



November 05, 2025

INVITATION TO BID BL013-26

The Gwinnett County Board of Commissioners is soliciting competitive sealed bids from qualified contractors for the **Purchase and Installation of Blowers at Shoal Creek Filter Plant** for the Department of Water Resources.

Bid Submittal Date and Location:

Bids should be typed or submitted in ink and returned in a sealed container marked on the outside with the BL# and Company Name. Bids will be received until **2:50 P.M. local time on December 12, 2025** at the Gwinnett County Financial Services - Purchasing Division – 4th Floor - Nash Building, 75 Langley Drive, Lawrenceville, Georgia 30046. Any bid received after this date and time will not be accepted. Bids will be publicly opened and read at 3:00 P.M. The bid opening will be virtual ONLY. To access the bid opening virtually, visit the following link: (<https://gwinnettgov.webex.com/gwinnettgov/j.php?MTID=mabdb95217b956a453bc6bbcd703d2b39>) or dial 1-408-418-9388, and enter Conference ID 2337 709 6808. Apparent bid results will be available the following business day on our website www.gwinnettcounty.com.

A pre-bid conference is scheduled for **10:00 A.M. on November 18, 2025**, at the Gwinnett County Shoal Creek Filter Plant Conference Room located at **1755 Buford Dam Road, Buford, GA 30518**. All suppliers are urged to attend.

Questions regarding bids should be directed to Brittany Bryant, CPPB, Purchasing Associate III, at Brittany.Bryant@GwinnettCounty.com or by calling 770-822-7759, **no later than 3:00 .P.M. on December 02, 2025**. Bids are legal and binding upon the vendor when submitted. All bids should be submitted in duplicate.

Successful contractors will be required to meet insurance requirements. The Insurance Company should be authorized to do business in Georgia by the Georgia Insurance Department and must have an A.M. Best rating of **A-7 or higher**.

Gwinnett County does not discriminate on the basis of disability in the admission or access to its programs or activities. Any requests for reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County Government should be directed to the ADA Coordinator at the Gwinnett County Justice and Administration Center, 770-822-8165.

The written bid documents supersede any verbal or written prior communications between the parties.

Award will be made to the supplier(s) submitting the lowest responsive and responsible bid. Gwinnett County reserves the right to reject any or all bids to waive technicalities and to make an award deemed in its best interest. Bids may be split or awarded in entirety. Gwinnett County reserves the option to negotiate terms, conditions and pricing with the lowest responsive, responsible vendor(s) at its discretion.

Award notification will be posted after award on the County website, www.gwinnettcounty.com and companies submitting a bid will be notified via email.

We look forward to your bid and appreciate your interest in Gwinnett County.

Brittany Bryant, CPPB
Purchasing Associate III

The following pages should be returned in duplicate as your bid:

Fee Schedule, Page 3
References, Page 4
Code of Ethics, Page 5
Contractor Affidavit and Agreement, Page 6

SCOPE OF WORK

- A. Gwinnett County is requesting quotes for furnishing, installation, and startup of two (2) Blowers, two (2) Motors, and specified ancillary components for a rehabilitation of two (2) Blower Skids (200hp, [3010 SCFM@8.5psi](mailto:SCFM@8.5psi)) located at: Shoal Creek Filter Plant 1755 Buford Dam Road, Buford, GA 30518.
- B. Scope Shall include the following:
 - 1. Submittals, Operation and Maintenance Manuals, Warranties, Training, Startup Services
 - 2. Equipment to be provided shall include, but is not limited to:
 - A. Blowers (2)
 - B. Motors (2)
 - C. Instrumentation (on Blower and Motor assemblies)
 - D. Check Valves, Flex Connectors, Lubricants, and other accessories listed in the specifications.
 - E. Spare Parts
 - 3. Installation Services for complete retrofit of two blower skids, maintaining one unit in service while completing each rebuild. Startup, Functional Testing, Performance Testing, Commissioning, and Training shall be by a certified manufacturer's representative.
 - 4. Deliver to Jobsite:
 - A. FOB Destination, Freight Prepaid and Allowed
 - B. All components shall be shipped crated on pallets
 - C. Freight Cost to be included in unit pricing.
 - D. Unloading and short-term storage shall be included.
 - E. A minimum of 48-hour notice in advance is required on all deliveries.

FAILURE TO RETURN THIS PAGE AS PART OF YOUR QUOTE DOCUMENT MAY RESULT IN REJECTION OF THE QUOTE.

Delivery will be F.O.B. Destination, freight pre-paid and allowed to: Gwinnett County Department of Water Resources at: Shoal Creek Filter Plant 1755 Buford Dam Road Buford Ga 30518.

QUOTE SCHEDULE

ITEM#	DESCRIPTION	QTY	MFG & NO.	DELIVERY A.R.O (WEEKS)	UNIT PRICE	TOTAL PRICE
1.	Blower Assemblies	2 EA			\$	\$
2.	Motor Assemblies	2 EA			\$	\$
3.	Motor and Blower Misc. Parts and Spares	1 LS			\$	\$
4.	Installation Complete	1 LS			\$	\$
TOTAL						\$

- Delivery of Submittal Drawings: _____ days after receiving Purchase Order
- Delivery of Motor, Blower, and Accessories: _____ days after approval of Submittal Drawings
- Installation of Motors and Blowers: _____ days after delivery of materials at Destination.

Note:

1. The unit price **MUST** include ALL charges, **including but not limited to freight and installation of all documents/products, Submittals, Blowers, Motors, and all Accessories, per specifications.**
2. If providing an equivalent, please provide the products cut sheet. Suppliers should be able to submit product cut sheets or information documents upon request.

Certification of Non-Collusion in Quote Preparation _____

Signature

Date

In compliance with the attached specifications and the instructions to bidders, the undersigned offers and agrees, within ninety (90) days of the date of quote opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the quote schedule. By submission of this quote, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Vendors should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the [Electronic Payment](#) information in the instructions to bidders.

Legal Business Name _____

Supplier Registration Number _____ Telephone Number _____

Complete Address _____

Does your company currently have a location within Gwinnett County? Yes ☐ No ☐

Representative Signature _____ Printed Name _____

E-mail Address _____

**FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION OF
BID.**

REFERENCES

Gwinnett County requests a minimum of three (3) references where work of a similar size and scope has been completed.

Note: References should be customized for each project, rather than submitting the same set of references for every project bid. The references listed should be of similar size and scope of the project being bid on. Do not submit a project list in lieu of this form.

1.

Company Name _____

Brief Description of Project _____

Completion Date _____

Contract Amount \$ _____ Start Dates _____

Contact Person _____ Telephone _____

E-Mail Address _____
2.

Company Name _____

Brief Description of Project _____

Completion Date _____

Contract Amount \$ _____ Start Date _____

Contact Person _____ Telephone _____

E-Mail Address _____
3.

Company Name _____

Brief Description of Project _____

Completion Date _____

Contract Amount \$ _____ Start Date _____

Contact Person _____ Telephone _____

E-Mail Address _____

Company Name _____



Bid # & Description BL013-26, Purchase and Installation of Blowers at Shoal Creek Filter Plant

CODE OF ETHICS AFFIDAVIT

PLEASE RETURN THIS FORM COMPLETED WITH YOUR SUBMITTAL. SUBMITTED FORMS ARE REQUIRED PRIOR TO EVALUATION.

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of their knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the vendor, its affiliates or its subcontractors:

1. _____
Company Submitting Bid/Proposal

2. Please select one of the following:
- ☐ No information to disclose (*complete only section 4 below*)
 - ☐ Disclosed information below (*complete section 3 & section 4 below*)

3. If additional space is required, please attach list:

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

4. BY: _____
Authorized Officer or Agent Signature

Sworn to and subscribed before me this

Printed Name of Authorized Officer or Agent

_____ day of _____, 20____

Title of Authorized Officer or Agent of Contractor

Notary Public

(seal)

Note: See Gwinnett County Code of Ethics Ordinance EO2011, Sec. 54-33. The ordinance will be available to view in its' entirety at **GwinnettCounty.com**



Solicitation Name & No. BL013-26, Purchase and Installation of Blowers at Shoal Creek Filter Plant

CONTRACTOR AFFIDAVIT AND AGREEMENT
(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL)

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Gwinnett County Board of Commissioners has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security] to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Gwinnett County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Gwinnett County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

E-Verify * User Identification Number

Date Registered

Legal Company Name

Street Address

City/State/Zip Code

BY: _____
Authorized Officer or Agent
(Contractor Signature)

Date

Title of Authorized Officer or Agent of Contractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

_____ DAY OF _____, 20_____

Notary Public

My Commission Expires: _____

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

For Gwinnett County Use Only:

Document ID # _____

Issue Date: _____

Initials: _____



GWINNETT COUNTY
FINANCIAL SERVICES | RISK MANAGEMENT
VENDOR INSURANCE REQUIREMENTS

Insurance:

Contractor shall provide evidence of insurance for at least the coverage and amounts set forth below. All insurance shall be maintained in the form and with a company (or companies) satisfactory to the Gwinnett County Board of Commissioners. The Contractor and their Subcontractor's/vendor's Certificates of Insurance shall require that the County be notified in writing thirty (30) days prior to cancellation, modification, or non-renewal of any insurance policy listed on the certificate(s). Upon request, the County will be provided certified copies of all required insurance policies.

A Minimum CoverageCommercial General Liability (Occurrence Form):

General Aggregate (other than Prod/Comp Ops Liability)	\$2,000,000
Products/Completed Operations Aggregate	\$2,000,000
Personal & Advertising Injury Liability	\$1,000,000
Each Occurrence	\$1,000,000

- Gwinnett County Board of Commissioners to be named as Additional Insured
- Additional Insured Endorsement CG 20 10 (edition dates of 07/04, 04/13, 12/19 or a substitute endorsement providing equivalent coverage) and CG 2037 (edition dates of 07/04, 04/13, 12/19 or a substitute endorsement providing equivalent coverage) must be provided with your Certificate of Insurance.
- Primary and Non-Contributory Endorsement to be specified in writing
- Contractual Liability
- Broad Form Property Damage
- Severability of Interest
- Underground, explosion, and collapse coverage
- Personal Injury (deleting both contractual and employee exclusions)
- Incidental Medical Malpractice
- Hostile Fire Pollution Wording
- Include Waiver of Subrogation in favor of Gwinnett County Board of Commissioners
- If project or operations are within 50 ft of a railroad, Contractor is required to name the specific Railroad as an Additional Insured and provide a copy of the Additional Insured Endorsement CG2417 or its equivalent.
- In the event the General Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of five (5) years or applicable statute of limitation period following completion of the work.

Automobile Liability to include:

Combined Single Limit – Each Accident	\$1,000,000
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- Comprehensive form providing coverage for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of all owned, non-owned, leased, hired, borrowed vehicles, and any other statutorily required automobile coverage.

- Gwinnett County Board of Commissioners to be named as Additional Insured
- Additional Insured Endorsements must be provided with the Certificate of Insurance
- Coverage to include loading and unloading
- Contractual Liability

Worker's Compensation & Employer's Liability Coverage to include:

Workers Compensation	Georgia State Statutory Limits
Employers Liability	
Bodily Injury by Accident – Each Accident	\$ 500,000
Bodily Injury by Disease – Policy Limit	\$ 500,000
Bodily Injury by Disease – Each Employee	\$ 500,000

- Waiver of Subrogation in favor of Gwinnett County Board of Commissioners

Umbrella/Excess Liability Insurance with policy limits as determined by Contract Sums (higher limits may be required depending on the extent of contract):

Contract Sums:

Contracts up to \$999,999	
Each Occurrence and Aggregate Limit	\$1,000,000
Contracts from \$1,000,000 to \$1,999,999 Each Occurrence and Aggregate Limit	\$3,000,000
Contracts from \$2,000,000 to \$4,999,999 Each Occurrence and Aggregate Limit	\$5,000,000
Contracts Over \$5,000,000 Each Occurrence and Aggregate Limit	\$10,000,000

- Concurrency of Effective Dates with Primary
- Blanket Contractual Liability
- Drop Down Feature
- Umbrella Policy must be as broad as the primary policy.
- Coverage excess over General Liability, Business Auto Liability, and Employers Liability
- In the event the Umbrella/Excess Liability insurance required by this Contract is written on a claims- made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of five (5) years or applicable statute of limitation period following completion of the work.
- Evidence of coverage in the form of a Certificate of Insurance shall be provided to the County prior to start of work.
- Gwinnett County Board of Commissioners shall be Additional Insureds.
- Contractor shall be liable for money, securities, or other property of the County.
- Such coverage shall include an owner coverage endorsement for County and County shall be included as a loss payee.
- Additional Insured Endorsements must be provided with the Certificate of Insurance

Cyber Liability Insurance: Applies if scope of work includes the storage or transfer of any County data or sensitive data (including but not limited to personally identifiable, health, or payment card data) or the related hosting of database(s) or internet site(s):

Limit of Insurance per Claim	\$1,000,000
Aggregate Limit	\$1,000,000

The Contractor shall maintain insurance coverage for network security and privacy risks, including, but not limited to, insurance for data breach or introduction of virus or malicious codes, consumer notification, whether or not required by law, forensic investigation, public relations and crisis management and credit or identity monitoring or similar remediation services, unauthorized access, failure of security information theft, damage to destruction of or alteration of electronic information, breach of privacy perils, wrongful disclosure and release of private information, collection, or other negligence in the handling of confidential information, and including coverage for related regulatory fines, defenses, and penalties allowed by law.

Property Insurance:

The Contractor is fully and solely responsible for any physical loss or damage to all tools, equipment, construction office trailers and their contents, vehicles or any other personal property utilized in the performance of the Contractor's work. Contractor agrees to waive its rights of recovery and cause its insurers, if any, to waive their rights of subrogation against Owner and Company for any such damage or loss, however caused.

Riggers Liability Insurance:

If any work to be performed involves the rigging, lifting, lowering or moving of property or equipment, then those parties performing such work shall carry Rigger's Liability Insurance in an amount adequate to insure against the physical loss or damage to the property or equipment in its care

Aviation Insurance: Applies if scope of work requires the use of aircraft, including helicopters, unmanned aircraft systems (e.g., drones) and/or fixed-wing aircraft:

Maintain (or require aircraft owner or operator to maintain), and Contractor shall furnish proof of, Aircraft Liability insurance with minimum limits of \$10,000,000 per occurrence for bodily injury and property damage of all aircraft.

Unmanned aircraft systems, minimum limits of \$2,000,000 for bodily injury, property damage, and personal injury (including invasion of privacy) for unmanned aircraft systems, and guest voluntary settlement bodily injury coverage (for any aircraft except unmanned aircraft systems)

- Such policy shall include contractual liability covering all owned and non-owned aircraft
- If the party providing the Aircraft Liability insurance is not Contractor, then Contractor shall require such party to (a) waive any subrogation rights of recovery they and/or their insurance carriers may have against County and any other indemnified parties and (b) name County and such other parties as Additional Insureds
- The Contractor shall (or shall require aircraft owner or operator) to hire, employ, and utilize pilots certified by the Federal Aviation Administration to operate any such aircraft.

- B. Gwinnett County Board of Commissioners (and any applicable Authority) must be specified in writing as an Additional Insured on General Liability, Auto Liability and Umbrella Liability policies.
- C. Gwinnett County should be provided with a minimum of 30 days advance written notice of cancellation, material change, or non-renewal of policies required by the contract.
- D. Certificate Holder should read:
Gwinnett County Board of Commissioners
75 Langley Drive
Lawrenceville, GA 30046-6935
- E. Insurance Company, except Worker' Compensation carrier, must have an A.M. Best Rating of A-7 or higher. Certain Workers' Comp funds may be accepted subject to the approval of the Gwinnett County Insurance Unit. European

markets including those based in London and domestic surplus lines markets that operate on a non-admitted basis are exempt from this requirement provided that the Contractor's broker/agent can provide financial data to establish that a market is equal to or exceeds the financial strengths associated with the A.M. Best's rating of A-7 or better.

- F. Insurance companies providing coverage should be licensed, and authorized to do business by the Office of the Insurance and Safety Fire Commissioner of Georgia ("Insurance Commissioner"), with the exception of non-admitted carriers, in which case the broker placing coverage should be licensed by the Insurance Commissioner. All agents placing coverage should be licensed by the Insurance Commissioner, either as a resident or non-resident.
- G. Certificates of Insurance, and any subsequent renewals, must reference each corresponding bid/contract by project name and project/bid number, if applicable.
- H. The Contractor shall agree to provide complete certified copies of current insurance policy(ies) or a certified letter from the insurance company(ies) if requested by the County to verify compliance with these insurance requirements.
- I. All insurance coverage required to be provided by the Contractor shall state that it is primary over any insurance program carried by the County.
- J. Contractor shall incorporate a copy of the insurance requirements as herein provided in each and every subcontract with each and every subcontractor in any tier and shall require each and every subcontractor of any tier to comply with all such requirements. The Contractor agrees that if for any reason a subcontractor fails to procure and maintain insurance as required, all such required Insurance shall be procured and maintained by Contractor at Contractor's expense.
- K. No Contractor or Subcontractor shall commence any work of any kind under this Contract until all insurance requirements contained in this Contract have been complied with and until evidence of such compliance satisfactory to Gwinnett County as to form and content has been filed with Gwinnett County. The ACORD Certificate of Insurance or a preapproved substitute is the required form in all cases where reference is made to a Certificate of Insurance or an approved substitute.
- L. The Contractor and its insurer(s) shall agree to waive all rights of subrogation against the County, the Board of Commissioners, its officers, officials, employees, and volunteers from losses arising from work performed by the Contractor for the County.
- M. Special Form Contractors' Equipment and Contents Insurance covering owned, used, and leased equipment, tools, supplies, and contents is required to perform the services called for in the Contract. The coverage must be on a replacement cost basis. The County will be included as a Loss Payee in this coverage for County owned equipment, tools, supplies, and contents.
- N. The Contractor shall make available to the County, through its records or the records of its insurer, information regarding any claim related to a County project. Any loss run information relating to a County project will be made available to the County upon its request.
- O. Compliance by the Contractor and Subcontractors with the foregoing insurance requirements shall not relieve the Contractor and Subcontractors of liability under the Contract and any applicable law.
- P. The Contractor and all Subcontractors are to comply with the Occupational Safety and Health Act of 1970, Public Law 91-956, and any other laws that may apply to this Contract.
- Q. The Contractor shall at a minimum apply risk management practices accepted by the Contractors' industry.
- R. The Contractor shall advise the County if required limits of insurance become eroded or impaired.

