GENERAL TERMS AND CONDITIONS
PLEASE READ AND SIGN

REFERENCE: *SELF-CLEANING CHANNEL SCREEN WITH WASH PRESS*

1) Sealed bids will be received at the Main Office of the Water Works and Sewer Board located at 931 Noble Street, Anniston, Alabama 36202-2268 until Tuesday, APRIL 14, 2020 at 10:00 am and then at said place publicly opened and read aloud.

2) Each bid must be submitted in a sealed envelope addressed to the Water Works and Sewer Board of the City of Anniston, 931 Noble Street, P.O. Box 2268, Anniston, Alabama 36202-2268. The envelope shall be marked "SEALED BID, SELF-CLEANING CHANNEL SCREEN WITH WASH PRESS, ATTENTION: PHILLIP T. BURGETT, TO BE OPENED 10:00 AM, TUESDAY, APRIL 14, 2020". Anyone who has questions regarding this solicitation should contact Phillip T. Burgett of the Board Engineering Department at (256) 241-5002.

3) The attached specifications are being provided to potential bidders as guidelines which describe the type and quality of equipment, supply, and/or service the Water Works and Sewer Board is seeking to purchase. The bidder must list exceptions to each specification item for consideration. Failure to comply with this provision could be cause for rejection of the bid.

4) Whenever the words equal, equivalent or alternate appear in the specifications, they shall be interpreted to mean an item or material or equipment similar to that named, and which is suited to the same use as that named and which is approved by the Board Engineering Department.

5) It will be assumed that all bids are based upon the specifications unless the bidder stipulates to the contrary. Exceptions from the specifications may be considered if they do not alter the performance for the intended purpose.

6) If it becomes necessary to revise any part of this bid, a written addendum will be provided on the Board website at awwsb.org. The Water Works and Sewer Board of the City of Anniston is not bound by any oral representations, clarifications, or clarification made in the written specifications by Board employees unless such clarification or change is provided to bidders at awwsb.org.

7) The bidder shall guarantee the units submitted for their bid shall be new and of the latest and most improved model of the current production, and shall be of first quality as to workmanship and materials used in said units. All modifications shall be made at the factory. Equipment shall not have been operated for any purpose other than routine operational testing. Demonstrators will not be accepted.

8) All bids shall be typewritten or in ink on the form(s) prepared by the Board. Bids prepared in pencil will not be accepted. All proposals must be signed by officials of the corporation or company duly authorized to sign bids.

9) All corrections or erasures shall be initialed and dated by the person authorized to sign bids.

10) Prices quoted shall be delivered prices, exclusive of all federal or state excise, sales, and manufacturer's taxes. The Board will assume no transportation or handling charges other than specified in this bid. The Board is tax exempt by law - Article 9 of Code of Alabama (1975) - Title 11-50-322.

11) Prices quoted to the Water Works and Sewer Board shall remain firm for a minimum of 60 days from the date of opening of the bid.

12) The delivery schedule shall be entered in the appropriate space on the proposal form. If all items cannot be delivered on the same schedule, please note variances.

13) The bidder shall assume ultimate responsibility for guaranty of all components of the equipment. All items furnished in accordance with these specifications shall be covered by the manufacturer's and/or supplier's standard warranty or guarantee on new equipment. The minimum warranty period on new equipment must be one year unless otherwise stated.

14) The Board reserves the right to request a demonstration of any and all items bid before making the award.

15) The Board reserves the right to accept or reject any or all items covered in the request, or any portion(s) thereof, waive formalities or informalities, re-advertise and/or take such other steps decreed necessary and in the best interest of the Board. The Board further reserves the right to reject any and all bids, and to waive any informality in any bid.

16) All bids will be awarded to the lowest responsive and responsible bidder. This determination may involve all or some of the following factors: price, conformity to specifications, terms of payment, financial ability to meet the contract, previous performance, facilities and equipment, availability of repair parts, experience, delivery promise, compatibility as required, other costs, and other objective and accountable factors which are reasonable.

17) All items bid will be inspected by a representative of the Water Works and Sewer Board upon delivery to ascertain compliance with the specifications. Items not in compliance with the specifications shall be rejected until proper remedial measures are taken to assure compliance. Payment to the successful bidder will be made in accordance with standard payment procedures of the Board.

