Appendix F – Existing Equipment Information

#### **SECTION 1**

#### **ELECTRIC AUGER**

#### **GENERAL INFORMATION**

# 1.1 EQUIPMENT DESCRIPTION

The Inclined Auger, when integrated with the Muffin Monster or Channel Monster grinder (Figure 1-1), forms the Auger Monster System. The Muffin/Channel Monster grinds the waste stream solids and the Inclined Auger conveys the resulting particles above the liquid level of the channel, effectively eliminating the requirements for treatment plant bar screens, rakes, etc. This allows the channel flow to continue downstream while grinding the influent solids into smaller particle sizes. The biological materials pass through a perforated screen trough, while the inorganic particulates are dewatered, and discharged from the channel.

The Inclined Auger includes a support frame, spray wash system, end plate, screen trough, centerless spiral with brush, transport/discharge segment casings with inspection port covers, and a drive assembly consisting of an adapter spool, gears, reducer, and motor. Refer to Figure 1-2.

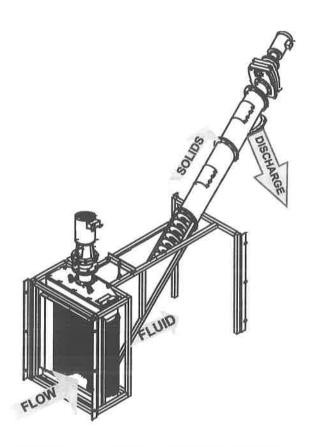


FIGURE 1-1. AUGER MONSTER SYSTEM

A one-piece, rotating, centerless spiral captures and pulls effluent particles upward, above the channel liquid level, and out the discharge chute. As the spiral rotates, the spiral brush is always in contact with the perforated portion of the stainless steel screen trough to prevent clogging of the perforations. The screen openings effectively separate liquids and biological solids from the mostly inorganic solid materials. The particulates are easily carried upward and out of the channel. The spray wash system washes organics back into the waste stream reducing odor of the particles being discharged.

A timer-based running scheme causes the auger spiral to run through intermittent forward/reverse cycles based on the time of day. A float switch, installed on the auger support frame, signals the controller to run the spiral continuously during periods of high-level channel flow. When the channel level returns to a normal level, the controller returns the auger to the timer-based operation. Refer to the Controller manual for detailed information on the operation sequences.

# 1.1 EQUIPMENT DESCRIPTION (Cont'd)

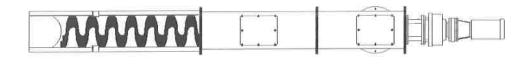
The Inclined Auger is installed at a 45° angle to the influent flow at the output of the grinder cutting chamber. Channel fit is assured through the design of the auger support frame. Refer to the Muffin/Channel Monster manual for operation and maintenance details on the grinder. Refer to the controller manual for Auger Monster System for operating information.

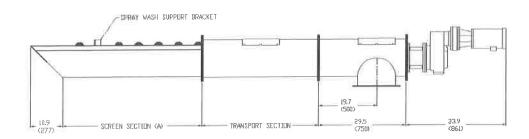
# 1.2 MECHANICAL SPECIFICATIONS

A primary component of the Inclined Auger is the one-piece, centerless spiral. A cleaning brush is mounted along the exposed portion of the spiral. The spiral lifts the ground-up solids above the channel, and out of a discharge chute. The spiral is enclosed in a stainless steel casing for high abrasion and corrosion resistance. The action of the brush against the screen trough effectively washes organic material back into the channel, and cleans the screen. A spray wash assembly located above the screen trough is held in position by brackets on each side of the trough.

The following specifications are uniformly applicable, irrespective of auger options. Consult the factory or sales representative for special requirement information.

- A. Screening, transport, and discharge segments are constructed of stainless steel
- B. Spray wash assembly is constructed of PVC or stainless steel
- C. Spiral is constructed of a carbon steel alloy
- D. Nylon brushes are installed along the exposed portion of the spiral
- E. Spiral drive: Electric
- F. Spiral tip maximum speed: 33-ft/min (0.17m/sec)
- G. Spiral transport maximum speed: 6.25-ft/min (0.03m/sec)
- H. Inclined Auger minimum weight: 540 lbs. (243 Kg)

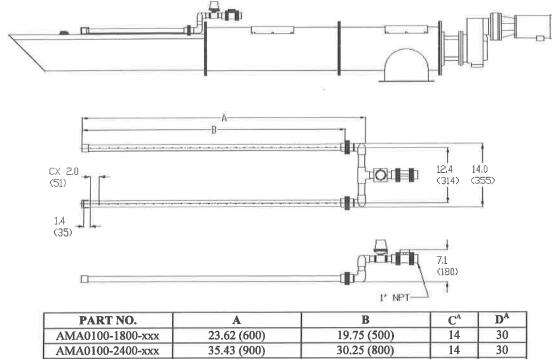




MODEL NO.	A DIMENSION
AMA1800	35.43 (900mm)
AMA2400	47.24 (1200mm)
AMA3200	59.06 (1500mm)
AMA4000	70.87 (1800mm)
AMA5000	82.68 (2100mm)
AMA6000	94.49 (2400mm)

