THE KELLEY GROUP
▪ A CIVIL ENGINEERING COMPANY ▪

**PROJECT:** Town of Lexington
CWSRF Project. No. CS010886-02
KG Project #22-0032

**ADDENDUM NO.** Four (4)

**DATE:** June 14, 2024

**TO:** All Recorded Contract Document Holders

This Addendum is issued to all registered plan holders pursuant to the Conditions of the Contract.

This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. This addendum and its attachments shall become a part of the plans and specifications and shall apply to the bid proposals for the above-named project.

The bidder(s) shall notify all affected subcontractors, material suppliers, and others to incorporate necessary cost and schedule updates, to the bid proposal and the work changes affected by this Addendum.

The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form. Bidders must also acknowledge receipt by email to jessica@kelleynetwork.com.

In the event of conflict between plans and specifications and this addendum, the addendum shall take precedence. Any modifications necessary to incorporate the revisions shall be included in the appropriate bid prices. The bid documents are hereby corrected, modified, and/or amended in the following manner:

---

**General:**

1. The following questions and answers were issued during the project's advertisement:

   **Q:** Will Schedule 10 304 4" Stainless Steel Pipe be acceptable for the sludge pump suction line?

   **A**: Yes, welded and flanged 4" Sch 10 304 Stainless Steel pipe is acceptable.

   **Q:** Can influent plug valve be removed since bypass system and isolation valve has been moved upstream of headworks?

   **A:** Yes, please see revised Plan Sheet 6 attached hereto.

   **Q:** Is there a name brand PLC you are intending to be used in Section 46 06 01 Control System Requirements?

**A:** PLCs shall meet the requirements of Specification Section 26 29 00 Manufactured Control Panels, or any other electrical specs citing minimum requirements for PLCs.

**Q:** Is the intent to have an HMI Interface for the operator to interact with the PID functionality of the flow rate and VFDs?

**A:** Yes, the intent is for the operator, integrator, and/or supplier to set the blower output via VFD in concert with the incoming flow rate using the PLC/HMI in the blower control panel at start-up, and for the operator to be able to adjust the settings in the field as needed.

**Q:** There are two sections for VFDs; 40 97 00 and 26 29 23. They do differ, which is the preferred section?

**A:** All VFDs shall meet the requirements of Specification Section 26 29 23. If the VFD manufacturers named in Specification Section 40 97 00 meet the minimum requirements of Specification Section 26 29 23, they shall be considered acceptable.

**Q:** I believe that the linear nature of the project, along with lead times on equipment and electrical components will necessitate a contract extension. Can the contract be extended to 240 days for substantial and 270 days for final?

**A:** As this project is necessitated by a Unilateral Order issued by ADEM, and due to the funding sources for this project, six (6) months have been allowed for the contract to be completed once the notice to proceed is issued. However, a request to the funding agency for an extension of the contract time will be made, and an extension of the contract time may be issued during construction on an as-needed basis.

2. As a point of clarification, Specification Section 46 02 00 – Section 3.05 – Line B shall be replaced with the following:

   3.05.B The aeration system should be designed to provide 771.9 lb/day of oxygen.

3. As a point of clarification, aerators and air distribution tubing shall be installed prior to baffle curtain installation to prevent air distribution tubing from running over top of baffle curtains. CONTRACTOR shall coordinate with aeration system manufacturer and baffle curtain manufacturer regarding installation sequencing.

4. As a point of clarification, control panels for the aeration system, effluent/sludge pump system, and the transfer pump system (Additive Alternate 2) may be provided by the equipment supplier or the system integrator, as chosen by the CONTRACTOR, so long as all panels meet the requirements of Specification Section 46 06 01 Control System Requirements, as well as all applicable electrical specifications.

5. As a point of clarification, System Integrator shall be on-site for all equipment start-up and testing activities to ensure proper functionality of control systems and equipment communication/operation, as well as to provide training to OWNER on operation of electrical equipment.

**Specifications:**

1. Remove and replace Section 00 41 43 Bid Form – Addendum #1 with the revised Section 00 41 43 Bid Form – Addendum #4 (9 total pages), as noted in the footer and attached hereto.

2. Remove and replace Section 01 11 13 Summary of Work – Addendum #1 with the revised Section 01 11 13 Summary of Work – Addendum #4 (10 total pages), as noted in the footer and attached hereto.

3. Remove and replace Section 46 06 01 Control System Requirements – Addendum #2 with the revised Section 46 06 01 – Addendum #4 (6 total pages), as noted in the footer and attached hereto.

**Drawings:**

1. Remove Sheet 6 from the contract documents and replace with Sheet 6 attached hereto.

This Addendum No. 4 shall be attached to the front of your set of Specifications and made a part of the Specifications and Contract Documents. Acknowledgment of receipt of Addendum No. 4 shall be noted on Page 00 41 43-1 of the Bid Form.

THE KELLEY GROUP, LLC.

By: _____
Edward Smith, P.E.

Addendum #4 is 29 total pages.
This concludes Addendum #4.

**SECTION 00 41 43**
**BID FORM – ADDENDUM #4**

Project Identification: **Town of Lexington Sewer System Improvements**
**CWSRF #CS010886-02**

**The project consists of demolition of existing sewer lagoon infrastructure, removal of sediment, liners, and appurtenances from two (2) sewer lagoon cells and disposal of the same. Installation of new lagoon aeration, baffle curtain, effluent pumps, blowers, controls, sludge pump, valves, actuators, and related equipment for a fully functional lagoon treatment system.**

This Bid is Submitted to:

**Town of Lexington**
**11060 Highway 101**
**Lexington, AL 35648**

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2.01 The Bidder declares that he understands that when quantities of Work for which unit price bids are requested are shown in the Advertisement Invitation for Bids, and in the Proposal, such quantities are approximate only and are subject to either increase or decrease, that, should the quantities of any of the Work items increase, the Bidder proposed to perform the additional Work at the unit prices bid by him, that should the quantities of any of the Work items be decreased, payment will be made only for the actual quantities of Work performed and such payment will be based upon the unit prices bid by him, and that he shall make no claim for profits anticipated on the decrease in quantities of Work. Actual quantities will be paid for as the Work progresses, in accordance with the provisions of the Contract Agreement, and such quantities shall be subject to final measurements and determinations made upon completion of the Work.

3.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening or for such a longer period of time that Bidder may agree to in writing upon request of OWNER.

4.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all of which is hereby acknowledged.

| Addendum No. | Addendum Date |
|---|---|
| _____ | _____ |

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect the cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied with all federal, state, and local Laws and Regulations that may affect the cost, progress, and performance of the Work.

