
3. Descriptive literature, brochures, and/or catalogs of submitted equipment.
4. Calculations showing the structural capability of the clarifier mechanism to withstand the momentary peak torque.

5. Complete bill of materials for the equipment.
6. List of Manufacturer's recommended spare parts.
7. Calculations substantiating the continuous torque rating of the main gear set in accordance with standard ANSI / AGMA 2001.
8. Operation and maintenance manuals in accordance with the requirements of section 01430.
9. Manufacturer's valid ISO 9001:2008 certificate of registration
10. Equipment weights and lifting points.
11. Short- and long-term storage requirements.
12. Manufacturer's installation instructions.
13. Installation Reference Lists
14. Valid Welder Certifications
15. A copy of Manufacturer's factory warranty.

1.4 REFERENCE STANDARDS

A. American Iron and Steel Institute (AISI).

B. American National Standards Institute (ANSI).

C. American Society for Testing Materials (ASTM).

D. American Bearing Manufacturers Association (ABMA).

E. American Gear Manufacturers Association (AGMA).

F. National Electrical Manufacturers Association (NEMA).

G. Underwriters Laboratory (UL).

1.5 QUALITY ASSURANCE

A. Qualifications: Qualified Manufacturers shall have a minimum 20 years' experience manufacturing clarifiers, with no fewer than 20 operating installations of the type specified herein located in the USA. Manufacturer shall provide a list of 5 names and dates of installations for verification by the Engineer or Owner's Representative.

B. A single manufacturer shall provide all components including but not limited to the clarifier, motors, gear reducers, controls, and control panels as a complete integrated package to ensure proper coordination, compatibility, and operation of the system.

C. Clarifier shall be Manufacturer's standard product and only modified as necessary to comply with the drawings, specifications, and specified service conditions.

D. All welding is performed in accordance with American Welding Society (AWS) Structural Welding Code.

E. All stainless-steel components shall undergo a passivation process to ensure maximum resistance to corrosion. All stainless-steel surfaces shall be thoroughly cleaned and glass bead-blasted to a minimum SSPC-SP-6 finish. The use of nitric and hydrofluoric acid

passivation is not acceptable due to the negative impact these chemicals have on the environment.

F. Contractor shall guarantee all equipment against faulty or inadequate design, improper assembly or installation, defective workmanship or materials, and breakage or other failure. Materials shall be suitable for service conditions.

G. All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practices. The fabrication shall be performed by the equipment manufacturer at the manufacturer's facility located within the continental USA; all welding shall be performed by direct employees of the manufacturer, each welder shall be certified in accordance with AWS or ASME. Welder certificates shall be provided to the Engineer upon request.

H. Each clarifier shall have the Manufacturer's name, address, and product identification information on a corrosion resistant nameplate securely affixed to the equipment.

I. Clarifier manufacturer shall be ISO 9001:2008 certified and provide the Engineer with a copy of a valid certificate of registration.

1.6 WARRANTY

A. The equipment shall be warranted by the manufacturer for a period of one (1) year from the date of Owner Acceptance.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Shipping
1. Ship equipment, material, and spare parts complete except where partial disassembly is required by transportation regulations or for protection of components.
2. Pack spare parts in containers bearing labels clearly designating contents and equipment for which they are intended.

B. Receiving and Storage:
1. Store and safeguard equipment, material, and spare parts. All spare parts must be stored in accordance with manufacturer's recommendations.

1.8 OPERATION AND MAINTENANCE MANUALS

A. The manufacturer shall furnish operation and maintenance manuals in accordance with the requirements of section 01430 – Operation and Maintenance Manuals.

PART 2 PRODUCTS

2.1 CLARIFICATION EQUIPMENT

A. Manufacturers:
1. Kusters
2. WesTech
3. Lakeside

4. Substitutions: Section 01600 - Product Requirements.

B. The manufacturer shall be successful in the experience of manufacture, installation, operation, and servicing of equipment of the type, size, quality, performance, and reliability equal to that specified. The manufacturer shall submit evidence of experience having supplied at least twenty (20) installations of similar type and size in the past five (5) years.

