



**FRASER PAPERS INC
PARK FALLS, WI, USA**

BTF HEAD BOX WITH AUTOMATIC DILUTION
PM # 1

GL&V PROJECT 3650-004/005

AUGUST 2003

1. GENERAL INFORMATION

1.1 Machine Data

Machine number	:	1
Basis weight	:	40-146 Lb/3300 ft ²
Grade (s)	:	Printing & Writing
Furnish	:	HWK, SWK, HW Sulfite, Gauld, TK1, TK2
Forming fabric width	:	110"
Pond side width	:	105.31"
Trim width at reel	:	99"
Headbox flow	:	1700 @ 3600 USGPM 4900 USGPM (max future)
Dilution water flow	:	255-360 USGPM
Machine operating speed	:	1,100 fpm 1,500 fpm future
Hand of machine	:	Standing at headbox looking toward the reel, drive is Left
White water consistency	:	0.008%
Headbox consistency	:	0.6% - 1.1%
Retention average	:	80% - 96%

1.2 Requirements

1.2.1 COMPRESSED AIR

AIR REQUIREMENT

DATE 16-04-03
REV 0

MACHINE DATA

WIRE WIDTH: 110
IN.
MACHINE SPEED: 970 FPM ACTUAL / 1470
FPM FUTURE
GRADE: PRINTING & WRITING PAPER
BASIS WEIGHT: 40-164 LBS/3300 SQ. FT.

DESCRIPTION	QTY	PRESSUR	OPERATIO	OPERATIO	CFM
		E PSI	N	N PERIOD *	CFM
DISTRIBUTOR AIR PAD	1	50	-	C	5

* : I = INTERMITENT
C = CONTINUE

1.2.2 WATER

WATER REQUIREMENT

DATE 12-05-03

REV 1

MACHINE DATA

WIRE WIDTH: 110
IN.
MACHINE SPEED: 970 FPM ACTUAL / 1470
FPM FUTURE
GRADE: PRINTING & WRITING PAPER
BASIS WEIGHT: 40-164 LBS/3300
SQ. FT.

DESCRIPTION	QTY	PRESSURE PSI	FLOW USGPM	SERVICE *	WATER **
DISTRIBUTOR SHOWERS	1	100	13	C	HFW
HOT WATER MAKE-UP CIRCUIT	1	40	5	I	FW

* : I = INTERMITTENT

C = CONTINUE

** : FW = FRESH WATER

HFW = HEATED FRESH WATER

MINIMUM WATER TEMPERATURE ON SHOWER TO BE AT
LEAST AT STOCK TEMPERATURE +/- 3 DEG. F
PH TO BE THE SAME AS STOCK PH

1.2.3 FAN PUMP HEAD

FAN PUMP HEAD REQUIRED				
			DATE	16-04-03
			REV	0
MACHINE DATA				
WIRE WIDTH:	110 IN.			
MACHINE SPEED:	970 FPM ACTUAL / 1470 FPM FUTURE			
GRADE:	PRINTING & WRITING PAPER			
BASIS WEIGHT:	40-164 LBS/3300 SQ. FT.			
	SPEED	HEADBOX FLOW	PRESSURE REQUIRED ***	
LOCATION	FPM	USGPM	PSI	IN. H2O
BTF DISTRIBUTOR INLET				
MINIMUM ACTUAL DATA	370	1700	4	110.8
MAXIMUM ACTUAL DATA	970	3600	18.2	504.3
HEADBOX DESIGN MAXIMUM DATA*	1470	4900	19.4	537.6
BTF DISTRIBUTOR MAXIMUM DATA**	1470	4900	19.4	537.6
* : PLASTIC INSERTS IN HEADBOX TURBULENCE GENERATOR WILL HAVE TO BE CHANGE TO REACH THIS SPEED				
** : CENTRAL POST WILL HAVE TO BE REMOVED FROM THE DISTRIBUTOR TO REACH THIS SPEED				
** : PLASTIC INSERTS IN DIFFUSER TUBES WILL HAVE TO BE CHANGED TO REACH THIS SPEED				
*** : PRESSURE SHOWN DO NOT INCLUDE ELEVATION DIFFERENCE IN THE SYSTEM & LOSSES IN APPROACH PIPING BEFORE DISTRIBUTOR				

1.2.4 DILUTION PUMP HEAD

DILUTION PUMP HEAD REQUIRED					
				DATE	16-04-03
				REV	0
MACHINE DATA					
WIRE WIDTH:	110 IN.				
MACHINE SPEED:	970 FPM ACTUAL / 1470 FPM FUTURE				
GRADE:	PRINTING & WRITING PAPER				
BASIS WEIGHT:	40-164 LBS/3300 SQ. FT.				
	SPEED	HEADBOX FLOW	DILUTION FLOW	PRESSURE REQUIRED *	
LOCATION	FPM	USGPM	USGPM	PSI	IN. H2O
INLET DILUTION HEADER					
MINIMUM ACTUAL DATA	370	1700	255	11.6	321.4
MAXIMUM ACTUAL DATA	970	3600	360	29.2	809.1
HEADBOX DESIGN MAXIMUM DATA	1470	4900	497	39.6	1097.3
BTF DISTRIBUTOR MAXIMUM DATA	1470	4900	497	39.6	1097.3
* : PRESSURE SHOWN DO NOT INCLUDE ELEVATION DIFFERENCE IN THE SYSTEM & LOSSES IN APPROACH PIPING BEFORE DISTRIBUTOR					

2. BTF DISTRIBUTOR GENERAL DESCRIPTION

2.1 BTF distributor main parts

The BTF distributor major parts are (see Figure 1A & 1B.):

1. **Inlet piping** : flanged tapered connection piece connected to approach piping.
2. **BTF Distributor bottom piece** : located just ahead of the damping chamber, the inlet piping is brought up to full diameter of the distributor. An access and cleaning port is included.
3. **Perforated plate** : A micro turbulence generating plate is located at the entrance of the unit. It is made of ultra high molecular weight plastic (UHMW).
4. **Damping chamber** : This zone slows the stock down, and distributes the stock evenly to the distributing hoses. An air pad absorbs pulsation generated in the approach system. A cleaning shower is located at the top of the tank to prevent any build up and keep the inside surfaces clean. An access port with sight glass is located at the top of the distributor tank for inspection and cleaning.
5. **Distribution zone** : located at mid height of the distributor tank, distribution hoses and water dilution injection tubes are evenly distributed around the distributor tank.
6. **Automatic Dilution system** : Connected to the water dilution tubes are ball valves activated by Honeywell-Measurex ProFlow actuators. Those fully controlled actuators will provide basis weight control for CD sheet profiling. Equally spaced control panels will be located over the actuators. Controls and operation details by Honeywell-Measurex.
7. **Dilution header** : White water supplied to the Automatic Dilution System will be provided by a circular header/pipe located at the top of the distributor tank. Stainless steel tubes equally spaced are connected to their respective valves. The dilution tubes are centred and located just over the distribution hoses. The dilution header is provided with inspection/cleaning port.
8. **Distribution hoses** : Flexible hoses equally spaced and of equal length, will transport the stock from the distributor tank to the headbox transition piece. These hoses are constructed of industrial braided material with EPDM inner tube and they can sustain a wide range of pH : between 2 and 12.

9. **Distribution tubes** : Stock coming from the hoses is evenly distributed across the headbox via equally spaced stainless steel distribution tubes. These tubes have a round to square shape to maximize open area toward the headbox.
10. **BTF Transition piece** : The transition connection where the distribution tubes will be connected will act as mixing / explosion chamber. A round access port is located at each end of the transition piece for inspection and cleaning. For further maintenance and thorough cleaning, a full width top panel can be opened. Two leverage points are located on the top panel for leverage, a chain block or crane winch will be used as leverage mechanism. The top panel will provide access to the headbox tube bank plastic inserts and distribution tubes.

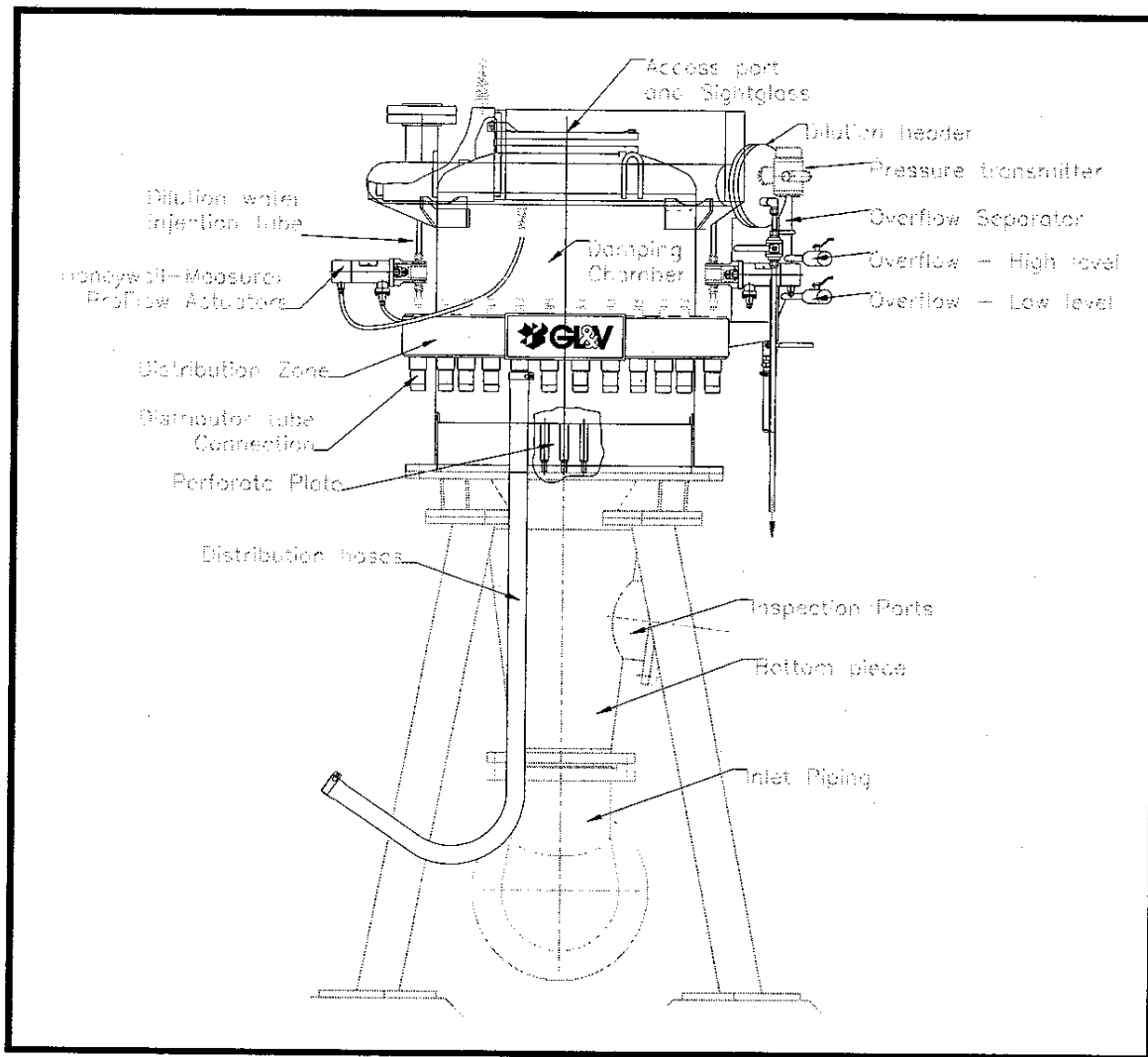


Figure 1A. BTF distributor main parts

2.2 Leading dimensions

Tank inside diameter:	:	27.5 in
BTF overall diameter:	:	60 in
Number of distribution hoses:	:	36
Inside diameter of feeding pipe:	:	8.33 in
BTF height:	:	100 in
Distribution hoses diameter	:	1.5 in. (38 mm, I.D.)
Maximum temperature:	:	140 °F
Maximum pressure:	:	75 psi
Flow, minimum / maximum :	:	1700-3600 USGPM
Dilution water flow	:	255-360 USGPM

Note: Consider BTF Universal Distributor for this application not as a pressure vessel.