FIGURE 1-2. ELECTRIC AUGER DIMENSIONS

# 1.2 MECHANICAL SPECIFICATIONS (Cont'd)



PART NO.	A	В	C <sup>A</sup>	$\mathbf{D}^{\mathbf{A}}$
AMA0100-1800-xxx	23.62 (600)	19.75 (500)	14	30
AMA0100-2400-xxx	35.43 (900)	30.25 (800)	14	30
AMA0100-3200-xxx	47.24 (1200)	42.25 (1100)	14	30
AMA0100-4000-xxx	59.06 (1500)	54.25 (1400)	14	30
AMA0100-5000-xxx	70.87 (1800)	65.25 (1700)	14	30
AMA0100-6000-xxx	82.68 (2100)	77.25 (2000)	14	30

A INDICATES TOTAL WATER OUTPUT OPENINGS

FIGURE 1-3. AUGER SPRAY WASH SYSTEM DIMENSIONS

# 1.3 DRIVE SPECIFICATIONS

The following specifications apply to the electric motor and reducer assembly located in the drive segment of the inclined auger.

- A. NEMA frame, TEFC, 1725 RPM (Special applications available)
- B. HP Rating: 2 HP (Special applications available. Factory recommendations are made based on auger length, environment and customer specific facts. Specifications apply to motor and motor controller)
- C. Power Requirements: 208-230/460 VAC ±10%, 3-Phase, 50/60 Hertz (Special applications available. Specifications apply to motor and motor controller)
- D. Duty: Continuous (grounding is required)
- E. Normal operating temperature range: +23°F (-5°C) to +104°F (+40°C) (Motor winding heaters required below +32°F (0°C))
- F. Storage:  $-4^{\circ}F$  ( $-20^{\circ}C$ ) to  $+149^{\circ}F$  ( $+65^{\circ}C$ )
- G. Reducer: Speed reduction ratio of 160:1 with a 1.3 applied service factor (special applications available)

B ALL DIMENSIONS ARE INCHES (mm)

XXX MATERIAL TYPE (PVC, SS)

#### 1.4 OPTIONS

The following paragraphs describe options to the Inclined Auger.

# 1.4.1 DISCHARGE BAGGING DEVICE

The Discharge Bagger is a screenings collection device that offers a clean, odor-free method of collecting material discharged from the auger. The bagger flange is attached to a flange fitted to the auger discharge. An accordion-folded, plastic sleeve is fitted onto the end of the bagger flange and the bagger cover is installed. The end of the plastic sleeve is pulled off the bagger flange and tied in a knot forming the end of the bag. Discharged material falls into and is collected in the bag. When the operator decides the bag is full, the plastic is cut and knotted completing the bag. The filled bag is then disposed of as defined in plant procedures, the end of the plastic sleeve is knotted, and the screenings collection can resume.

#### 1.4.2 WEATHER PROTECTION SYSTEM

The weather protection system is designed to protect Inclined Auger components during freezing weather. The system consists of heat-tracing and an insulation blanket installed around the auger transport segment, and heat tracing of the spray wash system piping. The insulation blanket is composed of 1 1/2 inch (38mm) thick fiberglass bats fully encased and enclosed inside a waterproof, corrosion-proof silicone fabric shell.

The insulation blanket is wrapped around the auger transport segment with the edges butting together on the bottom side of the transport segment casing. The edges are bound together with Velcro flaps and buckle straps. The blanket can be easily removed and replaced for auger maintenance and inspection without damage to the insulation blanket.

The heat tracing, attached to the spray wash system piping, is designed to prevent freezing of the water inside the piping.

#### 1.5 STORAGE/HANDLING/CARE

The following paragraphs describe the storage, handling, and care in a normal operational environment and, guides to be followed if the auger is being decommissioned.

# 1.5.1 OPERATIONAL ENVIRONMENT

The following operational environment storage, handling, and care requirements apply.

- A. Store indoors in an environment between -40°F (-40°C) and +115°F (+46°C).
- B. Store in the shipping containers until time for installation.
- C. Close ALL shipping containers after shortage/damage inspection. DO NOT open until time of installation.
- D. Extended storage may cause grease to separate. A light oil MAY leak from greased areas. Unless this is excessive (more than 1 Tablespoon) this WILL NOT cause ANY problems. The grease will homogenize to its original consistency when the gears are run. CAUTION: DO NOT LUBRICATE MOTOR.

#### 1.5.2 DECOMMISSIONING GUIDELINES

The following guidelines should be adhered to if the auger is being taken out of, and **NOT** scheduled to be returned to, service.

- 1. Clean and disinfect the unit thoroughly.
- 2. Disassemble the unit as described in Section 4.
- 3. Clean and disinfect the individual parts of the unit.
- 4. Dispose of the motor and individual parts in accordance with local, federal, and national safety and disposal regulations and standards. APPLY REQUIRED WARNING AND CAUTION LABELS TO ALL SCRAP CONTAINERS.

