

**SANITARY DISTRICT NO. 5 OF MARIN COUNTY
2001 Paradise Drive
Tiburon, California 94920**

AGENDA

**Capital Improvement Program Committee Meeting
Tuesday, June 14, 2022, 5:00 p.m.**

CORONA VIRUS (COVID-19) ADVISORY NOTICE

Consistent with Assembly Bill 361 revising Government Code section 54953, and Resolution No. 2021-07 of this Board enacted in accordance therewith, the Meeting will not be physically open to the public and all Board Members and Staff will be teleconferencing into the meeting.

How to Submit Public Comments:

Comments submitted prior to the commencement of the meeting will be presented to the Committee and included in the public record for the meeting.

Public Comments are to be submitted via email to rdohrmann@sani5.org.

In addition, members of the public who are calling-in will have the opportunity to provide public comments by following the steps below:

How to Participate in the Meeting:

Join Zoom Meeting by clicking on the following link:

<https://us02web.zoom.us/j/6230620778>

Meeting ID: 623 062 0778

or join by phone:

Call in number: (669) 900-9128

Participant Code: 623 062 0778

I. Roll Call

II. Public Comments

III. New Business

1. Review and discuss FKC budgetary number for screw press re Main Plant wastewater treatment plant (WWTP) equipment redundancy
2. Review and discuss JBI budgetary number for head-works screening equipment re Main Plant WWTP process improvements
3. Verbal discussion about future Main Plant & Paradise Cove WWTP's Equipment & Capital Improvements Master Plan.
4. Verbal discussion of upcoming Main Plant Wet Weather Tank Rehabilitation Project
5. Verbal update re Main Plant Drain Line Rehabilitation Project

IV. Adjournment

*This Committee may be attended by Board Members who do not serve on this committee. In the event that a quorum of the entire Board is present, this Committee shall act as a Committee of the Whole. In either case, any item acted upon by the Committee or the Committee of the Whole will require consideration and action by the full Board of Directors as a prerequisite to its legal enactment. **Accessible public meetings:** Any member of the public who needs accommodations should email the Office Manager, at rdohrmann@sani5.org, who will use her best efforts to provide as much accessibility as possible while also maintaining public safety.*

FKC CO., LTD.

2708 West 18th Street
Port Angeles, WA 98363



(360) 452-9472
FAX (360) 452-6880

Item #1

May 13, 2022

Tony Rubio
District Manager-Chief Plant Operator
Sanitary District No.5 of Marin County
2001 Paradise Drive
Tiburon CA 94920

Ph: 415-435-1501 ext 106
Email: trubio@sani5.org

**Re: FKC Co., Ltd. QT01-051322atb BHX-400 Screw Press
with Skid – FOB Tiburon, CA**

Tony:

We appreciate your email regarding a duplicate screw press for your facility. FKC is pleased to offer this proposal for an SHX-400 screw press:

The design criteria FKC has worked with is the following:

- Municipal Anaerobically Digested Sludge
- 83 dry lbs per hour, 1 dry ton per 24 hours
- 8-9 gallons per minute @ 2%TS
- 20 to 22 % Total Solids outlet

This proposal also includes pricing for a skid similar to your existing installation. The skid proposed however, is made of marine grade aluminum. The skid is still designed to have the screw press, a flocculation tank, and a control panel bolted to it. But just like the 1st installation, FKC does not provide the piping, conduit, wiring or field connections between any of the equipment proposed.

The control panel is set to provide power and logic control for the screw press and flocculation tank.

(con't QT01-051322atb)

Please note that the pricing found in this quotation does not include taxes or bonding requirements. Other items not included with this quotation are pumps, polymer system, conveyor, polymer hose/fittings, polymer tote/drum, disposal bin/truck, and anchor bolts. This FKC proposal also does not include any valves or instrumentation not expressly listed.

Lastly, FKC does have a newer model BHX screw press which could fit in the same footprint and provide more capacity with the same screw press diameter. This would be a model BHX-400 for a capacity of 100 dry lbs per hour, 1.2 dry tons per 24 hours, and 10 gallons per minute @ 2%TS inlet. There would be no added cost for the model. The drive is just configured a bit differently. When you are ready to move forward with procurement, we can discuss more details about the BHX models. The majority of FKC installations in California now have the BHX model.

Shipping prices have more than doubled in the last year. The more time that lapses from this date of quotation, the more likely the shipping costs will be inaccurate.

We hope this information is helpful. Please contact this office if you have questions, or if you need anything further.

Sincerely,
FKC Co., Ltd.

Trent Bohman

**FKC Screw Press
Model SHX-400x3000L
with Skid**

**QT01-051322atb
May 13, 2022**

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A. Proposed Equipment

1. Screw Press

Qty.	Description	FOB Tiburon, CA Unit Price
1	FKC SHX-400x3000L	Included
	Material:	Anaerobically digested municipal sludge
	Ash Content:	8% or higher
	Fiber Content:	4% or higher
	Inlet Capacity:	84 dry lbs per hour 1.0 dry ton per 24 hours
	Inlet Consistency:	1.0 to 2.5% Total Solids
	Inlet Flow Rate:	8-9 gpm @ 2% TS
	Outlet consistency:	20 to 22% Total Solids w / polymer use
	Materials of construction:	SS-304 wetted parts Galvanized carbon steel base
	Speed reducer:	Sumitomo Cyclo-reducer Gearbox with Motor: 2.0HP 480V/3PH/60Hz
	Other:	(1) One FKC Model 55GL Flocculation Tank (1) One FKC standard NEMA 4X Control Panel (1) One Headbox Level Transmitter (1) One Hi-Hi Level Probe

A. Proposed Equipment

2. Skid

Qty.	Description	FOB Tiburon, CA Unit Price
=====	=====	=====
1	FKC Skid	Included

Material of Construction:

Base Frame: W 10, C10, C6 Aluminum
Decking: 3/16 Aluminum Tread Plate

with Qty (1) Discharge Chute

Material of Construction:

16ga. 304L
L 2 x 2 x 1/8 304L
FB 1/2 x 2 304L

B. Miscellaneous

1. Delivery

Delivery to the FOB point will be within seven (7) months after submittal approvals and notice to proceed with manufacturing.

2. Shipping Arrangements

The FKC dewatering screw press and skid materials will be shipped on a flat bed truck from the Port Angeles, WA facility.

All the equipment integrally mounted to the skid DO NOT come pre-piped and pre-wired to each other. Piping, conduit, wiring, and field terminations between each piece of equipment offered by FKC are to be provided by the Contractor.

Shipping terms are FOB Tiburon, CA.

3. Equipment Summary

The following summarizes the equipment offered:

- (1) One FKC Model SHX-400 Screw Press
- (1) One FKC Model 55GL Flocculation Tank
- (1) One FKC standard NEMA 4X Control Panel
- (1) One Headbox Level Transmitter
- (1) One Hi-Hi Level Probe
- (1) One FKC skid

TOTAL: US\$ 302,000 – FOB Tiburon, CA

Please note that the pricing found in this quotation does not include taxes or bonding requirements. Other items not included with this quotation are pumps, polymer system, conveyor, polymer hose/fittings, polymer tote/drum, disposal bin/truck, and anchor bolts. This FKC proposal also does not include any valves or instrumentation not expressly listed.

4. Effective Period

This proposal shall remain valid 60 days from the date of the proposal.

5. Payment Terms

30% with approved submittals
70% with delivery of equipment
Net 30 days

6. Installation

The Screw Press Skid is shipped ready for installation. Customer may need to mount the motor to the C-face adapter on the screw press gearbox.

This scope of supply does not include conduits, wiring or piping between the equipment offered. All items are shipped loose and separate for Customer field installation.

7. Operator Training and Start Up

On-site Services are included in the price of this proposal.

Included with this proposal is 6 days on-site for start-up, performance and training services. The 6 days would occur over 2 trips. Weekends and holidays not included.

8. Warranty

FKC's mechanical warranty covers material and workmanship for a period of twelve (12) months from start-up or eighteen (18) months from delivery whichever occurs first.

9. Documentation Schedule

The drawings provided with this scope of supply are reference drawings only.

Submittals for Approval – Eight (8) weeks after receipt of purchase order
Certified Drawings - within 2 weeks after submittal approval
Operation & Maintenance Manuals – before shipment of equipment

10. Performance Guarantee

The performance figures and conditions denoted in section A of this proposal constitute FKC Co., Ltd.'s performance guarantee and the conditions required to meet the guarantee. All of the consistency figures are based on total solids (TS) not total suspended solids (TSS).

In the event that performance is not met, FKC will provide all parts, engineering, and labor associated with the work necessary to bring the equipment into conformance with the performance guarantee.

11. Notes and Clarifications to the Specifications & Drawings

No notes or clarifications are offered with this proposal.

12. Service Rates

The following are rates and terms for professional and technical services furnished by FKC: If required, round-trip airfare (coach class) from Port Angeles, WA to airport nearest work site.

Weekdays

\$1200.00 - Per eight (8) hour day on weekdays plus, lodging, and rental car expenses.

\$150.00 - Per hour for all hours exceeding eight (8) hour workday on weekdays.

\$100.00 - Per hour for office engineering services and telephone consultations.

Saturdays, Sundays and Holidays

\$1,800.00 - Per eight (8) hour day plus lodging and rental car expenses.

