

**ITEM I**  
**CITY OF FAIRHOPE**  
**BID INVITATION**

**October 17, 2011**

Sealed proposals will be received by the City of Fairhope of Baldwin County, Alabama, in the City of Fairhope offices, 555 South Section St. Fairhope, Alabama, until **2:00P.M. November 14, 2011**, and then publicly opened thereafter, for furnishing all labor and materials, and performing all work required by the City of Fairhope and described as follows:

**Bid Number: 001-12 MATERIALS FOR LIFT STATION KEY ALLEGRO**

Questions or comments pertaining to this bid must be presented in writing, sent as e-mail or faxed to the attention of the Purchasing Manager, Daniel P. Ames, P.O. Drawer 429, 555 South Section St., Fairhope, Al 36532, e-mail: dan.ames@cofairhope.com, Seventy Two (72) hours prior to the bid opening or will be forever waived.

All bids must be on blank forms provided in the Bid Documents. **BID BOND IS WAIVED.**  
**THERE WILL BE NO PRE-BID MEETING.**

The City of Fairhope is an Equal Opportunity Employer and requires that all contractors comply with the Equal Employment Opportunity laws and the provisions of the Contract Documents in this regard. The City also encourages and supports the utilization of Minority Business Enterprises on this and all public bids.

All bids, with their guarantee (when required), must be enclosed in a sealed, opaque envelope, clearly identified on the outside as a "**Sealed Bid**" with **Item Name, Bid Number, City of Fairhope's Name and Address and Bidder's Name and Address**. Each bid must be in a separate envelope. Bids made out in pencil will not be accepted.

Failure to observe the instructions contained herein will constitute grounds for rejection of your bid. The City reserves the right to accept or reject all bids or any portion thereof whichever is in the best interest of the City of Fairhope.

The company that is awarded the bid must have Workman's Compensation Insurance on all of its employees if work is done on City premises. General Liability Insurance must be maintained to hold the City harmless in the event of an accident. Proof of Workman's Compensation Insurance if work is done on City premises and General Liability Insurance specifying coverage must accompany this bid packet. See specifications for details.

No bids will be considered unless the bidder, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this type of work in accordance with all applicable laws of the State of Alabama. Where applicable, this shall include evidence of holding a current license from the State Licensing board for General Contractors, Montgomery, Alabama, as required by Chapter 8 of Title 34, of the Code of Alabama, 1975. In addition, non-residents of the State if a corporation, shall show evidence of having qualified with the Secretary of State to do business in the State of Alabama. Bidder must have a current business license or purchase a business license with the City of Fairhope prior to bid being awarded.

Daniel P. Ames  
Purchasing Manager  
Posted 10-17-2011

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## ITEM II

### INSTRUCTION TO BIDDERS

#### AWARD OR REJECTION OF BIDS

1. The Bid will be awarded to the lowest responsible bidder complying with conditions of the invitation for bids, provided his bid is reasonable and it is in the interest of the City of Fairhope to accept it. The bidder to whom the award is made will be notified at the earliest possible date. The City of Fairhope, however, reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest to the City of Fairhope.

#### COMPLIANCE

1. All bid components will comply with all Federal, State and Local laws, ordinances, codes and regulations.
2. The awarded vendor will be responsible for insuring that all items meet specifications before delivery.
3. Awarded vendor will make no substitutions for bid items without prior written approval of the City of Fairhope Purchasing Department.

#### ORDERING

1. The City of Fairhope Purchasing Department will issue Purchase Order(s) to the awarded vendor for bid items as needed.
2. If awarded vendor fails to fill Purchase Order(s) or deliver on time, the City of Fairhope reserves the option to procure needed, comparable items from any source, and bill the awarded vendor for associated expenses generated by such failure.

#### PACKAGING & DELIVERY

1. Deliver bid items to City of Fairhope Warehouse, 555 South Section Street, Fairhope, Al, or other designated City site, maintaining product in proper state, undamaged.
2. At point of delivery, awarded vendor will present an itemized delivery ticket **with the Purchase Order Number clearly referenced thereon**, to City of Fairhope receiving personnel for signing.
3. F.O.B. City of Fairhope, as directed.
4. Shortages, defective or damaged items will be rejected. The awarded vendor will replace such items within ten (10) working days.
5. If applicable, all titles, fees, as well as other charges, are to be paid by awarded vendor. Awarded vendor is to furnish prepaid certificate of title in the name of the City of Fairhope, Title shall change upon acceptance of delivery at the Owner approved delivery location.
6. The bidder shall give the City at least 24 hours notice (Weekends and Holidays excluded) prior to delivery on site.

## **PAYMENT**

1. Invoices -- Upon completion of service and delivery of materials specified in the applicable purchase order, awarded vendor will submit an invoice and signed delivery ticket to:  
City of Fairhope  
Accounts Payable Department  
P.O. Box 429  
Fairhope, AL 36533
2. **All invoices must reference appropriate Purchase Order Numbers**

Payment Of Invoice: All invoices received by the City of Fairhope are payable within thirty (30) days from the date of receipt by the City of Fairhope, provided they are approved by the City of Fairhope.

## **COMPLIANCE**

1. Compliance with or variations from the specifications must be noted as to each item on the Specification Sheet. This requirement must be met even though the Purchasing Manager may alter the specifications in the form of an addendum to accommodate variances. A request for a change in the specifications to accommodate a variation must be called to the attention of the Purchasing Manager at least 72 hours before the bid opening date. All requests for such changes will be considered and the merits weighed. Only those changes in specifications deemed to be in the best interest of the City will be made. In the event of a change in specifications, an addendum will be supplied to bidders. Exceptions may be accepted if they are minor, equal, or superior to that which is specified, and provided that they are listed and fully explained on a separate page entitled, "Exceptions to Specifications". The exceptions shall refer to the specification page and paragraph number. The City shall determine which (if any) exceptions are acceptable and this determination shall be final.

### **ITEM III**

## **CITY OF FAIRHOPE, ALABAMA STANDARD TERMS AND CONDITIONS**

### **ACCEPTANCE OF AGREEMENT**

This Agreement contains all terms and conditions agreed upon by the Owner and Winning bidder. No other agreement, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind either party hereto. The Winning Bidder shall not employ Subcontractors without the express written permission of the Owner. No waiver, alteration, consent or modification of any of the provisions of the Agreement shall be binding unless in writing and signed by the Owner and Contractor. This Agreement shall not be construed against the party or parties preparing it. It shall be construed as if all the parties and each of them jointly prepared this Agreement, and any uncertainty or ambiguity shall not be interpreted against one or more parties.

### **ACCEPTANCE OF WORK**

The City of Fairhope will be deemed to have accepted the Work after the City of Fairhope agrees the Work is completed by signature on delivery or service tickets. In the event Work furnished under the Contract / Agreement / Purchase Order is found to be defective or does not conform to the intent of the Contract / Agreement / Purchase Order, the awarded vendor shall, after receipt of notice from the City of Fairhope, correct the deficiencies. Failure on the part of the awarded vendor to properly correct the deficiencies within the time period allowed will constitute the City of Fairhope's right to cancel the Contract / Agreement / Purchase Order immediately, upon written notice to the awarded vendor.

### **ADDENDA**

All Addenda are part of the Contract Documents. Include resultant costs in the Bid. Addenda will be issued by FAX or Email to all Bidders on record, and posted to the City of Fairhope website [www.cofairhope.com](http://www.cofairhope.com). It is the responsibility of the bidder to verify that all addenda have been received, and to include all signed addenda in the bid submission

### **ADDITIONAL ORDERS**

Unless it is specifically stated to the contrary in the bid response, the City of Fairhope reserves the option to place additional orders against a contract awarded as a result of this solicitation at the same terms and conditions; to extend the renewal date until a new bid is in place, if it is mutually agreeable.

### **APPLICABLE LAW**

This Agreement is deemed to be under and shall be governed by and construed according to the laws of the State of Alabama. Any litigation arising out of the Agreement shall be heard in the Courts of Baldwin County, Alabama.

### **ASSIGNMENT**

The awarded vendor shall not assign the Contract / Agreement / Purchase Order or sublet it as a whole without the express written permission of the City of Fairhope. The awarded vendor shall not assign any payment due them hereunder, without the express written permission of City of Fairhope. The City of Fairhope may assign the Contract / Agreement / Purchase Order, or sublet it as a whole, without the consent of the awarded vendor.

### **ASSURANCE OF NON-CONVICTION OF BRIBERY**

The bidder hereby declares and affirms that, to its best knowledge, none of its officers, directors, or partners and none of its employees directly involved in obtaining contracts has been convicted of bribery, attempted bribery or conspiracy to bribe under the laws of any state or Federal government.

### **AWARD CONSIDERATION**

The following factors will be considered in determining the lowest **responsible** bidder: Overall quality, Conformity with specifications both general and specific, Purposes for which materials or services are required, Delivery dates and time required for delivery, Unit acquisition cost, financial ability to meet the contract, previous performance, facilities and equipment, availability of repair parts, experience, delivery promise, terms of payments, compatibility as required, other costs, and other objective and accountable factors which are reasonable.

### **AWARD OR REJECTION OF BIDS**

The Bid will be awarded to the lowest responsible bidder complying with conditions of the invitation for bids, provided his bid is reasonable and it is in the interest of the City of Fairhope to accept it. The bidder to whom the award is made will be notified at the earliest possible date. The City of Fairhope, however, reserves the right to reject any and all bids and

to waive any informality in bids received whenever such rejection or waiver is in the interest to the City of Fairhope.

#### **BACK ORDERS**

If it is necessary to back order any items, the vendor must notify the Purchasing Department and advise as to the expected shipping or delivery date. If this date is not acceptable, the City of Fairhope may seek remedies for default.

#### **BID AND PERFORMANCE SECURITY**

If bid security is required, a bid bond or cashier's check in the amount indicated on the bid cover must accompany the bid and be made payable to The City of Fairhope of Baldwin County, Al. Corporate or certified checks are not acceptable. Bonds must be in a form satisfactory to the City and underwritten by a company licensed to issue bonds in the State of Alabama. If bid security fails to accompany the bid, it shall be deemed unresponsive, unless the Purchasing Manager deems the failure to be non-substantial. All checks will be returned to the bidders after the contract has been approved. If a performance bond is required, the successful bidder will be notified after the awarding of the contract.