D. Bidder has carefully studied all the following if supplied: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for the performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey an understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

5.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or

induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

6.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

| BASE BID | | | | | |
|---|---|---|---|---|---|
| **Item #** | **ITEM** | **UNIT** | **QTY** | **Unit Price** | **Total Price** |
| 1 | Mobilization/Demobilization - Including, but not limited to, insurance, bonds, permits, submittals, existing site documentation, and site cleanup (Limited to 6% of the contract total) | LS | 1 | | |
| 2 | Furnish and Install Flow Diversion System – Furnish and install 8"x6" tapping sleeve and valve, insert-a-valve, PVC Force Main, Portable Effluent Screening, etc. as required to provide a fully functional flow diversion system to divert flow to Cell #3 for the duration of construction on Cells #1 and #2. | LS | 1 | | |
| 3 | Clearing and Grubbing - Clear and grub entire lagoon site to include removal and disposal of trees, weeds, etc. along perimeter of lagoon cells. Spray with herbicide and pre-emergent to prevent immediate regrowth. | LS | 1 | | |
| 4 | Demolition - Remove existing lagoon aerators, lagoon covers, pumping/dewatering of Cells 1 and 2, Cell 1 lagoon liner, Cell 2 lagoon liner, vertical turbine pump 1, flow control actuator, flow control butterfly valves, existing flow meters, etc. Allow Owner option to accept any operational lagoon aerators, pumps, etc. Cost for delivery of any stored equipment to Owner's storage facility shall be considered incidental to this bid item. Disposal of remaining materials at approved landfills shall be considered incidental to this bid item. | LS | 1 | | |
| 5 | Cell 1 Lagoon Liner - Furnish and Install 60 mil lagoon liner in Cell 1 (Aeration Cell) to include compacted sand repair as required, sub-drainage/venting system, geotextile cushion underlay, pipe/structure penetrations, etc. to provide a fully functional lagoon liner system. | LS | 1 | | |
| 6 | Cell 2 Lagoon Liner - Furnish and Install 60 mil lagoon liner in Cell 1 (Settling Cell) to include compacted sand repair as required, sub-drainage/venting system, geotextile cushion underlay, pipe/structure penetrations, etc. to provide a fully functional lagoon liner system. | LS | 1 | | |
| 7 | Baffle Curtain - Furnish and Install approximately 183 linear feet of lagoon baffle curtain with end anchors, bottom anchors, flow-through window, etc. to provide a fully functional lagoon partition system in Cell 1 (aeration cell). | LS | 1 | | |
| 8 | Aeration System - Furnish and Install positive displacement blower, stainless steel header pipe, carbon steel air pipe, air valves, stainless steel manifold, weighted air tubing, nine (9) weighted aerators, etc. to provide a fully functional lagoon aeration system. | LS | 1 | | |

| BASE BID | | | | | |
|---|---|---|---|---|---|
| **Item #** | **ITEM** | **UNIT** | **QTY** | **Unit Price** | **Total Price** |
| 9 | Process Control System - Furnish and Install lagoon control panel to include aeration control system, flow meters, flow meter outputs, valve actuator control system, variable frequency drives, breakers, disconnects, etc. to provide a fully functional process control center. Costs for installing conduit, wire, junction boxes, wire termination, system start-up, testing, etc. shall be considered incidental to this bid item. Coordination with power utility to provide any required electrical service changes shall also be considered incidental to this bid item. | LS | 1 | | |
| 10 | Effluent Pump Installation – Install new effluent vertical turbine pump 1. To include pump pad, anchor bolts, leveling grout, wiring, air relief valves (2), priming, painting, start-up, testing, etc. to provide a fully functional effluent pump system. Precipitation-based pump control system shall be considered incidental to this bid item. | LS | 1 | | |
| 11 | Sludge Pump - Furnish and install self-priming pump, concrete pad, 4" suction pipe system, check valve (1), isolation plug valve (1), air relief valve (1), 3" effluent force main, discharge splash block, wiring, control panel, etc. to provide a fully functional sludge removal pumping system. Cost for conduit, wire, etc. required to provide power to the pump/panel shall be considered incidental to this bid item. | LS | 1 | | |
| | | | | **BASE BID TOTAL:** | |

| ADDITIVE ALTERNATE (BASE BID + ADDITIVE ALTERNATE) | | | | | |
|---|---|---|---|---|---|
| **Item #** | **ITEM** | **UNIT** | **QTY** | **Unit Price** | **Total Price** |
| ALT 1 | Flow Control System – Remove and replace flow control system (two valves, one actuator existing) to include 8" knife gate valves (2), electric actuators (2) wiring, conduit, control system, etc. to provide a fully functional electric-actuated flow control selection system. | LS | 1 | | |
| ALT 2 | Lift Station Pumps – Remove and replace existing 2 HP return lift station pumps with (2) new 2 HP submersible pumps to match existing pump conditions. Reuse existing guide rails, discharge elbow, and other mechanical parts. Furnish and install new float control system, etc. as required to provide a fully functional flow return system. | LS | 1 | | |
| | | | | **ADDITIVE ALTERNATE TOTAL:** | |

| DEDUCTIVE ALTERNATE (BASE BID - DEDUCTIVE ALTERNATE) | | | | | |
|---|---|---|---|---|---|
| **Item #** | **ITEM** | **UNIT** | **QTY** | **Unit Price** | **Total Price** |
| DED ALT 1 | Effluent Pump Replacement - Remove and replace existing effluent vertical turbine pump 1 with existing rebuilt vertical turbine pump supplied by Owner. To include pump pad, anchor bolts, leveling grout, wiring, air relief valves (2), priming, painting, start-up, testing, etc. to provide a fully functional effluent pump system. Precipitation-based pump control system shall be considered incidental to this bid item. Cost for loading and transport of existing pump from Owner's facility to site shall be considered incidental to this bid item. The bid price for this item shall be considered a deduction from the base bid, and a replacement to Line Item #11, should the OWNER choose to award this item. The base bid will be reduced by the amount of Line Item #DED ALT 1 should this alternative be awarded. | LS | 1 | | |
| | | | | **DEDUCTIVE ALTERNATE TOTAL:** | |

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

7.01 Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

A. The OWNER reserves the right, at its sole discretion, to award some, all, or none of the bid items listed in the bid form, including additive and deductive alternates, in any order, as the OWNER perceives in his best interest. CONTRACTOR reserves the right to accept award of the Contract as awarded by the OWNER. If CONTRACTOR should choose not to accept award, ENGINEER may then recommend award to next low responsive bidder or choose to recommend rejection of remaining bids.

B. The OWNER can, and will, consider options in the selection or rejection of Alternate #1 and Alternate #2 when identifying the low responsive bidder.

8.01 Bidder agrees that the Work will be substantially complete within **180** calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within **210** calendar days after the date when the Contract Times commence to run.

9.01 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

**10.01 Bidder will submit with his bid package references stating his qualifications to perform the work required and provide a minimum of five (5) references and validation of performing similar size and type of municipal sewer system improvements.**

11.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security in an amount no less than 5% of the bid price, but in no event more than $10,000, or the form of the bid bond provided in this Project Manual; and

B. A tabulation of Subcontractors, Suppliers and other individuals and entities required to be identified in this Bid; and

C. Required bidder qualifications statement with supporting data as detailed in the Instruction to Bidders.

The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on _____ _____, 20_____.