Surety Bonds (if required)

All of the surety requirements will stay the same except the Surety Company must have the same rating as set forth in item E above.

WINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES – PURCHASING DIVISION
GENERAL INSTRUCTIONS FOR VENDORS, TERMS AND CONDITIONS

*****ATTENTION*****

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE SUBMITTAL:

1. FAILURE TO USE COUNTY FEE SCHEDULE.
2. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE COMPLIANCE/SPECIFICATION SHEETS.
3. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE ADDENDA.
4. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
5. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL SOLICITATIONS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION PAGE. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS SOLICITATION DOCUMENT.**
6. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL SOLICITATIONS. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.
7. FAILURE TO PROVIDE AN ETHICS AFFIDAVIT WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE ETHICS AFFIDAVIT IS REQUIRED ON ALL FORMAL SOLICITATIONS OVER \$100,000.00. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.

I. PREPARATION OF SUBMITTAL

- A. Each vendor shall examine the drawings, specifications, schedule, and all instructions. Failure to do so will be at the vendor's risk, as the vendor will be held accountable for their submittal.
- B. Each vendor shall furnish all information required by the solicitation form or document. Each vendor shall sign the submittal and print or type his or her name on the fee schedule. The person signing the submittal should initial erasures or other changes. An authorized agent of the vendor must sign the submittal.
- C. Fee schedule pricing should have only two decimal places unless otherwise stated. In the event of a calculation error in total price, the unit pricing prevails.
- D. Except for solicitations for the sale of real property, individuals, firms, and businesses seeking an award of a Gwinnett County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County officer, elected official, employee, or other County representative other than the Purchasing Associate named in the solicitation between the date of the issuance of the solicitation and the date of the final award. The Purchasing Director will review violations. If determined that such communication has compromised the competitive process, the offer submitted by the individual, firm or business may be disqualified from consideration for award. Solicitations for the sale of real property may allow for verbal or written communications with the appropriate Gwinnett County representative.
- E. Sample contracts (if pertinent) are attached. These do NOT have to be filled out with the submittal but are contained for informational purposes only. If awarded, the successful vendor(s) will be required to execute these documents prior to County execution.
- F. Effective July 1, 2013 and in accordance with the Georgia Illegal Immigration Reform Enhancements for 2013, an original signed, notarized and fully completed Contractor Affidavit and Agreement should be included with vendor's submittal, if the solicitation is for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia). Failure to provide the Contractor Affidavit and Agreement with your submittal may result in being deemed non-responsive and automatic rejection.

II. DELIVERY

- A. Each vendor should state time of proposed delivery of goods or services.
- B. Words such as "immediate," "as soon as possible," etc. should not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) should be stated. If calendar days are used, include Saturday, Sunday, and holidays in the number.

III. EXPLANATION TO VENDORS

Any explanation desired by a vendor regarding the meaning or interpretation of the solicitation, drawings, specifications, etc. must be requested by the question cutoff deadline stated in the solicitation for a reply to reach all vendors before the deadline of the solicitation. Any information given to a prospective vendor concerning a solicitation will be furnished to all prospective vendors as an addendum to the solicitation if such information is necessary or if the lack of such information would be prejudicial to uninformed vendors. The written solicitation documents supersede any verbal or written communications between the parties. Receipt of addenda should be acknowledged in the submittal. **It is the vendor's responsibility to ensure they have all applicable addenda prior to their submittal.** This may be accomplished by contacting the assigned Purchasing Associate prior to the submittal or visiting the Gwinnett County website.

IV. SUBMISSION OF FORMAL OFFERS/SUBMITTALS

- A. Formal bid and proposal submittals shall be enclosed in a sealed package or envelope, addressed to the Gwinnett County Purchasing Division with the name of the vendor, the date and hour of opening and the solicitation number on the face of the package or envelope. Facsimile or emailed submittals will not be considered. Any addenda should be enclosed in the sealed envelopes as well.
- B. ADD/DEDUCT: Add or deduct amounts indicated on the outside of the envelope are allowed and will be applied to the lump sum amount. Amount shall be clearly stated and should be initialed by an authorized representative.
- C. Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the vendor's request and expense, if items are not destroyed by testing.
- D. Items offered must meet required specifications and must be of a quality that will adequately serve the use and purpose for which intended.
- E. Full identification of each item submitted, including brand name, model, catalog number, etc. must be furnished to identify exactly what the vendor is offering. Manufacturer's literature may be furnished but vendor should not submit excessive marketing material.
- F. The vendor must certify that items to be furnished are new and that the quality has not deteriorated to impair its usefulness.
- G. Unsigned submittals will not be considered except in cases where it is enclosed with other documents that have been signed. The County will determine acceptability in these cases.
- H. Gwinnett County is exempt from federal excise tax and Georgia sales tax regarding goods and services purchased directly by Gwinnett County. Vendors are responsible for federal excise tax and sales tax, including taxes for materials incorporated in county construction

projects. Vendors should contact the State of Georgia Sales Tax Division for additional information. Agreements where there is a cost-plus mark-up, mark-up will not be paid on taxes.

- I. Information submitted by a vendor in the solicitation process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act.

V. WITHDRAWAL DUE TO ERRORS

Vendors must give Gwinnett County Purchasing Division written notice within two (2) business days of completion of the opening stating that they wish to withdraw their submittal without penalty for an obvious clerical or calculation error. Submittal may be withdrawn from consideration if the price was substantially lower than the other submittals due solely to a mistake therein, provided pricing was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake and was due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the submittal. The unintentional arithmetic error or omission can be clearly proven through inspection of the original work papers, documents, and materials used in preparing the submittal sought to be withdrawn. The vendor's original work papers shall be the sole acceptable evidence of error and mistake if a vendor elects to withdraw their submittal. If a quote or bid submittal is withdrawn under the authority of this provision, the lowest remaining responsive offer shall be deemed to be low bid.

No vendor who is permitted to withdraw their submittal shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid or proposal was submitted.

Vendors who fail to request withdrawal by the required forty-eight (48) hours may automatically forfeit bid bond if a bond was required. Bid may not be withdrawn otherwise.

Withdrawal is not automatically granted and will be allowed solely at Gwinnett County's discretion.

VI. TESTING AND INSPECTION

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of the tests are determined. Cost of inspections and tests of any item that fails to meet the specifications, shall be borne by the vendor.

VII. F.O.B. POINT

Unless otherwise stated in the request for invitation and any resulting contract, or unless qualified by the vendor, items shall be shipped F.O.B. Destination, Freight Prepaid and Allowed. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

VIII. PATENT INDEMNITY

The vendor guarantees to hold the County, its agents, officers, or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the vendor is not the patentee, assignee, or licensee.

IX. BID BONDS AND PAYMENT AND PERFORMANCE BONDS (IF REQUIRED, FORMS WILL BE PROVIDED IN THIS DOCUMENT)

A five percent (5%) bid bond, a one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond must be furnished to Gwinnett County for any solicitation as required in the solicitation package or document. **Failure to submit a bid bond with the proper rating will result in submittal being deemed non-responsive.** Bonding company must be authorized to do business in Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirement of the solicitation. **The bid bond, payment bond, and performance bond must have the proper A.M. Best rating as stated in the solicitation document.**

X. DISCOUNTS

- A. Time payment discounts may be considered in arriving at net prices and in award of solicitations. Offers of discounts for payment within ten (10) days following the end of the month are preferred.
- B. In connection with any discount offered, time will be computed from the date of delivery and acceptance at destination, or from the date correct invoice or voucher is received, whichever is the later date. Payment is deemed to be made for the purpose of earning the discount on the date of the County check.

XI. AWARD

- A. Award will be made to either the highest scoring firm (for proposals) or the lowest responsive and responsible vendor (for quotes/bids). The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the vendor to perform, and the vendor shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any submittal if the evidence submitted by, or investigation of such vendor fails to satisfy the County that such vendor is properly qualified to carry out the obligations of the contract.
- B. The County reserves the right to reject or accept any or all offers and to waive technicalities, informalities and minor irregularities in the submittals received.
- C. The County reserves the right to make an award as deemed in its best interest, which may include awarding to a single vendor or multiple vendors; or to award the whole solicitation

agreement, only part of the agreement, or none of the agreement, based on its sole discretion of its best interest.

- D. In the event of proposal scores rounded to the nearest whole number result in a tie score, the award will be based on lowest cost.
- E. If proposal negotiations with the highest ranked firm are unsuccessful, the County may then negotiate with the second ranked firm and so on until a satisfactory agreement has been reached.

XII. DELIVERY FAILURES

Failure of a vendor to deliver within the time specified or within reasonable time as interpreted by the Purchasing Director, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the Purchasing Director, shall constitute authority for the Purchasing Director to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the vendor shall reimburse the County within a reasonable time specified by the Purchasing Director for any expense incurred in excess of the contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting vendor. Alternatively, the County may penalize the vendor one percent (1%) per day for a period of up to ten (10) days for each day that delivery or replacement is late. Should public necessity demand it, the County reserves the right to use or consume articles/services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

XIII. COUNTY FURNISHED PROPERTY

No material, labor or facilities will be furnished by the County unless so provided in the solicitation package.

XIV. REJECTION OF SUBMITTALS

Failure to observe any of the instructions or conditions in this solicitation package may constitute grounds for rejection.

XV. CONTRACT

Each submittal is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all the commodities or services described therein shall constitute a contract between the vendor and the County which shall bind the vendor on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted submittal. The County, on its part, may order from such vendor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered.

Upon receipt of a solicitation package containing a Gwinnett County "Sample Contract" as part of the requirements, it is understood that the vendor has reviewed the documents with the

understanding that Gwinnett County requires that all agreements between the parties must be entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the vendor's submittal. If no exceptions are stated, it is assumed that the vendor fully agrees to the provisions contained in the "Sample Contract" in its entirety.

Any Consultant as defined in O.C.G.A. §36-80-28 that is engaged to develop or draft specifications/requirements or serve in a consultative role during the procurement process for any County procurement method, by entering into such an arrangement or executing a contract, the consultant agrees to abide by the current state law and: 1) Avoid any appearance of impropriety and shall follow all policies and procedures of the County, 2) Disclose to the County any material transaction or relationship pursuant to §36-80-28, that is considered a conflict of interest, any involvement in litigation or other dispute, relationship, or financial interest not disclosed in the ethics affidavit, and 3) Acknowledge that any violation or threatened violation of the agreement may cause irreparable injury to the County, entitling the County to seek injunctive relief in addition to all other legal remedies.

When the vendor has performed in accordance with the provisions of this agreement, Gwinnett County shall pay to the vendor, within thirty (30) days of receipt of any department approved payment request and based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any. If Gwinnett County fails to pay the vendor within sixty (60) days of receipt of a pay request based upon work completed or service provided pursuant to the contract, the County shall pay the vendor interest at the rate of $\frac{1}{2}\%$ per month or pro rata fraction thereof, beginning the sixty-first (61st) day following receipt of pay requests. The vendor's acceptance of progress payments or final payment shall release all claims for interest on said payment.

The parties agree that this Contract shall be governed and construed in accordance with the laws of the State of Georgia.

XVI. NON-COLLUSION

Vendor declares that the submittal is not made in connection with any other vendor's submittal for the same commodity or commodities, and that the submittal is bona fide and is in all respects fair and without collusion or fraud. An affidavit of non-collusion shall be executed by each vendor. Collusion and fraud in submittal preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

XVII. DEFAULT

The contract may be canceled or annulled by the Purchasing Director in whole or in part by written notice of default to the vendor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible vendor, or the next highest scoring responsive and responsible proposer, or articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting vendor (or their surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the vendor shall continue the performance of this contract to the extent not terminated under

the provisions of this clause. Failure of the vendor to deliver materials or services within the time stipulated on their offer, unless extended in writing by the Purchasing Director, shall constitute contract default.

XVIII. TERMINATION FOR CAUSE

The County may terminate this agreement for cause upon ten days prior written notice to the vendor of the vendor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

XIX. TERMINATION FOR CONVENIENCE

The County may terminate this agreement for its convenience at any time upon 30 days written notice to the vendor. In the event of the County's termination of this agreement for convenience, the vendor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the vendor, which shall itemize each element of performance.

XX. SUBSTITUTIONS

Vendors offering substitutions or who are deviating from the attached specifications shall list such deviations on a separate sheet to be submitted with their offer. The absence of such a substitution list shall indicate that the vendor has taken no exception to the specifications contained herein.

XXI. INELIGIBLE VENDORS

The County may choose not to accept the offer by an individual, firm, or business who is in default on the payment of taxes, licenses, or other monies owed to the County. Additionally, vendors or persons placed on an Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance shall not be eligible to provide any commodities or services to the County during the period such person remains on the Ineligible Source List.

XXII. PENDING LITIGATION

An individual, firm, or business that has litigation pending against the County, or anyone representing a firm or business in litigation against the County, not arising out of the procurement process, will be disqualified.

XXIII. OCCUPATION TAX CERTIFICATE

Each successful vendor must have a valid Gwinnett County occupation tax certificate if the vendor maintains an office within the unincorporated area of Gwinnett County. Incorporated, out of County, and out of State vendors are required to have any and all certificates necessary to do business in any town, County or municipality in the State of Georgia, or as otherwise required by County ordinance or resolution. Vendors may be required to provide evidence of valid certificates. Out of State vendors are required to have a certificate in the Georgia jurisdiction where they receive the most revenue.

XXIV. PURCHASING POLICY AND REVIEW COMMITTEE

The Purchasing Policy & Review Committee has been established to review purchasing procedures and make recommendations for changes; resolve problems regarding the purchasing process; make recommendations for standardization of commodities, schedule buying, qualified products list, annual contracts, supplier performance (Ineligible Source List), and other problems or requirements related to purchasing. The Purchasing Policy & Review Committee has authority to place vendors on the Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance, for a period not to exceed three (3) years.

XXV. AMERICANS WITH DISABILITIES ACT

All vendors for Gwinnett County are required to comply with all applicable sections of the Americans with Disabilities Act (ADA) as an equal opportunity employer. In compliance with the Americans with Disabilities Act (ADA), Gwinnett County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees without disabilities. Disabled individuals must satisfy job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations. Any requests for the reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County should be directed to the ADA Coordinator, 75 Langley Drive, Lawrenceville, Georgia 30046, 770-822-8165.

XXVI. ALTERATIONS OF SOLICITATION AND ASSOCIATED DOCUMENTS

Alterations of County documents are strictly prohibited and will result in automatic disqualification of the vendor's solicitation response. If there are "exceptions" or comments to any of the solicitation requirements or other language, then the firm may make notes to those areas, but may not materially alter any document language.

XXVII. TAX LIABILITY

Local and state governmental entities must notify vendors of their use tax liability on public works projects. Under Georgia law, private vendors are responsible for paying a use tax equal to the sales tax rate on material and equipment purchased under a governmental exemption that is incorporated into a government construction project: excluding material and equipment provided for the installation, repair, or expansion of a public water, gas, or sewer system when the property is installed for general distribution purposes. To the extent the tangible personal property maintains its character (for example, the installation of a kitchen stove), it remains tax-exempt. However, if the installation incorporates the tangible personal property into realty (for example, the installation of sheetrock), it becomes taxable to the private vendor. See O.C.G.A. §48-8-3(2) and O.C.G.A. §48-8-63.

XXVIII. STATE AND FEDERAL LAW REGARDING WORKER VERIFICATION

Effective July 1, 2013 State Law requires that all who enter into a contract for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia) and that all who enter into a contract for public works as defined by O.C.G.A. §36-91-2(12) for the County, must satisfy the Illegal Immigration Reform Enhancements for 2013 in

conjunction with the Federal Immigration Reform and Control Act (IRCA) of 1986, in all manner, and such are conditions of the contract.

The Purchasing Division Director with the assistance of the Internal Audit Division shall be authorized to conduct random audits of a vendor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The vendor and subcontractors shall retain all documents and records of its compliance for a period of five (5) years following completion of the contract or shall abide by the current time requirements at the time of the contract. This requirement shall apply to all contracts for all public works, labor or service contracts that exceed \$2,499.99 except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia.

Whenever it appears that a vendor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employment of such vendor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security and may result in termination of the contract if it is determined at any time during the work that the vendor or subcontractor is no longer in compliance with worker verification.

By submitting an offer to the County, vendor agrees that, in the event the vendor employs or contracts with any subcontractor(s) in connection with the covered contract, the vendor will secure from the subcontractor(s) such subcontractor(s)' indication of the employee-number category applicable to the subcontractor, as well as attestation(s) from such subcontractor(s) that they follow the Illegal Immigration Reform Enhancements for 2013 in conjunction with all federal requirements. Original signed, notarized Subcontractor Affidavits and Agreements must be maintained by the vendor awarded the contract.

A vendor's or subcontractor's failure to participate in the federal work authorization program as defined above shall be subject to termination of the contract. A vendor's failure to follow Gwinnett County's instruction to terminate a subcontractor that is not participating in the federal work authorization program may be subject to termination of the contract.

XXIX. SOLID WASTE ORDINANCE

No individual, partnership, corporation, or other entity shall engage in solid waste handling except in such a manner as to conform to and comply with the current Gwinnett County Solid Waste Ordinance and all other applicable local, state and federal legislation, rules, regulation, and orders.