18) Any provisions made in the Invitation for Bids supersedes any provisions outlined here in the General Terms and Conditions

19) A bid bond or cashier check in the amount of 5% of bid amount shall be submitted with your proposal.

20) Bidders may be disqualified and rejection of proposals may be recommended for any of (but not limited to) the following causes:

- Failure to use the bid forms furnished by the Board
- Lack of signature by an authorized representative on the bid form
- Failure to properly complete the bid form and vendor compliance
- Unauthorized alteration of the bid form

21) Bidders will submit two (2) names, addresses, telephone numbers of current users of the equipment proposed in the bid

_____	_____
_____	_____
_____	_____
_____	_____

I HEREBY CERTIFY THAT I HAVE READ AND UNDERSTAND THESE INSTRUCTIONS

_____
SIGNATURE OF BIDDER

_____
NAME OF BIDDER (typed or printed)

PROPOSAL FORM

REFERENCE: *SELF-CLEANING CHANNEL SCREEN WITH WASH PRESS*

THE WATER WORKS AND SEWER BOARD OF THE CITY OF ANNISTON
931 NOBLE STREET
P.O. BOX 2268
ANNISTON, AL 36202-2268

OPENING DATE: APRIL 14, 2020, AT 10:00AM

I HEREBY SUBMIT THE FOLLOWING FOR CONSIDERATION IN ACCORDANCE WITH ALL TERMS AND SPECIFICATIONS OF THE ABOVE REFERENCED INVITATION FOR BID:

MAKE:_____

MODEL:_____

DELIVERY SCHEDULE:_____

TOTAL PRICE:_____*

(*TOTAL PRICE INCLUDES SELF-CLEANING CHANNEL SCREEN WITH WASH PRESS PLUS ALL DESIGN, LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO INSTALL)

DELIVERY SCHEDULE SHALL BE NUMBER OF DAYS FROM DATE OF ORDER

THIS BID MUST BE RETURNED ALONG WITH SETS OF DESCRIPTIVE LITERATURE WITH MANUFACTURER'S SPECIFICATIONS

SUBMITTED BY: _____

NAME : _____

TITLE : _____

CORPORATION : _____

ADDRESS : _____

TELEPHONE NUMBER : _____

DATE : _____

SIGNATURE : _____

SECTION 11 33 00 – SELF-CLEANING ELEMENT FILTER MEDIA, CHANNEL SCREEN

PART 1–GENERAL

1.1 REQUIREMENTS

A. The Bidder shall supply all design, labor, equipment, and materials necessary to furnish and install one (1) Parkson Model AG-S-A, 60-degree channel screen, or equivalent, of such width (4 feet minimum) and discharge height as required for the channel and conveyor layout shown on the attached drawings. Screen spacing shall be 6mm. The design shall be based on the Aqua Guard® Ultra Clean™ mechanical filter screen unit, as manufactured by Parkson Corporation, Vernon Hills, IL. The Aqua Guard® unit will consist of a frame assembly, filter belt/screen assembly, drive assembly, rotating brush assembly, spray assembly and discharge chute.

B. The automatic bar/filter screen will be designed to positively clean and remove debris up to 7 inches in diameter from the influent stream by means of high impact plastic filter elements designed to retain and elevate debris to the discharge point of the unit where the rotating brush assembly and spray system cleans the elements.

C. The unit shall be suitable for installation and operation in the channel depicted in the attached drawings. The angle of inclination shall be 60 degrees from horizontal. The total discharge height of the screen, as measured from its base to the screenings discharge point, shall be as required to deposit debris onto the conveyor shown on the attached drawings.

D. The Bidder should become familiar with existing configuration and conditions at the installation site at the headworks building at Choccolocco Creek WWTP, 35 Friendship Road, Oxford, AL 36203 to ensure that the equipment proposed will conform, adapt, and fit in the existing proposed space. The Bidder is responsible for assessing all existing site conditions including verifying channel dimensions in order to prepare the bid.

E. The attached record drawings are including in the bid package in order to help bidders with evaluation of existing site conditions and were not developed for design of this screen procurement. Design of the screen installation is the responsibility of the Bidder. Notes have been placed IN RED on the record drawings to merely convey the desire of the Owner.