3. BTF HEADBOX GENERAL DESCRIPTION

3.1 BTF headbox main parts

The BTF headbox major parts are (see Figure 5.):

1. **Slice body:** this main part on which is attached many key components including slice lip and screw jacks. This high rigidity structure provides slice straightness with minimal mechanical and thermal deflection. This slice body is linked to the rest of the headbox by a double knuckle setup for vertical and horizontal adjustments of the slice lip in relation to the bottom lip.
2. **Top slice (slice lip):** this key component provides precise jet delivering on the forming fabric. The slice is optically adjusted so the slice opening is constant in reference to the apron lip. It should be noted that with BTF headboxes, the slice lip should not be bent for sheet profiling as with conventional headboxes.
3. **Apron lip:** this highly rigid, highly polish and precise surface will act as horizontal support for the stock jet. The bottom slice is a fixed element and optically adjusted for precise jet landing on the forming fabric.
4. **Tube bank:** The tube bank consists of rows of turbulence generating tubes. This section is used for critical turbulence generation.
5. **Vertical slice adjustment mechanism:** this mechanism will permit up and down movement of the slice lip to control flow out of the headbox. The slice body assembly rotates around a knuckle. The mechanism is composed of screw jacks, transversal shaft and coupled to a gear box with electric motor. The motor has an electrical brake to ensure no movements of the screw jacks during operation. This arrangement will provide from 0.25" to 4.5" slice opening in reference to the apron lip. Limit switches prevent extreme movement of the mechanism. If those switches would fail, mechanical stopper will stop any further movements to prevent damage to headbox parts.

6. **Horizontal slice adjustment mechanism:** this mechanism will allow horizontal movement of the slice lip in relation to the breast roll centre. The slice body assembly rotates around a knuckle. This horizontal movement provide to the papermaker the flexibility to control the jet angle and landing point on the forming fabric. The mechanism is composed of screw jacks, transversal shaft and coupled to a handwheel.
7. **Pond side:** massive stainless steel plates which seal both ends of the headbox. The distance in between each pond side precisely matches the slice width. Paper stock will flow along those pond sides.
8. **Control panel:** a control panel is mounted on the tending side of the headbox for fast and easy reading of the slice lip position. Also, located on this box are the "Up" and "Down" buttons to control slice opening. This control panel gets input from the LVDT positioning system located in the back of the headbox.
9. **BTF Transition piece:** The transition connection where the distribution tubes will be connected will act as mixing / explosion chamber. Located in the middle of the explosion chamber are two speed bumps used to equalize the flow. A round access port is located at each end the transition piece for inspection and cleaning. For further maintenance and thorough cleaning, a full width top panel can be opened. Two leverage points are located on the top panel for leverage, a chain block or crane winches will be used as leverage mechanism. Structural arms on the back of the headbox are provided with a hole to insert the safety pins while the transition piece cover is open. The top panel will provide access to the headbox tube bank plastic inserts and distribution tubes.
10. **Hot water chamber:** the BTF headbox is provided with hot water chambers in the slice body and under the apron lip. Water heating system is supplied with all necessary hardware in place. Hot water chambers are used for thermal stability during operation. It also provides thermal stability during prolonged shut downs for faster start-up. This system is required for wide machine to prevent distortion in the slice opening.
11. **Positioning chart:** A stainless steel plate with graduation provides fast reading of the position of the slice lip.
12. **Pressure transmitter:** The total head pressure transmitter is located on the front pond side.

12. **Pressure transmitter:** The total head pressure transmitter is located on the front pond side.
13. **LVDT:** The BTF headbox has a LVDT system to relate the exact position of the slice lip. LVDT is connected to the control panel which has digital readouts. The readouts displays SLICE OPENING and HORIZONTAL measurements. The LVDT system is located outside on the back pond side of the headbox.

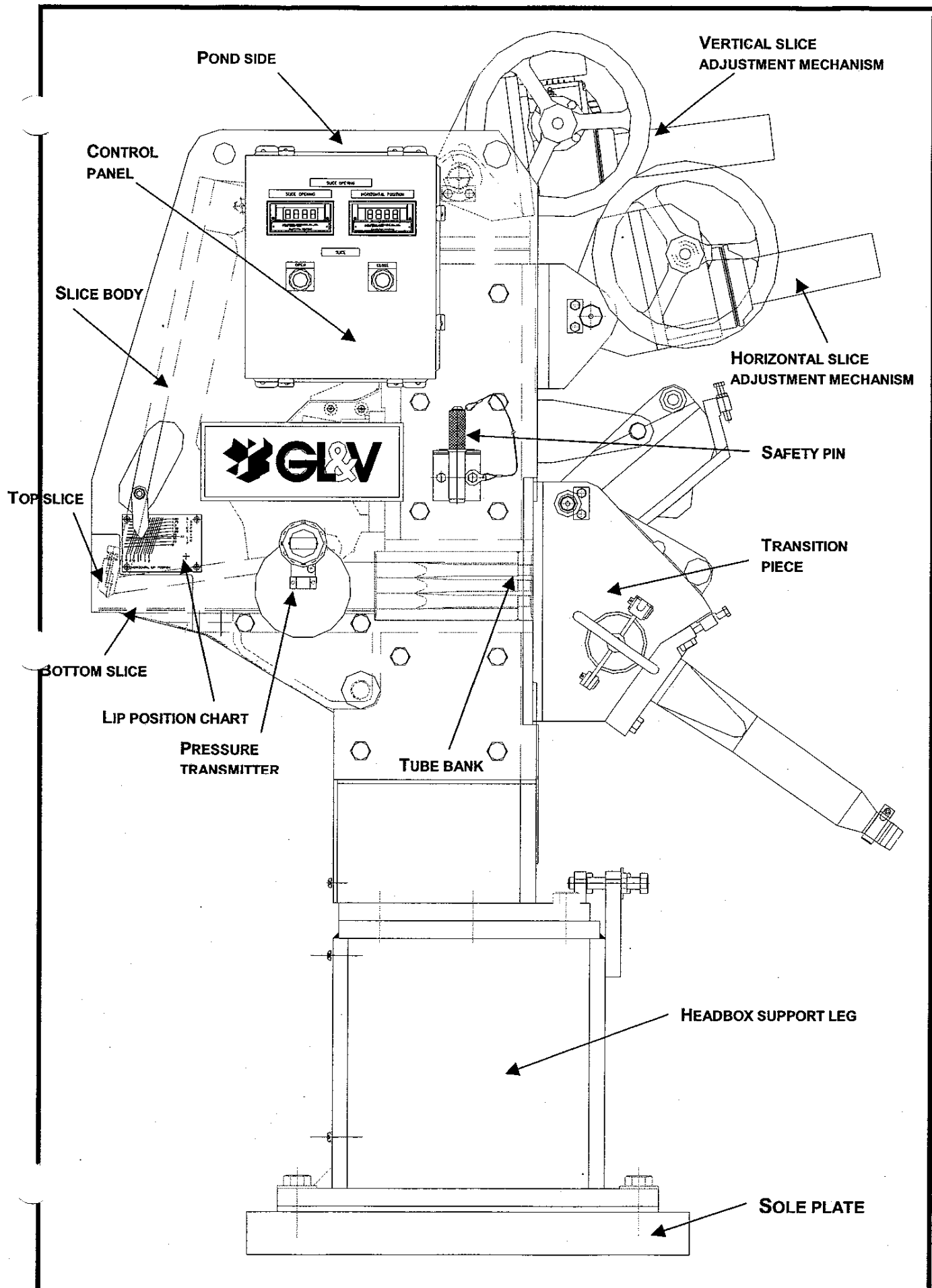
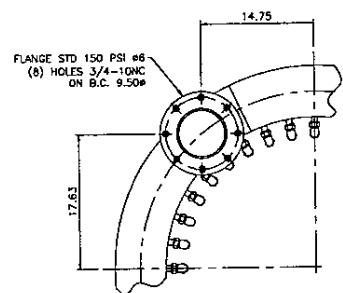
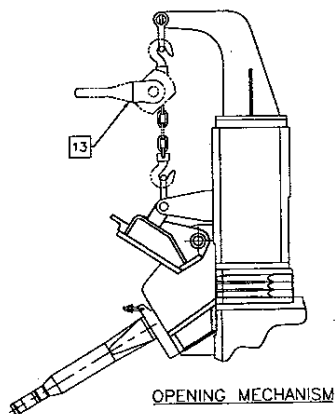


FIGURE 5. BTF HEADBOX MAIN PARTS

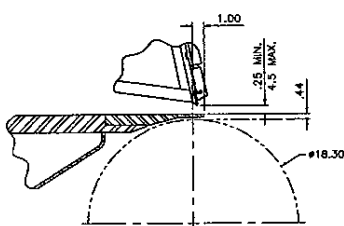
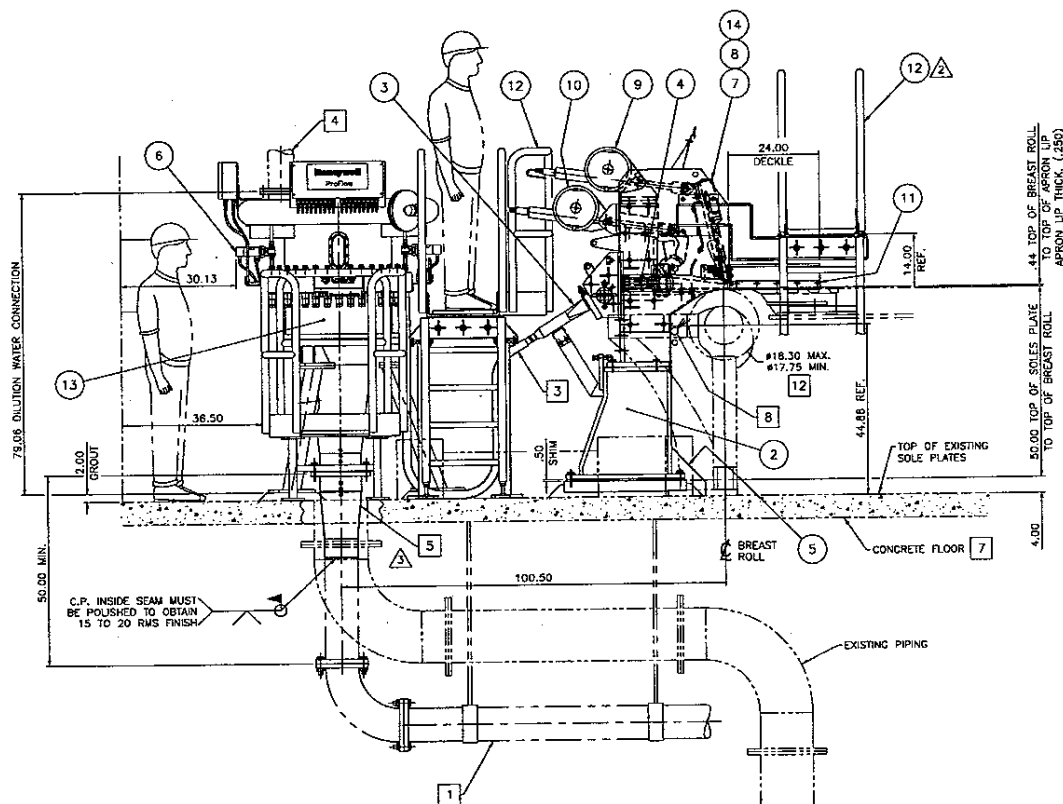
3.2 Leading dimensions

