7. FIRST WASHING (VARIO SPLIT NO. 1)

7.1 Application

The Vario Split is used in the treatment of secondary fiber in the paper industry. The primary objective is washing low consistency stock, i.e., the removal of fine particles such as ash, inactive fines and small particles of ink. The removal efficiency of ash and fines can be varied and controlled with the Vario Split. In addition the Vario Split thickens the low consistency stock to 8-10%.

The Vario Split together with the water clarification plant enables mill personnel to control the fines build up in the system and therefore with monitoring, good fines management can be maintained. This enables the production crew to produce repeatable conditions in the system, improving operating stability.

7.2 Operation

Low consistency stock is fed to the Vario Split headbox and is directed between the center roll and the rotating wire. The inlet pressure is monitored. Due to the sudden impact of pressure caused by the wire against the center roll and the high centrifugal forces created by the high rotating speed of the active roll, the stock is dewatered. The water together with the fine particles pass through the wire.

Fibers form a thin sheet on the center roll which is scraped off by a oscillating doctor blade. The oscillation of the doctor is interlocked with the main drive. The stock is discharged into Vario Split No. 1 stock chest.

The wire is cleaned with a medium pressure spray pipe followed by an oscillating high pressure spray pipe. These showers are interlocked with the main drive via interlocked on-off valves.

The wash water is collected and then deaerated in the Vario Split No. 1 air separator and gravity fed to Vario Split No. 1 filtrate chest for further treatment in the Purgomat clarifier.

The wire is protected against run out by interlocking the wire run out switches with the main drive. The wire tension pressure switch is also interlocked with the main drive.

7.3 Starting Sequence of the Group

This is the most complex group in the system. The starting sequence includes fine screening, preflotation, cleaning and water clarification No. 1:

- Start of water supply pumps and compressor system
- Start of water clarification No. 1 group
- Start of Vario No. 1.
- Start of reverse cleaner system } in fast sequence
- Start of forward cleaner system }
- Start of preflotation system }
- Start of fine screen system

Stock is fed to the system by the primary fine screen pump. System can be run with water and roughly stabilized before stock is turned on. During short interruptions system continues running with water and only the stock pump is stopped.

Automatic Group Start

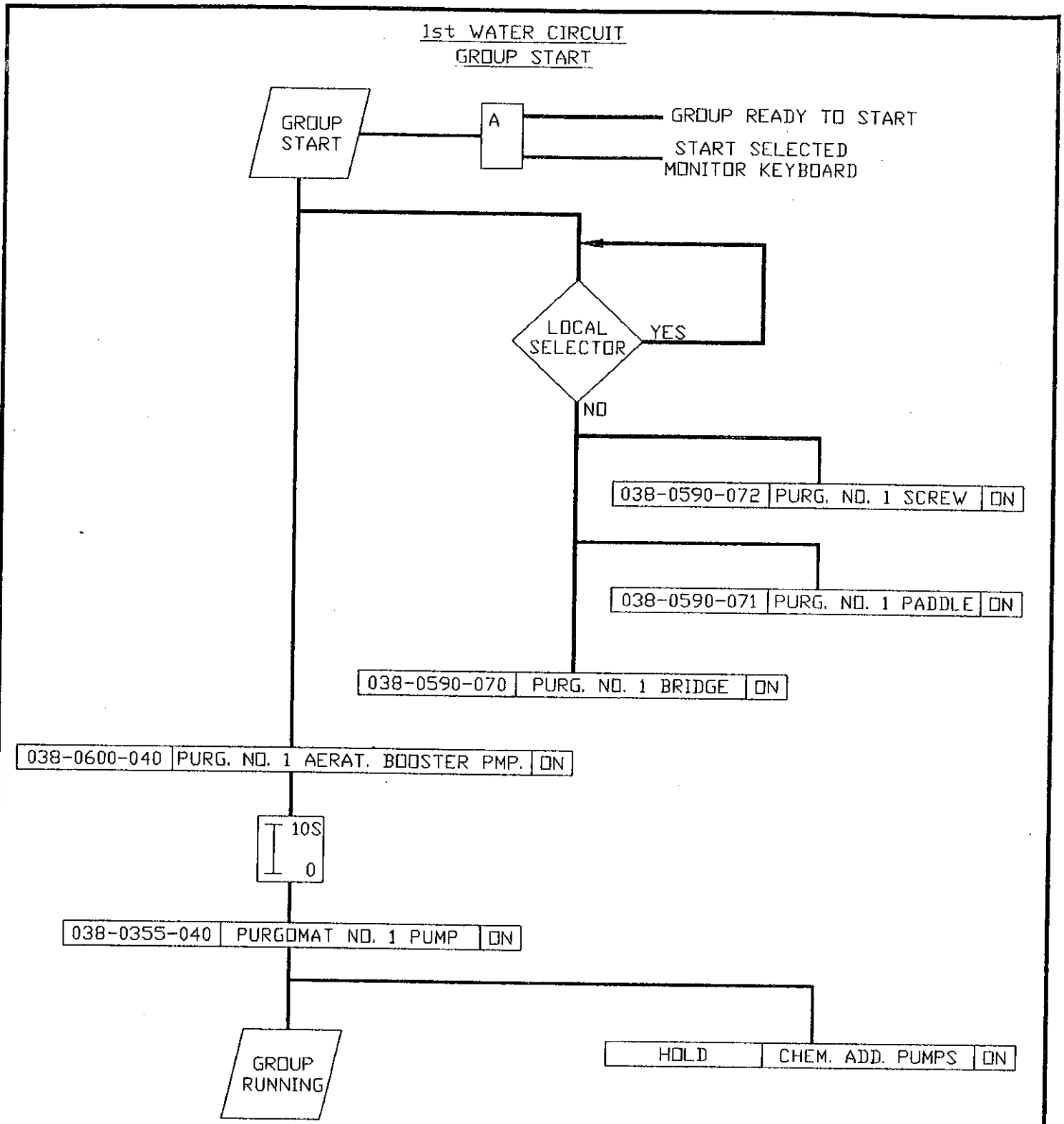
Precondition: Fill Vario No. 1 filtrate chest and clear water No. 1 chest with water (110°-120°) via filling the pulper water chest. Fill Purgomat No. 1.