E. The Choccolocco Creek WWTP has an average daily flowrate of 10.7 MGD with peaks of approximately 36 MGD. Treatment processes include screens, cyclonic grit removal, 4 primary clarifiers, 4 aeration basins, 6 secondary clarifiers, and UV disinfection. TSS averages 112 mg/L and peaks periodically above 300 mg/L and rarely above 500mg/L.

1.2 PERFORMANCE

A. The screen shall be capable of passing a minimum of 21 MGD with a head loss of 20 inches or less at a velocity of 2 feet per second.

B. The screen shall be capable of presenting a clean filtration surface to the influent stream at all times during continuous operation. It shall be capable of intermittent operation in order to form a mat of material to provide maximum trash removal. Additionally, in order to maximize the capture of paper, rags, and other flexible debris, which tends to drape over and adhere to the filtration surfaces, the screen shall have a minimum of 0.694 square feet of contact surface area per square foot of wetted filtration belt frontal surface.

PART 2 – CONSTRUCTION AND MATERIALS

2.1 FRAME ASSEMBLY

A. The frame of the unit, which is stationary, shall be constructed from type 304 stainless steel with a thickness of 1/2 inch. It supports and locates all of the operating components. The unit shall rest at the bottom of the channel, and be anchored at the operating floor elevation. No mounting or fastening of the unit frame shall be required to the sidewalls or bottom of the channel.

B. The “A” frame unit shall be supported at the operating floor elevation by support legs constructed from type 304 stainless steel. The legs shall be designed to allow the unit to pivot the screen out of the channel without dewatering (e.g. for bypass purposes). Routine service of the unit is possible with the screen in the channel.

C. Guide rails shall be mounted to each side on the inside surface of the frame to direct the filter belt during its ascension out of the channel. The guide rails shall be 1-inch thick and shall be constructed from type 304 stainless steel.

D. At the top of the screen, circular chain guides shall gently direct the filter belt from its ascending path out of the channel towards the drive sprockets. These circular guides shall be constructed from type 304 stainless steel and shall be welded to a type 304 stainless steel shaft. In order to reduce the wear on both the chain and chain guides, the shaft shall be secured to bearings on each side of the frame and the shaft shall rotate freely.

E. Circular chain guides shall also be provided to direct the filter belt from the drive sprockets to the descending path into the channel. These circular guides shall be constructed from 3/4-inch thick type 304 stainless steel and shall be welded to a type 304 stainless shaft. In order to reduce the wear on both the chain and chain guides, the shaft shall be secured to bearings on each side of the frame and shall rotate freely.

F. Lower return guides shall be provided at the base of the screen to direct the filter belt during its 180-degree turn from the descending to ascending paths. The lower guide rails shall be constructed from type 304 stainless steel and shall be fixed in place as low as possible in the frame to optimize the submerged screen area. No submerged bearing or rotating guides that will require routine maintenance or that may become fouled by trash and debris shall be used.

G. Neoprene rubber seals with type 304 stainless steel backing plates shall be mounted along the upstream edges of the frame to seal the outer edge of the frame against the channel wall, and the area between the frame and filter belt side plates.

H. The bottom of the unit shall be sealed with two rows of nylon brushes, which allow the elements to pass through, but prevents trash from passing beneath the filter elements, ensuring capture of all solids and trash by the filter belt.

I. All shaft bearings shall be mounted externally to the side frame for ease of access and maintenance.

J. The portion of the screen above the channel shall be equipped with covers to help control the emission of odors and protect operators from contact with moving parts. The covers will also minimize misting and dripping. All enclosures shall be removable. There shall be hinged sections on the front and rear of the unit for access to the screen for periodic maintenance. The covers shall be fabricated from 14-gauge type 304 stainless steel.

2.2 FILTER BELT/SCREEN ASSEMBLY

A. The screen shall provide dual filtration of all materials in order to minimize compaction of captured debris and minimize the head loss through the screen. This shall be accomplished by recessing the horizontal fine filtration opening in the face of the screen. The coarse horizontal openings formed by the upper or forward shank/arm of the elements shall be 14 millimeters and shall be the first opening the flow stream contacts as it passes through the screen. The lower or recessed shank/arm of the elements shall create a two-dimensional grid which limits the maximum vertical opening to 59 millimeters and the fine horizontal opening of 6 millimeters. This restricted opening profile is required to prevent long, thin materials from passing through the grid by aligning themselves so that the long axis is parallel with the vertical opening. The elements are arranged in a staggered fashion to form an endless belt and to create a range of motion that allows the recessed shank/arm of one row of elements to pass through the plane of the forward arm of the next row of elements it meshes with. Each filter element shall be a single molded component with a rake integral to its shape. The filter belt shall form a row of these rakes spaced every 8 inches, capable of lifting material of up to 7 inches in diameter out of the channel. The elements are secured to two separate filter shafts that pass through individual bosses in the elements.

