HARRISONBURG-ROCKINGHAM REGIONAL SEWER AUTHORITY
P.O. BOX 8
MOUNT CRAWFORD, VIRGINIA 22841
TEL: 540.434.1053 FAX: 540.434.5160
www.hrrsa.org

ISSUE DATE: **June 3, 2016**	Request for Proposal: **HRRSA-2016-02**	FOR: **Influent Fine Screen Equipment Procurement**
DEPARTMENT: **Harrisonburg-Rockingham Regional Sewer Authority**	DATE/TIME OF CLOSING: **July 7, 2016, 2:00 P.M., local time**	CONTRACT ADMINISTRATOR: **Sharon G. Foley, P.E.** **Executive Director** **sfoley@hrrsa.org** 540.434.1053, Ext. 223

A Pre-Proposal Conference will not be held for this project. Interested parties may contact the Contract Administrator to schedule a site visit. HRRSA North River WWTF is located at 856 North River Road, Mount Crawford, Virginia 22841.

Proposals - In accordance with the following and in compliance with all terms and conditions, unless otherwise noted, the undersigned offers and agrees, if the proposal is accepted, to furnish items or services for which prices are quoted, delivered or furnished to designated points within the time specified. It is understood and agreed that with respect to all terms and conditions accepted by the Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) the items or services offered and accompanying attachments shall constitute a contract.

Acknowledge Receipt of Addenda Here: No. _____ Date:_____

No. _____ Date:_____

No. _____ Date:_____

No. _____ Date:_____

Note- HRRSA does not discriminate against faith-based organizations in accordance with the *Code of Virginia, §* 2.2-4343.1 or against a bidder or offeror because of race, religion, color, sex, national origin, age, disability or any other basis prohibited by state law relating to discrimination in employment in the performance of it procurement activity.

NAME AND ADDRESS OF FIRM:

_____

_____

_____

_____

Telephone/Fax No.: _____

E-Mail Address: _____

Federal Employer Identification No. or Federal Social Security No. (Sole Proprietor) _____

Prompt Payment Discount % for payment within days/net days

Contractor's License No. _____

By signing this proposal, offeror certifies, acknowledges, understands, and agrees to be bound by the conditions set forth in this RFP.

BUSINESS CLASSIFICATION – CHECK ONE:

☐ **Individual** ☐ **Partnership** ☐ **Corporation** ☐ **LLC**

State in which Incorporated: _____

_____ _____

Vendor Legally Authorized Signature Date

_____ _____

Print Name and Title Witness

Sealed proposals subject to terms and conditions of this Request for Proposals will be received by U.S. mail at P.O. Box 8, Mount Crawford, VA 22841 or by delivery to 856 North River Road, Mount Crawford, VA 22841 until the day/time specified above.

AN EQUAL OPPORTUNITY ORGANIZATION

Please return this completed form with bid/proposal submission.

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HARRISONBURG-ROCKINGHAM REGIONAL SEWER AUTHORITY

REQUEST FOR PROPOSAL

RFP No. HRRSA-2016-02

Table of Contents

ATTACHMENTS:

A – HRRSA GENERAL TERMS AND CONDITIONS

B – TECHNICAL SPECIFICATIONS

C – PROJECT DRAWINGS

1. **PURPOSE**

A. The Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) is requesting proposals, subject to the specifications and conditions contained herein, to provide two (2) influent fine screens and one (1) screening wash press to replace existing equipment at the North River Wastewater Treatment Facility (WWTF) in Mount Crawford, Virginia.

B. The fine screens and screening wash press will consist of two fine screens, one wash press unit and associated control systems to replace two existing fine screens and one existing washer compactor. The fine screens and wash press will be installed in the existing fine screen building without requiring significant structural modifications to the screen channel or building. HRRSA will self-perform or, under separate contract, procure the services of a general contractor to perform site work, make minor structural modifications for the Equipment, install piping and sluices, and connect instrumentation and power between disconnect boxes installed on the Equipment provided pursuant to this RFP.

C. Influent fine screens will be installed and commissioned sequentially to maintain fine screening operations at all times. Offeror shall support Owner during commissioning of the washer/compactor and each screen unit during separate trips as described herein.

D. The Equipment will be commissioned under the direction of the Offeror's field representative. Per the attached specifications, this will require Manufacturers representative to be at the North River WWTF (exclusive of travel) for one (1) day for pre-installation conference, two (2) days per fine screen unit for start-up, installation inspection and field testing (four (4) days total), one (1) day for operations and maintenance training for fine screens, two (2) days for washer/compactor start-up, installation inspection and field testing, and one (1) day for operations and maintenance training for washer/compactor.

E. Technical proposal(s) including information from the Manufacturer of the screenings equipment will be evaluated as part of the procurement process due to limited existing space requirements and critical impacts on the downstream biological processes.

F. This solicitation, and the resulting Purchase Order(s), shall be consistent with the Virginia Water and Waste Authorities (VWWA) Act and the Virginia Public Procurement Act (VPPA).

2. **BACKGROUND INFORMATION**

A. HRRSA is a political subdivision of the Commonwealth of Virginia, organized under the Virginia Water and Waste Authorities Act, Chapter 28, Title 15.1, Code of Virginia of 1950, as amended. HRRSA was created by action of the Board of Supervisors of Rockingham County and the

Councils of the City of Harrisonburg and the Towns of Bridgewater, Dayton and Mt. Crawford, Virginia and was chartered by the State Corporation Commission on July 15, 1970.

HRRSA's North River Wastewater Treatment Facility (WWTF) is located at 856 North River Road, Mount Crawford, Virginia 22841 and has a rated design capacity of 22.0 million gallons per day (MGD).

3. **SCOPE OF SERVICES**

A. The Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) will evaluate, select and enter into an agreement with the Offeror for the work contained in this Request for Proposal (RFP).

B. The Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) will evaluate, select and directly purchase two (2) fine screens, one (1) screenings wash press and associated control systems that meet the requirements contained in this Request for Proposals (RFP) document, Technical Specifications and Project Drawings. HRRSA reserves the right to make multiple awards under this RFP to different Offerors. Specifically, different Offerors may be selected to provide fine screen equipment and wash press equipment.

C. The basis of design shall be ¼ inch opening fine screens rated for a flow rate of 30.0 MGD each in accordance with Technical Specifications attached to this RFP. The fine screens and wash press shall be able to be installed in the existing fine screen building without requiring significant structural modifications to the screen channel or building. Two types of fine screens will be considered: Continuous Belt Through Flow Screens and Mechanically Cleaned Through Flow Bar Screens. The following technical specifications are attached to this RFP and shall be the basis of design for the proposed equipment:

1. Continuous Belt Through Flow Screens
2. Mechanically Cleaned Through Flow Bar Screens
3. Fine Screening Wash Press

D. The following Manufacturers will be considered as the basis-of-design Equipment requirement for screen and screen wash press equipment; alternate manufacturers meeting the performance specifications may be considered, but HRRSA reserves the right to select Equipment based on technical qualifications, performance track record and number of successful installations.

1. Duperon Adaptive Technology
2. Hydrodyne Engineering

4. **SPECIFICATIONS AND DRAWINGS**

A. Refer to the Technical Specifications and Project Drawings dated June 3, 2016 for the Influent Fine Screen Equipment Procurement included as Attachments B and C.

B. The Equipment shall comply with all applicable federal, state and local codes and regulations to include safety and fire codes and regulations.

C. All electrical connections that are not factory assembled and shipped complete shall only require HRRSA or the installing contractor to connect wires between junction boxes installed on the Equipment supplied by the Offeror. All electrical equipment located in the fine screenings building shall be rated for a Class 1 Division 1 Group D classified environment. All other electrical equipment shall be rated NEMA 4X for service in a corrosive and wet environment. For all electrical controls work a terminal block shall be provided on the equipment with all control wires terminated at the location and identified. For all 120V/1PH electrical work a separate electrical box shall be provided on the equipment that terminates and identifies all 120V wiring. For all 460V/3PH electrical work a separate electrical box shall be provided on the equipment (or on the motor) that terminates and identifies all 460V wiring.

D. Offeror shall submit shop drawings of the Equipment indicating complete description of all system components to be provided to include required appurtenances to meet the requirements of the RFP.

E. General Equipment Requirements

1. Material and equipment shall be provided that is:

    a. Constructed and finished in a workmanlike manner.

    b. Suitable for the purpose intended, especially as related to acceptability for use in a wastewater treatment facility.

    c. Selected and fabricated to the best engineering practice.

    d. Mechanical and electrical equipment, particularly bearings, contacts and other wearing parts shall be designed for extended periods of operation without frequent maintenance or attention.

    e. All machinery shall be designed such that all working parts are readily accessible for inspection and repair, and each part is suitable for the service required.

    f. Safety Devices: The Equipment shall include all necessary permanent safety devices, such as machinery guards, emergency stops and similar items required by OSHA, and other federal, state, and local health and safety regulations.

    g. Provide lifting lugs for equipment weighing over 100 pounds.

2. Flanges and pipe threads:

    a. All pipe flanges shall conform in dimension and drilling to ANSI B16.1, Class 125 (cast iron pipe sizing) and to ANSI B16.5, Class 150 (steel pipe sizing),unless otherwise specified.

    b. Provide like flanges for all connections. The connection of dissimilar flanges will not be accepted.

c. Pipe threads shall conform to ANSI B1.1, coarse thread series, Class 2 fit.

d. Flange assembly bolts shall be heavy pattern, hexagonal head, stainless steel machine bolts with heavy pattern hexagonal nuts conforming to ANSI B18.2.1 and B18.2.2.

e. Bolt threads shall conform to Unified Screw Threads, Standard Coarse Thread Series, Class 2A and 2B, ANSI B1.1.

3. Bearings

a. Unless otherwise specified, oil or grease lubricated ball or roller type equipment bearings shall be designed to withstand the stresses of the service conditions specified. Rate each bearing in accordance with AFBMA Methods of Evaluating Load Ratings of Ball and Roller Bearings.

b. Equipment bearings shall have a minimum B-10 rating life of 100,000 hours, as determined using the maximum equipment operating speed, unless otherwise specified.

c. Grease lubricated bearings, unless factory sealed and lubricated, shall be furnished with easily accessible grease supply, flush, drain, and relief fittings. Use extension tubes where necessary. Provide standard hydraulic alemite type grease supply fittings.

4. Couplings

a. A flexible coupling shall be provided for all drives rated over 0.5 HP where the drive is directly connected, unless otherwise specified.

b. Couplings shall be furnished to accommodate; angular or parallel misalignment, and end float, and to cushion shock loads and dampen torsional vibrations.

c. The flexible element is to be attached to the coupling flanges by means of clamping rings and cap screws. The coupling flanges are to be attached to the stub shaft by means of a key and set-screw or Cross-Clamped.

d. Metal-to-metal contact will not be acceptable.

e. Manufacturers

i. KTR Rotex
ii. Rex-Omega Elastomeric/Flexible
iii. TB Woods Standard Sureflex

f. For larger couplings, continuous sleeve flexible non-lubricated, forged steel couplings shall be furnished.

g. Couplings are to be sized in accordance with Equipment manufacturer's recommendations and installed in conformance with the Coupling manufacturer's instructions.

5. Guards
    a. Sheet-expanded guards, or equal are to be furnished on all mechanical moving parts in accordance with workplace safety regulations.
    b. Guards shall be fabricated of 14 gauge steel, or equal, and painted red after fabrication to same standard as parent equipment.
    c. Guards are to be removable to facilitate maintenance of moving parts.
    d. Provisions are to be made to extend lube fittings through guards.
6. Caution signs
    a. Provide signage in accordance with OSHA standards and requirements:
        1. All rotating equipment drives shall be identified with caution signs.
        2. Caution signs shall consist of vinyl stick-on type decals positioned immediately adjacent to the rotating element and placed onto a clean, smooth surface.
        3. When an insufficient space or surface exists the decal is to be applied to a galvanized mild steel, fiberglass, or plastic sheet fastened to equipment.
        4. The caution signs shall read "CAUTION - AUTOMATIC EQUIPMENT MAY START AT ANY TIME".
        5. Sign letters are to be 25 mm in height, in red, on a yellow background.
7. Pilot devices
    a. For electrical pilot devices including switches, relays, filters and contacts, heavy-duty industrial quality devices are to be furnished.
    b. Contacts which provide alarm malfunction or control to external systems are to be rated for 24V DC control power. Analog instruments are to be rated for 4-20 mA control power.
8. Indicating lights
    a. Oil-tight transformer type indicating lights with LED lamps are to be furnished.

5. GENERAL CONTRACT CONDITIONS

Refer to the HRRSA General Terms and Conditions (Attachment A).

6. SPECIAL TERMS AND CONDITIONS

A. Definition of Terms:

1. The terms “Manufacturer” as used in this RFP shall refer to the manufacturer that the Offeror (if Offeror is different from the Manufacturer) is proposing to use for specific pieces of

equipment for this project. The Manufacturer named by the Offeror shall be considered the basis of the Offeror's proposal.

2. Equipment: All fine screen, wash press, associated controls and ancillary equipment provided by the Offerer under this RFP.

B. Retainage: Under the provisions of Code of Virginia 2.2-4333, the Offeror shall be paid at ninety-five percent of the earned sum when payment is due, with no more than five percent being retained to ensure faithful performance of the contract. All amounts withheld may be included in the final payment.

C. Partial Payment: HRRSA will pay the Offeror percentages of the contract price according to the following schedule:

1. 10%: Within 30 days of delivery of shop drawings to HRRSA

2. 65% (75% cumulative): Within 30 days of delivery and HRRSA acceptance of all Equipment to the North River WWTF.

3. 20% (95% cumulative): Within 30 days of HRRSA issuing a certificate/letter of Substantial Completion for the Equipment installation. HRRSA will conduct a Substantial Completion inspection when it receives notification that ALL of the following has been successfully achieved/performed in accordance with the contract documents:

a. Offeror issuance of Certificate of Proper Installation

b. Offeror issuance of Certificate of Proper Operation

c. Offeror successful completion of all start-up activities and field performance testing and submission of said documentation to HRRSA.

D. Final Payment: The final payment, which will include the retainage, less any amounts due or claimed by HRRSA, shall not become due until all punch list items have been resolved to the satisfaction of HRRSA and after the Offeror has delivered all documents described in the specifications. Within 30 days of completion of said items, HRRSA shall pay the Offeror the amount therein stated, less all prior partial payments.

E. Project Completion:

1. *Testing and Start-Up*: Procedures for starting of mechanical, electrical, control systems, and monitoring systems shall include the following: Offeror shall coordinate sequence for startup of various items of equipment; notify Engineer fourteen (14) days prior to startup of each item of equipment; verify that each piece of equipment has been checked for proper

lubrication, drive rotation, belt tension, control sequence, and other conditions that may cause damage; verify control systems are fully operational in automatic and alternate modes of operation; verify that tests, meter readings, and specific electrical characteristics agree with those specified by electrical equipment manufacturer; verify that instruments, meters, and gauges have been calibrated (Perform three-point calibration on continuous elements and systems. Provide calibration records.); provide a Certificate of Proper Installation issued by manufacturer to Engineer and Owner prior to initiating any startup activities.

Offeror shall perform startup prior to functional test to include pre-startup inspection of installation; startup under no-load conditions, if possible, observations of noise, vibration, and operation. Owner and Engineer shall witness startup. If all operating characteristics are normal, proceed with functional test.

Offeror shall perform functional test prior to placing equipment in service. Perform functional test under supervision of responsible manufacturers' representatives, instrumentation and control subcontractor, and Offeror personnel. Representatives of Owner and Engineer shall witness functional test. If applicable, perform functional test on each piece of equipment and operational system as specified in the individual product Sections. If system is to be placed in service in phases, perform functional test on each part of system prior to placing each part of system in service. Functional testing shall demonstrate that equipment operates and complies with specified performance requirements; demonstrate that control panel functions, including failures and alarms, operate and comply with specified performance requirements; be non-destructive; if necessary, simulate failures and alarm conditions by jumping failure input terminals, and provide signal generators that simulate control conditions if it is not feasible to create actual conditions; use actual as-built control diagrams in demonstration of functions; use operation and maintenance manuals to demonstrate operation of equipment; provide a Certificate of Proper Operation issued by manufacturer to Engineer and Owner prior to placing equipment in service. If functional test does not meet requirements specified in this Section, Offeror shall remedy defects and provide additional testing at no additional cost to Owner.