C. Suppliers not meeting the experience clause identified in section 1.5.A shall provide a performance and payment bond for 100% of the contract amount. The bond shall be issued by a surety with an FSR rating of no less than "A". A letter of surety shall be provided with the pre-approval to confirm bondability. The owner and/or engineer reserves the right to reject any manufacturer should insufficient or incomplete data be provided to determine an approved equal manufacturer status.

D. GENERAL DESIGN REQUIREMENTS

1. Structural Steel: ASTM A-36 and shall conform to requirements of the AISC "Speciation of the design, fabrication and erection for structural steel for buildings" Latest edition, except that the maximum allowable stress for the loading conditions of any member shall be 2/3 the value allowed by the AISC.
2. Thickness of Structural Steel shall be no less than ¼ inch.
3. Welding: All A-36 steel, both submerged and non-submerged, shall be continuously seal welded. Stitch or skip welding is not permitted.
4. The clarifier components shall be designed for all bolted connections, field welding will not be permitted.
5. The Contractor shall be required to make any necessary modifications to the new or existing concrete to accommodate the equipment furnished. The manufacturer shall ensure the manufacturer furnished anchor bolt templates are properly designed for the application.
6. Edge Grinding: Sharp projections of cut or sheared edges of ferrous metal shall be ground to a radius by a power grinder as required to ensure satisfactory coating adhesion.

E. DESIGN CRITERIA (per Clarifier)

Tank Diameter (ft):	100[1]
Sidewater Depth (ft):	Unk.[1]
Floor Slope (in/in):	Unk.[1]
Feedwell Diameter (ft):	TBD[2]
Feedwell Depth (ft):	TBD[2]
EDI Well Diameter (ft):	TBD[2]
EDI Well Depth (ft):	TBD[2]
Operational Environment:	Non-Hazardous
Stainless Steel Hardware Grade:	316
Center Column Diameter (in):	TBD[2]

1 – Contractor to confirm with field measurements
2 – To be sized by clarifier manufacturer for optimal system performance

F. PERFORMANCE AND DESIGN REQUIREMENTS

1. Each clarifier shall be capable of processing the specified maximum flow of municipal wastewater and shall be capable of efficiently separating solids from the treated liquid.

2. All components shall be designed and manufactured so the clarifier(s) can withstand the structural force exerted by momentary peak torque. All structural and functional parts shall be adequately sized to prevent deflection and vibration which could impair operation.

G. CLARIFIER COMPONENTS

1. Center Column
   a. The center column shall Support entire sludge collector mechanism including inboard end of the access bridge; sized and designed by collector manufacturer. Minimum wall thickness of 1/4 inch; mounted at center of basin. Shall be provided and designed to support all required static and dynamic loads. The column shall be designed for 2 times the continuous operating torque identified in section 2.2.B.
   b. The bottom of the column shall have a bolting flange for anchorage to the concrete tank using stainless steel anchor bolts. The Manufacturer shall provide a steel template/grout shield to accurately locate anchors and allow for grouting beneath the pier after final plumbing.
   c. The column shall have gusset plates located at the top and bottom flanges for added strength.
2. Center Drive Cage
   a. The drive cage shall be a steel box truss capable of carrying dead load of rake arms plus its own dead load, as well as design total torque assuming entire design torque is distributed uniformly along each rake arm: bolted to spur gear assembly that rotates center cage; bolted to rake arms and influent well hangers (if used).
   b. Structural calculations shall be provided verifying the structural ability of the drive cage. The cage shall be designed for 2 times the continuous operating torque identified in Table 2.2.B.
3. Feedwell
   a. Welded steel concentric with center column supported by center cage or access bridge; top edges approximately 4 inches above tank water surface. Size shall be as identified in Table 2.2.B.
   b. Four baffled slots at liquid level to permit removal of floating material in well; 12 inches long; extending 2 inches below low-water level.
   c. Feedwell plate sections shall be designed to bolt together.
4. EDI Well
   a. Mounted concentric with center column, supported by center cage; top edge approximately 4 inches above water surface; designed to diffuse influent into tank to greatest extent possible by use of energy-dissipating nozzles. Closed and sealed bottom within 1 inch of center column. Size shall be as identified in Table 2.2.B.
   b. The EDI well shall be equipped with multiple curved outlet ports located on the side of the well. The ports shall be arranged evenly around the EDI and shall discharge the liquid into the direction of rotation to further dissipate energy and enhance flocculation.
   c. Two 3” x 5” grit drains shall be provided on the EDI.
5. Rotating Truss Arms
   a. Each designed for 2 times the continuous torque identified is Table 2.2.B. Total torque shall be assumed to be distributed uniformly along each truss arm.

