

**LEGAL NOTICE  
BD-14-21**

Sealed bids will be received by the officers of the Board of Public Utilities (BPU), City of Jamestown, New York, at its 92 Steele Street office until 1:00 PM, November 15, 2021, for the supply of three (3) sludge grinders and three (3) control panel units for the Jamestown Wastewater Treatment Plant. A mandatory pre-bid inspection and walk down site visit will be held on November 8, 2021, at 9:00 AM.

Detailed specifications and bid forms may be obtained at the office of the Board of Public Utilities located at 92 Steele Street, Jamestown, New York or online at [www.jamestownbpu.com](http://www.jamestownbpu.com), by clicking on 'About' then 'Legal Notices and Bid Opportunities.'

The BPU reserves the right to reject any or all bids, the right to waive any informalities, the right to permit exceptions deemed not to be of substance, and the right to accept any bid which the BPU deems to represent the prudent and economical expenditure of the public monies for the benefit of its customers by securing the maximum quality at the lowest possible cost.

Bids shall be placed in a sealed envelope addressed to the General Manager, Board of Public Utilities, City of Jamestown, New York, be plainly marked on the outside, "**Proposal No. BD-14-21**" and be delivered at the Board's office located at 92 Steele Street.

David Leathers, General Manager  
Board of Public Utilities  
City of Jamestown  
92 Steele Street  
Jamestown, New York 14701

October 25th, 2021

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**SECTION 1**  
**INSTRUCTION TO BIDDERS**

**1.0 INSTRUCTION TO BIDDERS**

Proposals for the materials, supplies or equipment referred to in the foregoing Legal Notice and covered by the attached Specifications, must be submitted within the specified time and must be accompanied by such information as the Specifications require. When bidding on this material, supplies or equipment, Bidders shall use the forms included with these Specifications, returning the same, intact, with such supplementary specifications, data, drawings, etc., as are to be included. All requirements in the way of deposits or bonds as evidence of good faith must be complied with.

A bid cannot be withdrawn after the expiration of the time set for receiving bids, nor can any change in price or other details be made by letter, telegram, or verbal statement. The prices and other information must be legibly written (or printed) in ink, the bid price, or prices being written in words as well as figures.

Bidders must acquaint themselves fully with the amount and nature of the materials, supplies or equipment to be purchased by carefully studying the Specifications and drawings in this Bid. If the Bidder should encounter any condition not provided for in the Bid Specifications that will affect its bid or the performance of its contractual obligations, should the Bidder be awarded the contract, the Bidder shall notify the BPU in writing, at least five (5) days prior to the opening of the bids and enclose a copy of such letter with the bid.

Technical questions addressed to:

Keith Vanstrom / WWTP Chief Operator  
Jamestown Board of Public Utilities  
P.O. Box 700  
Jamestown, NY 14702-0700  
(716) 661-1653  
E-Mail: [kvanstrom@jamestownbpu.com](mailto:kvanstrom@jamestownbpu.com)

Procedural questions addressed to:

Todd Hoaglund / Building & Fleet Maintenance Supervisor  
Jamestown Board of Public Utilities  
P.O. Box 700  
Jamestown, NY 14702-0700  
(716) 661-1662  
FAX (716) 661-1645  
E-Mail: [thoaglund@jamestownbpu.com](mailto:thoaglund@jamestownbpu.com)

Each response will be transmitted to each potential Bidder known to the BPU. Any Bidder responding to the Bid shall be deemed to understand the Bid Specifications.

No bid will be accepted from, nor will any contract be awarded to any person or company who is in arrears with the Board of Public Utilities upon debt or contract, or who is in default, as surety or otherwise, upon any obligation to said Board or whose performance has heretofore proven unsatisfactory or dilatory.

If required in Section 4, each proposal shall be accompanied by a Proposal Bond issued by a surety company authorized by license to write insurance contracts in New York State and rated "A" or better by A. M. Best Company, Inc. in Best's Key Rating Guide, and otherwise acceptable to the BPU, or by a certified check on solvent bank in an amount of at least ten percent (10%) of the amount bid, as an evidence of good faith that the Bidder will, within ten (10) days after the date of notification that its Proposal has been accepted, enter into a contract with the Board of Public Utilities of the City of Jamestown (BPU), New York, to execute its proposal. If a certified check is furnished, it shall be drawn to the order of the Treasurer of the City of Jamestown, New York. If a Proposal Bond is furnished, it shall be on the blank form attached hereto.