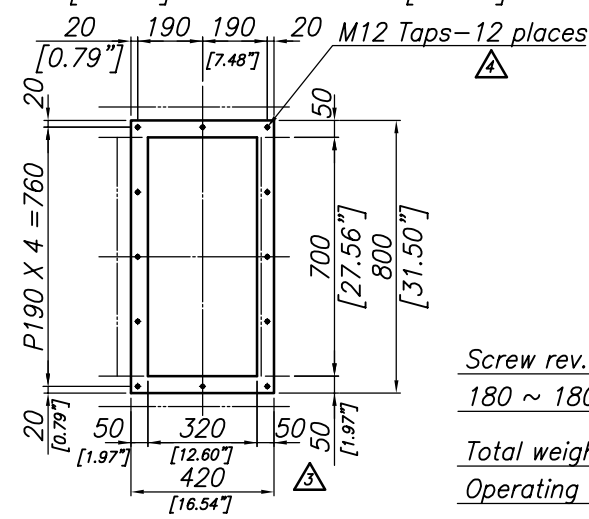
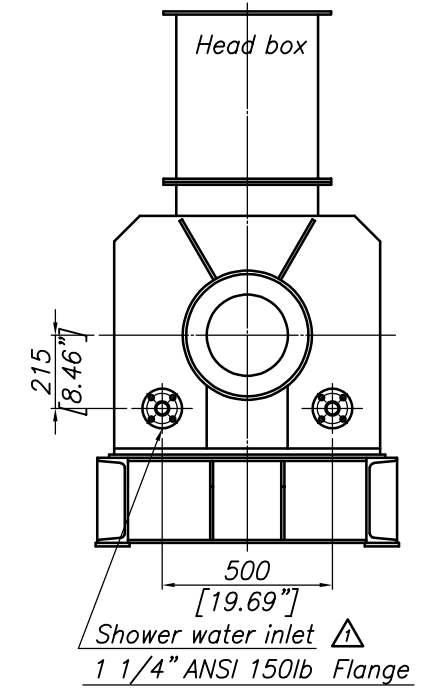
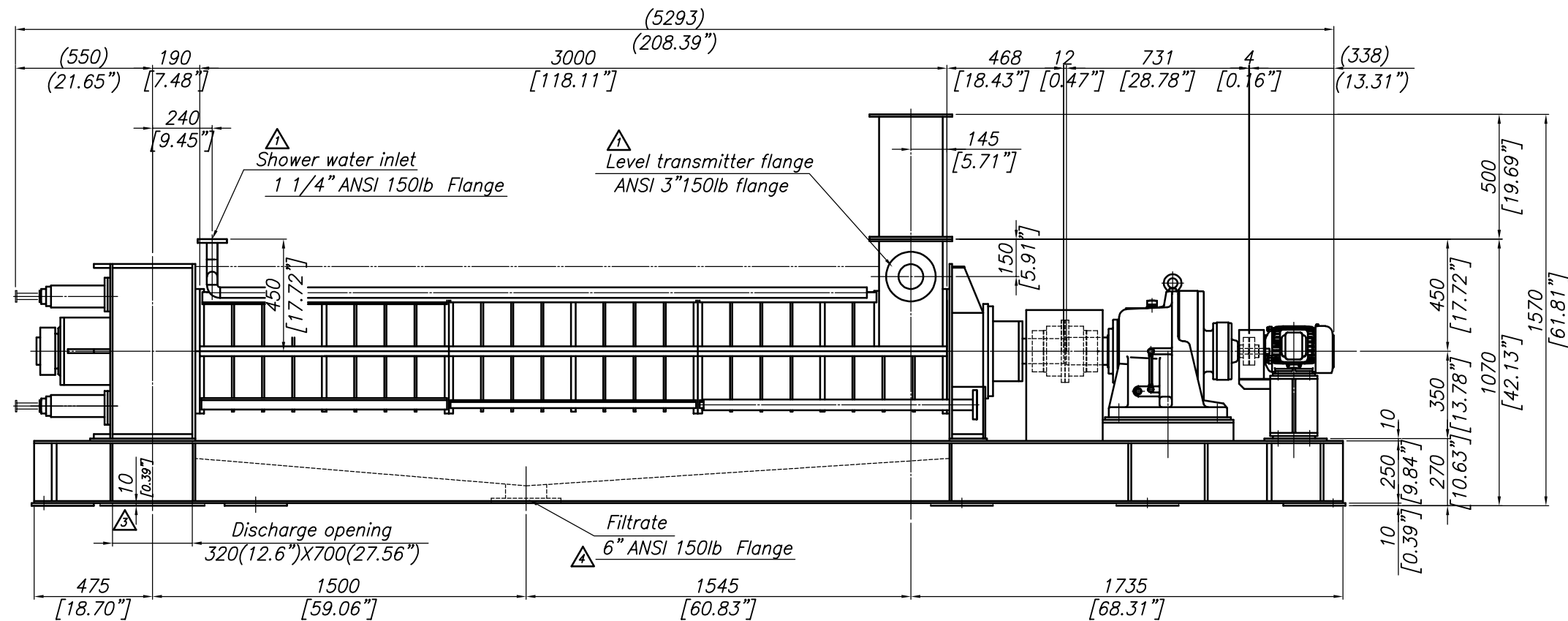
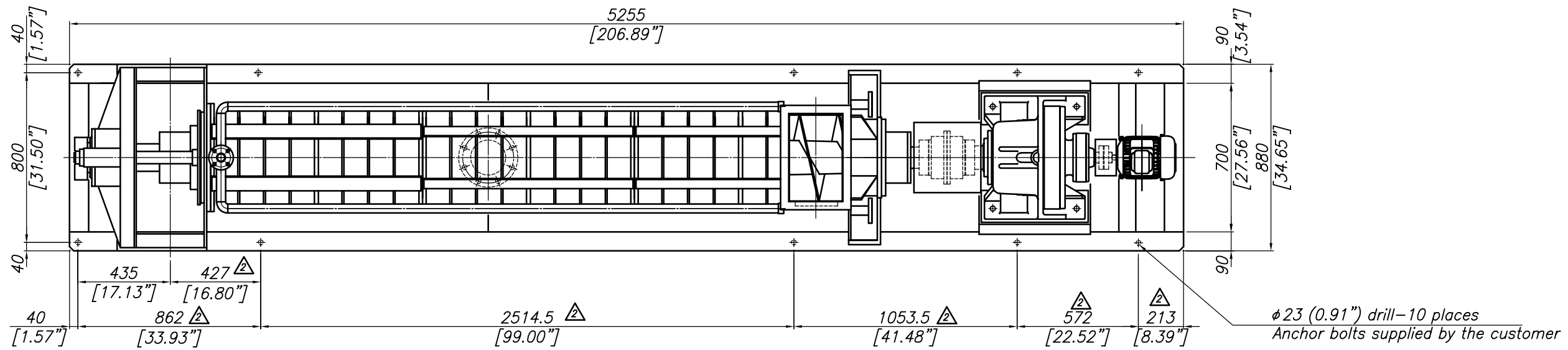
\$225.00 - Per hour for all hours exceeding eight (8) hour workday.

Travel Time - Weekdays

\$80.00 - Per hour travel time. (Not to exceed \$960/day)

Travel Time – Weekends and US Holidays

\$120.00 - Per hour travel time (Not to exceed \$1,440/day)



Screw rev.
180 ~ 1800 X 1/4437 = 0.04 ~ 0.4 rpm

Total weight = 3,200 kg (7,050 lbs)

Operating weight = 3,500 kg (7,720 lbs)

Cyclo reducer
CHH-6215DA-4437

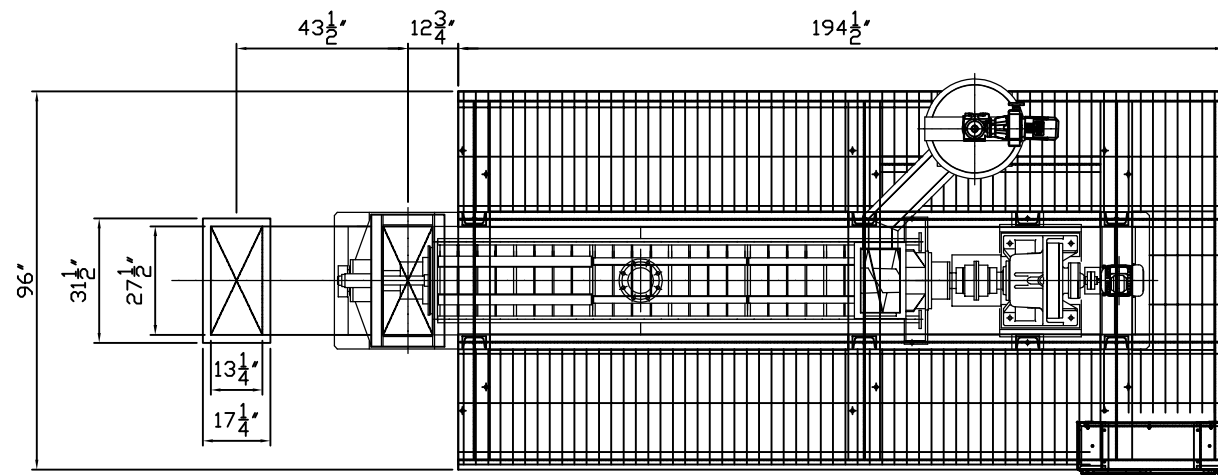
Variable speed motor
2HP, 4P, 60Hz, 1800rpm
Frame No. 145T