B. The side plates (or end plates) are mounted next to the outermost elements of each filter row and overlap to form a continuous moving sidewall for the filter belt. This moving wall prevents captured trash and debris from spilling over the sides of the filter belt. The side plates shall be constructed from a high strength phenolic resin.

C. The tension of the moving screen/filter belt assembly shall be completely supported by a stainless steel link chain. The chain must connect the filter shaft ends on both sides of the belt assembly so that the elements are free of tension and support no weight of the assembly. The chain shall be of closed link design with 2 link sidebars, chain rollers and pins per link. The chain

assembly shall have a minimum cross-sectional area of 0.203 square inches at the weakest point of any individual link.

D. Chains shall be supplied with hollow pins that allow for the removal and replacement of the filter shafts, side plates and filter elements without releasing the chain tension. The unit is designed to allow this function to take place at the operating floor elevation with the screen in the channel. Chain rollers shall have a diameter of 3 inches.

E. All chain components shall be corrosion resistant stainless steel. Sidebars shall be type 304 stainless steel. Pins shall be type 410 stainless steel and the bushings shall be type 416 stainless steel. Rollers shall be type 17/4 stainless steel. Type 410, 416 and type 17/4 series components shall be heat treated to a minimum hardness of 39 on the Rockwell C Scale.

F. The filter shafts shall have a maximum diameter of 1-3/8 inch and be spaced on 8-inch centers in the direction of travel of the filter belt. The shafts shall be constructed from type 304 stainless steel.

2.3 ULTRACLEAN™ TECHNOLOGY

A. In addition to the normal interaction of the filter elements, the Ultra Clean™ Technology cleans and renews the screen in 3 additional ways:

1. The UltraWash Screen Belt Spray System.

2. The Ultra Clean™ Belt Geometry and repositioned brush.

3. The Quick Change UltraBrush™ Assembly

B. The UltraWash screen belt spray system consists of two (2) optimally positioned 1" stainless steel spray bars with ¼ turn quick release spray nozzles. The ¼ turn makes unplugging nozzles quick and easy with access provided thru the covers. Water usage is approximately 20 gpm at 40 psi but can be very effective at low flows, pending site requirements.

C. SOLENOID VALVE. The UltraWash system will be actuated by a 120 Volt, single phase, 60 Hz normally closed solenoid valve. Valves will consist of a brass body with a 1" inch NPT pipe connection. Electrical housing will be rated NEMA 4X with a ½ inch conduit connection.

D. Installer will provide and locate pressure gauge for supply pressure and manual shut off valves for each spray bar.

E. The UltraClean Belt Geometry increases the discharge length and positions the screen belt for optimal cleaning by the combination of the brush and spray wash system.

F. The UltraBrush assembly is of hybrid construction that limits stringy solids from wrapping around the brush shaft and extends its effective life. The bristles are longer and make maximum penetration of the element shank for positive cleaning of the filter belt. The brush is driven by an independent drive system.

G. A side mounted door provides access for replacing the UltraBrush without reaching into the unit by more than 6 inches. Designs that require reaching into the machine beyond 6 inches to change the brush are prohibited. Changing of the brush is accomplished in under 10 minutes by sliding the solid core brush from the cantilevered drive shaft.

2.4 ULTRABRUSH DRIVE ASSEMBLY

A. The drive assembly consists of a gear reducer, motor, and brush shaft. The drive mechanism shall be protected from the trash stream to ensure that the brush runs smoothly.

B. The gear reducer is of hollow shaft design by Sumitomo or equivalent, mounted directly to the unit external to the side frame and connected directly to the brush shaft with a keyless tapered bushing. The reducer shall be designed in accordance with AGMA recommendations for Class II service based on the required horsepower for operation.