Headbox height:	:	88"
Headbox width (CD):	:	120"
Headbox width (MD):	:	55"
Slice width:	:	105.31"
Distribution hoses diameter	:	1.5" (38 mm, I.D.)
Number of distribution hoses	:	36
Maximum temperature:	:	140 °F
Maximum pressure:	:	75 psi

LOADS 7		
	STATIC (lbs)	DYNAMIC (lbs)
A	1066	1600
B	1066	1600
C	1066	1600
D	7000	10500
E	7000	10500



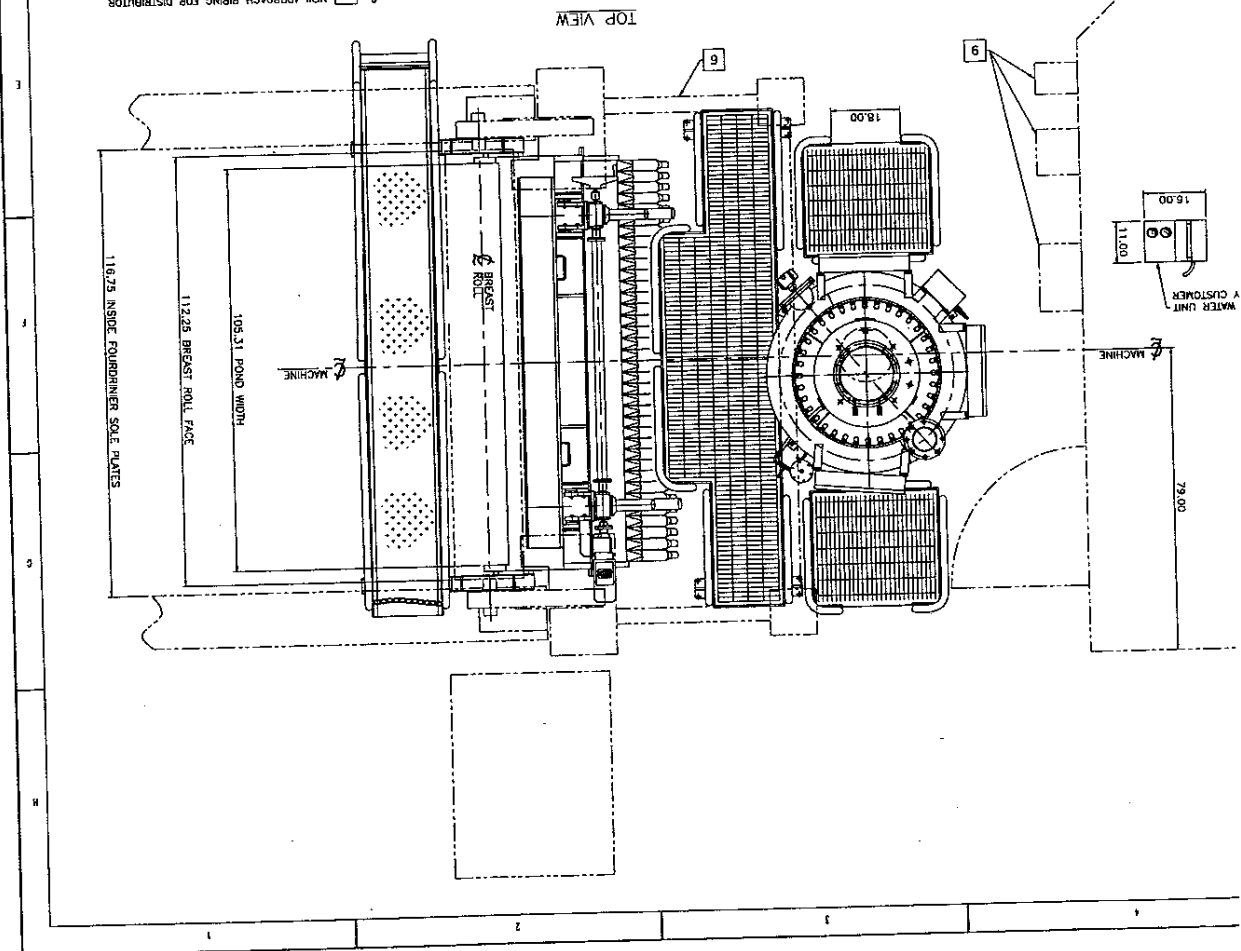
DILUTION WATER CONNECTION



APRON LIP POSITION
SCALE=1:5

TENDING SIDE VIEW

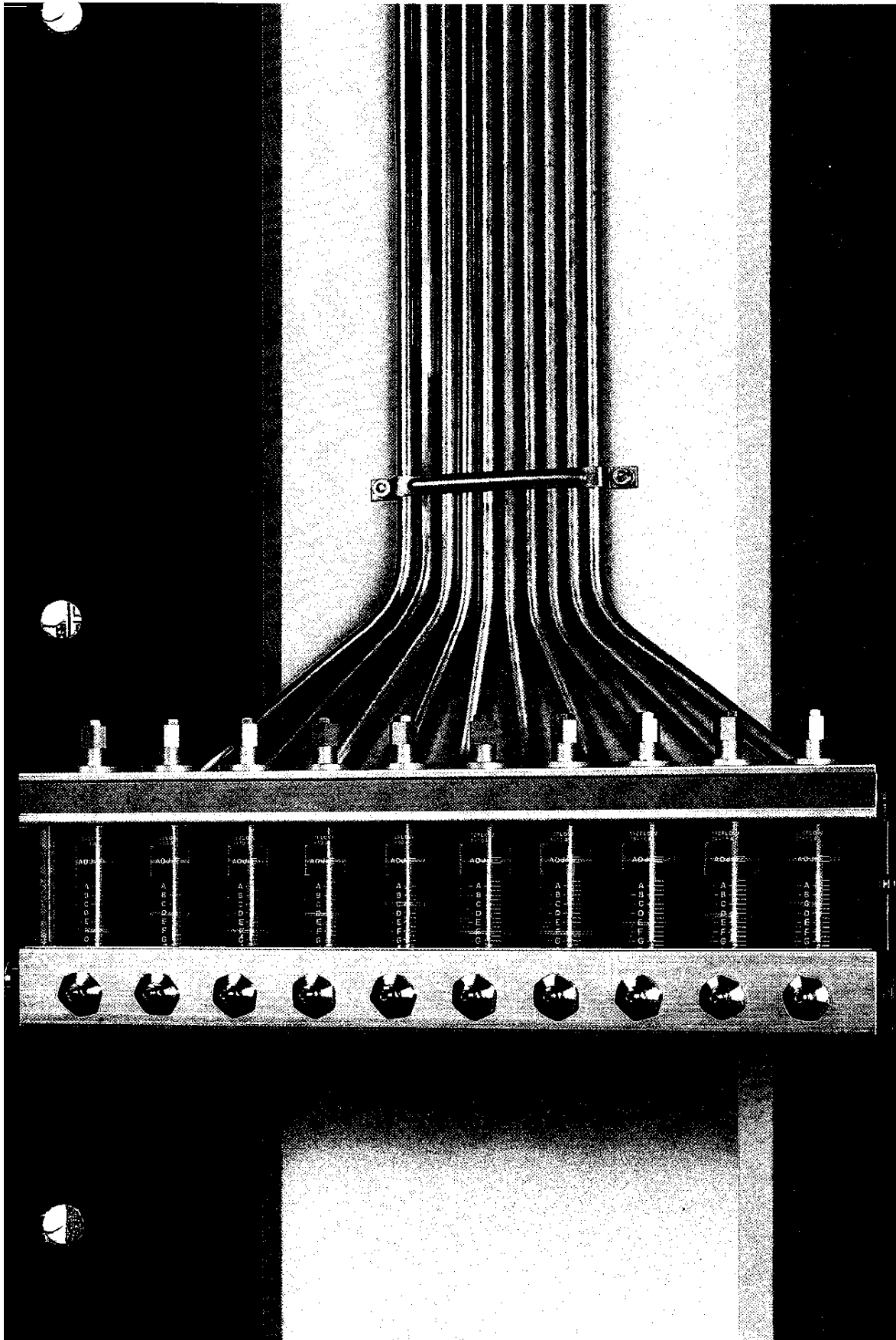
ELECTRIC HOT
TO BE LOCATED BY



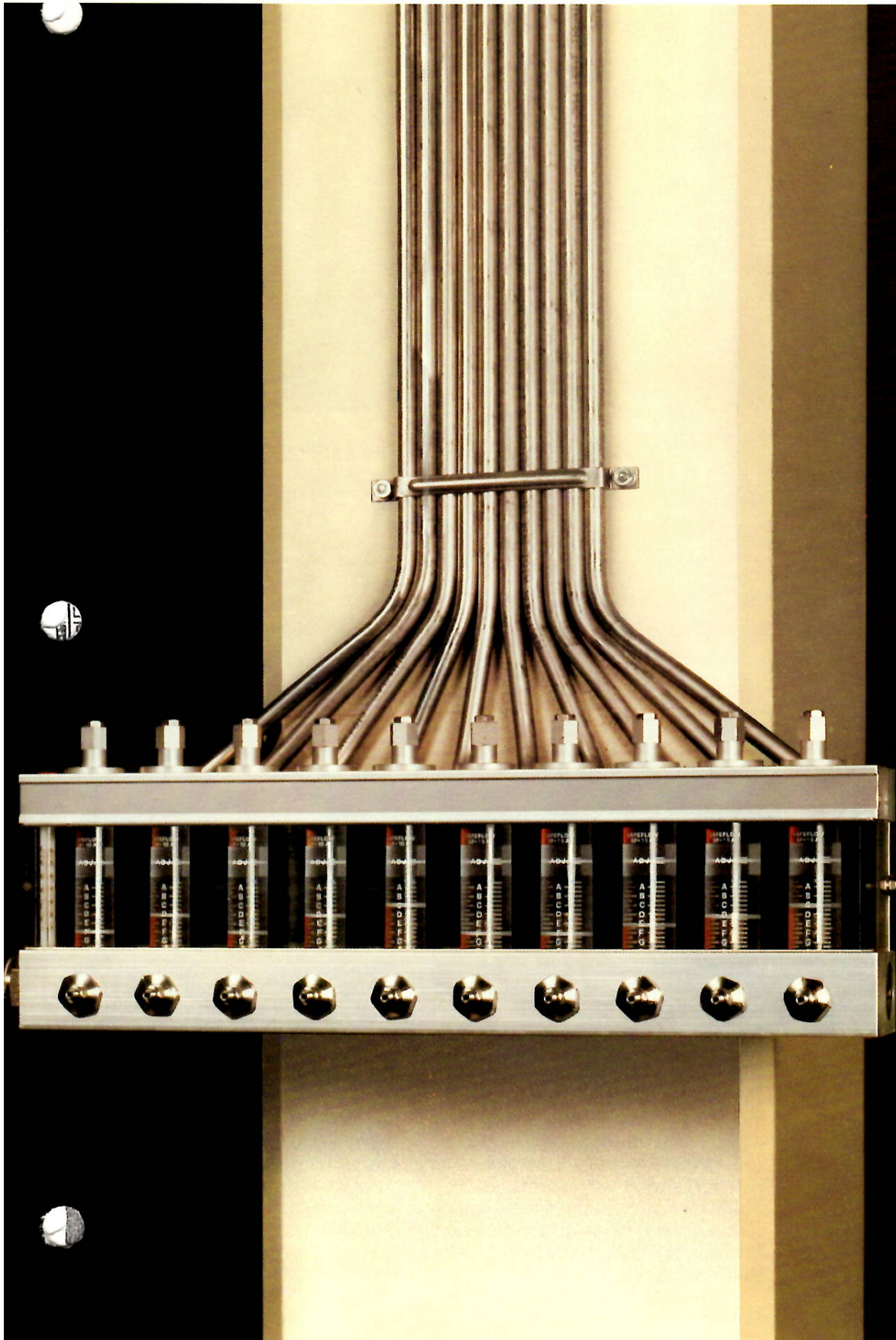
SUCTION ROLL SPECIFICATIONS

Customer <u>FLAMBEAU PAPER CORP.</u>		LG Serial SR- <u>271</u>	
Location <u>PARK FALLS WI</u>		LG S.O. # <u>42213</u>	
Roll O.D. <u>30"</u> Drilled Face <u>109"</u>		Cust. P.O. # <u>87003062</u>	
Roll Type: Press ☐ Drum ☐ Couch ☒ Pickup ☐ Felt ☐ Other _____			
Shell O.D. <u>30"</u> I.D. <u>27 1/2"</u> Length <u>121"</u> Thickness <u>1 1/4"</u> Material: 1-N Bronze ☒ Other _____			
Rubber Cover Thickness _____ O.D. _____ I.D. _____ Length _____ <u>NONE</u> P & J _____ Ends Dubbed? _____ Rubber Type _____			
Trunnion I.D. <u>10 1/2"</u> Capacity Range <u>3000</u> to <u>4500</u> CFM Vacuum <u>20</u> In. Hg Connection at: Front ☒ Rear ☐			
Bearings		Front <u>23072K</u> Stand off <u>9 1/2"</u>	Rear <u>23072K</u> Stand off <u>9 1/2"</u>
Internal <u>23036</u> CL Main Brgs. <u>140"</u>			
Suction Box Material: C.S. Welded ☒ S.S. Welded ☐ C.I. ☐ No. Openings: Single ☒ Dual ☐ Other _____ 1st Box Width <u>8"</u> Other _____ 2nd Box Width _____ Other _____			
Deckles Actuation: Hydraulic ☒ Mechanical ☐ Max. Deckled Face <u>109"</u> Min. Deckled Face <u>85"</u>			
Seal Strips Matl: Polyethylene ☒ Lam. Phenolic ☐ Other _____ Std. (Water Lube) ☒ Plain (No Water Lube) ☐ Other _____ Can be pulled ☐ from _____ Cannot be pulled ☒ Load: Air ☒ Spring ☐			
Silencing Strip Yes ☐ No ☒ Load: Air ☐ Spring ☐ Can be pulled ☐ from _____ Cannot be pulled ☐			
Showers Cleaning ☒ uses _____ GPM @ _____ psi Fog ☐ uses _____ GPM @ _____ psi Lo Press ☐ uses _____ GPM @ _____ psi Needle ☐ uses _____ GPM @ _____ psi			
Air Pass Yes ☒ No ☐ <u>INDEPENDENT</u> Stationary ☐			