2. Substantial Completion: When Offeror considers the entire Work ready for its intended use Offeror shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Offeror as incomplete) and request that Engineer issue a certificate of Substantial Completion. Promptly after Offeror’s notification, Owner, Offeror, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Offeror in writing giving the reasons therefore. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment.

3. Final Inspection: Upon written notice from Offeror that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Offeror and will notify Offeror in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Offeror shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

4. Partial Utilization: Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Offeror agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Offeror's performance of the remainder of the Work, subject to the following conditions:

    1. Owner at any time may request Offeror in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Offeror agrees that such part of the Work is substantially complete, Offeror will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

    2. Offeror at any time may notify Owner and Engineer in writing that Offeror considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

    3. Within a reasonable time after either such request, Owner, Offeror, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Offeror in writing giving the reasons therefore. If Engineer considers that part of the Work to be substantially complete, the Engineer will issue a certification of Substantial Completion of that part of the Work as described above.

F. Shop Drawings and Samples: Offeror shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals. Shop Drawings shall be prepared by persons and entities possessing expertise and experience in the trade for which the Shop Drawing is prepared and, if required by the Contract Documents or applicable Laws or Regulations, by a licensed architect or engineer, as appropriate. Data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Offeror proposes to provide and to enable Engineer to review the information.

    1. Submittal Procedures: Submit shop drawings in accordance with the following submittal procedures:

a. Submit six (6) hard copies of all shop drawings and samples. Three (3) copies will be returned to Offeror.

b. Before submitting each Shop Drawing or Sample, Offeror shall have determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto; the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; all information relative to Offeror's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents. Each submittal shall bear a stamp or specific written certification that Offeror has satisfied Offeror's obligations under the Contract Documents with respect to Offeror's review and approval of that submittal.

c. With each submittal, Offeror shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

2. Engineers Review: Engineer's review and approval or other appropriate action will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer's review and approval or other appropriate action will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. Engineer's review is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of Offeror as required by the Contract Documents. Engineer will return submittals marked as follows:

   a. Approved: Offeror may incorporate product(s) or implement Work covered by submittal.

   b. Approved as Noted: Offeror may incorporate product(s) or implement Work covered by submittal, in accordance with Engineer's notations.

   c. Revise as Noted, Resubmit: Make corrections or obtain missing portions, and resubmit. Except for portions indicated, Offeror may begin to incorporate product(s) or implement Work covered by submittal, in accordance with Engineer's notations.

d. Rejected/Resubmit as Specified: Offeror may not incorporate product(s) or implement Work covered by submittal.

3. Re-Submittal Procedures: If submittals are required to be resubmitted, Offeror shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Offeror shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

7. INSTRUCTIONS FOR PREPARING AND SUBMITTING PROPOSALS

A. Questions and Inquiries: Procedural questions about this RFP should be directed to Sharon G. Foley, P.E., HRRSA Executive Director, at (540) 434-1053 extension 223 or sfoley@hrrsa.org. Technical questions should be directed to Aaron Tice, Project Manager (Wiley|Wilson), at (434) 455-3210 or atice@wileywilson.com. **All questions shall be submitted by 5 pm on June 28, 2016.**

B. Site Visits: A pre-proposal conference will not be held for this solicitation. Interested parties may contact the Contract Administrator (Sharon G. Foley, P.E., HRRSA Executive Director, at (540) 434-1053 extension 223 or sfoley@hrrsa.org) to schedule a site visit. The HRRSA North River WWTF is located at 856 North River Road, Mount Crawford, Virginia 22841.

C. Contents of Proposals: Information contained in the proposal shall be stated in a clear and concise manner. Documents should be submitted in two separate envelopes, one containing the Technical Submission and the other containing the Cost Proposal. The two submittals shall be identical except that the technical proposal shall not contain any cost information.

D. The Offeror's submittal shall be organized in accordance with the following Table of Contents. Each page of the submission should be numbered sequentially.

1. Table of Contents

Section	Title
1	RFP COVER PAGE
2	Executive Summary Including Proposed Personnel / Team Organization
3	Manufacturer Information, Relevant Experience and References
4	HRRSA Required Forms: Vendor Identification/Ownership Disclosure Statement, Small & Minority Business Statement and State Corporation Commission Form
5	Price Quotation Form including Guaranteed Schedule (Cost Proposal only)

2. Executive Summary

   a. Provide an executive summary highlighting key aspects of the proposal excluding cost information. The executive summary should not exceed one page in length.

   b. The executive summary shall clearly state and identify who the sole responsible party is for submitting the proposal, (i.e. the Offeror) and the proposed equipment manufacturer for the fine screen and washer/compactor equipment (i.e., the Manufacturer). There shall only be one responsible party (i.e. Offeror).

   c. Include an organizational chart for the entire team (including the manufacturer) clearly indicating services and equipment to be provided by each team member and/or manufacturer as appropriate.

   d. Provide clear, concise information regarding the experience and qualifications of all key personnel responsible for work and the respective roles and experience of those members. Key personnel shall include Offeror's Project Manager, Manufacturers Project Manager and Certified Field Technician. Provide the geographic location of all key personnel.

3. Manufacturer Information, Relevant Experience and References

   a. The Manufacturer is defined as the party that manufacturers and supplies the fine screen and washer/compactor equipment specified.

   b. Provide a brief company history detailing product lines and history of manufacturing equipment meeting the requirements of this RFP.

   c. Identify the location of the corporate headquarters and the location of the facility where the equipment will be manufactured for this project.

   d. Identify the Project Manager, Applications Engineer, and Certified Field Technician that will be assigned to this project. Provide brief descriptions of their experience and qualifications.

   e. Identify the location of the nearest authorized service representative(s) for the Equipment. Provide legal name, address and contact person for the authorized service representative(s). Provide the number of trained service technicians employed by the service representative. Scoring preference will be given to service representatives within 3 hours driving distance of HRRSA.

   f. Identify the availability, source and location of origin for spare parts for all major components of the equipment being proposed. Scoring preference will be given to manufacturers that can deliver spare parts for major components to HRRSA within 5 days of order.

g. Provide a list of recommended spare parts and all special tools to perform routine and preventative maintenance for HRRSA to retain on site and include all items as part of the cost proposal.

h. Describe the customary technical support provided after the completion of the contractual warranty period.

i. List all professional and technical certifications/affiliations.

j. Description of company structure and identify and outline any and all relationships with any partners, major equipment suppliers and/or consultants that would be used for this project.

k. Demonstrate a minimum of ten (10) projects demonstrating relevant experience in the manufacture of exact model proposed or equivalent (larger) fine screen and washer/compactor equipment of the same type at municipal wastewater treatment facilities. References shall demonstrate relevant experience with a description of each contract scope, substantial completion dates, and delineation of specific equipment provided.

l. Provide Owner and Operator contacts for the references/installations listed above. Contact names and telephone numbers shall be provided for all references.

m. State the design operating flow, opening size, hydraulic characteristics and unit model number for all references/installations listed above.

4. Guaranteed Delivery Schedule

a. Offeror shall provide a guaranteed schedule from issuance of PO to delivery of all shop drawings to HRRSA.

b. Offeror shall provide a guaranteed schedule from issuance of PO to delivery of Equipment to North River WWTF. Delivery of three (3) hard copies of the O&M manual and an electronic copy in .PDF format is a requirement in meeting the equipment delivery schedule requirements to the job site.

E. Cost Proposal: The Cost Proposal shall be identical to the Technical proposal but shall also include a completed Price Quotation Form.

F. Packaging of Proposals: The Proposal will be submitted in two separate envelopes, one containing the Technical Submission and the second containing the Cost Proposal. The Technical Submission shall include a complete proposal excluding Price Quotation Form. The Cost Proposal, contained in a separate and appropriately marked envelope, shall be identical to the Technical Submission but shall include Price Quotation Form. The proposals will initially be evaluated based on the Technical Submission. The Cost Proposal envelope will only be opened

for those proposals that are deemed by the selection committee to meet the RFP requirements as described herein.

G. Proposal Submission Procedure

1. Proposals must be received at the North River WWTF (856 North River Road, Mt. Crawford, VA 22841) **BEFORE 2:00 P.M., LOCAL TIME, JULY 7, 2016**.

2. Each proposal shall be submitted in a sealed envelope with the outside of the envelope stating the name of the Offeror, its mailing address, its telephone number, and the following identification: **"RFP No. HRRSA-2016-02: Influent Fine Screen Equipment Procurement".**

3. The Sealed Proposal Envelope shall contain two separate envelopes, one containing the Technical Submission and the second containing the Cost Proposal, so labelled. The Technical Submission shall include a complete proposal excluding Price Quotation Form. The Cost Proposal, contained in a separate and appropriately marked envelope, shall be identical to the Technical Submission but shall include a Price Quotation Form.

4. One complete, original proposal, so marked, and one complete copy, so marked, are required.

   Proposal security in the amount of five percent (5%) of the total proposed cost will be required in accordance with the EJCDC Form C-430 Bid Bond. In lieu of a proposal security, HRRSA will accept a cashier's check or cash deposit equal to the 5% of the total proposed project cost.

5. Proposals may either be mailed to P.O. Box 8, Mt. Crawford, Virginia 22841 or hand delivered or shipped to 856 North River Road, Mt. Crawford, Virginia 22841. Proposals may not be emailed.

6. Proposals received by HRRSA after the acceptance date will not be considered. Proposals will be publicly accepted and logged in at the time and date received but not opened.

7. Offerors, prospective bidders, vendors or other interested parties requiring "reasonable accommodation" under the Americans with Disabilities Act for submission of proposals, authorized inspection visits or appropriate data collection on HRRSA property, or any other procurement-related contact with HRRSA staff, must contact the HRRSA Executive Director in a timely manner to arrange such accommodations as appropriate.

H. HRRSA to Bind Firm in Contract: Proposals must give the full name and address of the vendor. Failure to manually sign the Proposal may disqualify it. The person signing the Proposal should show Title or Authority to bind his/her firm in a contract.

I. Rights of HRRSA: HRRSA reserves the right to accept or reject all or any part of any proposal, waive informalities and award the Contract to best serve the interest of HRRSA.

J. The contents of the Proposal submitted by the successful Offeror and this RFP will become part of any contract/PO awarded as a result of the Scope of Work contained herein.

K. Costs of Proposal Preparation: Any costs incurred by the Offerors in preparing or submitting proposals are the Offeror's responsibility. HRRSA will not reimburse any Offeror for any costs incurred as a result of a response to this RFP.

L. Addendum and Supplement to Request: Only written communications relative to this procurement will be considered. No oral communication by either the Offeror or any representative of HRRSA shall alter or amend the intention of these specifications or be binding thereupon. Written addenda will be issued for any clarifications and or changes necessitated by appropriately posed questions from potential Offerors and /or representatives of HRRSA. Written acknowledgement of all addenda is necessary for the bid to be considered complete and responsive.

8. Evaluation of Proposals

A. HRRSA will review and rank the proposals from each Offeror based upon the factors itemized below. Weighting factors will be applied to each category.

1. Quality Factors

    a. Completeness of Technical Proposal in demonstrating Equipment meets the intent and requirements of the RFP, Technical Specifications and Project Drawings. (20%)

    b. Relevant Manufacturer experience, field installations and performance track-record. (20%)

    c. Demonstrated equipment quality, manufacturing quality assurance/quality control. (20%)

    d. Guaranteed delivery schedule. (15%)

    e. Compliance with all aspects of the RFP (Cause for Rejection)

2. Cost Factors

    Equipment Cost (25%)

B. Each proposal will be evaluated with respect to compliance with all technical and administrative requirements as detailed in the RFP.

C. References will be evaluated based on the similarity of the installation, size and complexity, as well as comments received from the reference.

D. The proposals will be ranked based upon the criteria set forth in the RFP. Price will be considered as defined herein, but will not be the sole determining factor. Negotiations will be conducted with the highest ranked Offeror. If an agreement cannot be reached to the satisfaction of HRRSA with the top ranked Offeror, then negotiations will be terminated with that Offeror and then negotiations will then be started with the next lowest ranked Offeror. This sequence will continue until an agreement can be reached to the satisfaction of HRRSA.

E. HRRSA reserves the right to not award/select any proposal, if HRRSA so chooses.

F. Should HRRSA determine in writing and in its sole discretion that only one Offeror is fully qualified, or that one Offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that Offeror.

G. From the date that the proposals are due, HRRSA will have 60 days to issue Notice of Award to the Offeror.

H. A written notice of award shall be provided to the successful Offeror within the specified acceptance period. It may be in the form of a letter, or PO, either of which shall be deemed a binding contract without further action by either party. If a formal contract is required, it shall be written and issued by the HRRSA Executive Director for execution by the Offeror. All copies shall then be returned to the HRRSA Executive Director, who will be responsible for providing proper signatures for HRRSA and dispersing copies.

I. Notice of Award: HRRSA will provide public notice announcing its decision to award the contract by posting the Notice of Intent to Award on its website (http://www.hrrsa.org), the *eVA* website (http://eva.virginia.gov/) and by mailing the notice to all Offerors submitting a proposal.

END OF SECTION

9. PRICE QUOTATION FORM

Influent Fine Screen Equipment Procurement

RFP No. HRRSA-2016-02

Item #	Description	Price
1	Total lump sum price for two (2) influent fine screens and associated control systems in accordance with this RFP.	$
2	Total lump sum price for one (1) fine screenings wash press and associated control systems in accordance with this RFP.	$
3	Daily price to provide manufacturer's representative for inspection, field testing or training separate from trips required in the RFP.	$
		Price
A/D-1	Add:	$
A/D-2	Add:	$
A/D-3	Deduct for providing both Items #1 and #2 (i.e. Two (2) Fine Screens and one (1) Wash Press)	($)
A/D-4	Deduct:	($)
A/D-5	Deduct:	($)

Note: Prices are to include all charges, F.O.B. delivery site at 856 North River Road, Mt. Crawford Virginia.

Offerors Guaranteed Schedule	
Number of Calendar Days from issuance of PO to Deliver all Shop Drawings to HRRSA:	
Number of Calendar Days from issuance of PO to Deliver Fine Screen Equipment and/or Wash Press Equipment to Site:	

Exceptions, if any, to any portion of this RFP or attachments shall be enumerated below:

_____

_____

_____

_____

By: _____

(Business Name)

_____

(Name and signature of person authorized to sign)

_____

(Title of person authorized to sign)

Please return this completed form with Cost Proposal.

10. VENDOR IDENTIFICATION AND OWNERSHIP DISCLOSURE

Influent Fine Screen Equipment Procurement

RFP No. HRRSA-2016-02

Company:					
Address:					
Contact Person:					
Telephone:		Fax:		E-Mail:	
Organized under the laws of the State of:					
Principal place of business:					
Following list includes persons having ownership of 3% or more in the company (attach more sheets if necessary):					
Name			**Address**		

HRRSA requests that any consultant, firm or vendor receiving a contract of award resulting from an RFP issued by HRRSA shall make certification as specified below. Receipt of such certification, shall be a prerequisite to the award of contract and payment thereof.

Section II – Employees Not to Benefit

I (we) hereby certify that if the contract is awarded to our firm, partnership, or corporation, that no employees of HRRSA or members of his/her immediate family, including spouse, parents or children has received or been promised, directly or indirectly, any financial benefit, by way of fee, commission, finder's fee, political contribution or any similar form of remuneration on account of the act of awarding and/or executing this contract.

Section III – Conflicts of Interest

This solicitation is subject to the provisions of VA Code §2.1-639.2 et. seq, the State and Local Government Conflict of Interests Act. The Vendor [ ] is [ ] is not aware of any information bearing on the existence of any potential organizational conflict of interest.

Section IV – Collusion

I certify that this offer is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting an offer for the same services, materials, supplies, or equipment and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of the State and Federal law and can result in fines, prison sentences, and civil damages.

I hereby certify that the responses to the above representations, certifications, and other statements are accurate and complete. I agree to abide by all condition of this RFP and certify that I am authorized to sign for my company.

Signature: _____ **Date:** _____

Name (Printed): _____ **Title:** _____

Please return this completed form with bid/proposal submission.

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11. SMALL AND MINORITY BUSINESS STATEMENT

Influent Fine Screen Equipment Procurement

RFP No. HRRSA-2016-02

The following information is requested for statistical purposes only. It is intended to ensure that its procurement practices are non-discriminatory and promote equality of opportunity for Small and Minority Business Enterprises, whether doing so by choice or by formal procedural regulation.