b. Truss arm design shall conform to slope of tank floor; consisting of structural steel triangular or box trusses attached rigidly to the center cage. Shall not incorporate use of any tie rods; self-supporting and without tie rods. Designed to support the sludge header assembly, as needed.

6. Walkway and Service Platform
   a. Welded steel truss or beam bridge construction and composed of two main members laterally braced together. UHMW-PE slide plates and anchor bolts for wall support shall be provided.
   b. Bridge shall be capable of supporting dead loads plus minimum walkway live load of 50 pounds per square foot with deflection of maximum L/360 of span for dead load plus live loads; cambered for 1/3 live load plus dead load.
   c. Walkway shall be supported at the drive service platform and the concrete wall. The service platform shall be located around the center drive and provide a minimum clearance of 1 foot 6 inches around all sides of the drive mechanism.
   d. Handrail: The walkway and platform shall be provided with mechanical handrail 42” high, double row 1.5” diameter aluminum pipe, and 0.25” x 4” kickplates on both sides. Walkway trusses may serve as the handrail if the top chord is 3’-6” above the walking surface.
   e. Decking: The entire walkway shall be covered with aluminum I-bar grating, 1.25” thick, attached with aluminum grating clips and stainless-steel hardware. The service platform shall be covered with 0.25” aluminum checkered plate.
7. Skimmer and Scum Removal
   a. A surface skimming system shall be provided and consist of two (2) skimming arms with skimmer heads, and a scum collection box. The skimmer arms shall span from the feedwell to the scum baffle and shall be supported by and rotate with the truss arms. Each skimmer head shall be designed to maintain constant contact with the scum baffle and shall include a 60-durometer neoprene wiper.
   b. The scum box shall be peripherally located and supported by steel support angles. The scum box shall be a minimum of 4’-0” wide x 4’-2” in length and constructed from ¼” steel plate and angles.
   c. An auto flush valve assembly shall be provided and mounted on the scum box. The valve body and parts shall be corrosion resistant material of either stainless steel or brass. The valve shall automatically open and close with each pass of the skimmer arm. The seal shall be a BUNA-N rubber type and properly seal without leakage. The duration and volume of flush water shall be adjustable.
8. Center Drive Mechanism
   a. General: The center clarifier drive mechanism shall consist of an electrical motor, primary reducer, intermediate gear reducer and a main gear set consisting of a spur pinion and internal tooth spur gear.
   b. Motor: The clarifier drive shall be driven by an electric motor. The motor shall be UL rated for the operational environment as specified in Table 2.2 B. The 1 HP motor shall be rated for 230/ 460V, 60 Hz, 3-phase operation with a minimum service factor of 1.0.
   c. Primary Reducer: A primary hydraulic reducer shall transmit torque to the intermediate reducer and provide overload protection. The hydraulic system shall be self-contained, and fully enclosed in a 304 stainless steel enclosure.

