

**REQUEST FOR SEALED PROPOSAL  
CITY OF MARTINSVILLE  
P O BOX 1112  
Martinsville, Va. 24112-1112**

**Quote F. O. B. Martinsville, VA.**

This is an inquiry not an order. Please attach this page with any submittals. The City of Martinsville reserves the right to accept or reject any and all bids, to purchase any part of the whole of items bid upon, to waive any informalities, and to award this bid as determined to be the most advantageous to the City. All proposals must be hand delivered to the Central Warehouse, 300 Fishel Street, Martinsville, VA 24112. Do not mail your bid. Proposals are subject to the City's Purchasing Manual and Virginia Public Procurement Act.

**SEALED PROPOSAL**

**FAXES NOT ALLOWED**

**DIRECT**

**REPLY TO: KAREN MAYS, PURCHASING AGENT**

**For Inquiries only: [kmays@ci.martinsville.va.us](mailto:kmays@ci.martinsville.va.us)**

|                                |   |  |                              |                                 |  |
|--------------------------------|---|--|------------------------------|---------------------------------|--|
| <b>Issue Date:</b><br>02/22/10 |   | <b>Reply Not later Than:</b><br>03/09/10 @ 2:00 PM |                              | <b>Date Delivery Requested:</b> |  |
| 1. Sherwood Logan & Associates |   |  | 4.                           |                                 |  |
| 2. Combs & Associates, Inc.    |   |  | 5.                           |                                 |  |
| 3. Heyward Inc.                |   |  | 6.                           |                                 |  |
| <b>Quantity</b>                | <b>Description</b>  | <b>Unit Price</b>                                  | <b>Amount</b>                |                                 |  |
|                                | <b>Sealed Proposals will be received until 2:00 p.m. Tuesday, March, 9<sup>th</sup>, 2010, by the City of Martinsville, Virginia, to contract with a vendor to furnish the following:</b>   |  |                              |                                 |  |
|                                | <b>SCOPE OF WORK &amp; REQUIREMENTS:</b>  |  |                              |                                 |  |
| 1 ea                           | <b>Sludge Thickener Center Drive Unit and Torque Control, Walkway, Platform with Handrail, Center Feedwell, Rotating Drive Cage, Rake Arms, Anchor Bolts, Skimmers, Scum Box, Scum Baffle and other related Appurtenances required, as per the attached specifications, as follows:</b> |  |                              |                                 |  |
|                                | <b>The City will evaluate and award based on the following selection criteria. Provide complete details, specifications and drawings for evaluation:</b>  |  |                              |                                 |  |
|                                | 1. Ability to meet the scope of work & requirements.  |  |                              |                                 |  |
|                                | 2. Price.   |  |                              |                                 |  |
|                                | 3. Warranty.  |  |                              |                                 |  |
|                                | 4. Materials, design and system operation.  |  |                              |                                 |  |
|                                | 5. Availability of system and delivery schedule.  |  |                              |                                 |  |
|                                | 6. Machine framework  |  |                              |                                 |  |
|                                | 7. References where a similar system has been provided.   |  |                              |                                 |  |
| <b>Point of Shipment:</b>      |   | <b>FOB: MARTINSVILLE,VA</b>                        |                              | <b>Promised Delivery Date:</b>  |  |
|                                |   | <b>Frt Prepaid &amp; Allowed</b>                   |                              |                                 |  |
| <b>Terms:</b>                  | <b>Quotation date:</b>  |  | <b>Authorized Signature:</b> |                                 |  |
|                                |   |  |                              |                                 |  |

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**REPLY TO: KAREN MAYS, PURCHASING AGENT**