- Purgomat No. 1 bridge drive, paddle drive and screw drive are ready to start
- Purgomat No. 1 pump is ready to start and speed controller is set to setpoint

- Purgomat No. 1 aeration booster pump is ready to start
- Process air pressure is available
- All drive blocks are in auto
- Vario No. 1 drive ready to start
- All pumps in cleaning and preflotation are ready to start
- All fine screens and pumps in this area are ready to start

If all these functions are available, group ready signal will be displayed.

Find attached start and stop sequences.



1/29/93	CERTIFIED	AC	0
12/21/92	PRELIMINARY	AC	A
DATE	REVISION	NAME	REV

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

CLIENT DWG NO. 500-459

BEW DWG NO. TPI1-917-00510

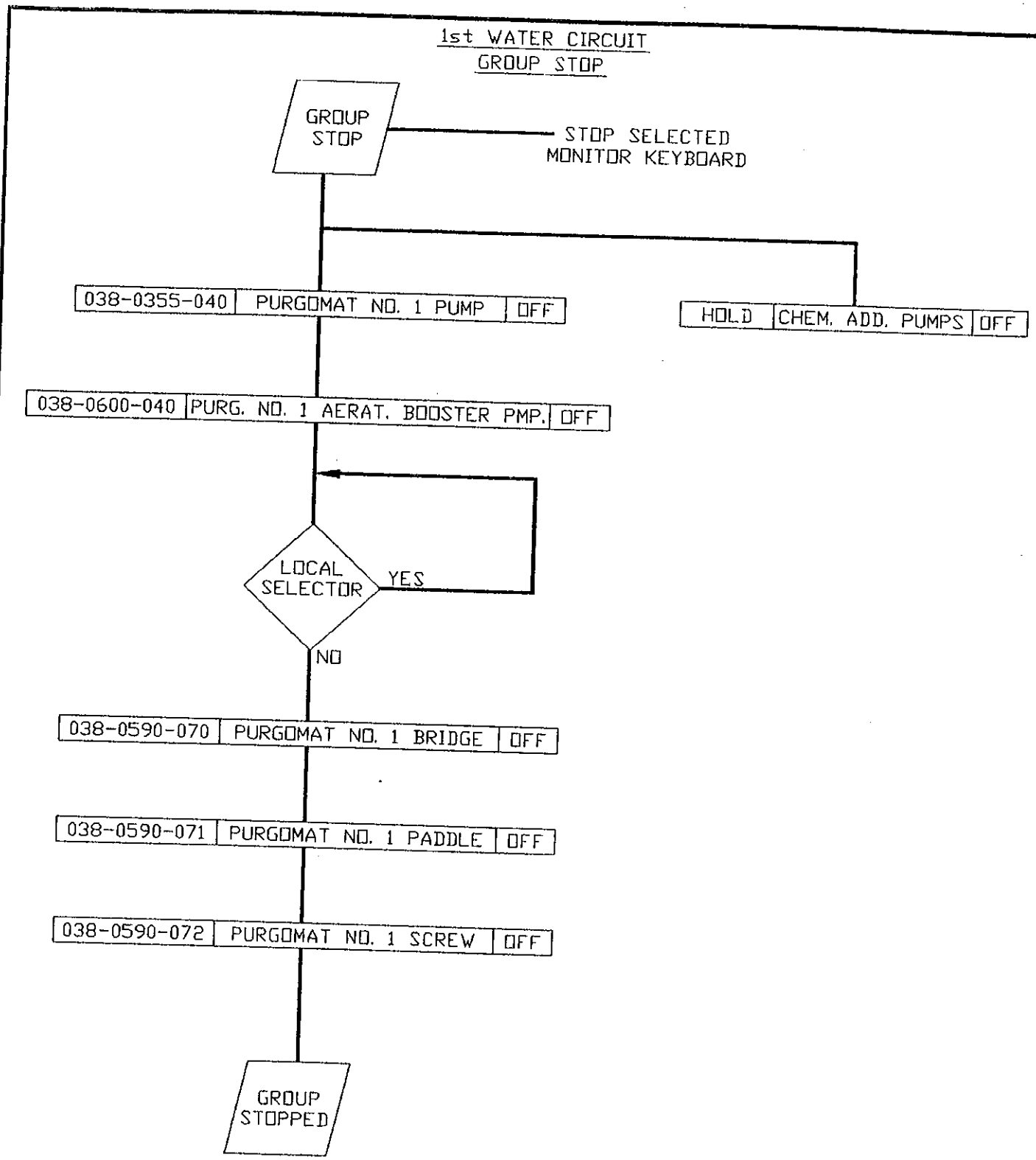
SCALE : NONE
SHEET 1 OF 1
DRAWN BY AC

TITLE: 1st WATER CIRCUIT START/STOP DIAGRAM

CHECKED KC
DATE 12/15/92

BIRD ESCHER WYSS INC.
MANSFIELD, MA

- CAD DRAWING -



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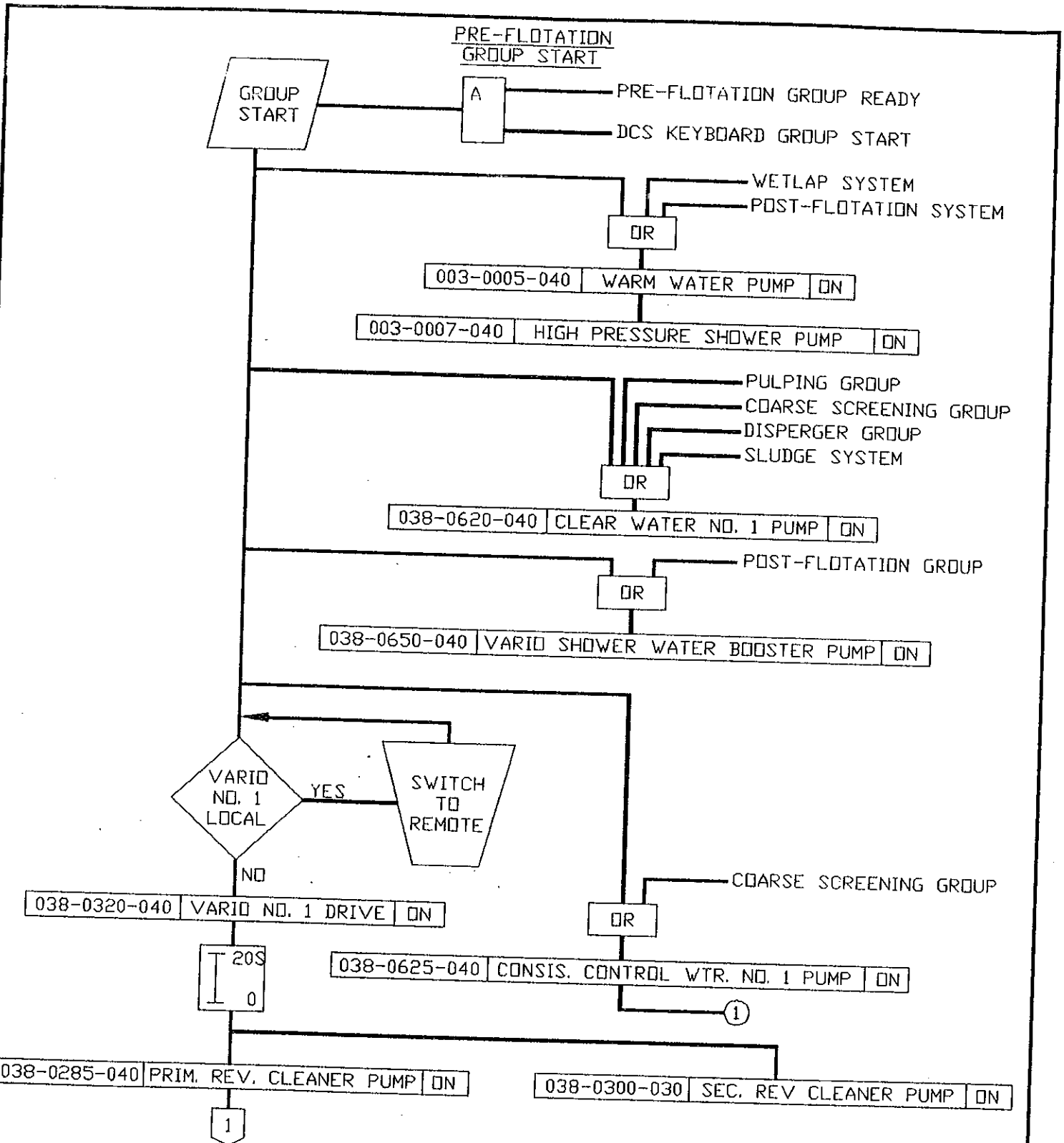
12/21/92	PRELIMINARY	AC	A	
DATE	REVISION	NAME	REV	CLIENT DWG NO. 500-458
SCALE : NONE	TITLE: 1st WATER CIRCUIT START/STOP DIAGRAM			BEW DWG NO. TPI1-917-00500
SHEET 1 OF 1				BIRD ESCHER WYSS INC. MANSFIELD, MA
DRAWN BY AC	CHECKED KC	DATE 12/15/92		- CAD DRAWING -



DATE	REVISION	NAME	REV
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1/29/93	CERTIFIED	AC	0
12/21/92	PRELIMINARY	AC	A