#### **BRAND NAMES**

Reference to brand names and numbers is descriptive, but not restrictive, unless otherwise specified. Bids on equivalent items meeting the standards of quality thereby indicated will be considered, providing the bid clearly describes the article offered and indicates how it differs from the referenced brands. Descriptive literature or manufacturers specifications plus any supplemental information necessary for comparison purposes should be submitted with the bid or the bid on that item may be rejected. Reference to literature submitted with a previous bid or on file with the Division of Purchasing will not satisfy this requirement. The burden is on the bidder to demonstrate that the item bid is equivalent to the item specified in the ITB. Bids without sufficient documentation to fully support equality, may be considered non-responsive.

Reference by the City of Fairhope in the ITB to available existing specifications shall be sufficient to make the terms of such specifications binding on the bidder. Unless the bidder specifies otherwise in its bid, it is understood the bidder is offering a referenced brand item as specified in the ITB or is bidding as specified when no brand is referenced. Failure to examine drawings, specifications and instructions will be at the bidder's risk.

#### **BUSINESS LICENSE**

The vendor selected to enter into a Contract / Agreement with the City of Fairhope must be licensed to do business in the City of Fairhope prior to commencement of any work under the contract. Delivery of goods or services to the City of Fairhope by Purchase Order have detailed and varied Business License requirements. In all instances that require a business license. Awarded vendor will provide proof of possessing a current City of Fairhope Business License. Prospective bidders will not be required to possess a City of Fairhope Business License prior to award.

#### **CANCELLATION OF / CONTRACT / AGREEMENT / PURCHASE ORDER / LEASE**

A purchase order can be canceled in whole or in part when awarded vendor fails to deliver or perform as specified. Cancellation of a purchase order can only be made by a written purchase order change (POC) from the City of Fairhope. A term contract, lease or agreement can be canceled by the City of Fairhope, for justifiable cause, or convenience, by written notice.

#### **CERTIFICATION PURSUANT TO ACT NO. 2006-557**

Alabama law (section 41-4-116, code of Alabama 1975) provides that every bid submitted and contract executed shall contain a certification that the vendor, contractor, and all of its affiliates that make sales for delivery into Alabama or leases for use in Alabama are registered, collecting, and remitting Alabama state and local sales, use, and/or lease tax on all taxable sales and leases into Alabama. By submitting this bid, the bidder is hereby certifying that they are in full compliance with act no. 2006-557, they are not barred from bidding or entering into a contract pursuant to 41-4-116, and acknowledges that the awarding authority may declare the contract void if the certification is false. All corporations must register to do business in Alabama with the Office of the Secretary of State. Their address is:

#### **Office of the Secretary of State**

P.O. Box 5616

Montgomery, AL 36103

(334) 242-5324

Fax: (334) 240-3138

<http://www.sos.state.al.us/index.aspx>

The Foreign Corporation form is online at <http://www.sos.state.al.us/downloads/dl1.cfm>.

#### **COST OF REMEDYING DEFECTS**

All defects, indirect and consequential costs of correcting, removing or replacing any or all of the defective materials or equipment will be charged against the awarded vendor.

#### **DELIVERY OF BID**

Bids must be received in the Purchasing Office by the date and time specified on the bid cover. All bids will be accepted until the time and date stated on the bid cover. No bids will be accepted that extend past the time and date on the bid cover. The time of receipt shall be determined by the time clock stamp in the Purchasing Department. Bids submitted by U.S. Mail must be received by the City of Fairhope of Baldwin County, Alabama, in the City of Fairhope offices, 555 South Section St., Fairhope, Al., unless otherwise specified.

#### **DELIVERY**

The number of calendar days required for delivery after receipt of a purchase order shall be stated in the RFQ / ITB / RFP and/or Purchase Orders. When no time is stated in the document, the time shall be fourteen (14) calendar days after receipt of order. If a shipment is not made within the time period specified, the Purchase Order may be canceled.

#### **ENVIRONMENTAL REQUIREMENTS**

All products will be clearly labeled for their intended use. Each delivery of product or materials will include a Material Safety Data Sheet (MSDS) for all materials that require an MSDS. All manufacturers/distributors of hazardous substances, including any of the items listed on this bid/quote/contract and subsequent award must include completed material safety data sheet (MSDS) for each hazardous material. Additionally, each container of hazardous materials must be appropriately labeled with:

- a) The identity of the hazardous material,
- b) Appropriate hazard warnings, and
- c) Name and address of the chemical manufacturer, importer, or other responsible party

#### **EQUIPMENT DEMONSTRATION**

The City of Fairhope may require equipment/ product materials or service techniques to be demonstrated at a time, date and location to be specified by the City of Fairhope.

#### **EQUIPMENT ELECTRICAL CERTIFICATION**

All electrical equipment purchased shall conform to, and be identified in, the applicable standard(s), or otherwise be certified as applicable, as of the bid opening date and time, by Underwriters Laboratories, Inc. or other

recognized laboratory facility. Bidder must provide satisfactory documentation with returned bid that all such equipment meets the applicable product standard or has otherwise been certified as outlined above. Unless indicated in the bid document, the above certification shall apply to the equipment itself, not the individual components of that equipment.

#### **ERRORS IN BID**

Bidders are assumed to be informed regarding conditions, requirements and specifications prior to submitting bids. Failure to do so will be at the bidder's risk. Bids already submitted may be withdrawn without penalty prior to bid opening. Errors discovered after the bid opening may not be corrected.

#### **FORCE MAJEURE**

Neither the City nor the awarded vendor shall be deemed in breach of any contract / Purchase Order or Agreement which may result from this proposal submission if it is prevented from performing any of the obligations hereunder by reason of Acts of God, acts of the public enemy, acts of superior governmental authority, strikes or labor disputes, floods, riots, rebellion, sabotage, or any similar other unforeseeable causes beyond its control and not due to its fault or negligence. Each party shall notify the other immediately in writing of the cause of such after the beginning period thereof. The awarded vendor may request cancellation and the City of Fairhope may grant the request if performance is prevented by any of the above referenced causes, or other unavoidable circumstances not attributable to the fault or negligence of the vendor. The burden of proof for such relief rests with the vendor. All correspondence pertaining to cancellation of a purchase order or term contract must be addressed to the City of Fairhope Purchasing Manager.

#### **HAZARDOUS AND TOXIC SUBSTANCES**

Bidder must comply with all applicable Federal, State, County and City laws, ordinances and regulations relating to hazardous and toxic substances, including such laws, ordinances and regulations pertaining to information hazardous and toxic substances, and as amended from time to time. Bidder shall provide the City of Fairhope with a "Material Safety Data Sheet" for all goods that carry one.

#### **INDEMNITY**

Indemnity: The awarded vendor hereby agrees to indemnify and save harmless the City of Fairhope, its officers, agent, and employees, from and against any and all liabilities, claims, demands, damages, fines, fees, expenses,

penalties, suits, proceedings, actions and cost of actions, including reasonable attorneys fees for trial and on appeal, of any kind and nature, arising or growing out of, or in any way connected with the performance of this Contract / Agreement / Purchase Order, to the extent caused by a negligent act or omission of the awarded vendor, their agents, servants, employees, Subcontractors, or others associated with the awarded vendor. The awarded vendor shall be responsible for damage to any equipment excluded from this agreement, or damage or injury caused by any equipment excluded from this agreement, only to the extent that the damage or injury is caused by a negligent act or omission of the awarded vendor, or caused by failure of the awarded vendor's supplied product to perform as specified.

### **INSPECTION**

All materials, workmanship, equipment, and supplies are subject to inspection and test at any source or time. Final inspection, acceptance or rejection will be made at delivery destination. Goods that do not meet specifications will be rejected unless substitutions have been approved by the City of Fairhope. Failure to inspect or to reject upon receipt, however, does not relieve the awarded vendor of liability. When subsequent tests, after receipt, are conducted and when such tests reveal a failure to meet specifications, the City of Fairhope will reject the goods and the awarded vendor shall immediately supply goods meeting specifications or the City of Fairhope may seek damages including but not limited to the testing expense, regardless of whether a part of or all of the goods have been consumed through the testing process. Rejected goods shall be removed by the awarded vendor promptly after rejection, at his expense. If not removed in fourteen (14) calendar days, they may be disposed of at the discretion of the City of Fairhope. Disposal costs will be the awarded vendor's responsibility.

### **INSPECTION OF PREMISES**

At reasonable times, the City may inspect those areas of the awarded vendor's place of business that are related to the performance of a Contract / Agreement / Purchase Order. If the City makes such an inspection, the awarded vendor must provide reasonable assistance. The City of Fairhope reserves the right on demand and without notice all the vendor's files associated with a subsequent Contract / Agreement / Purchase Order where payments are based on the awarded vendor's record of time, salaries, materials, or actual expenses.

This same clause will apply to any subcontractors assigned to the Contract / Agreement / Purchase Order.

### **INSURANCE**

If a Contract / Agreement / Purchase Order results from this RFQ / ITB / RFP, or other form of solicitation, the awarded vendor shall maintain such insurance as will indemnify and hold harmless the City of Fairhope from Workmen's Compensation and Public Liability claims from property damage and personal injury, including death, which may arise from the awarded vendor's operations under this Contract / Agreement / Purchase Order, or by anyone directly or indirectly employed by him/her.

### **INVITATION TO BID**

Any provisions made in the RFQ / ITB / RFP, or other form of solicitation, supersedes any provisions outlined here in the General Terms and Conditions.

### **INVOICING, DELIVERY, PACKAGING**

Invoices shall be prepared only after ordered materials have been delivered. All invoices must show the purchase order number. Unless otherwise specified in writing, vendors shall not ship any material without an authorized Purchase Order from the City of Fairhope Purchasing Department. All packages delivered must show the purchase order number. The awarded vendor will be required to furnish all materials, equipment and/or service called for at the bid price quoted. In the event the awarded vendor fails to deliver within a reasonable period of time, as determined by the City of Fairhope, the right is reserved to cancel the award and subsequent purchase order and purchase from the next lowest responsible bidder the items needed. The original awarded vendor will be back charged the difference between the original contract price and the price the City of Fairhope has to pay as a result of the failure to perform by the original awarded vendor. All bids will remain firm for acceptance for 60 days from the date of bid opening. Prices shall be net F.O.B., Prepaid and Allow, City of Fairhope chosen site, Baldwin County, Al. The title and risk of loss of the goods will not pass to the City of Fairhope until receipt and acceptance takes place at the F.O.B. point.

### **LABELING**

Individual shipping cartons shall be labeled with the name "City of Fairhope", Purchase Order Number, and where applicable, Contract Number, date of manufacture, batch number, storage requirements, conditions, and recommended shelf life. Bidders are



encouraged to offer product packaging with recycled content.