**For Inquiries only: [kmays@ci.martinsville.va.us](mailto:kmays@ci.martinsville.va.us)**

|                           |   |  |               |                                 |  |
|---------------------------|---|--|---------------|---------------------------------|--|
| <b>Issue Date:</b>        |   | <b>Reply Not later Than:</b>                               |               | <b>Date Delivery Requested:</b> |  |
| 1.                        |   | 4.   |               |                                 |  |
| 2.                        |   | 5.   |               |                                 |  |
| 3.                        |   | 6.   |               |                                 |  |
| <b>Quantity</b>           | <b>Description</b>  | <b>Unit Price</b>  | <b>Amount</b> |                                 |  |
|                           | <b>The City will require a manufacturer's factory trained representative to provide equipment start up and calibration and operator training for a minimum of 8 hours. Provide an hourly rate for this service.</b> |  |               |                                 |  |
|                           | <b>The City does ask the successful vendor to have this equipment available and ready for delivery by June 3<sup>rd</sup>, 2010.</b>  |  |               |                                 |  |
|                           | <b>The City of Martinsville will provide jobsite unloading and installation of this equipment.</b>  |  |               |                                 |  |
| <b>*****</b>              | <b>Successful vendor shall be required to field verify all elevations and dimensions of equipment before shipment can be accepted.</b>  |  |               |                                 |  |
|                           | <b>Please give a contact name and email address_____</b>  |  |               |                                 |  |
|                           | <b>_____.</b>   |  |               |                                 |  |
| <b>Point of Shipment:</b> |   | <b>FOB: MARTINSVILLE, VA<br/>Frt Prepaid &amp; Allowed</b> |               | <b>Promised Delivery Date:</b>  |  |
| <b>Terms:</b>             | <b>Quotation date:</b>  | <b>Authorized Signature:</b>                               |               |                                 |  |

**Definitions:**

The term “contractor or vendor” refers to the successful vendor of this contract.

Sealed proposals will be received until 2:00 p.m. on Tuesday, March 9<sup>th</sup>, 2010 at the office of the Purchasing Agent, Karen Mays, City of Martinsville Central Warehouse, 300 Fishel Street, Martinsville, Va. 24112-3248. Sealed proposals may be hand delivered, sent by FedEx or UPS to the 300 Fishel Street address. Do not mail your proposal. Place “Sludge Thickener”, 03/09/10 and 2:00 p.m. at the lower left hand corner of the envelope.

The City of Martinsville reserves the right to accept or reject any and all proposals, to waive any informalities, to negotiate with any/or all vendors, and to award this project as determined to be in the best interest of the City. Sealed proposals will be evaluated based on the selection criteria. There will not be a formal opening. Only the names of those submitting proposals will be revealed on March 9<sup>th</sup>, 2010.

Each proposal price must be binding for a minimum of 30 days from 03/09/10. Changes in price will not be allowed unless agreed upon by both parties.

The successful vendor must be responsible for the delivery of this system to the Waste Water Treatment Plant, located at 801 Wind Dancer Lane, Ridgeway, Va. 24148-4341. The price quoted must include freight charges and be F.O.B. Ridgeway, Va. Freight prepaid and allowed to the destination, F.O.B. Shipping Point will not be allowed.

For more information please email all inquires to [kmays@ci.martinsville.va.us](mailto:kmays@ci.martinsville.va.us).

**Guaranty**

- A. The successful Contractor should guarantee that all the system materials and equipment provided should fully comply with the scope of work and requirements of the City of Martinsville.
- B. All expenses covering return or replacement of defective or improper equipment or merchandise will be assumed by the Contractor. In no instance should the contractor refer the City to any distributor or manufacturer for settlement of any claim arising from defective or improper equipment or merchandise. If the Contractor should fail to replace or repair any defective or improper equipment or merchandise within thirty (30) days from date of notice, the City may make the necessary corrective arrangements and charge the cost to money due the Contractor or bill the Contractor. The Contractor agrees to reimburse the City in such instances.
- C. Any defects in the system equipment and materials used to fully perform or endure the service for which it is intended, which in the opinion of the City are caused by or due to materials not in compliance with the scope of work and requirements that may appear in the work after acceptance by the City and within the warranty period should be regarded as conclusive evidence that the Contractor has failed to comply with the said scope of work and requirements. The Contractor in this event should at his own expense, at such time and in such manner as the Engineer may direct, repair or take up any such defective

**equipment, in full compliance with the scope of work and requirements. The repairs required to be made by the Contractor should extend only to making goods an inherent defects which become manifested in the materials under ordinary conditions, and should not be held to cover any breakage or damage caused by improper use or by accident resulting from circumstances over which the Contractor has no control.**

**City of Martinsville, Wastewater Treatment Plant  
Gravity Sludge Thickener Replacement Specifications**

**Scope**

The scope of this project is to replace the internal mechanism for the existing No. 2 Sludge thickener at the City of Martinsville's Wastewater Facility. The thickener is 35 ft. in diameter with a 10' side wall depth. The unit receives both Primary and Secondary Sludge from an 8 MGD Extended Aeration Facility. The thickener and drive unit will run continuously.