C. The motor shall be a minimum 1/2 HP squirrel cage induction motor, TEFC, 230/460 volt, 3-phase, 60 Hz, 1800 RPM by Baldor or equivalent.

D. Overload protection shall be provided by an electrical overload device that senses motor current draw (SSAC Current Monitor or equal).

2.5 DISCHARGE CHUTE

A. A discharge chute shall be provided integral to the machine, constructed from 14-gauge type 304 stainless steel and designed to direct the screenings to the collection equipment below.

B. The chute shall extend beyond the standard discharge point into the washer compactor unit.

2.6 LUBRICATION

A. Lubrication lines shall be extended from each bearing housing to central point's located on each side of the machine, accessible from the operating floor for ease of maintenance.

2.7 FASTENERS

A. All fasteners shall be type 18-8 stainless steel.

2.8 SURFACE FINISH

A. SURFACE TREATMENT OF STAINLESS STEEL COMPONENTS.

1. All structural members will be mechanically cleaned using Dupont Starblast. Sheet metal components such as covers, or the discharge chute will be furnished with a 2B finish.

2. All other appurtenances including roller chain, brush sprockets, bearing housings, motor, reducer, etc. shall be supplied with the manufacturer's standard finish.

PART 3 - ELECTRICAL DEVICES AND CONTROLS

3.1 ELECTRICAL DEVICES

A. All Interconnecting conduit and wiring shall be included in the supply of the unit. In addition to the drive motor, the following electrical devices will be furnished with the unit:

1. FLOAT SWITCH-High Level Alarm

A mercury type float switch of chemical resistant polypropylene construction will be provided with a 316 SST pipe mounting bracket, float mounting clamp and expansion anchors. The mounting bracket requires a suitable length of 1" nominal pipe to suspend the float in the channel, to be supplied by others. The float will have a 20-foot long integral cable.

2. Differential Level Controls (UltraSonic)

B. CONTROLS: The following controls will be provided:

A 480 Volt primary U.L. listed and labeled control panel in a NEMA 4X 304 SST enclosure suitable for wall mounting. It will contain the following logic devices for proper operation of the equipment:

1. Programmable relay to perform necessary logic functions and monitor equipment mounted electrical devices.
2. Emergency Stop Push Button.
3. Hand-Off-Auto selector switch for screen operation.
4. Hand-Off-Auto selector switch for brush operation.
5. Hand-Off-Auto selector switch for spray wash operation.
6. Control power and run indicating lights.
7. Motor current monitor and hour meter
8. Fault indicating light and system reset pushbutton
9. Run and fault auxiliary output contacts for customer use.
10. A step-down control transformer, motor starter and fused disconnect will be provided.

3.2 SEQUENCE OF OPERATION

A. HAND OPERATION

1. When the Hand mode is selected, the screen will run continuously. Placing the selector switch in the Off position will stop the screen.

B. AUTOMATIC OPERATION

1. When the Auto mode is selected, the unit will run via the water level sensor, repeat cycle timer, or thermostat.

2. After the water level has lowered, the unit will continue to run for the length of time set on the off-delay timer, typically set at 30 seconds.

3. The Spray wash system and brush are also activated whenever the screen is running.

C. EMERGENCY STOP

1. The unit can be deactivated at any time by pressing either the control panel or unit mounted Emergency Stop push buttons.

D. FAULT CONDITIONS

1. Motor overload or high motor current will stop the drive motor and illuminate the fault light

PART 4 - OTHER

A. ANCHOR BOLTS

1. Anchors are 304 stainless steel. The anchorage of the screen is designed around the HILTI HY 150 Epoxy Anchoring system.

B. FACTORY SERVICE

1. The manufacturer will provide a qualified service representative following installation for a total of one (1) trip for two (2) days for inspection of installation, equipment startup and operator training for all of the equipment provided.

C. FACTORY ASSEMBLY, TESTING, AND INSPECTION

1. The screen shall be factory assembled and tested prior to being shipped. The Engineer and/or Owner may, at their option and own expense, witness the factory test. The equipment will be shipped completely assembled other than the motor/reducer, discharge chute and support legs. It shall be capable of being set in place and field erected by the contractor with a minimum of field assembly.

D. INSTALLATION, OPERATION AND MAINTENANCE MANUAL

1. In addition to the normal Installation, Operation, and Maintenance manuals required by the contract, a spare manual will be shipped with the unit in order to allow for proper operation of the equipment prior to the release of all final Installation, Operation, and Maintenance manuals to the end user.