Definition:

1. Small Business: For the purpose of this document, a small business concern is one which regardless of ownership or control:

    a. Does not exceed fifty (50) employees.
    b. Gross annual income does not exceed $2 million.
    c. Is independently owned and operated (not subsidiary of another firm).
    d. Is not dominant in its field of operation.

2. Minority Business: A business entity which is operated and controlled by a minority.

    a. The terms "operated and controlled" shall mean that the managerial and official staff of this entity shall be comprised of minority persons, sufficient in ratio and gross earnings to demonstrate that the business transactions are, in fact, controlled by minority persons; and that the primary power, direct or indirect, to influence the management of this entity shall rest with minority persons or a corporation, partnership, or sole proprietorship in which minority persons collectively own, operate, control and share in earnings of 51 percent or more of such an enterprise.

    b. A minority person shall mean Black, Hispanic, Asian or Pacific Islanders, American Indians or Alaskan Natives, and women, regardless of race or ethnicity.

PLEASE CHECK THE FOLLOWING INFORMATION RELEVANT TO YOUR FIRM:

Minority Business Firm: Yes_____; No_____.
Small Business Firm: Yes_____; No_____.

Name of Business: _____

Address: (Office) _____

Telephone/Fax: _____ /_____

Please return this completed form with bid/proposal submission.

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12. STATE CORPORATION COMMISSION FORM

Virginia State Corporation Commission ("SCC") registration information

The undersigned Contractor:

☐ is a corporation or other business entity with the following SCC identification number:_____

-OR-

☐ is not a corporation, limited liability company, limited partnership, registered limited liability partnership or business trust

-OR-

☐ is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's out-of-state location)

-OR-

☐ is an out-of-state business entity that is including with this bid an opinion of legal counsel which accurately and completely discloses the undersigned Offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of §13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

****NOTE****

☐ Check the following box if you have not completed any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for proposals (the Commonwealth reserves the right to determine in its sole discretion whether to allow such waiver):

Signature: _____

Date: _____

Name: _____
(Print)

Title: _____

Name of Firm: _____

Please return this completed form with bid/proposal submission.

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13. MANUFACTURER STATEMENT OF QUALIFICATIONS

Influent Fine Screen Equipment Procurement

RFP No. HRRSA-2016-02

Provide the following information per RFP Section 7.D.3. Attach additional pages as required.

Manufacturer:
Identify the location of the corporate headquarters and the location where the project staff will be based during the project:
Provide a brief company history detailing product lines and history of manufacturing equipment meeting the requirements of this RFP.
Description of Company Structure (Owner, Officers, Office Locations, Number of Permanent Staff). Identify and outline any and all relationships with any partners, equipment suppliers and/or consultants that would be used for this project.
Nearest Authorized Service Representative:
Availability (state typical delivery time to HRRSA), Source and Location of Origin of Spare Parts for All Major Components:

Provide the following information for each project reference per RFP Section 7.D.3 (10 references minimum; 12 references maximum):

Project Reference No. 1 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 2 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 3 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 4 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 5 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 6 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 7 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 8 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 9 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 10 (Required)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 11 (Optional)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

Project Reference No. 12 (Optional)

Owner and Project Name:	
Project Reference Name and Position:	
Current Contact Information:	
Date of Completion:	Unit Flow Rating/No. Units:
Model Number:	Opening Size:
Project Description:	
Applicable Project Elements (check all that were applicable to the referenced project): □ Influent Wastewater Fine Screen □ Wash Press □ Retrofit to Existing Screen Channel	

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HARRISONBURG-ROCKINGHAM REGIONAL SEWER AUTHORITY
GENERAL TERMS AND CONDITIONS

APPLICABLE LAWS AND COURTS: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth serving Rockingham County. The contractor shall comply with all applicable federal, state and local laws, rules and regulations.

ANTI-DISCRIMINATION: By submitting their proposals, offerors certify to the Harrisonburg-Rockingham Regional Sewer Authority that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and § 2.2-4311 of the *Virginia Code*.

In every contract over $10,000 the provisions below apply:

1. During the performance of this contract, the contractor agrees as follows:

   a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, status as a service disabled veteran, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

   b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

   c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

   The contractor will include the provisions of 1. above in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

2. HRRSA does not discriminate against small and minority businesses or faith based organizations.

ETHICS IN PUBLIC CONTRACTING: By submitting their proposals, offerors certify that their proposals are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other offeror, supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

IMMIGRATION REFORM AND CONTROL ACT OF 1986: By submitting their proposals, offerors certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

DEBARMENT STATUS: By submitting their proposals, offerors certify that they are not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

ANTITRUST: By entering into a contract, the contractor conveys, sells, assigns, and transfers to HRRSA all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by HRRSA under said contract.

MANDATORY USE OF FORMS AND TERMS AND CONDITIONS: Failure to submit a proposal on the form provided, (if provided) shall be a cause for rejection of the proposal. Modification of or additions to the General Terms and Conditions of the solicitation may be cause for rejection of the proposal; however, HRRSA reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

REVISIONS TO THE OFFICIAL RFP: No offeror shall modify, revise, edit or make any unauthorized change(s) to the original Official Request for Proposal (RFP). The Official solicitation document and the Addenda are the documents posted on the HRRSA and eVA web sites and/or authorized by HRRSA. Any such violation as stated above may result in rejection of the RFP response. In addition, violations may result in the debarment of the offeror by HRRSA.

CLARIFICATION OF TERMS: If any prospective offeror has questions about the specifications or other solicitation documents, the prospective offeror should contact the person whose name appears on the face of the solicitation no later than five working days before the due date. Any revisions to the solicitation will be made only by addendum issued by HRRSA.

PAYMENT:

1. To Prime Contractor: Refer to RFP Special Terms and Conditions.

2. To Subcontractors:

   a. A contractor awarded a contract under this solicitation is hereby obligated:

      (1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from HRRSA for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

      (2) To notify HRRSA and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.

   b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed

by the contractor that remain unpaid seven (7) days following receipt of payment from HRRSA, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee.

c. Any such contract awarded shall further require the contractor to include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower- tier subcontractor. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of HRRSA.

PRECEDENCE OF TERMS: HRRSA's General Terms and Conditions shall apply in all instances. In the event there is a conflict in this solicitation between HRRSA's General Terms and Conditions and any other Special, Standard or Supplementary Terms and Conditions, including the Special Terms and Conditions of the RFP, the more stringent of the Special, Standard or Supplementary Terms and Conditions shall apply.

QUALIFICATIONS OF OFFERORS: HRRSA may make such reasonable investigations as deemed proper and necessary to determine the ability of the offeror to perform the services/furnish the goods and the offeror shall furnish to HRRSA all such information and data for this purpose as may be requested. HRRSA reserves the right to inspect offeror's physical facilities prior to award to satisfy questions regarding the offeror's capabilities. HRRSA further reserves the right to reject any proposal if the evidence submitted by, or investigations of, such offeror fails to satisfy HRRSA that such offeror is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

TESTING AND INSPECTION: HRRSA reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

ASSIGNMENT OF CONTRACT: A contract shall not be assignable by the contractor in whole or in part without the written consent of HRRSA.

CHANGES TO THE CONTRACT: Changes can be made to the contract in any of the following ways:

1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.

2. The HRRSA Executive Director may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give HRRSA a credit for any savings.

DEFAULT: In case of failure to deliver goods or services in accordance with the contract terms and conditions, HRRSA, after due oral or written notice, may procure them from other sources and hold

the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies, which HRRSA may have.

CANCELLATION OF THE CONTRACT: HRRSA may terminate any agreement resulting from this solicitation at any time, for any reason or for no reason, upon thirty days advance written notice to the Contractor. In the event of such termination the Contractor shall be compensated for services and work performed prior to termination.

TAXES: Sales to HRRSA are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.

USE OF BRAND NAMES: Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict offerors to the specific brand, make or manufacturer named, but conveys the general style, type, character, and quality of the article desired. Any article which the public body, in its sole discretion, determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. The offeror is responsible to clearly and specifically identify the product being offered and to provide sufficient descriptive literature, catalog cuts and technical detail to enable HRRSA to determine if the product offered meets the requirements of the solicitation. This is required even if offering the exact brand, make or manufacturer specified. Normally in competitive sealed bidding only the information furnished with the bid will be considered in the evaluation. Failure to furnish adequate data for evaluation purposes may result in declaring a bid nonresponsive. Unless the offeror clearly indicates in its proposal that the product offered is an "equal" product, such proposal will be considered to offer the brand name product referenced in the solicitation.

INSURANCE: The Contractor shall obtain insurance coverage per the attached document, Harrisonburg-Rockingham Regional Sewer Authority Insurance Requirements. Workers' compensation coverage shall be required pursuant to the provisions of §2.2-4332 and §65.2-800 et seq. of the *Code of Virginia* and shall provide to the Harrisonburg-Rockingham Regional Sewer Authority, a certificate of insurance showing evidence of such coverage prior to the award of the contract. If any subcontractors are involved, the subcontractor will have workers' compensation insurance in accordance with §2.2-4332 and §65.2-800 et seq. of the *Code of Virginia*. The Contractor and any subcontractors shall maintain these insurance coverages during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.

PERFORMANCE AND PAYMENT BONDS: The Contractor shall furnish the following bonds:

1. A performance bond in the sum of the contract amount conditioned upon the faithful performance of the contract in strict conformity with the plans, specifications and conditions of the contract.

2. A payment bond in the sum of the contract amount. The bond shall be for the protection of claimants who have and fulfill contracts to supply labor or materials to the prime contractor to whom the contract was awarded, or to any Subcontractors in the furtherance of the work provided for in the Contract, and shall be conditioned upon the prompt payment for all materials furnished or labor supplied or performed in the furtherance of the work.

3. Each of the bonds shall be executed by one or more surety companies selected by the Contractor that are authorized to do business in Virginia.

Nothing in this section shall preclude the Contractor from requiring each Subcontractor to furnish a payment bond with surety thereon in the sum of the full amount of the contract with such subcontractor conditioned upon payment to all persons who have and fulfill contracts that are directly with the subcontractor for performing labor and furnishing materials in the prosecution of the work provided for in the Subcontract.

SELECTION PROCESS/AWARD: Upon the award or the announcement of the decision to award a contract as a result of this solicitation, HRRSA will notify all responsive offerors.

PROPOSAL ACCEPTANCE PERIOD: A proposal may not be withdrawn after the time and date proposals must be received and for sixty (60) days thereafter; except that a proposal may be withdrawn due to error as otherwise provided per §2.2-4330 of *Virginia Code*.

EXCUSABLE DELAY: HRRSA shall not be in default of any failure in performance of this agreement in accordance with its terms if such failure arises out of causes beyond its reasonable control and without the fault of or negligence of HRRSA. Such causes may include, but are not restricted to acts of God or the public enemy, fires, flood, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, but in every case the failure to perform must be beyond the reasonable control and without the fault or negligence of HRRSA.

DRUG-FREE WORKPLACE: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

SAFETY and OSHA STANDARDS: All parties performing services for HRRSA shall comply with all Occupational Safety and Health Administration (OSHA), State Occupational Health Standards, and any other applicable rules and regulations. All parties shall be held responsible for the training, supervision, and safety of their employees. Any unsafe acts or hazardous conditions that may cause injury or damage to any persons or property within and around the work site areas under this contract shall be remedied per the regulatory agency's guidelines.

PERMITS AND FEES: All proposals submitted shall have included in price the cost of any business or professional licenses, permits or fees required by HRRSA or the Commonwealth of Virginia. The offeror must have all necessary licenses to perform the services in Virginia and, if practicing as a corporation, be authorized to do business in the Commonwealth of VA.

COOPERATIVE PROCUREMENT: This procurement is being conducted on behalf of other public bodies, in accordance with §2.2-4304 (A) of the *Code of Virgini*a. The successful offeror has the option to

provide these same services, **except architectural and engineering services**, at the same prices, awarded as a result of this solicitation to any public body within the Commonwealth of Virginia. If any other Public body decides to use the final contract, the contractor(s) must deal directly with that public body concerning the placement of orders, issuance of the purchase orders, contractual disputes, invoicing and payment. Failure to extend a contract to any public body will have no effect on consideration of your proposal.

LIABILITY AND LITIGATION: Notwithstanding any provision to the contrary, HRRSA shall not indemnify or hold harmless any Contractor or other third party. HRRSA does not waive any right or release any party from liability, whether on its own behalf or on behalf of any boards, employees or agents. HRRSA does not waive the right to trial by jury for any cause of action arising from the Contract and shall not be required to submit any Contract claim to binding arbitration or mediation. HRRSA shall not be liable to Contractor for any special, punitive or exemplary damages arising from the performance of the contract, including, but not limited to, incidental damages, and lost profit or lost wages, even if such special damages are reasonably foreseeable.

STATE CORPORATION COMMISSION IDENTIFICATION NUMBER: Pursuant to Code of VA 2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized. Link to the SCC site is http://www.scc.virginia.gov.

END OF SECTION

HARRISONBURG-ROCKINGHAM REGIONAL SEWER AUTHORITY
INSURANCE REQUIREMENTS

The Contractor shall provide and maintain the following minimum limits of insurance coverage during the period of performance required under this Contract.

1) Comprehensive General Liability
   a. $1,000,000 Bodily Injury and Property Damage per occurrence and aggregate
   b. Comprehensive General Form
   c. Independent Contractors Coverage
   d. Products/Completed Operations (to be provided for a minimum of 36 months after completion of the work)
   e. Broad Form Contractual Liability
   f. Personal Injury Liability

2) Comprehensive Automobile Liability
   a. $1,000,000 Combined Single Limits
   b. Statutory Uninsured Motorist Coverage
   c. Hired and Non-owned Coverage
   d. Motor Carrier Act Endorsement

3) Builders Risk Coverage
   a. NOT USED

4) Workers Compensation and Employer's Liability
   a. Statutory Coverage for Virginia
   b. $1,000,000 Employer's Liability
   c. Broad Form All States Endorsement
   d. Compliance with all Federal Statutes, including U.S. Longshoreman and Harbor Worker's Act, the Jones Act, and Federal Employees Act.

5) Umbrella Liability
   a. Additional $1,000,000 liability coverage over the primary limits for Comprehensive General Liability, Comprehensive Automobile Liability and the Employer's Liability

Prior to commencing work under the Contract, the successful Contractor shall furnish HRRSA with a Certificate of Insurance naming HRRSA as an additional insured. A sixty (60) day notice of cancellation, non-renewal, or change in the insurance coverage must be provided.

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Harrisonburg-Rockingham Regional Sewer Authority

Influent Fine Screen
Equipment Procurement

Attachment B:
Technical Specifications

ITB No. HRRSA-2016-02
Wiley|Wilson Comm. No. 216002.00

June 3, 2016

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MECHANICALLY CLEANED THROUGH FLOW BAR SCREEN

PART 1 - GENERAL

1.01 SCOPE OF WORK:

A. The Manufacturer shall:

1. Provide two (2) ¼" nominal opening mechanically cleaned through flow bar screen units with screen wash sluice and other appurtenances as specified herein. Manufacturer shall provide all ancillary items required to provide a complete and operational fine screen package installed in the existing fine screen building.

2. One (1) wash press will be provided by Manufacturer under a single contract with the screen units or by HRRSA under separate contract.

3. Provide one (1) screen control panel (SCP) and two (2) local control stations (LCS) as specified herein to allow each screen to operate automatically.

B. General:

1. The Manufacturer shall be responsible for providing a complete, fully functional front flow fine screen system to include front flow screen unit, SCP and LCSs. All equipment provided under this section shall be the end products of one Manufacturer who shall be responsible for the suitability and compatibility of all included equipment in order to achieve standardization for appearance, operation, maintenance, spare parts, and manufacturer's service.

2. Each screen unit provided under this Specification shall be factory- and field- tested for compliance to the requirements specified herein. The screen shall be shipped completely assembled to the extent practicable or shall be clearly marked for assembly in the field.

3. The equipment provided under this section will be self-installed by HRRSA or a General Contractor under a separate contract. The Manufacturer shall commission the screens and provide start-up support to HRRSA and/or General Contractor as specified herein.

4. The screen system(s) shall be designed to be supplied with 480-volt, 60-hertz, 3-phase power.

5. All equipment shall be designed for continuous or intermittent operation and long operating life in a highly corrosive, high humidity atmosphere typical to a wastewater treatment facility headworks.