XXX. GENERAL CONTRACTORS LICENSE

Effective July 1, 2008: **All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law (O.C.G.A. §43-41-17).**

XXXI. PRODUCTS MANUFACTURED IN GEORGIA

When contracting for or purchasing supplies, materials, equipment, or agricultural products that exceeds \$100,000.00, excluding beverages for immediate consumption, Gwinnett County shall give preference as far as may be reasonable and practicable to such supplies, materials, equipment, and agricultural products as may be manufactured or produced in this state. Such preference shall not sacrifice quality. Gwinnett County Board of Commissioners shall consider, among other factors, information submitted by the vendor which may include the vendor's

estimate of the multiplier effect on gross state domestic product and the effect on public revenues of the state and the effect on public revenues of political subdivisions resulting from acceptance of an offer to sell Georgia manufactured or produced goods as opposed to out-of-state manufactured or produced goods. Any such estimates shall be in writing. **(O.C.G.A. §36-84-1).**

XXXII. INDEM

XXXIII. INDEMNIFICATION

To the fullest extent permitted by law, the vendor shall, at his sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless the County, its commissioners, officers, agents, and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, action, judgment, cost, penalty, liability, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by the negligent acts, errors by any act or omission of the vendor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless whether such claim is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any of the rights or obligations of indemnity which would otherwise exist as to any party or person described in this agreement. In any and all claims against the County, its commissioners, officers, agents, and employees by any employee of the vendor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the vendor or any subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

Vendor shall also indemnify, hold harmless, insure, and defend the County for damages, losses, or expenses to the extent caused by or resulting from the negligence, recklessness, or intentionally wrongful conduct of the vendor or other persons employed or utilized by the vendor in the performance of a contract that utilizes survey services.

XXXIV. CODE OF ETHICS

Vendors shall disclose under oath the name of all elected officials whom it employs or who have a direct or indirect pecuniary interest in the business entity, its affiliates, or its subcontractors. (This shall not apply to informal purchases as defined by the Purchasing Ordinance.) The vendor shall execute a Code of Ethics affidavit. Failure to submit the affidavit during the procurement process shall render the offer non-responsive.

Any business entity holding a contract with Gwinnett County that after execution of the contract or issuance of the purchase order employs, subcontracts with, or transfers a direct or indirect pecuniary interest in the business entity to an elected official shall within five (5) days disclose such fact in writing under oath to the Clerk of the Board of Commissioners. Failure to comply, or vendors submitting false information or omitting material information shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution. Note: See Gwinnett County Code of Ethics Ordinance EO2011, Sec. 54-33. The ordinance is available to view in its entirety at www.gwinnettcountry.com.

XXXV. ELECTRONIC PAYMENT

Vendors accepting procurements should select one of Gwinnett County's electronic payment options.

- A. A vendor may select ePayables payment process which allows acceptance of Gwinnett County's virtual credit card as payment for outstanding invoices. The authorized vendor

representative must send an email to: vendorelectronicpayment@gwinnettcountry.com and indicate the desire to enroll in Gwinnett County's virtual credit card payment process.

- B. A vendor may select Direct Deposit payment process and the payment will be deposited directly into an account at their designated financial institution. To securely enroll in Direct Deposit, either access your online [Vendor Login and Registration](#) on the County's web site and update the requested information on the Direct Deposit tab or mail a [Direct Deposit Authorization Agreement](#) form.

The County will send a Payment Advice notification via email for both payment types. For more information about Electronic Payments, please visit the Gwinnett County Treasury Division page or click here -> [Gwinnett County Electronic Payments](#).

DIRECTIONS TO GJAC BUILDING FROM I-85

Take I-85 to Georgia Highway 316 (Lawrenceville/Athens exit). Exit Highway 120 (Lawrenceville/Duluth exit) and turn right. At seventh traffic light, turn right onto Langley Drive. Cross Highway 29 through the traffic light and proceed through the roundabout. Visitors can either proceed to the front parking area on the left or to the parking deck behind the building. Click [here](#) for additional information about parking. **The Purchasing Division is located on the fourth floor of the Charlotte J. Nash Building. NOTE THAT THE PURCHASING DIVISION HAS TEMPORARILY RELOCATED.**

FAILURE TO RETURN THIS PAGE MAY RESULT IN REMOVAL OF YOUR COMPANY FROM COMMODITY LISTING.

BL013-26

Buyer Initials: BB

IF YOU DESIRE TO SUBMIT A "NO BID" IN RESPONSE TO THIS PACKAGE, PLEASE INDICATE BY CHECKING ONE OR MORE OF THE REASONS LISTED BELOW AND EXPLAIN.

- ☐ Do not offer this product or service; remove us from your bidder's list for this item only.
- ☐ Specifications too "tight"; geared toward one brand or manufacturer only.
- ☐ Specifications are unclear.
- ☐ Unable to meet specifications
- ☐ Unable to meet bond requirements
- ☐ Unable to meet insurance requirements
- ☐ Our schedule would not permit us to perform.
- ☐ Insufficient time to respond.
- ☐ Other

COMPANY NAME _____

AUTHORIZED REPRESENTATIVE _____

SIGNATURE

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples and other submittals. Detailed submittal requirements are specified in the Technical Sections.
- B. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.
- C. Make all submittals to the ENGINEER. The ENGINEER will review all technical submittals.
- D. Unless otherwise noted, within 30 days after the issuance of the Notice to Proceed, submit a list of submittals with scheduled submittal dates to the ENGINEER for review. This list shall include the specification section number, description of the submittal, scheduled submission date, and anticipated approval date. The CONTRACTOR's schedule shall be based upon a minimum of one resubmittal for each shop drawing and sample.
- E. The CONTRACTOR is responsible for identifying and delivering all submittals required by the Contract Documents.

1.02 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Shop Drawings
 - 1. Shop drawings as specified in individual Sections include, custom-prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shopwork manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications, as applicable to the work.
 - 2. Subcontractors, manufacturers, suppliers and/or vendors shall submit all shop drawings directly to the CONTRACTOR for checking. The CONTRACTOR shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
 - 3. Check all subcontractor's, vendors, manufacturer's and/or supplier's shop drawings regarding measurements, size of members, materials and details to make certain that they conform to the intent of the Drawings and related Sections. Return shop

drawings found to be inaccurate or otherwise in error to the subcontractors for correction before submission thereof.

4. All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.

B. Product Data

1. Product data as specified in individual Sections include, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliance and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing and printed product warranties, as applicable to the work.
2. On standard drawings or data sheets, clearly indicate model and option being proposed and strike out all non-relevant data.

C. Samples

1. Samples specified in individual Sections include, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols and units of work to be used by the ENGINEER, ENGINEER or OWNER for independent inspection and testing, as applicable to the work.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
 1. Field measurements – The CONTRACTOR is responsible for ensuring all aspects of the Work are dimensionally correct.
 2. Field construction criteria
 3. Catalog numbers and similar data
 4. Conformance with related Sections

- B. Each shop drawing, sample and product data submitted by the CONTRACTOR shall have affixed to it the following Certification Statement including the CONTRACTOR's Company name and signed by the CONTRACTOR:

Company Name (as appropriate) _____

Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.

Signature: _____ Date: _____

- C. All submittals shall be accompanied by the ENGINEER's standard submittal transmittal form. The form may be obtained in quantity from the ENGINEER. Any submittal not accompanied by the above-identified form or where all applicable items on the form are not completed will be returned for resubmittal.
- D. The submittal transmittal sheet shall include the date, project title, project number, submittal number, specification section, type of submittal code (see list below), a complete description of the submittal, a listing of all items in the submittal package, indication of deviations from the Contract Documents, and the names of the CONTRACTOR, supplier, manufacturer and vendor. In addition, the cover sheet shall include space for the ENGINEER's stamp and the CONTRACTOR's Certification Stamp. Codes for the type of submittal are indicated below:
- DWG Shop drawing, working drawing or other product data
 - SAM Sample
 - PRE Preliminary submittal
 - OCM Operation/maintenance manual
 - CRT Certification
 - SCH Schedule
 - PLN Plan (i.e. Safety Plan) TRN Training information
 - WTY Warranty
 - OTH Other
- E. The CONTRACTOR shall utilize a 5-character submittal identification numbering system in the following manner:
1. The first four digits shall be the numbers 0001 to 9999 to sequentially number each separate item or drawing submitted.

2. The last character shall be a letter, A to Z, indicating the submission, or resubmission of the same Drawing, i.e., "A=1st submission, B=2nd submission, C=3d submission, etc.
- F. Normally a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Do not include products from more than one specification section in a single submittal. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of a group or package as a whole. A multiple page submittal shall be collated into sets and each set shall be stapled or bound, as appropriate, prior to transmittal to the ENGINEER.
- G. Deviations from the Contract Documents shall be clearly indicated on all submittals on a separate sheet (or sheets) of paper, typed and attached to the Submittal immediately following the cover page. Deviations shall be identified by Specification Section and Paragraph, Drawing Number and/or Detail.
- H. The review and approval of shop drawings, samples or product data by the ENGINEER shall not relieve the CONTRACTOR from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the CONTRACTOR, and the ENGINEER or OWNER will have no responsibility, therefore.
- I. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased, or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the CONTRACTOR's risk. The OWNER will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- J. Project work, materials, fabrication, and installation shall conform with approved shop drawings, applicable samples, and product data.

1.04 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved Submittal Schedule and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. Except as otherwise indicated, the ENGINEER will return three copies of each submittal or resubmittal, with comments, to the CONTRACTOR no later than thirty (30) calendar days following their receipt by the ENGINEER.
- C. Number of submittals required:
 1. Shop Drawings: For Approval: 1-searchable, indexed pdf,
 - a. For As-Approved/Final: 1-hard copy, 1-searchable, indexed pdf.

2. Product Data: For Approval: 1-searchable, indexed pdf,
 - a. For As-Approved/Final: 1-hard copy, 1-searchable, indexed pdf.
 3. Samples: Submit the number stated in the respective Sections.
- D. Submittals shall contain:
1. Identification of the product, with the section number, page and paragraph(s), Drawing number, detail number and any such other information necessary to fully identify the submitted product.
 2. Field dimensions, clearly identified as such.
 2. Relation to adjacent or critical features of the Work or materials.
 4. Applicable standards, such as ASTM or Federal Standards numbers.
 5. Complete and total identification of deviations from Contract Documents.
 6. Identification of revisions on resubmittals.
 7. Where calculations are required to be submitted by the CONTRACTOR, the calculations shall have been checked by a qualified individual other than the preparer. The submitted calculations shall clearly show the names of the preparer and of the checker.
 8. In addition to the hard copies, an electronic version (in PDF format) of all approved shop drawings for Divisions 11, 13, 15, and 16 shall be submitted.

1.05 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
 1. As permitting any departure from the Contract requirements;
 2. As relieving the CONTRACTOR of responsibility for any errors, including details, dimensions, and materials;
 3. As approving departures from details furnished by the ENGINEER, except as otherwise provided herein.
- B. The CONTRACTOR remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- C. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements that ENGINEER finds to be in the interest

of the OWNER and to be so minor as not to involve a change in Contract Price or Contract Time, the ENGINEER may return the reviewed drawings without noting an exception.

D. Submittals will be returned to the CONTRACTOR under one of the following codes.

Code 1 - "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the CONTRACTOR may release the equipment and/or material for manufacture.

Code 2 - "APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the CONTRACTOR. The CONTRACTOR may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

Code 3 - "APPROVED AS NOTED/CONFIRM". This combination of codes is assigned when a confirmation of the notations and comments IS required by the CONTRACTOR. The CONTRACTOR may, at his own risk, release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the ENGINEER within 15 calendar days of the date of the ENGINEER's transmittal requiring the confirmation.

Code 4 - "APPROVED AS NOTED/RESUBMIT". This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the package. This resubmittal is to address all comments, omissions and non-conforming items that were noted. Resubmittal is to be received by the ENGINEER within 15 calendar days of the date of the ENGINEER's transmittal requiring the resubmittal.

Code 5 - "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents. The CONTRACTOR must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

Code 6 - "COMMENTS ATTACHED" is assigned where there are comments attached to the returned submittal which provide additional data to aid the CONTRACTOR. Codes 1 through 5 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.

E. Resubmittals will be handled in the same manner as first submittals. On resubmittals the CONTRACTOR shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the ENGINEER on the previous submission. Additionally, the CONTRACTOR shall direct specific attention to any revisions made other than the corrections requested by the ENGINEER on previous submissions.

- F. Partial submittals may not be reviewed. The ENGINEER will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the CONTRACTOR and will be considered "Not Approved" until resubmitted. The ENGINEER may at his option provide a list or mark the submittal directing the CONTRACTOR to the areas that are incomplete.
- G. Repetitive Review
 - 1. Shop drawings and other submittals will be reviewed no more than twice at the OWNER's expense. All subsequent reviews will be performed at times convenient to the ENGINEER and at the CONTRACTOR's expense, based on the ENGINEER's then prevailing rates. The CONTRACTOR shall reimburse the OWNER for all such fees invoiced to the OWNER by the ENGINEER. Submittals are required until approved.
 - 2. Any need for more than one resubmission, or any other delay in obtaining ENGINEER's review of submittals, will not entitle CONTRACTOR to extension of the Contract Time.
- H. If the CONTRACTOR considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the CONTRACTOR shall give immediate written notice thereof to the ENGINEER.
- I. When the shop drawings have been completed to the satisfaction of the ENGINEER, the CONTRACTOR shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the ENGINEER.

1.06 DISTRIBUTION

- A. Make and distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the ENGINEER. Number of copies shall be as directed by the ENGINEER but shall not exceed six.

1.07 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the CONTRACTOR's failure to transmit submittals sufficiently in advance of the Work
- B. For all submittals required in Divisions 11, 13, 14, 15 and 16 for which there are associated control panels or interconnection with the instrumentation system, the CONTRACTOR shall have the Application Engineering Supplier (AES) review the

submittal for conformance with the instrumentation design prior to submission of the shop drawing to the ENGINEER.

1.08 ADMINISTRATIVE SUBMITTALS

- A. Submit to the ENGINEER a copy of all letters relative to the Contract, transmitting notifications, reports, certifications, payrolls and the like, that the CONTRACTOR submits directly to a federal, state or other governing agency.
- B. When requested by the ENGINEER, submit copies of each purchase order for all materials and equipment furnished under these specifications for incorporation into the Work. Each purchase order shall show the supplier's name, manufacturer's name, materials, type, model number, size, quantity, accessory list, and requested delivery date of the material and equipment ordered. In addition, each purchase order shall clearly indicate the amount of Georgia State Sales Tax.
- C. Complete a daily form indicating the total manpower for each construction trade, major equipment on site, each subcontractor's manpower, weather conditions, and any other items required by the ENGINEER. The daily report shall be completed on forms provided by the ENGINEER and shall be submitted to the ENGINEER by 9:00 AM the following workday. The report shall comment on the daily progress and status of the work within each major component of the work. Submitting acceptable daily reports is a precondition to approval of the monthly progress payment. However, these reports are not to be used to meet the notice requirements contained within the General Conditions.

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 GENERAL**1.01 REQUIREMENTS INCLUDED**

- A. Material and equipment incorporated into the Work:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the ENGINEER.
 - 3. Manufactured and Fabricated Products
 - a. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 - 4. Do not use Products for any purpose other than that for which they are designed or specified.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract
- B. Summary of work is included in Section 11276-A and 11276-B.
- C. Shop drawings, product data, and samples are included in Section 01300.
- D. Cleaning as required by NSF 61
- E. Warranties are included in Section 01740.

1.03 APPROVAL OF PRODUCTS :

- A. Only new Products shall be incorporated in the Work, unless otherwise specified or indicated on the Drawings.

- B. All Products shall be subject to the inspection and approval of the ENGINEER. No Products shall be delivered to the work without prior approved Shop Drawings.
- B. Furnish all required facilities and labor for handling and inspection of Products. If requested, either prior to beginning or during the progress of the work, submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the Specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the CONTRACTOR's expense.
- C. Submit Shop Drawings, Product Data, and Samples sufficiently in advance to permit consideration and approval before Products are necessary for incorporation in the work. Any delay of approval resulting from the failure to submit Shop Drawings, Product Data, or Samples in a timely manner shall not be used as a basis of claim against the OWNER or the ENGINEER.
- D. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes and surfaces, provide such samples of workmanship or finish as may be required or requested.
- E. Products used in the Work shall correspond to the approved Shop Drawings, Product Data, Samples or other data.

1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of Products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver Products to the site in undamaged condition, in manufacturer's original sealed containers or packaging, with identifying labels intact and legible, complete with instructions for handling, storing, unpacking, protecting, and installing.
 - 2. Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the ENGINEER.
 - 2. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged, or sensitive to deterioration.
 - 3. Products delivered to the site shall be unloaded and placed in a manner that will not hamper the CONTRACTOR's normal construction operations, nor those of other contractors and subcontractors. Unloading shall not interfere with normal traffic flow.
 - 4. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.

- B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

1.05 STORAGE AND PROTECTION

- A. Furnish a covered, weather-protected storage structure(s) providing a clean, dry, ventilated, noncorrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment, and special equipment to be incorporated into the Work. Storage of equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment, etc. Five copies of the manufacturer's instructions for storage shall be delivered to the ENGINEER prior to storage of all equipment and materials. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the Work. Products not properly stored shall not be included in Applications for Payment.
- C. Store Products in accordance with manufacturers' instructions, with seals and labels intact and legible.
 - 1. Store Products subject to damage by the elements in weather tight enclosures. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 2. Store fabricated Products above the ground, on blocking or skids, to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings.
 - 3. Provide adequate ventilation to prevent condensation.
 - 4. Store loose granular materials in a well-drained area on solid, flat surfaces to prevent mixing with foreign matter.
- D. All Products shall be handled and stored before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft, or damage of any kind whatsoever to the material or equipment.
- E. Cement, sand, and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural steel, miscellaneous steel, and reinforcing steel shall be stored off the ground and protected to prevent accumulations of dirt, grease, or standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete beams shall be handled and stored in a manner to prevent accumulations of dirt, grease, standing water, staining, chipping, or cracking. Brick, block and masonry products shall be handled and stored in a manner to minimize breakage, chipping, cracking and spalling.
- F. All Products which, in the opinion of the ENGINEER, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of

the Work. No compensation will be made for the damaged Products, their removal, or their replacement.