Gear coupling
GC-SSM250

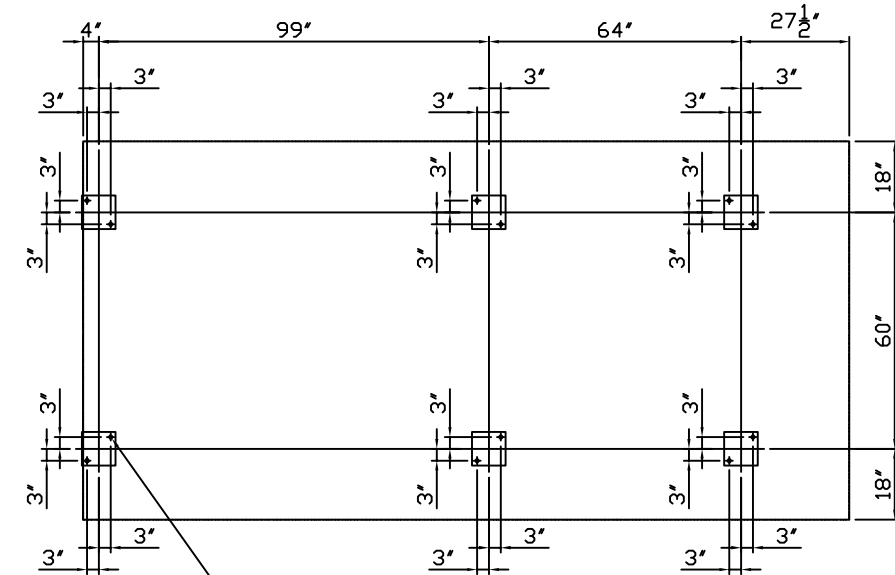
Flexible coupling
NF 403

Rev.	Date	Description	Drawn by	Rev. by	Appd. by
4	11/17 '06	Issued as Certified	R. Olson		
3	11/17 '06	Discharge Flange	S.ENDO	H.ABE	T.OGAWA
2	11/8 '06	Moved Anchor Bolt Holes	R. Olson		
1	10/21 '06	Changed	S.ENDO	H.ABE	T.OGAWA
0	10/17 '06	First issue	S.ENDO	H.ABE	T.OGAWA

符号 Mark	名称 Description	材質 Material	数量 Pcs.	重量 Weight	備考 Remarks
発注先 Purchaser	Messrs. FKC CO., LTD.		Quantity		配布先
最終客先 End user	Messrs. Sanitary District No.5 of Marin County Tiburon, CA		1		F K C
工事名称 Job name	SHX-400X3000L Screw press		Scale		営業部
図面名称 Dwg. name	Assembly		1/15		QC 部 QC 工程 製造部 設計部
工事番号 Job No.	M-2397				鋼路工場
図面番号 Dwg. No.	S2397-01				大阪営業所 富士営業所
			Ref. job No.		合計

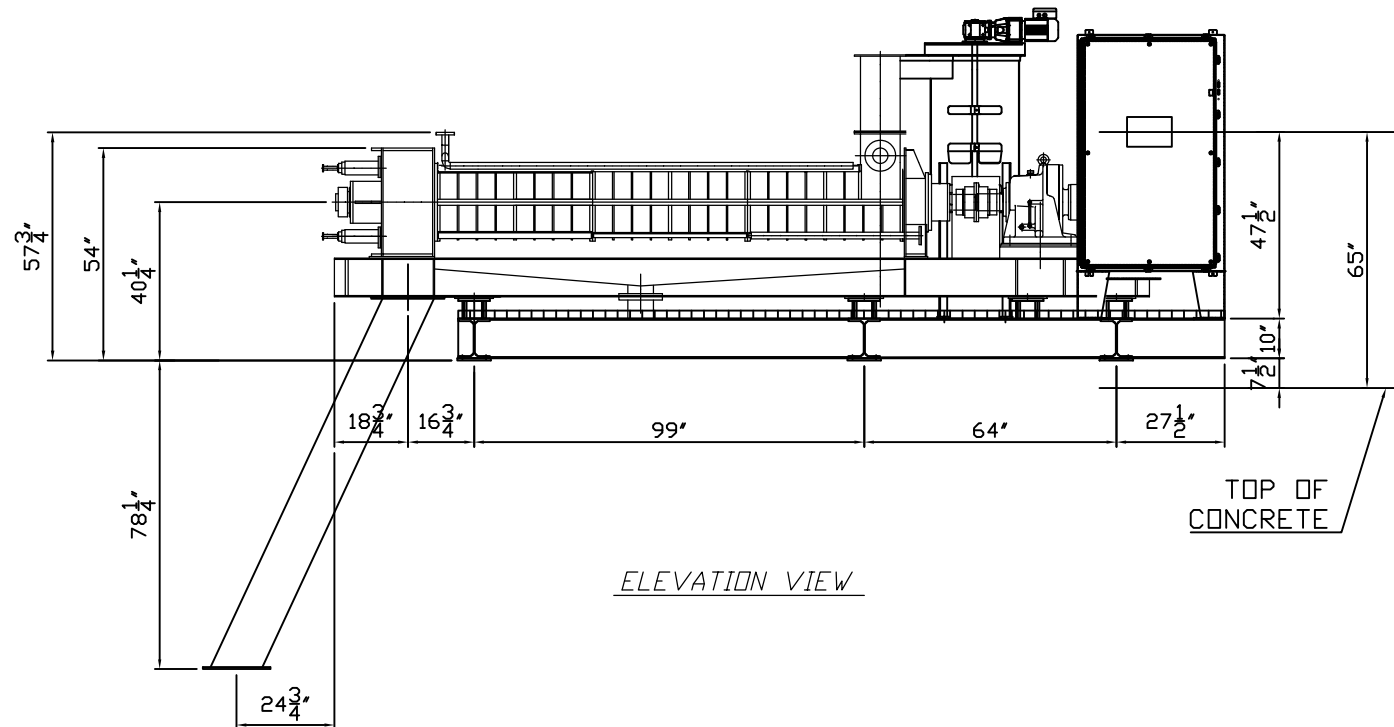


PLAN VIEW

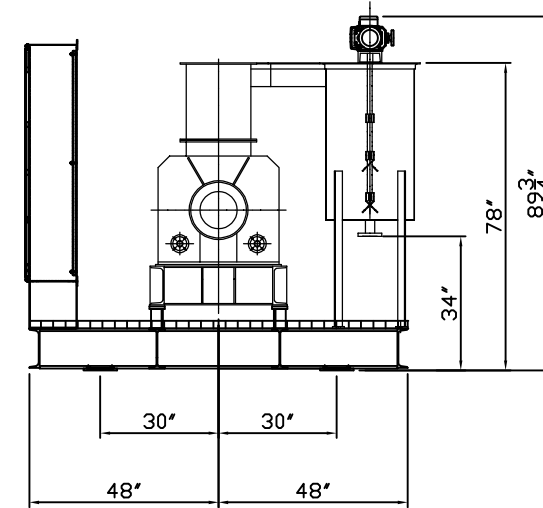


7/8" ϕ Holes
 Use 3/4" ϕ Anchor Bolts, 12 Places
 Minimum Anchor Bolt Embedment shall be 4.5'

ANCHOR BOLT LAYOUT



ELEVATION VIEW



END VIEW

Rev.	Date	Description	Drawn by	Appd. by
1	1/22/06	Issued as Certified	R. Olson	R. Olson
2	11/16/06	Issued as Certified	R. Olson	R. Olson

Purchaser	Marin #5 WWTP	Quantity	1
Location	Tiburon, CA		
Dwg. name	Model SHX-400x3000L Screw Press Skid Mounted Dewatering System		
Dwg. No.	DS-186		

FKC FKC CO., LTD.

2708 W. 18TH ST.
 PERT ANGELES, VA 98362
 (360) 452-9472 FAX (360) 452-6880

Date: May 27, 2022

Project: Marin County #5 Tiburon-Belvedere WWTP

Proposal Number: P12480 R1

PRELIMINARY BUDGET EQUIPMENT SCOPE

To: Marin County #5 Tiburon-Belvedere WWTP

From: Your Duperon® Team

Alex Peruski
Sales Project Manager
(989) 754-8800
aperuski@duperon.com

Rep: JJ Jefferies
JBI Water & Wastewater Equipment
916-531-5500
jj@jbiwater.com

Steve Aiken
Regional Sales Manager
(989) 754-8800
saiken@duperon.com





Date: May 27, 2022

Project: Marin County #5 Tiburon-Belvedere WWTP

Proposal Number: P12480 R1

PRELIMINARY BUDGET EQUIPMENT SCOPE

Thank you for considering Duperon™ system solutions for your project. We appreciate the opportunity to provide you with a **Preliminary Budget Equipment Scope**. Please do not hesitate to contact your **Duperon® Team** with any questions as we work with you through the design process and ensure a successful project.