1.02 DEFINITIONS

A. Continuous operation shall be defined as 24 hour per day 7 days per week operation

B. Intermittent operation shall be defined as periodic operation or extended periods off-line.

1.03 REFERENCES

A. AICS, American Institute of Steel Construction

B. AISI American Iron and Steel Institute

C. ANSI, American National Standards Institute

D. ASCE, American Society of Civil Engineers

E. ASME, American Society of Mechanical Engineers

F. ASTM, American Society of Testing and Materials

G. AWS, American Welding Society

H. IBC, International Building Code

I. IEC, International Electric Code

J. IEEE, Institute of Electrical and Electronics Engineers

K. NEC, National Electrical Code

L. NEMA, National Electrical Manufacturers Association

M. Underwriters Laboratory (UL and cUL)

1.04 SUBMITTALS

A. Shop Drawings shall be approved by Engineer prior to fabrication of fine screen units or control panels.

B. Shop Drawings for Fine Screens

1. Product Data for Screen Systems

a. Complete list of all system components to be provided.

b. Make, model, weight, and horsepower of each equipment assembly.

c. Detail specifications for equipment assemblies indicating component drawings, dimensions, weights, loads, required clearances, method of field assembly, components, anchor bolt locations and location and size of each field connection.

d. Performance data for each type of equipment that will show compliance with specification requirements stated herein. Performance data shall include the maximum flow rate, total head loss, influent channel velocity, throat velocity, velocity through grid, effluent channel velocity, and total system horsepower demand.

e. Head loss curves using influent, effluent, and grid velocities along with percent obstruction comparisons.

f. Identification of outside utility requirements for each component such as air, water, power, etc. Include operating parameters for all required utilities.

g. Suggested spare parts list to maintain the equipment in service for a period of 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance with current price information.

h. List special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.

i. Special shipping, storage and protection, and handling instructions.

j. Routine maintenance requirements prior to installation and start-up.

2. Submittal Drawings for Screen Systems

a. Detailed drawings for all components of the flow through fine screens.

b. Detailed Mechanical, Structural, and Electrical Drawings showing the equipment fabrications and interface with other items.

c. Structural design drawings and calculations signed and sealed by a Professional Engineer registered in the Commonwealth of Virginia.

d. Include dimensions, size, and locations of connections to other work

e. Include information on weights of all major equipment

e. System layout, installation, and placing drawings for screen systems and accessories.

f. Certified shop drawings showing all important details of construction, dimensions and anchor bolt locations.

g. Schematic electrical wiring diagram and electrical controls information.

C. Shop Drawings for Screen Control Panels and Local Control Stations

1. Detail drawings and specifications for master control unit including dimensioned drawings, weights, required clearances, method of field assembly, components, anchor bolt locations and location and size of each field connection.

2. Instrumentation, control system schematic, all electrical and control components wiring diagrams.

3. Source code for screen system to allow HRRSA to integrate local/custom programming into the PLC program

4. Special shipping, storage and protection, and handling instructions.

5. Routine maintenance requirements prior to installation and start-up.

D. Certified Factory Performance Test

E. Field Test results and Vibration Report.

F. Manufacturers Operation and Maintenance Manuals customized for this project.

G. Manufacturer's Certificates of Proper Installation and Proper Operation.

H. Manufacturer’s Written Warranty.

I. A complete bill of materials of all equipment.

J. Descriptive product literature.

K. Compliance Statement

L. Complete motor and drive data

M. Record drawings of screen arrangement, controls, and accessories in both hard copy and digital format

1.05 DELIVERY, STORAGE, AND HANDLING

A. Shipping:

1. Ship equipment, material, and spare parts complete, except where partial disassembly is required by transportation regulations or for protection of components.

2. Pack all spare parts in containers bearing labels clearly designating the contents.

3. Deliver spare parts at the same time as pertaining equipment.

B. Receiving

1. Owner will inspect and inventory items immediately upon delivery to site and is responsible for storing and safeguarding equipment, material, instructions, and spare parts in accordance with Manufacturer’s written instructions.

1.06 WARRANTY

A. The Manufacturer shall provide a full written warranty for all equipment under this section. The warranty period shall be 24 months from delivery of equipment or 18 months from substantial completion, whichever is shorter. If a defect is found during the warranty period, the Manufacturer shall remedy said defect at no cost to Owner.

1.07 SPARE PARTS AND SPECIAL TOOLS.

A. Manufacturer's recommended spare parts.

B. Complete set of special tools

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Duperon Adaptive Technologies Flexrake Mechanically Cleaned Fine Bar Screen

2.02 PERFORMANCE REQUIREMENTS

A. The mechanically cleaned through flow bar screen shall meet the following design conditions:

Parameter	**Design Value per Screen Unit**
Number of Screens	2
Minimum Peak Flow Rating per Screen	30 MGD
Average Annual Daily Flow per Screen	6 MGD
Bar Screen Spacing	¼-inch
Minimum Screen Width	42-inches
Installation Angle (Channel Floor to Screen)	60-degrees
Design Upstream Water Depth	54 inches
Maximum Upstream Water Depth (Overflow)	66 inches
Maximum Allowable Approach Velocity	4 feet per second
Maximum Allowable Bar Slot Velocity	6 feet per second
Maximum Allowable Head loss at Peak Flow Rate (2 Conditions)	6 inches at 30% blinding
	20 inches at 60% blinding
Minimum Bar Screen Height Above Channel Floor	66 inches

Parameter	**Design Value per Screen Unit**
Minimum Structural Design Differential of Frame/Grid	66 inches at 100% blinding
Minimum Screen Drive Design Differential for Normal Operation	66 inches
Minimum Screen Discharge Height Above Existing Building Finished Floor	48 inches
Existing Screen Channel Dimensions	Refer to Drawing Attached to RFP
Screen Enclosure Requirement	Full Enclosed
Minimum Number of Spray Bars for Screening Removal	1 per screen
Maximum Spray Bar System Wash Water Requirements	25 GPM at 40 PSI
Minimum Screen Drive Motor HP	1/2 HP
Primary Power	480V / 3PH / 60Hz
Auxiliary Power	120V / 1PH / 60Hz
Screen Drive Motor Rating	Class 1 Division 1 Group D
Screen Drive VFD Rating	UL Listed
Installation Location	Indoors
Screen Metallic Component Material	Type 316 SST per ASTM A380
Screen Non-Metallic Components	UHMWPE

2.03 GENERAL REQUIREMENTS

A. Safety Devices: The equipment shall include all necessary permanent safety devices, such as machinery guards, emergency stops and similar items required by OSHA, and other federal, state, and local health and safety regulations.

2.04 EQUIPMENT REQUIREMENTS

A. The screen shall consist of a fully enclosed bar screen assembly with fixed bars extending above the screen channel to the height specified herein and a continuous deadplate between the bar screen and the discharge point. The bars shall be continuously cleaned with alternating staging scrapers and thru-bar scrapers extending the entire width of the bar screen.

B. The screen design shall allow maintenance of all moving components to be accomplished from the existing screen room finished floor level. No part of the drive system shall be located below the finished floor level.

C. All metallic components of the screen unit shall be constructed of ASTM A380 316 SST and designed to withstand structural differential loading as specified herein and as required for a complete and functional screen unit.

D. Bar screen assembly:

1. Screen Bars shall be “tear drop” shaped with minimum dimensions of 0.25 inch x 0.75 inch. Bars shall be individually replaceable without welding.

2. The screen framework shall be bent plate with minimum 3/16 inch cross section. Horizontal members shall be of stainless steel bent plate or stainless steel pipe. Support members and frame shall adequately support the bar screen based on structural requirements specified herein.

3. Dead plate shall be minimum ¼ inch thick flat plate spanning the width of the entire screen from the bar screen to the discharge point. The dead plate shall function to allow transport of screenings between the bar screen and discharge point.

E. The link system shall support scrapers and be capable of flexing around and collecting large objects and surges of solids at peak flows/loadings without overloading and shutting down the unit. The link system shall bend in one direction only and function as its own lower sprocket and frame. The links shall be stainless steel castings and have a minimum ultimate strength of 60,000 lbs with a minimum cross section of 1.5 inches.

F. Staging scrapers shall be minimum 1.00 inch thick, 4 inches depth, UV Stable UHMW-PE with a serrated edge. Thru bar scrapers shall be minimum 0.375 inch thick, 5 inch depth stainless steel and shall fully penetrate the bar screen to clean all three sides of the bars as well as extend through to the cross members. Scrapers shall extend the full width of the screen, and shall be spaced a maximum of 21 inches apart. Provide three staging scrapers for each thru-bar scraper.

G. The link slide assembly shall be provided intermittently to support the link and scraper assembly. The link slide assembly shall be constructed of UV Stable UHMW PE rollers and stainless steel supports and components.

H. Return guide/closeouts shall be provided at the edge of the bar screen and dead plate to assure proper alignment of scrapers as they enter the bar screen. Return guide/closeouts shall be designed with clearances less than the bar screen opening specified herein.

I. Provide a stainless steel and UV Stable UHMW-PE debris blade assembly to assist in removing debris from the scraper.

J. Screenings Wash System

1. Provide a stainless steel spray wash header located in the head space of the screen to offload the screenings from the continuous belt.

2. The spray bar shall incorporate brass nozzles at 2 inch spaces that can easily be replaced or removed for cleaning.

3. The spray bar shall be positioned behind the rotating belt and will backwash the solids into a discharge chute. The wash water shall be used to continuously flush the screenings from this chute into the sluice trough.

4. The discharge chute shall be minimum ¼ inch thick stainless steel. The discharge chute shall be bolted to the dead plate and shall be designed to allow debris to be transferred from discharge point into a sluice trough.

5. The screenings sluice will be provided by Owner to collect screenings and wash water from the discharge chute of the screen and transfer them by gravity directly into the wash press washing trough. Manufacturer shall provide a recommended sluice width, depth and NPW water flow rate to convey screenings to the wash press.

6. The manufacturer shall supply a stainless steel electric actuated solenoid valve for the wash water spray bar system and a stainless steel ball valve that will be fitted into the back plate of the sluice for manual washing.

K. Provide a minimum 14 gauge stainless steel enclosure to cover the screen above the finished floor of the existing building. The front of the enclosure shall have removable panels for access to equipment with a polycarbonate viewing panel. Removable panels shall be minimum 16 gauge stainless steel. Provide knurled knobs for "no tool required" access, and alignment notches to support repositioning of removable panels. The top of the front enclosure shall include a knock out to allow installation of a 6-inch diameter pipe stub for ventilation. The rear of the enclosure shall have hinged removable doors and shall be secured with a lift-slide-latch handle. Rear removable door shall include an integral viewing door that shall be secured with a lift-slide-latch handle to provide access to the rear of the screen equipment.

L. Screen Drive:

1. The screen drive shall be located at the top of the screen unit. The drive shall consist of stainless steel drive sprockets and shaft. The screen drive shall be designed to allow scrapers to move at no greater than 28 inches per minute at standard operating speed of ½ rpm.

2. The screen drive shall include a shaft-mounted, right angle type, grease filled gearbox with spiral bevel gearing with a minimum 1.5 service factor based on machine torque requirements.

3. The screen drive motor shall be 480V, 3PH, 60 Hz, 1,800 RPM inverter duty. Minimum motor horsepower and rating shall be as specified herein. The motor shall have an EPNV enclosure, NEMA design B with a 56C frame size. Service factor shall be 1.0 or greater, Class F insulation

and be optimized for IGBT type inverters. The motor shall be UL listed and designed for continuous operation.

4. Motor shall have built in, normally closed, thermostat to protect from overheating.

5. Screen drive bearings shall be greased ball bearing type, non-self-aligning, sealed and lubricated and shall have a L10 life of 50,000 hours.

6. Screen drive speed reducer shall be a double-reduction, cycloidal style and shall comply with all applicable AGMA standards. The speed reducer shall be capable of a 4/1 speed range with variable output speeds between 0.50 to 2.2 output RPMs.

2.05 CONTROL PANELS

A. General

1. The screen units shall be provided with one (1) Screen Control Panel (SCP) outside the fine screen building and two (2) Local Control Stations (LCS) to be mounted adjacent to the screens in the fine screen building. All components shall be completely factory wired and shall include all necessary controls for both automatic and local operation of the screen units.

2. If a single manufacturer is selected to provide the screen units and the wash press, a single control panel shall be provided to control both screen units and the wash press unit.

3. The SCP enclosure and all components shall be rated NEMA 4X. Enclosure shall be ASTM A380 Type 316 stainless steel. Wiring and all electrical components shall comply with UL/CSA and NEC.

4. The LCS enclosures and all components shall be rated NEMA 4X, 7, 9 rated for Class 1 Division 1 Group D classified environment. Enclosure shall be ASTM A380 Type 316 stainless steel. Wiring and all electrical components shall comply with UL/CSA and NEC.

5. All electrical and control connections that are not factory assembled and shipped complete shall only require the installing Contractor to connect wires between junction boxes and terminal strips installed on the screen unit and on terminal strips within the SCP and LCSs.

6. Power shall be suitable for 460VAC, 3 Phase, 60 Hz service. Control power shall be 120 VAC.

7. Electrical and instrumentation components shall be Square D, Siemens, GE, Westinghouse, or Equal.

8. The following process controllers and VFDs are standardized equipment utilized by HRRSA. Provide equipment by the following manufacturers:

   a. PLC: Schneider Electric M-340 PLC

   b. Touchscreen Interface: Schneider Electric Magellis 12” (minimum)

   c. VFD: Schneider Electric ATV 312

9. SCP shall include all components for functional and reliable operation to include the following at minimum:

    a. Main disconnect circuit breaker sized per NEC.

    b. Type 1 surge protective device (SPD) provided on the 480VAC power supply.

    c. Variable frequency drives (VFD) with line reactors

    d. PLC with LCD touchscreen interface, Ethernet port and I/O capability as required to achieve the functionality described herein. Provide 25% spare I/O capacity on each I/O card. PLC shall have field settable/adjustable/accessible process parameters and provide specific indications of each type of fault that may occur. PLC memory shall be backed up with non-volatile memory which will load automatically if memory is corrupted. LCD shall be equipped with sun-shield to prevent display washout (Shade-Aide by Smith and Loveless or equal).

    e. 4 port Ethernet switch

    f. Control power transformer with 120VAC transient voltage surge suppressor (TVSS)

    g. Run Time Meter

    h. Motor overload sensor

    i. Air conditioner, heater and combination temperature and humidity regulator to prevent equipment overheating, freezing and condensation (Ambient Conditions: 0 F to 100 F).

    j. Provide a 40 cfm, structured carbon media vapor adsorber to adsorb corrosive gases and ensure longevity of control components. The adsorber shall be completely self contained and powered through 120V control power from the control panel. Unit shall be mounted adjacent on unistrut adjacent to the control panel and shall be no larger than 16” x 16” x 24” tall and shall be piped via inlet / outlets provided in the control panel. Manufacturer shall provide all piping, valves and other ancilliary items to create a functionally complete system. Adsorber shall be MWV Series 40 with Versacomb media.

B. Provide all equipment and programming required to provide LCSs with the following capabilities:

    1. Screen Control Modes: In “Local” mode the screen is controlled locally (overriding the SCP) by start/stop/jog buttons on the LCS. In “Local” mode the drive speed is controlled by the selector on the SCP interface. In “Remote” mode the screen is controlled by the SCP. In “Off” mode the screen is interlocked from being started by the SCP or LCS.

C. Operator control functions on the LCSs shall, as a minimum, include the following for each screen unit:

    1. Pushbuttons for:

        a. Emergency Stop (red “mushroom” type button)

b. Screen Run (continuous screen run)

c. Screen Stop (screen stop if running)

d. Screen Jog (screen run while holding button)

2. Selector Switch

a. Screen No. 1 / No. 2 “Local” – “Off” – “Remote”

D. Provide all equipment and programming required to provide SCPs with the following capabilities:

1. Screen Control Modes: In “Hand” mode the screen is controlled by start/stop/jog buttons and drive speed selector on the SCP. In “Auto” mode the screen is controlled by differential level control. In “Off” mode the screen is interlocked from being started by the SCP.

2. Screen Differential Level Control: The screen shall be controlled via a PLC based differential level control to maintain a target differential level across the screen. The screen speed shall be adjusted based on upstream water level to maintain the target differential level. The differential level setpoint shall be operator adjustable via the touchscreen interface. Provide manufacturer’s standard differential level control program.