Pull Block Yes ☒ No ☐ Matl: Al ☒ S.S. ☐ Other _____			
Saveall Pan Yes ☐ No ☒ Matl: S.S. ☐ Other _____			
Rotation (As viewed from front) Clockwise ☒ Counterclockwise ☐			
Roll Weight Total Weight _____ Front Weight _____ Rear Weight _____			
Nip Load: _____ pli		Grind: Straight ☒ Crown _____ in @ _____ °	
BM # <u>4589-100</u> Assy. Dwg. # <u>D-4589-100</u> Installation Dwg. # <u>D-4587-31</u>			
Other Data: <u>UPPER REAR STAND SUPPLIED.</u>			

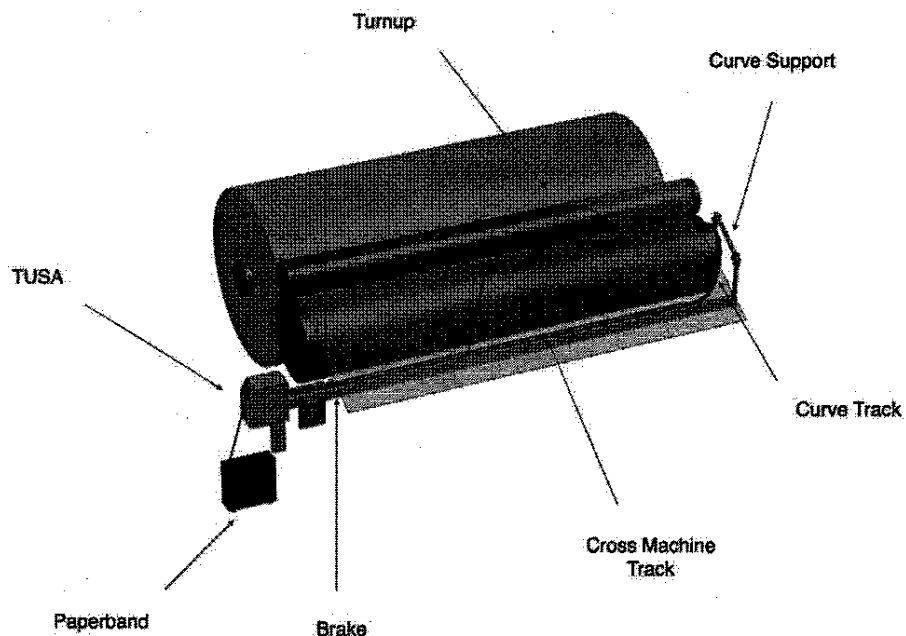
SAFECIRC Recirculating Oil Lubrication System



SAFECIRC Recirculating Oil Lubrication System



Turnup System



- The basic components of all of our systems are the **TUSA** Dispenser, the **Track System** and the **Paperband**.
- Inside the **T1C** Dispenser are the mechanical, pneumatic and control components that move the paperband.
- The **Track** guides the paperband across the machine and into the nip. The **Curve** section at the drive side is held in place with a **Support** arm assembly. This aims the paperband into the **Nip** between the spool and drum.
- The **Brake** on the tending side provides tension on the paperband and is the main control during the turnup.
- **Paperband** is the repulp-able paper ribbon used for the turnup.
- Pressure Sensitive **Adhesive** is applied to the leading edge of the paperband. This adhesive is compressed in the nip and sticks the paperband to the new spool.
- A **Turnup** is a **Cut** and a **Wrap**. The paperband cuts the sheet and wraps it onto the new spool.

NO. 1 PAPER MACHINE
CELLECO CLEANERS
TECHNICAL DATA

STAGE	BANK TYPE	UNITS	CAPACITY GPM/UNIT
PRIMARY	CLEANPAC 350	40	118
SECONDARY	CLEANPAC 350	24	118
TERTIARY	CLEANPAC 350	4	118

PRESSURE TARGETS (PSI)

STAGE	FEED	ACCEPT	REJECT
PRIMARY	37	16	13
SECONDARY	26	5	3
TERTIARY	32	11	3
PRESSURE DROP:	21	PSI	(FEED - ACCEPT)
PRESSURE DIFFERENCE:	3 - 5	PSI	(ACCEPT - REJECT)

CONSISTENCY TARGETS (%)

STAGE FEEDS:	0.50 - 0.90	(INDIVIDUAL STAGE)
STAGE FEED DROP:	0.05 - 0.10	(BETWEEN STAGES)

FLOW RATIO TARGETS (%)

STAGE	ACCEPT	REJECT
PRIMARY	90	10
SECONDARY	90	10
TERTIARY	90	10

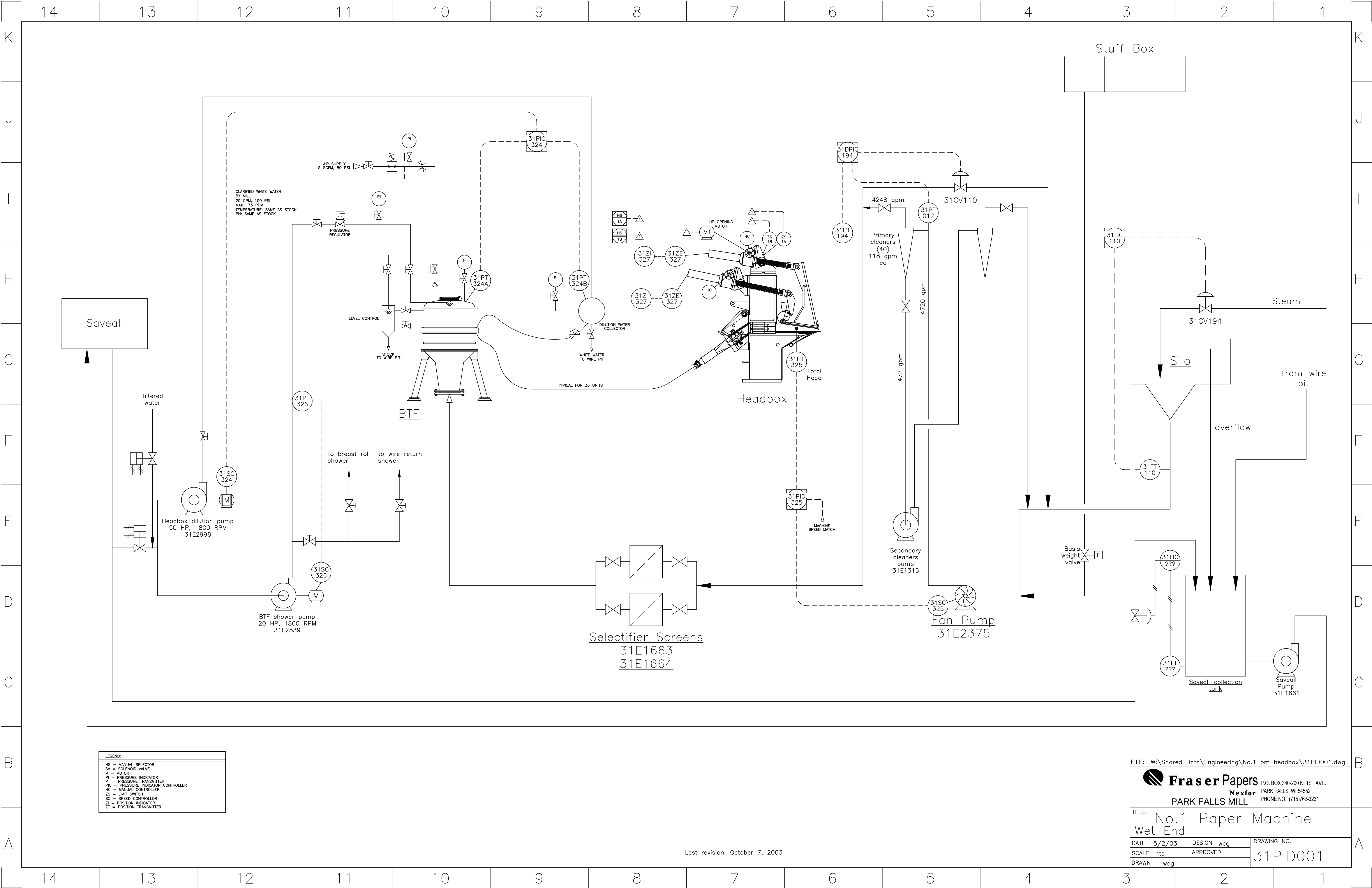
FLOWS TARGETS (GPM)