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)

*(Individual's signature)*

Doing business as: _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Email: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____

*(Signature of general partner -- attach evidence of authority to sign)*

Name (typed or printed): _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Email: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability):_____

By: _____

*(Signature -- attach evidence of authority to sign)*

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

*(Signature of Corporate Secretary)*

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Email:_____

Date of Qualification to do business is _____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____

*(Signature of joint venture partner -- attach evidence of authority to sign)*

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

By: _____

*(Signature -- attach evidence of authority to sign)*

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Email:_____

Phone and FAX Number, and Address for receipt of official communications:

_____

_____

**SECTION 01 11 13**
**SUMMARY OF WORK – ADDENDUM #4**

PART 1 – GENERAL

1.01 CONTRACT DESCRIPTION

A. Contract Type: Unit Price as described in Agreement – EJCDC

B. The contract award, if made, will be made to the low-responsive bidder. A "responsive" bid shall be evidenced by: (1) A Bid form complete in accordance with the Instructions to Bidders and with instructions and/or requests contained in any other sections of the Contract Documents; (2) A Bid Form not evidencing any apparent unbalanced pricing for the performance of the Items of Work; (3) a Bid Form without excisions, special conditions or qualifications made by the Bidder; and (4) a Bid Form containing no alternative bids or offerings for any items unless such alternative bids or offerings are requested in the Technical Specifications or Contract Documents.

C. The successful bidder must furnish a Performance Bond for one hundred (100%) percent of the bid amount and a Labor and Material Payment Bond for one hundred (100%) percent of the bid amount and must secure his bond from a bonding company's representative or agent in the State of Alabama.

D. The attention of bidders is called to provisions of State Law Governing General Conditions, as set forth in Chapter 4 (Section 65 to 82, inclusive) of Title 46 of the Code of Alabama of 1940, as amended; and bidders shall be governed by law insofar as it is applicable. The above-mentioned provisions of the Code make it illegal for the OWNER to consider a Bid from anyone who is not properly licensed under such code provisions. The OWNER, therefore, will not consider any bid unless the bidder produces evidence that he is so licensed. Neither will the OWNER enter into a Contract with a foreign corporation that is not qualified under State Law to do business in the State of Alabama. **The bidder must be licensed by the Alabama Licensing Board for General Contractors with a major classification of MU (Municipal & Utility). The CONTRACTOR must include his General Contractor's license number and classification on the outside of the sealed bid envelope.**

E. Unit Price

1. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

2. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

3. The OWNER reserves the right, at its sole discretion, to award some, all, or none of the bid items listed in the bid form, including additive and deductive alternates, in

any order, as the OWNER perceives in his best interest. CONTRACTOR reserves the right to accept award of the Contract as awarded by the OWNER. If CONTRACTOR should choose not to accept award, ENGINEER may then recommend award to next low responsive bidder or choose to recommend rejection of remaining bids.

4. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

1.02 WORK UNDER THIS CONTRACT

A. The Contract provides all labor to make improvements to the sewer system.

B. The work to be performed, including work detailed and not detailed in the Contract Documents, shall be in accordance with specifications prepared by The Kelley Group, LLC.

C. The CONTRACTOR will notify the ENGINEER by 8 a.m. Friday of the next week's operations and promptly notify the ENGINEER of any work stoppages due to weather or other conditions preventing work, partial or complete days.

D. **Line Item #1 - Mobilization/Demobilization** - to include, but not limited to, insurance, bonds, permits, submittals, existing site documentation, and site cleanup (Limited to 6% of the construction total: 4% for Mobilization, 2% for Demobilization).

E. **Line Item #2 – Flow Diversion System**– Furnish and install flow diversion system to include tapping sleeve and valve, PVC pipe, steel cover plate, discharge to Cell #3, temporary screening system, etc. to provide a fully functional flow diversion system in order that influent flow is diverted around Cells #1 and #2, directly to Cell #3. Flow diversion system shall be maintained for the duration the outage of Cells #1 and #2.

1. CONTRACTOR shall supply ENGINEER with bypass pumping plan submittal prior to commencement of construction. Plan shall include pipe sizing/material/layout, tapping sleeve and valve material submittal, temporary screening system submittal, proposed flow diversion schedule, and any other pertinent material submittals.

2. CONTRACTOR may use flexible discharge hose or HDPE pipe of comparable size in lieu of PVC pipe, however CONTRACTOR shall ensure that pipe is braced such that 'snaking' of pipe will not be an issue.

3. This bid item shall be inclusive of manpower, power, fuel, etc. to monitor and maintain flow diversion system and prevent any outages that may cause spills or overflows. Additionally, CONTRACTOR shall remove and dispose of all screened solids from temporary screening system daily to prevent clogs for the duration of flow diversion

operations. Backup pumping systems shall be available should an outage of the primary lift station system occur.

4. CONTRACTOR shall be responsible for notification to ENGINEER and ADEM should any spills or overflows occur, as well as for cleanup of any spills or overflows relating to bypass pumping failures.

5. CONTRACTOR may pump down and shut off flow from East Street lift station for duration of flow diversion system installation, so long as approved by ENGINEER and OWNER.

F. **Line Item #3 – Clearing and Grubbing –** Clear and Grub entire lagoon site to include removal and disposal of trees, shrubs, and other vegetation along perimeter of lagoon cells. Spray with herbicide to prevent immediate regrowth.

1. CONTRACTOR shall ensure that entire lagoon site within perimeter fence is cleared and grubbed and all debris is removed from site at CONTRACTOR's expense.

2. CONTRACTOR shall spray gravel access drives with herbicide and pre-emergent to kill all vegetation prevent immediate regrowth of vegetation. CONTRACTOR shall spray balance of site with herbicide to kill all woody and broad-leaf vegetation, and pre-emergent to prevent immediate regrowth of vegetation. CONTRACTOR shall maintain no re-growth by using pre-emergent until project is accepted by OWNER. CONTRACTOR shall ensure that no runoff of herbicide into lagoon cells occurs during performance of this work.

G. **Line Item #4 – Demolition** – Remove all existing lagoon aerators (approximately eight), all lagoon covers (approximately ten), all lagoon baffles (approximately four) and anchors, Cell 1 lagoon liner, Cell 2 lagoon liner, Vertical Turbine Pump 1, etc.

1. CONTRACTOR shall allow OWNER the option to retain any mechanical equipment removed during demolition. CONTRACTOR shall load, haul, and unload any equipment chosen to be retained to OWNER's storage facility at no additional cost.

2. Dewatering of Cell 1 and Cell 2 to prepare for removal of lagoon liner shall be considered incidental to this line item. CONTRACTOR may pump liquid contents of each cell to Cell 3 for storage while cells are out of service.

3. CONTRACTOR shall be responsible for any permitting associated with disposal of any plastics, objects, sediment, sludge, etc. associated with dewatering and preparation to remove lagoon liners. Disposal of the cell contents shall be considered incidental to this line item.
4. CONTRACTOR shall be responsible for treating any material removed from Cell 1 and Cell 2 and hauled away for vector control and shall ensure that material meets all ADEM guidelines for transport and depositing in a licensed landfill.

H. **Line Item #5 – Cell 1 Lagoon Liner –** Furnish and Install 60 mil HDPE lagoon liner in Cell 1 (aeration) to include compacted sand repair as required, sub-drainage/venting

system, geotextile cushion underlay, pipe/structure penetrations, etc. to provide a fully functional lagoon liner system.

1. CONTRACTOR shall inspect lagoon liner base and sub-base to ensure adequate compaction per lagoon liner manufacturer's recommendations. CONTRACTOR shall repair in place any damaged areas to lagoon liner sub-base and base prior to installation of new liner system.

2. CONTRACTOR shall subcontract lagoon liner installation to liner manufacturer's forces or provide evidence of certification to install liner by lagoon liner manufacturer if CONTRACTOR wishes to install liner with their own forces.