3. Downstream Water Level Control: Downstream water level will be controlled by a weir gate with actuator. Manufacturer shall provide PID block logic in the PLC program to control weir gate position based on downstream water level. The downstream water level setpoint shall be operator adjustable via the touchscreen interface.

4. Wash System Control: In “Hand” mode the wash system is controlled by start/stop push buttons on the SCP. In “Auto” mode the wash system runs while the screen motor is running and for a variable time (set via touchscreen interface) following screen motor stop. In “Off” mode the wash system is interlocked from running.

E. Operator control functions on the operator interface shall, as a minimum, include the following for each screen unit:

1. Pushbuttons for:

a. Alarm Test

b. Alarm Reset

c. Screen Run (continuous screen run)

d. Screen Stop (screen stop if running)

e. Screen Jog (screen run while holding button)

f. Wash System On

g. Wash System Off

2. Indication for

a. Screen No. 1 / No. 2 Run - Green

b. Screen No. 1 / No. 2 Stop – Red

c. Wash System On - Green

d. Wash System Off – Red

e. Screen No. 1 / No. 2 Mode (Hand – Off – Auto)

f. Screen No. 1 / No. 2 LCS Mode (Local – Off – Remote)

3. Selector/Inputs

a. Screen No. 1 / No. 2 “Hand” – “Off” – “Auto”

b. Wash System “Hand” – “Off” – “Auto”

c. Drive Speed (RPM) Selector (In Hand Mode)

d. Differential Level Target Setpoint

e. Downstream Water Level Target Setpoint

f. Wash System Run Time Following Screen Stop

4. Alarms Indication (red) for:

a. VFD Failure

b. Motor Overload Sensor

c. Emergency Stop

d. Level Sensor Signal Loss

e. Level Sensor High and Low Levels (Operator Configurable Set Points)

F. Summary of Signal Interfaces and Controls

1. Provide discrete signals between the SCP and LCSs to achieve the functionality described herein. Control voltage power shall be 120VAC.

2. Each SCP shall provide the following signals for each screen unit to the HRRSA SCADA system as follows:

a. Discrete Output: Provide isolated contact closures suitable for connection to the SCADA system's 120VAC control power.

1) Screen VFD or Motor Overload Common Alarm

2) Screen Emergency Stop Alarm

3) Level Sensor Signal Loss Alarm

4) Screen Run

5) Hand Mode Indication

6) Auto Mode Indication

7) Off Mode Indication

b. Analog Input (4-20 mA):

1) Screen Upstream Level

2) Screen Downstream Level

3) Weir Gate Position Indication

c. Analog Output (4-20 mA):

1) Weir Gate Position

2.06 FINISHING

A. All fabricated stainless steel parts shall be cleaned, descaled, passivated and tested in accordance with ASTM A380. A lacquer coating is not acceptable.

B. Motor and gearbox shall be manufacturer’s standard coating for humid/wet environments for superior corrosion protection.

PART 3 - EXECUTION

3.01 GENERAL

A. Packaged Equipment: When any system is provided as pre-packaged equipment, coordination shall include space and structural requirements, clearances, utility connections, signals, outputs, and features required by the manufacturer including safety interlocks.

3.02 INSTALLATION

A. Manufacturer shall be responsible for supervising installation of screen by the installing party and issuing a Certificate of Proper Installation prior to start-up.

3.03 FACTORY TESTS

A. All equipment shall be factory tested in accordance with the following tests for compliance with the operational requirements specified herein. Tests shall be performed on the actual assembled unit being supplied for this project.

B. If screen does not work as required by the RFP, manufacturer shall be responsible for adjustments and replacement.

C. All screen equipment shall be tested in factory, fully assembled, and delivered so that minimal amount of assembly is required.

D. The Manufacturer shall supply a certification of the completion of the factory testing of the assembled screening system and appurtenances and shall certify as to the equipment being in satisfactory operating condition at time of shipment.

3.04 FIELD TESTS AND INSPECTIONS

A. The equipment shall be shipped completely factory assembled.

B. Prior to equipment start-up, the Manufacturer shall inspect all equipment for proper assembly, installation, and alignment, for quiet and proper operation. The Manufacturer shall issue a Certificate of Proper Installation prior to beginning functional test.

C. In the event the screen equipment fails to meet the performance requirements specified, the Engineer shall have the right to require the Manufacturer to modify or replace the screen equipment to enable said system to meet the performance requirements specified.

D. Additional tests shall be conducted as required to ensure compliance with these Specifications and shall be performed at no additional cost to the Owner.

E. A copy of all information from functional tests, including data, worksheets, and other materials shall be turned over to the OWNER at the completion of the testing program.

3.05 MANUFACTURERS REPRESENTATIVE

A. Provide manufacturer’s representative for a minimum of one (1) days for pre-installation conference.

B. Provide manufacturer’s representative for a minimum of two (2) days per screen (separate trips) to perform installation inspection and field testing.

C. Provide manufacturer's representative for a minimum of one (1) day total to perform operations and maintenance training.

D. Provide a manufacturer's signed certificate of proper installation and operation for each screen under this Section.

END OF SECTION

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CONTINUOUS BELT THROUGH FLOW SCREEN

PART 1 - GENERAL

1.01 SCOPE OF WORK:

A. The Manufacturer shall:

1. Provide two (2) 1/4-inch nominal opening continuous belt through flow screen units with screen wash sluice and other appurtenances as specified herein. Manufacturer shall provide all ancillary items required to provide a complete and operational fine screen package installed in the existing fine screen building.

2. One (1) wash press will be provided by Manufacturer under a single contract with the screen units or by HRRSA under separate contract.

3. Provide one (1) screen control panel (SCP) and two (2) local control stations (LCS) as specified herein to allow each screen to operate automatically.

B. General:

1. The Manufacturer shall be responsible for providing a complete, fully functional front flow fine screen system to include front flow screen units SCP and LCSs. All equipment provided under this section shall be the end products of one Manufacturer who shall be responsible for the suitability and compatibility of all included equipment in order to achieve standardization for appearance, operation, maintenance, spare parts, and manufacturer's service.

2. Each screen unit provided under this Specification shall be factory- and field- tested for compliance to the requirements specified herein. The screen units shall be shipped completely assembled to the extent practicable or shall be clearly marked for assembly in the field.

3. The equipment provided under this section will be self-installed by HRRSA or a General Contractor under a separate contract. The Manufacturer shall commission the screens and provide start-up support to HRRSA and/or General Contractor as specified herein.

4. The screen system(s) shall be designed to be supplied with 480-volt, 60-hertz, 3-phase power.

5. All equipment shall be designed for continuous or intermittent operation and long operating life in a highly corrosive, high humidity atmosphere typical to a wastewater treatment facility headworks.

1.02 DEFINITIONS

A. Continuous operation shall be defined as 24 hour per day 7 days per week operation

B. Intermittent operation shall be defined as periodic operation or extended periods off-line.

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M. Underwriters Laboratory (UL and cUL)

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A. Shop Drawings shall be approved by Engineer prior to fabrication of fine screen units or control panels.

B. Shop Drawings for Fine Screens

1. Product Data for Screen Systems

a. Complete list of all system components to be provided.

b. Make, model, weight, and horsepower of each equipment assembly.

c. Detail specifications for equipment assemblies indicating component drawings, dimensions, weights, loads, required clearances, method of field assembly, components, anchor bolt locations and location and size of each field connection.

d. Performance data for each type of equipment that will show compliance with specification requirements stated herein. Performance data shall include the maximum flow rate, total head loss, influent channel velocity, throat velocity, velocity through grid, effluent channel velocity, and total system horsepower demand.

e. Performance curves showing head loss curves using influent, effluent, and grid velocities along with percent obstruction comparisons.

f. Identification of outside utility requirements for each component such as air, water, power, etc. Include operating parameters for all required utilities.

g. Suggested spare parts list to maintain the equipment in service for a period of 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance with current price information.

h. List special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.

i. Special shipping, storage and protection, and handling instructions.

j. Routine maintenance requirements prior to installation and start-up.

2. Submittal Drawings for Screen Systems

a. Detailed drawings for all components of the flow through fine screens.

b. Detailed Mechanical, Structural, and Electrical Drawings showing the equipment fabrications and interface with other items.

c. Structural design drawings and calculations signed and sealed by a Professional Engineer registered in the Commonwealth of Virginia.

d. Include dimensions, size, and locations of connections to other work

e. Include information on weights of all major equipment

e. System layout, installation, and placing drawings for screen systems and accessories.

f. Certified shop drawings showing all important details of construction, dimensions and anchor bolt locations.

g. Schematic electrical wiring diagram and electrical controls information.

C. Shop Drawings for Screen Control Panels and Local Control Stations

1. Detail drawings and specifications for master control unit including dimensioned drawings, weights, required clearances, method of field assembly, components, anchor bolt locations and location and size of each field connection.

2. Instrumentation, control system schematic, all electrical and control components wiring diagrams.

3. Source code for screen system to allow HRRSA to integrate local/custom programming into the PLC program

4. Special shipping, storage and protection, and handling instructions.

5. Routine maintenance requirements prior to installation and start-up.

D. Certified Factory Performance Test

E. Field Test results and Vibration Report.

F. Manufacturers Operation and Maintenance Manuals customized for this project.

G. Manufacturer's Certificates of Proper Installation and Proper Operation.

H. Manufacturer’s Written Warranty.

I. A complete bill of materials of all equipment.

J. Descriptive product literature.

K. Compliance Statement

L. Complete motor and drive data

M. Record drawings of screen arrangement, controls, and accessories in both hard copy and digital format

1.05 DELIVERY, STORAGE, AND HANDLING

A. Shipping:

1. Ship equipment, material, and spare parts complete, except where partial disassembly is required by transportation regulations or for protection of components.

2. Pack all spare parts in containers bearing labels clearly designating the contents.

3. Deliver spare parts at the same time as pertaining equipment.

B. Receiving:

1. Owner will inspect and inventory items immediately upon delivery to site and is responsible for storing and safeguarding equipment, material, instructions, and spare parts in accordance with Manufacturer’s written instructions.

1.06 WARRANTY

A. The Manufacturer shall provide a full written warranty for all equipment under this section. The warranty period shall be 24 months from delivery of equipment or 18 months from substantial completion, whichever is shorter. If a defect is found during the warranty period, the Manufacturer shall remedy said defect at no cost to Owner.

1.07 SPARE PARTS AND SPECIAL TOOLS.

A. Manufacturer's recommended spare parts.

B. Complete set of special tools

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Hydrodyne Engineering Bull Shark Continuous Belt Through Flow Screen

2.02 PERFORMANCE REQUIREMENTS

A. The mechanically cleaned through flow bar screen shall meet the following design conditions:

Parameter	**Design Value per Screen Unit**
Number of Screens	2
Minimum Peak Flow Rating per Screen	30 MGD
Average Annual Daily Flow per Screen	6 MGD
Screen Grid Opening	¼-inch
Minimum Screen Width	42-inches
Installation Angle (Channel Floor to Screen)	75-degrees
Maximum Allowable Approach Velocity	4 feet per second
Maximum Allowable Bar Slot Velocity	6 feet per second
Design Upstream Water Depth	54 inches
Maximum Upstream Water Depth (Overflow)	66 inches
Maximum Allowable Head loss at Peak Flow Rate (2 Conditions)	6 inches at 30% blinding
	20 inches at 60% blinding
Minimum Structural Design Differential of Frame/Grid	66 inches at 100% blinding

Parameter	**Design Value per Screen Unit**
Minimum Screen Drive Design Differential for Normal Operation	66 inches
Minimum Screen Discharge Height Above Existing Building Finished Floor	48 inches
Existing Screen Channel Dimensions	Refer to Drawing Attached to RFP
Screen Enclosure Requirement	Full Enclosed
Minimum Number of Spray Bars for Screening Removal	1 per screen
Maximum Spray Bar System Wash Water Requirements	25 GPM at 40 PSI
Minimum Screen Drive Motor HP	3/4 HP
Primary Power	480V / 3PH / 60Hz
Auxiliary Power	120V / 1PH / 60Hz
Screen Drive Motor Rating	Class 1 & 2 –Group C/D, E/F
Screen Drive VFD Rating	UL Listed
Installation Location	Indoors
Screen Metallic Component Material	Type 316 SST per ASTM A380
Screen Non-Metallic Components	UHMWPE

2.03 GENERAL REQUIREMENTS

A. Safety Devices: The completed Work shall include all necessary permanent safety devices, such as machinery guards, emergency stops and similar items required by OSHA, and other federal, state, and local health and safety regulations.

2.04 EQUIPMENT REQUIREMENTS

A. The screen shall consist of a fully enclosed continuous belt screen assembly. The screen belt shall be a steel laced link design connected by stainless steel axles and UHMWPE spacers to form a continuous belt. The screen shall be designed to provide a seal between the rotating belt and the static screen frame components. The belt shall provide a mechanism for lifting, transporting, and removing large solids and rags.

B. The screen design shall allow maintenance of all moving components to be accomplished from the existing screen room finished floor level. No part of the drive system shall be located below the finished floor level.

C. All metallic components of the screen unit shall be constructed of ASTM A380 316 SST and designed to withstand structural differential loading as specified herein and as required for a complete and functional screen unit.

D. Screen Belt

1. The screenings belt shall consist of heavy duty stainless steel laced links connected in parallel and separated by Delrin spacers to maintain specified opening. Each laced link hook element shall be fabricated from 14 gauge (minimum) stainless steel. Each straight element shall be fabricated from 16 gauge (minimum) stainless steel. All elements shall be a minimum of 1 inch wide forming a slotted opening of the specified width and minimum 1 inch deep in the direction of flow. Hooks on elements shall form horizontal lifting trays or shelves for removing large solids and rags every 8 inches.

2. The stainless steel laced links shall be connected by heavy duty stainless steel axles every 8 inches to form a continuous belt that will rotate within the frame's guide system. Axle diameter shall be a minimum 5/8 inch. The axle design shall allow the row of laced links to pivot. The links shall support the screening grid and bear tension loads across the entire width and length of the screen belt.

3. The axles shall be extended to a UHMWPE guide link at the side of each row of laced link elements. These guides shall interlock to create a continuous guide link system that will slide within the frame.

4. The heavy duty guide links shall be minimum 2 inches thick to protect against undue wear from grit and shall be specially machined to form a closure seal with clearance less than the belt opening between the rotating belt and the static frame.

5. The seal shall be continuous from grade level through the building finished floor elevation forming an uninterrupted closure between the traveling screen grid and the stationary frame. The seal shall be fixed to the screen frame and be adjustable so that it will remain in contact with the rotating screen belt at all times.

6. The bottom of the grid shall be sealed with a replaceable front lower seal brush with a stainless steel holder and polypropylene bristles.

7. Intermittent stainless steel laced link elements that form sharp hooks will be regularly placed along the face of each row of the grid to effectively remove larger particles.

E. Screen Frame

1. The continuous belt shall rotate within a heavy duty stainless steel static support frame that shall stand at a fixed angle in the channel.

2. The screen shall not be fixed within the channel to allow the entire machine, including screen grid, to lift out of the channel for repair or bypass. All routine maintenance shall be achieved without removing the screen from the channel and shall be performed at grade level.

3. The guide link system shall travel around a guide wear track that is integral to the support frame.

F. Screenings Wash System

1. Provide a stainless steel spray wash header located in the head space of the screen to offload the screenings from the continuous belt.

2. The spray bar shall incorporate brass nozzles at 2 inch spaces that can easily be replaced or removed for cleaning.

3. The spray bar shall be positioned behind the rotating belt and will backwash the solids into a discharge chute. The wash water shall be used to continuously flush the screenings from this chute into the sluice trough.

4. The discharge chute shall be minimum ¼ inch thick stainless steel. The discharge chute shall be bolted to the screen frame and shall be designed to allow debris to be transferred from discharge point into the sluice trough.

5. The screenings sluice shall collect screenings and wash water from the discharge chute of the screen and transfer them by gravity directly into the wash press washing trough.

6. The sluice shall be manufactured from stainless steel. It shall comprise of U-shaped lengths of trough minimum 6 inch width/diameter and 8 inch side wall height that will be connected to the desired overall length.

7. A change in direction will be achieved using long swept bends that will prevent blockages from occurring.

8. The sluice will collect flow from each screen as shown on the drawings.

9. The Manufacturer shall design and supply the support leg structure manufactured from stainless steel. The legs will be suitable for fixing to a concrete floor.

10. Provide stainless covers in sections no more than 6 feet long and weighing no more than 35 pounds.

11. The manufacturer shall supply a stainless steel electric actuated solenoid valve for the wash water spray bar system and a stainless steel ball valve that will be fitted into the back plate of the sluice for manual washing.