Equipment Scope

SCREENS:

QTY	UNIT	DESCRIPTION
1	EA	Duperon® FlexRake® - Front Clean Front-Return Model: GTS - Global Technology Screen Enclosure (& Material): Fully Enclosed (304) Nom Width x Length: 2 x 15 Feet Clear Opening Size: 0.25 in Angle of Installation: 10 Deg. from Vertical Material Construction: 304 SSSL
Notes: Based on 8 ft channel height. Site Modification would be required to reduce channel width to 2 ft wide and would be completed by others		

Screenings Processing

QTY	UNIT	DESCRIPTION
1	EA	Duperon® Washer Compactor Model: WC3.D1.5 Appx Footprint: 2 ft wide x 7 ft long Motor HP: 3 HP Chute Allowance: 10 ft long w/ 1 bend (customizable) Material Construction: 304 SSSL
Notes: Requires 5-10 gpm water usage and 40-60 psi. Includes shorten hopper to assist in reducing screen to below a ceiling height of 7 ft		

CONTROLS

QTY	UNIT	DESCRIPTION
1	EA	Main Control Panel: 1 - GTS / 1 - WC Power: 480V/3ph/60hz Panel Rating: NEMA 4X PLC/Relay Based: Relay Screen Instrumentation: Dual Mechanical Float Local Pushbutton Station(s): Three Button (E-Stop/Run/Jog Rev)
Notes: Includes Air Conditioner, heater, thermostat, and rain hood. See attached Controls Selection Guide for additional options.		

TECH/FREIGHT

QTY	UNIT	DESCRIPTION
1	LOT	On-Site Technical Assistance Number of Trips: 1 Trip(s) Days On-Site per Trip: 2 8-hour man-day(s)
1	LOT	Freight FOB Jobsite, Full Freight Allowed

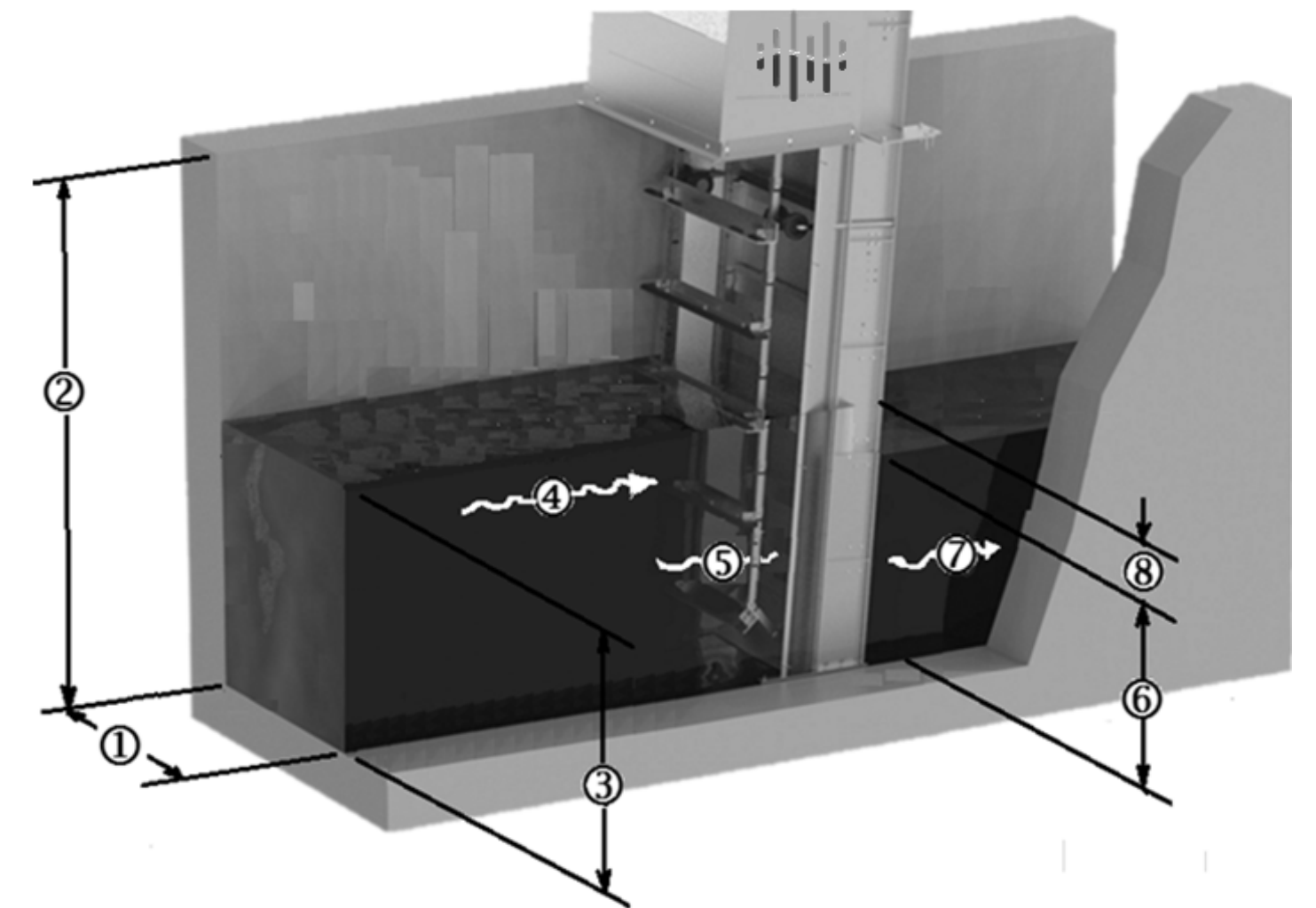
Clarifications:

- This is not a fully designed project; preliminary pricing may be affected by scope change/project development
- Operational, structural, wind, or seismic calculations are not included
- Scope is based on models and assumptions widely utilized in the industry
- Scope does not convey an offer to sell; installation and taxes are not included
- **For reference only:** Standard Delivery Schedule: Submittals 6-8 week from PO - Shipped 14-16 weeks from approval

PRELIMINARY BUDGET PRICING:

\$278,000.00





Date: 5/27/2022

Project: Marin County #5 Tiburon-Belverde WWTP CA

DC #: P#12480 R1

Notes:

Peak Flow = 6.70 MGD with estimated 4.00 ft downstream water level

Average Flow = .97 MGD with estimated .50 ft downstream water level

Based on Channel 2 ft wide x 8 ft height

Case No.	Prod. Model	Flow Rate (MGD)	Opening Between Bars (in.)	①		②		Percent Blinding (%)	Bar thickness (in.)	Side Close-outs (ft.)	Base Plate Height (ft.)	Flow Coeff. (1/C ²)	③ Upstr. Water Level (ft.)	④ Upstr. Velocity (fps)	⑤ Slot Velocity (fps)	⑥ Downstr. Water Level (ft.)	⑦ Downstr. Velocity (fps)	⑧ Head Loss (in.)	Comments	
				Channel Width (ft.)	Unit Width (ft.)	Channel Depth (ft.)	Channel Depth (ft.)													
1	GTS	6.70	0.25	2.00	2.00	8.00	25%	0.25	0.52	0.19	0.99	4.27	1.21	4.39	4.00	1.30	3.28	Calculated with 6.70 MGD, 25% blinding, an estimated 4.00 FT DSWL		
2	GTS	0.97	0.25	2.00	2.00	8.00	25%	0.25	0.52	0.19	0.99	0.71	1.05	3.87	0.50	1.50	2.57	Calculated with .97 MGD, 25% blinding, an estimated .50 FT DSWL		

Duperon requires a minimum of 1.00 ft water depth when the unit is in operation to keep the SSTL FlexLinks lubricated and ensure an optimal amount of screening area. This does not apply to LowFlow, FR IQ, and GTS units.