PART 5 - WARRANTY

1. The equipment manufacturer shall provide unconditional warranty on the self-cleaning channel screen.

a. The manufacturer's warranty period shall be for 12 months after the final acceptance of the equipment by the Owner.

b. The equipment manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended and free from defects of design, material and workmanship.

c. In the event the equipment fails to perform as specified, the equipment manufacture shall promptly repair or replace the defective equipment without any cost to the Owner.

PART 6 - INSTALLATION

1. The Bidder shall supply all design, labor, equipment, and materials necessary to furnish and install the screen in the space shown on the attached drawings.

2. The Bidder shall supply all design, labor, equipment, and materials necessary to install electrical wiring and termination to the equipment. An existing motor control panel schedule is shown in the attached drawings.

3. The Owner shall supply and install the necessary water supply to the UltraWash Screen Belt Spray System

END OF SECTION 11 33 00

SECTION 11 33 01 – WASH PRESS

PART 1 – GENERAL

1.1 REQUIREMENTS

A. Supply all design, labor, equipment, and materials necessary to furnish and install a complete and operational screw wash press system including, but not limited to, wash press unit, supports, drive assembly and controls.

B. The manufacturer shall be responsible for visiting the site to evaluate the dimensional, electrical, utilities and other requirements for installation of the equipment.

1.2 SUBMITTALS

A. Product Data:

1. Rated capacities
2. Operation criteria and characteristics
3. Furnished specialties
4. Utility requirements
5. Accessories
6. Materials
7. Equipment weights
8. Dimensions of individual components
9. Motor Data
10. Finishes
11. Details of construction

B. Shop drawings showing the following shall be submitted and approved prior to installation.

1. Location requirements
2. Installation requirements
3. Elevations
4. Dimensions of equipment
5. Utility requirements and connections
6. Power and control wiring diagrams

C. Product test reports based on evaluations performed by the manufacturer shall indicate compliance with these contract documents.

D. The wash press shall be a Parkson AWP8-4. or equivalent. Equivalent manufacturer shall have a minimum of five (5) years of design and manufacturing experience with screw wash press units, with not less than one hundred (100) screw wash press units sold and installed in similar applications. Equivalent manufacturer shall include U.S. installation list with the equipment submittal.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following manufacturers:

1. Screw Wash Press:

a. Parkson AWP8-4 Aqua Wash Press unit
b. Approved Equivalent

2.2 SCREW WASH PRESS

A. Press unit shall consist of a spiral, trough, support legs, wash zone, trough flush spray, press zone, drive system and controls.

B. The wash press unit shall be designed to receive and wash screenings, then reduce the volume and water content by means of a pressing action. Solids to be washed shall be gravity fed to an inlet trough and conveyed by the spiral towards the washing section where water is injected, back flowing the solids while the spiral alternately stops and restarts to repeatedly convey the screenings through the wash section. The wash water is then turned off and the screenings are discharged and dewatered by the backpressure generate in the discharge pipe.

C. The press unit shall be inclined at 0 degrees from horizontal.

D. The press shall have an inlet capacity of 20 cubic feet per hour, handling wet screenings with an approximate dry weight of not less than 8% solids.

2.3 SPIRAL

A. The shafted spiral shall be constructed of high strength carbon steel and prime coated for protection during shipment. The spiral shall be 10.00 inches OD, shall have 0.63-inch thick flights and shall have a replaceable 0.25-inch wide nylon brush with type 304 stainless steel casing attached with bolted clips to the spiral OD throughout the inlet area to scour the perforated sheet. The brush OD shall be 10.50 inches.

B. TROUGH

1. The press body shall consist of an inner trough, an outer trough and an inlet area. The press body shall be constructed of type 304L stainless steel for all welded components and type 304 stainless steel for all non-welded covers. Press bodies must be fabricated with “L” grade stainless steels, which shall minimize corrosion in the weld heat affected zone.

2. INNER TROUGH. The press inner trough shall be constructed of 0.25-inch thick stainless steel in the washing and pressing barrel with 0.19-inch diameter holes chamfered to 0.38-inch diameter on the outside. The unit shall have six (6) 0.25-inch thick by 1.50-inch wide replaceable wear bars with 400 Brinell hardness.