STAGE	FEED	ACCEPT	REJECT
PRIMARY	4720	4248	472
SECONDARY	2832	2549	283
TERTIARY	472	425	47

NO. 1 PAPER MACHINE
CELLECO CLEANERS
TECHNICAL DATA

FINAL STAGE TARGETS
(REJECT CONTROL UNIT)

UNITS:	1	
TYPE:	R.C.C. UNIT	
	(1HRCC - 4)	
FEED FLOW:	47	GPM
FEED CONSISTENCY:	< 0.50	%
MAXIMUM FIBER CONTENT:	17.0	#/MIN
ACCEPT FLOW RATIO:	96	%
ACCEPT FLOW:	162	GPM
REJECT FLOW RATIO:	4	%
REJECT FLOW:	5	GPM
REJECT CONSISTENCY:	0.40 - 0.80	%
DILUTION WATER PRESSURE:	21	PSI
DILUTION WATER FLOW:	120	GPM



FILE: W:\Shared Data\Engineering\No.1 pm headbox\31PID001.dwg

**Fraser Papers**

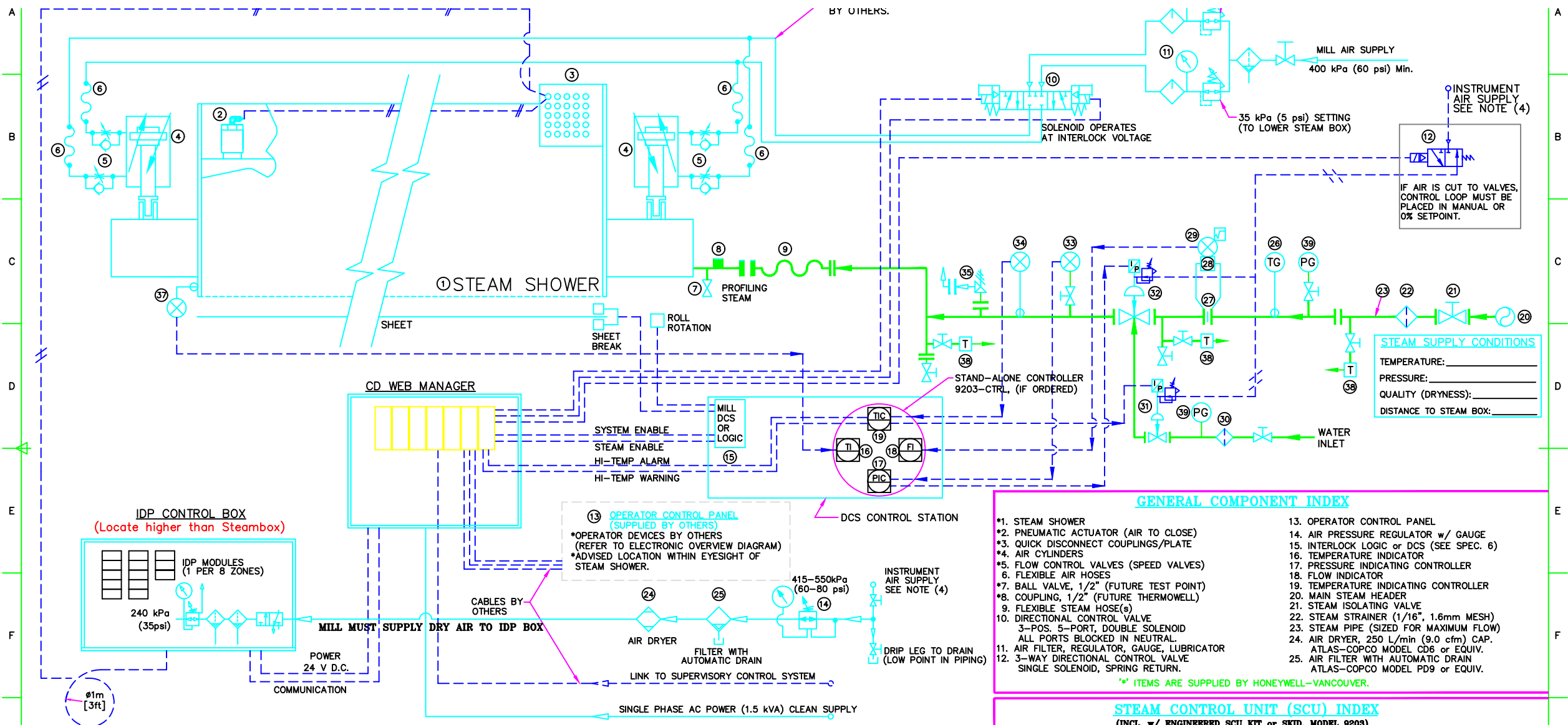
Nexfor

P.O. BOX 340-200 N. 1ST AVE.
PARK FALLS, WI 54552
PHONE NO.: (715)762-3231

TITLE
**No.1 Paper Machine
Wet End**

DATE 5/2/03	DESIGN wcg	DRAWING NO. 31PID001
SCALE nts	APPROVED	
DRAWN wcg		

Last revision: October 7, 2003



SPECIFICATIONS:

1. STEAM PRESSURE AT STEAM BOX INLET: 7–80 kPa (1–12 psi)
NORMAL OPERATING STEAM PRESSURE: 14–55 kPa (2–8 psi)
MAXIMUM PRESSURE CONTROL SETTING: 80 kPa (12 psi)
2. DATA FOR PRESSURE RELIEF VALVE (ITEM #35) SIZING:
SET PRESSURE TO 103 kPa (15 psi), 10% OVERPRESSURE,
CAPACITY GREATER THAN CAPACITY OF WIDE OPEN SCV
(ITEM 32) @ 103kPa (15psi) DOWNSTREAM PRESSURE.
ASME B31.1, SECTION VIII OR EQUIV. COMPLIANT.
3. PROFILING STEAM FLOW (Based on Maximum Production Rate):

4. STEAM TEMPERATURE TO BE CONTROLLABLE BETWEEN
125°C & 140°C (260–290°F)
– TYPICAL OPERATING TEMPERATURE 132°C (270°F).
– STEAM HI-TEMPERATURE WARNING AT 140°C
(VISIBLE IN CONTROL ROOM)
– STEAM HI-TEMPERATURE INTERLOCK/ALARM AT 150°C,
REDUCE STEAM PRESSURE UNTIL TEMPERATURE < 140°C
5. SIZE OF FLEXIBLE HOSE (PROFILING STEAM) ITEM #9: *nom. #4"*
6. DESCRIPTION OF INTERLOCKS (BY OTHERS) :

GENERAL COMPONENT INDEX

- | | |
|--|--|
| *1. STEAM SHOWER | 13. OPERATOR CONTROL PANEL |
| *2. PNEUMATIC ACTUATOR (AIR TO CLOSE) | 14. AIR PRESSURE REGULATOR w/ GAUGE |
| *3. QUICK DISCONNECT COUPLINGS/PLATE | 15. INTERLOCK LOGIC or DCS (SEE SPEC. 6) |
| *4. AIR CYLINDERS | 16. TEMPERATURE INDICATOR |
| *5. FLOW CONTROL VALVES (SPEED VALVES) | 17. PRESSURE INDICATING CONTROLLER |
| *6. FLEXIBLE AIR HOSES | 18. FLOW INDICATOR |
| *7. BALL VALVE, 1/2" (FUTURE TEST POINT) | 19. TEMPERATURE INDICATING CONTROLLER |
| *8. COUPLING, 1/2" (FUTURE THERMOWELL) | 20. MAIN STEAM HEADER |
| *9. FLEXIBLE STEAM HOSE(s) | 21. STEAM ISOLATING VALVE |
| 10. DIRECTIONAL CONTROL VALVE | 22. STEAM STRAINER (1/16", 1.6mm MESH) |
| 3-POS. 5-PORT, DOUBLE SOLENOID | 23. STEAM PIPE (SIZED FOR MAXIMUM FLOW) |
| ALL PORTS BLOCKED IN NEUTRAL. | 24. AIR DRYER, 250 L/min (9.0 cfm) CAP. |
| 11. AIR FILTER, REGULATOR, GAUGE, LUBRICATOR | ATLAS-COPCO MODEL CD6 or EQUIV. |
| 12. 3-WAY DIRECTIONAL CONTROL VALVE | 25. AIR FILTER WITH AUTOMATIC DRAIN |
| SINGLE SOLENOID, SPRING RETURN. | ATLAS-COPCO MODEL PD9 or EQUIV. |

*# ITEMS ARE SUPPLIED BY HONEYWELL-VANCOUVER.

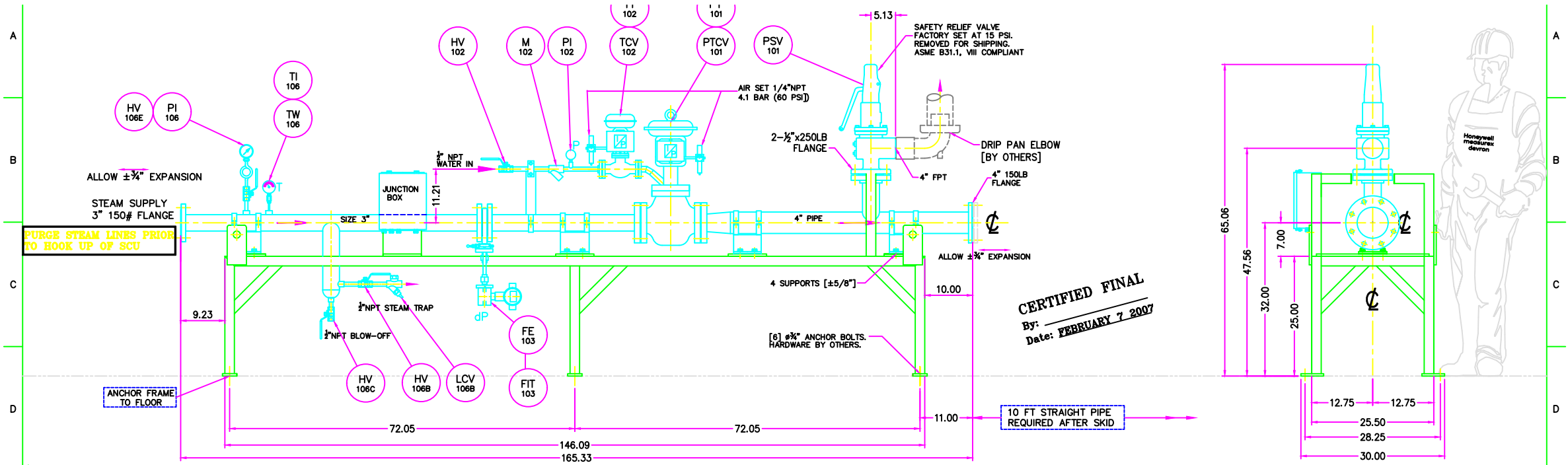
STEAM CONTROL UNIT (SCU) INDEX
(INCL. w/ ENGINEERED SCU KIT or SKID, MODEL 9203)

- | | |
|---|---|
| 26. TEMPERATURE GAUGE (SKID ONLY) | 33. PRESSURE INDICATING TRANSMITTER |
| 27. FLOW ORIFICE PLATE (FLANGES w/ SKID ONLY) | 34. TEMPERATURE INDICATING TRANSMITTER/RTD |
| 28. 3-WAY MANIFOLD VALVE (SKID ONLY) | 35. PRESSURE RELIEF VALVE(s) |
| 29. FLOW INDICATING TRANSMITTER | 36. PRESS. REDUCING REGULATOR (JACKET ONLY) |
| 30. WATER STRAINER | 37. TEMPERATURE TRANSMITTER/RTD |
| 31. TEMPERATURE CONTROL VALVE | 38. STEAM TRAPS (2 SUPPLIED) |
| 32. STEAM CONDITIONING VALVE | 39. PRESSURE GAUGE(s) (SKID ONLY) |

NOTES:

1. This diagram is a schematic representation of a system as recommended by Honeywell, not a working drawing.
2. If a Steam Control Unit is ordered, please refer to the SCU Process & Instrumentation Diagram.