#### 1.6 LIMITATION OF USE

The manufacturer considers that the buyers and users of this equipment will limit the use of the equipment to the purpose and intent defined at the time of sale. Applications of the equipment other than defined MUST ASSURE COMPLIANCE WITH ALL APPLICABLE LOCAL, FEDERAL, AND AREA SAFETY RULES, REGULATIONS, AND GUIDELINES.

#### 1.7 DESIGN COMPLIANCE

The manufacturer considers that the equipment described in this manual satisfies the design criteria for same and/or similar types of equipment. The manufacturer also considers that the buyers and users of this equipment WILL COMPLY AND ASSURE COMPLIANCE WITH THE NOTES, CAUTIONS, AND WARNINGS INCLUDED THROUGHOUT THIS MANUAL AND SUMMARIZED IN TABLE 1-1 TO AVOID THE POTENTIAL FOR INJURY AND DAMAGE THAT COULD OCCUR WITH THIS TYPE OF EQUIPMENT.

# 1.8 RETURN FOR REPAIR

If a return of product is required, a Return Merchandise Authorization (RMA) number must be obtained by calling the factory. Have ready the sales order number, serial number of the grinder, auger, or controller, with any special operating conditions or instructions. The service representative will give specific return and packaging instructions.

# 1.9 CUSTOMER SERVICE QUESTIONS

The Customer Service Department values your input. If you have any questions regarding your JWCE equipment, please contact the following JWCE Service facilities.

Western Region: JWC Environmental Eastern Region: JWC Environmental

2600 S. Garnsey St. 4485 Commerce Drive, Suite 109 Santa Ana, CA 92707 Buford, GA 30518-3473

# 1.10 EMERGENCY OPERATION

See the Controller manual for emergency and normal auger operation.

# 1.11 SAFETY INSTRUCTIONS

NOTE, CAUTION, and WARNING are used throughout this manual. NOTE highlights information considered important to the continued operation of the equipment. CAUTION highlights information that if NOT followed could result in damage to the equipment and might affect the safety of operating personnel. And, WARNING highlights areas of concern that will affect the safety of operating personnel. Customer/end user personnel are considered responsible for compliance to ALL CAUTIONs and WARNINGs. Table 1-1, Safety Instructions, is a summary of safety concerns, it is NOT intended as a substitute for the reading of each CAUTION and WARNING to assure compliance.

# 2.4 INSTALLATION (Cont'd)

**CAUTION:** 

THE AUGER MUST NOT BE PERMITTED TO REST FREE OF THE OVERHEAD CRANE UNTIL THE DRIVE-END SUPPORT IS INSTALLED. DAMAGE MAY OCCUR TO THE SCREEN SEGMENT SIDE RAILS ABD THE AUGER ASSEMBLY MAY "BEND" CAUSING UNEVEN WEAR OF THE BRUSH SHOULD THE CRANE BE REMOVED PREMATURELY.

- K. Secure the bracket, located on the underside of the discharge segment, to the drive-end pedestal. Refer to Figure 2-5. The drive-end pedestal is fastened to the in channel/out of channel support as defined for the installation.
- L. Install the float switch for the timerbased run scheme on the frame at the location defined for the installation. Refer to Figure 2-6.
- M. Install the spray wash system on the auger.
- N. Install the spray wash system solenoid valve electrical connection.
- O. Connect the water source to the auger spray wash.
- P. **OPTION:** If the optional bagger device is included in your order, install the system as described in Paragraph 2.5.
- H. **OPTION:** If the optional weather protection system is included in your order, install the system carefully to **AVOID** damage to the insulation blanket. The blanket seams should be located at the bottom of the auger casings. Wrap the heat trace tape around the spray wash components.
- Install the controller as defined in the controller manual. Installation of the controller with remote operating features is user defined.
- J. Connect auger motor wiring to the controller, following good practices as outlined in the National Electric Code and ANY local, state, and federal codes which

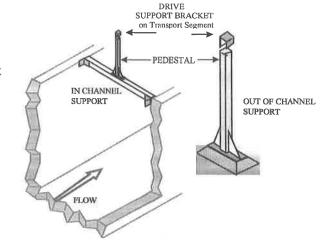


FIGURE 2-5 INSTALLATION SUPPORT BRACKET

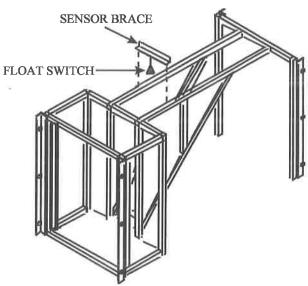


FIGURE 2-6. FLOAT SWITCH INSTALLATION

- may apply. Verify available voltage is the same as the voltage identified on the motor nameplate.
- K. Verify leads in the auger motor conduit box have been connected together as defined on the motor nameplate to match the facility power source available.
- L. Complete all installation checklists and forms.