If required by Section 4, each Bidder shall furnish with the Proposal, a "Statement of Surety" to the effect that, should the bid be accepted, the Surety is willing to provide a Performance Bond in the sum of one hundred percent (100%) of the contract price, conditioned upon the faithful and satisfactory performance of all obligations and requirements of the contract and guaranty of materials and workmanship for 12 months following final acceptance of the work by the BPU.

If the Bidder to whom this Contract is awarded fails to sign same, and provide the required Performance Bond within ten (10) days after the award is made, the award may be canceled and in that event, the Bidder will forfeit to the BPU such portion of the check or Proposal Bond as may be required to pay the difference between its bid and that of the Bidder who shall eventually accept and fulfill the contract, or shall be used to reduce the cost of the work if done by the BPU.

A bid which is not accompanied by the required certified check or Proposal Bond, or a bid which is incomplete or which contains alterations, erasures, discrepancies, or a conditional proposal, or a bid in which the surety company is not named, may be rejected. All certified checks will be returned to their respective depositors immediately after the contract has been signed and the Contractor's Performance Bond herein required has been furnished and approved by the BPU's properly authorized representatives.

The BPU reserves the right to reject any bid or all bids, the right to waive any informalities, the right to permit exceptions deemed not to be of substance, and the right to accept any bid which the BPU deems to represent the prudent and economical expenditure of the public moneys for the benefit of the BPU's ratepayers by securing the maximum quality at the lowest possible cost.

All proposals shall be submitted in an opaque sealed envelope or package plainly marked on the outside with the name, address, and phone number (including FAX number) of the person, firm, partnership, or corporation bidding and the name of their respective representatives whom they expect to be present when the bids are opened. The SPECIFICATION - PROPOSAL - CONTRACT NUMBER on which the bid is submitted shall be plainly marked on the outside of the sealed envelope containing the bid. If forwarded by US Mail, the envelope containing each proposal shall be placed in another envelope addressed to Mr. David Leathers, General Manager, Board of Public Utilities, PO Box 700, Jamestown, New York 14702-0700. If forwarded otherwise than by US Mail,

it must be delivered to Mr. David Leathers, General Manager, Board of Public Utilities, 92 Steele Street, Jamestown, New York 14701.

An original and two (2) complete copies of the Proposal shall be provided in sealed envelopes marked "BD-14-21 - COPIES" and include the bidders information as indicated above.

Two (2) proposals from a firm, corporation, or association under different names will not be considered. Reasonable grounds for supposing that any bidder is interested in more than one proposal for this purchase will be cause for the rejection of all proposals in which it has been interested. Any or all proposals will be rejected if there is reasonable ground for supposing that there is collusion among bidders, and all participants in such collusion will receive no further recognition for this purchase.

The Bidder shall submit a complete proposal providing prices for all options and supply any information (with the proposal) which may be required to completely evaluate its proposal or the bid may be declared irregular.

Bidders are required to comply with the Standard Clauses for NYS Contracts attached hereto as Appendix A. These standards prohibit discrimination by any Bidder against protected classes, grant priorities to Bidders using Minority Owned Business Enterprises and Women Owned business Enterprises, and impose other conditions and restrictions.

## **1.1 DEFINITION OF TERMS**

The terms and expressions used in these specifications and contract shall be understood as follows:

The word "BPU" or "JBPU" means the City of Jamestown Board of Public Utilities.

"Bid Specifications" refers to the entire package of documents.

The word "Bidder" to mean any individual, or entity submitting a proposal to the Board of Public Utilities of the City of Jamestown, New York.

"Contract" shall refer to the document executed by the parties which incorporates the Bid Specifications into an agreement. A Purchase Order shall be considered a form of Contract.

The word "Vendor" means any individual, firm or corporation proposing to provide materials, supplies or equipment pursuant to this Bid.

The word "General Manager" to mean the General Manager of the Board of Public Utilities, City of Jamestown, New York.

"Performance Bond" shall be interpreted to mean a document or documents executed by the contractor and a financial guarantor (surety) providing a financial guaranty that the Contractor will perform the work contracted for and will pay all subcontractors and material suppliers. The term Performance Bond shall include "Payment Bond."

"Proposal Bond" shall mean the written financial guaranty of a financial guarantor (surety) that the bidder will execute a contract with the BPU upon notification that the bid has been awarded to that contractor.

## **1.2 AUTHORITY OF BIDDERS**

If the bid is made by a firm or partnership, the name and the place of residence of each member of the firm or partnership must be given. If made by a corporation, the person signing the

bid shall state under the laws of what state the corporation was chartered and the name and title of officer or officers having authority under the by-laws to sign contracts. Anyone signing a proposal as agent must file it with legal evidence of their authority to do so.