3. CONTRACTOR shall field verify lagoon liner quantities prior to commencement of construction and notify ENGINEER of field measurements. Any discrepancy between volumes in Contract Documents and field-measurements shall be addressed prior to release to production of materials.

I. **Line Item #6 – Cell 2 Lagoon Liner –** Furnish and Install 60 mil HDPE lagoon liner in Cell 2 (settling) to include compacted sand repair as required, sub-drainage/venting system, geotextile cushion underlay, pipe/structure penetrations, etc. to provide a fully functional lagoon liner system.

1. CONTRACTOR shall inspect lagoon liner base and sub-base to ensure adequate compaction per lagoon liner manufacturer's recommendations. CONTRACTOR shall repair in place any damaged areas to lagoon liner sub-base and base prior to installation of new liner system.

2. CONTRACTOR shall subcontract lagoon liner installation to liner manufacturer's forces or provide evidence of certification to install liner by lagoon liner manufacturer if CONTRACTOR wishes to install liner with their own forces.

3. CONTRACTOR shall field verify lagoon liner quantities prior to commencement of construction and notify ENGINEER of field measurements. Any discrepancy between volumes in Contract Documents and field-measurements shall be addressed prior to release to production of materials.

J. **Line Item #7 – Baffle Curtain** – Furnish and Install approximately 183 linear feet of lagoon baffle curtain with end anchors, bottom anchors, flow-through window, etc. to provide a fully functional lagoon flow partitioning system in Cell 1 (aeration cell).

1. CONTRACTOR shall field-verify required dimensions of baffle curtain prior to release to production of baffle curtain materials. CONTRACTOR shall notify ENGINEER in writing of any discrepancies between proposed dimensions and actual field dimensions.

2. CONTRACTOR may subcontract baffle curtain installation to curtain manufacturer's forces if so desired.

3. CONTRACTOR shall provide detail of curtain anchoring system, as well as proposed location of anchoring points, to ENGINEER prior to release to production of baffle curtains and anchor system.

4. CONTRACTOR shall field verify curtain quantities prior to commencement of construction and notify ENGINEER of field measurements. Any discrepancy between volumes in Contract Documents and field-measurements shall be addressed prior to release to production of materials.

K. **Line Item #8 – Aeration System** – Furnish and Install approximately positive displacement blower package, stainless steel header pipe, isolation valves, check valves, discharge pressure gauge, carbon steel air pipe, purge valve, stainless steel manifold, weighted air tubing, nine (9) weighted aerators, etc. to provide a fully functional lagoon aeration system.

1. CONTRACTOR shall field-verify required dimensions of air pipe and air tubing prior to release to production of materials.

2. CONTRACTOR shall provide and install blower and aeration system per manufacturers' recommendations. Details provided are for reference purposes. CONTRACTOR shall verify all installation requirements with equipment manufacturers prior to commencement of construction.

3. CONTRACTOR shall install purge valve at low point of air pipe where pipe turns ninety degrees (90°) from blowers to stainless steel manifold. Air pipe shall slope down from blowers to tee (with surge valve installed on blind flange) and up from tee to manifold.

L. **Line Item #9 – Process Control System –** Furnish and Install lagoon process control panel to include aeration control system, flow meter input/output, valve actuator control, variable frequency drives, manual aeration control, automatic aeration control by flow, breakers, disconnects, enclosure, etc. to provide a fully functional process control system.

1. CONTRACTOR shall furnish and install all conduit, wire, trenching, wire termination, testing, start-up etc. to provide a fully functional system. All materials and equipment required for power and control of lagoon equipment shall be considered incidental to this bid item.

2. CONTRACTOR shall furnish and install influent and effluent flow meters, meter vaults, hatches, remote displays, conduit, wire, trenching, wire termination, testing, start-up, etc. required to provide a fully functional flow monitoring system for lagoon influent and lagoon effluent. Flow meter hardware, installation, programming, and integration shall be considered incidental to Bid Item Number 10.

3. CONTRACTOR may subcontract system integration to licensed integrator/electrical Subcontractor if so desired.

a. Approved System Integrators for this project are:
    (a) Dexter Fortson Associates
        (i) Bessemer, AL
    (b) Matthews Integration
        (i) Huntsville, AL

4. Aeration control system shall be provided by aeration system manufacturer and shall be capable of manual operation using manual variable frequency drive settings for aeration control, or by automatic operation using flow meter output (4-20 mA) for control of variable frequency drive settings for aeration control. The amount of air output by variable frequency drives to provide adequate aeration for varying flow amounts shall be per aeration system manufacturer's recommendations and shall be field verified at time of start-up.

5. Any coordination required with local electrical provider, and fees associated with relocation of electrical service/facilities, shall be considered incidental to this bid item.

M. **Line Item #10 – Effluent Pump Installation –** Install new effluent vertical turbine pump 1 To include pump pad, anchor bolts, leveling grout, wiring, air relief valves (2), priming, painting, testing, start-up, etc. to provide a fully functional effluent pump system.

1. Pump detail drawings are for reference per old record drawings by others. CONTRACTOR shall field verify elevations, dimensions, existing concrete conditions, existing pipe diameters, existing pipe condition, etc. prior to release to production of materials. Any potential issues with installation of effluent pump shall be addressed to ENGINEER in writing prior to commencement of construction.

2. CONTRACTOR shall provide new air relief valves for both Pump 1 and Pump 2 and shall provide sketch of proposed installation of same to ENGINEER prior to commencement of construction.

3. CONTRACTOR shall furnish and install new pump control panel to be level-controlled by level in effluent pump wet well. Costs for panel, wire conduit, trenching, junction boxes, wire termination, etc. shall be considered incidental to this bid item.

4. CONTRACTOR or Systems Integrator shall furnish and install precipitation-based pump control system with pump control panel such that pumps can not pump to sprayfield during rain events.

    a. Precipitation Sensor shall be WS100 by Lufft, or equal.
    b. Precipitation Sensor shall be integrated such that effluent pumps are restricted from running in the event of 0.125" or more of precipitation.

N. **Line Item #11 – Sludge Pump –** Furnish and Install self-priming pump, concrete pad, suction pipe system, check valve, isolation valve, air relief valve, 3" effluent force main, discharge splash block, wiring, control panel, etc. to provide a fully functional sludge removal system.

1. CONTRACTOR shall install self-priming pump, pump base, motor, and anchor bolts in accordance with pump manufacturer's recommendations.

2. CONTRACTOR shall provide submittal of proposed anchoring plan and pump discharge plan to include effluent header piping and valve arrangement prior to commencement of construction.

3. Effluent force main shall be installed according to standard sewer force main specifications and shall include ductile iron fittings, thrust blocking, and other appurtenances as necessary.

4. CONTRACTOR shall be responsible for providing/installing suction pipe system per detail. This work shall be considered incidental to this bid item.

5. CONTRACTOR shall furnish and install pump control panel for this pump to include an automatic high water level float switch. The pump will typically be operated in manual mode to remove sludge, however. Any wiring, conduit, trenching, equipment, etc. required to provide power to this pump control panel shall be considered incidental to this bid item.

O. **Additive Alternate Line Item #ALT 1 – Flow Control System –** Remove and replace flow control system to include 8" knife gate valves (2), electric actuators (2), wire, conduit, control system in process control panel, etc. to provide a fully functional electric-actuated flow control selection system.

