

# **JET III**

## **The new generation of dust collectors**

Someday, all dust collectors may offer the benefits of JET III:

- High collection efficiencies
- Low first cost
- Low maintenance cost
- Low operating cost

Why wait for someday?

JET III is a wholly-new design in pulse-jet dust collectors, offering the high collection efficiencies required by increasingly stringent environmental regulations, plus true economy for the plant owner. Economy is achieved by a new, state-of-the-art system designed to reduce maintenance, labor, parts and energy costs.

Available in a full range of standard cloth areas, JET III also offers flexible sizing and efficient, space-saving installa-

tion. Variation of the tube sheet/bag length can be tailored to a particular application and dust condition. This flexibility enables a relatively small-sized housing to be employed on large-volume jobs, lowering capital costs. Smaller modules (1,140 to 5,570 ft<sup>2</sup> of cloth area) are square in plan, and large-volume modules (4,910 to 12,800 ft<sup>2</sup> of cloth area) are rectangular. Both designs feature specially-designed inlet connections for efficient gas flow and long filter bag life.

Access to the unit is provided by an integral, full-height, weather-proof, walk-in, clean air plenum. Where heat or other factors present special problems, or where bags in excess of 144

inches long are used, manually operated, hinged roof doors are available.

JET III housings are constructed of 10-gauge hot rolled sheet steel stiffened for 20" WG. All JET III units are completely fabricated before shipment for easy, economical field erection. Square modules are shipped as assembled, one-piece units, complete with flanged inlet and outlet connections. Due to restrictions in certain geographic areas, the air header and valve assemblies may be shipped as a sub-assembly for field installations. The large-volume modules are shipped in three, pre-matched sections for easy job-site completion.

### **3 important ways better**

While sizing, access and housing construction of a dust collector are important, the critical features are the internals. Inside, JET III shows its superiority in

these exclusive areas:

1. Tube sheet and bag attachment
2. Venturi and cage
3. Pulse cleaning system

The following pages describe these exclusive features of JET III that yield real benefits in operation and economy for you.

# JET III - 3 important ways better

## #1 - Tube Sheet & Bag Attachment

- Die-formed cups for added strength
- Positive seal against dust leakage
- Fast bag attachment, without tools
- Simple, one-step bagging
- Improves clean-side work area

### Tube Sheet:

JET III uses the Wheelabrator-Frye drawn-cup tube sheet, previously available only in higher-priced collectors. The bag cups are drawn, eliminating welds which could fail or leak. The tube sheet is seal-welded into the housing to effect a positive seal against dust

penetration. Also, the tube sheet's flat, smooth upper surface simplifies maintenance and housekeeping.