### **1.3 INTERPRETATION OF SPECIFICATIONS**

The documents in this bid package are collectively intended to describe and provide for the complete product and each form a part of the Contract (s). They are to be cooperative and what is called for by one is as binding as if called for by all. It is important, therefore, that Bidders familiarize themselves with all documents.

### **1.4 STANDARDS AND SUBSTITUTIONS**

The names or make of any article, device, material, form of construction, fixture, etc., named in these specifications whether or not the words "or equal" are used, shall be known as "standard".

All proposals shall be based on the standards specified.

Where two or more standards are named together, Bidders may bid on any of the standards named, regardless of the order in which they are named.

Bidders are invited to submit substitutions for the standards specified, provided:

1. They name the substitution bid upon and the additions or deduction they will make to, or from their base bid provided each substitution is approved by the BPU.
2. The substitute bid upon shall be written on a substitute blank and attached to the formal proposal.
3. The complete specifications and a description of the substitution bid upon shall be furnished to the BPU prior to the award of the contract.

If the Bidder names no substitutions, the standards as specified shall be used.

### **1.5 EXCEPTIONS**

Any exceptions to the bidding specifications shall be noted on the Proposal Form in the space provided, if additional space is required the Bidder shall note in the space that the exceptions are stated on an attached page(s). The attached page(s) shall be numbered and inserted immediately following the signature page of the Proposal Form and clearly titled "EXCEPTIONS"

### **1.6 BULLETINS**

It shall be understood that any bulletins issued from time to time to furnish additional information to the bidders shall become an integral part of these specifications. Receipt of bulletins shall be acknowledged by the bidders in the space provided on the proposal sheet.

### **1.7 SCOPE**

All materials, supplies or equipment provided in response to this bid shall be in new condition and delivered to the BPU at the expense of the Bidder, unless otherwise specified.

## **1.8 TRANSFER OF TITLE**

Title to any material, supply or equipment purchased pursuant to this Bid shall not transfer until inspection and acceptance by the BPU General Manager, or his designee. Acceptance shall not act to waive any rights of the BPU under any warranty or guarantee provision.

## **SECTION 2** **LEGAL REQUIREMENTS**

### **2.0 INTERPRETATION OF SPECIFICATIONS**

Should any misunderstanding arise as to the intent or meaning of the Bid Specifications, or any discrepancies appear in either, the decision of the General Manager in such case shall be final and conclusive.

No person or persons except the General Manager or his designee shall have the power to revoke, alter, enlarge, or relax the stipulations or requirements of these specifications. No interpretation of the meaning of the specifications or other documents will be made by the JBPU to any bidder orally.

### **2.1 ORAL STATEMENTS NOT BINDING**

It is understood that the written terms and provisions of these specifications, as incorporated into a Contract, supersede all prior oral statements of officers of all parties to the Contract and such statements shall not be effective or be construed as entering into or forming part of, or altering in any way, the written Contract.

### **2.2 SUITS IN COURTS**

These Bid Specifications, and any Contract incorporating them, shall be interpreted in accordance with the laws of the State of New York. Any action brought against the JBPU or its officers or agents under this Contract shall be brought in the courts of the State of New York, Chautauqua County.

### **2.5 SAVE HARMLESS**

Vendor agrees to indemnify and save harmless the JBPU from and against any loss, expense or claim by reason of damage to property, bodily injury, or both, arising out of the performance of this Contract where such damage or injury is attributable to the negligence of Vendor or its subcontractors. In the event that such damage or injury is caused by the joint or concurrent negligence of the JBPU, the loss shall be borne by the Vendor and JBPU proportionately to their degree of negligence.

## **2.6 PATENTS**

The Vendor certifies that it has title to, and the legal right to sell, all materials, supplies or equipment provided pursuant to this Bid. The Vendor agrees to indemnify and hold the BPU harmless from any claims of third parties related to title and right to sell, including claims related to patent and trademark infringement.

## **2.7 INSURANCE**

If required by Section 4, each Bidder shall be required to provide a certificate of insurance demonstrating insurance coverage with minimum limits as follows:

New York Worker's Compensation:	Statutory
Employer's Liability:	\$1,000,000 BI & PD combined
Comprehensive General Liability:	\$1,000,000/occurrence, 2,000,000 aggregate
Additional coverage on a per-Bid basis	

## **2.8 NO WAIVER OF LEGAL RIGHTS**

Neither the inspection by the JBPU, nor by any of its duly authorized agents, shall operate as a waiver of any provision of this Contract, or of any power herein reserved to the JBPU, or any right to damage herein provided, nor shall any waiver of breach of this Contract be held to be a waiver of any subsequent breach.