G. Provide a minimum 14 gauge stainless steel enclosure to cover the screen above the finished floor of the existing building. The front of the enclosure shall have removable panels for access to equipment with a polycarbonate viewing panel. Removable panels shall be minimum 16 gauge stainless steel. Provide knurled knobs for "no tool required" access, and alignment notches to support repositioning of removable panels. The top of the front enclosure shall include a knock out to allow installation of a 6-inch diameter pipe stub for ventilation. The rear of the enclosure shall have hinged removable doors and shall be secured with a lift-slide-latch handle. Rear removable door shall include an integral viewing door that shall be secured with a lift-slide-latch handle to provide access to the rear of the screen equipment.

H. Screen Drive:

1. The screen drive shall be located at the top of the screen unit. The drive shall consist of stainless steel drive sprockets and shaft. The continuous belt shall be supported and rotated around heavy duty stainless steel sprockets located on the drive shaft in the head space of the screen. These sprockets shall have lugs that transmit torque directly from the gear reducer to notches on the underside of the UHMWPE guide links. Driving forces shall be transmitted to areas located behind the screen's grid to prevent solids from contacting drive surfaces.

2. The screen drive shall include a shaft-mounted, right angle type, grease filled gearbox with spiral bevel gearing with a minimum 1.5 service factor based on machine torque requirements.

3. The screen drive motor shall be 480V, 3PH, 60 Hz, 1,800 RPM inverter duty. Minimum motor horsepower and rating shall be as specified herein. The motor shall have an EPNV enclosure, NEMA design B with a 56C frame size. Service factor shall be 1.0 or greater, Class F insulation and be optimized for IGBT type inverters. The motor shall be UL listed and designed for continuous operation.

4. Motor shall have built in, normally closed, thermostat to protect from overheating.

5. Screen drive bearings shall be greased ball bearing type, non self-aligning, sealed and lubricated and shall have a L10 life of 50,000 hours.

6. Screen drive speed reducer shall be a double-reduction, cycloidal style and shall comply with all applicable AGMA standards. The speed reducer shall be capable of a 4/1 speed range with variable output speeds between 0.50 to 2.2 output RPMs.

2.05 CONTROL PANELS

A. General

1. The screen units shall be provided with one (1) Screen Control Panel (SCP) outside the fine screen building and two (2) Local Control Stations (LCS) to be mounted adjacent to the screens in the fine screen building. All components shall be completely factory wired and shall include all necessary controls for both automatic and local operation of the screen units.

2. If a single manufacturer is selected to provide the screen units and the wash press, a single control panel shall be provided to control both screen units and the wash press unit.

3. The SCP enclosure and all components shall be rated NEMA 4X. Enclosure shall be ASTM A380 Type 316 stainless steel. Wiring and all electrical components shall comply with UL/CSA and NEC.

4. The LCS enclosures and all components shall be rated NEMA 4X, 7, 9 rated for Class 1 Division 1 Group D classified environment. Enclosure shall be ASTM A380 Type 316 stainless steel. Wiring and all electrical components shall comply with UL/CSA and NEC.

5. All electrical and control connections that are not factory assembled and shipped complete shall only require the installing Contractor to connect wires between junction boxes and terminal strips installed on the screen unit and on terminal strips within the SCP and LCSs.

6. Power shall be suitable for 460VAC, 3 Phase, 60 Hz service. Control power shall be 120 VAC.

7. Electrical and instrumentation components shall be Square D, Siemens, GE, Westinghouse, or Equal.

8. The following process controllers and VFDs are standardized equipment utilized by HRRSA. Provide equipment by the following manufacturers:

    a. PLC: Schneider Electric M-340 PLC

    b. Touchscreen Interface: Schneider Electric Magellis 12" (minimum)

    c. VFD: Schneider Electric ATV 312

9. SCP shall include all components for functional and reliable operation to include the following at minimum:

    a. Main disconnect circuit breaker sized per NEC.

    b. Type 1 surge protective device (SPD) provided on the 480VAC power supply.

    c. Variable frequency drives (VFD) with line reactors

    d. PLC with LCD touchscreen interface, Ethernet port and I/O capability as required to achieve the functionality described herein. Provide 25% spare I/O capacity on each I/O card. PLC shall have field settable/adjustable/accessible process parameters and provide specific indications of each type of fault that may occur. PLC memory shall be backed up with non-volatile memory which will load automatically if memory is corrupted. LCD shall be equipped with sun-shield to prevent display washout (Shade-Aide by Smith and Loveless or equal).

    e. 4 port Ethernet switch

    f. Control power transformer with 120VAC transient voltage surge suppressor (TVSS)

    g. Run Time Meter

    h. Motor overload sensor

    i. Air conditioner, heater and combination temperature and humidity regulator to prevent equipment overheating, freezing and condensation (Ambient Conditions: 0 F to 100 F).

    j. Provide a 40 cfm, structured carbon media vapor adsorber to adsorb corrosive gases and ensure longevity of control components. The adsorber shall be completely self contained and powered through 120V control power from the control panel. Unit shall be mounted adjacent on unistrut adjacent to the control panel and shall be no larger than 16" x 16" x 24" tall and shall be piped via inlet / outlets provided in the control panel. Manufacturer shall provide all piping, valves and other ancilliary items to create a functionally complete system. Adsorber shall be MWV Series 40 with Versacomb media.

B. Provide all equipment and programming required to provide LCSs with the following capabilities:

1. Screen Control Modes: In “Local” mode the screen is controlled locally (overriding the SCP) by start/stop/jog buttons on the LCS. In “Local” mode the drive speed is controlled by the selector on the SCP interface. In “Remote” mode the screen is controlled by the SCP. In “Off” mode the screen is interlocked from being started by the SCP or LCS.

C. Operator control functions on the LCSs shall, as a minimum, include the following for each screen unit:

1. Pushbuttons for:

a. Emergency Stop (red “mushroom” type button)

b. Screen Run (continuous screen run)

c. Screen Stop (screen stop if running)

d. Screen Jog (screen run while holding button)

2. Selector Switch

a. Screen No. 1 / No. 2 “Local” – “Off” – “Remote”

D. Provide all equipment and programming required to provide SCPs with the following capabilities:

1. Screen Control Modes: In “Hand” mode the screen is controlled by start/stop/jog buttons and drive speed selector on the SCP. In “Auto” mode the screen is controlled by differential level control. In “Off” mode the screen is interlocked from being started by the SCP.

2. Screen Differential Level Control: The screen shall be controlled via a PLC based differential level control to maintain a target differential level across the screen. The screen speed shall be adjusted based on upstream water level to maintain the target differential level. The differential level setpoint shall be operator adjustable via the touchscreen interface. Provide manufacturer’s standard differential level control program.

3. Downstream Water Level Control: Downstream water level will be controlled by a weir gate with actuator. Manufacturer shall provide PID block logic in the PLC program to control weir gate position based on downstream water level. The downstream water level setpoint shall be operator adjustable via the touchscreen interface.

4. Wash System Control: In “Hand” mode the wash system is controlled by start/stop push buttons on the SCP. In “Auto” mode the wash system runs while the screen motor is running and for a variable time (set via touchscreen interface) following screen motor stop. In “Off” mode the wash system is interlocked from running.

E. Operator control functions on the operator interface shall, as a minimum, include the following for each screen unit:

1. Pushbuttons for:

   b. Alarm Test

   c. Alarm Reset

   d. Screen Run (continuous screen run)

   e. Screen Stop (screen stop if running)

   f. Screen Jog (screen run while holding button)

   g. Wash System On

   h. Wash System Off

2. Indication for

   a. Screen No. 1 / No. 2 Run - Green

   b. Screen No. 1 / No. 2 Stop – Red

   c. Wash System On - Green

   d. Wash System Off – Red

   e. Screen No. 1 / No. 2 Mode (Hand – Off – Auto)

   f. Screen No. 1 / No. 2 LCS Mode (Local – Off – Remote)

3. Selector/Inputs

   a. Screen No. 1 / No. 2 “Hand” – “Off” – “Auto”

   b. Wash System “Hand” – “Off” – “Auto”

   c. Drive Speed (RPM) Selector (In Hand Mode)

   d. Differential Level Target Setpoint

   e. Downstream Water Level Target Setpoint

   f. Wash System Run Time Following Screen Stop

4. Alarms Indication (red) for:

   a. VFD Failure

b. Motor Overload Sensor

c. Emergency Stop

d. Level Sensor Signal Loss

e. Level Sensor High and Low Levels (Operator Configurable Set Points)

F. Summary of Signal Interfaces and Controls

1. Provide discrete signals between the SCP and LCSs to achieve the functionality described herein. Control voltage power shall be 120VAC.

2. Each SCP shall provide the following signals for each screen unit to the HRRSA SCADA system as follows:

a. Discrete Output: Provide isolated contact closures suitable for connection to the SCADA system's 120VAC control power.

1) Screen VFD or Motor Overload Common Alarm

2) Screen Emergency Stop Alarm

3) Level Sensor Signal Loss Alarm

4) Screen Run

5) Hand Mode Indication

6) Auto Mode Indication

7) Off Mode Indication

b. Analog Input (4-20 mA):

1) Screen Upstream Level

2) Screen Downstream Level

3) Weir Gate Position Indication

c. Analog Output (4-20 mA):

1) Weir Gate Position

2.06 FINISHING

A. All fabricated stainless steel parts shall be cleaned, descaled, passivated and tested in accordance with ASTM A380. A lacquer coating is not acceptable.

B. Motor and gearbox shall be manufacturer's standard coating for humid/wet environments for superior corrosion protection.

PART 3 - EXECUTION

3.01 GENERAL

A. Packaged Equipment: When any system is provided as pre-packaged equipment, coordination shall include space and structural requirements, clearances, utility connections, signals, outputs, and features required by the manufacturer including safety interlocks.

3.02 INSTALLATION

A. Manufacturer shall be responsible for supervising installation of screen by the installing party and issuing a Certificate of Proper Installation prior to start-up.

3.03 FACTORY TESTS

A. All equipment shall be factory tested in accordance with the following tests for compliance with the operational requirements specified herein. Tests shall be performed on the actual assembled unit being supplied for this project.

B. If screen does not work as required by the RFP, manufacturer shall be responsible for adjustments and replacement.

C. All screen equipment shall be tested in factory, fully assembled, and delivered so that minimal amount of assembly is required.

D. The Manufacturer shall supply a certification of the completion of the factory testing of the assembled screening system and appurtenances and shall certify as to the equipment being in satisfactory operating condition at time of shipment.

3.04 FIELD TESTS AND INSPECTIONS

A. The equipment shall be shipped completely factory assembled.

B. Prior to equipment start-up, the Manufacturer shall inspect all equipment for proper assembly, installation, and alignment, for quiet and proper operation. The Manufacturer shall issue a Certificate of Proper Installation prior to beginning functional test.

C. In the event the screen equipment fails to meet the performance requirements specified, the Engineer shall have the right to require the Manufacturer to modify or replace the screen equipment to enable said system to meet the performance requirements specified.

D. Additional tests shall be conducted as required to ensure compliance with these Specifications and shall be performed at no additional cost to the Owner.

E. A copy of all information from functional tests, including data, worksheets, and other materials shall be turned over to the OWNER at the completion of the testing program.

3.05 MANUFACTURERS REPRESENTATIVE

A. Provide manufacturer's representative for a minimum of one (1) days for pre-installation conference.

B. Provide manufacturer's representative for a minimum of two (2) days per screen (separate trips) to perform installation inspection and field testing.

C. Provide manufacturer's representative for a minimum of one (1) day total to perform operations and maintenance training.

D. Provide a manufacturer's signed certificate of proper installation and operation for each screen under this Section.

END OF SECTION

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FINE SCREENING WASH PRESS

PART 1 - GENERAL

1.01 SCOPE OF WORK:

A. The Manufacturer shall:

1. Provide one (1) fine screenings wash press, control panel and other appurtenances as specified herein. Manufacturer shall provide all ancillary items required to provide a complete and operational wash press package installed in the existing fine screen building.

2. Two (2) fine screen units will be provided by Manufacturer under a single contract with the wash press or by HRRSA under separate contract.

3. Manufacturer shall provide a connection to a screen wash sluice that will convey screen washings to the location of the wash press.

4. Provide one (1) main control panel and one (1) local control station as specified herein to allow the wash press to operate automatically.

B. General:

1. The Manufacturer shall be responsible for providing a fully functional, factory tested, pre-packaged fine screenings wash press to wash and dewater screenings conveyed from the fine screens at the Fine Screen Building. All equipment provided under this section shall be the end products of one Manufacturer who shall be responsible for the suitability and compatibility of all included equipment in order to achieve standardization for appearance, operation, maintenance, spare parts, and manufacturer's service.

2. Wash press units provided under this Specification shall be factory- and field- tested for compliance to the requirements specified herein. The units and sluice connection shall be shipped completely assembled to the extent practicable or shall be clearly marked for assembly in the field.

3. The equipment provided under this section will be self-installed by HRRSA or a General Contractor under a separate contract. The Manufacturer shall commission the wash press and provide start-up support to HRRSA and/or General Contractor as specified herein.

4. The wash press system shall be designed to be supplied with 480-volt, 60-hertz, 3-phase power.

5. All equipment shall be designed for continuous or intermittent operation and long operating life in a highly corrosive, high humidity atmosphere typical to a wastewater treatment facility headworks.

1.02 DEFINITIONS

A. Continuous operation shall be defined as 24 hour per day 7 days per week operation

B. Intermittent operation shall be defined as periodic operation or extended periods off-line.

1.03 REFERENCES

A. AICS, American Institute of Steel Construction

B. AISI American Iron and Steel Institute

C. ANSI, American National Standards Institute

D. ASCE, American Society of Civil Engineers

E. ASME, American Society of Mechanical Engineers

F. ASTM, American Society of Testing and Materials

G. AWS, American Welding Society

H. IBC, International Building Code

I. IEC, International Electric Code

J. IEEE, Institute of Electrical and Electronics Engineers

K. NEC, National Electrical Code

L. NEMA, National Electrical Manufacturers Association

M. Underwriters Laboratory (UL and cUL)

1.04 SUBMITTALS

A. Shop Drawings shall be approved by Engineer prior to fabrication of wash press or control panels.

B. Shop Drawings for Wash press Equipment

1. Product Data

a. Complete list of all system components to be provided.

b. Make, model, weight, and horsepower of each equipment assembly.

c. Detail specifications for equipment assemblies indicating component drawings, dimensions, weights, loads, required clearances, method of field assembly, components, anchor bolt locations and location and size of each field connection.

d. Performance data for each type of equipment that will show compliance with specification requirements stated herein.

e. Identification of outside utility requirements for each component such as air, water, power, etc. Include operating parameters for all required utilities.

f. Suggested spare parts list to maintain the equipment in service for a period of 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance with current price information.

g. List special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.

h. Special shipping, storage and protection, and handling instructions.

i. Routine maintenance requirements prior to installation and start-up.

2. Submittal Drawings

a. Detailed drawings for all components of the wash press system.

b. Detailed Mechanical, Structural, and Electrical Drawings showing the equipment fabrications and interface with other items.

c. Include dimensions, size, and locations of connections to other work

d. Include information on weights of all major equipment

e. System layout, installation, and placing drawings for wash press systems and accessories.

f. Schematic electrical wiring diagram and electrical controls information.

C. Shop Drawings for Control Panels and Local Control Stations

1. Detail drawings and specifications for control panels including dimensioned drawings, weights, required clearances, method of field assembly, components, anchor bolt locations and location and size of each field connection.

2. Instrumentation, control system schematic, all electrical and control components wiring diagrams.

3. Source code for wash press system to allow HRRSA to integrate local/custom programming into the PLC program

4. Special shipping, storage and protection, and handling instructions.

5. Routine maintenance requirements prior to installation and start-up.

D. Certified Factory Performance Test

E. Field Test results and Vibration Report.

F. Manufacturers Operation and Maintenance Manuals customized for this project.

G. Manufacturer's Certificates of Proper Installation and Proper Operation.

H. Manufacturer’s Written Warranty.

I. A complete bill of materials of all equipment.

J. Descriptive product literature.

K. Compliance Statement

L. Complete motor and drive data

M. Record drawings of wash press arrangement, controls, and accessories in both hard copy and digital format

1.05 DELIVERY, STORAGE, AND HANDLING

A. Shipping:

1. Ship equipment, material, and spare parts complete, except where partial disassembly is required by transportation regulations or for protection of components.