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

CLIENT DWG NO. 500-452

BEW DWG NO. TPI1-917-00440

SCALE : NONE

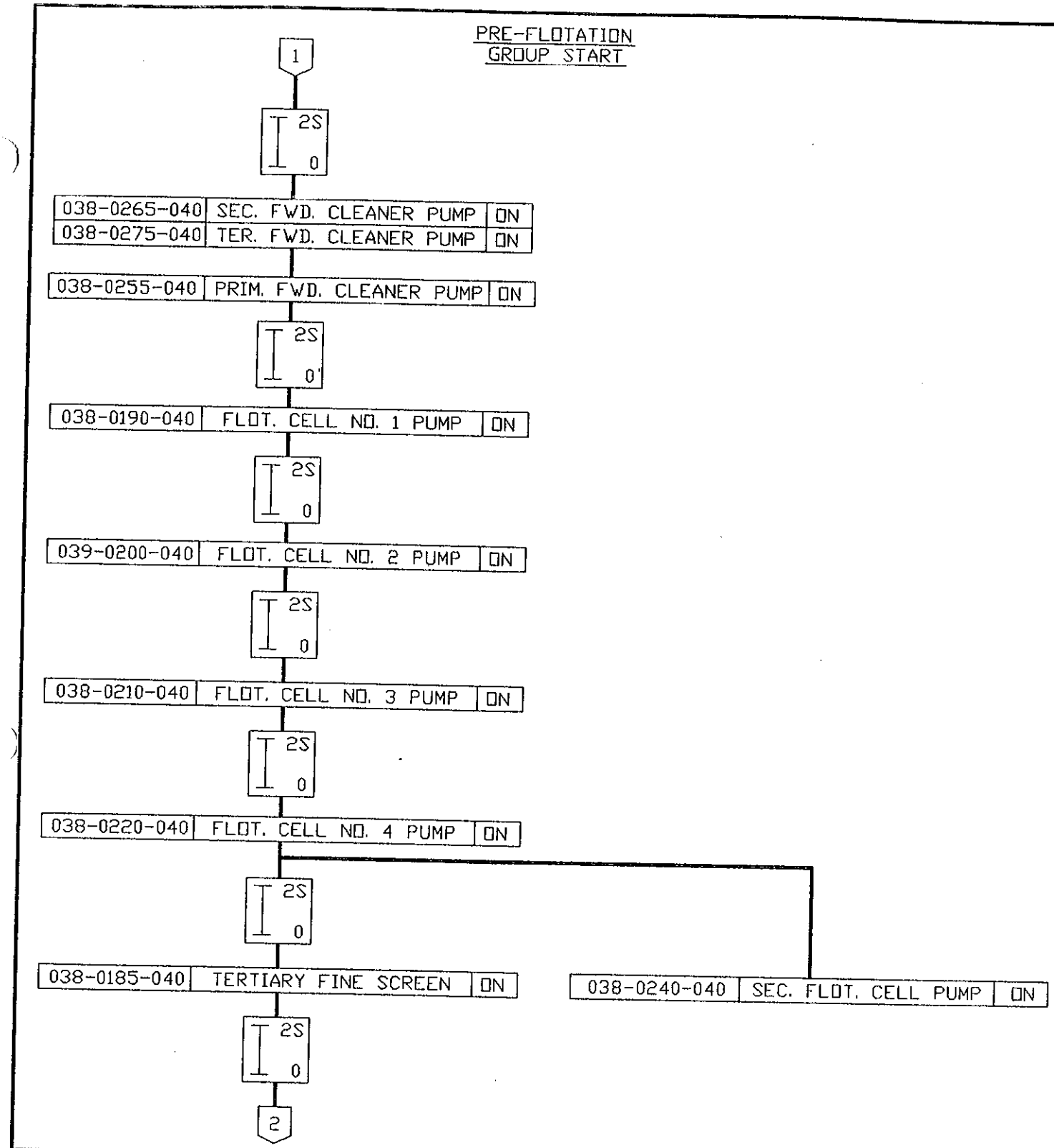
SHEET 1 OF 3

TITLE: PRE-FLOTATION GROUP START/STOP DIAGRAM

DRAWN BY AC | CHECKED KC | DATE 12/8/92

BIRD ESCHER WYSS INC.
MANSFIELD, MA

- CAD DRAWING -



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12/21/92	PRELIMINARY	AC	A
DATE	REVISION	NAME	REV