The enclosure shall also function as the fluid reservoir and shall provide a minimum 8-gallon capacity. The hydraulic system shall include: a hydraulic motor, a hydraulic pump, an aluminum manifold assembly, a flow directional valve, a pressure relief valve, an oil filter assembly, an oil filter replacement indication gage, a 6-inch diameter glycerin filled torque indication gage and all necessary hoses and fittings.

d. Intermediate Reducer: The intermediate reducer shall be a planetary type, providing no less than 90% gear efficiency. All lubrication of the planetary gearing shall be oil. Grease lubrication is not permitted. The planetary reducer shall be designed for a 200,000-hr. service life at the rpm and torque specified in Table 2.2.B. The output shaft of the intermediate reducer shall be keyed to a heat-treated spur pinion.

e. Final Reducer: The main gear shall include an internal tooth spur gear and spur pinion. The main gear material shall be ASTM A536 Ductile iron, 80,000 psi minimum tensile strength. The pinion shall be constructed from AISI 4150 steel, hardened to a minimum 340 Bhn.

f. Final Reducer: The main gear shall include an internal tooth spur gear and spur pinion. The main gear material shall be forged alloy steel, induction hardened to a minimum 53Rc. The pinion shall be constructed from AISI 4150 steel, hardened to a minimum 340 Bhn.

g. Turntable Base: Fabricated Steel, ASTM A36, minimum 36,000 psi tensile strength; able to be bolted to center column and to provide support for internal spur gear, the entire rotating collector mechanism and one end of the access bridge. Cast iron housing are not permitted.

h. Main Bearing: The main bearing shall consist of hardened steel chrome ball bearings and nylon spacer (1" minimum), each riding on a contoured, hardened steel raceway set as part of a precision bearing. The main bearing diameter shall be as identified in Table 2.2.B of these specifications.

i. Torque Overload Protection: The clarifier drive shall include a hydraulic torque overload protection system. Mechanical overload devices are not permitted due to their inherent inaccuracy. Two overload switches shall be provide, one for "alarm" set at 100% of the continuous torque identified in Table 2.2.B, and one for "motor cut-off" set at 130% of the continuous torque identified in Table 2.2.B. Additionally a pressure relieve valve shall be provided set at 150% of the continuous torque identified in Table 2.2.B. All switches shall be current rated for 120 VAC. Each switch shall be NEMA rated for the specified environment identified in Table 2.2.B of these specifications. The torque indication gage shall be 6 inches in diameter, glycerin filled with a scale that displays actual operating torque (ft-lbs or N-m).

j. Condensate Removal: A condensate removal system shall be included to automatically remove condensate from the main gear housing. The condensate system shall include a 1" galvanized steel piping with vertical stem. The pipe arrangement shall be designed to provide constant removal of condensate from the main gear housing. A minimum of 6" clearance shall be provided below the low point drain to allow for easy access by plant personnel.

k. Coatings: Each clarifier drive mechanism shall be factory coated with 2 coats (2-3 mils per coat, minimum DFT) of Tnemec epoxy prior to shipment.

2.2 CONTROLS AND INSTRUMENTATION

A. GENERAL

1. The clarifier control panel shall be the supplier's standard UL listed enclosure and wired for 460 volts, 3-phase, 60 Hz electrical service. The enclosure shall be furnished completely pre-wired and tested, requiring only mounting and connection to field mounted electrical devices. The control panel shall include all equipment required to control the clarifier specified herein.
2. Refer to Specification Section 16480 ("Manufactured Control Panels") for additional control panel requirements.
3. The control panel enclosure shall be NEMA rated for the specified environment identified in Table 2.2.B of these specifications. The enclosure shall house the control devices, relays, terminal blocks, and motor starter. All hinges and latches shall be corrosion resistant.

