SOLUTIONS 4 MANUFACTURING

Capacity and Size Information Biomass Handling & Grinding asset # 1710

Video Link

See the You Tube video of this plant.
The biomass system is shown at 0:57 seconds on this video

https://www.youtube.com/watch?v=y_duWKsphDY

Capacity

There are 4 lines. The 150 ton (288 bales) referenced in the video is the loaded capacity, not operating capacity of the 4 lines; Each line holds 2 truckloads of 36 bales before getting to the singulator. The total on the 4 lines is 2x36x4=288 bales.

The manual from the manufacturer does not have a break-down, but the system was built to be able to supply 930 dry tons per day to the ethanol process, which would use 2 lines (Line #1 & #2 for ethanol production, #3 a spare line that can be used for either process and line #4 dedicated to cogeneration fuel supply).

So Design Capacity = 465 ton/day (TPD) per line x 4 lines = 1,860 TPD

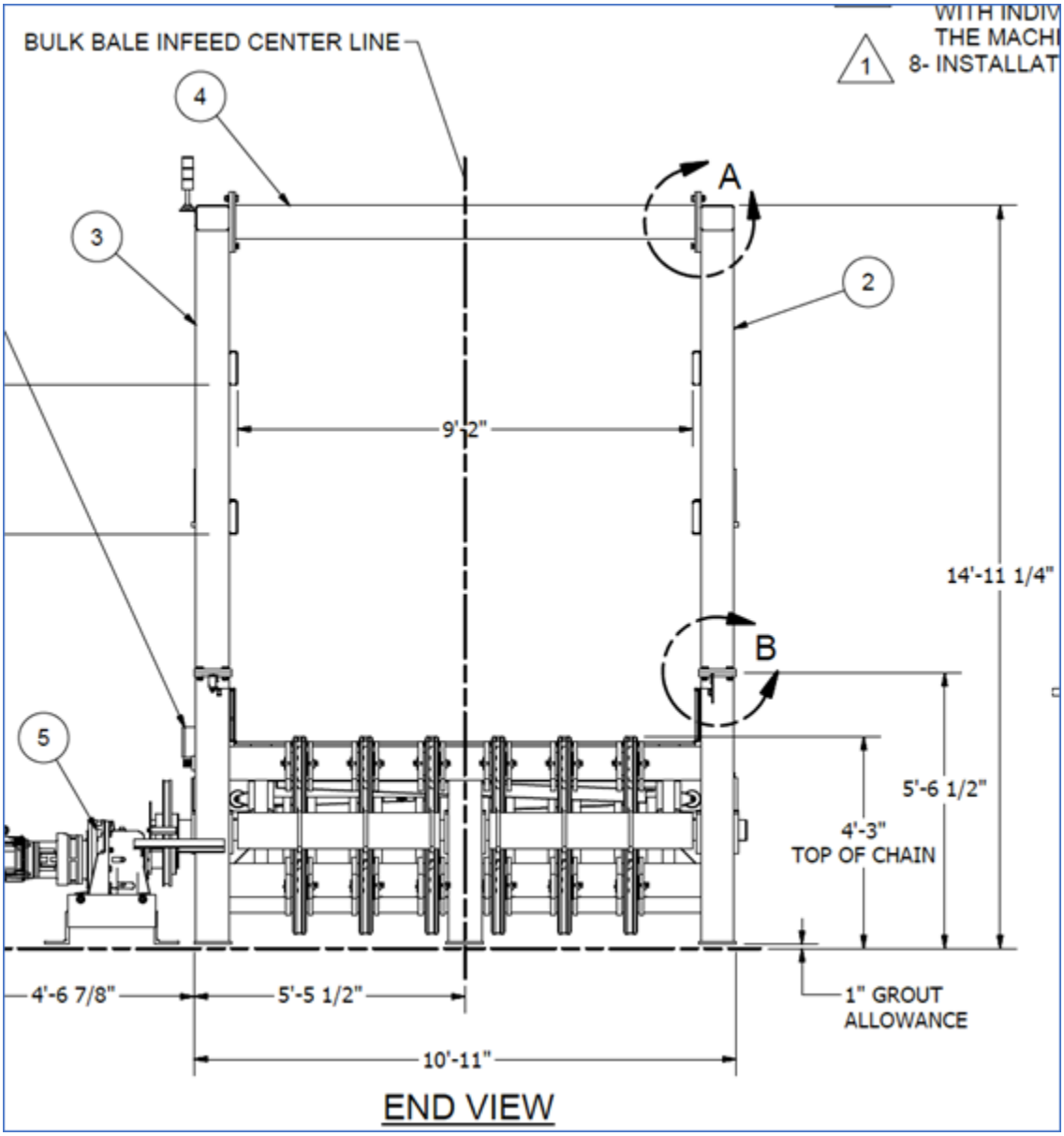
The original design spec called for: *"Overall processing rate with all four (4) lines in production will be up to 140-180 bales per hour. Each equipment train will be for converting incoming baled (3' x 4' x 8' bales) fiber materials (corn stover, switchgrass, or wheat straw)"*

Grind Size & Bale Size – Tipple Dimensions

Grind size that was targeted during original installation was <1" for the ethanol plant and <1 ¾" for biomass boiler/cogeneration. The screens can be changed on the equipment to get a different grind size.

The bales we received were 4' wide (Dimensions H x W x L: Bales 3' x 4' x 8' with non-metallic stringing.). Average wet weight of 1,200 lbs per bale.

The infeed tipple clearance width is listed on the drawings as 9'2". See sketch below



Hydraulic Pump Skid (Power Pack)

Each of the 4 lines have a hydraulic pump skid power pack to drive functions – conveyors, chopper, grinder, hoists. Each power pack has 4 pumps – (2) 20HP, (1) 10HP, and (1) 3HP developing 1300 psig. All 4 are required to run during operation. Physical size of each power pack is 7'-6" x 7' x 7'-2" tall.

Silo

The fines silo is carbon steel, capacity 6,000 cu ft. Physical size is 16.23 dia x 29'-2" tall. On 26'-7" legs.