#### **LOSS OR DAMAGE IN TRANSIT**

Delivery by a vendor to a common carrier does not constitute delivery to the City of Fairhope. Any claim for loss or damage incurred during delivery shall be between the vendor and the carrier. The City of Fairhope accepts title only after satisfactory receipt at the delivery point. The City of Fairhope shall note all visible damages on the freight bill and may refuse the damaged goods. The vendor shall make immediate replacement of the damaged merchandise or be subject to damages for breach of contract. If damage is to a small portion of a total shipment and the City of Fairhope will not be inconvenienced because of the shortage, the vendor may be permitted by the Purchasing Manager to deduct the amount of damage or loss from its invoice, in lieu of replacement. Risk of loss during delivery is borne by the vendor until the goods have been accepted by the City of Fairhope, unless otherwise specified in the RFQ / ITB / RFP or other form of solicitation.

#### **MANDATORY SITE VISIT**

If the RFQ / ITB / RFP or other form of solicitation requires a mandatory site visit, bidders must inspect the site where installation or service is to take place to obtain a full understanding of scope of work outlined therein. Date of site visit will be determined by the City of Fairhope.

#### **MONITORING OF SERVICES**

Performance of services will be monitored by the requisitioning department and/or the Purchasing Department, and evaluation reports may be filed with the Purchasing Department. Performance not meeting specifications will result in cancellation of Contract / Agreement / Purchase Order and may result in vendor being removed from the vendor list.

#### **NONCONFORMING MERCHANDISE**

When merchandise received from the lowest responsible bidder is not in accordance with the purchase order, it will be returned to the bidder, at bidder's expense.

#### **NON-DESCRIMINATION**

The City of Fairhope is an Equal Opportunity Employer and requires that all contractors comply with the Equal Employment Opportunity laws and the provisions of the Contract / Agreement / Purchase Order Documents in this regard. The City also encourages and supports

the utilization of Minority Business Enterprises on this and all public bids.

#### **NON EXCLUSIVE**

Unless otherwise specified, this Contract / Agreement / Purchase Order is considered a non-exclusive Contract / Agreement / Purchase Order between the parties.

#### **NOTIFICATION AND ACCIDENT REPORTS**

In the event of accidents of any kind, in the performance of a Contract / Agreement / Purchase Order, the awarded vendor shall notify the City of Fairhope immediately and furnish, without delay, copies of all such accident reports to the City of Fairhope. If in the performance of their Work, the awarded vendor fails to immediately report an accident to the City of Fairhope, of which the awarded vendor has knowledge of and which results in a fine levied against the City of Fairhope then the awarded vendor shall be responsible for all fines levied against the City of Fairhope.

#### **PACKAGING**

All goods must be packaged in new packing containers. Packing that meets the requirements of common carriers is acceptable, unless otherwise required. A packing slip or invoice must accompany all shipments and must reference the purchase order number.

#### **PAYMENT**

Invoices -- Upon completion of service and delivery of materials specified in the applicable purchase order, awarded vendor will submit an invoice and signed delivery ticket to:

City of Fairhope  
Accounts Payable Department  
P.O. Box 429  
Fairhope, Al. 36533

All invoices must reference appropriate Purchase Order Numbers

Payment of Invoice: All invoices received by the City of Fairhope are payable within thirty (30) days from the date of receipt by the City of Fairhope, provided they are approved by the City of Fairhope.

#### **PAYMENT WITHHELD**

Payment may be withheld until all items have been delivered and all requirements of the Contract / Agreement / Purchase Order have been fulfilled.

#### **RECEIPT BY CITY OF FAIRHOPE**

If not otherwise stated in the order, the City of Fairhope will be said to have received goods when they have been

delivered, unloaded and placed on the agency's dock or if there is no dock, inside an accessible building, and signed for by an authorized City employee. Shipments will be checked against the receiving copy of the Purchase Order. If the purchase order requires grading certificates, USDA Stamps, or any proof of quality, such proof must accompany the shipment.

#### **SET-UP AND INSTALLATION**

Unless otherwise specified, bid / quotation to include cost of all uncrating, disposal of shipping materials, set-up, testing and initial instruction to agency personnel.

#### **SPILL CLEAN UP**

The awarded vendor shall be responsible for spillage caused by their negligence, which occurs during transit or unloading operations. The awarded vendor shall immediately report and clean up any spillage. Upon failure to do so, the awarded vendor shall remain responsible for all actual related costs.

#### **PRODUCT TESTING**

Vendor shall incur all cost involved in obtaining an Independent Laboratory Test if the City deems necessary during the term of the Contract / Agreement / Purchase Order. The City of Fairhope reserves the right to request a demonstration of any and all items bid before making the award.

#### **PATENTS**

Awarded Vendor guaranties that the sale and / or use of goods will not infringe upon any U.S. or foreign patent. Awarded vendor will at his / her own expense, indemnify, protect and save harmless the City of Fairhope, on any patent claims arising from the purchase of goods or services.

#### **PACKAGING**

Unless otherwise specified, goods are to be packaged in cartons meeting federal specifications and shipped on non-returnable pallets.

#### **PERMITS LICENSES AND CERTIFICATES**

The awarded vendor is to procure all permits, licenses, and certificates, or any approvals of plans or specifications as may be required by Federal, State, Local Laws, ordinances, rules, and regulations, for the proper execution and completion of Work covered under the Contract / Agreement / Purchase Order.

#### **PREPARATION OF BID**

All bids / proposals shall be typewritten or in ink on the form(s) prepared by the City of Fairhope. Bids / proposals prepared in pencil will not be accepted. All bids / proposals must be signed by officials of the corporation or company duly authorized to sign bids / proposals. Any bid / proposal submitted without being signed will automatically be rejected. All corrections or erasures shall be initialed and dated by the person authorized to sign quotations /bids / proposals. If there are discrepancies between unit prices quoted and extensions, the unit price will prevail.

#### **QUESTIONS / CONTACT**

Commencing with the issuance of the RFQ / ITB / RFP, or other form of solicitation, no vendor or anyone acting on a vendor's behalf, shall make direct or indirect contact with City personnel or undertake any activities or take any action to otherwise promote its quotation / bid / proposal to the City or its personnel. All communications shall be made to the contact identified in the quotation / bid / proposal documents. Violation of this requirement may, at the City's sole and absolute discretion, be grounds for disqualifying a vendor from further consideration.

#### **REJECTION OF BIDS**

The City of Fairhope reserves the right to accept or reject any or all bids in whole or in part for any reason, to waive technicalities or informalities, or to advertise for new proposals, if, in the judgment of the awarding authority, the best interest of the City of Fairhope will be promoted thereby. Bidders may be disqualified and rejection of proposals may be recommended for any of (but not limited to) the following causes: Failure to use the bid forms furnished by the City of Fairhope, Lack of signature by an authorized representative on the bid form, Failure to properly complete the bid form and vendor compliance, Evidence of collusion among bidders, Unauthorized alteration of the bid form.

#### **RIGHT TO AUDIT**

The awarded vendor shall maintain documentation of all work performed. The awarded vendor shall make any and all documentation available to the City of Fairhope at all reasonable times, for inspections and audit by the City of Fairhope, during the entire term of the Contract / Agreement / Purchase Order and for a period of Three (3) years after the expiration of the Contract / Agreement / Purchase Order.

**SAMPLES**

Bidders will not be required to furnish samples at the time of bid opening, unless specifically called for. The City of Fairhope reserves the right to request samples after bid opening to assist in the evaluation of proposals submitted.

**SAFETY MEASURES**

The awarded vendor shall take all necessary precautions for the safety of the City of Fairhope's and awarded vendor's employees at the Work site, and shall erect and properly maintain at all times, all necessary safeguards for the protection of the workmen and the public. The awarded vendor shall post signs warning against hazards in and around the Work site.

**SUBSTITUTIONS**

Substitutions on a purchase order shall require the approval of the Originating Buyer. The City of Fairhope reserves the right to reject at destination and hold at the vendor's risk and expense any goods supplied by the vendor which do not conform to the specification or description embodied in the order or are inferior in any respect to the good specified. Any good bought by sample which is inferior in quality to the sample submitted by vendor will be rejected. Any goods delivered that do not meet specifications may be returned to the vendor at its expense. When a good is returned, the vendor must make immediate replacement with acceptable merchandise or the City of Fairhope may seek remedies for default.

**TABULATION**

Bid results are posted on The City of Fairhope's web site: [www.cofairhope.com](http://www.cofairhope.com). The awarded vendor will be sent a written notification via mail.

**TAXES**

Prices quoted shall be delivered prices, exclusive of all federal or state excise, sales, and manufacturer's taxes. The City will assume no transportation or handling charges other than specified in the RFQ, ITB, RFP or other form of solicitation. The City is tax exempt by law – Code of Alabama 1975.

**TERMINATION FOR CONVENIENCE**

Any Contract / Agreement / Purchase Order may be terminated for convenience by the City of Fairhope, in whole or in part, by written notification to the awarded vendor.

**TERMINATION FOR DEFAULT**

Performance of Work under the Contract / Agreement / Purchase Order Agreement may be terminated by the City of Fairhope, in whole or in part, in writing, whenever the City of

Fairhope determines that the awarded vendor has failed to meet the requirements of the Contract / Agreement / Purchase Order.

**TERMINATION FOR NON-APPROPRIATION**

Termination for Non-appropriation – The continuation of any financial obligation beyond the current fiscal year is subject to and contingent upon sufficient funds being appropriated, budgeted, and otherwise made available by the local source, State Legislature and/or federal sources. The City of Fairhope may terminate any financial obligation, and awarded vendor waives any and all claim(s) for damages, effective immediately upon receipt of written notice (or any date specified therein) if for any reason the City of Fairhope's funding from local, State and/or federal sources is not appropriated, withdrawn or limited.

**TIME IS OF THE ESSENCE**

The City of Fairhope and awarded vendor agree that time is of the essence in the performance of Work called for under this Contract / Agreement / Purchase Order. The awarded vendor agrees that all work will be accomplished regularly, diligently and uninterrupted at such a rate of progress as will ensure full completion thereof within reasonable time periods.

**TITLE**

All titles, fees, as well as other charges, are to be paid by awarded vendor. Awarded vendor is to furnish prepaid certificate of title in the name of the City of Fairhope, Title shall change upon acceptance of delivery at the City of Fairhope approved delivery location.