## **2.9 CONFLICTING TERMS**

The terms of this Bid Specification shall be incorporated into any contract arising there from. If any conflict arises between these Specifications and a subsequent Contract, the terms of the Contract shall prevail.

## **2.10 WARRANTY**

Unless otherwise specified in Technical Specifications, each material, supply or item of equipment shall be warranted to comply with all Technical Specifications and be free from defects in material or workmanship for a period of one year from the date that the item is placed into service.



**SECTION 3**  
**FINANCIAL**

**3.0 INTENT AND MEANING OF SPECIFICATIONS**

It is the intent and meaning of the specifications that the price bid is to include all expenses in connection with furnishing all materials, supplies or equipment, covered by the attached Technical Specifications.

**3.2 TERMS OF PAYMENT**

Payments on account of the items supplied by the Vendor will be made by the JBPU on monthly detailed reports submitted by the Vendor and approved by the General Manager of the Board of Public Utilities. Invoices received by the 7<sup>th</sup> day of the month will be paid by the end of each month. Invoices received after the 7<sup>th</sup> day of the month will be paid net 45 days.

Alternative payment terms in the Technical Specifications, if any, prevail.

**SECTION 4**  
**FORMS TO BE COMPLETED**  
**BY CONTRACTOR For BD-14-21**

<b><u>Document</u></b>	<b><u>Required (Y/N)</u></b>	<b><u>Provided</u></b>
Bidder's Federal Tax Identification Number:	<u>Yes</u>	_____
Guaranty for Proposal Contract (Proposal Bond)	<u>Yes</u>	_____
-or-		
Certified Check (if permitted in bid specifications)	<u>Yes</u>	_____
Form of Proposal	<u>Yes</u>	_____
Statement of Surety related to Performance Bond	<u>No</u>	_____
Non-Collusive Bidding Certification (provide one)		
(Corporation)	<u>Yes</u>	_____
(Individual or Partnership)	<u>Yes</u>	_____
Site Visit Certification	<u>Yes</u>	_____
Product Availability Schedule Form	<u>Yes</u>	_____
Contractor Qualifications	<u>Yes</u>	_____
Insurance Certificate or Statement from Agent	<u>No</u>	_____

**PROPOSAL BD-14-21**  
**FORM OF PROPOSAL**

Board of Public Utilities  
City of Jamestown, New York

Date \_\_\_\_\_

Gentlemen:

The undersigned, a \_\_\_\_\_ (individual, partnership, corporation)  
represented by \_\_\_\_\_ proposes to furnish the materials, supplies  
and/or equipment, contained in Bid Specification **BD-14-21** as follows:

Price

Three (3) Sludge Grinders and associated Control Panels

Equipment to be provided shall include, but not be limited to, the following components that will fit into existing layout with minimal modifications to piping. Please see Section 5 for detailed specifications for each component.

1. Three (3) Sludge Grinders
  - A. Sized for 2% solids of primary sludge with a maximum of 400 gpm of flow.
2. Three (3) Grinder Control Panels
  - A. NEMA4x Polycarbonate Enclosure
3. One day of supervisory startup and onsite service.

**TOTAL COST to Jamestown BPU:** \$ \_\_\_\_\_

**We certify that we can supply all materials, supplies and equipment within \_\_ calendar days from the Bid.**

**We (I) the undersigned declare that we (I) have carefully examined the specifications and will fully comply with the requirements of the specifications except as noted below (list all exceptions taken and provide additional pages if necessary):**

#1 Section: \_\_\_\_\_ Page: \_\_\_\_\_ Paragraph: \_\_\_\_\_ Description of exception (include proposed substitution):

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#2 Section: \_\_\_\_\_ Page: \_\_\_\_\_ Paragraph: \_\_\_\_\_ Description of exception (include proposed substitution):

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#3 Section: \_\_\_\_\_ Page: \_\_\_\_\_ Paragraph: \_\_\_\_\_ Description of exception (include proposed substitution):

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#4 Section: \_\_\_\_\_ Page: \_\_\_\_\_ Paragraph: \_\_\_\_\_ Description of exception (include proposed substitution):

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#5 Section: \_\_\_\_\_ Page: \_\_\_\_\_ Paragraph: \_\_\_\_\_ Description of exception (include proposed substitution):