The equipment should include a center drive unit and torque control, walkway and platform with handrail, stationary center influent column, center feedwell, rotating drive cage, sludge rake arms, anchor bolts, scum skimmers, scum box, scum baffle, and all other appurtenances required or shown on the drawings.

**Warranty**

The supplier should warranty the Thickener for a minimum of 18 months from delivery or 12 months after startup whichever comes first. Please submit warranty with bid.

**Submittals after award of bid**

Certified general arrangement drawings (shop drawings) showing all important details and materials of construction, dimensions, loads on supporting structures, and anchor bolt locations.

Descriptive literature, bulletins, and/or catalogs of the equipment.  
Complete data on motors and speed reducers.

Electrical schematics for all control equipment to be furnished.

Calculations documenting the AGMA rating of the drive unit and life of the main bearing, prepared and signed by a registered professional engineer.

Complete descriptive information and electrical schematic for torque overload device.

**Experience**

The equipment supplier should have a minimum 15 years experience in the design application of gravity sludge thickening for sewer sludge. The supplier must have an existing thickener in operation with 200 miles of City of Martinsville's Wastewater Plant.

**Design Description**

The thickener mechanism should be of the center drive type, supported on a stationary influent column, with the flow entering at the bottom of the influent column and flowing upward into a feedwell through openings near the water level. The thickener should be designed to remove settled sludge from the bottom of the tank.

## **Materials**

All structural steel should conform to the requirements of ASTM A36. Steel pipe used for structural members should conform to ASTM A53. Steel members in contact with liquids, either continuously or intermittently, should have a minimum thickness of 1/4" unless otherwise noted. All aluminum should be type 5052, 6061, 6063 or 2014 alloy unless otherwise noted.

## **Fabrication**

Shop fabrication and welding of structural members should be in accordance with the latest edition of the "Structural Welding Code", AWS D1.1, of the American Welding Society. All welded connections should develop the full strength of the connected elements and all joined or lapped surfaces should be completely seal welded with a minimum 3/16" fillet weld. Intermittent welding should not be allowed.

## **Surface and Edge Preparations**

Sharp projections of cut or sheared edges of ferrous metals should be ground to a radius by multiple passes of a power grinder as required to ensure satisfactory coating adhesion. Submerged and non submerged steel plates and shapes; surfaces will be prepared by blast cleaning per SSPC-SP10, then given one (1) shop coat of Sherwin-Williams Dura-Plate 235 multi-purpose epoxy, color red oxide or equivalent, 4.0 to 8.0 mils thick dry and may be followed by one (1) shop coat of Sherwin-Williams Dura-Plate 235 multi-purpose epoxy or equivalent, 4 to 8 mils thick dry.

The drive unit should be coated with the supplier's standard enamel paint system.

## **Structural Design**

The ratio of un-braced length to least radius of gyration (slenderness ratio) should not exceed the values listed in the AISC manual. For angles, the radius of gyration should be taken about the Z structural members and connections should be designed so that the unit stresses will not exceed AISC allowable stresses by more than one third when subject to loading of the previously listed peak torque. All steel design should be in accordance with the AISC Manual of Steel Construction, latest edition, and the Uniform Building Code (UBC), latest edition.