**VENDOR LIST**

A vendor may be removed from the City of Fairhope's Bidders List if a vendor fails to respond to three (3) consecutive ITB's. A properly submitted "No Bid" is considered as a response and the vendor will receive credit for the response.

**WARRANTY**

The awarded vendor expressly warrants that all articles, materials, and work offered shall conform to each and every specification, drawing, sample, or other description which is furnished to or adopted by the City of Fairhope, and that it will be fit and sufficient for the purpose intended, merchantable, of good material and workmanship, and free from defects. The awarded vendor further warrants all items for a period of one year, unless otherwise stated, from the date of acceptance of the items delivered and installed or work completed. All repairs, replacements, or adjustments during the warranty period will be

at the awarded vendor's sole expense. Awarded vendor will provide written warranty for all parts and labor for a period of (1) one year commencing from date of written acceptance of delivery by City of Fairhope. Awarded vendor will provide written copies of all other applicable

warranties, such as, Manufacturer's warranty. Those warranties, if any, will be in addition to the awarded vendor's warranty, and the terms of which will not be altered by the awarded vendor's warranty.

ITEM V  
BID PROPOSAL  
CITY OF FAIRHOPE

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

BID NO.: 001-12

BID NAME: Materials for Lift Station Key Allegro

We propose to meet or exceed the above specifications for the sum of:

BID PRICE: \$ \_\_\_\_\_

Delivery lead time ARO: \_\_\_\_\_ Days.

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_

Each bid must give the full business address of the bidder and must be signed by him with his usual signature. Bids by partnerships must furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the State of Incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person shall also be typed or printed below the signature. A bid by a person who affixes to this signature the word "president," "secretary," "agent," or other designation without disclosing his principal, may be held to be the bid of the individual signing. When requested by the City of Fairhope, Baldwin County, Alabama, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

The undersigned agrees to furnish the goods/services as requested by you for the City of Fairhope, Baldwin County, Alabama in your invitation to bid, and certifies that they will meet or exceed the specifications called for. The undersigned has read all information pertaining to this bid and has resolved all questions. It is also understood and agreed that all prices quoted are F.O.B. described in the bid documents and specifications.

Company \_\_\_\_\_

State of Incorporation \_\_\_\_\_

Company Representative \_\_\_\_\_  
(Signature)

Title \_\_\_\_\_

Company Representative \_\_\_\_\_  
(print)

Company Address \_\_\_\_\_

Phone \_\_\_\_\_

\_\_\_\_\_ Fax \_\_\_\_\_

Federal ID Number \_\_\_\_\_



**SCOPE OF WORK**

1. The Awarded Vendor to provide all necessary supervision, labor, tools, materials and safety equipment to perform the following tasks:
  - a. Provide LIFT STATION MATERIALS as per specifications, as ordered by Purchase Orders.
  - b. Deliver items to the City of Fairhope Warehouse, Fairhope Al, or other designated City site.
  - c. Provide current, applicable Material Safety Data Sheets (MSDS) with each delivery, notifying receiving personnel of any changes, replacements or revisions.
  - d. The attached specifications are intended and provided solely as a general and non-exhaustive expression of the intent and purpose of the City of Fairhope regarding this bid; said specifications should be so considered by the bidders. The use of specific names is not intended to restrict the bidder or any seller or manufacturer, but is solely for the purpose of indicating the type, size and quality of materials, product services, or equipment best suited for the City of Fairhope. Accordingly, the bidder admits and agrees that said specifications are not complete in every detail and that the work and materials not indicated or expressly mentioned in said specifications, but which are reasonably necessary for the full and faithful performance of the item(s) bid in accordance with the full and faithful intent, will be included in the bid and incorporated in the work by the bidder and at the bidder's sole expense, the same as if indicated and specified.

**PURPOSE:**

The City of Fairhope will accept bids on **LIFT STATION MATERIALS** with the following minimum specifications.

**SUBMERSIBLE LIFT STATION  
FAIRHOPE, ALABAMA**

**TECHNICAL SPECIFICATIONS:**

**COMPLY YES NO**

**GENERAL:**

\_\_\_\_\_

Furnish two (2) submersible non-clog sewage pumps as specified herein. Each pump shall be furnished with a **12HP, 1760 RPM** submersible electric motor suitable for operation on 240 volts, 3 phase, 60 hertz, 4-wire service, a 4 inch cast iron discharge connection with anchor bolts, upper guide bar bracket, 25 feet of stainless steel lifting cable, and 50 feet of hypalon jacketed type SPC cable, P-MSHA approved and sized according to N.E.C. and ICEA standards. The pumps shall be similar to existing in the

Fairhope system and shall be Flygt Model NP3153 (OR EQUAL). Each pump shall be capable of producing following:

Primary Design Point	169 GPM @ 81' TDH
Minimum Design Point	65 GPM @ 90' TDH
Maximum Design Point	900 GPM @ 26' TDH
Horsepower (min)	12

**1. PUMP DESIGN:** \_\_\_\_\_

The pumps shall be automatically and firmly connected to the discharge connection, guided by no less than two guide bars extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal to metal watertight contact. Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable. No portion of the pump shall bear directly on the sump floor.

**2. PUMP CONSTRUCTION:** \_\_\_\_\_

Major pump components shall be of grey cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blow holes or other irregularities. All exposed nuts or bolts shall be of stainless steel construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump.

Sealing design shall incorporate metal-to-metal contact between machined surfaces. Critical mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit.

Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other devices shall be used.

Each unit shall be provided with an integral motor cooling system. A motor cooling jacket shall encircle the stator housing, providing for dissipation of motor heat regardless of the type of pump installation. An impeller, integral to the cooling system and driven by the pump shaft, shall provide the necessary circulation of the cooling liquid through the jacket. The cooling liquid shall pass about the stator housing in the closed loop system in turbulent flow providing for superior heat transfer. The cooling system shall have one fill port and one drain port integral to the cooling jacket. The cooling system shall provide for continuous pump operation in liquid or ambient temperatures of up to 104°F. (40°C.). Operational restrictions at temperatures below 104°F are not acceptable. Fans, blowers or auxiliary cooling systems that are mounted external to the pump motor are not acceptable.

**4. MOTOR:** \_\_\_\_\_



The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. The stator windings shall be insulated with moisture resistant Class H insulation rated for 180°C (356°F). The stator shall be insulated by the trickle impregnation method using Class H monomer-free polyester resin resulting in a winding fill factor of at least 95%. The motor shall be inverter duty rated in accordance with NEMA MG1, Part 31. The stator shall be heat-shrink fitted into the cast iron stator housing. The use of multiple step dip and bake-type stator insulation process is not acceptable. The use of pins, bolts, screws or other fastening devices used to locate or hold the stator and that penetrate the stator housing are not acceptable. The motor shall be designed for continuous duty while handling pumped media of up to 104°F. The motor shall be capable of withstanding at least 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of aluminum. Three thermal switches shall be embedded in the stator end coils, one per phase winding, to monitor the stator temperature. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the motor control panel. The junction chamber shall be sealed off from the stator housing and shall contain a terminal board for connection of power and pilot sensor cables using threaded compression type terminals. The use of wire nuts or crimp-type connectors is not acceptable. The motor and the pump shall be produced by the same manufacturer.

The motor service factor (combined effect of voltage, frequency and specific gravity) shall be 1.15. The motor shall have a voltage tolerance of +/- 10%. The motor shall be designed for continuous operation in up to a 40°C ambient and shall have a NEMA Class B maximum operating temperature rise of 80° C. A motor performance chart shall be provided upon request exhibiting curves for motor torque, current, power factor, input/output kW and efficiency. The chart shall also include data on motor starting and no-load characteristics. Motor horsepower shall be sufficient so that the pump is non-overloading throughout its entire performance curve, from shut-off to run-out.

#### 5. BEARINGS: \_\_\_\_\_

The integral pump/motor shaft shall rotate on two bearings. The motor bearings shall be sealed and permanently grease lubricated with high temperature grease. The upper motor bearing shall be a single ball type bearing to handle radial loads. The lower bearing shall be a two row angular contact ball bearing to handle the thrust and radial forces. The minimum L<sub>10</sub> bearing life shall be 50,000 hours at any usable portion of the pump curve.

#### 6. MECHANICAL SEALS: \_\_\_\_\_

Each pump shall be provided with a positively driven dual, tandem mechanical shaft seal system consisting of two seal sets, each having an independent spring. The lower primary seal, located between the pump and seal chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide ring. The upper secondary seal, located between the seal chamber and the seal inspection chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide seal ring. All seal rings shall be individual solid sintered rings. Each seal interface shall be

held in place by its own spring system. The seals shall not depend upon direction of rotation for sealing. Mounting of the lower seal on the impeller hub is not acceptable. Shaft seals without positively driven rotating members or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces are not acceptable. The seal springs shall be isolated from the pumped media to prevent materials from packing around them, limiting their performance.

Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and shall provide capacity for lubricant expansion. The seal lubricant chamber shall have one drain and one inspection plug that are accessible from the exterior of the motor unit. The seal system shall not rely upon the pumped media for lubrication.

The area about the exterior of the lower mechanical seal in the cast iron housing shall have cast in an integral concentric spiral groove. This groove shall protect the seals by causing abrasive particulate entering the seal cavity to be forced out away from the seal due to centrifugal action.

A separate seal leakage chamber shall be provided so that any leakage that may occur past the upper, secondary mechanical seal will be captured prior to entry into the motor stator housing. Such seal leakage shall not contaminate the motor lower bearing. The leakage chamber shall be equipped with a float type switch that will signal if the chamber should reach 50% capacity.

#### 7. PUMP SHAFT: \_\_\_\_\_

The pump and motor shaft shall be a single piece unit. The pump shaft is an extension of the motor shaft. Shafts using mechanical couplings shall not be acceptable. The shaft shall be AISI type 431 stainless steel. Shaft sleeves will not be acceptable.

#### 8. IMPELLER: \_\_\_\_\_

The impeller shall be of gray cast iron, ASTM A-48 Class 35B, dynamically balanced, semi-open, multi-vane, back swept, screw-shaped, non-clog design. The impeller leading edges shall be mechanically self-cleaned automatically upon each rotation as they pass across a spiral groove located on the volute suction. The screw-shaped leading edges of the impeller shall be hardened to Rc 45 and shall be capable of handling solids, fibrous materials, heavy sludge and other matter normally found in wastewater. The screw shape of the impeller inlet shall provide an inducing effect for the handling of up to 5% sludge and rag-laden wastewater. The impeller to volute clearance shall be readily adjustable by the means of a single trim screw. The impellers shall be locked to the shaft, held by an impeller bolt and shall be coated with alkyd resin primer.