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The above proposal is based on the receipt of bulletin(s) No.(s) \_\_\_\_\_,

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

By: \_\_\_\_\_, \_\_\_\_\_  
(Signature of Contractor's Representative) (Print Name)

Title: \_\_\_\_\_, Date \_\_\_\_\_

**GUARANTY FOR PROPOSAL CONTRACT**  
(Proposal Bond)

KNOW ALL MEN BY THESE PRESENTS, that we \_\_\_\_\_, a corporation organized and having principal offices at \_\_\_\_\_ are held and firmly bound unto in the penal sum of \$ \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), lawful money of the United States of America, to be paid to \_\_\_\_\_ or to its certain attorneys, successors, or assigns; for which payment will and truly to be made we bind ourselves, our successors, and assigns, jointly and severally by these presents.

WHEREAS \_\_\_\_\_ has presented a proposal to the Board of Public Utilities, of the City of Jamestown, New York on the foregoing proposal sheets.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the said proposal, herewith accompanying, dated \_\_\_\_\_ be accepted as to any or all of the items offered, and if within ten (10) days after notice of such acceptance, said Person shall enter into contract with the Board of Public Utilities, of the City of Jamestown, New York and shall furnish a bond with good and acceptable sureties, as required, then this obligation shall be void and of no effect; otherwise, it shall remain in full force and virtue.

IN WITNESS WHEREOF, the \_\_\_\_\_ has caused its corporate seal to be hereto affixed this \_\_\_\_\_ day of \_\_\_\_\_, and these presents to be signed by its \_\_\_\_\_ pursuant to a resolution of its \_\_\_\_\_ passed on the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ A.D., a certified copy of which resolution is hereto attached.

ATTESTS:

**STATEMENT OF SURETY**  
Regarding Performance Bond

Having examined the "General Provisions" and "Technical Specification", and the proposal of \_\_\_\_\_ hereto attached, we hereby declare that, if said proposal or any part thereof be accepted, we are willing to be bound with said Person(s) in the sum of one hundred percent (100%) of the Contract Price, conditioned upon the faithful and satisfactory performance of all the obligations and requirements of the Contract.

Surety \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

By \_\_\_\_\_

As \_\_\_\_\_

**NON-COLLUSIVE BIDDING CERTIFICATION**

By submission of this proposal, each person signing on behalf of any Person certifies, and in the case of a joint proposal, each party thereto certifies as to its own organization, under penalty of perjury that to the best of their knowledge and belief:

- 1) The prices of this proposal have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- 2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
- 3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

The person signing this bid or proposal certifies that they have fully informed themselves regarding the accuracy of the statements contained in this certification and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing in its behalf.

IN WITNESS WHEREOF, the undersigned corporation has caused its corporate seal to be hereto affixed, and these presents to be signed by its duly authorized officer, this day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
(Name of Corporation)

By \_\_\_\_\_

(Corporate Seal)

\_\_\_\_\_  
(Title of Officer Executing)

**NON-COLLUSIVE BIDDING CERTIFICATION**

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury that to the best of their knowledge and belief:

1) The prices of this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

The person signing this bid or proposal certifies that they have fully informed themselves regarding the accuracy of the statements contained in this certification and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing in its behalf.

Dated \_\_\_\_\_, \_\_\_\_\_

\_\_\_\_\_  
(Signature)  
or if partnership

\_\_\_\_\_  
(Name of Partnership)

\_\_\_\_\_  
(Signature of Partner)

By \_\_\_\_\_  
(Signature of Partner)



**SITE VISIT CERTIFICATION**

It is required that the bidders perform an on-site inspection of the construction site prior to submission of this Proposal. The Bidder shall have Keith Vanstrom from the BPU, sign and date this form upon the bidder completing its pre-bid inspection and walk down on November 8th, 2021 at 9:00 AM. Directions to the project site can be acquired from Keith Vanstrom and info for BPU Technical Lead: (716) 661- 1653 or e-mail to: kvanstrom@jamestownbpu.com.