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

CLIENT DWG NO. 500-452

BEW DWG NO. TPI1-917-00440

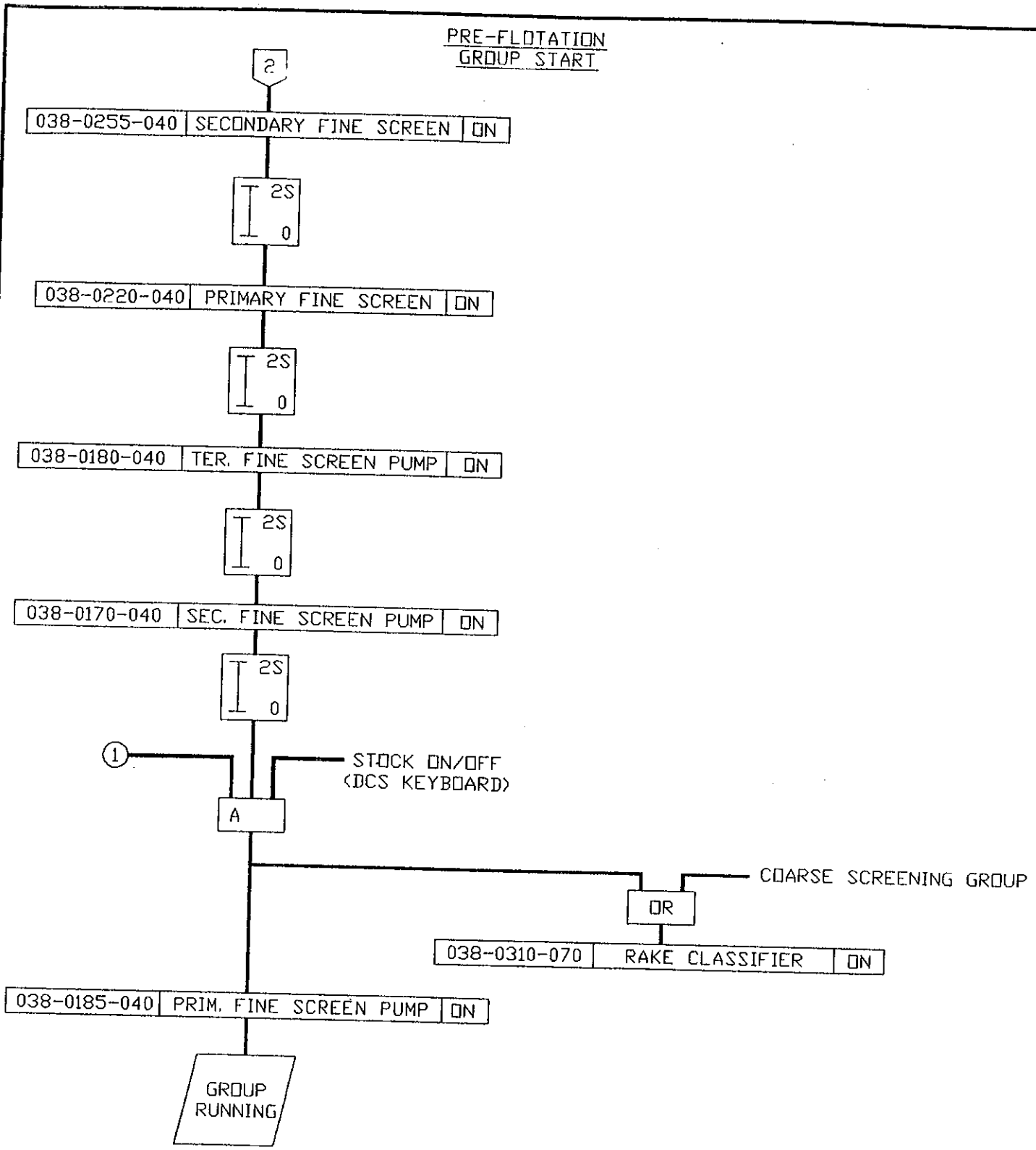
SCALE : NONE

SHEET 2 OF 3

TITLE: PRE-FLOTATION GROUP START/STOP DIAGRAM

DRAWN BY AC | CHECKED KC | DATE 12/9/92

BIRD ESCHER WYSS INC.
MANSFIELD, MA
- CAD DRAWING -



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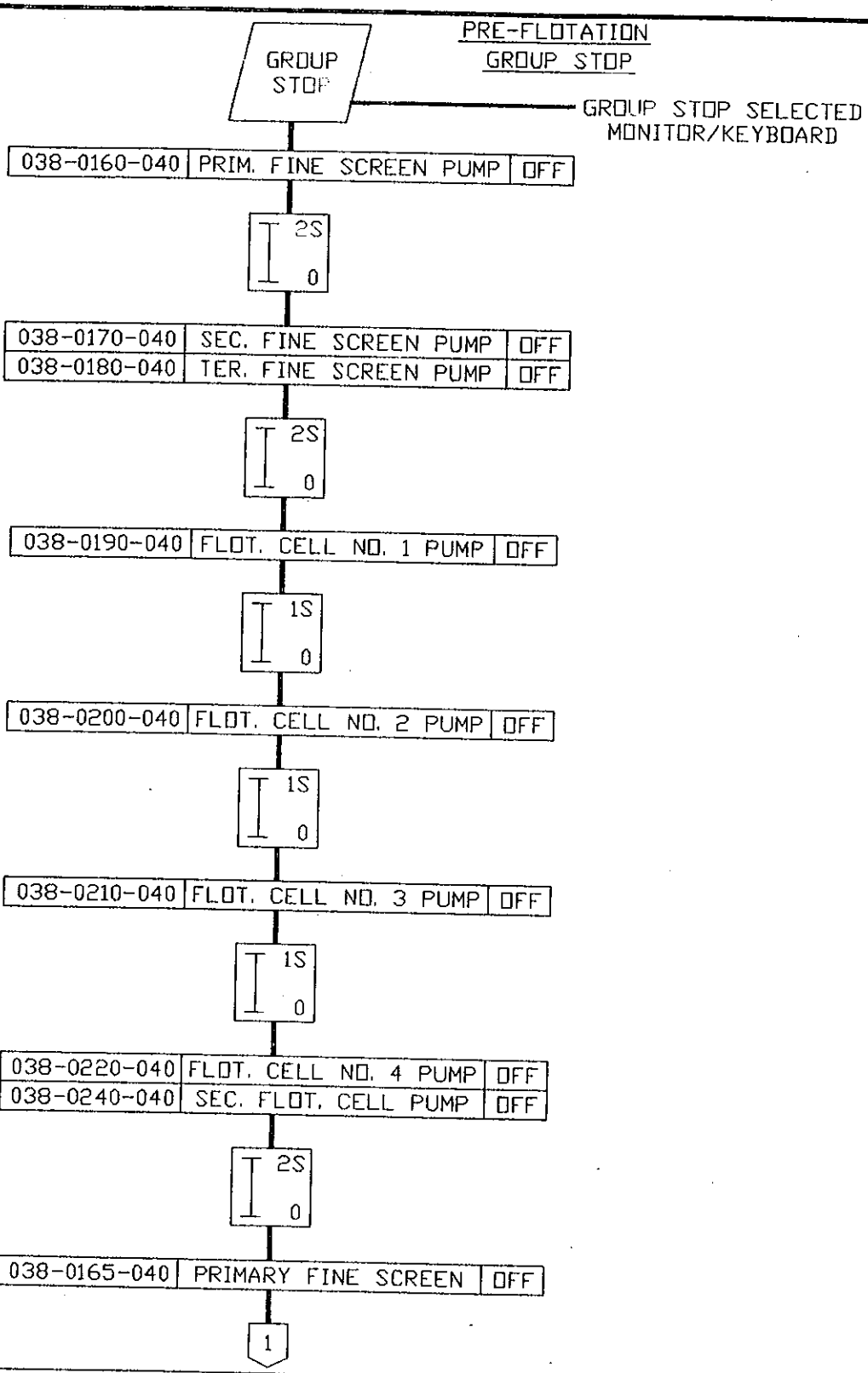
12/21/92	PRELIMINARY	AC	A	
DATE	REVISION	NAME	REV	CLIENT DWG NO. 500-452
SCALE : NONE	TITLE: PRE-FLOTATION GROUP START/STOP DIAGRAM			BEW DWG NO. TPI1-917-00440
SHEET 3 OF 3				BIRD ESCHER WYSS INC. MANSFIELD, MA
DRAWN BY AC	CHECKED KC	DATE 12/9/92		- CAD DRAWING -