### Bag Attachment:

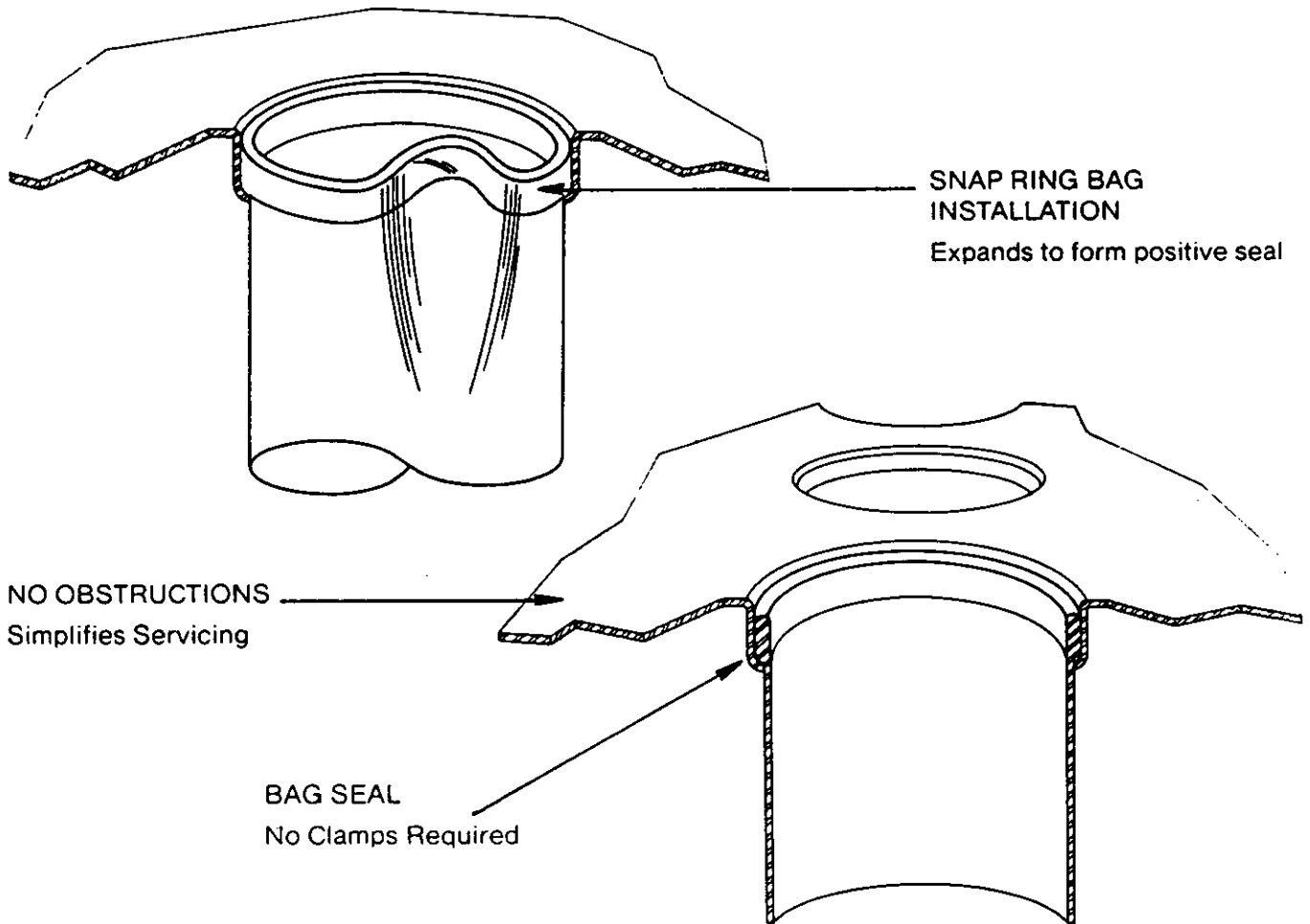
JET III tube sheet features patented Wheelabrator-Frye "snap-ring" bag sealing.

Unlike other designs where bag installation often is a two-man, two-step operation external to the filter, JET III offers a fast, one-man, one-step process. Our tube sheet, acting as a natural bagging fixture, allows cage insertion directly into the tube sheet and bags.

This simple, one-step attach-

ment creates the only seal necessary, eliminating the need for secondary seals such as "O" rings or gaskets. In fact, it would be difficult to install a bag which did not seal properly. On major change-outs, bags can be dropped to the dirty side hopper below, to maintain a true, clean-side work environment.

JET III filter bags are supplied by Wheelabrator-Frye's own W.W. Criswell Division. A complete range of high-quality bags is available in all popular synthetic fibers, including high-temperature fabrics.



# **JET III – 3 important ways better**

## **#2 – Venturi and Cage**

- Designed to save compressed air costs
- Venturi self-aligns for easy installation and efficient pulse cleaning
- Simple interlock for rapid assembly
- Quality bag support cages

The high-gain throat of JET III's newly-designed venturi is capable of cleaning more surface area of filter media with less compressed air. This provides effective cleaning of JET III's 6" diameter bags up to 14' long while the collector is on stream. JET III's venturi