Bidder's Name \_\_\_\_\_

Bidder's Representative \_\_\_\_\_

BPU Representative \_\_\_\_\_

Date of Inspection \_\_\_\_\_

## COMMUNICATIONS AND SHIPPING INSTRUCTIONS -

### COMMUNICATIONS

Unless specifically indicated elsewhere in the documents, all communications related to these documents and the work described shall be directed to as follows:

Administrative:                   Jamestown Board of Public Utilities  
P.O. Box 700, 92 Steele St.  
Jamestown, New York 14702-0700  
Attention: Todd Hoaglund  
Phone (716) 661-1662, FAX (716) 661-1645  
E-Mail: [thoaglund@jamestownbpu.com](mailto:thoaglund@jamestownbpu.com)

Technical:                         Jamestown Board of Public Utilities  
P.O. Box 700, 92 Steele St.  
Jamestown, New York 14702-0700  
Attention: Keith Vanstrom  
Phone (716) 661-1653  
E-Mail: [kvanstrom@jamestownbpu.com](mailto:kvanstrom@jamestownbpu.com)

**SECTION 5**  
**TECHNICAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

A. Work Included

1. Furnish all materials, equipment, and incidentals required for three (3) in-line sewage grinders, as shown on the Contract Drawings and as specified herein.
2. Included are grinder, drive unit assembly, control panel, anchorage system, and all appurtenances.

B. Performance and design requirements:

1. Equipment shall be designed and selected for continuous duty grinding of concentrated solids derived from the municipal wastewater industry. Grinders shall be suitable for grinding small particles of wood, industrial solvents, greases, detergents, rags, hair, wipes, and organic particles in concentrations as great as 7 percent. The grinder fluids are expected to range in temperatures between 60 degrees F and 140 degrees F, and the pH may vary between 6 and 9.

**1.2 QUALITY ASSURANCE**

A. Grinders and motor controllers shall meet the requirements of the following industry standards:

1. ASTM A536-84 - Standard Specification for Cast Iron Castings.
2. ASTM A36 – Standard Specification for Carbon Steel Plate.
3. AISI 4140 - Heat Treated Round Steel.
4. AISI 4130 - Heat Treated Alloy Steel.
5. National Electrical Manufacturer's Association Standards (NEMA).

B. Acceptable Manufacturers

1. Manufacturer must have at least five (5) years of substantial experience in the manufacturing of two shafted grinders in the type of application specified herein.

**1.3 SUBMITTALS**

- A. Provide full and complete shop drawings, catalog cuts, and other technical data to fully define the materials, equipment, and performance capabilities for each characteristic specified herein.
- B. Manufacturer's recommended installation instructions.
- C. Manufacturer's warranty; warranty should be a 2 year warranty, 100% parts and labor, including wear parts.

#### D. Operation and Maintenance Data

1. For all units furnished under this Section, the Contractor shall submit one (1) electronic of Operation and Maintenance Manuals to include the following:
  - a. General -equipment function, description and normal and limiting operating characteristics.
  - b. Installation instructions - assembly procedures and alignment and adjustment procedures.
  - c. Operation instructions - startup procedures, normal operating conditions, emergency and normal shutdown procedure.
  - d. Lubrication and maintenance instructions which shall list all points to be greased or oiled; shall recommend type, grade, and temperature range of lubricants; and shall recommend frequency of lubrication.
  - e. Troubleshooting guide.
  - f. Parts list and predicted life of parts subject to wear.
  - g. Drawings - cross sectional view, assembly and wiring diagrams. Drawings shall include detailed parts lists with part numbers, instructions for ordering spare parts, and complete preventive maintenance instructions required to ensure satisfactory performance and longevity of the equipment.
  - h. Performance curves.
  - i. Instructions for adjustment, calibration and testing of selected electronic components or assemblies, normally considered replaceable by the manufacturer, whose performance is not ascertainable by visual inspection.
  - j. Service instruction for major components not manufactured by the equipment manufacturer, but which are supplied by him in accordance with these specifications. The incorporation of literature produced by the actual component manufacturer shall be acceptable.

#### 1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store equipment in manufacturer's original undamaged shipping containers with tags and labels intact and legible.
- B. Store all equipment up off the ground, under cover, protected from weather and construction activities or other possible damage.

#### 1.5 WARRANTY

- A. For the equipment shall be warranted to be free from defects in workmanship, design and materials for a period of two (2) years. If any part of the equipment should fail during the warranty period, it shall be replaced in the machine(s) and the unit(s) restored to service at no expense to the OWNER.