- G. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored Products to assure that Products are maintained under specified conditions and free from damage or deterioration.
- H. Protection after Installation - Provide substantial coverings as necessary to protect installed Products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.
- I. Maintain full responsibility for all material, equipment and supplies until final inspection of the work and acceptance thereof by the OWNER and ENGINEER. In the event any such material, equipment and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the CONTRACTOR shall replace same without additional cost to the OWNER.
- J. Should proper action on storage and handling of equipment supplied under this Contract not be taken within seven days after written notice to do so has been given, the OWNER retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contract Price. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, engineering and any other costs associated with making the necessary corrections.
- K. Approved equipment can be stored offsite at the factory or in bonded storage and billed at 90% of equipment value. All equipment stored offsite must be maintained in accordance with the procedures outlined in paragraph 1.06.

1.06 STORAGE AND HANDLING OF EQUIPMENT ON SITE

- A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed.
 - 1. Equipment shall not be shipped until approved by the ENGINEER. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the ENGINEER. Operation and maintenance data as described in Section 01730 shall be submitted to the ENGINEER for review prior to shipment of equipment.
 - 2. All equipment having moving parts such as gears, electric motors, etc. and/or instruments shall be stored in a temperature and humidity controlled building approved by the ENGINEER, until such time as the equipment is to be installed.
 - 3. All equipment shall be stored fully lubricated with oil, grease, etc., unless otherwise instructed by the manufacturer.

4. A copy of the manufacturer's storage instructions shall be given to the ENGINEER and shall be carefully studied by the CONTRACTOR and reviewed with the ENGINEER by him. These instructions shall be carefully followed and a written record of this kept by the CONTRACTOR.
5. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the CONTRACTOR shall start the equipment, at least half load, once weekly for an adequate period of time to insure that the equipment does not deteriorate from lack of use.
6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the work, if stored for longer than ninety days, shall have the bearings cleaned, flushed and lubricated prior to testing and startup.
7. Prior to acceptance of the equipment, the CONTRACTOR shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective and it shall be removed and replaced at no expense to OWNER.

1.07 MANUFACTURERS' INSTRUCTIONS FOR INSTALLATION

- A. When the Contract Documents require that installation of Products shall comply with manufacturers' printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including five copies to the ENGINEER. Maintain one set of complete instructions at the job site.
- B. Handle, install, connect, clean, condition and adjust Products in strict accord with such instructions and in conformity with specified requirements.
 1. Should job conditions or specified requirements conflict with manufacturers' instructions, consult with ENGINEER for further instructions.
 2. Do not proceed with work without clear instructions.
- C. Perform Work in accord with manufacturers' instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.08 WARRANTY

- A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01740.

1.09 SPECIAL TOOLS

- A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations and maintenance, together with instructions for their use. Preserve and deliver to the OWNER these tools and instructions in good order no later than ten days prior to start-up of the equipment.
- B. Tools shall be furnished in steel tool chests complete with lock and duplicate keys.

1.10 SPARE PARTS

- A. Spare parts for equipment provided under Divisions 2, 11, 13, 14, 15, and 16 have been specified in the pertinent sections of the Specifications. In addition, manufacturers and suppliers may be required to provide spare parts recommended for the initial year of operation.
- B. Spare parts shall be collected and stored as required by the manufacturers in accordance with this Section. Spare parts shall be packed in cartons, properly labeled with indelible markings.
- C. An inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item shall be provided to the ENGINEER. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.
- D. Spare parts shall be delivered to the OWNER not later than ten days prior to start-up.

A.11 REASE, OIL AND FUEL

- A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The OWNER shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied under Divisions 2, 11, 13, 14, 15 and 16.
- B. Lubricants in all drives and intermediate drives of mechanical equipment shall be changed after initial break-in of the equipment, which in no event shall be any longer than three weeks of operation.
- C. Lubricants used in equipment located in process tankage (such as mixers, flocculators, etc.) shall be food-grade.

PART 2 PRODUCTS**2.01 GENERAL PRODUCT REQUIREMENTS**

- A. Provide products that comply with the Contract Documents, which are undamaged and, unless otherwise indicated, new at the time of installation.

1. Provide products, complete with accessories, trim, finish, safety guards and other devices and details needed for a complete installation and the intended use and effect.
2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

2.02 PRODUCT SELECTION PROCEDURES

A. Procedures governing product selection include the following:

1. Major Equipment listed on Schedule of Suppliers (Section 00450): Provide item circled at time of bid. Where a deductive alternate is offered at time of bid, provide item if acceptable to OWNER and ENGINEER. If alternate deduct item is not accepted, provided item circled at time of bid. If no item is circle on schedule of suppliers, provide "A" item listed. There will be no substitution of major equipment following bid opening.
2. Proprietary Specification Requirements: Where specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
3. Semi-proprietary Specification Requirements: Where Specifications name two or more products or manufacturers, provide one of the products indicated. No substitutions will be permitted.
 - a. Where products are specified by name, accompanied by the term "or equal," comply with provisions concerning "substitutions" to obtain approval for use of an unnamed product.
4. Nonproprietary Specifications: When specifications list products or manufacturers that are available and may be incorporated in the work, but do not restrict the CONTRACTOR to use of these products only, the CONTRACTOR may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of any unnamed product.
5. Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.
6. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply and are recommended for the application. Manufacturers' recommendations may be contained in product literature or by the manufacturer's certification of performance.

7. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
8. Visual Matching: Where specifications require matching a Sample, the ENGINEER's decision on whether a product matches will be final. Where no product in the specified category matches and complies with other requirements, comply with provisions concerning "substitutions" for selection of a matching product in another category.
9. Visual Selection: Where requirements include the phrase "... as selected from a manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product that complies with other specified requirements. The ENGINEER will select the color, pattern, and texture from the product line selected.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Comply with manufacturers' instructions for installation of products. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 01740

WARRANTIES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers' standard warranties on products and special warranties.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Purchase Order/Contract: General requirements relating to warranties and bonds.
- B. General closeout requirements included in Section 01700.
- C. Specific requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual Sections of Division 2 through 16.

1.03 SUBMITTALS

- A. Submit written warranties to the OWNER prior to the date fixed by the ENGINEER for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the OWNER.
- B. When a special warranty is required to be executed by the CONTRACTOR, or the CONTRACTOR and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the OWNER for approval prior to final execution.
- C. Refer to individual Sections of Divisions 2 through 16 for specific content requirements, and particular requirements for submittal of special warranties.
- D. At Final Completion compile two copies of each required warranty properly executed by the CONTRACTOR, or by the CONTRACTOR, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- E. Multiple Warranties:
 - 1. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents and sized to receive 8-1/2-in by 11-in paper.
 - 2. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the Section in which specified and the name of the product or work item.
 - 3. Provide heavy paper dividers with celluloid covered tabs for each separate warranty.

3. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address and telephone number of the installer, supplier and manufacturer.
 5. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS," the project title or name and the name, address and telephone number of the CONTRACTOR.
- F. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.04 WARRANTY REQUIREMENTS

- A. All equipment furnished and installed or supplied for this project shall be warranted by the CONTRACTOR and the equipment manufacturers for a period of one year. Warranty period shall commence on the date of Substantial Completion of the Work, or a designated portion of the Work.
- B. Equipment shall be warranted to be free from defects in workmanship, design, and materials. If any part of the equipment should fail during the warranty period, it shall be replaced and the equipment restored to service at no expense to the OWNER.
- C. The manufacturer's warranty period shall run concurrently with the CONTRACTOR's warranty or guarantee period. No exception to this provision shall be allowed. In the event that a manufacturer is unable to provide a one-year warranty commencing at the time of Substantial Completion, then the manufacturer shall provide a two-year warranty commencing at the time the equipment is delivered to the job site. This two-year warranty shall not relieve the CONTRACTOR of his/her responsibility to provide a one-year warranty commencing at the time of Substantial Completion.
- D. The form of warranty is included at the end of this Section.
- E. Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The CONTRACTOR is responsible for the cost of replacing or rebuilding defective work regardless of whether the OWNER has benefited from use of the work through a portion of its anticipated useful service life.
- F. When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- G. When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

- H. Written warranties made to the OWNER are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the OWNER can enforce such other duties, obligations, rights, or remedies.
- I. The OWNER reserves the right to reject warranties and to limit selections to Products with warranties not in conflict with requirements of the Contract Documents.
- J. The OWNER reserves the right to refuse to accept work for the project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- K. Manufacturer's disclaimers and limitations on product warranties do not relieve the CONTRACTOR of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the CONTRACTOR.

1.05 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the OWNER.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the OWNER.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION
(Form of Warranty follows)

Shoal Creek Filter Plant

OWNER: Gwinnett County Department of Public Utilities

CONTRACT NO.:

EQUIPMENT ITEM:

SECTION NO.:

SUPPLIER'S NAME:

SUPPLIER'S ADDRESS:

SUPPLIER'S REFERENCE NO.:

The undersigned guarantees that the above equipment is of good merchantable quality; free from defects in materials and workmanship; fully meets the type, quality, design and performance requirements defined in the Contract Documents for the above referenced Project; and that the equipment will in actual operation satisfactorily perform the functions for which it has been installed.

The undersigned agrees to repair, replace, or otherwise make good, any defect in materials and/or workmanship in the equipment described above which may develop within a period of (circle one of the following):

One year from the date of Substantial Completion: _____

(Insert Date of Substantial Completion)

or

Two years from the date the equipment was delivered to the job site: _____

(Insert Delivery Date)

COMPANY: _____

ADDRESS: _____

PHONE NO.: _____

BY: _____

(SEAL)

(Typewritten Name) _____

DATE: _____

SECTION 43 11 33-A**AIR SCOUR BLOWERS AND ACCESSORIES-GENERAL SPECIFICATION****PART 1 GENERAL****1.01 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment, and incidentals required to install and test, complete and ready for operation, two air scour blowers and appurtenances as shown on the Drawings and as specified herein.

1.02 RELATED WORK

- A. Field painting is included in Section 09902.
- B. Instrumentation work, except as hereinafter specified, is included in Division 13.
- C. Electrical work, except as hereinafter specified, is included in Division 26.

1.03 SUBMITTALS

- A. Copies of all materials required to establish compliance with the Specifications shall be submitted in accordance with the provisions of Section 01300 for shop drawings. Submittals shall include at least the following:
 - 1. Calculations supporting blower selection.
 - 2. Complete description of all materials.
 - 3. Certified shop and installation drawings showing all details of construction, dimensions, and anchor bolt locations.
 - 4. Descriptive literature, bulletins, and/or catalogs of the equipment.
 - 5. A complete bill of materials.
 - 6. The weight of each component.
 - 7. Description of surface preparation and shop prime painting of the equipment.
 - 8. A list of the manufacturer's recommended spare parts.
 - 9. Complete motor data.
 - 10. Noise level and vibration compliance certifications.
 - 11. Certified copies of field test reports for tests specified in Part 3.

- B. In the event it is not possible to conform with certain details of the Specifications, describe completely all non-conforming aspects.

1.04 QUALITY ASSURANCE

A. Qualifications

1. All the equipment specified under this Section shall be furnished by a single manufacturer, and shall be units of proven ability as manufactured by a competent organization that is fully experienced, reputable and qualified in the manufacture of the equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practice and methods, and shall operate satisfactorily when installed.
2. All equipment furnished under this Section shall be new and unused and shall be the standard products of manufacturers having a successful record of manufacturing and servicing similar equipment and systems as specified herein for a minimum of five (5) years.
3. These Specifications are intended to give a general description of what is required, but do not cover all details which may vary in accordance with the exact requirements of the equipment as offered. They are, however, intended to cover the furnishing, delivery, installation, field testing and field calibration of all materials and apparatus as required. Any additional equipment necessary for the proper operation of the proposed installation not specifically mentioned in these Specifications or shown on the Drawings shall be furnished and installed at no change in Contract Price or Time.

B. Services of the Manufacturer's Representative

1. The equipment manufacturer shall furnish the services of a competent and experienced factory representative who has complete knowledge of proper installation, operation and maintenance of the equipment for a period of not less than two 8-hour days (exclusive of travel time) in each of two separate visits to inspect the installed equipment, perform an initial test run, conduct final performance testing, and provide operating and maintenance instructions to the plant personnel.
2. The first visit shall be for checking and inspecting the installation of the equipment.
3. The second visit shall be to perform the initial test run, conduct final performance testing, and provide operator training.
4. At least one of the two days shall be allocated solely to the instruction of plant personnel in operation and maintenance of the equipment. This instruction period shall be scheduled at least ten days in advance with the OWNER and shall take place prior to plant start-up and acceptance by the OWNER. The final approved copies of operation and maintenance manuals must have been delivered to the ENGINEER prior to scheduling the instruction period with the OWNER.

5. The CONTRACTOR shall videotape, in a digital format, all training provided by the manufacturer's representative. The videotape(s) or other electronic media shall become the property of the OWNER.
6. If there are difficulties in operation of the equipment due to the manufacturer's fabrication or CONTRACTOR's installation, additional service shall be provided at no change in Contract Price or Time.

1.05 DESCRIPTION OF SYSTEM

- A. Two air scour blowers shall be provided, one duty and one standby. The blower assembly shall be capable of supplying air on a continuous basis at rated capacity for air backwashing of the filters. Blower operation will normally be initiated by a remote signal.
- B. A blower unloading valve (existing) associated with each blower shall open whenever the associated blower is not operating and shall automatically close at an adjustable time delay of 1 to 30 seconds after the blower motor starts in order to allow the motor to accelerate with the blower unloaded. When the blower is stopped, the unloading valve shall automatically reopen after an adjustable time delay. When the blower selector switch set to Remote, the blower shall not start unless the blower unloading valve is in the open position.
- C. An air temperature switch mounted on the discharge piping from each blower shall alarm and shut down the blower at a preset high temperature condition.
- D. Should the blower discharge become clogged or if a valve in the discharge piping is closed when the blower is started, compressed air will be relieved to the atmosphere through automatic pressure relief valves.
- E. Pressure switches mounted on the suction and discharge piping of each blower shall provide an alarm signal at a preset low suction and high discharge pressure condition.
- F. The blower, motor, and accessories shall be designed to ensure the sound pressure level does not exceed 95 dBA at a distance of three feet from any component when tested in accordance with the Compressed Air and Gas Institute PNEUROP American National Standards Institute S5.1, Test Code for Measurement of Sound from Pneumatic Equipment. The equipment shall be tested in an arrangement similar to the equipment to be furnished hereunder. The test shall include the noise from the motor. The test results shall be submitted to the ENGINEER and shall verify that the specified noise level is not exceeded by equipment actually installed.

1.06 OPERATING INSTRUCTIONS

- A. Operating and maintenance manuals shall be furnished to the ENGINEER as provided in Section 01730. The manuals shall be prepared specifically for this installation and shall include all required catalog cuts, drawings, equipment lists, descriptions, etc. that are required to instruct operating personnel unfamiliar with such equipment.

1.07 TOOLS AND SPARE PARTS

- A. One set of all special tools required for the proper servicing of all equipment supplied under these Specifications shall be packed in a suitable steel tool chest with a lock.
- B. Furnish all spare parts recommended by the manufacturer for one years' normal operation and maintenance of the equipment. These shall include as a minimum the following:
 - 1. Part numbers and quantities of each type of bearing and diagram showing where installed.
 - 2. Two sets of all gaskets and O-rings.
 - 3. Two complete sets of drive V-belts.
 - 4. Any additional parts called out in subsequent Section 43 11 33-B
- C. All spare parts shall be suitably packaged or boxed for long term storage. Each part shall be clearly identified by part description, part number and any other pertinent data.

1.08 POWER SUPPLY

- A. All motors shall be designed for operation on a power supply as specified in Section 26 20 00 Power factor correction capacitors conforming to the requirements of Section 26 20 00 shall be furnished under this Section.

PART 2 PRODUCTS

2.01 BLOWER AND DRIVE

- A. The air scour blowers and appurtenances shall include, but not limited to, the following items to be supplied by the blower manufacturer:
 - 1. Two rotary positive displacement blowers (driven by electric motors through V-Belt drives);
 - 2. One blow-off silencer;
 - 3. Two check valves;
 - 4. Two high temperature switches;

5. Two high pressure switches;
6. Two low pressure switches;
7. Four pressure relief valves, two for each blower discharge;
8. Inlet and discharge pressure and vacuum gauges;
9. Flexible pipe connectors as required; and
10. Other appurtenances as required by the blower manufacturer.

B. Design Requirements

Blower Location:	Blower Room at Elevation of 1079.00
Inlet Location:	Outside near Filter Pipe Gallery Entrance
Blower Capacity:	3010 scfm
Discharge Pressure:	8.5 psi
Operations:	Intermittent for 1-5 minutes each time for up to 24 times per day
Inlet Temperature:	0-100°F
Blower Speed:	1800 RPM Maximum
Maximum Gear Tip Speed	4,200 fpm
Motor:	200 HP TEFC (max. 1,800 rpm) (1.15 S.F.), Class B, 40°C Ambient, High Efficiency, with power factor correction capacitors
Drive:	V-Belt
Controls:	See Paragraph 1.05
Alarms/Shutdowns:	High Air Discharge Temperature High Air Discharge Pressure Low Air Suction Pressure

- C. The blowers shall deliver oil-free air. The blowers and motors shall be mounted on the existing fabricated steel base designed for ease of changing sheaves and V-belts. The units shall be designed in such a manner, that in the future the compressor housing may be sound insulated with a removable cover, without impairing the operation of the unit.
- D. The blowers shall be a positive displacement rotary blowers which employ two or three impellers to pressurize a trapped volume of air at a controlled rate prior to exposing it to a discharge pressure.
- E. Lubrication shall be provided by a splash lubrication system for gears and bearings.
- F. The blowers shall be V-belt driven by an electric motor mounted on a common base. V-belt drives shall be Dodge Sealed-Life II V-belts with matching taper lock sheaves and taper lock bushings.