2. Pack all spare parts in containers bearing labels clearly designating the contents.

3. Deliver spare parts at the same time as pertaining equipment.

B. Receiving:

1. Owner will inspect and inventory items immediately upon delivery to site and is responsible for storing and safeguarding equipment, material, instructions, and spare parts in accordance with Manufacturer’s written instructions.

1.06 WARRANTY

A. The Manufacturer shall provide a full written warranty for all equipment under this section. The warranty period shall be 24 months from delivery of equipment or 18 months from substantial completion, whichever is shorter. If a defect is found during the warranty period, the Manufacturer shall remedy said defect at no cost to Owner.

1.07 SPARE PARTS AND SPECIAL TOOLS.

A. Provide two spares for all wear components.

B. Complete set of special tools.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Hydrodyne Engineering

B. Duperon Adaptive Technologies

2.02 PERFORMANCE REQUIREMENTS

A. The wash press shall meet the following design conditions:

Parameter	**Design Value**
Number of Units	1
Minimum Inlet Feed Capacity	140 cu ft/hr
Screw Nominal Flight Diameter	12 inches
Screw Torque Tube Minimum Diameter	3.5 inches
Speed Reducer Minimum Torque Rating	25,000 in-lb
Speed Reducer Minimum Thrust Rating	5,100 in-lb
Minimum Motor Size	7.5 HP
Electrical Power	460V/3PH/60Hz
Electrical Classification	Class I, Division 2, Group D
Maximum Available Wash Water Supply Flow Available	50 GPM
Maximum Available Wash Water Supply Pressure	40 PSI
Electrical Enclosure Type	NEMA 4X/7/9 SST
Wash Press Metallic Component Material	Type 316 SST per ASTM A380

2.03 GENERAL REQUIREMENTS

A. Safety Devices: The completed Work shall include all necessary permanent safety devices, such as machinery guards, emergency stops and similar items required by OSHA, and other federal, state, and local health and safety regulations.

2.04 EQUIPMENT REQUIREMENTS

A. The wash press unit shall be designed to handle the inlet feed capacity of screenings as specified herein. The unit shall be designed to receive wet screenings from fine screens as specified in this RFP. The unit shall wash, compact and dewater screenings for the removal of fecal matter and other organic contaminants.

B. The Maximum Available Wash Water Supply Flow and Pressure specified herein reflect the maximum flow and pressure that HRRSA's NPW system can supply at the wash press. If the screenings wash press requires higher flows or pressure, a booster pump shall be provided.

C. The wash press shall incorporate one or more rotating screw augers in a cylindrical housing to convey the screenings through a minimum of two stages of washing and compaction-dewatering.

D. Washing of screenings shall be performed by multiple spray nozzles located in the inlet hopper and screw housing. The wash water flow shall be controlled by a solenoid valve and control signal from the wash press control panel.

E. The manufacturer shall provide a detailed description of the recommended wash cycle sequence to include a description of the objective, recommended cycle times, and recommended screw speeds for each step in the sequence.

F. The operation sequence of the wash press unit shall be from the control panel. Operation shall be initiated by a signal from the fine screen units. The operation of the press screw motor and wash solenoids shall be controlled by cycle timers displayed on and adjustable from the control panel interface.

G. Screenings Inlet Hopper

1. Screenings hopper shall be minimum 10-gauge (0.135-in.) thick stainless steel materials of construction to receive screenings from the sluice to feed the wash press. The sluice will be sized based on the fine screen manufacturer's recommendation. Provide a minimum 12" W x 18" H square connection.

2. Manufacturer shall provide connection between the screen sluice and hopper.

3. The wash press shall have a flanged opening to allow attachment/support of inlet hopper.

H. Screw Conveyor Housing

1. The housing shall include separate washing zones and compaction-dewatering zones. The housing shall be equipped with drainage sections with perforations for gravity drainage of the wash water. The wash press cylindrical housing shall be of all stainless steel construction with 1/4-inch thick minimum wall. Each end of the housing shall be fitted with reinforced end supports fabricated from 1/2-inch minimum thick plate to accept the drive mounting and discharge pipe mounting.

2. The wash zone shall have 0.5 mm slotted perforations for drainage of liquid.

3. The compaction-dewatering zone shall be 360-degree circumference with 0.5 mm slotted perforations, located on the discharge end of the housing, of gasketed and clamped construction.

4. The compaction-dewatering zone shall have a removable top drainage section cover fabricated of minimum 12-gauge (0.1054-in.) thick stainless steel material. The removable sections shall be held in place by quick release stainless steel clamps for ease of inspection. Provide a sealing gasket where the covers make contact with the outer screw conveyor transport housing.

5. The wash zone and compaction-dewatering zones shall be fitted with a drain pan and bottom mount 3-inch drain. Drain pipe connection shall be standard 3-inch diameter stainless steel NPT threaded connection. HRRSA will provide drain piping as required.

6. A minimum of two (2) UHMWPE replaceable wear strips shall be used to support the screw auger. The wear strips shall prevent the screw from contact with the housing. The wear strips and wear strip holders shall able to be removed without requiring disassembly of the wash press.

I. Screw Conveyor

1. The housing shall be fitted with one or more helical screw auger(s) of corrosion-resistant AISI Type 316 stainless steel construction. Screw augers shall be capable of forward and reverse movement.

2. The screw augers shall consist of not less than 1/2-inch thick minimum flights, continuously welded on a stainless steel standard pipe wall torque tube with a nominal diameter as noted herein.

J. Seal Chamber

1. A seal chamber shall be provided with a removable spool piece fabricated with Schedule 20 minimum stainless steel and with machined end flanges not less than 5/8-inch thick stainless steel. The spool piece shall be provided to form a seal assembly housing and to support the drive assembly.

2. Where the shaft of the screw passes through the outer housing, a replaceable seal assembly shall be provided to prevent liquid from entering the speed reducer housing. Seal design shall be such that it can be replaced in the field. When leakage occurs, a 1-1/2 inch minimum diameter line shall drain any leakage from the drive assembly.

K. Drive

1. The drive shall be a direct-connected speed reducer (single auger) or counter-rotating dual gear transmission (multiple augers) designed to take a 500 percent shock load without damage. The drive manufacturer shall be a member of AGMA. The drive shall have a minimum torque rating of not less than the value noted herein. The drive shall have a minimum thrust rating of not less than the value noted herein.

2. The drive shall be bolted to the drive end of the transport tube shaft.

3. The drive shall be driven by a field replaceable motor. The reducer/transmission shall utilize a taper grip bushing to connect to the drive shaft of the screw auger. The use of keys and keyways are an acceptable connection method.

4. Drive shall have separate motor overload protection via RTDs and high level torque sensor to monitor torque loads on drive.

5. Motors shall be 1,800 RPM, 460V, 60Hz, 3 Phase, NEMA C Face. Motor shall be inverter duty, premium efficiency, TEFC, NEMA Design B, Insulation Class F, Service Factor 1.15, continuous duty. Motor shall not be designed to operate in the Service Factor.

6. Motors shall be rated for classified electrical service Class I Division 1 Group D.

L. Wash System

1. The wash press shall be fitted with nozzles to wash the screenings in the wash zone and hopper. Available wash water flow and pressures are noted herein. If the wash press requires additional flows or pressures, a booster pump shall be provided. Booster pumps (if required) shall be integral to the wash press, shall not require any additional plumbing to be performed by HRRSA and shall meet electrical service, connection and classification requirements specified herein.

2. The wash press shall be equipped with electric actuated solenoid valves and manual isolation ball valves to provide wash water control to the wash zone and allow service of all components without disconnecting or isolating NPW water feed.

3. Nylon reinforced braided hose shall connect nozzles to the solenoid valves.

4. Solenoid valves shall be 3/4-inch minimum, brass body suitable for 120 VAC operation and shall be rated for an environment as noted herein. Solenoid valves shall be normally closed and rated for up to 100 psig. Solenoid valves shall be slow close type to minimize water hammer.

5. Ball valves shall be 3/4-inch diameter, 1/4-turn, stainless steel body with stainless steel ball and Teflon seats, and shall have an adjustable stop handle for volume control of the spray wash system.

6. One (1) water strainer shall be provided suitable for a 3/4-inch connection and a flow rate for up to 25 gal/min. Water filter shall be a stacked filter element design with washable 80-mesh (200 micron) polyethylene or polypropylene disc elements, polypropylene head and bowl and Buna N gaskets.

M. Discharge Section

1. A solids discharge pipe of stainless steel construction shall be provided. Pipe shall be tapered for ease of solids transport. The discharge pipe shall be 10 gauge (0.135-in.) stainless steel and shall be tapered outward to a larger diameter to prevent the washed and dewatered screenings from plugging.

2. The solids discharge pipe shall discharge screenings at a height and orientation matching the existing fine screenings wash press.

3. A 45 degree elbow shall be provided for connection between the housing and the discharge pipe. Elbow shall be provided with a Schedule 10S stainless steel butt weld stub end. Stainless steel bolts shall be provided for connecting the discharge section to the wash press.

4. The discharge elbow shall be fitted with a lap joint flange 1/2-inch minimum thickness to allow minimum 180-degree adjustment of the horizontal angle of the discharge pipe. The elbow shall be field adjustable.

5. The end of the discharge section shall be provided with a 10-gauge stainless steel 12 inch long chute stub. HRRSA to provide flexible discharge chute to dumpster.

2.04 CONTROL PANELS

A. General

1. The wash press shall be provided with one (1) Main Control Panel (MCP) outside the fine screen building and one (1) Local Control Stations (LCS) to be mounted adjacent to the wash press in the fine screen building. All components shall be completely factory wired and shall include all necessary controls for both automatic and local operation of the wash press.

2. If a single manufacturer is selected to provide the screen units and the wash press, a single control panel shall be provided to control both screen units and the wash press unit.

3. If multiple screw-augers are provided, all controls are applicable to control all augers in common.

4. The MCP enclosure and all components shall be rated NEMA 4X. Enclosure shall be ASTM A380 Type 316 stainless steel. Wiring and all electrical components shall comply with UL/CSA and NEC.

5. The LCS enclosures and all components shall be rated NEMA 4X, 7, 9 rated for Class 1 Division 1 Group D classified environment. Enclosure shall be ASTM A380 Type 316 stainless steel. Wiring and all electrical components shall comply with UL/CSA and NEC.

6. All electrical and control connections that are not factory assembled and shipped complete shall only require the installing Contractor to connect wires between junction boxes and terminal strips installed on the wash press unit and on terminal strips within the MCP and LCSs.

7. Power shall be suitable for 460VAC, 3 Phase, 60 Hz service. Control power shall be 120 VAC.

8. Electrical and instrumentation components shall be Square D, Siemens, GE, Westinghouse, or Equal.

9. The following process controllers and VFDs are standardized equipment utilized by HRRSA. Provide equipment by the following manufacturers:

a. PLC: Schneider Electric M-340 PLC

b. Touchscreen Interface: Schneider Electric Magellis 12" (minimum)

c. VFD: Schneider Electric ATV 312

10. MCP shall include all components for functional and reliable operation to include the following at minimum:

a. Main disconnect circuit breaker sized per NEC.

b. Type 1 surge protective device (SPD) provided on the 480VAC power supply.

c. Variable frequency drives (VFD) with line reactors

d. PLC with LCD touchscreen interface, Ethernet port and I/O capability as required to achieve the functionality described herein. Provide 25% spare I/O capacity on each I/O card. PLC shall have field settable/adjustable/accessible process parameters and provide specific indications of each type of fault that may occur. PLC memory shall be backed up with non-volatile memory which will load automatically if memory is corrupted. LCD shall be equipped with sun-shield to prevent display washout (Shade-Aide by Smith and Loveless or equal).

e. 4 port Ethernet switch

f. Control power transformer with 120VAC transient voltage surge suppressor (TVSS)

g. Run Time Meter

h. Motor overload sensor

i. Air conditioner, heater and combination temperature and humidity regulator to prevent equipment overheating, freezing and condensation (Ambient Conditions: 0 F to 100 F).

j. Provide a 40 cfm, structured carbon media vapor adsorber to adsorb corrosive gases and ensure longevity of control components. The adsorber shall be completely self contained and powered through 120V control power from the control panel. Unit shall be mounted adjacent on unistrut adjacent to the control panel and shall be no larger than 16" x 16" x 24" tall and shall be piped via inlet / outlets provided in the control panel. Manufacturer shall provide all piping, valves and other ancilliary items to create a functionally complete system. Adsorber shall be MWV Series 40 with Versacomb media.

B. Provide all equipment and programming required to provide LCSs with the following capabilities:

1. Wash Press Control Modes: In "Local" mode the wash press is controlled locally (overriding the MCP) by start/stop/jog buttons on the LCS. In "Local" mode the drive speed is controlled by the selector on the MCP interface. In "Remote" mode the wash press is controlled by the MCP. In "Off" mode the wash press is interlocked from being started by the MCP or LCS.

C. Operator control functions on the LCSs shall, as a minimum, include the following for each wash press unit:

1. Pushbuttons for:

a. Emergency Stop (red “mushroom” type button)

b. Start (screw auger run forward)

c. Stop

d. Forward Jog (screw auger reverse while held – release to stop)

e. Reverse Jog (screw auger reverse while held – release to stop)

2. Selector Switch

a. “Local” – “Off” – “Remote”

D. Provide all equipment and programming required to provide the MCP with the following capabilities:

1. The wash press shall be capable of operating in “manual” mode independent of programmed controls. Provide controls required to facilitate the following manual operations:

a. Utilize wash system to include opening all solenoid valves, starting booster pump (if required) and all ancillary functions required to wash screenings.

b. Manually replicate the automated wash cycle to include starting wash press drive and forward and reverse screw movement.

c. All alarms incorporated into the automatic sequence of operations shall remain functionally equivalent if the wash press is operated in manual mode of operation.

2. The wash press shall be operated in coordination with the fine screen control system according to the following sequence of operations.

a. The wash press will receive a start signal via a dry contact relay from the screen control system.

b. Following receipt of the start signal, the wash press shall initiate the wash cycle sequence.

c. All controls for the fully automatic operation of the wash press shall be provided.

d. The wash cycle sequence shall be field adjustable at the control panel user interface to allow changes to the times, speeds and sequence of each step of the wash cycle. It shall include the following steps at a minimum:

1) Initial Preparation: Reverse screw to break up any residual screenings

2) Wash/Compact: Forward screw to wash/compact screenings for pre-set time corresponding to trash rake cycle.

3) Periodic Cleans: Reverse screw for a pre-set time to break up screenings initiated by high level torque reading at motor. If three high level torque alarms are generated within a defined time period, the wash press shall stop and generate a general fault alarm.

4) Final Clean: Reverse and forward screw for pre-set times following the wash/compact step.

E. Operator control functions on the operator interface shall, as a minimum, include the following for each Wash Press unit:

1. Pushbuttons for:

a. Alarm Test

b. Alarm Reset

c. Screw-Auger Run (continuous run forward)

d. Screw-Auger Stop (stop if running)

e. Screw-Auger Jog Forward (run while holding button)

f. Screw-Auger Jog Reverse (run while holding button)

g. Wash System On

h. Wash System Off

2. Indication for:

a. Screw-Auger Run - Green

b. Screw-Auger Stop – Red

c. Wash System On - Green

d. Wash System Off – Red

e. Wash Press Mode (Hand – Off – Auto)

f. Wash Press LCS Mode (Local – Off – Remote)

1. Selector/Inputs

a. Wash Press “Hand” – “Off” – “Auto”

b. Wash System “Hand” – “Off” – “Auto”

c. Drive Speed (RPM) Selector (In Hand Mode)

3. Alarms Indication (red) for:

a. VFD Failure

b. High Level Torque

c. Motor Overload Sensor

d. Emergency Stop

F. Summary of Signal Interfaces and Controls

1. Provide discrete signals between the MCP and LCSs to achieve the functionality described herein. Control voltage power shall be 120VAC.

2. The MCP shall provide the following signals for the Wash Press unit to the HRRSA SCADA system as follows:

a. Discrete Output: Provide isolated contact closures suitable for connection to the SCADA system's 120VAC control power.

1) Wash Press VFD or Motor Overload Common Alarm

2) High Level Torque

3) Wash Press Emergency Stop Alarm

4) Screw Auger Run

5) Hand Mode Indication

6) Auto Mode Indication

7) Off Mode Indication

2.06 FINISHING

A. All fabricated stainless steel parts shall be cleaned, descaled, passivated and tested in accordance with ASTM A380. A lacquer coating is not acceptable.