## **Drive Unit Design Parameters**

The drive unit should be designed and manufactured by the thickener equipment supplier to ensure unit responsibility. The drive unit should be designed for the torque values previously listed. It should turn the mechanism at the design collector tip speed. The drive main bearing should be designed for the total rotating mechanism loads with a minimum 10 years life of 100 years or 876,000 hours. The drive unit should be capable of producing and withstanding the previously listed momentary peak torque while starting. The drive main gear should be designed to a minimum AGMA 6 rating when rated in accordance with the latest AGMA standard. Gear teeth should be designed for proper load distribution and sharing. Stub tooth design and surface hardening of the main gear should not be allowed. The main bearing should be capable of withstanding the listed overturning

moment without the aid of any underwater guides or bearings to ensure correct tooth contact for AGMA rating of the main gear.

All spur gearing should be designed to the latest AGMA spur gear standard for strength and surface durability, based on a life of 175,000 hours. The design running torque rating of the drive gearing should be based on the smaller of the strength and durability values determined from the above AGMA standard. To ensure safety and ease of maintenance, all components of the drive should be direct coupled.

No overhung pinions should be allowed on the speed-reducing unit. The lower pinion bearing should not be located below the turntable base.

Any and all welding on the drive unit should be done using E70XX weld rod.

### **Drive Unit Specifications**

#### **Alternative A:**

The drive unit should consist of a solid internal main spur gear, bearing turntable, pinion, secondary speed reducer, support base, and drive unit bearing. The drive should be mounted on the center column and support the entire rotating load of the mechanism. The main internal gear should be forged of alloy-hardened steel. The pinion should be heat-treated alloy steel. All speed reducers should be fully enclosed and running in grease. Support base for the drive should be of welded steel to assure rigidity. Cast iron main drive housings are not acceptable due to their potential for cracks and leakage. Lubricant and dust shields should be provided. The drive bearing should include a forged steel precision gear/bearing set, with fully contoured raceways hardened to a minimum 58-60 Rc and protected by a neoprene seal. Strip liners designed for periodic maintenance and replacement should not be acceptable. The drive should be designed so that the balls and nylon spacers can be replaced without removing the access walkway. The main gear to pinion gear mesh should be grease lubricated. Lubrication fittings should be readily accessible. Continuous condensate drains should be provided in the main gear housing. Oil lubricated drives, or drive units that require large lubricant cavities requiring periodic condensate draining are not acceptable.

#### **Overload Protection**

An overload device should be provided in a stainless steel, weatherproof enclosure. The device should be actuated by torque generated from the main drive, which should operate two independently adjustable switches (the alarm switch at 100 percent of design running torque and the motor cutout switch at 120 percent of design running torque). Devices that require the worm to float and measure the thrust of the worm gear should not be acceptable. These two switches should be factory adjusted to accurately calibrate the alarm torque value and the overload position. A visual torque indicator should be provided and oriented so that it may be read from the walkway. It should be calibrated from 0 to 160 percent of design running torque.

### **Turntable**

The turntable base should have an annular bearing raceway upon which the rotating assembly rests. It should have a maximum allowable deflection in accordance with the bearing specifications. The allowable modulus of elasticity should be a minimum of 29 x 10<sup>6</sup> psi. The center cage should be fastened to and supported from the gear casing. Ball bearings should be of high carbon chrome alloy 52100 steel running in fully contoured races, as part of a precision gear/bearing set. The balls should be oil or grease lubricated and protected by elastomer seals. Felt seals that allow the entrance of moisture from outside the drive (i.e. rain water, condensate, etc.) will not be allowed.

The turntable assembly should be so designed that split internal gear, balls and strip liners may be removed without raising the access bridge.

### **Speed Reducing Unit**

The speed-reducing unit should consist of cycloidal, helical, or planetary speed reducers directly connected to a motor without the use of chains or v-belts, and should be keyed to the pinion.

The main ring gear of cycloidal drives should be made of high carbon chromium bearing steel and be fixed to the drive casing. An eccentric bearing on the high speed shaft should roll cycloidal discs of the same material around the internal circumference of this main ring gear. The lobes of the cycloid disc should engage successively with pins in the fixed ring gear. Pins to the low speed shaft should transmit the movement of the cycloid discs then. Speed reducer efficiency should be a minimum of 90% per reduction stage.