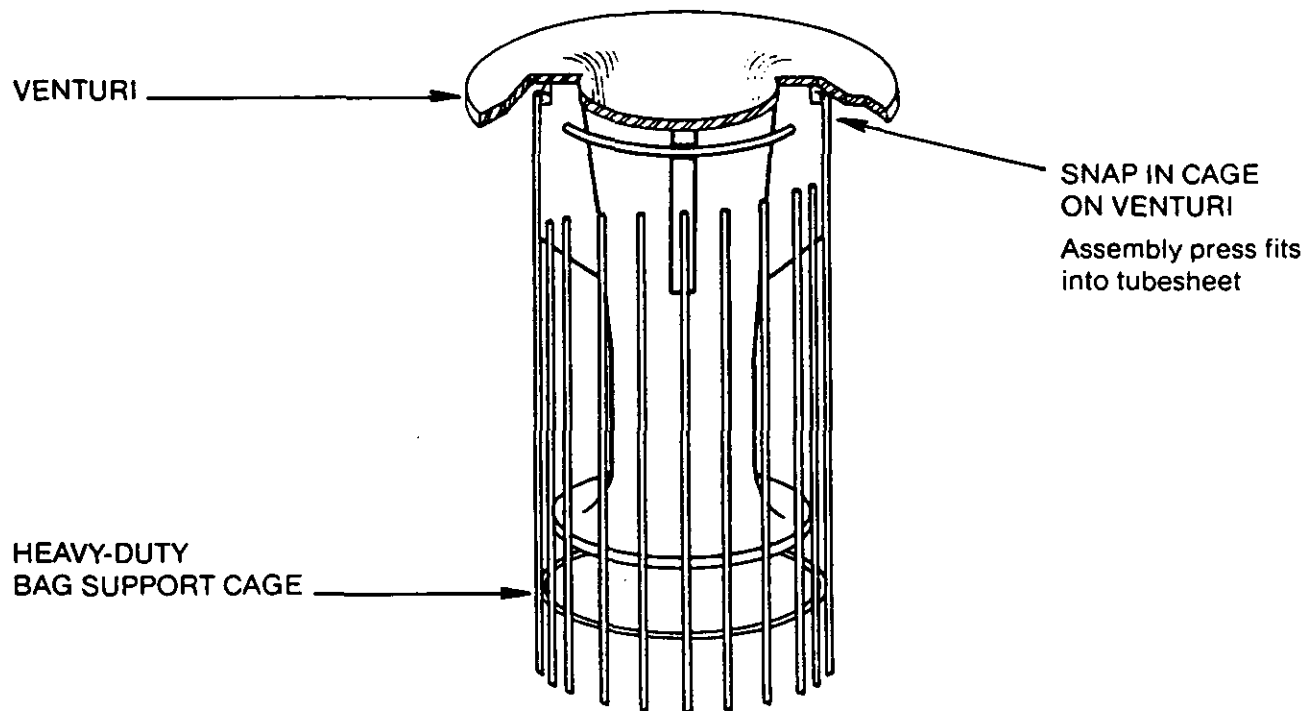
may be supplied in aluminum or cast iron. The venturi is self-aligning in the bag support cage and tube sheet for easy installation and maximum cleaning efficiency. No fittings, clamps, gaskets or attachments are required to secure the assembly.

JET III features the industry's simplest yet most effective venturi and cage assembly. Assembly requires only a single snap interlock of the venturi within the cage. The weight of the cage is then supported by the venturi flange.

The standard bag support

cage is made of heavy-gauge wire to provide maximum support for long filter bag life. This rugged construction maintains alignment and critical dimensional relationship between bag and cage.

Cages are specifically designed to withstand rough handling during installation and subsequent bag change-outs. Carbon steel is standard. Stainless steel cages and corrosion-resistant coatings are available for special applications.



# **JET III – 3 important ways better**

## **#3 – Pulse Cleaning System**

- Simple design uses few parts
- Easy to maintain
- Saves energy costs

JET III features a uniquely designed pulse-jet cleaning system. Resulting from extensive research, JET III's pulse cleaning hardware is designed to clean with minimum air consumption and maximum energy savings. More filter cloth area is cleaned per horsepower than in previous designs. Field tested on critical industry applications, the JET III cleaning system can also contribute to prolonging filter bag life. JET III's header, air valves and manifold combine to offer a highly effective cleaning system.

### **1. JET III Header**

The compressed air header is square in section for space saving, positive alignment and convenient bolt-on

of air valves. This eliminates leakage common to other designs.

The header assemblies are sectioned to permit local isolation for maintenance without shutting down the total system. These sectioned headers provide rapid depletion of the header pressure. The system requires a maximum line pressure of 90 PSI for energy conservation.