# 2.4 INSTALLATION (Cont'd)

- B. Carefully lower the auger support frame into the channel and position to the desired location. Using the holes in the mounting-angles, mark the anchor bolt locations. Remove the mounting-angles from the frame, and drill holes at the marked locations in the channel wall.
- C. Reinstall the mounting-angles onto the support frame, and secure the mounting-angles to the channel wall.
- D. Attach lifting cables/chains to the grinder lift rings.
- A. Lift the grinder and lower it into the support frame with the vertical guides on the grinder sliding over the vertical guides at the front portion of the frame. Refer to Figure 2-2. When seated, the grinder rests on the bottom of the channel.
- B. If the grinder has a drum screen, vertical extension strips are located on the support frame to adjust the gap between the support frame and the screen drum. The extension strip mounting holes are slotted. Loosen the bolts that secure the extension strip(s) and move each strip toward the screen drum until it is as close as possible without touching the screen drum. Refer to Figure 2-3.
- C. Attach a lifting sling/cable at the lift point(s) of the auger so that the auger can be lifted and balanced for safe handling.
- H. Lift the Inclined Auger high enough to clear the auger support frame. Move the Inclined Auger into position to lower into the frame. Lower the auger into the frame at an angle greater than 45° and move the auger screen segment forward until the screen end is positioned under the angled frame crossmember. The crossmember will become a pivot point. Refer to Figure 2-4.
- Finish lowering the Inclined Auger until the tabs along both sides of the screen segment rest on the angled supports inside of the frame.
- J. Verify the auger is secured, sits flush on the angled supports and rests in place at a 45° angle.

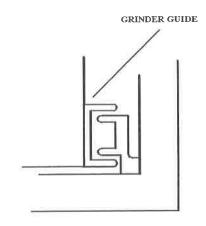


FIGURE 2-2. GRINDER/FRAME GUIDES

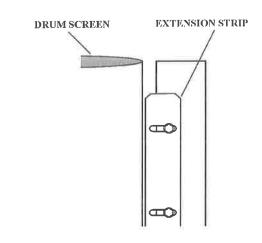


FIGURE 2-3. EXTENSION STRIP

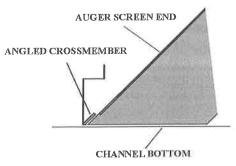


FIGURE 2-4. SCREEN END UNDER CROSSMEMBER



ensure compliance with all applicable local, federal, and area safety rules, regulations, and guidelines.

#### 1.5 DESIGN COMPLIANCE

The manufacturer considers that the equipment described in this manual satisfies the design criteria for same and/or similar types of equipment. The manufacturer also considers that buyers and users of this equipment will comply and ensure compliance with the notes, cautions, and warnings included in this manual and summarized in Section 2 to avoid the potential for injury and damage that could occur with this equipment.

#### 1.6 RETURNS AND SERVICE QUESTIONS

Contact JWCE with the Screen model number and serial number listed on the nameplate for return authorization if repairs are required.

Returned components should be properly packaged and shipped to JWCE.

Contact the JWCE Customer Support Department at the following locations or contact a local sales/service representative for answers to service questions.

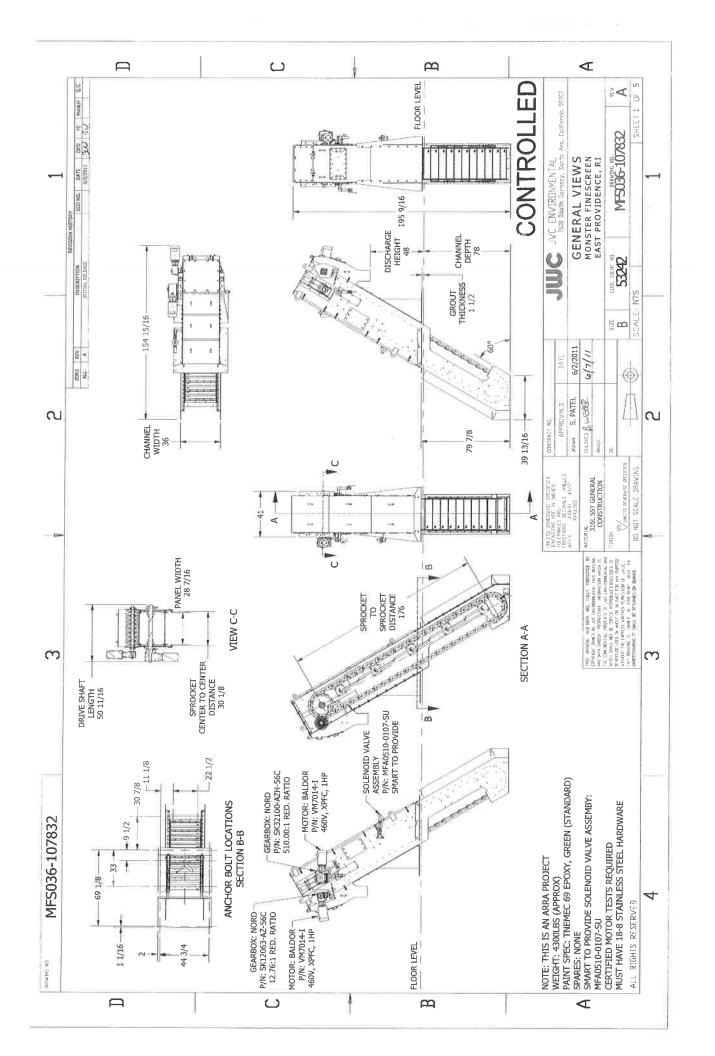
Wastom Davions
Western Region:
JWC Environmental®
2600 S. Garnsey St.
Santa Ana, CA 92707
Ph:(800)331-2277 (not
available in California)/
(949) 833-3888
Fax: (714) 751-1913