DESIGNER	DATE (YY.MM.DD)	CHECKED	DATE (YY.MM.DD)	ENG. APPROVAL	DATE (YY.MM.DD)
DXIAO	07.01.10				
Honeywell			DEVRONIZER /(35) ZONE SYSTEM EQUIPMENT & FLOW DIAGRAM		

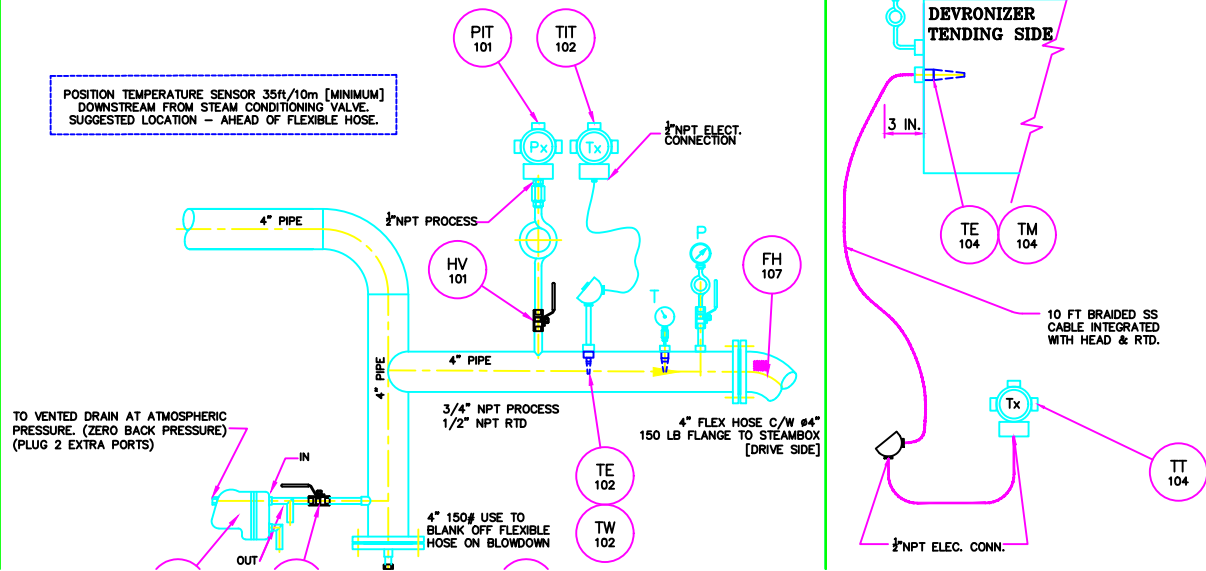


SCOPE OF SUPPLY

TAG No.	COMPONENT DESCRIPTION	SUPPLIER	LB [KG]
PTCV-101	Steam Conditioning Valve	HONEYWELL	235 [110]
PY-101	I to P Positioner	HONEYWELL	-
PSV-101	Safety Pressure Relief Valve	HONEYWELL	107 [49]
D-101	Drip Pan Elbow	By Others	27 [12]
HV-101	Ball Valve	By Others	-
PIT-101	Pressure Indicating Transmitter	HONEYWELL	-
HV-102	Ball Valve	HONEYWELL	-
TY-102	I to P Positioner	HONEYWELL	-
M-102	Water Strainer	HONEYWELL	-
TCV-102	Temperature Control Valve	HONEYWELL	20 [9]
PI-102	Pressure Gauge	HONEYWELL	-
TE-102	Temperature Sensor, RTD	HONEYWELL	-
TW-102	ThermoWell	HONEYWELL	-
TIT-102	Temperature Indicating Transmitter	HONEYWELL	-
FE-103	Differential Press. Flow Measurement	HONEYWELL	-
FIT-103	Differential Pressure Ind. Transmitter	HONEYWELL	-
TE-104	Temperature Sensor, RTD	HONEYWELL	-
TM-104	1/2\" Coupling	HONEYWELL	-
TT-104	Temperature Indicating Transmitter	HONEYWELL	-
LCV-106B	Steam Trap, ThermoStatic	HONEYWELL	-
HV-106B	Ball Valve	HONEYWELL	-
HV-106C	Ball Valve	HONEYWELL	-
TW-106	ThermoWell	HONEYWELL	-
TI-106	Bi-Metal Thermometer	HONEYWELL	-
HV-106E	Ball Valve	HONEYWELL	-
PI-106	Pressure Gauge	HONEYWELL	-
LCV-107	Steam Trap, Float	HONEYWELL	-
FH-107	Flexible Hose	By Others	-
HV-107A	Ball Valve	By Others	-
HV-107B	Ball Valve	By Others	-
PI-107	Pressure Gauge	HONEYWELL	-

STEAM PIPING TO DEVRONIZER

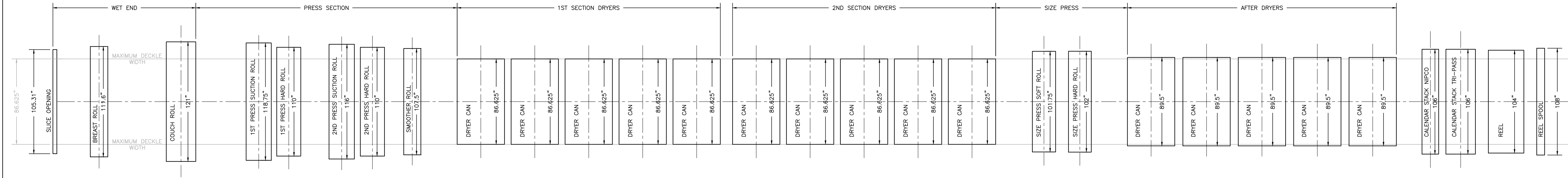
PIPING & ASSEMBLY BY CUSTOMER



NOTES:

- 1) This diagram represents a typical functional assembly drawing of the Steam Control Unit. It is intended to facilitate in planning the layout of the key components that are supplied. It details:
 - Typical pipe lengths and relative part positions
 - Flange types and ratings
 - Face to face and overall parts dimensions
- 2) The detailed piping engineering and design is the responsibility of the mill or the local company doing the piping and installation. The local contractor or customer is to ensure the:
 - Meeting of ASME or equivalent TUV standards & any applicable regulatory & local code requirements
 - Detailed pipe lengths & connections to headers, drains, etc.
 - Location of sufficient steam traps at low points, etc.
 - Mounting and supporting of piping and components
 - Insulating of pipes & components for safety & to minimize condensation
- 3) General installation and meeting of all relevant mill requirements
- 3) Maximum operating steam pressure out of skid is 800 mBar [12 PSI].
- 4) Steam & pressure piping materials and construction to comply with ASME B31.1 Sec. VIII or equivalent TUV standards.
- 5) All insulation to be supplied by others.
- 6) All Bar pressures are gauge pressures.
- 7) Weight = 900 LB/400 KG
- 8) Frame color: paint carboline epoxy coated S150 royal blue or equivalent.
- 9) **PURGE STEAM LINES PRIOR TO HOOK UP OF SCU.**

01	CERTIFIED FINAL DWG			SC	07.02.07	SC
REV	REVISION DESCRIPTION				BY	DATE
DESIGNER	DATE (YY.MM.DD)	CHECKED	DATE (YY.MM.DD)	ENG. APPROVAL	DATE (YY.MM.DD)	APPV
SC	07.01.12					
Honeywell		TITLE				
The information contained herein is proprietary to Honeywell and is not to be reproduced, communicated to a third party, or used in any way without the express written permission of Honeywell International Inc.		STEAM CONTROL UNIT [SCU]				
		MODEL 9203-S6				
		SKID - ASSEMBLY DRAWING				
		PROJECT				
		FLAMBEAU RIVER, PARK FALLS, WI, PM 1				
FINISH	USED ON	WO No.	CO No.	SYS No.		



NOTE:
DECKLE WIDTH COMPUTED
UNDER THE ASSUMPTION
THAT ALL MACHINE ROLL
SHARE THE SAME
CENTERLINE

#1 PAPER MACHINE ROLL WIDTHS
SCALE: 1/4" = 1'-0"

REV.	DESCRIPTION	DATE	APPR.

PRELIMINARY
DESIGN



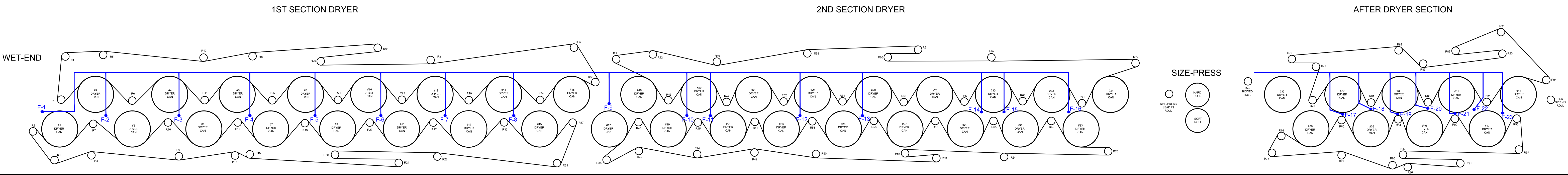
DISCLAIMER:
ALL DIMENSIONS/EXISTING CONDITIONS
SHOWN SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE. THIS
DRAWING IS THE PROPERTY OF FLAMBEAU
RIVER PAPERS, LLC, AND IS NOT TO BE
REPRODUCED OR USED FOR ANY REASON
OTHER THAN THE PURPOSE IT HAS BEEN
EXPRESSLY FURNISHED.