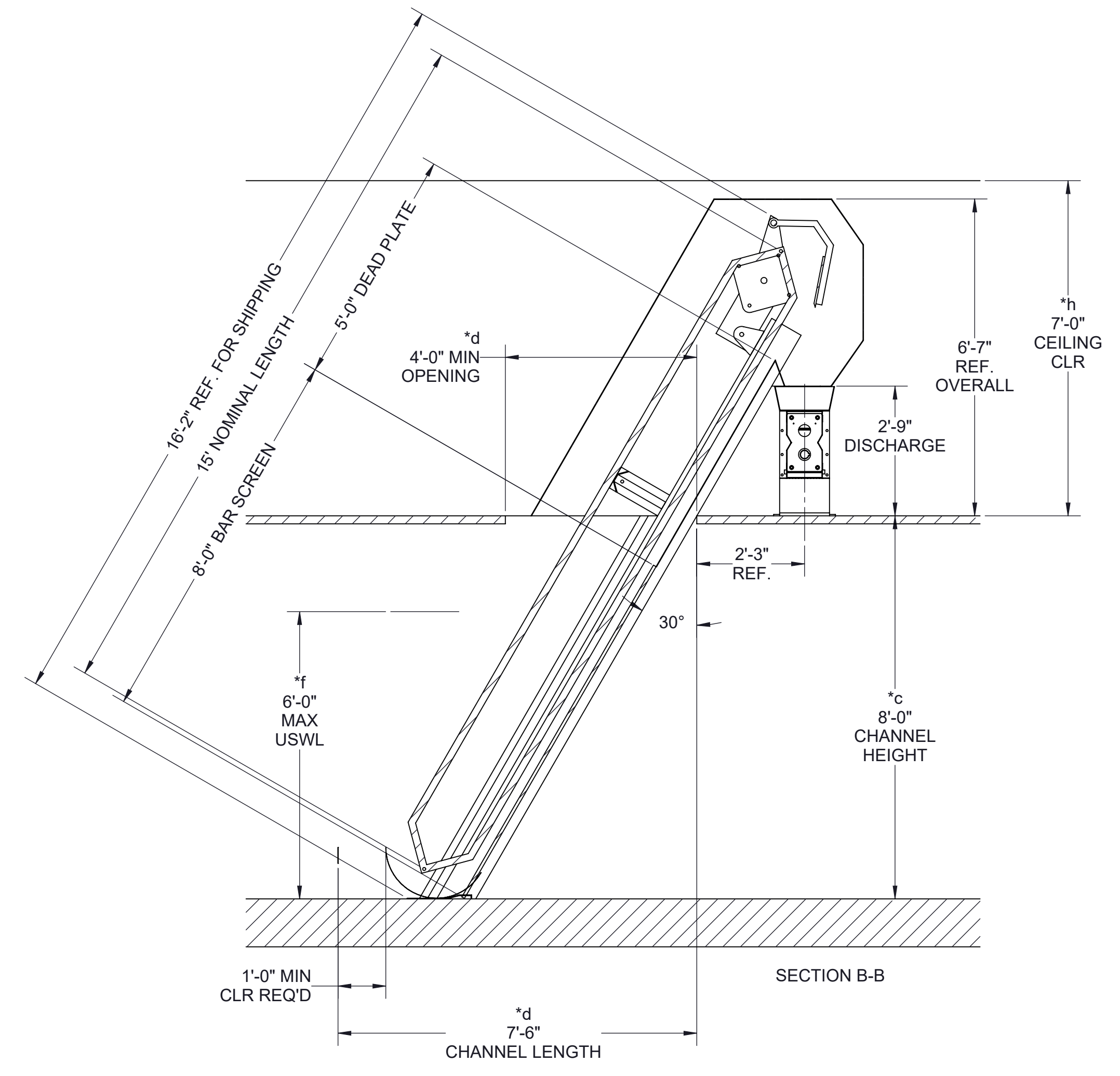
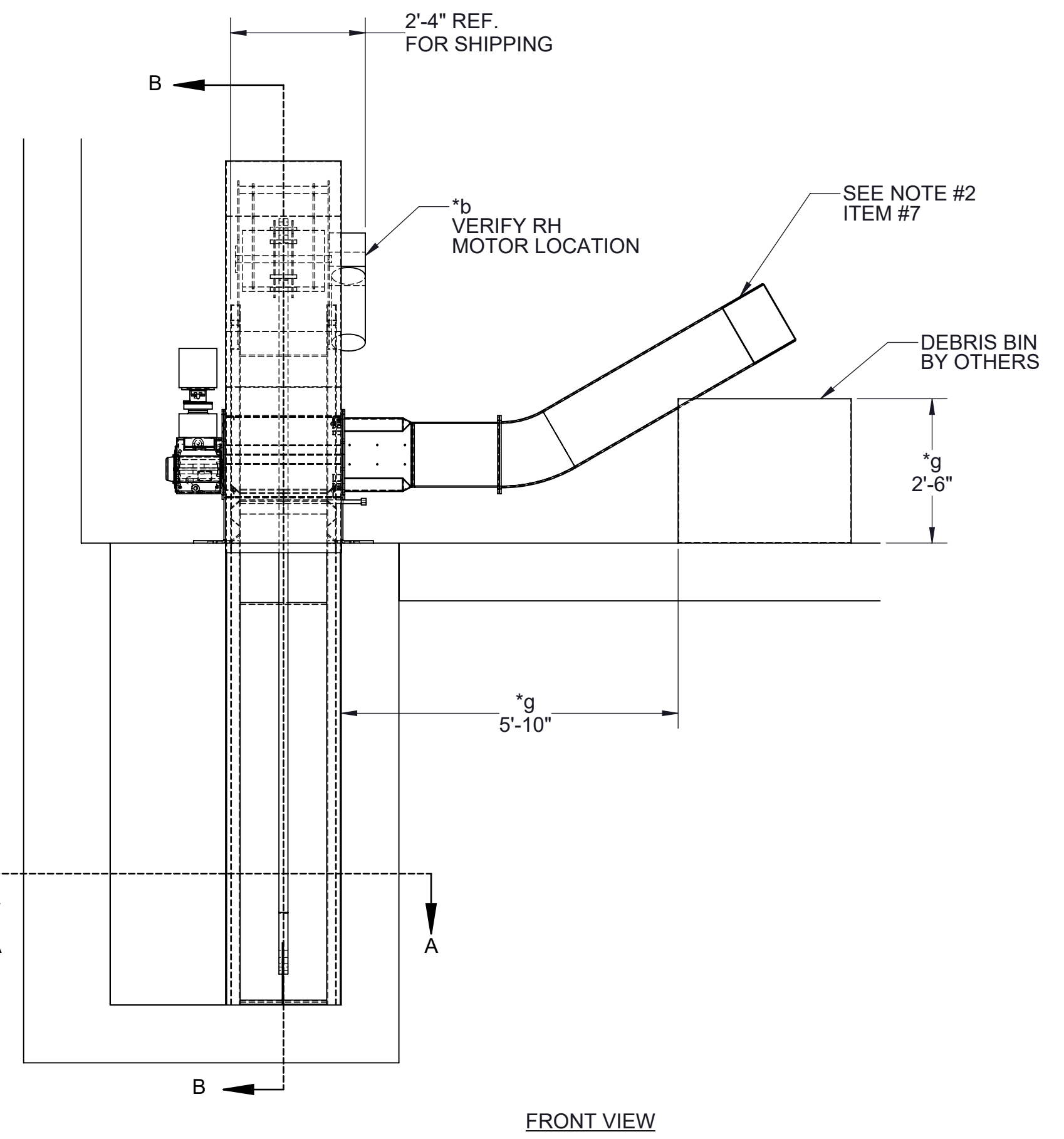
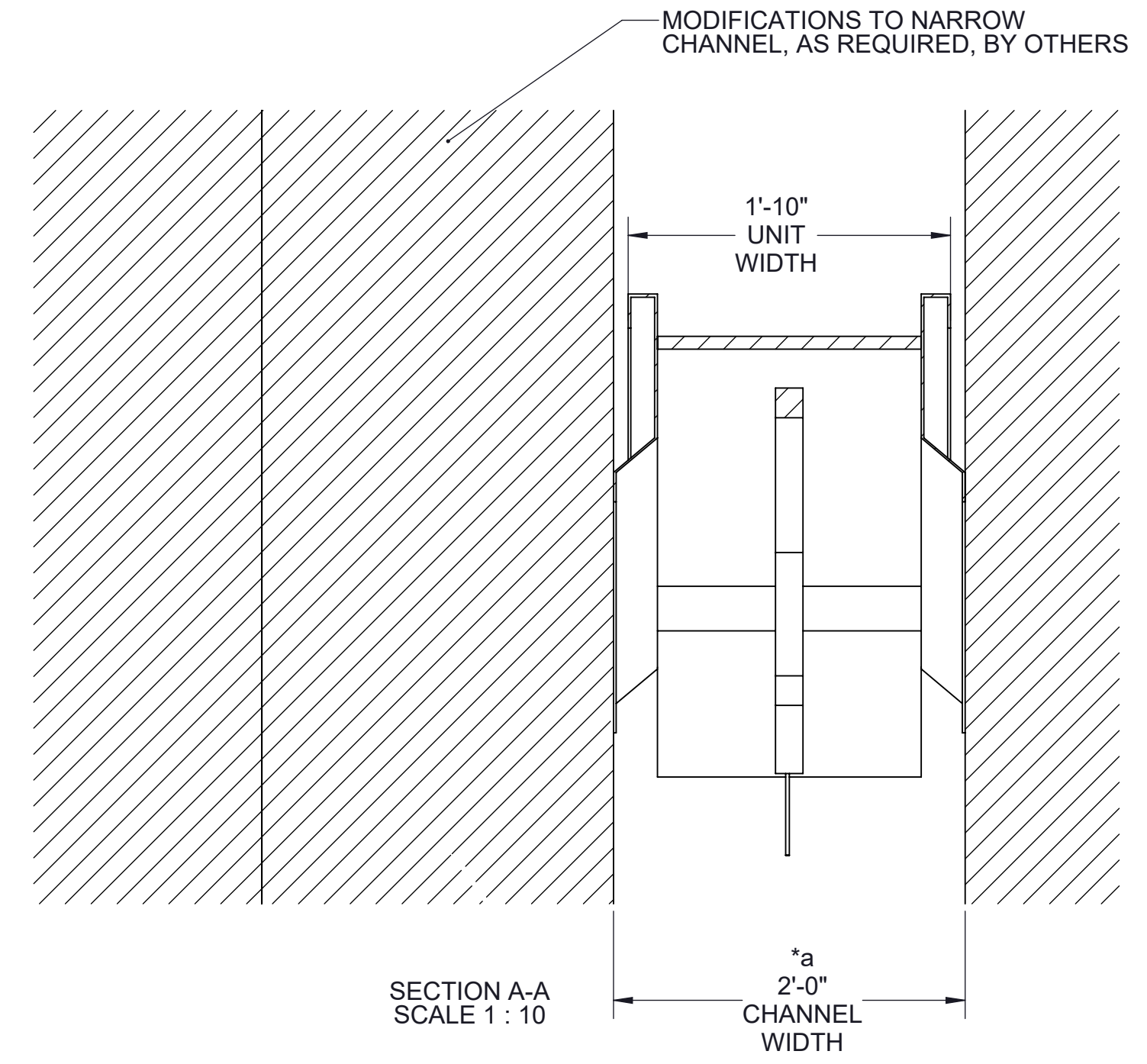
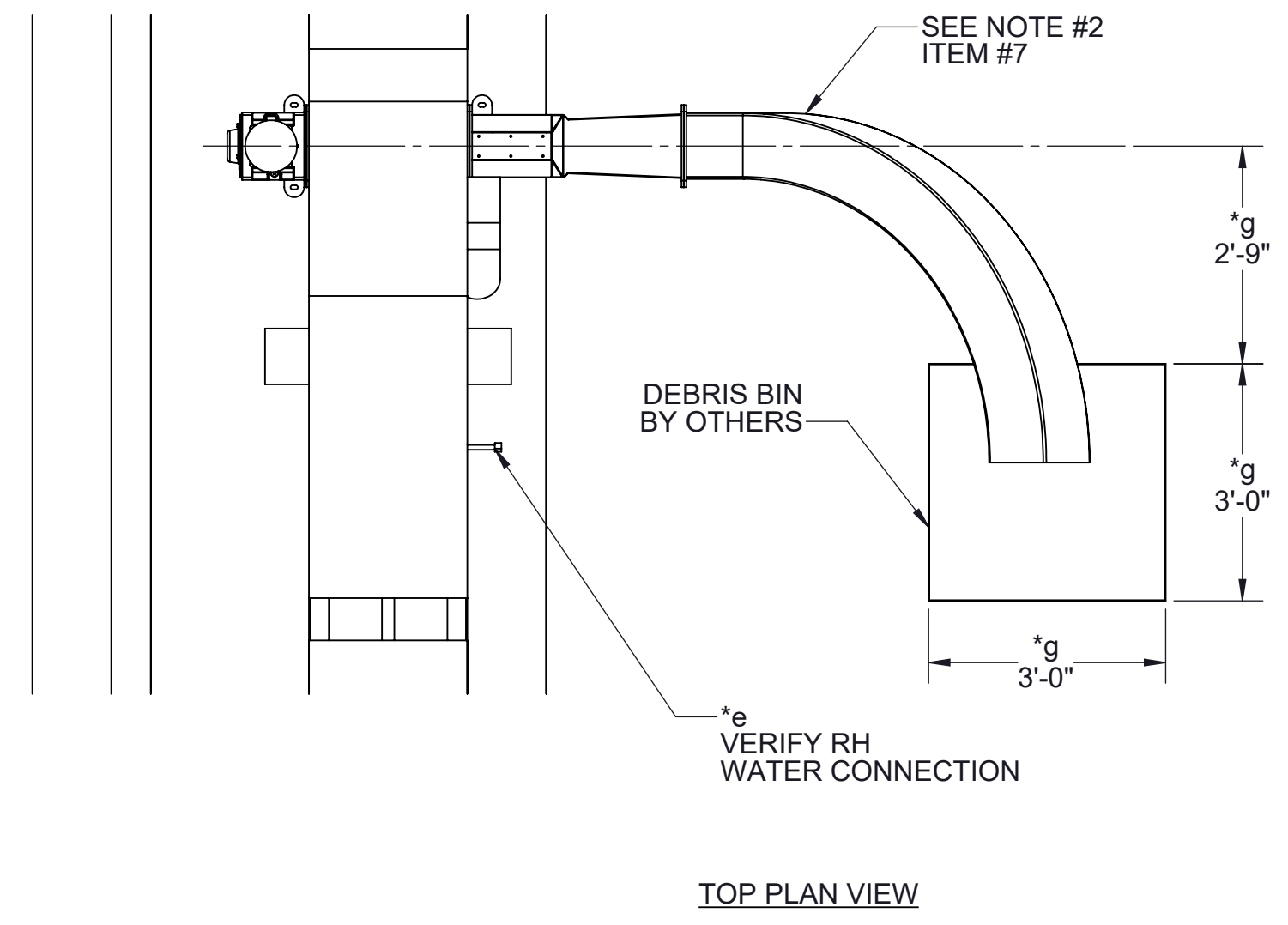
Head loss is calculated using Bernoulli equation: $HL=(1/C^2)*(V^2-v^2)/(2g)$. Flow coefficient $(1/C^2)=1.43$ should be used for general applications (FP,HD,SCT,FRIQ≥.62). $(1/C^2)=.99$ is used for teardrop bars (LF,FPFS, FPFS-M, FRIQ≤.5, GTS). ‡