#### 9. VOLUTE/SUCTION COVER: \_\_\_\_\_

The pump volute shall be a single piece gray cast iron, ASTM A-48, Class 35B, non-concentric design

with smooth passages of sufficient size to pass any solids that may enter the impeller. Minimum inlet and discharge size shall be as specified. The volute shall have integral spiral-shaped, sharp-edged groove(s) that is cast into the suction cover. The spiral groove(s) shall provide the sharp edge(s) across which each impeller vane leading edge shall cross during rotation so to remain unobstructed. The internal volute bottom shall provide effective sealing between the multi-vane semi-open impeller and the volute.

#### 10. PROTECTION: \_\_\_\_\_

Each pump motor stator shall incorporate three thermal switches, one per stator phase winding and be connected in series, to monitor the temperature of the motor. Should the thermal switches open, the motor shall stop and activate an alarm. A float switch shall be installed in the seal leakage chamber and will activate if leakage into the chamber reaches 50% chamber capacity, signaling the need to schedule an inspection.

The thermal switches and float switch shall be connected to a Mini CAS control and status monitoring unit. The Mini CAS unit shall be designed to be mounted in the pump control panel.

#### 11. MIX-FLUSH VALVE: \_\_\_\_\_

One pump shall be equipped with an automatically operating valve that will provide a mixing action within the sump at the start-up of the pumping cycle.

This valve shall be mounted directly on the pump volute and shall direct a portion of the pumpage into the sump to flush and re-suspend solids and grease by the turbulent action of its discharge. The turbulent action caused by the flow shall also provide some sump aeration benefits. The valve shall be mounted on the pump volute so that it can be removed from the sump along with the pump during normal and routine maintenance checks and shall be positioned on the volute to provide for non-clogging operation. The valve shall be equipped with an adjustable, wear-resistant discharge nozzle which shall be used to direct flow from the valve to optimize mixing action within the sump.

The valve shall not require any external power source or control to operate, neither electric nor pneumatic. The use of the external power source is not acceptable. The valve shall be suitable for use in Class I, Division 1 hazardous locations.

The valve shall open at the beginning of each pumping cycle and shall automatically close during pump operation after a pre-selected time of operation. The valve shall operate automatically by differential pressure across the valve and shall be actuated through a self-contained hydraulic system which uses an environmentally safe fluid. A method of adjusting the valve operating time shall be provided.

#### 12. CONTROLS: \_\_\_\_\_

It is the intention that this specification shall cover a complete Duplex Pump Lift Station Electrical Control System as hereinafter described and all necessary appurtenances

which might normally be considered a part of the complete electrical system for this installation. All of the automatic control equipment is to be supplied by one manufacturer. It shall be factory assembled, wired and tested and covered by complete electrical drawings and instructions.

The control system described hereafter is a Bulletin LC150/(B300)/FP1 Control System as manufactured by Siemens Water Technologies of St. Paul, MN. (OR EQUAL). The naming of a manufacturer of equipment in this specification is not intended to eliminate competition or prohibit qualified manufacturers from offering equipment. Rather, the intent is to establish a standard of excellence in the construction of and for the types of material used, and to indicate a principle of operation desired. The contractor's bid shall be based on the use of Siemens Water Technologies equipment (OR EQUAL).

### 13. SYSTEM COORDINATION AND SINGLE SOURCE RESPONSIBILITY:

The equipment provided shall be a completely integrated automatic control and monitoring system consisting of the required automation and alarm monitoring equipment in a factory wired and tested

assembly. The automatic control and alarm/monitoring system components shall be standard, catalogued, stocked products of the system supplier to assure one source responsibility, immediately available spare/replacement parts, proper system interconnections and reliable long term operation.

The hardware that is installed in the control and monitoring system shall be readily available. None of the hardware in the system shall be part of a discontinued line or classified as hardware that is on repair status only. The Supplier shall provide documentation verifying the continuing availability of the system hardware for full integration of the original hardware with future hardware improvements. All necessary mounting panels, stands, hangers, and brackets shall be furnished and installed and shall comply with the relevant sections of the Specifications.

### 14. QUALITY ASSURANCE:

The Supplier shall maintain quality in both design and workmanship as well as materials used in manufacture of equipment supplied. All equipment supplied under this Contract shall be of new manufacture.

The Supplier shall be a firm that is engaged in the manufacturing of process control systems. The system shall be in regular production with pre-designed hardware and

software for process control systems. When the specification conflicts with a manufacturer's standard system, the standard system may be furnished if the intention of the specification is met.

System shall be a standard system. Custom one of a kind application software and customized hardware components will not be accepted. A standard system is defined as one which is available, at time of bid, with fully tested hardware and software, full documentation, and prepared training classes such that no development must be done beyond system configuration.

Supplier shall be responsible for detailed engineering, manufacture, programming, test, start-up and demonstration of all equipment and software programs to provide a complete operating system.

The Supplier shall have been continuously involved in the design and manufacture of control systems for the past ten (10) years. The Supplier shall have successfully built and placed into operation, systems similar to the one proposed herein and will furnish a list of at least ten (10) operating installations upon request by the Engineer. The Supplier shall have on staff a qualified instrument technicians and shall maintain a stock inventory of spare parts for all major components in the system.

The Supplier shall be responsible for engineering and implementing necessary interface between the supplied equipment and the existing equipment or interface junction boxes. Supplier shall document this interface including point-to-point wiring diagrams.

Provide all engineering and render coordination assistance, necessary for calibration of overall control system and to resolve interface discrepancies between panels, equipment, instrumentation and final control devices. Where interface conflicts exist, the Supplier shall document conflicts in writing to the City providing absolute information such as terminal numbers, device name, tests performed and diagnosis of problem.

All of the equipment listed herein shall be furnished by a single supplier.

All equipment supplied shall be of the most current and proven design at the time of delivery. The completed System and the equipment provided by the Supplier shall be compatible with the functions required and shall be a complete working System.

All electrical components of the System shall operate on 120 volt, single- phase, 60 Hertz current, except as otherwise noted in the specifications and on the drawings.

The Supplier shall be Siemens Water Technologies, St. Paul, Minnesota, or equal.

## **15. DOCUMENTATION:**

The complete assembly shall be provided with job-specific wiring diagrams, parts lists, enclosure dimensional and door layout drawings and instructions. Production Schematics shall be submitted for approval for all equipment herein specified. The Production Schematics Submittal shall include a Document List. An Order Specification shall be included which shall describe in detail the major functionality of the equipment being provided as well as components used detailed down to major component level. Each panel shall be provided with a job-specific wiring diagram,

parts list, enclosure door layout and enclosure dimension drawing. Manufacturer's wiring diagrams that are not job-specific (standard drawings with options crossed out, etc.) are not acceptable. The wiring diagram requirement applies to all field mounted instrumentation and control equipment. Interconnection details shall be shown for all field mounted instrumentation. A Description of Operation shall be provided detailing the operation of the complete system, including the control and alarm handling.

Provide As-built Drawings and Instruction Manuals. These manuals shall include corrected Shop Drawings. In addition, a detailed Programming and Operations Manual for the Microprocessor-based Controller Unit shall be included. The manual shall include all information as detailed for the Shop Drawing Submittals above.

## **16. GENERAL EQUIPMENT REQUIREMENTS:**

### **U.L. SERIALIZED LABEL**

The control panel(s) shall be constructed in compliance with Underwriter's Laboratories Categories 698A and 913 standards – “Enclosed Industrial Control Panel Relating to Hazardous Locations with Intrinsically Safe Circuit Extensions” listing and following-up service. The control panel(s) shall bear the Underwriter's Laboratories serialized label for “Enclosed Industrial Control Panel Relating to Hazardous Locations with Intrinsically Safe Circuit Extensions”.

Prior to shipment from the manufacturer's facility to the jobsite for installation, an Underwriter's Laboratories (U.L.) representative shall inspect the completed control panel(s). Upon successful completion of the inspection, the panel shall be assigned the required “Enclosed Industrial Control Panel Relating to Hazardous Locations with Intrinsically Safe Circuit Extensions” serialized U.L. label, indicating the equipment is built in accordance with the practices and requirements of the Underwriter's Laboratories 698A and 913 categories.

While the use of U.L. listed components is encouraged, their use alone and/or the alternate use of a U.L. 508A – “Enclosed Industrial Control Panel” serialized label will not be considered an acceptable or satisfactory alternate to the “Enclosed Industrial Control Panel Relating to Hazardous Locations with Intrinsically Safe Circuit Extensions” serialized label specified above. Upon request from the Engineer, the panel manufacturer shall supply documentation to the owner proving they are a U.L. recognized manufacturing facility for the type of equipment required. Only the labeled products of U.L.698A and 913 “Enclosed Industrial Control Panel Relating to Hazardous Locations with Intrinsically Safe Circuit Extensions” recognized panel manufacturer shall be considered acceptable for use on this project.

All wiring shall be minimum 600 volt UL type MTW or AWM and have a current-carrying capacity of not less than 125% of the full load current. The conductors shall be in complete conformity with the national electric codes, state, local and NEMA electrical standards. For ease of servicing and maintenance, all wiring shall be color coded. The wire color code shall be clearly shown on the drawings, with each wire's color indicated.

In addition, the equipment wiring shall be permanently marked with wire numbers that correspond to the system schematics. The numbering convention shall comply with the municipal industry standard.

All control wiring shall be contained within plastic/PVC wiring duct with covers. Where dimensional constraints prevent the use of wiring duct, wires shall be trained to panel components in groupings. The wire groupings shall be bundled and tied not less than every 3 inches with nylon self-locking cable ties as manufactured by Panduit or equal.

**18. INCOMING SERVICE AND LIGHTNING ARRESTOR:** \_\_\_\_\_

The service pole and metering will be done ahead of the lift station control panel as provided by the local electrical utility company. The lift station control panel shall be service entrance rated. Conduit and wiring between the power company termination and the lift station shall be furnished and installed by the City of Fairhope. The utility power will be 240 volts, 3 phase, 4 wire, 60 Hertz.

A lightning arrestor shall be supplied in the control system and connected to each line of the load side of main power disconnect. The arrestor shall protect the control system against damage as the result of transient voltage surges caused by lightning interference, switching loads and power line interference's. It shall begin shunting to ground at 1000 volts maximum.