B. Motor and gearbox shall be manufacturer’s standard coating for humid/wet environments for superior corrosion protection.

PART 3 - EXECUTION

3.01 GENERAL

A. Packaged Equipment: When any system is provided as pre-packaged equipment, coordination shall include space and structural requirements, clearances, utility connections, signals, outputs, and features required by the manufacturer including safety interlocks.

3.02 INSTALLATION

A. Manufacturer shall be responsible for supervising installation of wash press by the installing party and issuing a Certificate of Proper Installation prior to start-up.

3.03 FACTORY TESTS

A. All equipment shall be factory tested in accordance with the following tests for compliance with the operational requirements specified herein. Tests shall be performed on the actual assembled unit being supplied for this project.

B. If wash press does not work as expected, manufacturer is responsible for adjustments and replacement.

C. All wash press equipment shall be tested in factory, fully assembled, and delivered so that minimal amount of assembly is required.

D. The Manufacturer shall supply a certification of the completion of the factory testing of the assembled wash press system and appurtenances and shall certify as to the equipment being in satisfactory operating condition at time of shipment.

3.04 FIELD TESTS AND INSPECTIONS

A. The equipment shall be shipped completely factory assembled.

B. Prior to equipment start-up, the Manufacturer shall inspect all equipment for proper assembly, installation, and alignment, for quiet and proper operation. The Manufacturer shall issue a Certificate of Proper Installation prior to beginning functional test.

C. In the event the Wash Press equipment fails to meet the performance requirements specified, the Engineer shall have the right to require the Manufacturer to modify or replace the Wash Press equipment to enable said system to meet the performance requirements specified.

D. Additional tests shall be conducted as required to ensure compliance with these Specifications and shall be performed at no additional cost to the Owner.

E. A copy of all information from functional tests, including data, worksheets, and other materials shall be turned over to the OWNER at the completion of the testing program.

3.05 MANUFACTURERS REPRESENTATIVE

A. Provide manufacturer's representative for a minimum of one (1) days total to perform installation inspection and field testing.

B. Provide manufacturer's representative for a minimum of one (1) day total to perform operations and maintenance training.

C. Provide a manufacturer's signed certificate of proper installation and operation for equipment under this Section.

END OF SECTION

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Harrisonburg-Rockingham Regional Sewer Authority

Influent Fine Screen
Equipment Procurement

Attachment 4:
Project Drawings

ITB No. HRRSA-2016-02
Wiley|Wilson Comm. No. 216002.00

June 3, 2016

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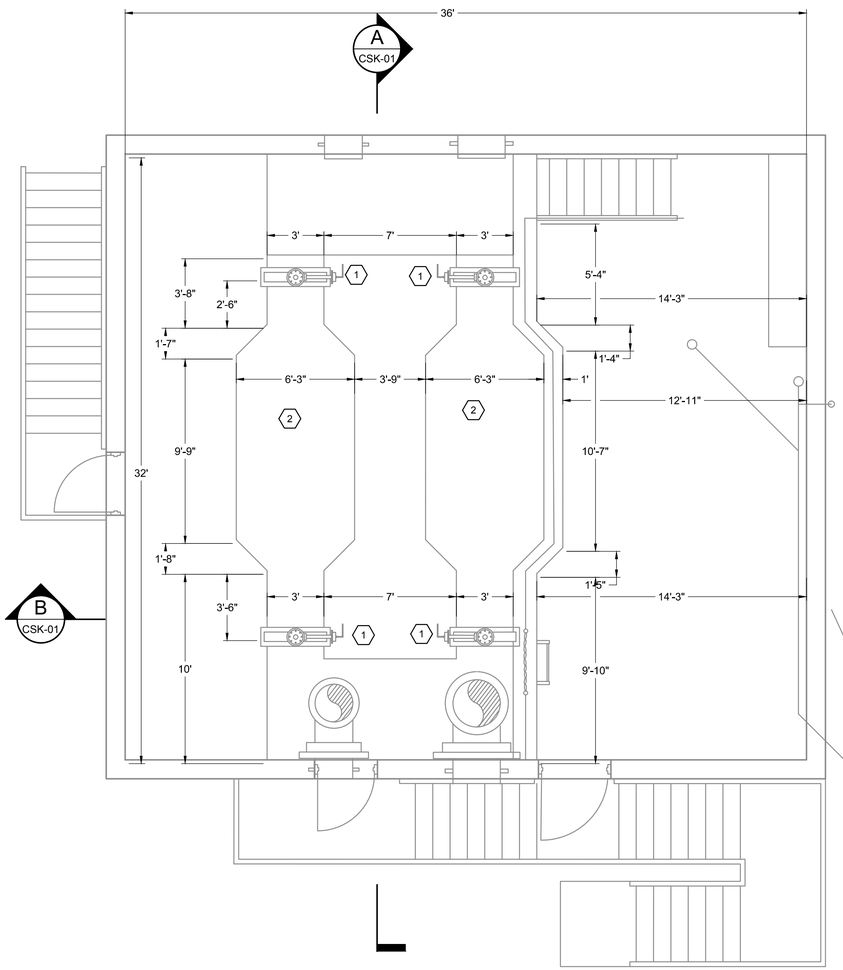
NOTES

1. EXISTING STOP GATES
2. EXISTING SCREEN CHANNEL

GENERAL NOTES

1. THIS DRAWING IS INTENDED TO CONVEY EXISTING BUILDING DIMENSIONS. EQUIPMENT IS NOT SHOWN FOR CLARITY

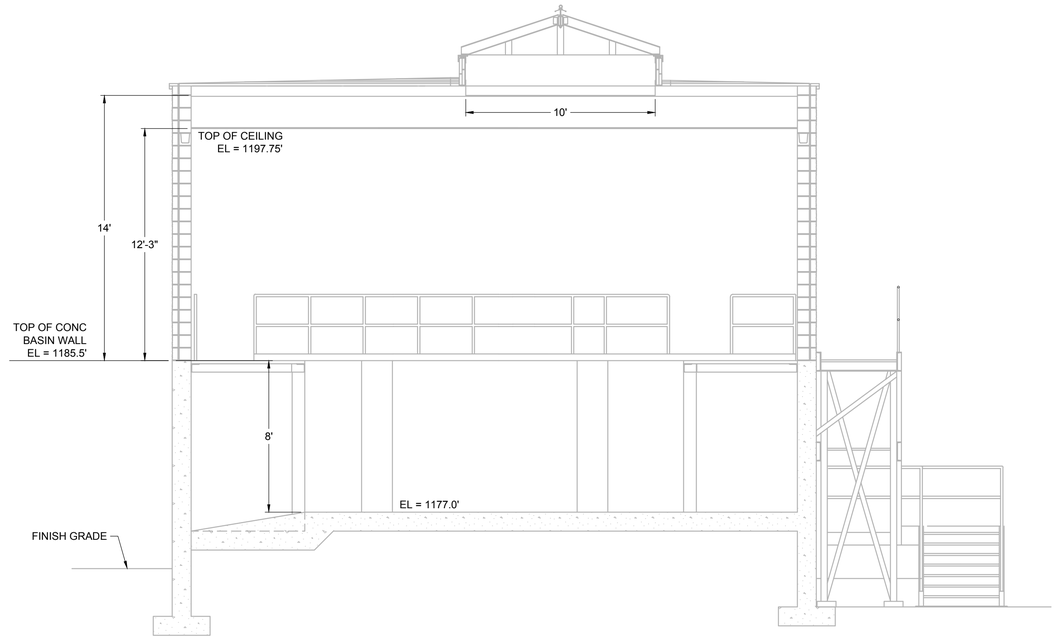


1 EXISTING FINE SCREENING BUILDING PLAN

SCALE: 1" = 4'

0' 2' 4' 8'

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.



A CSK-01 SECTION VIEW

SCALE: 1" = 4'

0' 2' 4' 8'

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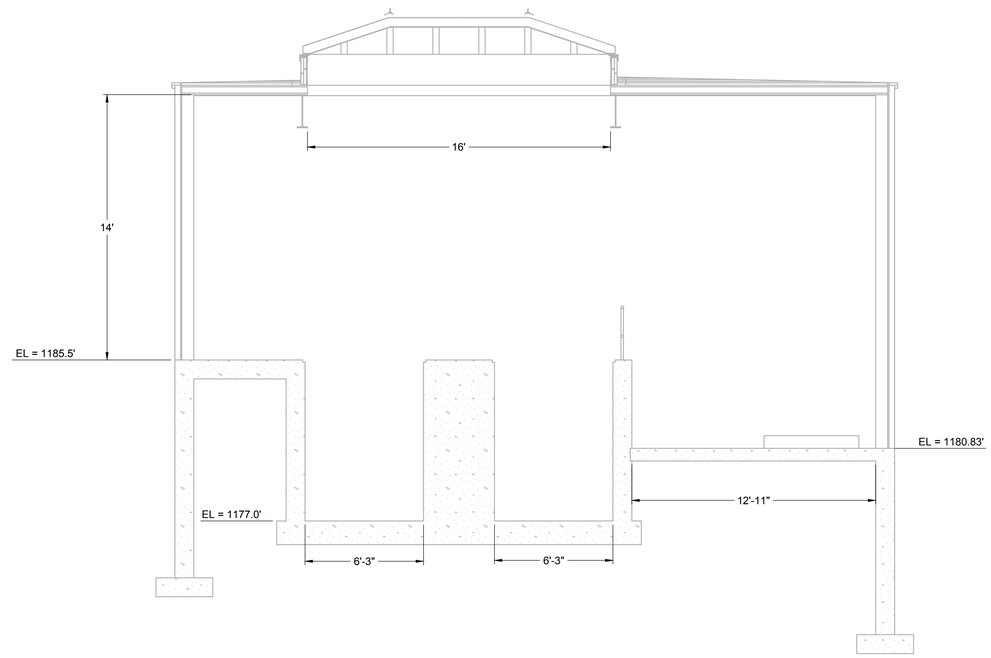

B CSK-01 SECTION VIEW

SCALE: 1" = 4'

0' 2' 4' 8'

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.

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NOT FOR CONSTRUCTION FOR REVIEW ONLY

HARRISONBURG-ROCKINGHAM REGIONAL SERWER AUTHORITY

NORTH RIVER WWTP
FINE SCREENS REPLACEMENT

MOUNT CRAWFORD, VIRGINIA

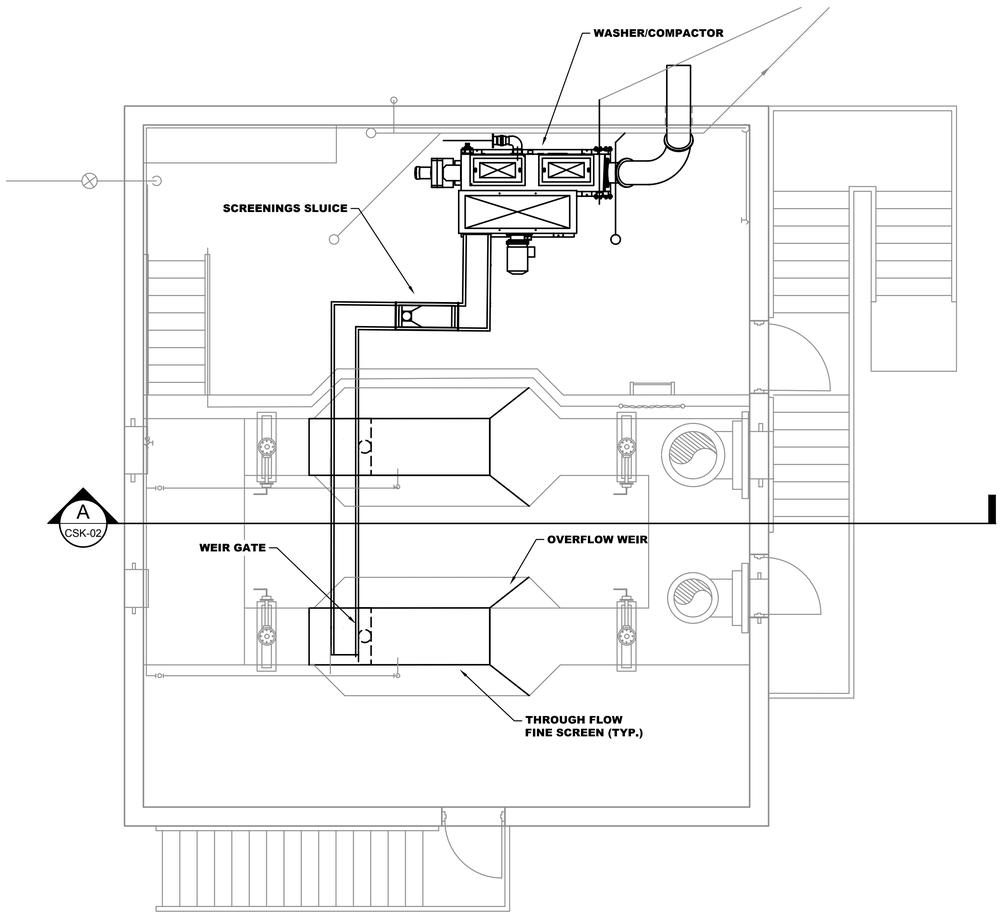
MRK	DATE	REVISION DESCRIPTION

COMM NO:	216002
DATE:	6/3/2016
DRAWN: EVS	DESIGN: AST
CHECK:	AST

SHEET TITLE

HRRSA FINE SCREEN EXISTING BUILDING AND DIMENSIONAL LAYOUT

SHT. NO.	REV. NO.
CSK-01	0

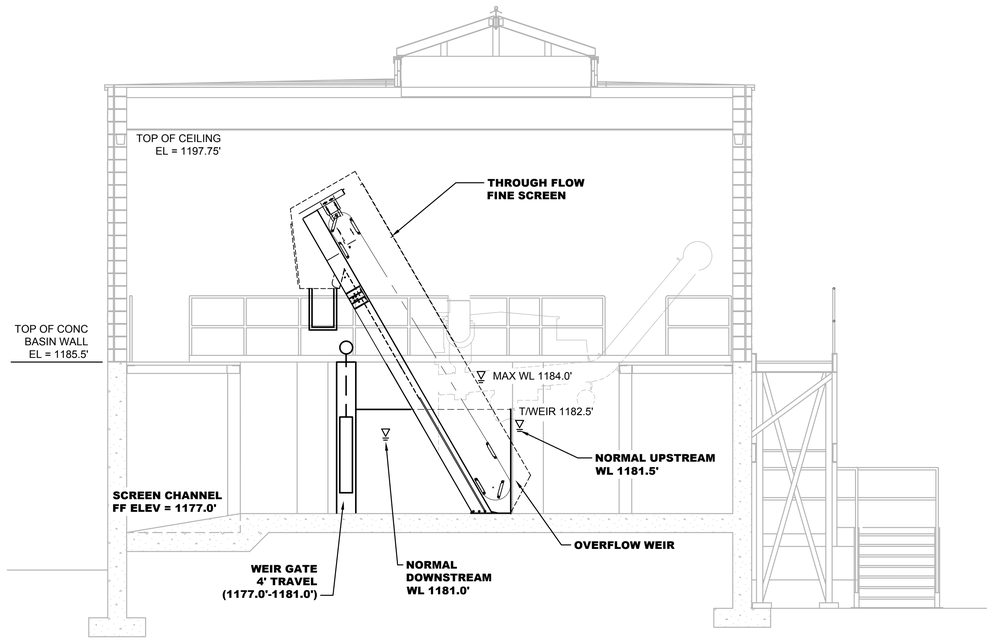


1 PROPOSED SCREEN LAYOUT

SCALE: 1" = 4'

0' 2' 4' 8'

IF THIS DRAWING IS REDUCED, GRAPHIC SCALE MUST BE USED.



A CSK-02 SECTION VIEW

SCALE: 1" = 4'

0' 2' 4' 8'

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FINE SCREENS REPLACEMENT

MOUNT CRAWFORD, VIRGINIA

MRK	DATE	REVISION DESCRIPTION

COMM NO:	216002
DATE:	6/3/2016
DRAWN: EVS	DESIGN: AST
CHECK:	AST

SHEET TITLE

FINE SCREEN BUILDING PLAN AND SECTIONS

SHT. NO.	REV. NO.
CSK-02	0

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