At design average flow conditions, approach velocities should be no less than 1.25 fps, to prevent settling. ††

Satisfactory designs have provided for velocities of 2 to 4 fps through the openings of mechanically cleaned screens.†††

References: ‡Hydraulic Similarity of Headloss Predictions (WEF abstract) 2010, L.Botero, M.Woodley. ††Recommended Standards for Wastewater Facilities (10 States), 61.122 (2014). †††WEF MOP 8 5th ed. 2010.

REVISIONS				
REV.	DESCRIPTION	DATE	REVISED	APPROVED
1	UNIT WAS FR IQ, REDUCED CEILING CLEARANCE TO 7'.	05/26/22	JSG	AP




NOTE #1
VERIFY THAT THE PROPOSED INSTALLATION IS SUITED TO THE SITE.

- VERIFY CHANNEL WIDTH DIMENSION.
- VERIFY MOTOR LOCATION.
- VERIFY CHANNEL HEIGHT.
- VERIFY CHANNEL DEPTH.
- VERIFY WATER CONNECTION LOCATION.
- VERIFY MAXIMUM WATER HEIGHT.
- VERIFY DEBRIS BIN HEIGHT AND LOCATIONS.
- VERIFY CEILING CLEARANCE.

NOTE #2

- BARSCREEN AND SCRAPERS NOT SHOWN FOR CLARITY.
- SITE DIMENSIONS ARE SUBJECT TO CHANGE UPON SITE VERIFICATIONS.
- FRONT AND REAR ENCLOSURE INCLUDED
- DECK SUPPORT ACCESSORIES ARE INCLUDED TO SPAN CHANNEL FOR SUPPORT/ANCHORAGE.
- PLATE/GRATING AND HANDRAIL MODIFICATIONS AS REQUIRED (BY OTHERS).
- FOR SITES w/ FREEZING CONDITIONS A DEAD PLATE HEAT PAD; SLUICE AND WC HEAT TRACE/WRAP ACCESSORIES ARE RECOMMENDED. NOT INCLUDED AT THIS TIME.
- WASHER COMPACTOR CHUTE ROUTING IS CONCEPTUAL. CHUTE ROUTING AND SUPPORT DETAILS (NOT SHOWN) WILL CHANGE BASED ON FINAL DESIGN AT TIME OF SUBMITTALS. FLOOR STAND SUPPORTS SHALL BE PROVIDED, AS REQUIRED, BY DUPERON. CEILING HANGER SUPPORTS SHALL BE PROVIDED, AS REQUIRED, BY OTHERS.

PROPOSAL



Saginaw, Michigan 48601
TF 800.363.6479

EQUIPMENT TYPE
**DUPERON CORPORATION
Flex Rake® GTS**

SITE NAME
**MARIN COUNTY, CA
TINURON-BELVIDERE WWTP**

DRAWN JSG	DATE 05/23/22	CHECKED -	DATE -	APPROVED AP	DATE 05/23/22
<p>CONCEPTUAL</p> <p>THIS PROPOSAL DRAWING IS BASED UPON THE INFORMATION AVAILABLE AT THE TIME AND MAY BE AFFECTED BY FUTURE SPECIFICATION, SCOPE, AND OTHER REQUIREMENTS. PLEASE BE ADVISED THAT DUPERON CORPORATION RETAINS THE RIGHT TO REFUSE, WITHDRAW, OR NEGOTIATE THIS PROPOSAL AT ANY TIME PRIOR TO SIGNING MATERIAL CONTRACT.</p> <p>PROPRIETARY</p> <p>THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF DUPERON CORPORATION AND MUST BE RETURNED TO DUPERON IMMEDIATELY UPON REQUEST. THIS MATERIAL AND THE INFORMATION ILLUSTRATED OR CONTAINED HEREIN MAY NOT BE REPRODUCED, COPIED, USED OR TRANSMITTED IN WHOLE OR IN PART IN ANY WAY WITHOUT THE PRIOR WRITTEN CONSENT OF DUPERON CORPORATION - SAGINAW, MI, USA</p>					
SIZE D		PROPOSAL NUMBER P12480		REV 1	
SCALE 1:25				SHEET 1 OF 1	

C:\Duperon\PROPOSALS\P12480-P12599\P12480 (1) FRIQ.(1) WC with Casters\P12480 GTS3 Sales Model