1. CONTRACTOR shall provide shop drawing of electric actuator layout to ensure fit in existing vault prior to release to production of materials.

2. CONTRACTOR or Systems Integrator shall integrate flow control actuators into process control system in order that flow be diverted to storage lagoon (Cell 3) during times of heavy precipitation when effluent pumps are not allowed to run.

3. This line item shall be considered an optional additive to the base bid price should the OWNER choose to award this item.

P. **Additive Alternate Line Item #ALT 2 – Transfer Pump Replacement –** Remove and replace existing submersible transfer pumps to include (2) 2 HP 460 V/3 Ph submersible pumps, level control system, etc. as required to provide a fully functional transfer pump system.

1. CONTRACTOR shall pull existing submersible pump and confirm that horsepower, flow, voltage, phase, etc. matches those shown on Contract Documents. CONTRACTOR shall provide documentation of this verification to ENGINEER immediately following field verification. This shall be considered the first item of work upon mobilization.

2. CONTRACTOR shall remove and replace pumps and level control system only, and wire to proposed pump control panel. Guide rails, discharge elbows, discharge pipe,

adapters, and other mechanical equipment shall be reused. In the event that equipment is inoperable and can not be reused, CONTRACTOR shall notify ENGINEER immediately upon discovery.

3. This line item shall be considered an optional additive to the base bid price should the OWNER choose to award this item.

Q. **Deductive Alternate Line Item #DED ALT 1 – Effluent Pump Replacement**

1. This line item shall be considered a deductive alternative to Line Item #11. If the OWNER should choose to award this item, Line Item #11 will be omitted from the award.

2. The bid price for this item shall be considered a deduction from the base bid, and a replacement to Line Item #11, should the OWNER choose to award this item. The base bid will be reduced by the amount of Line Item #DED ALT 1 should this alternative be awarded.

3. Any costs associated with loading, handling, hauling, storage, etc. of equipment provided by OWNER shall be considered incidental to the deductive alternate bid item.

1.03 PROJECT DESCRIPTIONS

A. OWNER obtained assistance through the Alabama Department of Environmental Management (ADEM) Clean Water State Revolving Fund (CWSRF/ARPA-BIL) to make improvements to the sewer system.

1.04 PROJECT OBJECTIVES

A. The project objective is to make improvements to the sewer system, mainly the sewage treatment lagoon, to alleviate issues with sewage treatment that contribute to permit violations.

1.05 SERVICES AND PRODUCTS

A. OWNER's Responsibilities

1. Review shop drawings and submittal data following approval by ENGINEER within ten (10) days following receipt.

2. Arrange for and deliver OWNER reviewed Shop Drawings, Product Data, and Samples to the CONTRACTOR.

3. Recipients are hereby notified that Buy America Provision must be adhered to. All steel, iron, and manufactured products used in this project are required to be produced in the United States.

4. Make payments on properly submitted and approved payment requests within 30 days of ENGINEER's review of the submitted invoice.

B. CONTRACTOR's Responsibilities

1. Provide detailed instructions for the construction process/timetable. Supply the OWNER and ENGINEER by 8 am each Friday with the planned location of work for the following week.
2. Schedule for delivery with Supplier; Receive and unload products at the site; inspect for completeness or damage and secure all materials until installation.

3. Handle, store, and install finished products in accordance with manufacturer instructions. Provide the engineer with written, planned execution of the work, including the plan for the handling, storage, and installation of the supplied products.

4. Provide ENGINEER with CONTRACTOR's invoice by the Friday nearest the 25th of each month.

5. Attend progress meetings that will be held monthly as close to the 20th of the month as possible, or as needed, to review installations prior to submitting an invoice.

1.06 STORED MATERIALS (NOT USED)

1.07 CONTRACTOR'S USE OF SITE

A. Cooperate with OWNER and adjacent property OWNERs to minimize conflict.

B. All attempts shall be made to keep all public roads and private drives open during construction. In the event a road closing is unavoidable, the road shall be open within a reasonable time approved by the OWNER, and an alternate route shall be provided during the interruption. All public services, i.e., police and fire, shall be notified by CONTRACTOR prior to any road closing.

1.08 WORK SEQUENCE

A. Coordinate construction schedule and operations with the OWNER and ENGINEER.

1. Construction shall be sequenced such that lagoon treatment system is out of service for the minimal amount of time possible.

2. CONTRACTOR shall submit projected time for treatment outage to ENGINEER for approval prior to commencement of construction.

**3. Should storage lagoon near full capacity during outage of lagoon treatment system, CONTRACTOR may pump out contents of storage lagoon and haul to nearby treatment facility. A request to perform this work should be addressed**

**in writing to ENGINEER and payment for this work shall be negotiated as required.**

1.09 LICENSES AND PERMITS

A. The CONTRACTOR shall be responsible for securing from the Local Municipalities all permits, licenses and for paying all taxes required to perform the Contract Work.

B. The CONTRACTOR shall be responsible for compliance with all Federal, State and local laws and ordinances regarding licenses and permits.

1.10 PROTECTION OF THE OWNER, WORKMEN, AND THE PUBLIC

A. The CONTRACTOR is responsible for the safe execution of the work.

B. The ENGINEER and the OWNER shall not be required to act as Safety Engineers or Safety Supervisors.

C. The CONTRACTOR is solely responsible for the safe prosecution of the work.

D. It is the CONTRACTOR's responsibility to secure advice from the Safety officer from his insurance company.

1.11 LOCATION OF UNDERGROUND OBSTRUCTIONS

A. The CONTRACTOR shall be responsible for carefully protecting utilities during the execution of the work.

B. Utilities that are damaged due to activities of the CONTRACTOR shall be repaired at no expense to the OWNER.

1.12 REGULATORY REQUIREMENTS

A. Secure from the office of the Inspection Services, Division of the Public Works Department of the Local Municipalities, Information for regulatory licenses and permits required.

B. Obtain permits and licenses from each Municipality.

C. Requirements contained in each individual authority's permit shall become the provisions and requirements for completion of the work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

**SECTION 46 06 01**
**CONTROL SYSTEM REQUIREMENTS – ADDENDUM #4**

PART 1 - EFFLUENT PUMP CONTROL SYSTEM

1.01 The Effluent Pump Control System shall include a control panel with the following requirements:

A. The control panel shall be designed, assembled, and tested by a UL508a authorized control panel manufacturer in strict compliance with Specification Section 26 29 00 ("Manufactured Control Panels"). The control panel shall be NEMA-4X 304 stainless steel construction with sub-panel and swing-out dead-front inner door. All operator devices shall be located on the inner door, no devices are to be located on the outer door. Incoming power shall feed an appropriately sized main circuit breaker determined by incoming power available fault current and control panel system loading.

B. System shall have a main circuit breaker, surge protection and phase monitoring protection. Each effluent pump motor shall be fed from a branch circuit protector (mounted within the main control panel) for an internally located Full Voltage Non-Reversing (FVNR) NEMA Rated Starter. The sludge pump motor shall have a branch circuit protector (mounted within the main control panel) for an internally located Full Voltage Non-Reversing (FVNR) NEMA Rated Starter. System shall include a properly sized power transformer, with appropriate primary and secondary protection, to provide control power for system control voltage. The control panel shall be furnished with integral 120/240-1P-3W load center (as indicated on electrical plans).