B. OPERATION

1. The control system shall be equipped with one (1) ON / OFF / AUTO position selector switch. In the Off mode the clarifier drive will not run. In the ON mode the clarifier drive shall run continuously. In the AUITO position, the clarifier drive shall run based on on/off commands from the plant SCADA system. The unit shall automatically restart after power failure. The following items shall be included in each control panel.
    a. Clarifier run light (green)
    b. Torque "alarm" light (amber)
    c. Torque "motor cut out" light (red)
    d. UL 508A Listed industrial controls label
    e. "Alarm" horn
    f. Reset push button
    g. On/Off selector switch
    h. Relays and control power transformers as required
    i. Main Breaker
    j. Main door mounted disconnect switch with through the door lockable handle

C. COMPONENTS

1. Enclosure
    a. Enclosures shall be NEMA rated as required, for the specified environment identified in Table 2.2.B of these specifications.
    b. Enclosure shall house the circuit breaker, motor starter, control devices, relays, and terminal blocks.
2. Control Devices
    a. Pilot devices shall be mounted on the enclosure front panel door.
    b. Indicator lights shall be LED type. Selector switches shall be heavy duty NEMA type.
    c. Control transformer shall be protected by two (2) primary fuses and one (1) secondary fuse. The 120-volt secondary shall have one leg grounded.
    d. Auxiliary relay contacts shall be included for clarifier drive, Run, Off, alarm, and motor cut out overload signal outputs. The contacts shall be rated 10-amp, 240 VAC, resistive load.

e. Relaying shall be included for clarifier drive start control input from the plant SCADA system as indicated on electrical plans. The contacts shall be rated 10-amp, 240VAC, resistive load.
f. Starter shall be integral to the enclosure.
g. Provide the following sets of auxiliary dry terminal blocks for monitoring by Owner's SCADA system:
   1) Running
   2) Fault
   3) High Torque
   4) ON/OFF/AUTO switch "Not In Auto"
h. Provide the following relaying for control of the clarifier drive by the plant SCADA system:
   1) Clarifier drive On/Off control

2.3 SOURCE QUALITY CONTROL

A. Clarifier components and control panel shall be factory assembled and tested to ensure proper fit and satisfactory operation. Equipment shall be shipped in the minimal practical number of pieces for minimal field assembly by the Contractor.

2.4 SHOP PAINTING

A. Stainless steel and other corrosion-resistant surfaces shall not be painted. Gearboxes, Motors, and other manufactured components will receive the manufacturer's standard weather- and corrosion-resistant coating. All fabricated steel components shall be coated in accordance with Section 09900.

2.5 SPARE PARTS

A. The following spare parts shall be provided:
   1. Two (2) Hydraulic Oil Filters
   2. One (1) Skimmer Neoprene

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify anchors are correctly positioned.

3.2 INSTALLATION AND TESTING

A. Contractor shall verify all dimensions in the field to ensure compliance of equipment dimensions with the drawings. Contractor shall notify Engineer of any significant deviations.

B. Installation of the equipment shall be in strict accordance with the contract documents and the Manufacturer's instructions and shop drawings. Manufacturer shall supply anchor bolts for the equipment. Contractors shall install the anchor bolts in accordance with the Manufacturer's recommendations.

C. Supplier shall furnish the services of a factory-trained Service Engineer for Three (3) trips and Five (5) days for start-up, commissioning, and operator training.

1. Equipment shall not be energized, or “bumped”, to check the electrical connection for motor rotation without installation inspection and the Service Engineer present.
2. The Service Engineer shall test rotate each clarifier for 2 complete revolutions, inspect the installation, and make recommendations for any necessary mechanical adjustments by the Contractor.
3. The Service Engineer shall conduct a torque test during the start-up and commissioning to demonstrate proper operation of the overload system.