## PART 2-PRODUCTS

### 2.1 GENERAL

#### A. THE INLINE GRINDER UNIT OPERATING CONDITIONS:

Primary Duty Point	100 gpm
Medium	Wastewater
Percent of Solids	Raw Sewage
Maximum HP at Duty Condition	3.0
Maximum RPM shall be	53
Required blade width	5.5 mm
Mounting style (in-channel, wall-mount)	In-channel
Cutter stack height	12.6 in
Number of shafts	2

#### B. MATERIALS

Component	Material
Casting	Cast iron ASTM A48 GG20, 20 – 26 Rockwell C
Wear Plates and Counter Blades	Hardox Carbon Steel, 43 Rockwell C
Cutters	High Wear Resistant Steel, nitrated, 60-65 Rockwell C
Shafts	Alloy steel, AISI 4140, 44 mm Diameter, tensile strength rating no less than 149,000 psi

### 2.2 GRINDER

#### A. General

1. The sewage grinder(s) shall be two-shaft design and be capable of continuous operation, processing wet or dry. Single shaft devices utilizing a single rotating cutter bar with stationary cutters will not be acceptable.
2. Two-shaft design shall consist of two parallel shafts equipped with monolithic cutter assemblies positioned on the shaft to form a helical pattern. If multiple cutter packages are used, O-rings shall be incorporated between each cutter package. Individual cutter and spacers will not be acceptable. The two shafts shall counter-rotate with the driven shaft operating at different speed then the speed of the drive shaft.

#### B. Components

1. Grinder gearbox housings shall be cast of ASTM A48 cast iron.
2. The bottom end housing shall be manufactured of carbon steel and bolted together to be field changeable on demand.

3. Grinder housing segments shall be manufactured of 1018 mild steel, bolted together.
4. High Flow side rails shall be installed on the sides of the housing to guiding particles directly into the cutting chamber while allowing liquid to pass. The side rails shall be evenly spaced to provide maximum flow, with clearance shall not exceed .11-inches (3 mm) and have a thickness of .16-inches (5 mm).
5. The top and bottom counter blade plates shall be manufactured of Hardox, minimum hardness of 43 Rockwell C (500 Brinell), and provide counter cutting action to protect against buildup in the top and bottom of the grinder.
6. Grinder drive and driven shafts shall be made of 4140 alloy heat-treated round steel with a tensile strength rating of not less than 149,000 psi (1027 Mpa). Each shaft diameter shall be a minimum of 1.73 inches (44 mm).
7. Mounting frames, overflow boxes, rail system and required hardware shall be made of 316 SS.
8. Cutters & Blades
  - a. Cutting stack shall be a nominal height of 12.59 inches (320mm)
  - b. Cutter shall be manufactured from a monolithic assembly constructed from a solid block of alloy steel surface ground to a blade thickness of .37-inches  $+.000/-0.001$  (9.5 mm  $+.000/-0.003$ ).
  - c. Cutters shall be heat treated to produce a hardness of 60-65 Rockwell C.
  - d. Cutters shall be nitrated for high corrosion resistance.
  - e. Cutters shall have 8 cam shaped teeth.
  - f. Cutter tooth height shall not be greater than ½-inch (13 mm) above the root diameter of the cutter.
  - g. Cutter assembly OD shall be 4.72-inches (120 mm) minimum. Spacer shall be cut into the monolithic cutter and shall have a smooth outside diameter with no tooth profiles. Designs with multiple cutters and spacers, or multiple cutter cartridges, or without a single monolithic cutter assembly shall not be acceptable.
9. Bearings and Seals
  - a. The radial and axial loads of the shafts shall be borne by oversized radial spherical roller bearings on upper end and deep groove ball bearings on lower end. The bearings shall be protected by single cartridge mechanical seals. Seal face materials must be a minimum of chrome oxide vs duronit, not requiring an external flush, but in a static bath of oil. The mechanical seal shall be rated at 90 psi continuous duty by the seal manufacturer. The bearings and seals shall be housed in a replaceable cartridge that supports and aligns the bearings and seals, as well as protects the shafts and end housings. The seal elements shall be independent of the stack height. The seal shall meet required pressure rating regardless of cutter stack fit. The seal and bearing cartridge shall provide protection against axial loading on shafts and bearings during shaft detection. O-rings shall be made of Buna-N elastomers.
10. Electric Motor & Reducer
  - a. The grinder gearbox shall be a low speed, high-torque parallel shaft gearbox manufactured by Nord Gear. Maximum motor speed shall not exceed 1800 rpm and should provide a minimum of 10% reserve hp as evidenced by specific requirements at maximum design.
  - b. All motors shall be built in accordance with latest NEMA, IEEE, ANSI and AFBMA standards where applicable.
  - c. Motor shall be TEFC with a minimum service factor of 1.15
  - d. Motors shall conform to all requirements stipulated in the motor section of this specification.