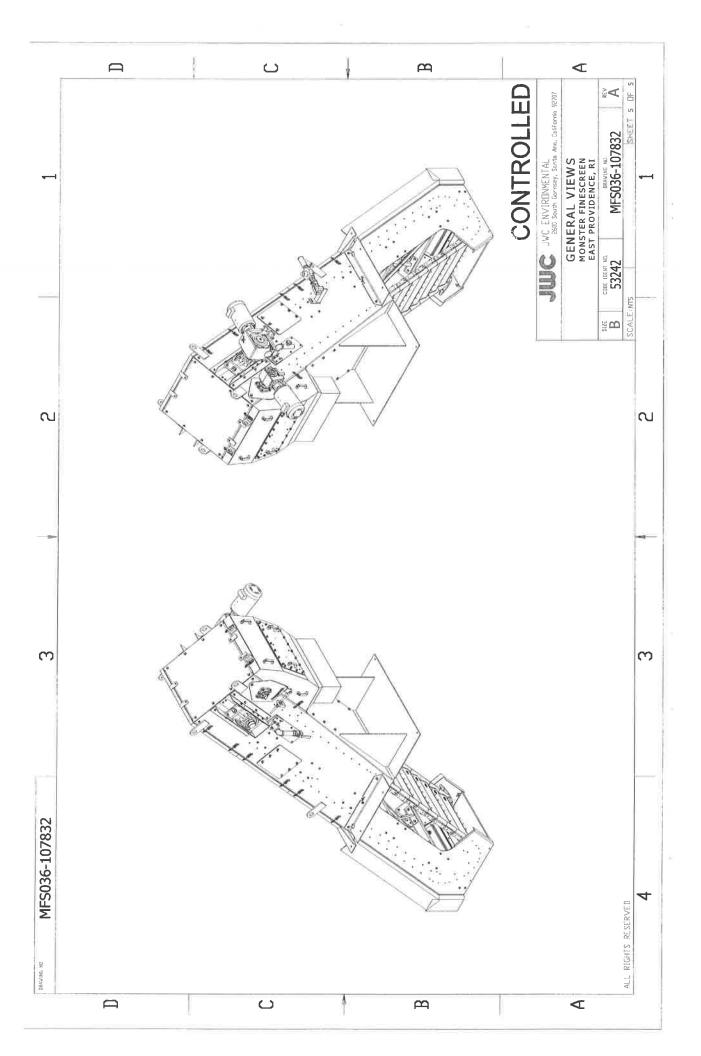
# TABLE 1-1 FINESCREEN CONSTRUCTION MATERIALS

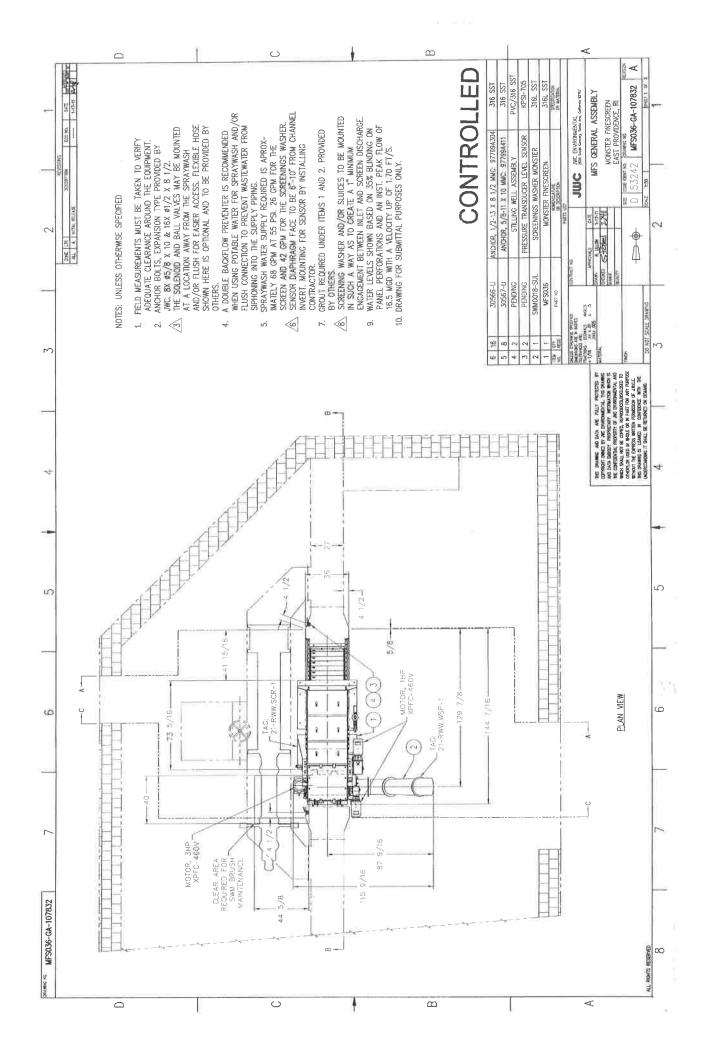
Item	Material
Support frame	ANSI 316L SST
Screen panel frame	ANSI 316L SST
Screen panels	ANSI 316L SST
Spray wash piping	ANSI 304 SST
Chain	Links - ANSI 316 SST
	Rollers - hardened steel
Fasteners	ANSI 316 SST
Spray nozzles	ANSI 316 SST
Chain tensioning system	ANSI 316L SST
Screen covers	ANSI 316L SST
Inlet deflector	ANSI 316L SST
Discharge trough	ANSI 316L SST
Seals	Neoprene
Tracking system	UHMW
Rotary brush	Yellow Polyester PBT
Bottom brush	Polypropylene
Screen drive shaft assembly	ANSI 316L SST
Screen drive sprocket	ANSI 316L SST
Brush drive assembly	ANSI 316L SST