C. Door-mounted controls for each motor shall include a Hand-Off-Auto selector switch, Green "Running" pilot light, Red "OFF" pilot light, Amber "Starter/Overload Fault" & "Motor Thermal Fail" pilot lights, and elapsed time meter. An externally enclosure top-mounted red flashing alarm beacon shall be included for a motor fault or high-level conditions. The primary control system shall utilize an MPE SC2000 pump controller and shall be controlled by a submersible (hydrostatic) level transducer. The pump controller shall alternate the operation of Effluent Pump No. 1 and No. 2. A relay-based backup float control system shall take control over from the primary SC2000 controller if floats indicate high- or low-level alarm conditions as noted below.

1.02 The following float switches shall be provided for backup float control:

A. High-High Level:

1. Shall illuminate a local amber "High-High Level Alarm" pilot light whenever level is higher than this float.

B. REQUIRED WITHIN ADDITIVE ALTERNATE NO. 1 ONLY:

1. Shall close "Normal Flow Transfer Valve Actuator Close Command" dry contacts to command the remote actuator to CLOSE upon rising level.

2. Shall open "Normal Flow Transfer Valve Actuator Open Command" dry contacts to remove the OPEN command to the remote actuator upon rising level.

3. Shall close "Overflow Transfer Valve Actuator Open Command" dry contacts to command the remote actuator to OPEN upon rising level.

4. Shall open "Overflow Transfer Valve Actuator Open Command" dry contacts to remove the CLOSE command to the remote actuator upon rising level.

D. High Level:

1. Shall start the integrally mounted Sludge Pump starter upon rising level.

2. Shall illuminate a local amber "High Level Alarm" pilot light whenever level is higher than this float.

E. Lag Pump Start:

1. Shall start the externally mounted lag effluent pump VFD (through an alternating relay with a time delay relay) at a preset speed (initially set at 100% unless directed otherwise by the civil engineer during startup) upon rising level.

2. Shall stop the integrally mounted Sludge Pump starter upon falling level.

3. Shall illuminate a local amber "Effluent Lag Pump Float Level" pilot light whenever level is higher than this float.

F. REQUIRED WITHIN ADDITIVE ALTERNATE NO. 1 ONLY:

1. Shall open "Normal Flow Transfer Valve Actuator Close Command" dry contacts to command to remove the CLOSE command to the remote actuator upon falling level.

2. Shall close "Normal Flow Transfer Valve Actuator Open Command" dry contacts dry contacts to command the remote actuator to OPEN upon falling level.

3. Shall open "Overflow Transfer Valve Actuator Open Command" dry contacts to remove the OPEN command the remote actuator upon falling level.

4. Shall close "Overflow Transfer Valve Actuator Open Command" dry contacts to command the remote actuator to CLOSE upon falling level.

G. Lead Pump Start:

1. Shall start the externally mounted lead effluent pump VFD (through an alternating relay with a time delay relay) at a preset speed (initially set at 100% unless directed otherwise by the civil engineer during startup) upon rising level.

2. Shall illuminate a local amber "Effluent Lead Pump Float Level" pilot light whenever level is higher than this float.

H. Low Level (all pumps off):

1. Shall stop all pumps (both effluent pumps and sludge pump) upon falling level.

2. Shall illuminate a local amber "Low Level" pilot light whenever level is lower than this float.

I. REQUIRED WITHIN ADDITIVE ALTERNATE NO. 1 ONLY:

1. Provisions for monitoring each of two (2) remote electrically actuated valves shall be provided (to interrogate dry contacts at the remote actuators with 120VAC discrete signals sourced from this panel) to provide the following local pilot lights on this panel:

a. Normal Flow Transfer Valve Actuator Open

b. Normal Flow Transfer Valve Actuator Closed

c. Normal Flow Transfer Valve Actuator Not In Auto

d. Normal Flow Transfer Valve Actuator Alarm

e. Overflow Transfer Valve Actuator Open

f. Overflow Transfer Valve Actuator Closed

g. Overflow Transfer Valve Actuator Not In Auto

h. Overflow Transfer Valve Actuator Alarm

2. Refer to the Effluent Pump Station Wiring Diagram on electrical plans for additional control panel requirements.

PART 2 - AERATION BLOWER DUPLEX CONTROL SYSTEM

2.01 The Aeration Blower Duplex Control System shall include a control panel with the following requirements:

A. The control panel shall be designed, assembled, and tested by a UL508a authorized control panel manufacturer in strict compliance with Specification Section 26 29 00 ("Manufactured Control Panels"). The control panel shall be NEMA-4X 304 stainless steel construction with sub-panel and swing-out dead-front inner door. All operator devices shall be located on the inner door, no devices are to be located on the outer door. Incoming power shall be fed an appropriately sized main circuit breaker determined by incoming power available fault current and control panel system loading.

B. System shall have surge protection and phase monitoring protection. Each motor shall be fed from a branch circuit protector for an externally located variable speed drive. System shall include a properly sized control power transformer, with appropriate primary and secondary protection, to provide control power for system control voltage, and two (2) blower enclosure cooling fans (integrated thermostat controlled). Door-mounted controls for each motor shall include a Hand-Off-Auto selector switch, Blower 1/Alternate/Blower 2 selector switch, Green "Run" pilot light, Red "Off" pilot light, Amber "VFD Fault" & "Motor Thermal Fail" pilot lights, and elapsed time meter. An externally enclosure top-mounted red flashing alarm beacon shall be included for VFD & motor fault conditions. In "Auto" the control system VFDs shall be PLC controlled with programming designed for interfacing with the flowmeter to calculate flow over time and determine the set blower speed. In "Hand" the blowers shall run at their respective VFD keypad preset speed setting. Blower motors shall operate via the blower selector switch position or alternate via 24-hour cycle timer when the selector switch is in the "Alternate" position.

C. Blower VFDs shall be mounted externally and be IP66/NEMA4X with onboard fan cooling and shall be manufactured in strict compliance with Specification Section 26 29 23 ("Variable Frequency Drives"). This reduces adjacent control panel size as well as frequent maintenance of air conditioners required with non-IP66 VFDs that are instead panel mounted.

PART 3 - TRANSFER PUMP CONTROL SYSTEM – ADDITIVE ALTERNATE 2

3.01 The Transfer Duplex Pump Control System shall include a control panel with the following requirements:

A. The control panel shall be designed, assembled and tested by a UL508a authorized control panel manufacturer in strict compliance with Specification Section 26 29 00 ("Manufactured Control Panels"). The control panel shall be NEMA-4X 304 stainless steel construction with sub-panel and swing-out dead-front inner door. All operator devices shall be located on the inner door, no devices are to be located on the outer door. Incoming power shall feed an appropriately sized main circuit breaker determined by incoming power available fault current and control panel system loading.

B. System shall have surge protection and phase monitoring protection. Each motor shall be fed from a branch circuit protector for an internally located Full Voltage Non-Reversing (FVNR) NEMA Rated Starter. System shall include a properly sized power transformer, with appropriate primary and secondary protection, to provide control power for system control voltage. The control panel shall be furnished with integral 120/240-1P-3W load center (as indicated on electrical plans).