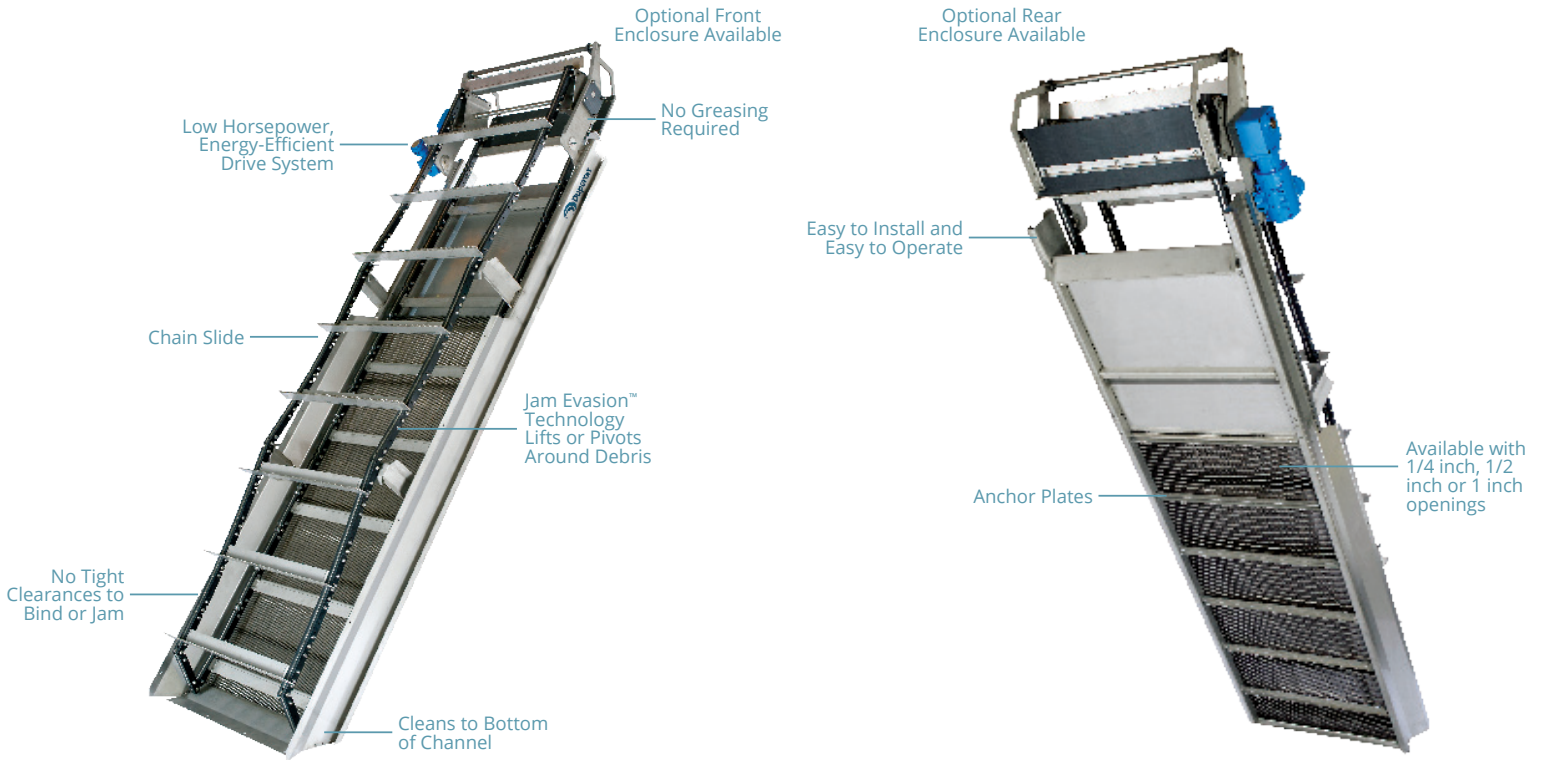
FLEXRAKE® GTS

Mechanically Cleaned Bar Screens

Simple, front cleaning, front return Duperon® FlexRake® technology. Available with 0.63 cm, 1.27 cm or 2.54 cm openings.

- No Lower Sprockets, Bearings or Tracks to Foul or Jam
- Lifts and Pivots Around Debris; Adapts to Influent
- Easy to Install and Easy to Operate
- Low Maintenance; No Greasing Required

The Duperon® FlexRake® GTS



MODELS

	GTS 1	GTS 2
LINK SYSTEM	Smart Link™	FlexLink™
UNIT WIDTH	.5m - 1m	> 1m to 3m
UNIT LENGTH	2m - 8m	>8m
INSTALLATION ANGLE (FROM VERTICAL)	30 DEGREES	10-45 DEGREES
GEARMOTOR	1/4 HP HYPONIC, EXPLOSION PROOF	1/2 HP EXPLOSION PROOF

TYPICAL APPLICATIONS

Wastewater, Combined Sewer Overflow (CSO), prison applications, primary and secondary screening intakes

STANDARD MATERIALS OF CONSTRUCTION

Standard: 304 Stainless Steel
Available in: 316 Stainless Steel

STANDARD OPERATING SPEED

.5 RPM
Can be increased with VFD to 2.5 RPM in high flow conditions.
1 discharge/minute on low, 5 per minute on high

SCREEN OPTIONS

	FINE SCREEN	COARSE SCREEN
BAR OPENING	6mm and	>13mm
BAR TYPE	Tear Shaped Bars	True Bar
SCRAPER MATERIALS OF CONSTRUCTION	SSTL	UHMW
SCRAPER CONFIGURATION	533mm (EVERY 2ND LINK)	VARIABLE PER APPLICATION

SHIPPING DATA

Ships fully assembled or can be provided in modular design for shipping containers.

STANDARD CONTROLS OPTIONS

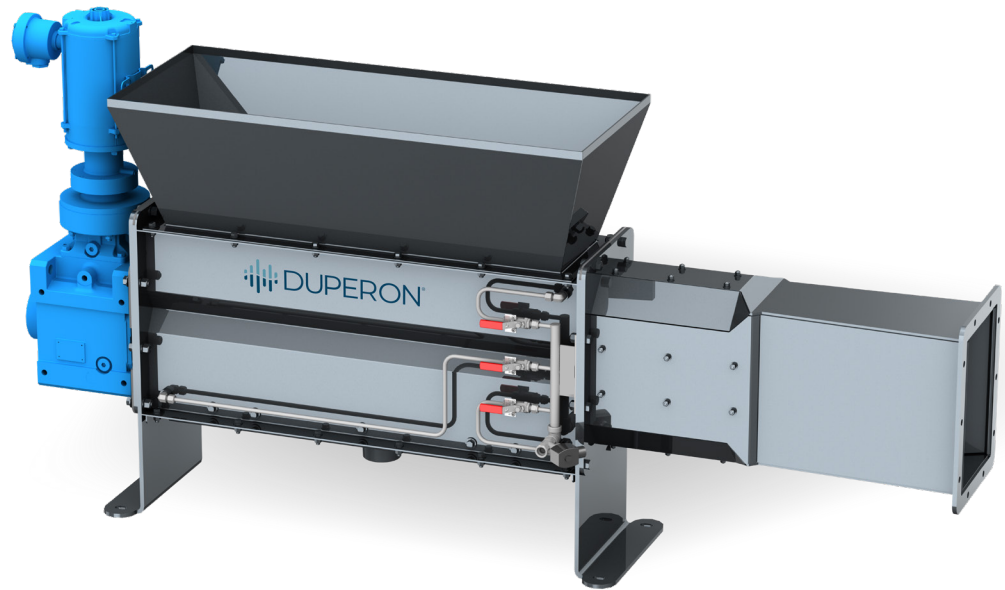
Packages range from simple start/stop to sophisticated automation. Motor overload protection provided. Contact Duperon® for further details and assistance in selecting the perfect package for your site.

OPERATION OPTIONS

Continuous/Manual.
Automatic with timer, float, SCADA, differential/high level sensing options with I/O as needed.

DUPERON®
WASHER COMPACTOR
 DUAL AUGER UNIT

Washer compactors automate the solids handling process efficiently and provide a bottom-line impact to meet hauler requirements and reduce landfill volume. The Duperon Washer Compactor is a patented, dual auger unit, specifically designed to handle the debris variations that a FlexRake® could potentially discharge. It combines mechanical simplicity and strength to achieve reliable performance and lower disposal costs.