Speed reducer helical or planetary gearing should be manufactured to AGMA standards and should provide at least 95% power transmission efficiency per stage. The speed reducer should have a minimum service factor of 1.25 based on the output torque rating of the drive.

The reducers should be fitted with radial and thrust bearings of proper size for all mechanism loads and be grease lubricated. As a safety feature, the speed reducer should be back drivable to release any stored energy as the result of an over torque condition.

### **Motor**

The motor should be a squirrel cage, induction type, TEFC, ball bearing heavy duty unit of ample power for starting and operating the mechanism without overload, with a minimum service factor of 1.15. A motor canopy should be provided.

Power supply to the equipment should be 240/480 volt, 60 hertz, 3 phase.

### **Control Equipment**

A control center may be furnished with equipment, if supplied may be supplied in a NEMA 4 enclosure.

**Alternative B:**

**DRIVE**

**Internal gear pitch diameter – 38.00".**

**Ball race diameter – 42.00".**

**Motor horsepower – 1.0 HP.**

**AGMA rated torque – 17,900 ft. lbs. @ 1.5 service factor**

**Output Speed - .11 RPM.**

**DRIVE MECHANISM**

**The drive mechanism should be completely factory assembled and should consist of a primary gear reduction unit, an intermediate reduction unit, plus a final reduction unit consisting of a pinion and internal gear enclosed in a turntable base. All gearing should be enclosed in gray cast iron ASTM A-48 Class 40B housings.**

**The primary reduction unit should be a heavy duty helical gear reducer. All bearings should be anti-friction type and running in oil in a cast iron housing.**

**The primary reduction gear reducer should drive the intermediate reduction unit through a chain and sprocket arrangement. The drive chain should be #80L self-lubricated roller chain and be covered with a non-corrosive OSHA approved removable guard. Proper chain tension should be provided for by an adjustable steel base mounted on the intermediate reduction unit.**

**The motor should be totally enclosed ball bearing type, of ample power for starting and continuously operating the mechanism without overloading. The motor should conform to NEMA standards and be suitable for operation on 230/460 volt, 3 phase, 60 Hertz current.**

**The intermediate reduction unit should be a heavy-duty, worm gear speed reducer in a gray cast iron housing, with grease and oil lubricated anti-friction type bearings. The unit should be mounted on a machined face on the top of the final reduction unit and properly aligned to maintain accurate centers for the final reduction gearing.**

**An overload device should be mounted on the drive head at the thrust end of the worm shaft and should consist of: a plate spring assembly, a plunger, indicator dial, two (2) micro switches (one N.O. and one N.C.), and a terminal block, all enclosed in a weather tight, gray cast iron housing, gasketed and mounted to the gear housing. The end thrust of the worm shaft against the plate spring should actuate the plunger, which in turn should move the indicator dial.**

**A visual torque dial indicator should be provided and oriented so it may be read from the walkway.**

**The micro switches should be factory set to: 1) sound an alarm when the load on the mechanism reaches 100% of the AGMA rated torque capacity of the drive; and 2) to stop the motor when the load reaches 120% of the AGMA rated torque capacity.**

**A shear pin device, set for 130% of the AGMA rated torque should be furnished.**

**The internal final gear should be driven by a heat-treated steel pinion from the slow speed shaft of the intermediate gear reduction unit. The internal gear should be split for easy removal, should be of ductile iron and should be designed to support the center cage and collector.**

**The turntable base should have an annular raceway to contain balls upon which the internal gear rotates. The ball race should ensure a low unit ball load, long life and stability, without the necessity of guide shoes or steady bearings. The balls should be alloy steel and should bear vertically and horizontally on four (4) renewable special hardened (38-42 Rockwell C) steel liner strips force fitted into the turntable base and internal gear. The liner strips should be 3/8" thick x 3/4" wide. The internal gear, pinion and ball race should run in an oil bath and be protected by a felt seal and neoprene dust shield.**

**The turntable base should be bolted to the center column and be designed to support the internal gear with the rotating mechanism and the access bridge. An oil filling and level pipe along with a drain plug and sight gauge, should be furnished as part of this unit. A pipe should be attached to the bottom of the turntable base for purposes of condensate removal. The oil piping should terminate within the center of the base for easy access.**