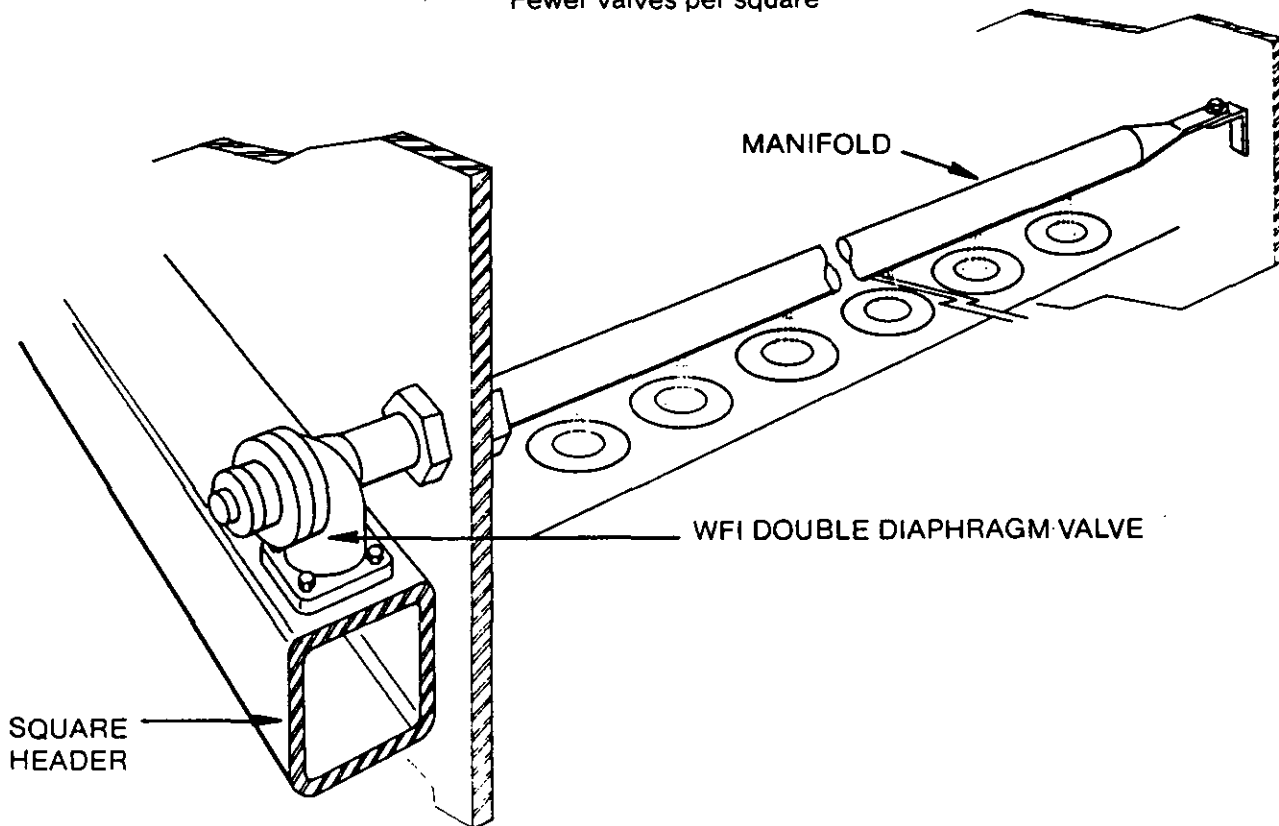
### **2. JET III Double-Diaphragm Air Valve**

Special Wheelabrator-Frye double-diaphragm valves are fitted to square headers. This air dump valve, matched to the new venturi, provides the air for cleaning up to 15 bags per row. Fewer valves per square

foot of cloth mean less maintenance and fewer parts in inventory. The valve also allows the convenience of remote pilot control (for low-cost electrical installation) with no loss of efficiency across the air valve. The air valve is simple to replace should this ever become necessary.

### **3. JET III Manifold**

The 1½"-diameter manifold pipe is jig-drilled for positive alignment of the blow holes with the venturi centers to assure maximum efficiency. Fit of the manifold within the plenum is positive to maintain this alignment. For bag inspection and/or removal, the manifold can be removed with a minimum of effort and no special tools.