1/29/93	CERTIFIED	AC	0
12/21/92	PRELIMINARY	AC	A
DATE	REVISION	NAME	REV

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

CLIENT DWG NO. 500-453

BEW DWG NO. TPI1-917-00450

SCALE : NONE

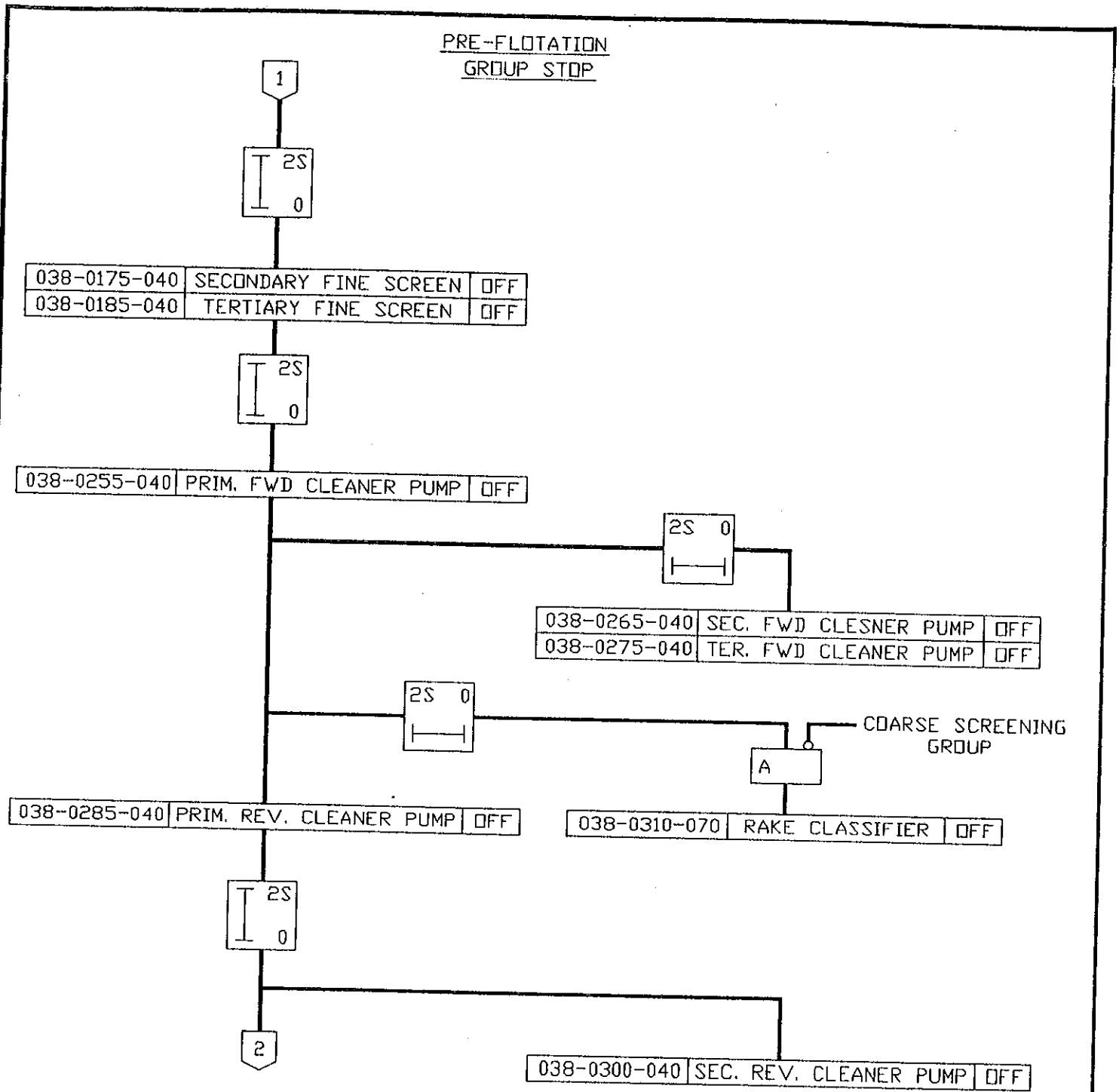
SHEET 1 OF 3

TITLE: PRE-FLOTATION GROUP START/STOP DIAGRAM

DRAWN BY AC | CHECKED KC | DATE 12/9/92

BIRD ESCHER WYSS INC.
MANSFIELD, MA

- CAD DRAWING -



DATE	REVISION	NAME	REV
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1/29/93	CERTIFIED	AC	0
12/21/92	PRELIMINARY	AC	A