**The turntable assembly should be so designed that the split internal gear, balls and strip liners may be removed without raising the access bridge.**

**The drive mechanism should be designed in accordance with AGMA Sections 2001-B88 (Sept. 1988), "Fundamental Rating Factors and Calculation Methods for Involute and Helical Gear Teeth"; and 6034-A87 (March 1988), "Practice for Enclosed Cylindrical Worm Gear Speed Reducers and Gearmotors"; for twenty-four (24) hour continuous duty, and twenty (20) year design gear life, based on the AGMA rated torque. All bearings should be designed for a minimum B-10 life of 200,000 hours.**

### **End of Drive Unit Specifications**

#### **Walkway**

**One (1) 36" wide walkway and platform with handrails should be supported by the drive unit and influent column at the center and the tank wall at its outer end, and should be designed to safely withstand a live load of 50 pounds per square foot. Deflection should not exceed L/360 when both the dead load and live loads are applied. It should consist of two beams with 1 -bar grating between the beams. The walkway should be diagonally braced against lateral movement, and provided with handrails 42" high, of double-row 1 1/2" diameter horizontal aluminum pipe, and 1/4" x 4" high kickplate on both sides.**

**Stainless steel bearing plates, UHMW-PE slide plates, and anchor bolts for the wall support should be provided by the equipment supplier and installed by the contractor. Bearing plate dimensions and anchor bolt diameter, length, quantity, and arrangement should be per the equipment supplier. The contractor should block out or otherwise modify the tank or support structure to accommodate walkway and supports, if required.**

### **Center Platform**

A center drive platform should be provided which allows 24" clearance outside the center drive components. It should consist of 1/4" aluminum checkered plate with necessary stiffeners and supports, resting on the drive unit and center column, and provided with connections to the walkway. Handrails 42" high of double-row 1 1/2" diameter horizontal aluminum pipe should surround the entire platform with 1/4" x 4" high kickplate.

### **Center Influent Column**

A stationary cylindrical steel influent column of 1/4" minimum wall thickness should be provided. One end should have a support flange for bolting to the tank floor over the influent line, with a similar flange at the top for supporting the drive unit and walkway. The structure and anchor bolts should provide adequate support for the entire mechanism dead load plus live load and torque with an adequate factor of safety to eliminate excessive deflection or vibration. Suitable openings should be provided in the upper portion of the column to allow unrestricted passage of the flow into the feedwell.

Prior to the center column being plumbed and grouted in place, the drive unit should be installed, positioned, and leveled.

### **Feedwell**

An energy dissipating feedwell should be supported outside of the center cage to diffuse the liquid into the tank without disturbance or formation of density currents. Baffled openings should be provided near the water surface to allow scum to exit the feedwell

The feedwell should be made of not less than 3/16" thick steel plate with necessary stiffening angles.

### **Center Cage**

The center cage should be of steel box truss construction. It should be provided with connections for the two sludge rake arms and feedwell supports. The cage top should be bolted to the main gear, which should rotate the cage with the attached arms and feedwell. The cage and each arm should be designed to withstand 150 percent of the design running torque of the drive without over stressing the members. Loading to develop the torque should be considered as uniform loads applied to each arm individually.

### **Sludge Rake Arms**

The mechanism should include two sludge rake arms of steel truss construction with steel scraper blades and adjustable stainless steel squeegees. Squeegees should be fastened to the rake blades with stainless steel fasteners. The blades should be properly sized to ensure complete raking of the bottom twice per revolution. The blades should rake the heavy sludge to a center sludge hopper. The arms should be adjustable at the cage to assure an even grout thickness over the tank bottom.