- e. The motors supplied shall be specifically designed for inverter duty to allow for the potential of future variable frequency drives. The motors shall be compatible with the grinders provided by the MANUFACTURER. The gear speed reducer shall be Nord parallel shaft geared type of reducer with "Heavy Shock" load classification. The drive shaft of the grinder shall be directly coupled with the reducer without use of a coupling.
- f. Required running torque per horsepower (kW):
  - 1) At momentary load peaks: 4,756 in-lbs. (721 NM/KN).

## 2.3 MOTOR CONTROLLERS

### A. General

- 1. Controller shall be the supplier=s UL/cUL listed standard and shall provide independent control of the grinder.
- 2. The controller shall be equipped with HAND-OFF/RESET-AUTO three-position selector switch. In OFF/RESET the grinder shall not run. In HAND the grinder shall run. In AUTO the grinder start and stop shall be controlled by a remotely located dry contact.
- 3. When a grinder jam condition occurs, while running in either the HAND or AUTO mode, the motor controller shall stop the grinder and reverse its rotation to clear the obstruction. If the jam condition still exists, the controller shall go through five additional reversing cycles within 45 seconds before signaling a grinder overload condition. When a grinder overload condition occurs, the controller shall shut the grinder off and activate a fail indication.
- 4. If the grinder is stopped due to a fail condition and a power failure occurs, the fail indicator shall reactivate when power is restored.
- 5. Controller reset shall be from local panel controls only.
- 6. The controller shall have indicator lights for POWER ON, RUN and FAIL conditions.
- 7. The controller shall provide overcurrent protection for the motor through an overload relay mounted directly on the contactor.
- 8. The controller shall be rated 3-HP (5-HP), 460 volts, 3 phase, 60 HZ.
- 9. Short circuit protection requires that a properly sized circuit breaker or fuses be installed by others.

### B. Components

- 1. Enclosure
  - a. Enclosures shall be NEMA 4, fabricated of polycarbonate reinforced polyester resins for wall mounting. Doors shall have hinges and corrosion resistant latches.
  - b. Enclosure shall house the control devices, relays, terminal blocks, and grinder reversing motor starter.
- 2. Control Devices
  - a. Pilot devices shall be mounted on the enclosure front panel.
  - b. Indicators shall be LED type lights. Lamps and the selector switch shall be heavy duty NEMA 4 type.
  - c. Two normally open status contacts shall be provided. One for a RUN signal and one for FAIL signal. The contacts shall be rated at 2-Amp, 240-VAC, resistive load.
  - d. Control transformer shall be protected by two primary fuses and one secondary fuse. The 120 volt secondary shall have one leg grounded.
- 3. Motor Starter
  - a. A reversing contactor type motor starter shall be provided for the motor.
  - b. Forward and reverse contactors on the starter shall have both mechanical and electrical interlocks.
  - c. The overload (OL) relay shall be adjustable so that the range selected includes the FLA (full load amperes) rating and service factor.

## **2.4 SPARE PARTS**

- A. Provide the following spare parts for each unit:
  - 1. One (1) complete gaskets & O-ring set.
  - 2. One (1) set of mechanical seals.
  - 3. One (1) set of monolithic cutters.
- B. Grinder spare parts shall be packaged in containers suitable for long term storage and shall bear labels clearly designating the contents and the equipment for which they are intended.

## **PART 3-EXECUTION**

### **3.1 FACTORY TEST**

- A. Each grinder and motor controller shall be factory tested to ensure satisfactory operation. All in-line units shall have a hydrostatic test conducted at the factory.

### **3.2 INSTALLATION**

- A. Grinder and motor controller shall be installed in accordance with the manufacturer(s) installation instructions.

### **3.3 FIELD QUALITY CONTROL**

- A. Provide the services of a factory trained representative to check initial installation and to place each grinder in service. Factory representative shall have complete knowledge of proper installation, operation, and maintenance of equipment supplied. Representative shall inspect the final installation and supervise a start-up test of the equipment.

### **3.4 MANUFACTURER'S SERVICES**

- A. Provide manufacturer's services under provisions of Section 01731.
- B. Minimum service requirements:
  - 1. Installation: As required for proper installation.
  - 2. Start-up, field testing and operator training: 4 hours on-site.
- C. Service Scheduling: by Owner on request any time during one-year warranty period.



**BIDDING AND CONSTRUCTION**  
**SCHEDULE FORM**

Following is the proposed schedule to be followed for this bid.

<u>Date</u>	<u>Milestone</u>
October 25, 2021	Bid Announcement
November 8, 2021	Site Visit
November 15, 2021-1 pm EST.	Bid Opening
November Board Meeting	Tentative Bid Award Date
December 1, 2021 Approx.	Contracts Signed / Purchase Order issued