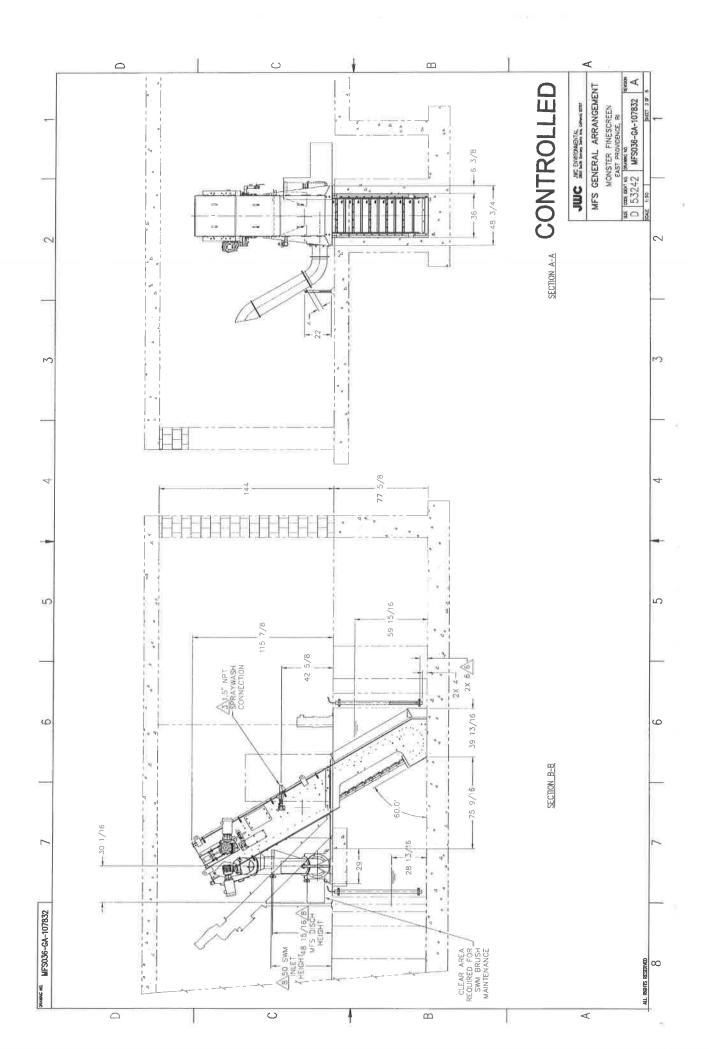
#### TABLE 1-2 FINESCREEN TYPICAL SPECIFICATIONS

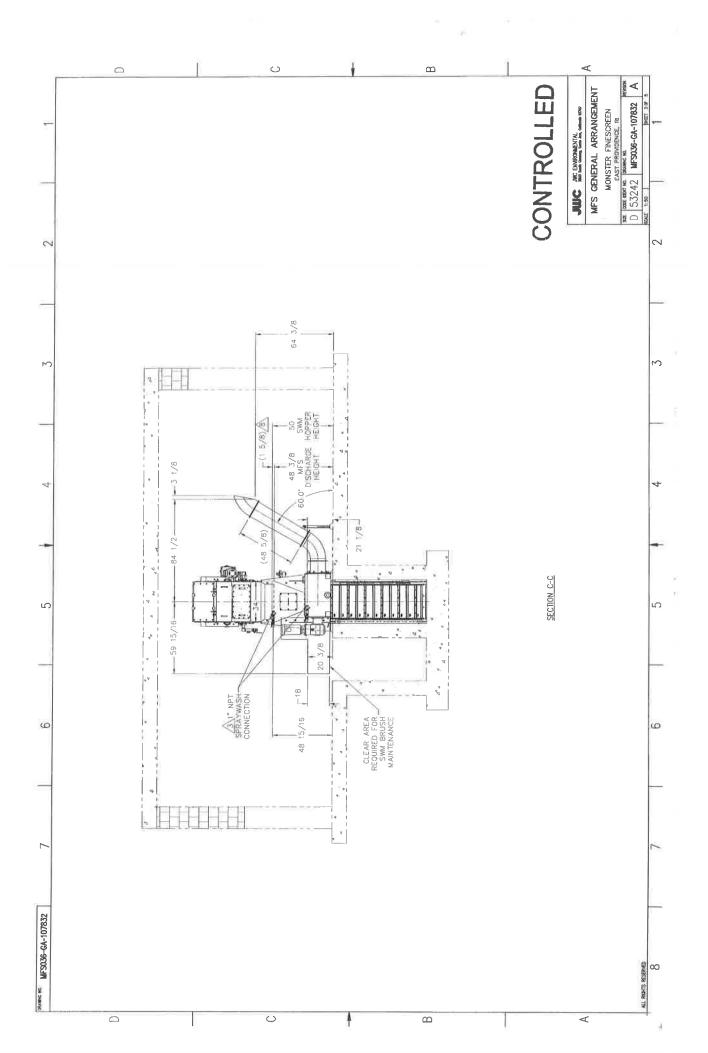
Item		Description
Screen Drive	NEMA frame types	TEFC-XP
Motor	rpm	1750
	horsepower	1
	voltage	460 volts AC
	phase	3
	Hertz	60
	duty	continuous
	ambient temperature	low 23°F (-5°C), high 104°F (40°C)
	service factor	1.15
	storage	-4°F (-20°C) to 149°F (65°C)
Brush Drive Motor	NEMA frame types	TEFC-XP
	rpm	1750
	horsepower	1
	voltage	460 volts AC
	phase	3
	Hertz	60
	duty	continuous
	ambient temperature	low 23°F (-5°C)
	•	high 104°F (40°C)
	service factor	1.15
	storage	-4°F (-20°C) to 149°F (65°C)
Screen Drive	gear reduction	multiple stage 510.00:1
Gearbox	duty	continuous
	lubrication	oil filled
	configuration	right angle: helical worm