**Vertical pickets of structural steel angle should be attached to the rake arms on 2'-0" centers.**

### **Surface Skimmer, Scum Trough and Skimmer Blade Ramp**

**A “full surface” skimmer should be furnished consisting of a scum blade supported from the influent well and structural A-frames mounted on top of the truss arm. A pivoting wiper assembly should be attached to the outer end of the scum blade to form a pocket for trapping the scum. The mechanism should insure continual contact and proper alignment between wiper blade, scum baffle and beach as the blade travels up the beach. The wiper blade should have a wearing strip on its outer end which contacts the scum baffle and neoprene strip on its lower and inner edge. Scum should be trapped as the wiper blade meets the skimmer blade ramp and is raised up the beach to be dumped into the scum trough. All springs, pivot points and threaded fasteners should be constructed of 18-8 stainless steel. The carbon steel components of the wiper assembly should be hot dip galvanized.**

**The scum trough and beach should be fabricated of ¼” thick steel plate, adequately supported from the tank wall. The scum trough should be 4'-0” wide, with a length 4'9” along the tank wall. A six standard pipe flange should be provided for connection to the scum discharge piping.**

### **Anchor Bolts**

**All anchor bolts should be a minimum of 1/2" diameter and made of 304 stainless steel. The equipment supplier should furnish all anchor bolts, nuts, and washers required for the equipment.**

### **Fasteners**

**All structural fasteners should be a minimum of 1/2" diameter and made of type 304 stainless steel. The equipment supplier should furnish all fasteners required for the assembly of the equipment.**

### **Manuals**

**The equipment supplier should furnish four (4) copies of operation and maintenance manuals, which will be retained at the installation site to assist plant operators. The manual should include the supplier’s erection and assembly recommendations and a complete list of recommended spare parts**

**A set of As-built drawings should be included.**

### **Field Service**

**The equipment supplier should provide the service of a qualified representative for one (1) trip and one (1) day to inspect the mechanism installation, lubrication, torque test, assist in start-up, and instruct plant personnel in the proper operation and maintenance of the mechanism.**



## Addendum

### Request for Sealed Proposal for the Sludge Thickener Center Drive Unit

Date: February 23, 2010

To: Sherwood Logan & Associates  
Combs & Associates, Inc.  
Heyward Inc.

From: Robin Legus, Purchasing Technician

Subject: Addendum to quote due on March 9<sup>th</sup>, 2010 @ 2:00 PM

#### Additional Information:

##### Fiberglass Scum Baffles

The scum baffles and brackets should be fiberglass reinforced polyester resin, compression molded in matched metal die molds. Components fabricated from cut plate stock with cut edges are not acceptable.

Scum baffles should be ¾" thick x 12" high with a maximum length of 12'. Mounting holes should be included as required to attach to support brackets.

Brackets should be provided at a maximum spacing of 40" on center. Minimum sizing should be 3/16" thick x 4" wide. Slots should be included to allow at least 1-1/2" vertical and horizontal adjustment to allow for anchor bolt locations.

Assembly hardware should be 316 stainless steel and anchors should be a minimum of ½" diameter 316 stainless steel.

The scum baffles and brackets should be provided by NEFCO or Warminster Fiberglass Company.

Please include this with your bid. Thank you.

Robin Legus, Purchasing Technician  
City of Martinsville, Virginia  
276-403-5353 (phone)  
276-403-5356 (fax)



**Addendum #2**

**Request for Sealed Proposal for the Sludge Thickener Center Drive Unit**

Date: February 25<sup>th</sup>, 2010

To: Sherwood Logan & Associates  
Combs & Associates, Inc.  
Heyward Inc.

From: Robin Legus, Purchasing Technician

Subject: Addendum to quote due on March 9<sup>th</sup>, 2010 @ 2:00 PM

Additional Information:

Surfaces will be prepared by blast cleaning per SSPC-SP10, then given one(1) shop coat of Sherwin-Williams Dura-Plate 235 multi-purpose epoxy, color red oxide or equivalent, 4.0 to 8.0 mils thick dry, the paint will be supplied by the vendor.

A second shop coat of Sherwin-Williams Dura-Plate 235 multi-purpose epoxy or equivalent, 4 to 8 mils thick dry using paint supplied by the vendor is optional. If the vendor chooses not to apply the second coat, they do not have to supply the paint. The vendor should state their intentions in the quote.

Robin Legus, Purchasing Technician  
City of Martinsville, Virginia  
276-403-5353 (phone)  
276-403-5356 (fax)