#1 PAPER MACHINE
INDIVIDUAL ROLL WIDTHS

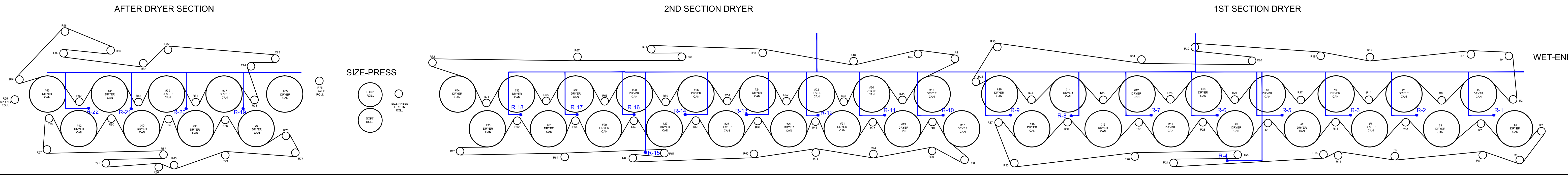
DATE: 5-27-15
DRAWN BY: NLB
DESIGNED BY: NLB
WORK ORDER NO.

DRAWING NO.
M001

#1 PAPER MACHINE FRONT SIDE ROSS AIR DROPS



#1 PAPER MACHINE BACK SIDE ROSS AIR DROPS



DROP NUMBER	1" 4	5" 16	3" 8	2" 16	5" 16	1" 2	5" 8
F-1	X						
F-2	X						
F-3	X						
F-4						X	
F-5	X						
F-6						X	
F-7							
F-8	X		X				
F-9					X		
F-10					X		
F-11		X					
F-12				X			
F-13				X			
F-14				X			
F-15			X				
F-16				X			
F-17		X					
F-18		X					
F-19				X			
F-20		X					
F-21		X					
F-22							
F-23	X		X				

REAR SIDE	1" 4	5" 16	3" 8	2" 16	5" 16	1" 2	5" 8
R-1			X				
R-2				X			
R-3					X		
R-4					X		
R-5			X				
R-6				X			
R-7		X					
R-8				X			
R-9			X				
R-10			X				
R-11			X				
R-12				X			
R-13							X
R-14			X				
R-15		X					
R-16				X			
R-17						X	
R-18			X				
R-19		X					
R-20			X				
R-21					X		
R-22						X	

REV.	DESCRIPTION	DATE	APPR.



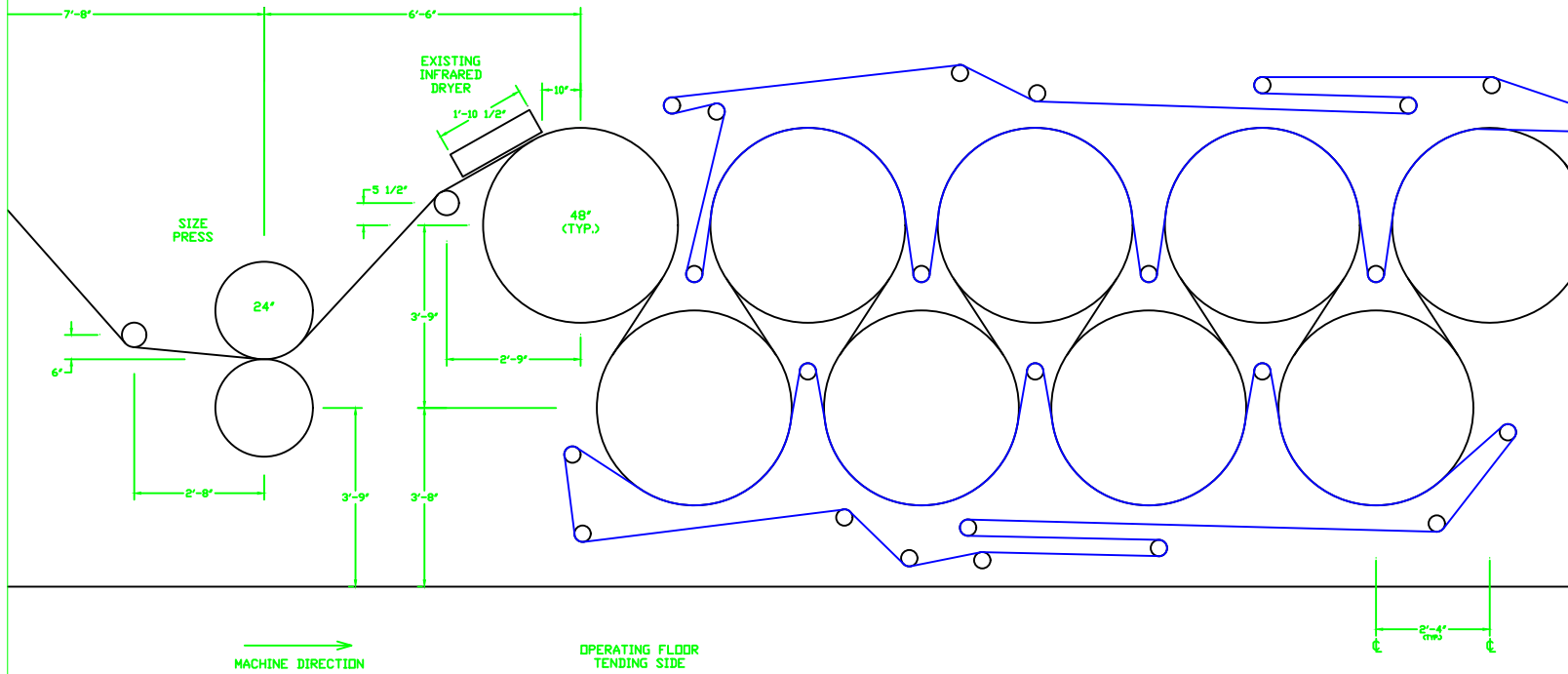
DISCLAIMER:
ALL DIMENSIONS/EXISTING CONDITIONS
SHOWN SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE. THIS
DRAWING IS THE PROPERTY OF FLAMBEAU
RIVER PAPERS, LLC, AND IS NOT TO BE
REPRODUCED OR USED FOR ANY REASON
OTHER THAN THE PURPOSE IT HAS BEEN
EXPRESSLY FURNISHED.

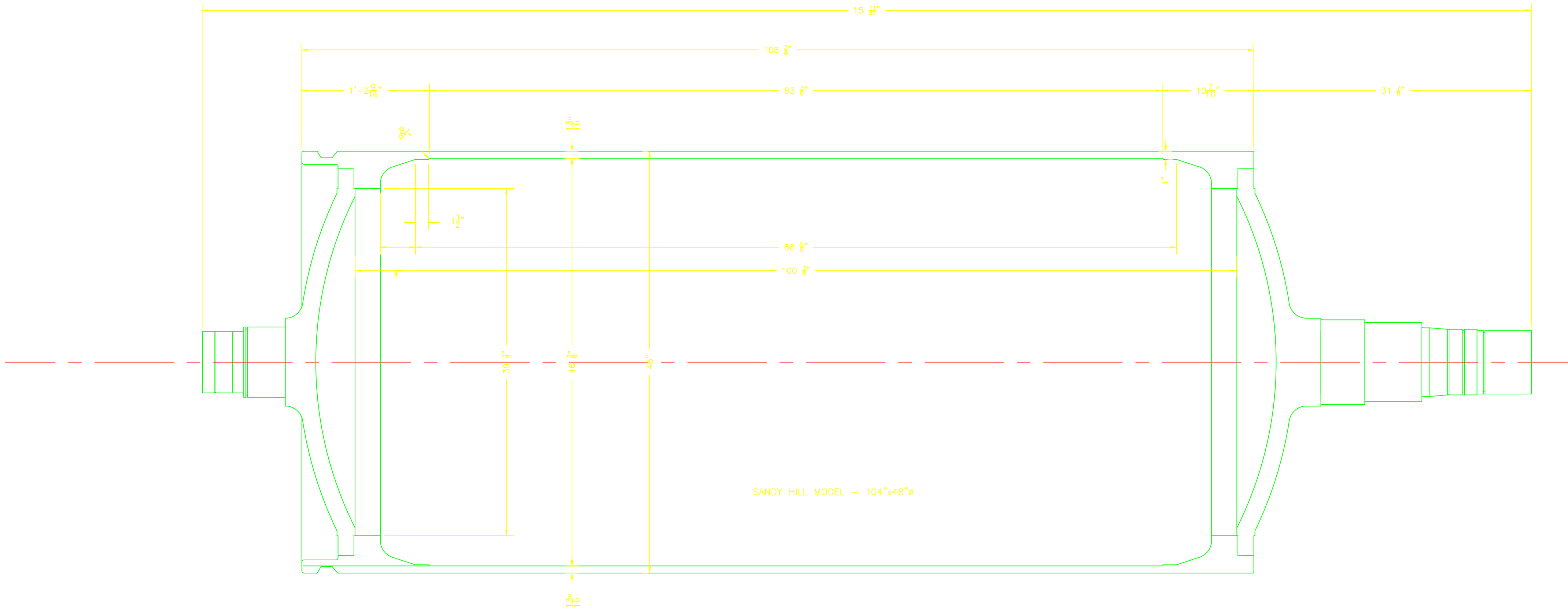
#1 PAPER MACHINE
ROSS AIR SYSTEM SCHEMATIC
CURRENT 3-3-16

DATE: 3-2-16
DRAWN BY: NLB
DESIGNED BY: NLB
WORK ORDER NO. _____

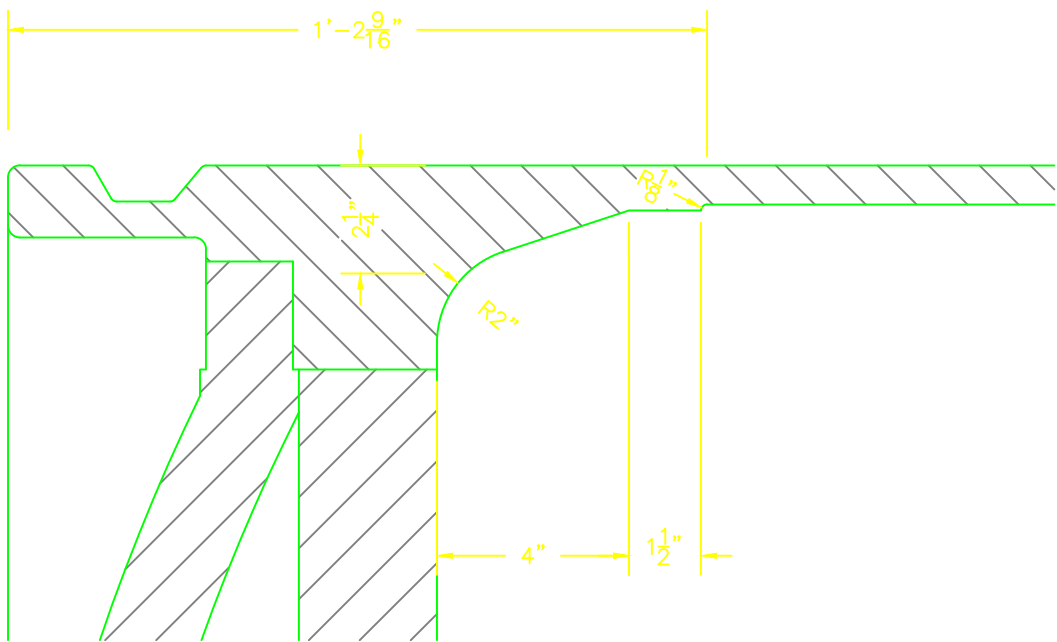
DRAWING NO.
P001

NO. 1 PAPER MACHINE AFTER DRYER SECTION





PAPER MACHINE #1 DRYER CAN (MINIMUM DECKLE SIZE)
SCALE 1 1/2"=1'-0"



CORNER DETAIL
SCALE 3"=1'-0"

REV.	DESCRIPTION	DATE	APPR.