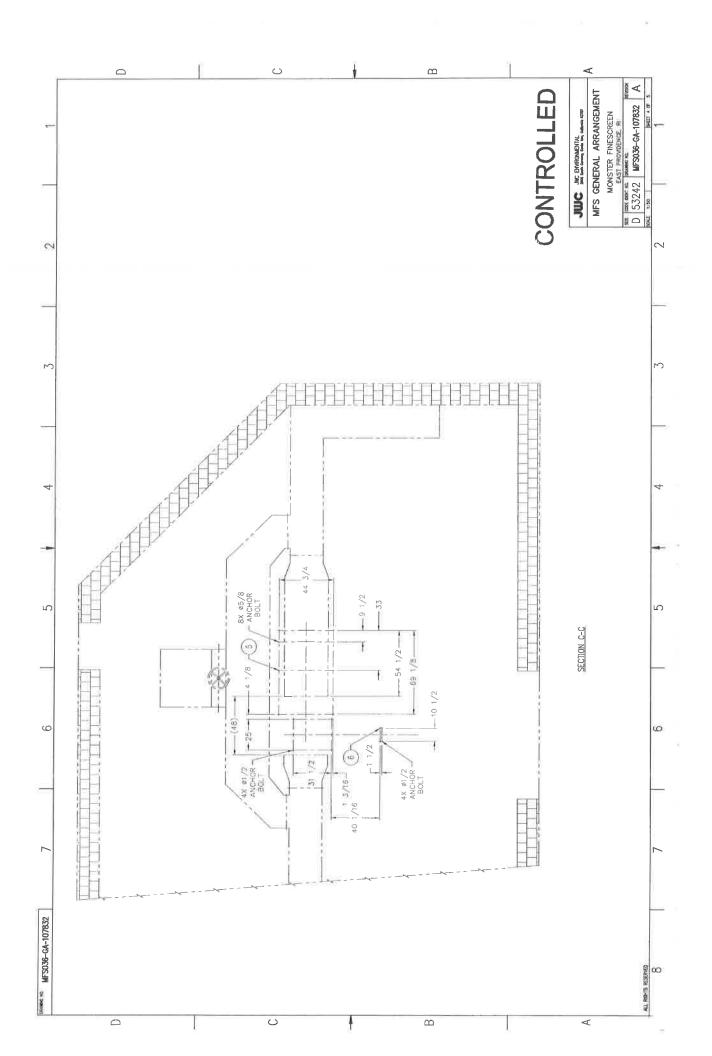


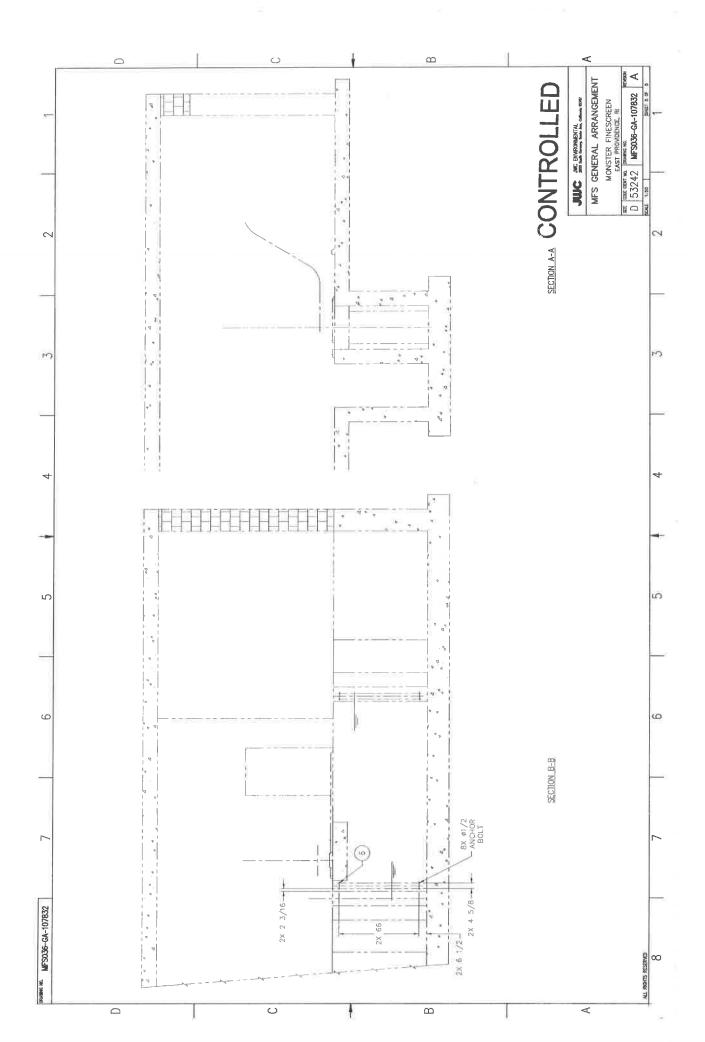








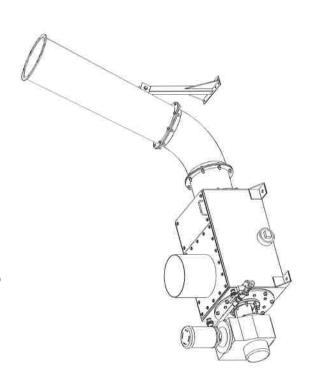






# OPERATION AND MAINTENANCE MANUAL Screenings Washer Monster Model SWM0018

East Providenance Headworks Specification Section 11329 Screenings Washpress & Appurtenances Tag Number 21-RWW-WPR-1



Released 11/15/2010 Revision E JWC Environmental
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# TABLE 7-1 SCREENINGS WASHER MODEL SWM0018 PARTS LIST (CONTINUED)

Qty	Part Number	Description	Material
1	50127	½-13 x 3-½" HHCS	SST
20	61009	5/8 lock washer	SST
2	SWC0014-0501	Gasket	1/8" Neoprene
8	30112	1/4-20 hex net	SST
8	30121	1/4 lock washer	SST
1	30007-0001	3/16 square x 1" key	Steel
1	AMC0016-0101	Flexible spline coupling	Steel-Nylon
2	30040-1018	Mounting flange gasket	1/8" Neoprene
36	30104	5/16 flat washer	SST
8	30108	5/16-18 x 1" HHCS	SST
20	30128	5/16-18 x 1-1/4" HHCS	SST
20	30129	5/16-18 hex nut	SST
8	30130	5/16 lock washer	SST