3. OUTTER TROUGH. The outer trough shall be constructed from 10 gauge (0.13) thick type 304L stainless steel, shall receive free liquid from the washed solids and shall direct the flow to a 4.00-inch OD drain tube.

C. INLET AREA

1. An inlet areas 13.75 inches wide by 63 inches in length, shall be constructed of 12 gauge (0.11 inch) thick stainless steel with 0.19-inch diameter perforations and shall receive incoming materials.

D. WASH ZONE SPRAY

1. The wash zone shall include a spray wash system to wash organic residue from the screenings. The wash zone spray shall consist of one (1) spray header, four (4) water injection points at 9 o'clock, 11 o'clock, 1 o'clock and 3 o'clock , one (1) ball valve and one (1) solenoid valve. The solenoid valve body shall be of brass construction with Buna seals. The ball valve shall be of brass construction with a stainless steel ball. The system shall have an output of 10 GPM at 60 psi. The spray connection shall be ½ inch NPT.

E. OUTER TROUGH FLUSH SPRAY

1. The press shall include a single point spray wash system to flush organic residue trapped in the outer trough. The flushing spray shall consist of one (1) spray header, one (1) ball valve and one (1) solenoid valve. The solenoid valve body shall be of brass construction with Buna seals. The ball valve shall be of brass construction with a stainless steel ball. The system shall have an output of 15 GPM at 60 psi. The spray connection shall be ½ inch NPT.

F. DRIVE SYSTEM

1. The wash press unit drive system shall consist of a motor, gear reducer and drive shaft.

G. GEARMOTOR

1. The drive system shall consist of a single speed dual voltage SEW-Eurodrive or equivalent motor direct coupled to a SEW-Eurodrive FA type helical gear reducer or equivalent. The electric motor shall be 3 Horsepower, 1800 RPM, 230/460 colt, 3 Phase, 60 Hz, TEFC, 1.15 Service Factor, NEMA Design B, with class F insulation, 40 °C ambient temperature and sever duty rated. The gear reducer shall be AGMA Class II with 94% efficiency shall have 13,900 inch-pounds of torque, shall be shaft mounted directly on the spiral drive shaft, shall have 2.0 Services Factor and an output speed on 14 RPM. Gear reducers with Service Factors of less than 1.4 and efficiencies of less than 94% shall not be allowed. The motor conduit box shall have one (1) ½ inch and one (1) ¾" NPT conduit connection.

H. SHAFT

1. The drive shaft shall be direct coupled to the spiral and constructed of painted carbon steel.

I. COMPRESSION TYPE PACKING GLAND

1. The package gland arrangement, located at the drive end of the machine, serves as a liquid barrier. The packing gland surrounds the shaft creating a seal.

J. DISCHARGE PIPING

1. A 14-gauge type 304L stainless steel discharge pipe shall be fitted to the press to direct screenings into a customer provided receptacle. All discharge pipe flanges shall be 304L stainless steel. Aluminum flanges shall not be allowed. Pipe supports shall be supplied by the press manufacturer.

K. TRANSITION INLET CHUTE/GUARD

1. A 12 gauge type 304L stainless steel transition inlet chute/guard shall be supplied to direct materials into the inlet feed area. The chute/guard shall be flange bolted to the trough with each side a minimum 60 degrees from horizontal.

L. FASTENERS

1. All fasteners shall be type 18-8 stainless steel.

M. SURFACE FINISH

1. SURFACE TREATMENT OF STAINLESS STEEL COMPONENTS.

a. All welded stainless steel subassemblies shall be free from welding discoloration and shall have a 2B finish.

b. The motor and gear reducer shall have the standard manufacturer's finish. The spiral and drive shaft shall be prime coated carbon steel.

2.4 ELECTRICAL DEVICES AND CONTROLS

A. ELECTRICAL DEVICES

1. All Interconnecting conduit and wiring shall be included in the supply of the unit. In addition to the drive motor, the following electrical devices shall be furnished with the unit:

a. SOLENOID VALVES: Two (2) 120 volt, single phase, 60 Hz solenoid valves for the wash zone and flush spray washed housed in NEMA 4X enclosures shall have 18-inch long integral leads and shall have ½ inch NPT conduit connections.