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

CLIENT DWG NO. 500-453

BEW DWG NO. TP11-917-00450

SCALE : NONE

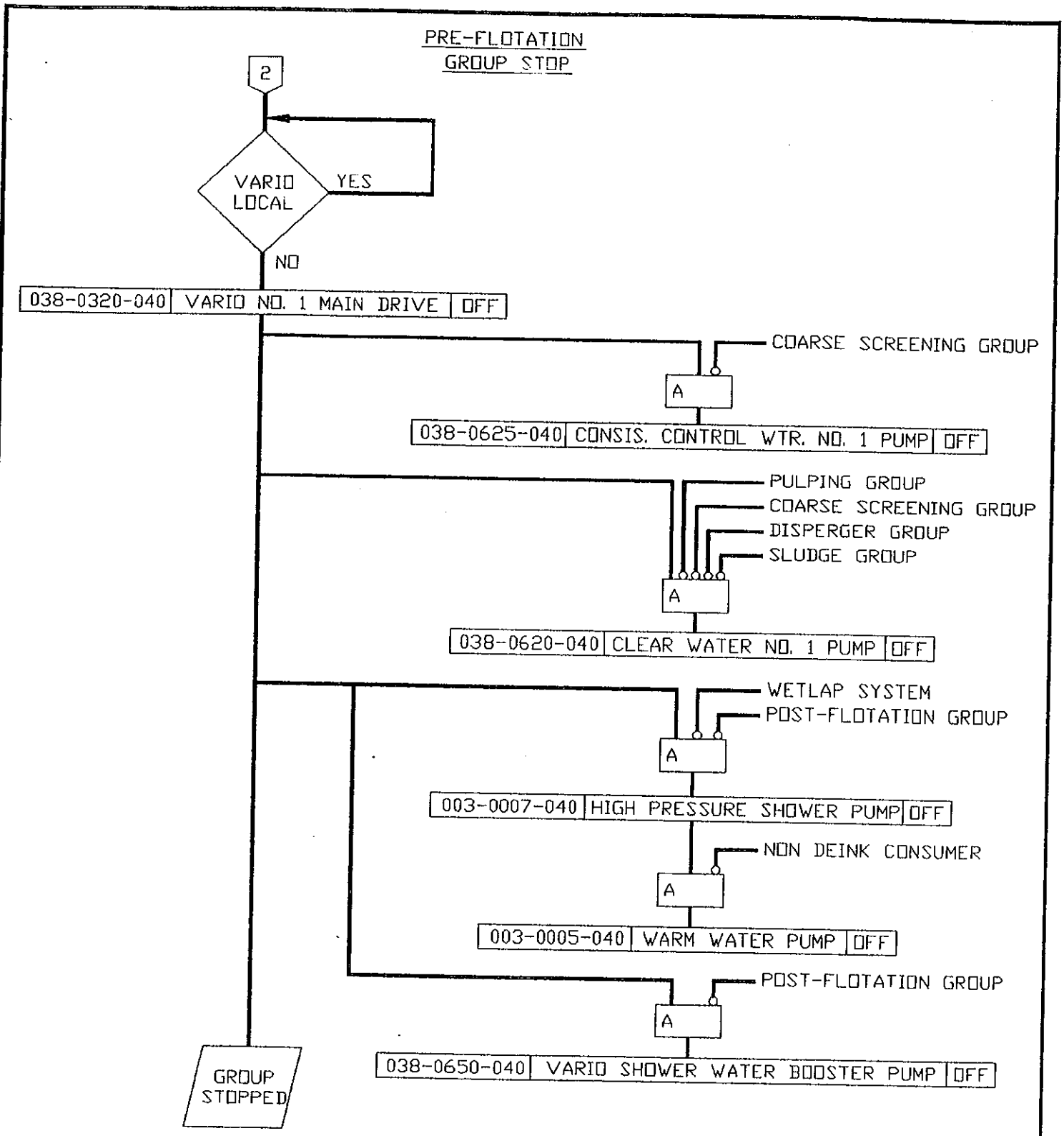
SHEET 2 OF 3

TITLE: PRE-FLOTATION GROUP START/STOP DIAGRAM

DRAWN BY AC | CHECKED KC | DATE 12/9/92

BIRD ESCHER WYSS INC.
MANSFIELD, MA

- CAD DRAWING -



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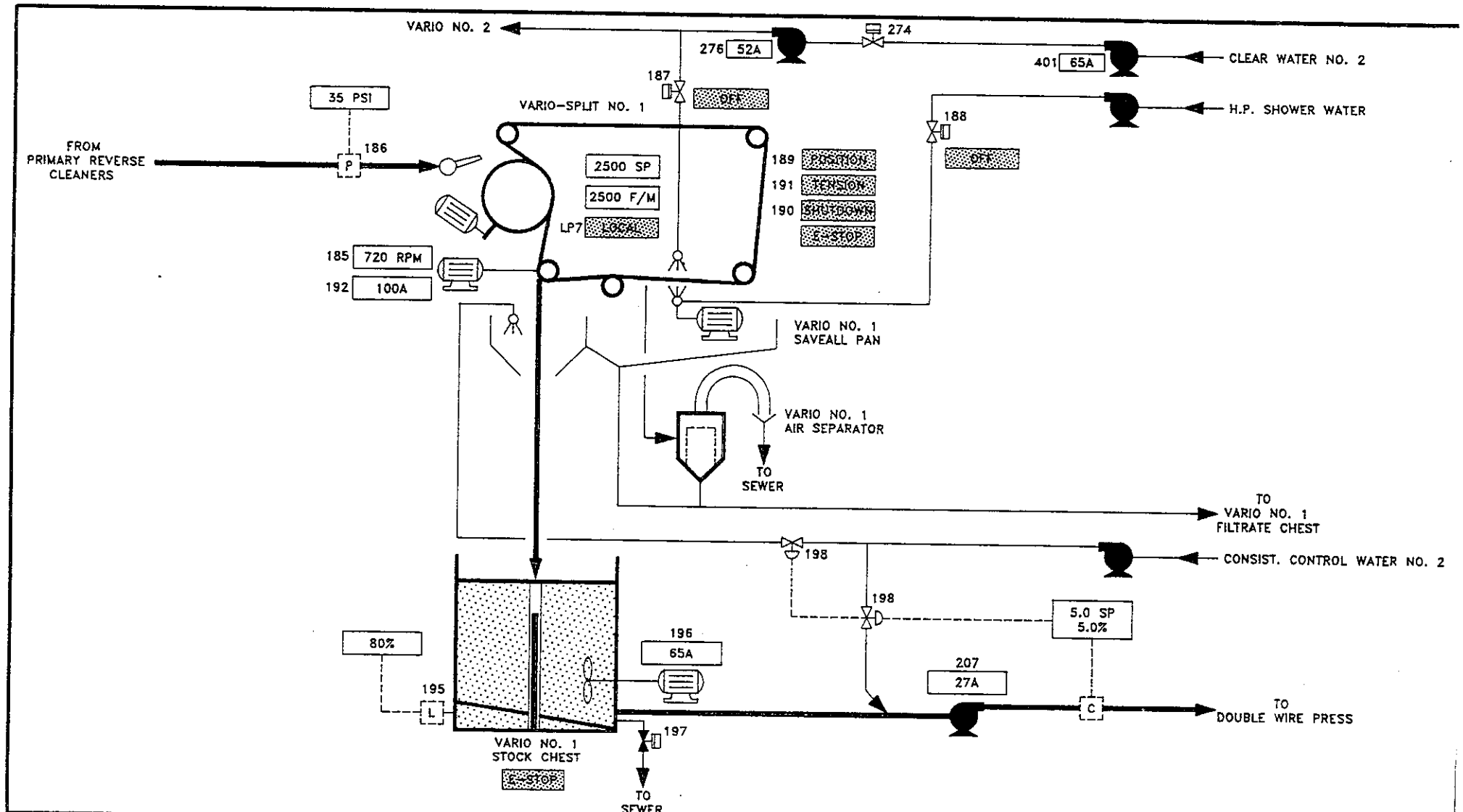
1/29/93	CERTIFIED	AC	0	
12/21/92	PRELIMINARY	AC	A	
DATE	REVISION	NAME	REV	CLIENT DWG NO. 500-453
SCALE : NONE	TITLE: PRE-FLOTATION GROUP START/STOP DIAGRAM			BEW DWG NO. TPI1-917-00450
SHEET 3 OF 3				BIRD ESCHER WYSS INC. MANSFIELD, MA
DRAWN BY AC	CHECKED KC	DATE 12/9/92		- CAD DRAWING -