C. Door-mounted controls for each motor shall include a Hand-Off-Auto selector switch, Green "Run" pilot light, Red "Off" pilot light, Amber "Motor Overload" pilot light, Amber "Leakage Alarm" pilot light, & Amber "ThermalAlarm" pilot lights. A submersible pump monitoring relay (for monitoring pump leakage and overtempt sensors) shall be provided within the control panel for each submersible pump as recommended by the pump supplier. An externally enclosure top-mounted red flashing alarm beacon shall be included for a motor fault or high-level conditions. Control system shall utilize a duplex pump alternator and shall be controlled by four (4) float switches for "Off", "Lead", "Lag", and "High Level" levels. Door-mounted indicator lights shall be provided to indicate "High Level" and "Low Level" conditions.

1. Refer to the Transfer Pump Station Wiring Diagram on electrical plans for additional control panel requirements.

3.02 All submersible pressure transducers indicated above shall be furnished by the associated panel supplier, and shall:

A. Be KPSI 750 series Submersible Level Transducer(s) (with integral diaphragm protector) with the following accessories:

1. Anti-Snag Cone

2. Stainless steel cable hanger

3. Aneroid Bellows

4. Full Lightning Protection with Lifetime Lightning Protection

B. Be 2-wire 4-20mA loop powered from the control panel.

C. Have waterproof housing constructed of 316 stainless steel.

D. Have attached electrical cable with Kevlar strength members.

E. Be Class I, Division I rated.

3.03 All float switches indicated above shall be furnished by the associated panel supplier, and shall:

A. Be Anchor Scientific Roto-Float Type S with hardware/accessories as required. Normally-open/normally-closed contact types shall be coordinated by supplier and shall be as required by application.

B. Have chemical Resistant polypropylene casing.

C. Be suspended type unit with built-in weight.

D. Be enclosed/encapsulated mercury SPST switch rated for 100VA at up to 250V. N.O. and N.C. contacts shall be provided and shall be connected as indicated on wiring diagrams or required by application, coordinated by contractor and equipment supplier.

E. Be complete with factory-installed PVC-jacketed STO cable designed for industrial duty, length as required to be extended to contractor-furnished termination point.

END OF SECTION

6/12/2024 9:13:58 AM

NOTES:

1. LOCATIONS AND DIMENSIONS SHOWN ARE PER 2001 AS–BUILT DRAWINGS BY OTHERS AND ENGINEER'S SITE VISITS. CONTRACTOR SHALL FIELD–VERIFY LOCATIONS, DIMENSIONS, MATERIALS, ETC. PRIOR TO COMMENCEMENT OF CONSTRUCTION
2. CONTRACTOR SHALL CLEAR, GRUB, AND SPRAY WITH HERBICIDE AND PRE–EMERGENT ALL LAGOON BANKS, GRAVEL ROADS, ETC. TO REMOVE ANY EXISTING VEGETATION PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR SHALL INSTALL AND START–UP BYPASS PUMPING SYSTEM PRIOR TO COMMENCEMENT OF DEMOLITION. SYSTEM SHALL BE BYPASSED SUCH THAT SEWAGE IS PUMPED FROM IMMEDIATELY DOWNSTREAM OF INFLUENT SCREEN TO STORAGE POND FOR THE DURATION OF CONSTRUCTION. CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLAN TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. CONTRACTOR MAY USE PORTABLE PUMP TO DEWATER CELLS 1 AND 2 PRIOR TO REMOVAL OF EQUIPMENT, SEDIMENT, COVERS, LINERS, ETC. CONTRACTOR MAY DISCHARGE PORTABLE PUMP TO CELL 3.

FURNISH AND INSTALL:
3'X3'X4" CONCRETE SPLASH BLOCK.
ANCHOR PVC DISCHARGE PIPE TO SPLASH BLOCK W/ SS U–BOLT.
PVC PIPE OUTLET INVERT 780.00±

GRAVEL ROAD

FURNISH AND INSTALL:
610± LF 4" OF ASTM D2241 DR25 GASKETED GREEN PVC FORCE MAIN @ MIN 24" DEPTH.
TIE TO PROP. SELF–PRIMING PUMP. DISCHARGE TO LAGOON CELL 3.

FURNISH AND INSTALL:
SELF–PRIMING SLUDGE PUMP – MOUNTED ON 4'X6'X8" CONCRETE PAD – W/ SUCTION ASSEMBLY, DISCHARGE CHECK VALVE, DISCHARGE ISOLATION VALVE, AND AIR RELEASE VALVE ON DISCHARGE HEADER.
TIE TO PROP. 4" PVC FORCE MAIN.
SEE SHEET 9 FOR DETAILS.
FURNISH AND INSTALL:
LOCAL PUMP CONTROL PANEL FOR MANUAL OPERATION.
SEE ELECTRICAL FOR DETAILS.

2 REQ'D (2) BOLLARDS. SEE DETAIL SHT. 10

1 REMOVE AND REPLACE EXISTING EFFLUENT FLOW METER.
FURNISH AND INSTALL:
EFFLUENT 4" FLANGED ELECTROMAGNETIC FLOW METER FLOMOTION SYSTEMS MS2500 W/REMOTE TRANSMITTER (OR APPROVED EQUAL.)
INSTALL IN 48" DOGHOUSE MANHOLE WITH 4"X6" CONCENTRIC REDUCERS EACH SIDE.
ROUTE POWER AND FLOW SIGNAL TO PROP. CONTROL PANEL.
SEE DETAIL SHEET 12

FURNISH AND INSTALL:
VERTICAL TURBINE PUMP 1
SEE DETAIL SHEET 9.
REMOVE AND REPLACE EX. EFFLUENT PUMP CONTROL PANEL. WIRE IN EX. AND NEW PUMP TO PANEL.
(DEDUCTIVE ALTERNATE #2: INSTALL OWNER SUPPLIED REPLACEMENT PUMP)

DUPLEX VERTICAL TURBINE EFFLUENT PUMPS W/ CONCRETE WET WELL

FURNISH AND INSTALL:
32,400± SF OF 60 MIL HDPE SMOOTH LAGOON LINER
IEC OR APPROVED EQUAL
SEE SHEET 8 FOR DETAIL

CELL 2

N

0 20' 40'
SCALE: 1" = 20'

ADDITIVE ALTERNATE #1:
FURNISH AND INSTALL:
TWO (2) 8" FLOW CONTROL BUTTERFLY VALVES
W/ ELECTRIC ACTUATORS, AUMA MODEL SA07.2/GS60.3/AM01.1 (OR APPROVED EQUAL).
ROUTE SIGNAL TO PLANT CONTROL PANEL ADJACENT TO BLOWERS.
RECONNECT HIGH WATER LEVEL CONTROL FLOATS IN EFFLUENT WETWELL.
SEE DETAIL SHT. 9

CELL 3

8" D.I. PIPE

FURNISH AND INSTALL:
TWO (2) 25 HP POSITIVE DISPLACEMENT BLOWER PACKAGES.
EXCELSIOR OR APPROVED EQUAL.
TO BE INSTALLED ON 13'X8'X8" CONCRETE PAD.
SEE SHEETS 7 AND 11 FOR DETAILS.

2.0' MIN.