END OF SECTION

THREE NOTCH GROUP Environment & Infrastructure

August 5, 2025

City of Troy
PO Box 549
Troy, Alabama 36081

Attention: Mayor Jason Reeves

Reference: **Report of Subsurface Exploration and Geotechnical Engineering Evaluation**
Walnut Creek WWTP – Addendum #1
Troy, Alabama
Three Notch Reference Number: R021022458

Dear Mayor Reeves:

Three Notch Group, Inc. (Three Notch) has completed an addendum to the geotechnical engineering evaluation for the proposed Walnut Creek WWTP project in Troy, Alabama. The addendum was required due to design plan changes. The following revised project description details the changes.

We understand that excavations to construct the two (2) proposed wet wells will extend to a depth of approximately 15½ feet (or ±EL 341). The adjacent resin media absorbers and cloth media tertiary filter are expected to bear on thickened slabs near existing grades. The weight of the proposed media absorbers is ±79 kips each, while the tertiary filter weighs ±45 kips. Based on the thickened slab dimensions provided in the most recent plan set, ground pressures beneath the slabs are expected to be on the order of 500 to 1,000 psf.

Revised Earthwork Considerations

The following recommendation modify those present in **Section 6.0** of the original *Subsurface Exploration and Geotechnical Engineering Evaluation* for the project. Provided the recommendations below are followed and that loads do not exceed those outlined above, the use of rammed aggregate piers is no longer expected to be required.

Due to the anticipated depth of cut to establish bearing elevations for the wet wells, those structures are expected to bear on high-consistency coastal plain deposits. A representative of Three Notch should verify the suitability of the bearing materials prior to construction of overlying structures.

However, low-consistency fill and coastal plain deposits will remain below the planned bearing elevation for the remaining structures and surrounding slab. In non-thickened slab areas with no overlying loads or negligible loads, we recommend the existing subgrade materials be undercut to minimum depth of 24 inches below proposed subgrade elevation. Exposed materials should be moisture conditioned and recompacted to the extent practicable. The excavation should then be returned to proposed final subgrade elevation with compacted and tested, structural fill.

The in-place materials, in their current condition, are not expected to provide sufficient support for the proposed equipment in thicknessed slab areas. Therefore, we recommend they be stabilized through limited over-excavation and replacement with a geosynthetic and crushed aggregate mat, as described below. The aggregate mat will provide a stable subgrade for additional fill placement or direct support of foundations. Additionally, the stabilization mat will mitigate potential differential settlements in the proposed structure.

Stabilization shall consist of excavating the on-site soils to a minimum depth of 36 inches below the planned foundation bearing elevation. The subgrade shall then be stabilized with a 36-inch-thick mat of interlayered crushed aggregate and geosynthetic. Following over-excavation, a 12" thick layer of open-graded, crushed aggregate (ASTM C-33 #57) shall be placed. A triaxial geogrid (Tensar TX 5 or equal) shall be installed over the initial stone lift. A second 12" thick layer of open-graded aggregate and triaxial geogrid shall then be installed. A final 12" thick stone lift should be placed over the second geogrid layer. The final stone lift shall consist of a combination of 6 inches of ASTM C-33 #57 crushed aggregate choked with 6 inches of densely graded, crushed aggregate (ALDOT 825).

The undercutting and stabilization process shall continue to a minimum horizontal distance of 3 feet beyond the sides of proposed thickened slab foundations or portions of the slab supporting overlying structures (as measured at the bottom of the excavation). Open-graded, aggregate lifts shall be individually compacted with a self-propelled, vibratory, smooth-drum compactor making a minimum of 4 passes in each of two perpendicular directions. The densely graded aggregate shall be compacted to the requirements for structural fill. Geogrid should be installed in accordance with the manufacturer's recommendations.

We appreciate the opportunity to work with you. Please call if you have any questions or need additional information.

Respectfully Submitted,
Three Notch Group, Inc.

K. Taylor Griffin, PE
Project Engineer

Allen J. Yates, PE
Senior Engineer

ALABAMA LICENSED No. 30466 PROFESSIONAL ENGINEER ALLEN JOHNSTON YATES
8/6/25