- G. The blower casings shall be of one piece construction with separate headplates, and shall be made of close-grained cast iron suitably ribbed to prevent distortion under the specified operating conditions. Blowers shall have a maximum pressure rise rating of 15.0 psi.
- H. The impellers shall be ductile iron, shall be the straight, two or three lobe involute type and shall operate without rubbing or liquid seals or lubrication. The impellers shall be positively timed by a pair of accurately machined heat-treated alloy steel, spur tooth timing gears. The shafts shall be alloy steel forgings and shall be flanged and attached to each end of each impeller by high tensile strength cap screws. Each impeller and shaft assembly shall be supported by double-row spherical roller bearings sized for a minimum 250,000 hours B-10 life.
- I. The blower motors shall be as specified in Section 26 20 00. Provide internal thermal temperature switches.
- J. The blowers shall be:
 - 1. Model 1016 RAS-J as manufactured by Roots-Dresser
 - 2. PD Blower Model UBI 250L
 - 3. SutorBilt Model 1016- 8000Q by Gardner-Denver.
 - 4. or OWNER approved equal.

2.03 ACCESSORIES

- A. All accessories shall be suitable for use at the elevated temperatures, pressures and other conditions of the blowers discharge flow.
- B. Flexible pipe connectors shall be rubber spool type with flanged ends equal to Super-Flex MFNC with EPDM cover and liner by Mason Industries, Inc.
- C. A vacuum gauge calibrated 30 to 0 inches of Hg shall be provided on the suction side of each blower and a pressure gauge calibrated 0-15 psig shall be provided on the discharge side. All gauges shall be equal to Ashcroft 1009, stainless steel case, with 3-1/2-inch dial face. A suitable tee handled corporation cock shall be installed between each gauge and connection to the air piping.
- D. Two pressure relief valves shall be mounted on each blower discharge as shown on the Drawings. Set pressure shall be 10-psig. The valves shall be Kunkle Figure 337-3, spring type with cast iron and bronze trim.
- E. Safety devices and controls as recommended by the blower manufacturer shall be provided, including an OSHA approved mild steel fabricated guard with epoxy primer and enamel top coat for the V-belt drive. Existing OSHA Guard may be re-used if no modifications are necessary.
- F. A discharge check valve shall be provided on the blower discharge piping. Check valves shall be of the wafer type with a cast iron body, stainless steel pin and spring, and two semi-circular aluminum bronze plates. The plates are spring loaded and

have Buna-N seal along the seating surface. The valves shall be designed to fit between two ANSI-125 flanges. The check valves shall be as manufactured by Techno Check, or approved equal. NOTE: These new check valves shall be installed in place of the existing ones.

- G. High discharge air temperature switches shall be mounted in the discharge piping of each blower mounted in a thermostat well and wired to the blower control panel.
- H. A high discharge pressure switch shall be mounted in the discharge piping of each blower and wired to the blower control panel.
- I. A low suction pressure switch shall be mounted in the discharge piping of each blower and wired to the blower control panel.
- J. Lagging shall be applied to all discharge piping within the blower room and operations center.

2.04 SURFACE PREPARATION AND SHOP PAINTING

- A. All surfaces shall be prepared and shop primed as part of the work of this Section (for those items not furnished with factory finish enamel paint). Surface preparation and shop painting procedures shall be outlined in the equipment submittal.

PART 3 EXECUTION

3.01 DELIVERY AND STORAGE

- A. Attention is directed to Section 01600.

3.02 INSTALLATION

- A. The filter air scour blowers and appurtenances shall be installed and piped as shown on the Drawings. Factory assembled or package arrangements will not be accepted. Installation shall include the furnishing and installation of all supports and bracing as may be required to support the blowers, associated equipment and piping, and to prevent any excessive or harmful vibration or movement of the equipment or piping resulting from the operation of the system. It is the intent of this project to re-use the existing pipe, mounting frame and silencers. Any proposed blower and motor shall fit the existing frame, silencer spacing and horizontal blower configuration.
- B. Installation shall be in strict accordance with the manufacturer's recommendations. This scope shall include two (2) mobilizations for installation, both of which will be separate from any mobilizations for Testing and Inspections. The first installation 4-day mobilization (Monday thru Thursday) will be followed by a 3day (Friday thru Sunday) run period. If said unit is accepted by owner after the 3-day period, 2nd install-mobilization may commence.
- C. All necessary Type 316 stainless steel anchor bolts, bolt sleeves, plates, nuts and washers shall be furnished and installed.

- D. All necessary lubricants shall be provided by CONTRACTOR during installation.

3.03 FIELD PAINTING

- A. Field painting shall only be for touchup of factory coatings. The primer shall be compatible with the finished paint. All appurtenances should be factory coated. Field touch-up is allowed.

3.04 FIELD INSPECTION AND TESTING

- A. After the installation of all equipment has been completed and approved by the manufacturer's representative and the equipment operated for a sufficient period to make all desirable corrections and adjustments, the air scour blowers shall be given field tests in the presence of the ENGINEER to determine that operation is satisfactory and in compliance with the Specifications and that all safety and protective devices are in proper adjustment and that the automatic bypass valve operates correctly. During this test period, the blowers shall be operated for not less than two (2) hours each, during which time readings of all essential data shall be taken and recorded at 30 minute intervals. Bypass valve and related piping is existing, and testing of it shall be only for owners informational purposes.
- B. If either unit does not meet the Specifications, corrective measures shall be taken or the unit(s) shall be removed and replaced with a unit which satisfies the conditions specified. Each blower shall be successfully operated for a continuous 8-hour operating period, beginning at filter start-up, to establish acceptance.
- C. The components of each lubricating system shall be completely tested in the presence of the ENGINEER. All component parts which are damaged as a result of testing or which fail to meet the requirements of these Specifications shall be replaced, reinstalled and retested at no additional cost to the OWNER.

END OF SECTION

11276-B**BLOWERS – SPECIFIC REQUIREMENTS****1.0 Site Conditions:**

System Design: 3010 ACFM @ 8.5 PSIG

Blower Orientation: Horizontal (Required to match existing)

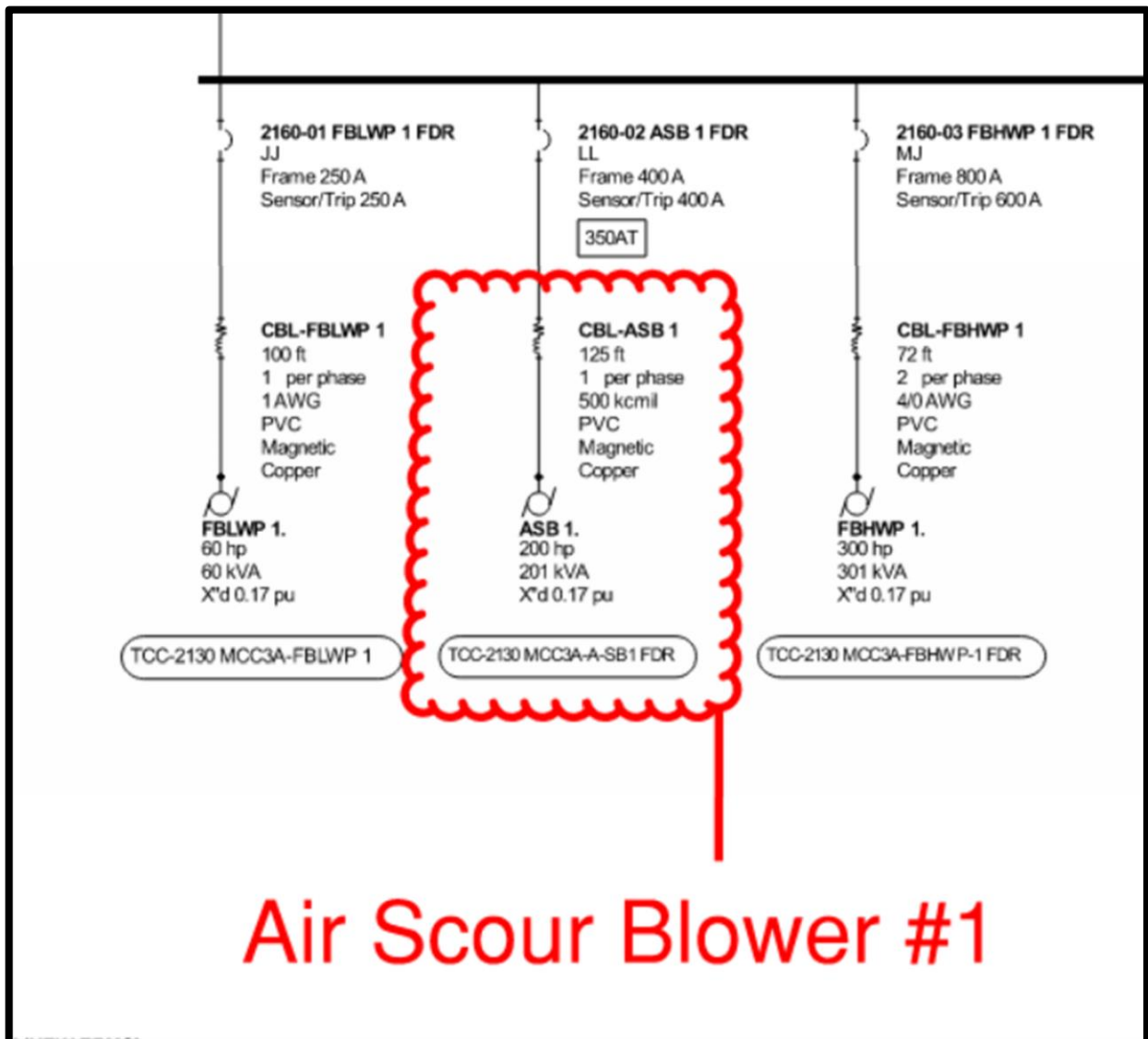
Mounting: Match existing anchor pattern of Roots 1016 J

Inlet and Outlet Silencers: Existing to be reused.

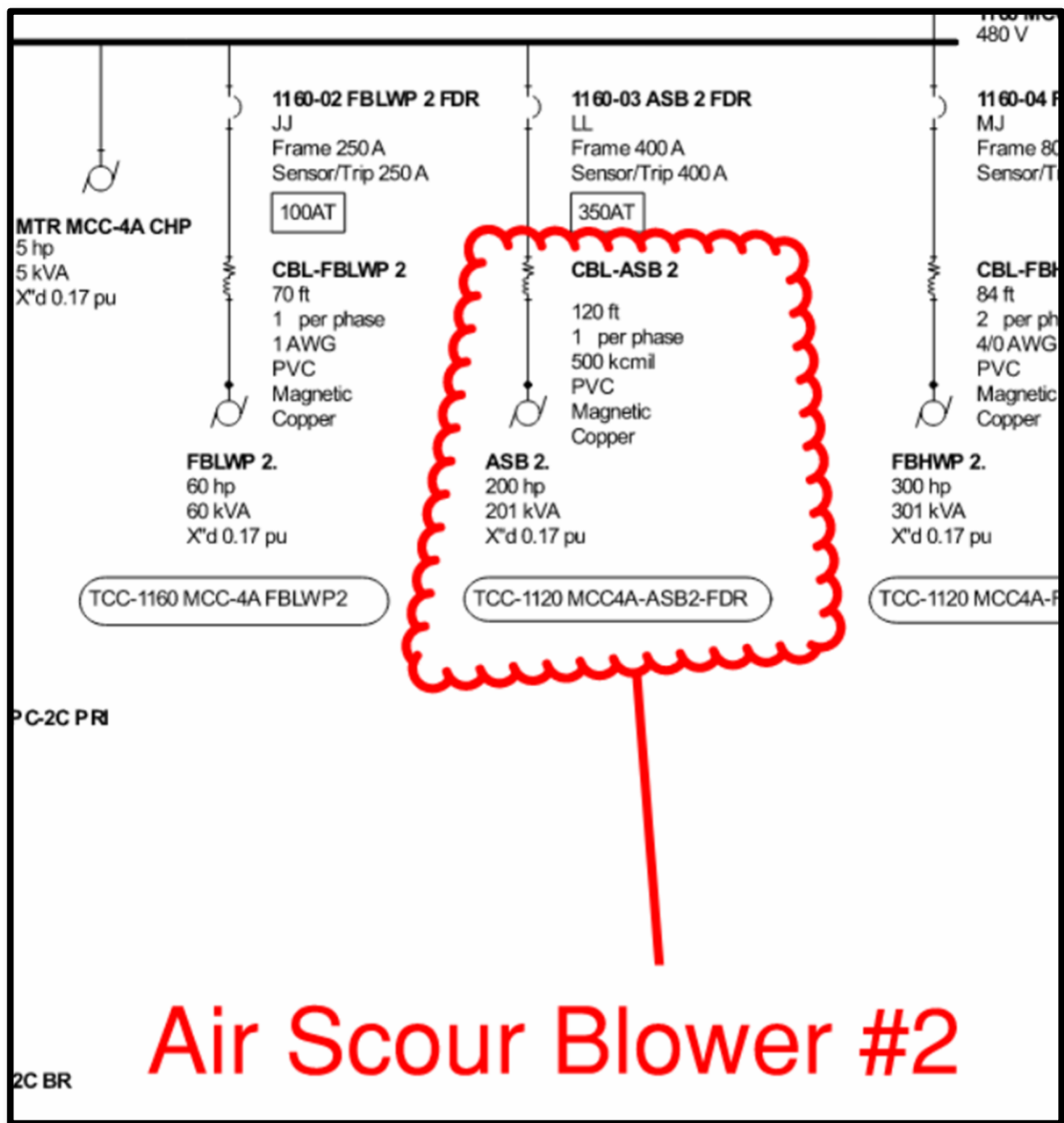
1.1 Existing Electrical Service:

New Blowers shall meet design system flow and pressure listed above without exceeding rated load on existing breakers and conductors feeding existing motors.

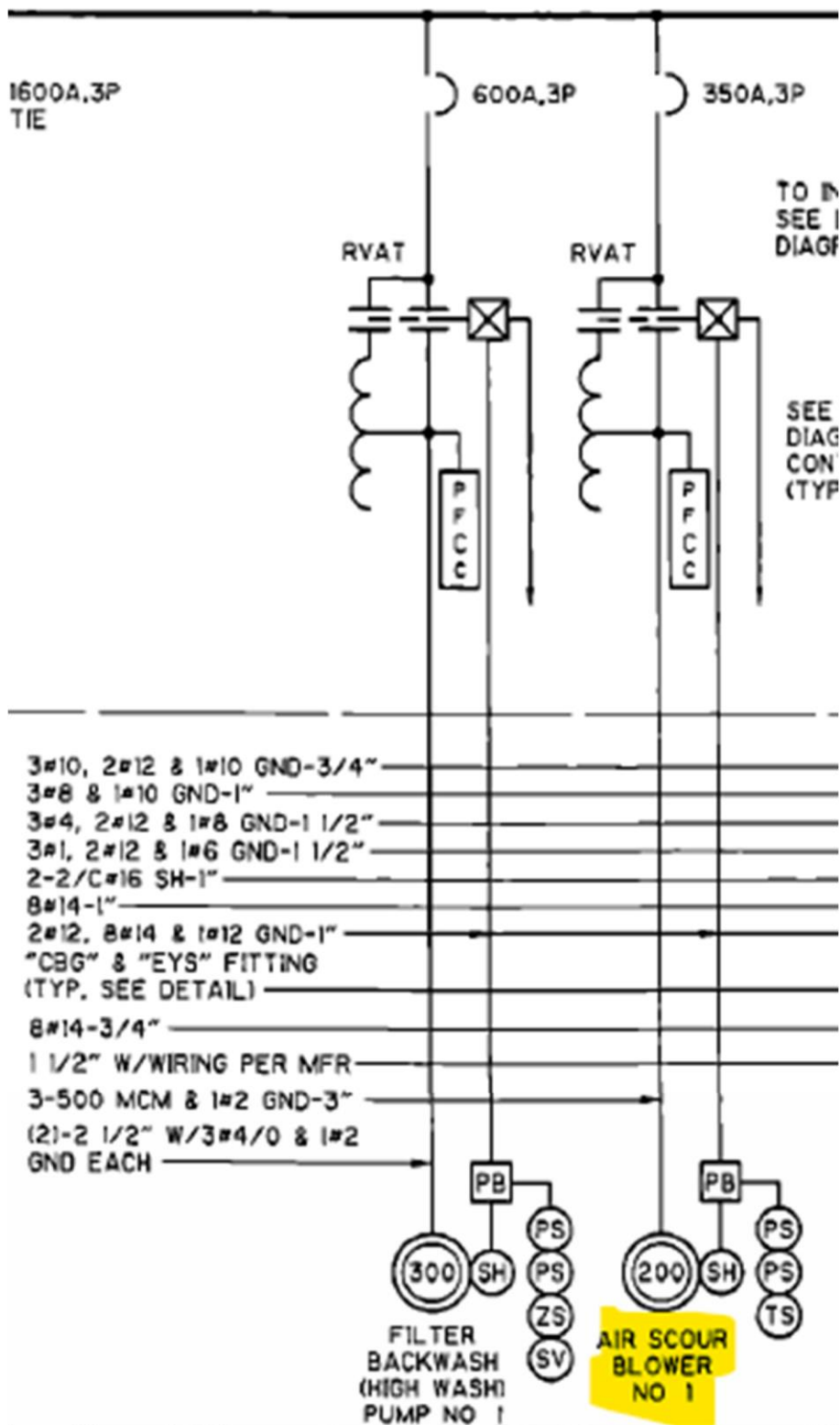
A. Air Scour Blower #1:



B. Air Scour Blower #2:

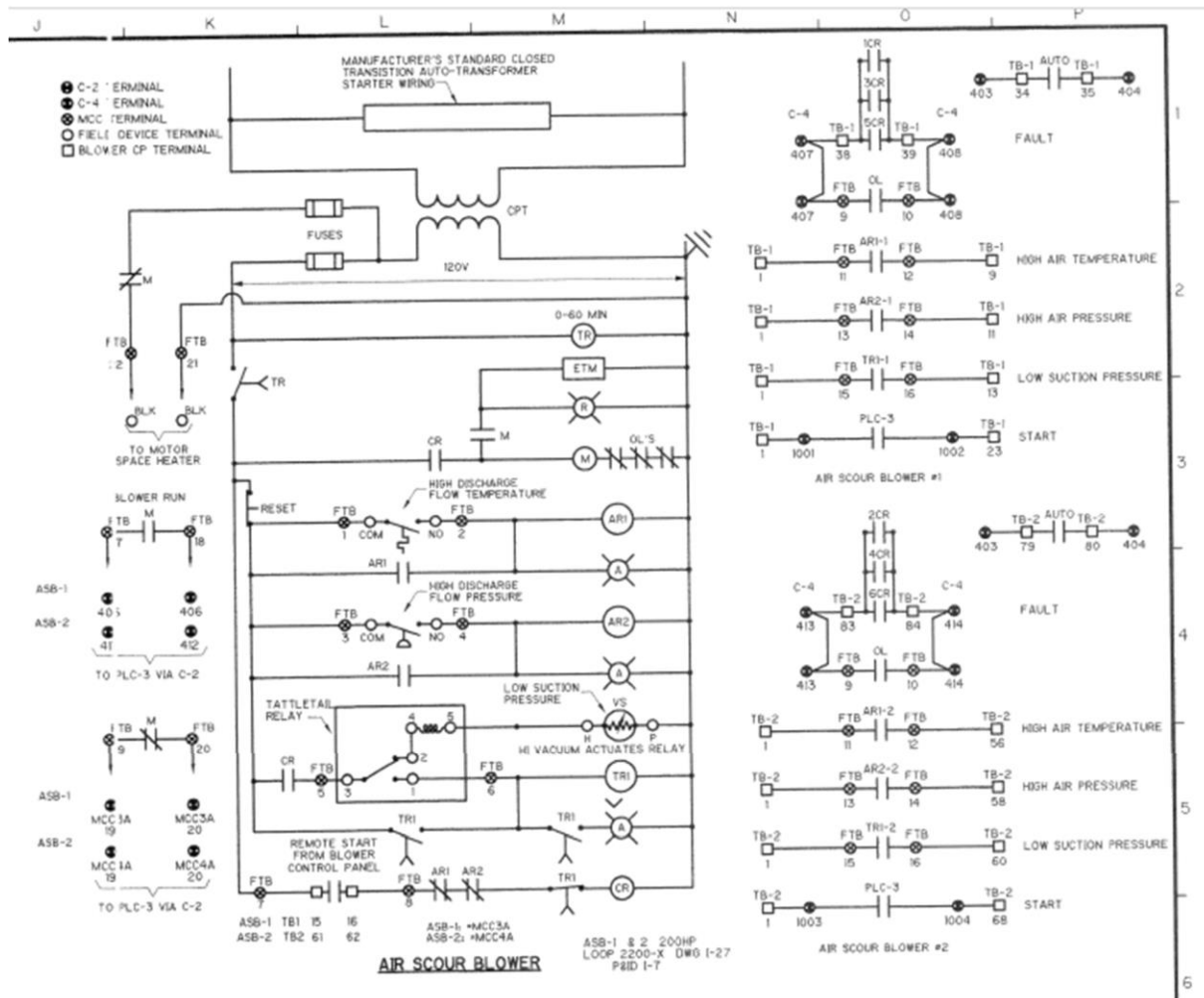


C. Electrical One-Line Drawing (typical of 2):



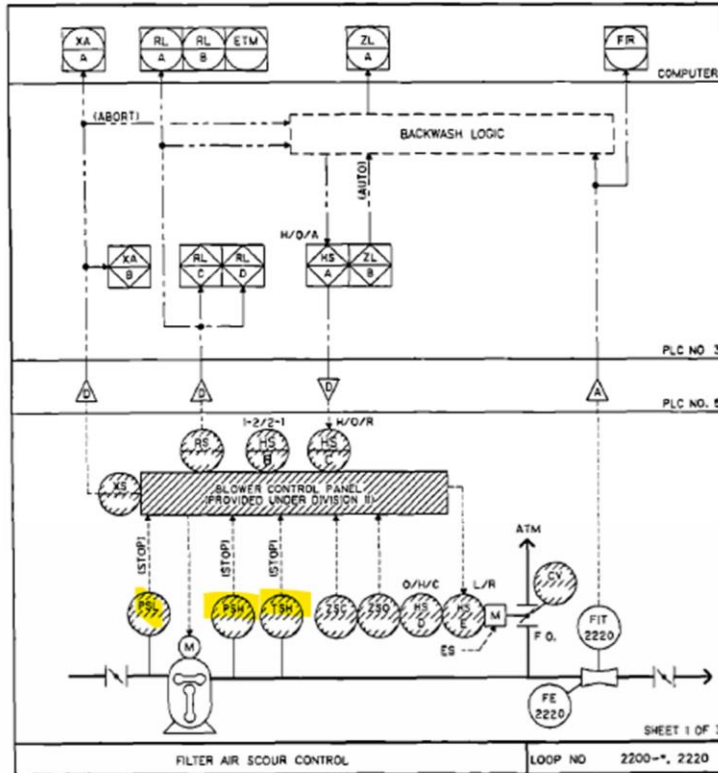
D. Control Schematic:

NOTE: See Ancillary Components (instrumentation) provided with Blower and Motor for each unit.



E. Air Scour Loop Diagram:

NOTE: Provided for reference as it pertains to ancillary components in scope of supply.



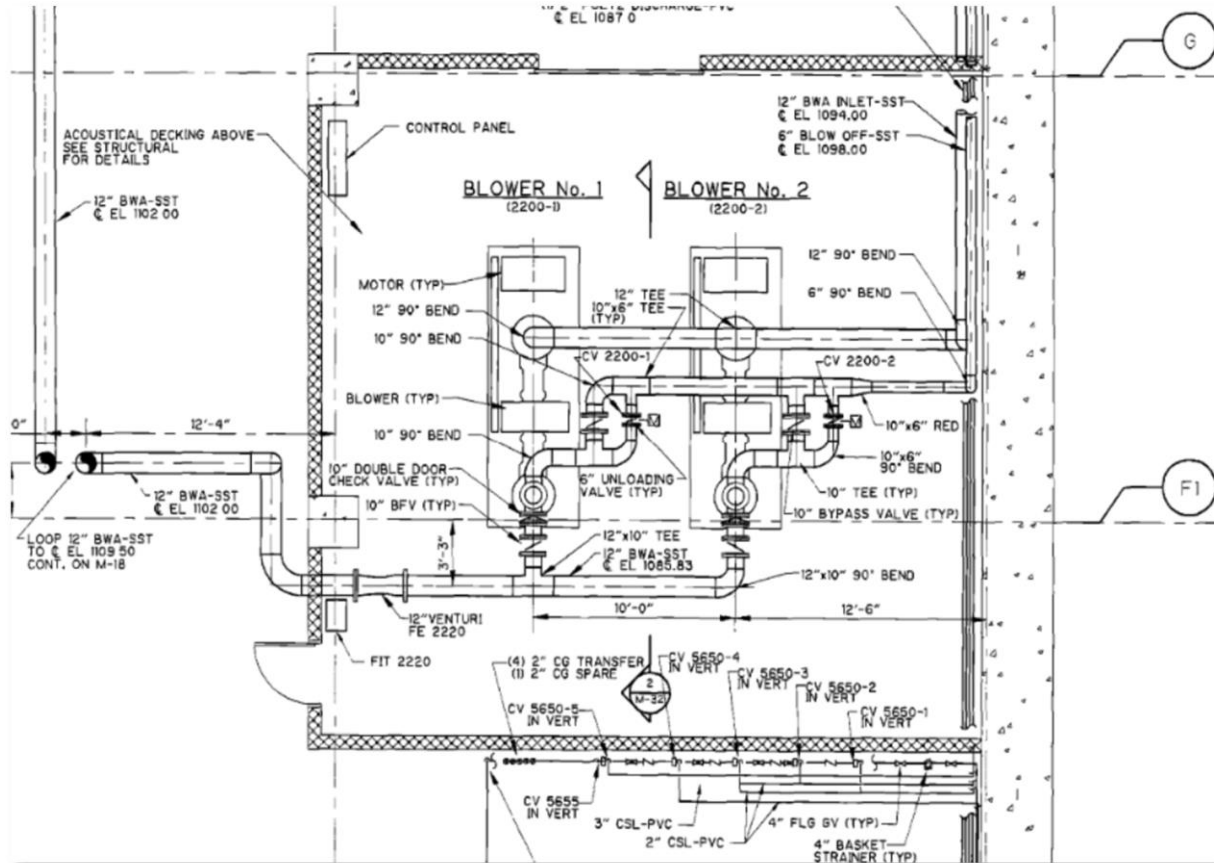
ITEM	DESCRIPTION	TYPE	CRITERIA	NAME TAG/SERVICE	QTY
FE / FIT	FLOW ELEMENT / INDICATING TRANSMITTER	VENTURI METER	METER SIZE: 12" RANGE: 0-3000 CFM BETA: 0.5	FILTER AIR SCOUR FLOW	1
CV	CONTROL VALVE	BUTTERFLY PROVIDED UNDER DIVISION IS	FAIL OPEN	FILTER AIR SCOUR BLOWER NO. * FLOW CONTROL VALVE	2
HS D	HAND SWITCH	PROVIDED WITH ACTUATOR	3-POSITION SWITCH OPEN/HOLD/CLOSE	FILTER AIR SCOUR BLOWER NO. * FLOW CONTROL VALVE CONTROL	2
HS E	HAND SWITCH	PROVIDED WITH ACTUATOR	2-POSITION SWITCH LOCAL/REMOTE	FILTER AIR SCOUR BLOWER NO. * FLOW CONTROL VALVE CONTROL	2
ZSO	POSITION SWITCH OPEN	PROXIMITY SWITCH PROVIDED UNDER DIVISION IS	FULLY OPENED POSITION	FILTER AIR SCOUR BLOWER NO. * FLOW CONTROL VALVE OPEN	2
ZSC	POSITION SWITCH CLOSED	PROXIMITY SWITCH PROVIDED UNDER DIVISION IS	FULLY CLOSED POSITION	FILTER AIR SCOUR BLOWER NO. * FLOW CONTROL VALVE CLOSED	2
TSH	TEMPERATURE SWITCH HIGH	PROVIDED UNDER DIVISION II		FILTER AIR SCOUR BLOWER NO. * HIGH DISCHARGE FLOW TEMPERATURE	2
PSH	PRESSURE SWITCH HIGH	PROVIDED UNDER DIVISION II		FILTER AIR SCOUR BLOWER NO. * HIGH DISCHARGE FLOW PRESSURE	2
PSL	PRESSURE SWITCH LOW	PROVIDED UNDER DIVISION II		FILTER AIR SCOUR BLOWER NO. * LOW SUCTION PRESSURE	2
XS	TROUBLE SWITCH	PROVIDED UNDER DIVISION II		FILTER AIR SCOUR BLOWER NO. * FAILURE	2
XA B	TROUBLE ALARM	INITIATED THRU SOFTWARE		FILTER AIR SCOUR BLOWER NO. * FAILURE	12
XA A	TROUBLE ALARM	INITIATED THRU SOFTWARE		FILTER AIR SCOUR BLOWER NO. * FAILURE	2
AS	RUN SWITCH	PROVIDED UNDER DIVISION II		FILTER AIR SCOUR BLOWER NO. * RUN STATUS	2
RL CD	RUN LIGHT	INITIATED THRU SOFTWARE	RED - RUN GREEN - OFF	FILTER AIR SCOUR BLOWER NO. * RUN STATUS	24

SHEET 2 OF 3

FILTER AIR SCOUR CONTROL, LOOP NO 2200-*, 2220

1.2 Layout:

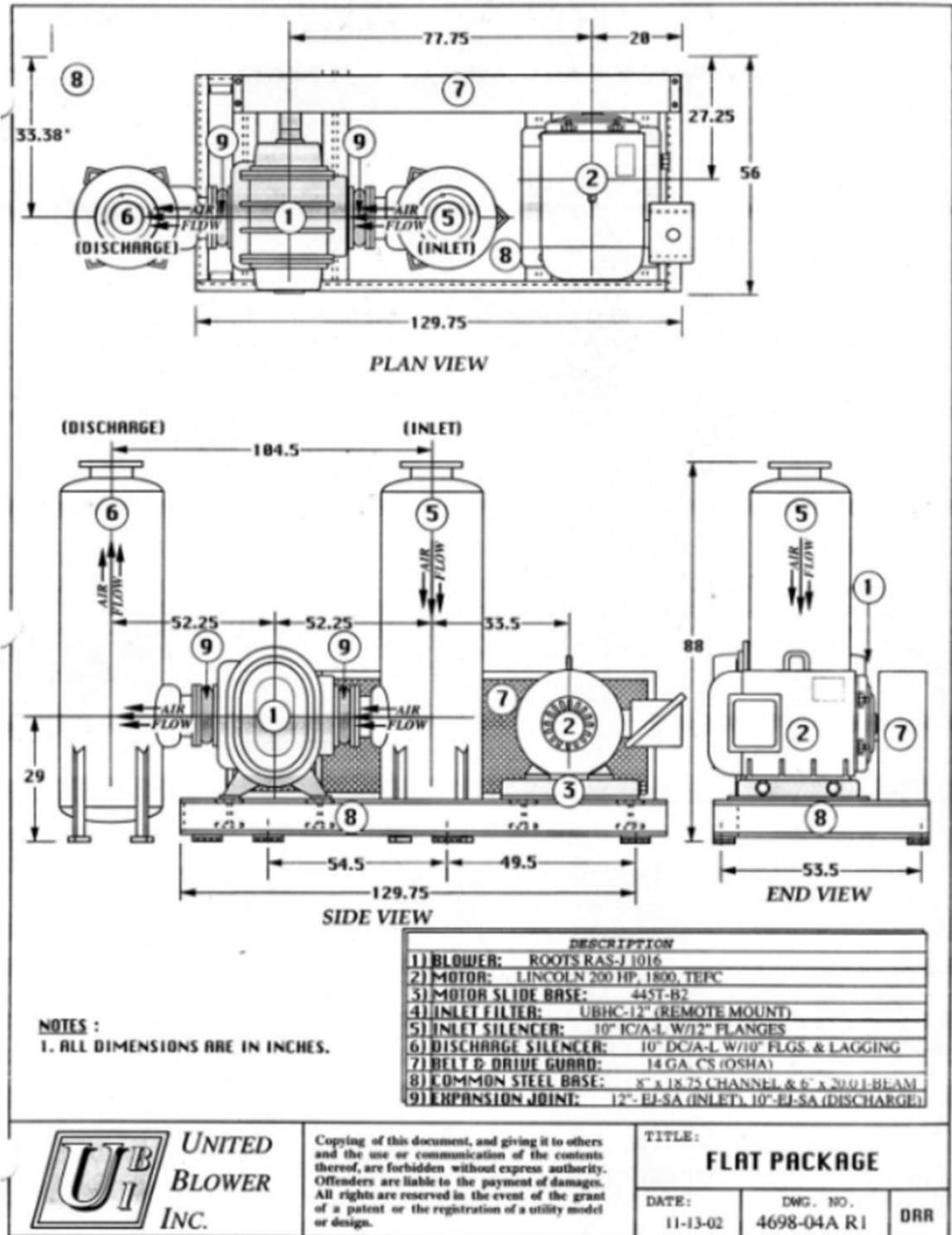
- 1.2.1 Existing Blower Frames are anchored to the concrete housekeeping pads in the basement of the Filter Building.



1.3 Skid Layout

Existing Blower Skids dimensions are as follows:

NOTE: New Blower and Motor shall fit this skid without modifications required.
Any adapter plates or frames, etc., shall be included in this proposal.



1.4 Existing Blower Performance Data:

BLOWER PERFORMANCE DATA		BLOWER-1 & BLOWER-2	
BLOWER MANUFACTURER:	ROOTS		
BLOWER MODEL NUMBER:	RAS-J 1016		
GAS HANDLED (MEDIA):	AIR		
ELEVATION AT SITE (FEET ABOVE SEA LEVEL):	1079		
BAROMETRIC PRESSURE AT INLET FLANGE (PSIA):	14.13		
MINIMUM INLET TEMPERATURE AT INLET FLANGE (°F):	0		
MAXIMUM INLET TEMPERATURE AT INLET FLANGE (°F):	100		
VAPOR PRESSURE AT MAXIMUM INLET TEMPERATURE (PSIA):	0.9503		
RELATIVE HUMIDITY AT INLET FLANGE (%):	36		
INLET VOLUME IN SCFM (STANDARD CONDITIONS):	2646		
INLET VOLUME IN ACFM (SITE CONDITIONS):	3010		
DISCHARGE PRESSURE AT ACFM (PSIG):	8.50		
REQUIRED POWER AT BLOWER SHAFT (BHP AT ACFM):	140.0		
BLOWER SPEED AT DESIGN ACFM (RPM):	1538		
BLOWER SPEED RANGE (RPM):	1200	TO	1800
PERCENT OF BLOWER SPEED RANGE AT DESIGN ACFM (%):	56		
BLOWER GEAR DIAMETER (INCHES):	10.00		
BLOWER GEAR TIP SPEED AT DESIGN ACFM (FPM):	4030		
DISCHARGE TEMPERATURE AT DESIGN ACFM (°F):	190		
NOISE LEVEL AT DESIGN ACFM (dBA):	* 93.8		
(3 FEET FREE FIELD CONDITIONS)			
BLOWER WEIGHT (LBS.):	2400		
BLOWER CONNECTIONS (INCHES):	INLET —	12.0 "	FLANGE
	DISCHARGE —	10.0 "	FLANGE

* ESTIMATED NOISE LEVEL BASED ON PREVIOUS TEST DATA ON SIMILAR EQUIPMENT.