THE DUPERON
DIFFERENCE

WHAT GOES IN, COMES OUT

- *Positive displacement from patented dual augers processes debris forward, prevents slipping, wrapping, clinging, and bridging*

CONSISTENT COMPACTION

- *The self-regulating compaction zone delivers consistent dry solids, regardless of debris or volume*

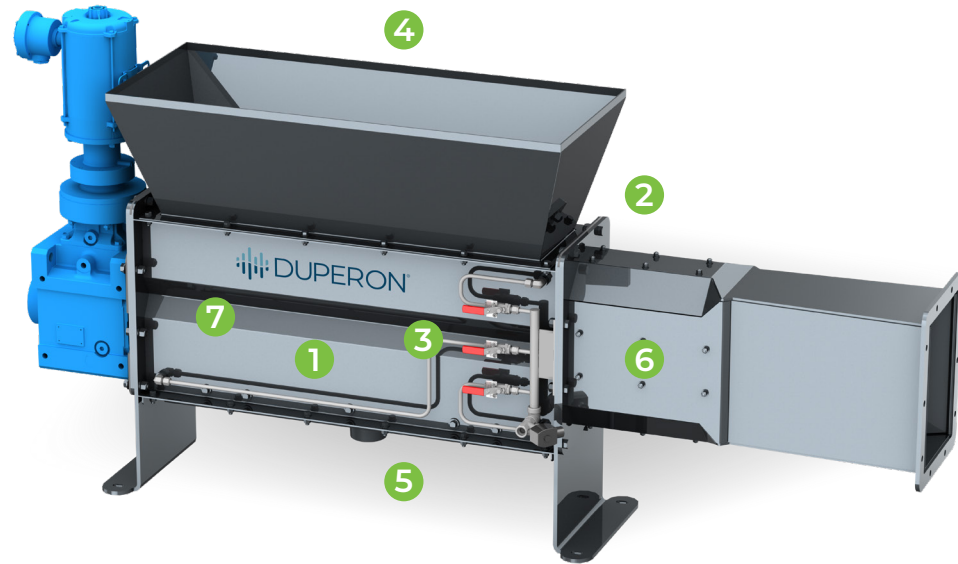
FLEXIBLE DISCHARGE

- *The Discharge Extension Option transports compacted screenings up to 40 ft in any direction without additional mechanized conveyance*

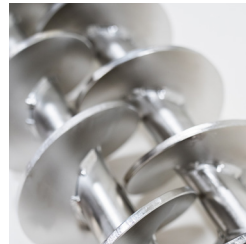
HIGH PERFORMANCE TO IMPACT BOTTOM-LINE

- *Reliably provides up to 84% volume reduction and 60% dry solids to minimize odor, meet hauler standards, and reduce landfill costs*

WASHER COMPACTOR FEATURES



- 1 HOUSING GEOMETRY**
Controls potential for "slip flow" when processing grease, septage and other similar debris
- 2 NON-BATCHING**
Continuous flow
- 3 SELF-CLEANING STRAINER**
Eliminating brushes and relieves clogging
- 4 DESIGNED FOR DUTY**
Designed to process debris variations that a FlexRake® could occasionally discharge, like rocks, grease, clothing, concrete and metal up to 4 inches
- 5 NON-CLOGGING FLOOD WASH PORT**
Ideal for non-potable water
- 6 NO FIXED REDUCTION COMPACTION**
A proprietary self-regulating compaction zone controls pressure, regardless of volume for consistent dry solids

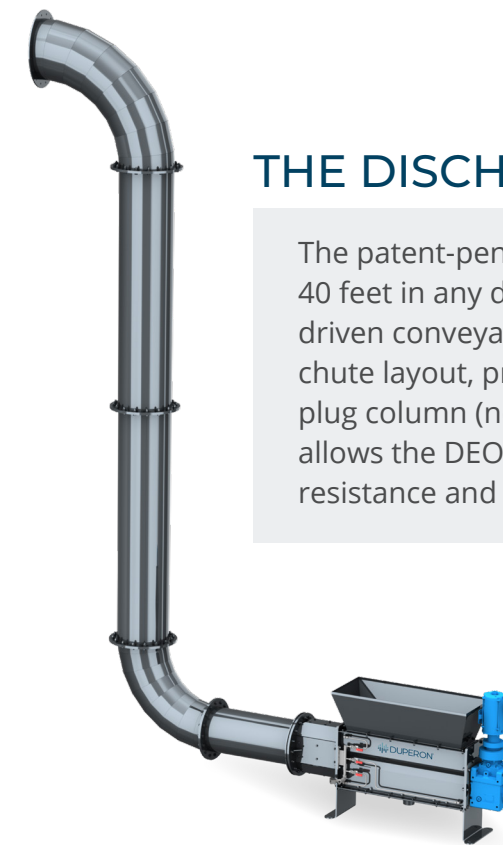


- 7 POSITIVE DISPLACEMENT**
Counter-rotating patented dual augers process debris forward, preventing slipping, wrapping, clinging and bridging

HOW IT WORKS

The Duperon® Washer Compactor is a powerful system that uses self-cleaning dual augers in a counter rotation to prevent wrapping and to help separate organic and inorganic materials. The dual augers use positive displacement, to continuously move debris forward for cleaning, compaction, and discharge. Flood washing ports clean screenings and return organics back to the channel. A proprietary self-regulating compaction zone provides consistent pressure, regardless of volume and debris composition.

Unlike other technologies, the Duperon Washer Compactor typically compresses debris before it enters the discharge chute, so it does not rely on fixed reduction compaction (using the friction of screenings in the chute to compact). The internally controlled compaction allows Duperon equipment to push a plug column with little to no resistance to extended locations. The captured solids are delivered in an enclosed chute to the desired discharge point, with minimal odor and vector-free.



THE DISCHARGE EXTENSION OPTION

The patent-pending Discharge Extension Option (DEO) can transport debris up to 40 feet in any direction, even vertically, eliminating the need for additional motor-driven conveyance systems. The dual augers, combined with the geometry of the chute layout, produce backpressure. This backpressure allows the weight of the plug column (not friction from the chute) to dewater and compact debris. This allows the DEO to easily transport compacted screenings long distances, without resistance and without requiring the augers to extend to the discharge point.

THE DEO PROVIDES SIGNIFICANT COST SAVINGS BY:

- Reducing the length of the bar screen extending multiple levels
- Eliminating additional conveyance, motors and associated maintenance
- Eliminating manual labor and debris handling of captured screenings

WASHER COMPACTOR DISCHARGE CHUTE ACCESSORIES



HEAT BLANKET:
The Washer Compactor hopper, compaction zone and discharge chute can be thermally protected from cold temperatures with the addition of the Heat Blanket with integral heat trace.



BAGGER:
The Bagger System attaches to the discharge chute for applications where bag dispensing and odor control are required. Included is a 90 meter length of continuous feed bags.



DROP SLEEVE:
This flexible Drop Sleeve is an economical way to direct and contain downward debris discharge. Also used where waste container hauling may cause damage to metal discharge chutes.



CASTER ASSEMBLY:
Optional casters allow for flexible placement of the Washer Compactor and simple movement of the unit.

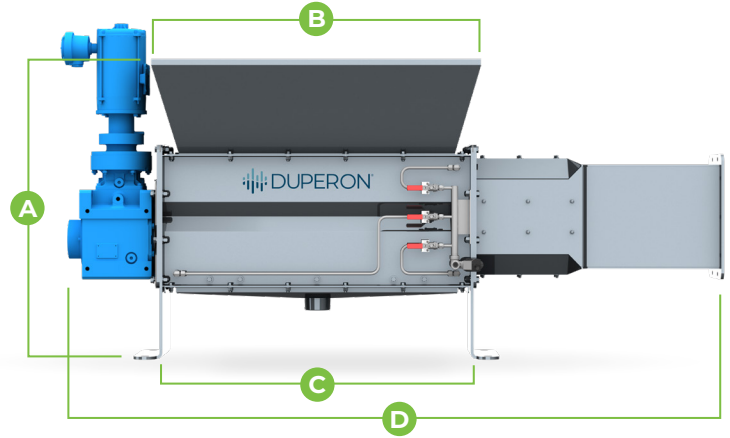


HOPPER LEVEL SENSOR:
Used in applications where a sluice discharges into the washer compactor. If the float trips, sluice water will turn off to avoid the hopper overflowing.



HOPPER BYPASS:
A 6 inch bypass plumbed with Fernco styie fittings to avoid hopper overflowing, drains excess debris back into the channel in front of the bar screen to be re-captured.

	BODY SIZE 1	BODY SIZE 2	BODY SIZE 3
A Typical hopper height (in)	38	38	38
B Hopper length (in)	27	43	67
C Distance between washer compactor legs (in)	24	40	64
D Overall length (in)	69	85	109



PRODUCT DATA

SIZING	3 sizes to accomadate site flow and capacities
WATER	<ul style="list-style-type: none"> Utilizes filtered effluent or municipal water Washer consumes 3-10 GPM Requires 40 psi-60 psi Drain connection 3 in NPT Supply connection 1/2 in NPT
UTILITY	120/240 volt, 1 PH 240/480 volt, 3 PH (0.6 kW/2.3 kW/3.8kW)
DRIVE	1 hp, 3 hp, 5 hp inverter duty motors available
MATERIAL OF CONSTRUCTION	304 SSSL or 316 SSSL, SSSL spur gears (17 - 4 PH) Self-lubricating main auger bearings
BAR SCREEN FLOWS	Flows up to 100 MGD* *flow values are based on MOP8 values through a ¼ inch bar screen
PEAK CAPACITY	Available from: 30 cu ft/hr - 150 cu ft/hr
TYPICAL PERFORMANCE	Up to: 30% - 60% dry solids 60% - 70% weight reduction Significantly decreases odor and fecal content
STANDARD CONTROLS	Packages range from simple start/stop to sophisticated automation Motor overload protection provided
OPERATION OPTIONS	Continuous while screen is running with off-delay capability to clear hopper
APPLICATIONS	<ul style="list-style-type: none"> Municipal wastewater Combined sewer overflow Pump stations Lift stations Industrial wastewater Other non-standard applications where debris is variable or difficult