REFERENCES

GRAPHIC SCALE NONE

REV | BY | CHK'D | DATE | TIMES | REVISIONS

CAD FILE: 39170010.DWG

REV	RELEASED FOR	BY	DATE	ACTION	BY	DATE
A	CERTIFIED	AC	1/19/95	DESIGN		
				DRAWN	AC	01/18/95
				CHK'D	KC	
				APP'D		
				APP'D		

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

PREFLOTATION SYSTEM
DCS SCREEN LAYOUT

SCALE NONE | FILE | PROJECT | SHEET NO.

BEW DWG NO. VPI3-917-00100

CLIENT DWG. NO. 500-509 | REV. A

Bird Escher Wyss Inc. 803 WEST STREET MANSFIELD, MA 02048 (508) 261-8800

PRE-FLOTATION SYSTEM

GROUP SELECT

START | HOLD | STOP

MAN | AUTO

STOCK SELECT

ON | OFF

GROUP READY

PROCESS GRAPHIC

192	100A	M	0320-040	LP7 LOCAL VARIO NO.1 DRIVE
		M	0300-040	SECONDARY REVERSE CLEANERS PUMP
173	156A	M	0285-040	PRIMARY REVERSE CLEANERS PUMP
158	34A	M	0275-040	TERTIARY FORWARD CLEANERS PUMP
176	52A	M	0265-040	SECONDARY FORWARD CLEANERS PUMP
171	124A	M	0255-040	PRIMARY FORWARD CLEANERS PUMP
136	156A	M	0190-040	FLOTATION CELL NO.1 PUMP
140	96A	M	0200-040	FLOTATION CELL NO.2 PUMP
144	96A	M	0210-040	FLOTATION CELL NO.3 PUMP
148	96A	M	0220-040	FLOTATION CELL NO.4 PUMP
124	40A	M	0185-040	TERTIARY FINE SCREEN
119	96A	M	0175-040	SECONDARY FINE SCREEN
113	240A	M	0165-040	PRIMARY FINE SCREEN
		M	0180-040	TERTIARY FINE SCREEN PUMP
114	40A	M	0170-040	SECONDARY FINE SCREEN PUMP
096	96A	M	0160-040	PRIMARY FINE SCREEN PUMP
276	52A	M	0065-040	VARIO SHOWER WATER BOOSTER PUMP
		M	SIMONS	HIGH PRESSURE SHOWER WATER PUMP
389	52A	M	0620-040	CLEAR WATER NO.1 PUMP
		M	0320-070	VARIO NO.1 DOCTOR
		M	0321-070	VARIO NO.1 OSCILLATING SHOWER
		M	CELLIER	PREFLOTATION SURFACTANT PUMP (CELLIER)
162	124A	M	0240-040	SECONDARY FLOTATION CELL PUMP

REV | BY | CHK'D | DATE | TIMES | REVISIONS

REFERENCES

CAD FILE: 38170022.DWG

GRAPHIC SCALE NONE

A CERTIFIED AC 1/22/93 DESIGN KC 1/20/93

REV RELEASED FOR BY DATE ACTION BY DATE

APP'D | APP'D | CHK'D | DRAWN AC 1/21/93 | DESIGN

BURROWS PAPER CORPORATION
LITTLE FALLS, NEW YORK

PRE-FLOTATION SYSTEM
CONTROL GROUP LAYOUT

SCALE NONE | FILE | PROJECT | SHEET NO.

BEW Bird Escher Wyss Inc.
803 WEST STREET
MANSFIELD, MA 02048
(508) 261-6800

BEW DWG NO. VPI3-917-00220

CLIENT DWG. NO. 500-521 | REV. A