All metering shall be done ahead of the main disconnect and control panel. The meter shall be installed by the City of Fairhope in accordance with local power company requirements.

Each panel shall be supplied with a properly sized control power circuit breaker and control power transformer (where necessary). The breaker shall supply power to all control wiring within the enclosure.

**19. NAMEPLATES:** \_\_\_\_\_

All major components and sub-assemblies shall be identified as to function with laminated, engraved bakelite nameplates, or similar approved means.

**20. CONTROL SYSTEM AND CONTROL PANEL:**

**20.1 ENCLOSURE:** \_\_\_\_\_

The described equipment shall be housed in a NEMA Type 4X, stainless steel, enclosure. The enclosure door shall be provided with a 3 point padlock-able latch and aluminum dead front operator's inner door. This weatherproof, rain-tight enclosure shall be designed specifically for mounting in an unprotected outdoor location. It shall have a gasketed, hinged, front weather door with locking capability and an internally mounted hinged dead front panel so that all the components normally actuated by Operating Personnel are accessible without opening the dead front and yet are not exposed to the elements or to unauthorized personnel. The enclosure shall be supplied with 18" floor stand kit and louvered skirts made of the same material as the enclosure to cover incoming conduit.

**20.2 INCOMING POWER CIRCUIT INTERRUPTS:** \_\_\_\_\_

The control panel shall include a thermal magnetic main circuit breaker to provide an incoming power disconnect means and short circuit/overcurrent protection for the control panel equipment

The circuit breaker must have a minimum ampere interrupting capacity of 25,000 @ 240 volt symmetrical RMS amps. The circuit breaker shall be operable through the operator's door of the enclosure and shall have a trip rating to allow full voltage starting and continuous operation of the motors. The circuit breaker shall be a Square-D FAL Line (OR EQUAL).

The commercial power input to the control panel/main breaker shall be UL service entrance rated and labeled.

### **20.3 CONTROL POWER TRANSFORMER:**

The control panel shall include a control power transformer for converting the high voltage incoming three phase service to 120 VAC single phase power. The 120 VAC power shall be used to power internal control components. The control power transformer shall be rated for 230/460-120 VAC single phase at 500VA with Class 105 Deg. C insulation and shall be UL Listed. The control power transformer shall be supplied with primary and secondary fusing. The control power transformer shall be of single epoxy resin impregnated construction to eliminate the possibility of moisture, dust, dirt, and industrial contaminants from affecting operation and shortening transformer life. The unit shall have integrally molded barriers between terminals and transformer to protect against electrical creepage.

### **20.4 PHASE FAILURE/UNDERVOLTAGE PUMP PROTECTION:**

Independent power monitors shall be provided on the load side of the pump disconnects to monitor incoming voltage and provide protection to the motors. These power monitors shall detect incoming service abnormalities including phase-loss, unbalance, reversal, over voltage, under-voltage and rapid cycling protection and provide automatic cutout of pumps and provide local alarm. Upon detection that incoming power has returned to normal, the unit will restore pump operation and discontinue alarm. This device shall have a nominal 2-4 second dropout delay and (2-300 second) adjustable restoration time delay.

The power monitor shall have built in dual color LED indicator. The indicator shall be green when system is normal and shall turn red upon detection of improper single or three phase power. The unit shall protect itself from voltage spikes and transients with internal transient protection meeting IEEE 587 standards.

The power monitor system shall also include a stagger time delay function providing time delay between lead and lag pump start to eliminate simultaneous starting of motors upon return of system power. This feature shall be in operation in all modes of pump operation.



## **20.5 BRANCH CIRCUIT BREAKERS AND MOTOR STARTERS:**

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A thermal magnetic circuit breaker shall be supplied as branch circuit protection for each pump motor. The circuit breaker must have a minimum ampere interrupting capacity of 25,000 @ 240 volt symmetrical RMS amps. The circuit breakers shall be operable through the operator's door of the enclosure and shall have a trip rating to allow full voltage starting and continuous operation of the motors. The circuit breaker shall be a Square-D FAL Line (OR EQUAL).

A NEMA rated, full-voltage, across-the-line magnetic motor starter with ambient-compensated, quick-trip class 10 overload sensing for submersible pumps in each phase to provide over current and running protection shall be provided for each pump motor. The overload trip setting shall be operator adjustable within normal pump operating ranges. Operator's door mounted, electronic overload reset push-buttons shall be provided (Mechanical O.L. operators are not acceptable). Motor Starters shall be of the same manufacture as the circuit breaker provided for the pumps.

120 VAC control power for each motor starter coil and H-O-A selector switch shall be provided.

A control power circuit breaker shall be provided and operable through the operators door of the control panel to provide a disconnect means and short circuit protection for any 120 VAC (or less) devices not powered from motor starter circuits.

## **20.6 PUMP CONTROL SELECTOR SWITCHES & "RUN" LIGHTS:**

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The control panel shall have three position selector switches mounted on the front door for Hand-Off-Auto operation of each pump. In the Hand position the motor shall be called to operate. In the Off mode the motor shall not be allowed to operate. In the Auto mode, the motor shall operate in response to control signals from the controller.

An operator's door mounted, 30.5mm diameter, NEMA Type 4X selector switch(s) shall be industrial rated heavy duty NEMA Type 4X with modular contact block assemblies. Contact Blocks shall be stacking screw together type with parallel double break contacts with wiping action. Contact blocks shall be rated NEMA A600, 600 Volt, 10A continuous duty, 7200VA make, 720VA break AC. Contacts shall have compression type screw terminals with self lifting spring washers to insure that the wire remains secure even under sever vibration. Snap together contact blocks are not acceptable. All pilot devices specified herein are to be Square D Class 9001 Type SK Line (OR EQUAL).

Unless specified otherwise, Selector Switch(s) shall be of the maintained position.

An operator's door mounted, 30.5mm diameter, NEMA Type 4X, pilot light with a "Green" lens and a replaceable bulb shall be provided for each pump to indicate a "pump running" condition. All pilot devices specified herein are to be Square D Class 9001 Type SK Line (OR EQUAL).

#### **20.7 PUMP RUNNING TIME METERS:** \_\_\_\_\_

An operator's door mounted, 120 VAC powered running time meter measuring hours and tenths and hundredths of hours of operation up to 99999.99 hours shall be furnished for each pump motor indicated.

#### **20.8 LIQUID LEVEL RESPONSIVE PUMP/ALARM CONTROLLER:** \_\_\_\_\_

The PUMP CONTROL – TELEMETRY UNIT shall be furnished for monitoring and automatically controlling the lift station pumps in a pump down mode of operation in response to a Level process variable as based on preconfigured set-points. Unit shall be capable of communicating station status and alarms to a master station via (Dedicated Leased Voice Grade Phone Line/VHF/UHF/Spread Spectrum) communications. The master station will be future.

The PUMP CONTROLLER – TELEMETRY UNIT shall be a standard, catalogued product of a water and wastewater pumping automation equipment manufacturer regularly engaged in the design and manufacture of such equipment. The PUMP CONTROLLER – TELEMETRY UNIT shall be specifically designed for water and wastewater pumping automation utilizing built-in preconfigured control and telemetry strategies allowing pump up or down mode pump control of 1 to 3 pumps. "One of a kind" systems using custom software with a generic programmable controller will not be acceptable.

The operating program shall be resident in non-volatile FLASH memory and include full-scale ranging and pump-up/down determination. The controller shall be arranged to operate up to three (3) pumps plus high and low (analog) alarms.

The ON and OFF adjustments of each pump and alarm setpoint shall be full-range adjustable through use of an authorized operator access code and a keypad. The controller display shall show the operation of each control stage.

The controller shall include keypad adjustable on-delay timing logic to provide staggered pump starting following a power failure condition. Keypad adjustable off delay timing for each pump control stage shall provide smooth transition between control stages.

The PUMP CONTROLLER – TELEMETRY UNIT shall be able to operate on either 120 AC or 10–30 VDC power sources. The unit shall be battery backed to provide continued system monitoring and alarm annunciation in the event of primary power failure. Unit shall have built in battery charging circuitry to maintain and charge battery. Battery shall be sized to provide a minimum of 4 hours of

back up power. Back up battery power will extend to necessary process sensors, local alarm lights, horns and telemetry equipment. A power on LED shall be built on board providing local indication that power is available to the unit.

The PUMP CONTROLLER – TELEMETRY UNIT shall be furnished with a user friendly “View-At-A-Glance™” (OR EQUAL) operator interface allowing adjustment and viewing of all system parameters and status. The operator interface shall be suitable for front door mounting including locations requiring wash-down and moisture protection.

- The process variable signal, Pump 1, 2, & 3 On/Off and High & Low Setpoints, shall be displayed simultaneously via front panel mounted long lasting Ultra Bright LED bar graphs. These bar graphs shall be vertically mounted in parallel fashion to provide relational viewing of all setpoints vs. the measured process. Each display column shall have a minimum of 40
- segments of resolution. Each setpoint column shall have a status LED mounted on top of the associated setpoint providing indication of setpoint activation status. Units that require operator action to view the above parameters are not acceptable.
- To assure the highest resolution and accuracy, the process display shall be configured to display the full range of the actual measured process. Range can also be offset allowing display of a pressure or level range that does not start at zero. The display ranges shall be field configurable.
- System Pump On/Off and Alarm setpoint parameters shall be easily adjustable via individual up and down pushbutton arrows located next to the associated setpoint display column(s).
- The unit shall have a built in process simulation capability allowing the operator to verify system operation by forcing the process variable up or down via pushbutton arrows located next to the process display. To prevent
- accidentally leaving the unit in simulation mode, the PUMP CONTROLLER shall be configured to automatically restore monitored process display within 2 minutes after last keypad usage or immediately upon operator initiated restore.
- The display unit shall incorporate a high contrast LCD panel allowing for viewing of higher level functions including the following:
  - Process display to XX.X of the full scale process range.
  - Time and Date Stamped Alarms & Events
  - Pump Statistics (Including Run Time, Number Of Starts, Daily Average Number Of Starts)
  - System diagnostics
  - Controller Security
  - Unauthorized Station Entry Detection

The PUMP CONTROLLER – TELEMETRY UNIT shall provide on board 24 VDC loop power output for external loop powered sensor. A built-in Analog Supply Voltage Status LED shall indicate availability of loop power. Unit shall be able to monitor a user selectable – 4-20 mA or 0-10 Volt analog input representing the process to be controlled. The analog digital conversion shall not be less than 16 bit to allow accurate measurement of the process variable. The analog input circuitry shall provide optical isolation from the main board to the field device. A

minimum of 1000 volts electrical isolation shall be required. The Analog process signal shall be displayed locally via 40 segment vertical LED display and the LCD digital display as specified above. This signal shall also be available for telemetry transmission.