TITLE:		
ROOTS		
RAS-J 1016		
DATE:	DWG. NO.	CBD
8/9/02	4698 —01	

1.5 Existing Blower Bill of Materials:

MANUFACTURERS LIST

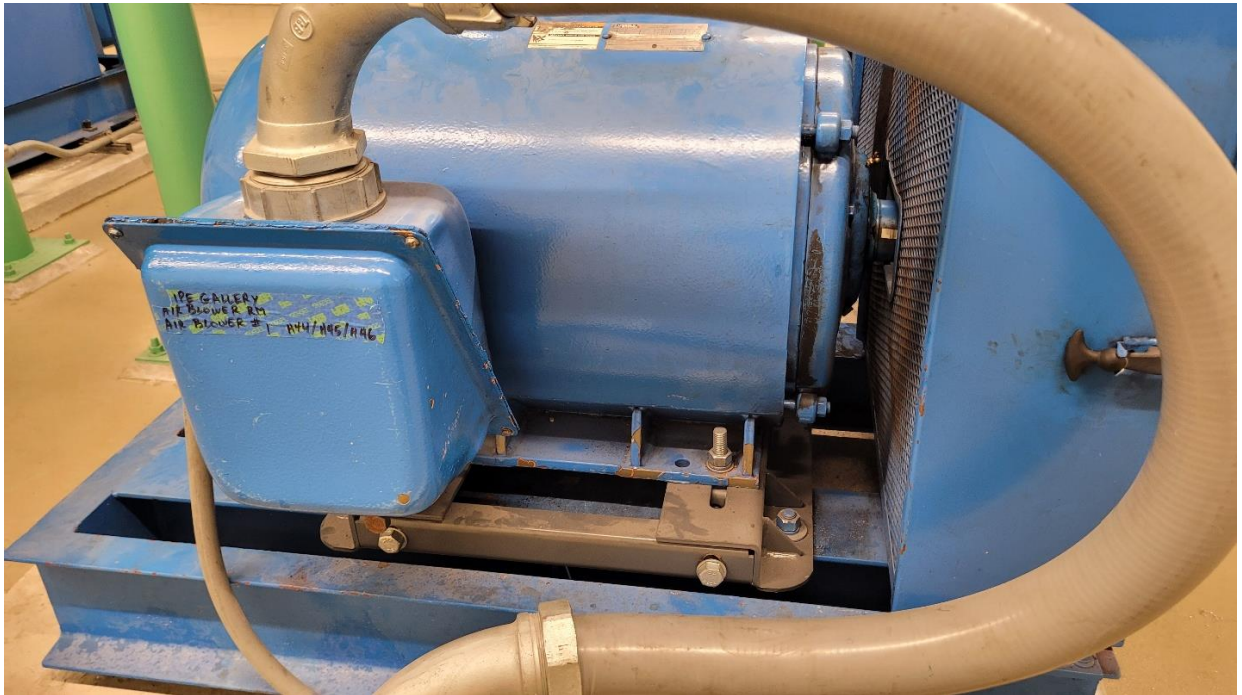
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ITEM	QTY	DESCRIPTION	MANUFACTURER	MODEL/STYLE	DWG#
1	2	BLOWER	BOOTS	1016 RAS-J (12/10" FLG'D)	4698 - 01
2	2	MOTOR	LINCOLN MOTORS	2" EI INP, 1800 RPM, 7EFC 4LMI 3551	4698 - 02
3	2	P.F.C.C.	ASEA	40 KVAR	4698 - 03
4	2	BASE	UBI	8" x 18.75 CHANNEL & 6" x 20.0 I-BEAM	4698 - 04
5	2	GUARD	UBI	14 GA. CRS (OSHA)	4698 - 05
6	2	DRIVE CONNECTION	MASDA	5VX SYSTEM	4698 - 06
7	2	INLET FILTER	UBI	MeHC-12"	4698 - 07
8	2	INLET SILENCER	UBI	IC/A-L 10" W/12" FLGS., 6" LAGGING	4698 - 08
9	2	DISCHARGE SILENCER	UBI	DC/A-L 10" WC 0" FLGS., LEGS 6" LAGGING	4698 - 09
10	1	BLOW-OUT SILENCER	UBI	AO/UFO 10" W/12" FLGS.	Hess - 10
11	4	RECEIVER VALVE	THURLE	FIG. 337-3" SET @ 9.5 PSI	4698 - 11
12	2	CHECK VALVE	TOMN	CV0100-10"	4008 - 12
13	2	BUTTERFLY VALVE	TOZEN	BVL1000-D 12" W/CHAIN WHEEL OPER.	4698 - 13
	2	BUTTERFLY VALVE	TOZEN	BVL1000-B 10" W/CHAIN WHEEL OPER.	4698 - 13
14	2	BLOW-OFF VALVE	BRAY	SERIES 30—ISO - 6"	4698 - 14
	2	ELECTRIC ACTUATOR	BRAY	570-P081 WITH HEATER	4698 - 14
15	2	EXPANSION JOINT	TOZEN	AIISM1D/10" EPDM	4698 - 15
	2	EXPANSION JOINT	TOZEN	AMSE3t Z, 2" EPDM	4698 - 15
16	2	TEMP. SENS. GAGE/GE	MARSH	SERIES "G" (0-30" WC)	4698 - 16
17	2	PRESSURE GAUGE	PRECISION	TYPE Z01 L (0-11 PSI)	4608 - 17
18	2	TEMP. SENS. GAGE	MURPHY	AZ5PEF-11 t0—15 PSI	4698 - 18
19	2	DISCHARGE TEMP. SENS. GAGE	PRECISION	B5A4-MM, BI—METAL ISO°—300°F	4698 - 19
20	2	TEMP. SWITCH/GAGE	MURPHY	A25TEF-350-12-1/2	4698 - 20
21	2	* SWITCH ENCLOSURE	TECH CONTROLS	125-40G NEMA 4X	4698 - 21
22	2 SETS	WEAR PROTECTIVE FILLS	UBI	1" NEOCON 6" x 4" UB WEB SET	4698 - 22
23	1 LOT	SPARE PARTS	UBI	SEE LIST	4648 - 23
24	1 LOT	PAINT (RED PRIMER)	TNEMEC	SERIES 37H CHEM-PRIME H.S.	4698 - 24
		PAINT (SAFETY BLUE)	TNEMEC	SERIES 74 POLYURETHANE	4698 - 24

* SWITCH ENCLOSURE FOR ITEMS 18 & 20.

1.6 Existing Blower Photos:

a. Typical Conduit Feed to motor junction box.



b. Motor end view of typical skid:





c. Blower end view of typical skid:





1.7 Ancillary Components – Blower:

- A. The following ancillary components shall be provided with the new Blowers for each skid:
1. Expansion Joints:
 - a. Quantity: Two per skid, 4 total
 - b. Inlet and Outlet Single Bellows Expansion Joint with Stainless Steel Flanges Rated for System Pressure. Bolt Pattern and lay length to accommodate the existing silencers and new blower.
 - c. Tozen AMSE210/10" (EPDM) and AMSE212/12" (EPDM), or as required to fit silencers to blower.
 - d. Or Owner Approved Equal.
 2. Blower Sheave
 - a. Quantity: One per skid, 2 total. (See Motor Ancillary Components for additional motor Sheave)
 - b. Shall be provided with blower. Coordinate motor alignment, shaft size/length and belt type.
 3. Drive Belt
 - a. Quantity: 1 per skid, 2 total.
 - b. Maska 5VX System (Coordinate with Sheaves)
 - c. Or Owner Approved Equal.
 4. Vacuum Gauge
 - a. Quantity: 1 per skid, 2 total.
 - b. Marsh Series G (0-30" W.C.)
 - c. Or Owner Approved Equal.
 5. Pressure Gauge
 - a. Quantity: 1 per skid, 2 total.

- b. Precision Type 201L (0-15PSI)
- c. Or Owner Approved Equal.
- 6. Discharge Temp/Gauge
 - a. Precision B5A4-MM, Bi-Metal (50F-300F)
 - b. Or Owner Approved Equal.
- 7. Oil Level Sight Glass/Water Separator on Drain.
 - a. McMaster Carr # 5729T86
 - b. Or Owner Approved Equal.
- 8. Oil Level Sight Glass on Fill.
- 9. Specialty Tools
 - a. As required to maintain the Blower

1.8 Ancillary Components – Motor:

- 1.8.1 The following components shall be provided with the new Motors for each skid:
 - 1. Motor Sheave
 - a. Quantity: 1 per motor, 2 total
 - b. Vendor selected to match that of Blower, coordinate belt type/size/quantity.
 - 2. Motor Frame
 - a. Quantity 1 per motor, 2 total
 - b. Vendor selected to match base frame of skid to motor. Shall be adjustable, and lockable in place with Jam Nuts.

1.9 Spare Parts:

- 1. Drive Belts
 - a. Quantity: 6 sets
- 2. Blower Shaft Seals
 - a. Quantity: 2 Sets

3. Blower Main Seals
 - a. Quantity: 2 Sets
4. Blower Bearings
 - a. Quantity: 2 Sets
5. Inboard Bearings
 - a. Quantity: 2 Sets
6. Steel Tool Box
 - a. Quantity: 1 containing above Seals, Bearing and any special tools necessary for maintaining Blowers or Motors.

2.0 Technical Documents

2.1 Submittals

1. Submit equipment cut sheets and literature as per Division 1 .
 - a. Operation and Maintenance Manuals
- 2.1.1 Submit electronic copy of Operation and Maintenance Manual as per Division 1.

2.0 Trilobe Style Blower:

A. Description of Equipment: Trilobe with Pulse Control Channels

1. Housing

- a. Casing shall be made of high-grade, close-grained grey cast iron, (ASTM 48 No. 35) annealed for stress relief and ribbed to prevent distortion. The casing shall be of one-piece construction for positive bearing alignment, with separate head plates for easy access, Casing shall have two cast-in ports to provide "pulsation control". Casing has flanged inlet and discharge connections. Screwed connections will not be acceptable. Casing integrity is tested @35PSIG.
- b. Both end plates shall be bolted and pinned to the casing. End plates as an integral part of the casing will not be acceptable. Bearing fits shall be precision machined to ensure accurate positioning of the rotors in the casing. Materials of construction shall be high grade, close grained grey cast iron.
- c. End covers shall be bolted to the end plates. Oversized oil sight glasses shall be provided on both sides of each cover. Materials of construction shall be high grade, close grained cast iron, or aluminum.

2. Rotors and Shafts

- a. The rotors shall be of the straight, three-lobe involute type and shall operate without rubbing, liquid seals or lubrication. Two lobe rotors will not be acceptable.
- b. Each rotor and shaft shall be ductile iron (ASTM A536, 65-45-12), integrally cast, and shall be accurately machined and ground to tolerance. The complete rotor assembly shall be dynamically balanced, following ISO 1940/ANSI S2.19 G2.5. Rotor cavities shall be plugged to prevent imbalance due to contaminants.

3. Timing Gears

- a. Both rotors shall be positively timed by a pair of accurately machined, heat treated ground alloy steel, helical tooth timing gears (20CrMnTi). To increase gear life and reduce noise, the use of spur gears is NOT acceptable. The timing gears shall be mounted on tapered shafts to provide positive locking of gears and shaft. Gears shall meet or exceed AGMA 12 in quality and carry a minimum of 1.70 Service Factor.
- b. Connections shall be provided for a hydraulic pump for expansion to adjust and/or remove gears.

4. Bearings

- a. Each blower shaft shall be supported by cylindrical roller or ball bearings sized for a minimum of 100,000 hours B-10 Life, at design speed and maximum radial and thrust load conditions.
- b. Drive shaft bearing shall be sized for an overhung V-Belt drive maximum continuous operating load.
- c. The bearing housing shall have a retainer providing positive containment of the bearings. Ground gear spacers shall maintain permanent rotor clearances withing the blower casing.

5. Seals and Lubrication

- a. Labyrinth type cast iron split elastic rotary piston ring shaft air and oil seals shall be provided at the point where the shaft passes through the end -plate. Lip type oil seals in the end-plate are NOT acceptable. Provisions shall be made to vent the rotor side of the oil to the atmosphere to eliminate carryover of lubricant into the air stream.
- b. The timing gears and bearings shall be splash oil lubricated from oil slingers mounted on the drive shaft and dipping in oil. Grease lubricated bearings are not acceptable.

B. Base/Discharge Silencer Combination

1. Base material is 3/8"-5/8" thick steel pipe, depending on the blower and motor size and weight. Internal construction provides pulsation reduction through the design principle of noise wave cancelation. End plated and reinforcing/supporting members are also 3/8"-5/8" plate.
2. Blower is directly mounted on discharge silencers inlet flange. Motor is mounted on pivoting steel channel supports. Two (2) adjustable steel springs (to fine tune belt tension) and motor weight provide for automatic belt tensioning.
2. No fibrous materials can be in contact with the air stream. Provide four (4) vibration isolation pads located under the base channel to reduce overall vibration. Provide six (6) vibration pads for 125hp and larger packages.
3. Blower and motor are to be mounted on their supports to provide near perfect belt alignment.

C. Configuration:

1. This application requires horizontal configuration.
2. Existing Frame and Inlet/Outlet Silencers will be re-utilized in this project.

D. Manufacturer:

- a. PD Blower Model UBI 250L
- b. Owner approved equal

3.0 Two Lobe Blower:

- A. Design: Unit shall meter backflow and channel air pressure in the direction of impeller rotation.
- B. Manufacturer:
 1. Roots RAS – Frame Size J1016
 2. Owner approved equal
- C. Configuration: This application requires horizontal configuration. Existing Frame and Inlet/Outlet Silencers will be re-utilized in this project.
- D. Cylinders and Head Plates: To be machined from grey iron, with cast ribs for improved strength and heat transfer.
- E. Impellers: Shall be made of ductile iron with a tensile strength of 60,000psi. Impellers shall be statically and dynamically balanced.

- E. Shafts: Shall be alloy steel forged. Flanges shall be connected to the impeller bodies with high tensile socket head cap screws. Labyrinth Seals shall be used where the shaft passes the head plate.
- F. Bearings: Long life, double row spherical roller bearings shall be used to support the shaft assemblies and control axial location of the impellers at the trust end. An inbound 5th bearing shall be used to reduce the drive shaft stress.
- G. Timing Gears: Impeller rotation shall be timed by a pair of precision machined, forged steel gears. These wide faced spur gears shall be manufactured to AGMA Standards and carbonized and ground to a hardness of 58-60Rc. Taper locking device shall be used to secure the bearings with an adjustable shrink fit. No shaft keyways or locking pins are to be used.
- I. Lubrication: Unit shall utilize a positive pressure lubrication system. This system shall be entirely self contained and include an integral drive oil pump, distribution piping, Oil Sump, Oil Filter, Oil Cooler, Pressure Gauge, Relief Valve, and low oil pressure safety switch. A splash lubrication system may be offered as an equal.
- J. Specifications (May vary by manufacturer, Basis of Design is Roots 1016J):
 - 1. Frame Size: 1016J
 - 2. Speed: 1800 RPM
 - 3. Maximum Pressure: 13.3 psi
 - 4. BHP: 218
 - 5. CFM: 3529
- K. Unit Dimensions:
 - 1. Height: 34.88"
 - 2. Length: 28.50"
 - 3. Inlet Flange: 12"
 - 4. Outlet Flange: 10"
- L. Configuration
 - 1. Horizontal
 - 2. V-Belt Drive – Provide additional bearing and correct sheave combination.

Section 16150

MOTORS

Part 1 GENERAL

1.01 SCOPE OF WORK

- A. All motors shall be furnished as called for in other Sections of these Specifications and shall be in conformance with the requirements of this section.

1.02 QUALIFICATIONS

- A. Routine tests shall be performed on the representative motors, and shall include the information described on NEMA MG1-12.54 "Report of Test Form for Routine Tests on Induction Motors". Efficiency shall be determined in accordance with IEEE Publication No. 112, Method B. Power factor shall be measured on representative motors.

1.03 SUBMITTALS

- A. Submittal of motor data for acceptance shall include complete nameplate data and test characteristics in accordance with NEMA Standard MG1-12.54 "Report of Test Form for Routine Tests on Induction Motors", and, in addition, the following for motors typical of the unit furnished:
 - 1. Efficiency and $\frac{1}{2}$, $\frac{3}{4}$ and full load.
 - 2. Power factor at $\frac{1}{2}$, $\frac{3}{4}$ and full load
 - 3. Motor outline, dimensions, and weight
 - 4. Descriptive bulletins, including full description of insulation system
 - 5. Bearing design data.
 - 6. Special features (i.e.: space heaters, temperature detectors, etc...)
 - 7. Power factor correction capacitor rating and type.
- B. The motor manufacturer shall submit to the ENGINEER as provided in Section 01300, certified dimension prints showing nameplate data and outline dimensions within three weeks of the date they receive the order.
- C. Guarantee: All equipment furnished and installed under this Section shall be guaranteed against defects of workmanship, materials and proper installation for a period of one (1) year from the date of acceptance. All such equipment or parts proven defective, due to the above noted causes, shall be replaced in the machines by the CONTRACTOR at no expense to the OWNER.
- D. Provide equipment warranty in accordance with Section 01740.