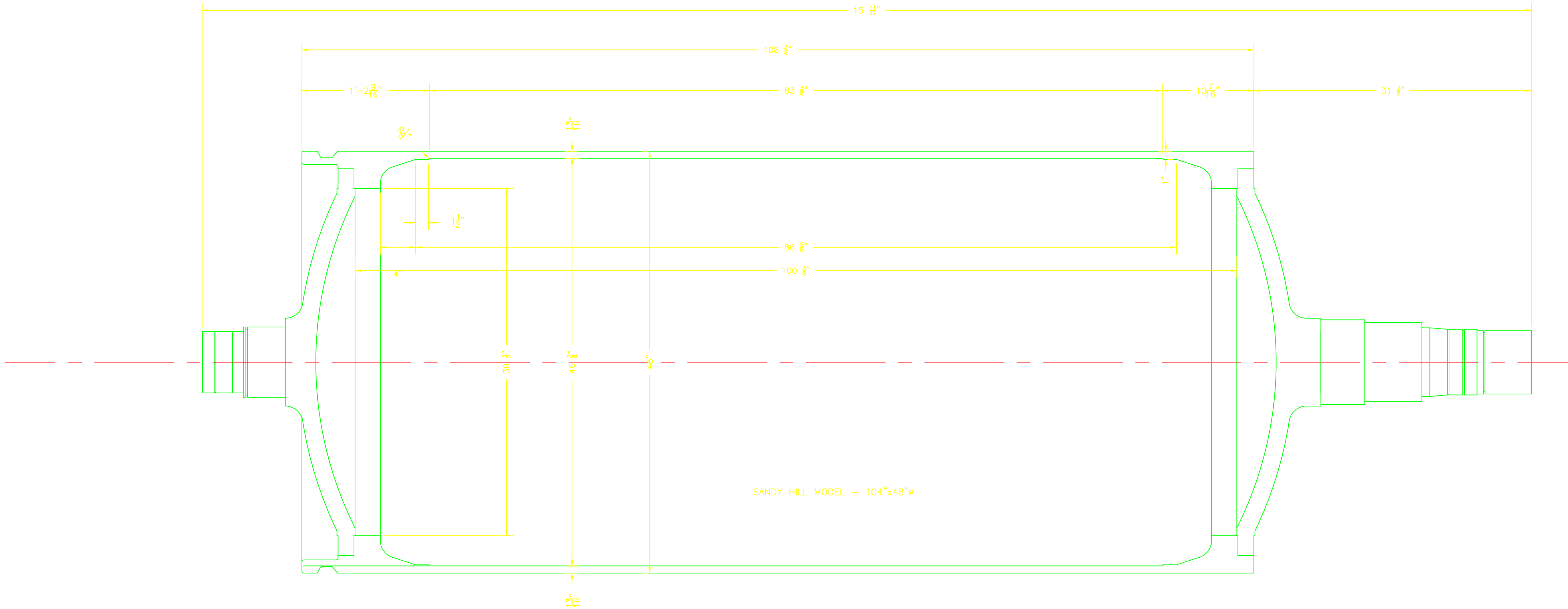


DISCLAIMER:
ALL DIMENSIONS/EXISTING CONDITIONS
SHOWN SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE. THIS
DRAWING IS THE PROPERTY OF FLAMBEAU
RIVER PAPERS, LLC, AND IS NOT TO BE
REPRODUCED OR USED FOR ANY REASON
OTHER THAN THE PURPOSE IT HAS BEEN
EXPRESSLY FURNISHED.

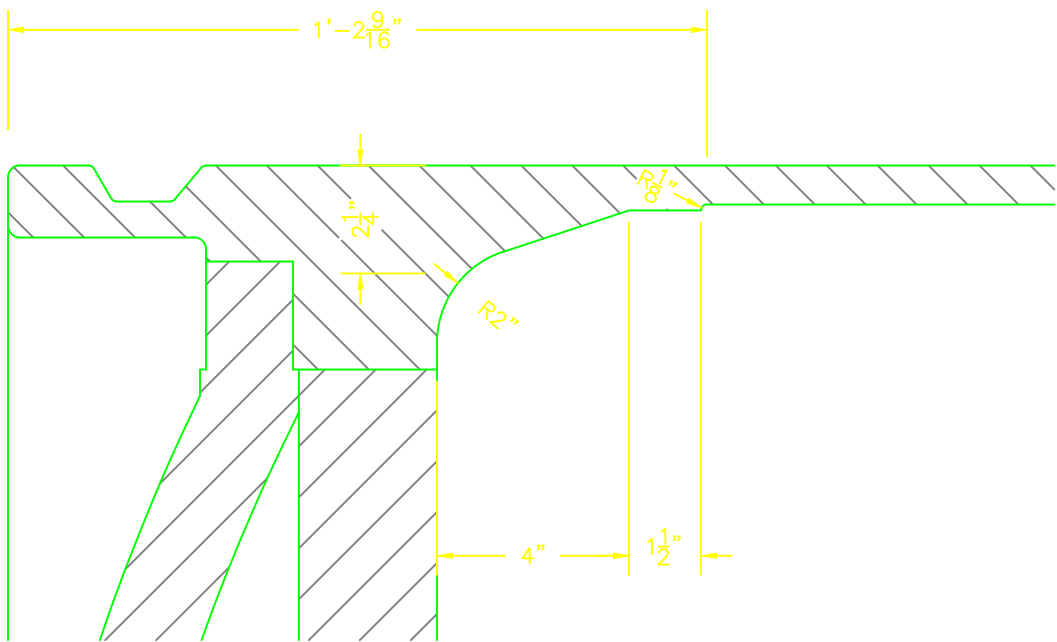
#1 PAPER MACHINE
SANDY HILL MODEL DRYER CAN

DATE: 2-2-16
DRAWN BY: NLB
DESIGNED BY: NLB
WORK ORDER NO.

DRAWING NO.
M001



PAPER MACHINE #1 DRYER CAN (MINIMUM DECKLE SIZE)
SCALE 1 1/2"=1'-0"



CORNER DETAIL
SCALE 3"=1'-0"

REV.	DESCRIPTION	DATE	APPR.



DISCLAIMER:
ALL DIMENSIONS/EXISTING CONDITIONS
SHOWN SHALL BE CHECKED AND VERIFIED
BY THE CONTRACTOR AT THE SITE. THIS
DRAWING IS THE PROPERTY OF FLAMBEAU
RIVER PAPERS, LLC, AND IS NOT TO BE
REPRODUCED OR USED FOR ANY REASON
OTHER THAN THE PURPOSE IT HAS BEEN
EXPRESSLY FURNISHED.

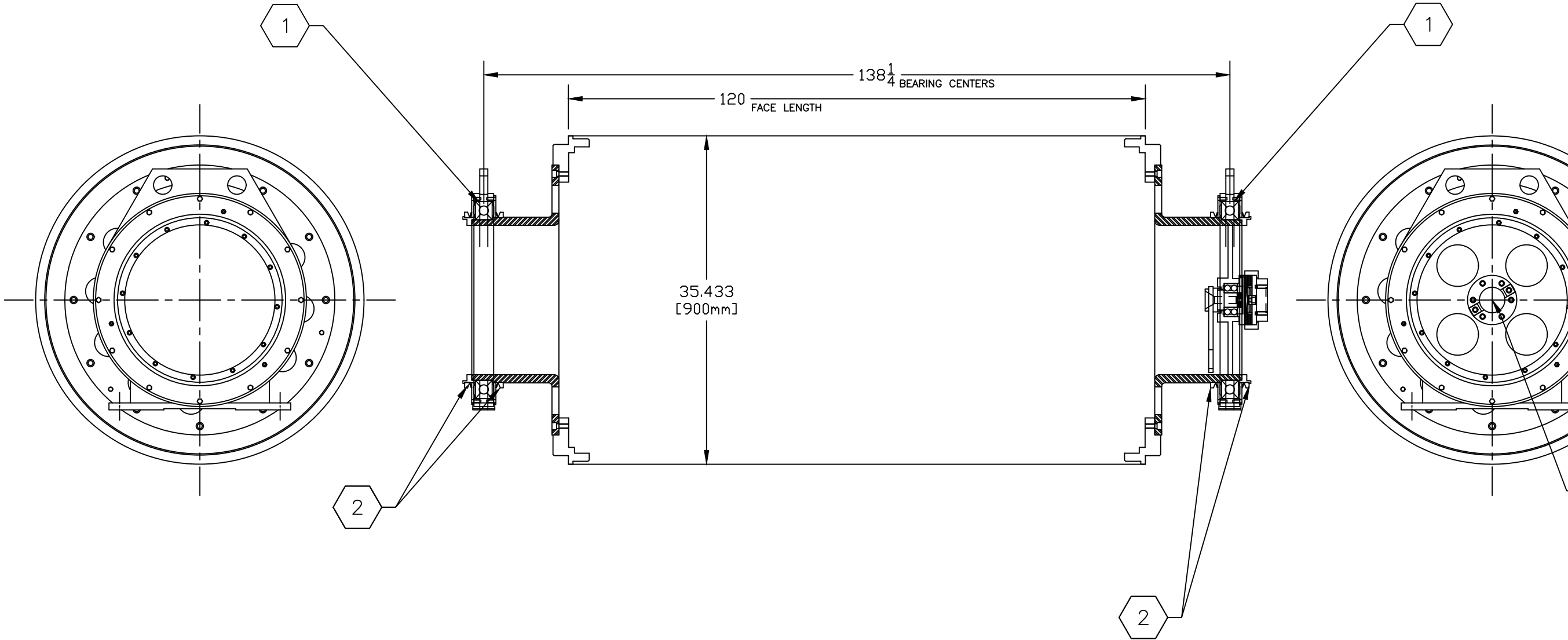
#1 PAPER MACHINE
SANDY HILL MODEL DRYER CAN

DATE: 2-2-16
DRAWN BY: NLB
DESIGNED BY: NLB
WORK ORDER NO. _____

DRAWING NO.
M001

PARTS LIST

ITEM	DESCRIPTION
1	EXTERNAL BEARING SKF #6
2	FORSHEDA V-RINGS NO. 1
3	INTERNAL BEARING SKF #3
4	FORSHEDA V-RING NO. 23



CONFIDENTIAL

THIS GRAPHIC OR ANY OTHER MATERIAL IS THE EXCLUSIVE AND C
THE JOHNSTON DANDY COMPANY INC. AND MUST NOT B
DISTRIBUTED, PUBLISHED OR USED IN ANY OTHER MANNER IN TH
WRITTEN CONSENT OF ANY AUTHORIZED REPRESENTATIVE OF THE

The Johnston Dandy
LINCOLN, MAINE

TITLE 35.433" DIA x 120" FACE DANDY

CUSTOMER FLAMBEAU PARK FALLS, WI

P.O. NUMBER

TOLERANCES

OPEN DIMENSIONS
OPEN DIMENSIONS
OPEN DIMENSIONS
ANGULAR DIMENSIO

MACHINE

PM1

MATERIAL

NOTED

NOTE

ALL DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED

DRAWING

09-