The PUMP CONTROLLER – TELEMETRY UNIT shall have the ability to monitor up to 16 digital inputs to be used to provide monitoring of local station status. Each discrete input shall provide optical isolation from the main board to the field device. A minimum of 1500 volts electrical isolation shall be required. An on board LED shall be provided indicating that digital Input isolation is not compromised. All discrete inputs shall be available for telemetry transmission. The following inputs shall be monitored:

- Pump 1, 2, 3 Run – This signal shall be used to provide local display of pump run status, pump total run time, pump average daily starts. For each pump.
- Pump 1, 2, 3 In Auto – This signal shall be used by the controller to determine pump availability. A pump in this mode cannot be called into operation.
- Pump 1, 2, 3 High Temperature/Seal Failure – This signal shall be used by the controller to disable the pump required when a High Temperature is the cause of the failure, and provide local alarm display. Controller shall be able to differentiate alarm. A Seal Failure shall not disable pump operation.
- High & Low Float/Pressure – This signal shall be used by the controller to provide back up control of the pumps in the event of primary (analog) sensor failure.
- Pump Inhibit – This signal shall be used by the controller to inhibit pumps from operating.
- Power Quality – This signal shall be used by the controller to disable pumps in the event incoming station power is unsuitable for use as determined by an optional external power monitoring device.
- Door Switch & Door Acknowledge– These signals shall be used by the controller to monitor station access as detected by an optional external door/limit switch an optional external alarm disabling switch.
- Alarm Silence – This signal shall be used by the controller to monitor an optional external silence push button and will temporarily disable the alarm horn output.

The PUMP CONTROLLER – TELEMETRY UNIT LCD shall operate in a manual scrolling menu mode with the various displays shown in sequence as selected by the keypad's up/down arrow keys. The display shall indicate the specific function entered on the keypad to confirm that selection of a particular output or other function from the keypad during adjustment or review routines.

The PUMP CONTROLLER – TELEMETRY UNIT shall be protected from unauthorized changes via built-in system security. The unit shall support 3 levels of security in a hierarchical structure allowing different levels of access to the PUMP CONTROLLER for differentiation of desired access levels to include Operator, Maintenance, & Supervisory access levels.

The PUMP CONTROLLER – TELEMETRY UNIT shall provide outputs for interface to local pumps and alarm annunciation equipment. Relay isolated contact outputs for activation of Pump 1, Pump 2, Pump 3, Common Alarm and Alarm Horn shall be provided. Each contact shall be rated for a minimum of 10 amps at 120 VAC or 5 Amps at 240 VAC. Open collector outputs for Low and High Level Alarm shall be provided for interface to off board monitoring equipment. Open collector outputs shall have a minimum operating range of 5-30 VDC @ 100 mA.

The PUMP CONTROLLER – TELEMETRY UNIT shall provide s 4-20 mA output signal for interface to external equipment including VFDs, Chart Recorders or other monitoring devices. Analog output can be configured to provide output representing process variable for retransmission or as a process control output for interface to VFDs, Valves, or other process controlled device.

The PUMP CONTROLLER – TELEMETRY UNIT shall support contact closure inputs from float or pressure switches representing high and low (*Level/Pressure*). The PUMP CONTROLLER – TELEMETRY UNIT shall annunciate these inputs as alarms and use them to provide back up control in the event the primary (analog) sensor fails. Unit will provide local alarm indication and utilize the inputs to cycle pumps on and off to maintain system operation.

The PUMP CONTROLLER – TELEMETRY UNIT shall have built-in standard operator adjustable alternation functions allowing for sequencing and equalizing wear of the pumps. The following alternation sequences shall be supported.

- Fixed
- Rotary
- First On First Off (FOFO)
- Utilize One Favor Others (UOFO)
- Emergency Mode

The PUMP CONTROLLER – TELEMETRY UNIT shall include built-in Pump Failure detection logic. In the event the pump has been called into operation and the pump run signal is not received within a pre-adjustable time period. A motor failure shall be produced. The failed motor shall be disabled, an alarm shall be displayed and the next available pump based on the selected alternation sequence shall be requested to start.

The controller shall include built in site intrusion detection logic that will monitor an external sensor (motion sensor, door switch, etc.) and allow authorized access to the station via controller keypad entry of proper security code or access level. The intrusion system upon detection of entry, will allow a preset amount of time for the operator to go the controller keypad and enter the proper code. When the operator logs out and leaves the facility, the controller shall allow a preset amount of time for the operator to get out before re-arming.

In addition to the pump and alarm control capability, the controller shall provide alarm annunciation. The controller shall upon the occurrence of an alarm sound an audible device and flash the alpha-numeric display. The display will indicate

the alarm description, complete with the time and date of the alarm occurrence. An acknowledge pushbutton shall be provided to allow silencing of the audible device while the digital display will continue to show the alarm function,

complete with time and date information, until the condition has cleared. A built-in alarm and status historian shall retain the last 100 time and date stamped events providing a historical record of recent activity.

The PUMP CONTROLLER – TELEMETRY UNIT shall include a volumetric lift station flow and pump performance monitoring capability allowing station flow measurement without the use of an in line flow meter. In addition to flow measurement, the PUMP CONTROLLER shall provide pump performance related information. Pump station flow and pump performance data shall be viewable locally through built in LCD or available for telemetry transmission to master station. The following information is to be provided:

- Average Station Influent Flow Rate
- Maximum Station Influent Rate (K Gal) w/Date & Time
- Current Day Total Effluent Flow (K Gal)
- Previous Days Total Effluent Flow (K Gal)
- Average Daily Effluent Flow (K Gal)
- Maximum Daily Effluent Flow (K Gal) w/Date & Time
- Station Effluent Flow (K Gal)
- Average Flow Rate Pump 1, 2, 3 Over All Cycles (GPM) – Each Pump
- Average Flow Rate Pump 1, 2, 3 Over Last Three Cycles (GPM) – Each Pump
- Total Flow Pump 1, 2, 3 (K Gal) – Each Pump
- Flow Rate Pumps 1, 2 (K Gal)
- Flow Rate Pumps 1, 3 (K Gal)
- Flow Rate Pumps 2, 3 (K Gal)
- Flow Rate Pumps 1, 2, 3 (K Gal)
- Pump 1, 2, 3 Low Flow Rate Alarm (Setpoint) – Each Pump
- Pump 1, 2, 3 Run Time – Each Pump
- Pump 1, 2, 3 Number Of Starts – Each Pump
- Pump 1, 2, 3 Average Number Of Starts – Each Pump

The PUMP CONTROLLER – TELEMETRY UNIT shall have one (1) RS-232C serial communications port that shall be available for telemetry communications. The RS-232 serial port shall support open communication standards including as a minimum, MODBUS RTU or ASCII and USFilter Open. Unit shall support communication data rates of 1,200 to 38,800 baud rates. On board communication diagnostic LEDs shall be available to provide indication of communications activity for verification and troubleshooting.

Unit shall be constructed for industrial applications for use in harsh environments. Unit shall have a Temperature Operating range of -40 to + 85 Deg C, and be able to operate in environments with 10-90% non condensing humidity. Unit shall be UL Listed and in compliance with FCC part 15 Class A emissions and CE IEC61000 Surge Withstand certifications.

All connections shall be made via plug-in terminal blocks with a minimal rating of 10 Amps, 300 Volts and capable of accepting 30-12 AWG wire.

It is the intention of this specification that a standard controller/transceiver be provided, with all of the control and communications features described as a fully-integrated assembly. The controller shall be a U.S. Filter Control Systems LC150.

## **20.9 SUBMERSIBLE LEVEL TRANSDUCER:**

The liquid level of the wet well shall be sensed by a submersible level transducer. The transducer shall be a 3-wire type to operate from the level controller's regulated supply voltage and produce an instrumentation signal in direct proportion to the measured level excursion over a factory-calibrated range of zero to 10 feet of water.

The transducer shall be of the solid-state head-pressure sensing type, suitable for continuous submergence and operation and shall be installed in accordance with manufacturer's instructions. The bottom diaphragm face of the sensor shall be installed approximately 6 inches above the wet well floor. The sensor shall be mounted using a stainless steel cable suspension system in a location and as shown on the job plans.

The transducer housing shall be fabricated of type 316 stainless steel with a bottom diaphragm 2-5/8" diameter of heavy-duty, limp, foul-free, molded Teflon (TM) bonded to a synthetic rubber back/seal. A hydraulic fill liquid behind the diaphragm shall transmit the sensed pressure to a solid-state variable-capacitance transducer element to convert the sensed pressure to a corresponding electrical value. The sensed media shall exert its pressure against the diaphragm that flexes minutely so as to vary the proximity between an internal ceramic diaphragm and a ceramic substrate to vary the capacitance of an electrical field created between the two surfaces. A stable, hybrid, operational amplifier assembly shall be incorporated in the transducer to excite and demodulate the sensing mechanism. The transducer shall incorporate laser-trimmed, temperature compensated, high quality components and construction to provide a precise, reliable, stable output signal directly proportional to the sensed pressure over a factory-calibrated range.

The transducer element shall incorporate high over-pressure protection and be designed to withstand intermittent overpressures five times the full-scale range being sensed. Metallic diaphragms shall not be acceptable in that they are subject to damage or distortion. Sensing principles employing LVDTs, resistive or pneumatic elements shall not be acceptable.

The internal pressure of the lower transducer assembly shall be relieved to atmospheric pressure through a heavy-duty urethane jacketed hose/cable assembly and a slack PVC bellows mounted in the control panel. The sealed breather system shall compensate for variations in barometric pressure and

expansion and contraction of air due to temperature changes and altitude as well as prevent fouling from moisture and other corrosive elements.

The transducer assembly shall be installed where directed by the Engineer and connected with other system elements and placed in successful operation.

The sensor shall be suspension-mounted using a US Filter Control Systems Stainless Steel Cable Suspension Mounting Kit (OR EQUAL). The mounting kit shall consist of a 2' long one-inch NPT type 316 stainless steel pipe with coupling, bolt, cable clamps and hardware. The required length of 1/8 inch diameter 7 x 19 stainless steel cable shall also be provided.