2 REQ'D (3) BOLLARDS. SEE DETAIL SHT. 10

FURNISH AND INSTALL:
TWO (2) 4" BUTTERFLY AIR VALVES W/HAND LEVER OPERATOR.
SS AIR HEADER ABOVE GRADE AT BLOWER DISCHARGE.

3 FURNISH AND INSTALL:
2" SS PURGE VALVE AT 4" X 4" BLIND TEE MOUNTED IN PLASTIC METER BOX
TO DRAIN AIR PIPE CONDENSATE. FIELD LOCATE PER MANUFACTURER'S RECOMMENDATIONS.
SEE DETAIL SHEET 10

2 FURNISH AND INSTALL:
NEMA 4X CONTROL PANEL – TO INCLUDE BLOWER CONTROLS W/ VFDS PACED BY INFLUENT FLOW METER.
TO BE INSTALLED ON CONCRETE PAD.
SEE ELECTRICAL FOR DETAILS.

2 FURNISH AND INSTALL:
ELECTRICAL RISER POLE
SEE ELECTRICAL FOR DETAILS.

1 ALTERNATE #2:
CONTRACTOR TO REMOVE AND REPLACE EXISTING 2HP RETURN LIFT STATION PUMPS W/ (2) NEW 2HP SUBMERSIBLE PUMPS TO MATCH EXISTING PUMP CONDITIONS.
CONTRACTOR TO REUSE EXISTING GUIDE RAILS, DISCHARGE ELBOW, AND OTHER MECHANICAL PARTS. FURNISH AND INSTALL NEW FLOAT CONTROL SYSTEM, ETC. AS REQ'D TO PROVIDE A FULLY FUNCTIONAL FLOW RETURN SYSTEM.
PUMPS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS AND SHALL BE MANUFACTURED BY KSB, EBARA, HYDROMATIC, OR APP'D EQUAL:
CAPACITY: 156 GPM
MINIMUM TDH: 5.5 FT
MAXIMUM TDH: 24.5 FT
POWER: 3PH., 60Hz, 460V, 2HP

SLOPE PAVED SPLASH BLOCK

8" D.I. PIPE

EFFLUENT BOX

ACTUATED VALVE VAULT

FURNISH AND INSTALL:
PUMP CONTROL PANEL AND LEVEL CONTROL FLOAT SWITCHES.
SEE ELECTRICAL FOR DETAILS.

SS INTAKE SCREEN

8" D.I. PIPE

FURNISH AND INSTALL:
183± LF BAFFLE CURTAIN W/ ONE (1) FLOW–THROUGH WINDOW
SEE DETAIL SHEET 8

CELL 1

SLOPE PAVED SPLASH BLOCK

61.0' 61.0'

2 REQ'D (2) BOLLARDS. SEE DETAIL SHT. 10

CELL 1B:
REQ'D VOLUME = 0.9 MG

37.0' 30.0'

MONITORING WELL

CELL 1A:
REQ'D VOLUME = 0.2 MG

15.0' TYP.

44.0' 64.0'

FURNISH AND INSTALL:
32,400± SF 60 MIL HDPE SMOOTH LAGOON LINER
IEC OR APPROVED EQUAL
SEE SHEET 8 FOR DETAIL

SLOPE PAVED SPLASH BLOCK

FURNISH AND INSTALL:
58± LF 4" CARBON STEEL AIR PIPE HEADER @ MIN. 30" DEPTH. TIE TO SS HEADER AND MANIFOLD.

3 FURNISH AND INSTALL:
12± LF OF 4" CARBON STEEL AIR PIPE HEADER @ MIN. 30" DEPTH.
1–4" SS TEE
1–4" 90° SS BEND
TIE TO SECOND MANIFOLD.

FURNISH AND INSTALL:
WEIGHTED FLEXIBLE TUBING.
TRIPLEPOINT HEAVY–FLEX (OR APPROVED EQUAL)
TIE TO SS MANIFOLD (2)
TIE TO AERATOR
(TYP. OF 9)
± 1100 LF TOTAL

1 FURNISH AND INSTALL TEMPORARY SOLIDS SCREENING AT THE DISCHARGE END OF THE 6" FORCEMAIN. CONTRACTOR IS RESPONSIBLE FOR REMOVING SCREENINGS THROUGHOUT THE DURATION OF CONSTRUCTION.

1 CONTRACTOR SHALL TRENCH FORCEMAIN DISCHARGE PIPE ACROSS GRAVEL DRIVE AND COVER TRENCH WITH STEEL PLATING TO ALLOW VEHICLE ACCESS TO SITE.

FM

1 CONTRACTOR TO FURNISH AND INSTALL 100± LF OF 6" DR18 PVC FORCE MAIN. FORCEMAIN TO BE LAID ABOVE GROUND. TO INCLUDE ANY NECESSARY BRACING/THRUST BLOCKING.

1 TEMPORARY FORCEMAIN BYPASS SHALL BE REMOVED AT PROJECT COMPLETION.

1 FURNISH & INSTALL 8" X 6" TAPPING SLEEVE AND VALVE

FM

CONTRACTOR TO FURNISH AND INSTALL 1–8" INSERT–A–VALVE.

FM FM FM

12' DOUBLE SWING GATE

CONTROL PANEL FOR AERATORS/MIXERS AND EFFLUENT PUMPS

TRANSFORMER

8" PVC WATER MAIN

8" PVC SEWER FORCE MAIN

3

FM FM FM FM FM FM FM FM

GRAVEL ROAD

FURNISH AND INSTALL:
INFLUENT 4" FLANGED ELECTROMAGNETIC FLOW METER FLOMOTION SYSTEMS MS2500 W/REMOTE TRANSMITTER (OR APPROVED EQUAL.)
INSTALL IN 48" DOGHOUSE MANHOLE WITH 4"X6" CONCENTRIC REDUCERS EACH SIDE.
ROUTE POWER AND FLOW SIGNAL TO PROP. CONTROL PANEL.
SEE DETAIL SHEET 9

INFLUENT MANUAL BAR SCREEN

FM

REVISIONS

| # | DESCRIPTION | DATE | BY |
|---|---|---|---|
| 1 | ADDENDUM #1 REVISIONS | 05/2024 | EAS |
| 2 | ADDENDUM #2 REVISIONS | 06/2024 | EAS |
| 3 | ADDENDUM #4 REVISIONS | 06/2024 | EAS |
| 4 | | | |
| 5 | | | |
| 6 | | | |

PROPOSED IMPROVEMENTS PLAN
CWSRF/ARPA SEWER SYSTEM IMPROVEMENTS
TOWN OF LEXINGTON
LAUDERDALE COUNTY
ALABAMA


THE KELLEY GROUP
• A CIVIL ENGINEERING COMPANY •
301 N Dickson St.
Tuscumbia, AL 35674
850 Corporate Pwky, Suite 104
Birmingham, Alabama 35242


ATTENTION:
THIS BAR = 1 INCH ON ORIGINAL DRAWING. ADJUST SCALE IF THIS BAR ≠ 1 INCH.
1"

PROJECT NO: 220032
DRAWN BY: EAS
CHECKED BY: BWT
SCALE: AS NOTED
DATE: 05/2024

SHEET NO.
6

R:\2022\220032- LEXINGTON CWSRF 2022\7.0 CAD\PRODUCTION PLAN\PROP. IMP..DWG