1.04 REFERENCE STANDARDS

- A. Institute of Electrical and Electronics Engineers (IEEE)
- B. National Electrical Manufacturers Association (NEMA)
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

PART 2 PRODUCTS

2.01 GENERAL

- A. Unless otherwise noted, motors 400 horsepower and above shall be medium voltage type rated 2300/4000 volts, 3-phase, 60 Hertz A.C.; motors below 400 horsepower shall be of the low voltage type. Unless otherwise noted, all motors ½ through 100 horsepower shall be rated 230/460 volt, 3 phase 60 Hertz, A.C.; motors 125 horsepower through 400 horsepower shall be rated 460 volt, 3-phase, 60 Hertz, and motors below ½ horsepower shall be rated 115/230 bolt, 1 phase, 60 Hertz A.C.
- B. All motors used with variable drives shall be rated for inverter duty and shall be in accordance with NEMA MG1-1993 REV1, Part 31.
- C. All motors shall be built in accordance with current NEMA, IEEE, ANSI, and AFBMA standards. Motors shall be of the type and quality described by this Section and other Divisions of the Specifications, and/or as shown on the Drawings, fully capable of performing in accordance with Manufacturer's nameplate rating, and free from defective material and workmanship.
- D. All Motors and associated machines shall meet or exceed the requirements of ANSI-NEMA MG1 (2024 or latest edition) Section I, Part 7 Mechanical Vibration-Measurement, Evaluation, and Limits. Use Category A (New) for all tests. For machines, measure in situ, refer to ISO 10816-3.

2.02 RATINGS

- A. All motors shall be sufficient size for the duty to be performed and shall not exceed their full- rated load when the driven equipment is operating at specified capacity and over the operational range. Unless otherwise noted, motors driving pumps, blowers, etc... shall not be overloaded at any head or discharge condition. The motor shall not be required to deliver more than its rated nameplate horsepower, at the 1.0 Service Factor, under any condition of mechanical or hydraulic loading (i.e. although a 1.15 service factor is required, it may not be used under any condition).
- B. Each motor shall develop ample torquer for its required service throughout its acceleration range at a voltage 10 percent below nameplate rating. Where shown on the Electrical Drawings to be operated on a reduced voltage starter, the motor shall develop ample torque under the conditions imposed by the reduced voltage starting method.

- C. All motors shall be continuous time rated suitable for operation in a 40 degree C ambient unless noted otherwise.
- D. Specific motor data such as HP, RPM, etc..., is specified under the detailed specification for the equipment with which the motor is supplied.

2.03 NAMEPLATES

- A. The motor manufacturer's nameplate shall be engraved or embossed on stainless steel and fastened to the motor from with stainless steel screws or drive pins. Nameplate shall indicate clearly all of the items of information enumerated in MENA Standard MGI-10.38 or MGI-20.60, and applicable.

2.04 CONDENSATE HEATERS

- A. Condensate heaters, where specified herein or under the detailed mechanical specifications shall be of the cartridge or flexible wrap around type installed within the motor enclosure adjacent to core iron. Heaters shall be rated for 120V, single phase with wattage and required. The heater wattage and voltage shall be embossed on the motor nameplate.

2.05 WINDING TEMPERATURE DETECTORS

- A. Winding temperature detectors, unless specified otherwise herein shall be a factory installed, embedded, bi-metallic switch type with leads terminating in the main conduit box, this device shall protect the motor against damage from overheating caused by single phasing, overload, high ambient temperature, abnormal voltage, locked rotor, frequent starts or ventilation failure. The switch shall have normally open contacts. Not less than three detectors shall be furnished with each motor.
- B. All motors operating with variable frequency drives shall be equipped with winding temperature detectors.

2.06 POWER FACTOR CORRECTION CAPACITORS

- A. The operating power factor of the motors shall range from 93 to 95 percent at full load and 95 to 98 percent when partially loaded. The capacitor current shall not exceed the motor no-load magnetized current.
- B. Capacitors shall be oil insulated or dry type (600 volt capacitors shall be of the dry type) with three high interrupting capacity current limiting integral fuse protection, blown fuse indicators, and discharge resistors and shall be hermetically sealed in steel enclosures. The insulating medium shall be nonflammable and meet the U.S. Environmental Protection Agency Standards. Covers shall be gasketed, bolt-on type. Capacitors shall be UL listed, and MEMA rated and tested. Oil insulated type shall be non-PCB dielectric, biodegradable and low toxicity.
- C. Units shall be designed to provide power factor correction in applications subject to the efforts of harmonics as required for each installation. Where required, units

shall consist of power factor correction capacitors as specified above and equipped with series inductors. The units shall be tuned to just below the 5th harmonic frequency on systems with predominantly 3 phase loads. Inductors shall have low flux density and distributed gaps, copper windings, brazed connections, winding varnishing impregnated and baked, Class 220 degree C insulation with 80 degree C rise.

2.07 THREE PHASE INDUCTION MOTORS

- A. Motors 50 Horsepower and larger shall have a 120-volt space heater for moisture control.
- B. Unless specifically noted in the other Section of these Specifications, all motors shall have minimum efficiencies as listed below:

Horsepower	NEMA Nominal Efficiency, %
1-2	84
3-5	88.5
7-1/2	89.5
10	90.2
15	91.0
20	92.0
25	92.2
30	92.4
40-50	94
60-100	94.5
Over 100	95.0

- C. All motors 100 horsepower and larger shall be furnished with power factor correction capacitors located in the motor starter enclosure as outlined in Section 16480. The motor manufacturer shall provide suitable capacitors to the motor control center manufacturer unless otherwise noted. Power factor correction capacitors shall be provided only for the high-speed winding on a 2-speed motor. Power factor correction capacitors shall not be required for motors operating on variable frequency drives.

2.08 CONSTRUCTION

A. GENERAL:

1. All drip proof and weather protected Type I and Type II motors shall have epoxy encapsulated windings. Totally enclosed motors shall be provided with an upgraded insulation by additional dips and bakes to increase moisture resistance and shall not be encapsulated. Motors for outdoor service shall have vacuum pressure impregnated (VPI) epoxy insulation for moisture resistance. Two speed motors shall be of the two winding type.

2. Squirrel-cage rotors shall be made from high-grade steel laminations adequately fastened together and to the shaft or shall be cast aluminum or bar-type construction with brazed end rings.
3. All motors shall be of the premium efficiency and high-power factor type. All motors shall be the corrosion resistant type conforming to the motors designated as "Corro-Duty" by U.S. Motors or equal.
4. Vertical motors shall be hollow or solid shaft as required by the equipment furnished under other Section of these Specifications.
5. Totally enclosed non-ventilated (TENV) motors shall include the same ratings and accessories as specified for TEFC motors. Explosion-proof motors shall be UL listed and FM approved for Class 1, Division 1 hazardous areas.

B. MEDIUM VOLTAGE MOTORS:

1. Medium voltage motors shall be of the squirrel cage type. All motors shall be NEMA Design B, with normal starting torque, and WP1 enclosure with stainless steel guard screens. Enclosure may be WP11 where required to meet noise requirements as specified in Division 11. The rating and characteristics, all materials, and construction shall be in accordance with the latest standards of ANSI, IEEE, and NEMA as applicable.
2. The stator winding insulation system shall be epoxy sealed, Class F or better. The insulation system shall be a combination of materials and process which provide a fully sealed winding as defined by NEMA and shall pass conformance test described in Bulletin #MG-1, 20.48. The stator windings shall be provided with six (6) resistance type temperature detectors, two per phase, brought to terminals in the low voltage terminal box. Motor manufacturers shall coordinate RTD monitoring requirements with VFD manufacturers specified in Section 16488.
3. The motors shall be rated 2300/4000 volts, 3-phase, 60Hertz and, unless otherwise noted the stator winding shall have a maximum temperature rise of 85 degrees C by resistance above a 40 degree C ambient when operated continuously at 115 percent of nameplate horsepower, voltage and frequency.
4. Bearings for horizontal motors shall be grease lubricated anti-friction type with an AFBMA average life of 20 years. Each bearing shall be equipped with a 10 ohm resistance temperature detector with leads brought to the low-voltage terminal box.
5. Bearings for vertical motors shall be oil lubricated, and shall be provided with spherical roller or Kingsbury thrust bearings as required by the pump thrust. The minimum average bearing life shall be 10 years in accordance with AFBMA standards. The thrust bearing shall be equipped with 10 ohm resistance temperature detectors. Suitable relays shall be supplied to the control panel,

MCC, etc..., manufacturer for mounting in the panels. Bearing housing shall be equipped with sight gauges, filler and drain plugs.

6. The main high voltage terminal box shall provide space for stress cones. A frame mounted pad with a drilled and tapped hole, not less than 3/8-inch diameter, shall be provided inside the conduit box for motor for motor frame grounding. All motor conduit boxes shall be provided with the correct number of conduit openings sized as indicated on the drawings. Boxes shall be suitably sized for conductor bending and terminations. Boxes shall be gasketed.
7. The low-voltage terminal box shall provide a terminal strip for space heaters, bearing RTD's and stator winding RTD's. All necessary external wiring between the low voltage terminal box and connections to the motor shall be factory installed.
8. Medium voltage motors shall be U.S. Motors or approved equal as manufactured by Ideal Electric Company, or Owner approved equal.
9. Motors shall be furnished with manufacturers standard prime coat of paint.
10. Motors shall have normal or high starting torque (as required) , low starting current (not to exceed 650 percent full load current), and low slip.
11. All fittings, bolts, nuts, and screw shall be plated to resist corrosion. Bolts and nuts shall have hex heads.
12. All machine surfaces shall be coated with rust inhibitor for easy disassembly.
13. Nameplates shall be stainless steel. Lifting lugs or "O" type bolts shall be supplied. Motors shall be protected for corrosion, fungus and insects.

C. LOW VOLTAGE, THREE PHASE MOTORS:

1. Motors shall be of the squirrel-cage induction type. Horizontal, vertical solid shaft, vertical hollow shaft, normal thrust and high thrust types shall be furnished as called for in the Drawings and as specified in other Sections of these specifications. Motors shall be of the type and quality described by these Specifications, and/or as shown on the schedule of the Drawings, fully capable of performing in accordance with Manufacturer's nameplate rating, and free from defective material and workmanship.
2. Motors shall have normal or high starting torque (as required), low starting current (not to exceed 650percent full load current), and low slip.
3. Unless otherwise specified, motors shall be totally enclosed, fan-cooled construction with a 1.15 service factor at the Class B Temperature-Rise.
4. The output shaft shall be suitable for direct connection or belt drive as required.

5. Motors shall have a Class F non hygroscopic insulation system but shall be limited to Class B Temperature-Rise, at 1.15 service factor.
6. All motors shall have a final coating of chemical resistant corrosion and fungus protective epoxy fortified enamel finish sprayed over red primer over all interior and exterior surfaces. Stator bore and rotor of all motors shall be epoxy coated.
7. All fittings, bolts, nuts, and screws shall be plated to resist corrosion. Bolts and nuts shall have hex heads.
8. All machine surfaces shall be coated with rust inhibitor for easy disassembly.
9. Conduit box shall be split from top to bottom and shall be capable of being rotated to four 90 degree positions. Synthetic rubber-like gaskets shall be provided between the frame and the conduit box and sealed with a non-wicking, non-hygroscopic insulating material. A frame mounted pad with drilled and tapped hole, not less than ¼-inch diameter, shall be provided inside the conduit box for motor frame grounding. All motor conduit boxes shall be provided with the correct number of conduit openings sized as indicated on the drawings. Boxes shall be suitably sized for conductor bending and terminations.
10. totally enclosed motors shall be provided with condensate drain hole and epoxy coated motor windings to protect against moisture.
11. Nameplates shall be stainless steel. Lifting lugs or "O" type bolts shall be supplied on all frames 254T and larger. Enclosures shall have stainless steel screens. Motors shall be protected for corrosion, fungus and insects.
12. Low voltage, three phase motors shall be manufactured by U.S. Motors, Reliance Electric, Baldor, or Owner Approved Equal.
13. Fractional Horsepower:
 - a. Fractional horsepower motors shall be rigid, welded-steel, designed to maintain accurate alignment of motor components, and provide adequate protection. End shields shall be cast iron or heavy fabricated steel. Windings shall be of varnish-insulated wire with slot insulation of polyester film, baked-on bonding treatment to make the stator winding strongly resistant to heat, aging, moisture, electrical stresses and other hazards.
 - b. Motor shafts shall be made from high-grade, cold-rolled shaft steel with drive shaft extensions carefully machined to standard NEMA dimensions for the particular drive connection.
 - c. For light to moderate loading, bearings shall be quiet all-angle sleeve type with large oil reservoir that prevents leakage and permits motor operation in any position.

- d. For heavy loading, bearings shall be carefully selected precision ball bearings with extra quality, long-life grease, and large reservoir providing 10 years normal operation without relubrication.

14. Integral horsepower:

- a. Motor frames and end shields shall be cast iron or heavy fabricated steel of such design and proportions as to hold all motor components rigidly in proper position and provide adequate protection for the type of enclosure employed.
- b. Windings shall be adequately insulated and securely braced to resist failure due to electrical stresses and vibrations.
- c. The shaft shall be made of high-grade machine steel or steel forging of size and design adequate to withstand the load stresses normally encountered in motors of the particular rating. Bearing journals shall be ground and polished.
- d. Rotors shall be made from high-grade steel laminations adequately fastened together, and to the shaft. Rotor squirrel-cage windings may be cast-aluminum or bar-type construction with brazed end rings.
- e. Motors shall be equipped with vacuum-degassed anti-friction bearings made to AFBMA Standards, and be of ample capacity for the motor rating. The gearing housing shall be large enough to hold sufficient lubricant to minimize the need for frequent lubrication, but facilities shall be provided for adding new lubricant and draining out old lubricant without motor disassembly. The gearing housing shall have long, tight, running fits or rotating seals to protect against the entrance of foreign matter into the bearings, or leakage of lubricant out of the bearing cavity.
- f. Bearings of high thrust motors will be tested for momentary upthrust of 30 percent downthrust. All bearings shall have a minimum B10 life rating of 5 years in accordance with AFBMA life and thrust values.
- g. Vertical hollow-shaft motors will have non-reverse ratchets to prevent backspin. Non- reverse ratchets shall be suitable for duty with variable frequency drives.

D. LOW VOLTAGE, SINGLE PHASE MOTORS:

- 1. Single phase motors shall be split case and capacitor-start induction type rated for continuous horsepower at the rpm indicated on the drawings or as required by the specifications. Motors shall be rated 115/230 volts, 60 Hertz, single phase, open drip proof, or totally enclosed fan cooled as indicated on the drawings or as required by the specifications, with temperature rise in accordance with NEMA Standards for Class B insulation.

2. Totally enclosed fan cooled motors shall be designed for severe-duty.
3. Motors shall have corrosion and fungus protective finish on internal and external surfaces. All fittings shall have a corrosion protective plating.
4. Mechanical characteristics shall be the same as specified for polyphase fractional horsepower motors.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Motor Connections: All motors shall be connected to the conduit system by means of a short section 18-inch minimum of liquid tight conduit unless otherwise indicated. For all motor connections of No. 4 AWG or larger wire size, the CONTRACTOR shall install a grounding conductor in the conduit and terminate at main conduit bod and at the motor control center or variable frequency drive with approved grounding lugs and clamps.
- B. Low Voltage: for wire sizes #8 AWG and larger, long barrel tin-plated copper compression (hydraulically pressed) type connections (Burndy Co., or equal) shall be installed on the branch circuit wires and the motor loads. Bolted connections shall utilize products which are rated for applications (bolt, nut and spring washer). All connections shall be insulated with heavy duty heat shrinkable material (Raychem Corp., or equal).
- C. Medium Voltage: Refer to Section 16121 for requirements.

3.02 TESTS AND CHECKS

- A. The following tests shall be performed on all motors after installation but before putting motors into service.
 1. The CONTRACTOR shall megger (1000volts DC) each motor winding before energizing the motor, and, if insulation resistance is found to be low, shall notify the ENGINEER and shall not energize the motor. The following table gives minimum acceptable insulation resistance in megohms at various temperatures and for various voltages with readings being taken after one (1) minute of megger test run.

Degree Winding Temperature					
F	C	115V	230V	460V	2300/4000V
37	3.9	60	108	210	1700
50	10	32	60	120	1000
68	20	13	26	50	460
86	30	5.6	11	21	195
104	45	2.4	4.5	8.8	84
122	50	1	2	3.7	35
140	60	0.50	0.85	1.6	15

2. The CONTRACTOR shall check all motors for correct clearances and alignment and for correct lubrication, and shall lubricate if required in accordance with the Manufacturer's instructions. The CONTRACTOR shall check direction of rotation of all motors and reverse connections if necessary. The correction for wrong rotation direction shall be made at the motor.
 3. All tests shall meet the requirements of , but not limited to, IEEE 43, 85 and 112. Efficiency tests for IEEE 112 shall include Method B.
 4. The CONTRACTOR shall provide to the ENGINEER a typed list of all motors 1HP and larger listing the no load motor current and voltage and the full load current and voltage. Any phase current imbalance greater than 10% shall be reported to the ENGINEER.
- B. The following tests shall apply to the medium voltage motors:
1. All motors shall be given the standard short commercial test prior to shipment. This shall consist of no load current, check current balance, winding resistance, air gap measurement, high potential tests, and bearing inspection. Six (6) copies of the certified short commercial test shall be submitted to the ENGINEER prior to shipment.
- C. Field testing and commissioning shall be done in accordance with the latest revision of the "Acceptance Testing Specifications for Electrical Power and Distribution Equipment and Systems" published by the International Electrical Testing Association (NETA Standard ATS-1999).

END OF SECTION