# 7.2 DRAWINGS

TABLE 7-2 is list of the applicable drawings for the Screenings Washer Model SWM0018.

# TABLE 7-2 SCREENINGS WASHER MODEL SWM0018 DRAWING LIST

<b>Drawing Title</b>	<b>Drawing Number</b>	Revision
Assembly, Screenings Washer Monster SWM0018, Sheets 1-3	SWM0018	С
Hopper Assembly, Sheet 1	SWA0006-107832	Α

#### 7.3 MOTOR DATA SHEET

The motor data sheet for the Auger drive motor is attached after the drawings listed in TABLE 7-3.

#### **TABLE 7-3 AUGER MOTOR**

Item	Description	Baldor Number
Auger Drive Motor	3 HP, 460 volts AC, 3 phase, 60 Hz, 1750 rpm, TEFC-XP, 1.15 SF	CEM7042T-1

#### 7.4 RECOMMENDED SPARE PARTS

TABLE7-4 is a list of recommended spare parts for the Screenings Washer SWM0018.

#### **TABLE 7-4 RECOMMENDED SPARES LIST**

Qty	Part Number	Description	Material
2	AMC0510-0102-SU	Solenoid valve, 1" NPT, 115 VAC, 1-phase	316 SST
1	SWA0160-0900-741	Auger spiral brush kit	
1	SWA0014-4018	Screenings Washer gasket kit	