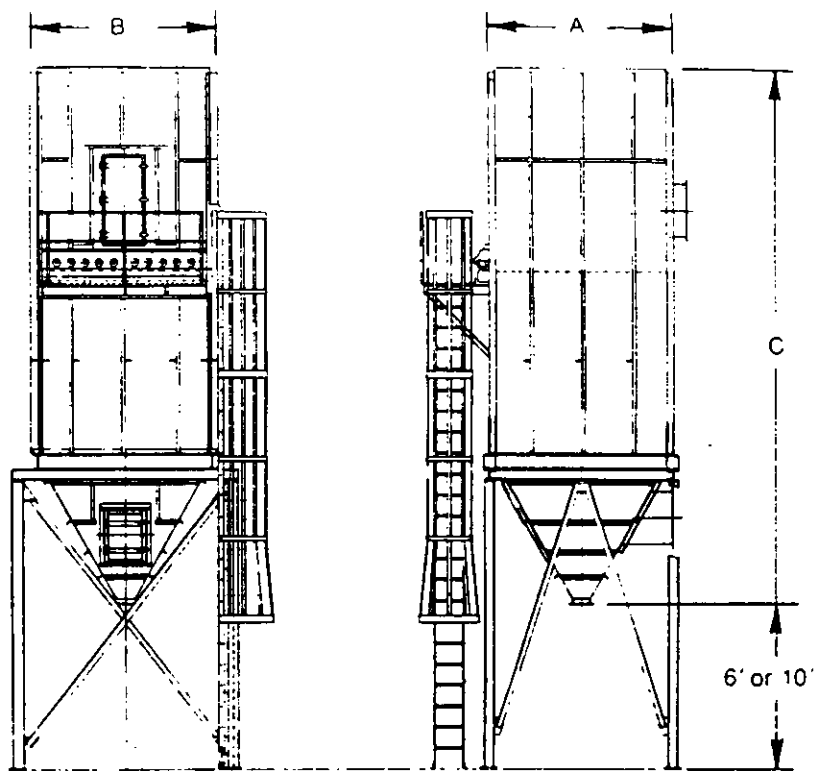
# JET III

cloth areas ranging from 1,140 to 5610 square feet.

Available with full height walk-in plenums (illustrated) type 'TA' or with multiple hinged roof doors. Type 'RA'.

**NOTE:**

'C' dimensions for all units with bag lengths up to and including 144" include walk-in plenums. 'C' dimensions for units with bag lengths of 156" or 168" include roof doors. Dimensions subject to change without notice.



**Square Modules (TA & RA) Filter Areas Sq. Ft.**

Model	No. of Bags	Filter Area/Module Bag Length In Inches					
		108"	120"	132"	144"	156"	168"
99	81	1140	1270	1390	1520	—	—
1111	121	1700	1900	2080	2270	—	—
1313	169	2380	2650	2910	3170	3450	3720
1515	225	3170	3530	3880	4230	4590	4950
1715	255	3590	4000	4380	4790	5200	5610

**Square Modules 'TA' Overall Dimensions**

Model	'A'	'B'	'C' — Dimension Based on Bag Length In Inches					
			108	120	132	144	156	168
99	6'-5"	6'-5"	24'-0"	26'-0"	28'-0"	30'-0"	—	—
1111	7'-9"	7'-9"	25'-2"	27'-2"	29'-2"	31'-2"	—	—
1313	9'-1"	9'-1"	26'-4"	28'-4"	30'-4"	32'-4"	27'-6"	28'-6"
1515	10'-5"	10'-5"	27'-5"	29'-5"	31'-5"	33'-5"	28'-7"	29'-9"
1715	11'-8"	10'-5"	28'-6"	30'-6"	32'-6"	34'-6"	29'-8"	30'-8"

**Square Modules 'RA' Overall Dimensions**

Model	'A'	'B'	'C' — Dimension Based on Bag Length In Inches					
			108	120	132	144	156	168
99	6'-5"	6'-5"	21'-2"	22'-2"	23'-2"	24'-2"	—	—
1111	7'-9"	7'-9"	22'-4"	23'-4"	24'-4"	25'-4"	—	—
1313	9'-1"	9'-1"	23'-6"	24'-6"	25'-6"	26'-6"	27'-6"	28'-6"
1515	10'-5"	10'-5"	24'-7"	25'-7"	26'-7"	27'-7"	28'-7"	29'-7"
1715	11'-8"	10'-5"	25'-8"	26'-8"	27'-8"	28'-8"	29'-8"	30'-8"