B. EMERGENCY STOP LOCAL PUSH BUTTION STATION

1. A NEMA 4X polycarbonate emergency stop push button shall be mounted to the end flange and shall have a ½ inch NPT conduit button.

C. CONTROLS

1. The following controls shall be provided for the unit, in the screen control panel:

2. A 480 volt primary U.L. listed and labeled control panel shall be provided in a NEMA 4X type 304 stainless steel enclosure suitable for wall mounting. It shall contain the following logic devices for proper operation of the equipment:

3. Programmable relay to monitor equipment mounted electrical devices to perform necessary logic functions.

4. Emergency stop push button

5. Hand-Off-Auto selector switches for the drive, wash and flush water sprays.

6. Control power and spiral run incandescent indicating lights.

7. Motor current monitor and hour meter.

8. Fault and fault reset push button incandescent light.

9. Run and fault auxiliary output contacts for customer use.

10. A Step-down control transformer, IEC rated motor starter and fused main disconnect shall not be provided.

2.5 SEQUENCE OF OPERATION

A. HAND OPERATION. When HAND mode is selected, the spiral shall run continuously. When either spray wash HAND mode is selected, the spray wash shall run continuously.

B. INTERMITTENT AUTOMATIC OPERATION. The control panel shall be equipped to control the wash cycle, spiral movement and flush cycle. Each wash or flush cycle and the spiral movement shall be controlled independently though the use of timers and counters. The drive motor and spray washes shall be controlled automatically when the selector switches are places in the auto position.

1. The press motor starts after an adjustable number of start cycles from the interlocked feeding equipment. The press motor shall run for an adjustable length of time, typically set at 30 seconds.

2. The press motor continues to run, and the washing solenoid opens for an adjustable length of time, typically set at 4 seconds. The press motor stops for an adjustable length of time, typically set at 4 seconds, while the washing solenoid remains open.

3. Motor stop/start cycle repeats for an adjustable number of counts, typically set at six (6).

4. The washing solenoid closes, and the press motor runs for an adjustable length of time, typically set at 30 seconds, to dewater and discharge the screenings.

5. The flush solenoid opens for and adjustable length of time after the press motor stops, typically set at 10 seconds. The system shall reset after the flush solenoid closes.

C. EMERGENCY STOP. The unit can be deactivated at any time by pressing either the control panel mounted or unit mounted Emergency Stop push buttons.

D. FAULT CONDITIONS. Motor overload or high motor current conditions shall stop the motor and illuminate the fault light.

E. SPARE PARTS

1. The following total spare parts shall be furnished:

a. One set of wear bars with fasteners
b. One set each brush with clip and fasteners

F. ANCHOR BOLTS

1. The installer shall furnish ½" – 13UNC by 5-1/2 inches long type 304 stainless steel expansion anchor bolts.

PART 3 – EXECUTION

3.1 FACTORY SERVICE

A. The Wash Press unit manufacturer shall provide factory service during one (1) trip for one (1) day for inspection of installation, equipment start-up, and operator training.

3.2 FACTORY ASSEMBLY, TESTING AND INSPECTION

A. The unit shall be factory operated and inspected prior to shipment. The Engineer and/or Owner may, at their own option and expense, witness the factory test.

3.3 OPERATION AND PAINTENANCE MANUAL

A. The Wash Press supplier shall provide two (2) installation, operation and maintenance manuals to the Owner.

3.4 SPARE PARTS

A. The following total spare parts shall be furnished:

1. One set of wear bars with fasteners.
2. One set each brush with clip and fasteners.

3.5 WARRANTY

1. The equipment manufacturer shall provide unconditional warranty on the screw wash press.

a. The manufacturer's warranty period shall be for 12 months after the final acceptance of the equipment by the Owner.

b. The equipment manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended and free from defects of design, material and workmanship.

c. In the event the equipment fails to perform as specified, the equipment manufacture shall promptly repair or replace the defective equipment without any cost to the Owner.

PART 4 - INSTALLATION

1. The Bidder shall supply all design, labor, equipment, and materials necessary to furnish and install the wash press in the space shown on the attached drawings.

2. The Bidder shall supply all design, labor, equipment, and materials necessary to install electrical wiring and termination to the wash press. An existing motor control panel schedule is shown in the attached drawings.

END OF SECTION 11 33 01