## **20.10 REDUNDANT LIQUID LEVEL RESPONSIVE HIGH LEVEL ALARM/PUMP CONTROL:**

An independent high level alarm and redundant pump control capability with features as hereinafter listed shall be provided in addition to the specified primary control system. It shall be powered by a 120 VAC circuit breaker.

The independent alarm/control panel equipment shall be designed to UL Industrial Control Panel standards and shall incorporate 120 VAC input power transient protection, a fused primary and a DC power supply with limited 12 VDC to power the intrinsic safety barrier level sensing float circuit(s). The front face of the controller accessible through the operator's door and shall incorporate four red LED indicators; a "control hold" LED, a redundant control "turn on" LED, a high level alarm/monitor LED, a "control contacts" energized LED and a pump "off delay" time control adjustment with a 0-5 minute range.

The redundant controller shall operate in conjunction with necessary direct-acting float switches (as specified elsewhere) to provide back up control of lift pumps, detection of high level and to protect the pumps from damage that may result from low wet well levels. The system shall monitor the float switch inputs and provide local indication of system operation via LEDs. Built in relay contacts shall be interfaced to alarm circuitry and pump motor starter pilot circuitry. The back up system shall not interfere with primary controller operation when wet well levels are within normal operating range. The back up system will only become active, and bypass the primary control and sensor system and assume full control, in the event wet well levels go outside of normal operating range. Back up sensors shall be mounted and configured to operate outside primary controller setpoint settings.

Upon detection of abnormally high wet well level the back up system shall provide independent dedicated high level alarm indication and contact closure output for activation of common alarm system. The back up system shall also provide independent dedicated control output active indication and dual isolated outputs suitable for direct interface to motor starter pilot circuits to activate both lift pumps. The high level alarm signal shall be deactivated upon lowering of wet well level below the high alarm sensor. The pumps will remain on until wet well level drops below a separate pump off sensor. Pump off sensor shall be mounted at a level that is below the normal operating range of the primary controller setpoint setting.



The back up control system shall also provide a wet well low level/suction function that disables the lift pumps upon detection that wet well level has reached a level that could cause damage to the pumps. The pumps shall be locked out of operation until wet well level has reached an elevation above the pump off sensor.

The redundant control/alarm capability shall be completely integrated in the specified control panel and system as described and in accordance with all applicable codes and job requirements.

Each float shall have molded polyethylene body, internal redundant polyurethane foam flotation, potted switch and cable connections and fine-stranded AWG #18 cable with heavy-duty synthetic rubber jacket in lengths as required to run unspliced to the control panel. The floats shall include internal weight allowing suspended operation without the use of special pipe or suspension mounting systems.

The redundant high level alarm/pump control module shall connect to the float switch level sensors through a control panel mounted UL Listed intrinsic safety barrier. The module shall provide an intrinsically safe interface for up to six sensors located in a hazardous area (the wet well) rated Class I, Division 1 or 2, Groups A, B, C and D, and Class II, Division 1 or 2, Groups E, F, and G. The module shall contain an LED indicator for each of the six sensor inputs providing visible indication of sensor actuation as well as an LED to indicate barrier "Power On" status.

Float switches shall be provided by the control panel supplier. They are to be a cataloged item of the control panel manufacture.

#### **20.11 USFCS MODEL LS FLOAT SWITCH:** \_\_\_\_\_

The liquid level shall be sensed by (3) three direct acting float switches. The float switches shall be Bulletin B100, Model LS Floats as manufactured by Siemens Water Technologies (OR EQUAL).

Each float shall have molded polyethylene body, internal redundant polyurethane foam flotation, potted switch and cable connections and fine-stranded AWG #18 cable with heavy-duty synthetic rubber jacket in lengths as required to run unspliced to the control panel. The floats shall operate on (24/120) volts and used with a pump/alarm controller providing differential pump operation, float indicating LED's and test switches and alarm circuitry as required.

#### **20.12 MODEL 9GCL3 STAINLESS STEEL MOUNTING CLAMP:** \_\_\_\_\_

The float switches shall be mounted to a 1" pipe utilizing all stainless steel float switch mounting hardware and secured in place by US Filter Control Systems/Consolidated Electric Model 9GCL3 stainless steel mounting clamps (OR EQUAL).

### **20.13 CONVENIENCE RECEPTACLE:** \_\_\_\_\_

**An operator's door mounted 120 VAC duplex ground fault interrupter (GFI) type, convenience receptacle rated at 15 amperes shall be supplied for the operation of a trouble light, drill, etc. It shall be protected by a separate 15 ampere trip rated circuit breaker accessible from the operator's door.**

### **20.14 LOCAL ALARM SYSTEM:** \_\_\_\_\_

A top mounted weatherproof, strobe alarm indication light assembly with shatter resistant polycarbonate red lens mounted on a polycarbonate/ABS blend case shall be provided. The alarm light shall be NEMA 4X rated, suitable for indoor or outdoor mounting and operate on 120 VAC and be PLC rated. The strobe tube shall provide a minimum of 300,000 peak candela output and shall be rated for 3,000 hour life. The alarm light shall flash upon occurrence of an alarm condition.

### **20.15 CONDENSATION PROTECTIVE HEATER:** \_\_\_\_\_

A 100 watt, 120 VAC condensation protective heater and adjustable high temperature cutout thermostwitch shall be supplied in the control panel. The heater's surface area for heat dissipation shall be large enough to prevent a skin burn (if an operator's hand should inadvertently come in contact with the unit when energized).

### **20.16 OVER-TEMPERATURE PUMP PROTECTION & PUMP SEAL FAILURE ALARM:** \_\_\_\_\_

Over-temperature protection shall be provided in the control panel to operate in conjunction with the over-temperature switch in each pump motor. The control shall provide pump operation lockout upon the occurrence of high temperature.

The circuitry shall also include a 30.5mm diameter, NEMA Type 4X, red "pump overtemp" shutdown alarm indicating light (with front replaceable bulb) and a 30.5mm diameter, NEMA Type 4X, manual reset push-button on the operator's door for each pump motor. All pilot devices specified herein are to be Square D Class 9001 Type SK Line (OR EQUAL).

An operator's door mounted 30.5mm diameter, NEMA Type 4X, red seal fail alarm light (with front replaceable bulb) and a panel mounted seal leakage relay (to operate with the pump seal leak sensor) shall be provided to indicate a pump seal failure alarm condition for each sewage pump. The seal leakage relay shall be of solid state design incorporating LED for visual indication of sensor activation. Unit shall include built in low voltage sensor and electrical surge protection. Unit shall be CSA approved and UL recognized. All pilot devices specified herein are to be Square D Class 9001 Type SK Line (OR EQUAL).

## **21.00 PUMP TEST:**

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The pump manufacturer shall perform the following inspections and tests on each pump before shipment from factory:

1. Impeller, motor rating and electrical connections shall first be checked for compliance to the customer's purchase order.
2. A motor and cable insulation test for moisture content or insulation defects shall be made.
3. Prior to submergence, the pump shall be run dry to establish correct rotation and mechanical integrity.
4. The pump shall be run for 30 minutes submerged, a minimum of six (6) feet under water.
5. After operational test No. 4, the insulation test (No. 2) is to be performed again.

A written report stating the foregoing steps have been done shall be supplied with each pump at the time of shipment upon request.

The pump cable end will be sealed with a high quality protective covering, to make it impervious to moisture or water seepage prior to electrical installation.

## **22.00 SITE TEST:**

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The pump shall be tested at start-up and voltage, current, and other significant parameters recorded. The manufacturer shall provide a formal test procedure and forms for recording data. Only factory certified service personnel shall perform start-up service. Proof of certification shall be required prior to equipment approval.

### **PUMP WARRANTY**

The pump manufacturer shall warrant the units being supplied to the owner against defects in workmanship and material for a period of five (5) years or 10,000 hours under the Municipal Wastewater - Permanent Installation Warranty Policy.

## **23.00 DOCUMENTATION:**

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Awarded Vendor will supply five (5) sets of detailed standard submittal drawings, Operation and Maintenance instruction manuals and parts list. Standard submittals will consist of:

- a) Pump Outline Drawing
- b) Control Data
- c) Access Frame Data
- d) Typical Installation Guides

Parts Lists and Technical Manuals shall be supplied after start-up has been completed.

**24.00 EXPERIENCE CLAUSE:** \_\_\_\_\_

The pump manufacturer shall have a minimum of 1,000 units of similar type pumps, installed and operating for no less than five (5) years in the United States.

**26.00 SERVICE:** \_\_\_\_\_

The pump supplier shall employ factory trained service personnel. These persons shall be authorized by the manufacturer to perform all maintenance and repair work on the above pumps. Factory certification of service personnel shall be provided to the engineer prior to approval of pumps. Only factory certified personnel shall perform start up on the specified material. The supplier shall also maintain a factory trained service personnel within 20 miles of the jobsite. Suppliers which cannot perform factory warranty work in their own service facility shall not be considered. Proof of such facilities shall be furnished to the City of Fairhope.

**27.0 VENDOR COMPLIANCE**

**27.01** Items bid must comply with all specifications listed.

**27.02** Vendor must acknowledge VENDOR COMPLIANCE. If vendor does not acknowledge VENDOR COMPLIANCE, it will be understood that vendor cannot fulfill said specifications.

If it is necessary to bid alternate materials or to take exceptions to the specifications as set forth, this must be so stated in your bid. For each item, please place an X in the appropriate space (Yes\_\_ No\_\_) to signify whether or not you are in complete compliance with the specification. Failure to follow the format or answer the specification may cause your bid to be disqualified. If you need extra space to describe your product, please attach extra sheets. When doing this, be sure your description references the appropriate question number.

**27.03** Compliance with or variations from the specifications must be noted as to each item on the Specification Sheet. This requirement must be met even though the Purchasing Manager may alter the specifications in the form of an addendum to accommodate variances. A request for a change in the specifications to accommodate a variation must be called to the attention of the Purchasing Manager at least 72 hours before the bid opening date. All requests for such changes will be considered and the merits weighed. Only those changes in specifications deemed to be in the best interest

of the City will be made. In the event of a change in specifications, an addendum will be supplied to bidders. Exceptions may be accepted if they are minor, equal, or superior to that which is specified, and provided that they are listed and fully explained on a separate page entitled, "Exceptions to Specifications". The exceptions shall refer to the specification page and paragraph number the City shall determine which (if any) exceptions are acceptable and this determination shall be final.

**28.0 QUANTITIES** The City of Fairhope does not guarantee the purchase of any set quantities.