**NOTE!** Dimensions not to be used for construction purposes.

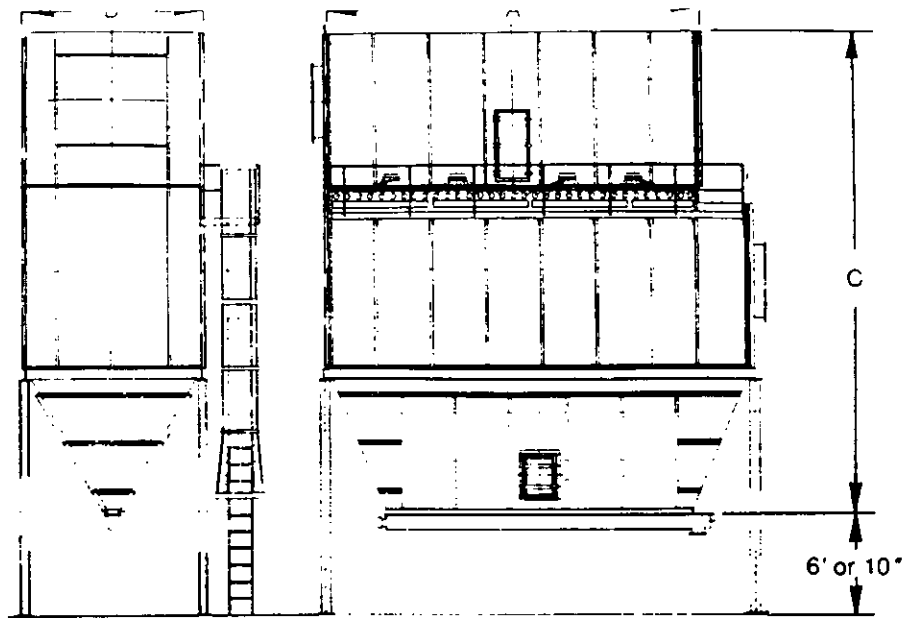
# Large-Volume JET III

cloth areas ranging  
from 4940 to  
12870 square feet.

Available with full height walk-in  
Plenums (illustrated Type "TA" or  
with multiple hinged roof doors  
type "RA")

**Note:**

"C" dimensions for all units with  
bag lengths up to and including  
144" include walk-in plenums  
"C" dimensions for units with bag  
lengths of 156" or 168" include  
roof doors. Dimensions subject to  
change without notice.



## Rectangular Modules — 'TA & RA' — Filter Areas in Sq. Ft.

Model	No. of Bags	Filter Area/Module Bag Lengths In Inches		
		120	144	168
2115	315	4940	5920	6930
2415	360	5650	6770	7920
2715	405	6360	7610	8910
3015	450	7060	8460	9900
3315	495	7770	9320	10890
3615	540	847	10150	11880
3915	585	9180	11000	12870

## Rectangular Modules 'TA' Overall Dimensions

Module	'A'	'B'	'C' Dimension Based on Bag Length In Inches		
			120	144	168
2115	17'-4"	10'-5"	29'-1"	33'-1"	37'-1"
2415	19'-4"	10'-5"	29'-1"	33'-1"	37'-1"
2715	22'-4"	10'-5"	29'-1"	33'-1"	37'-1"
3015	24'-4"	10'-5"	29'-1"	33'-1"	37'-1"
3315	27'-4"	10'-5"	29'-1"	33'-1"	37'-1"
3615	29'-4"	10'-5"	29'-1"	33'-1"	37'-1"
3915	32'-4"	10'-5"	29'-1"	33'-1"	37'-1"

## Rectangular Modules 'RA' Overall Dimensions

Model	A	B	'C' Dimension Based on Bag Length In Inches		
			120	144	168
2115	17'-4"	10'-5"	25'-5"	27'-5"	29'-5"
2415	19'-4"	10'-5"	25'-5"	27'-5"	29'-5"
2715	22'-4"	10'-5"	25'-5"	27'-5"	29'-5"
3015	24'-4"	10'-5"	25'-5"	27'-5"	29'-5"
3315	27'-4"	10'-5"	25'-5"	27'-5"	29'-5"
3615	29'-4"	10'-5"	25'-5"	27'-5"	29'-5"
3915	32'-4"	10'-5"	25'-5"	27'-5"	29'-5"

**NOTE!** Dimensions not to be used for construction purposes.

# Type 1000RA (Roof Access)

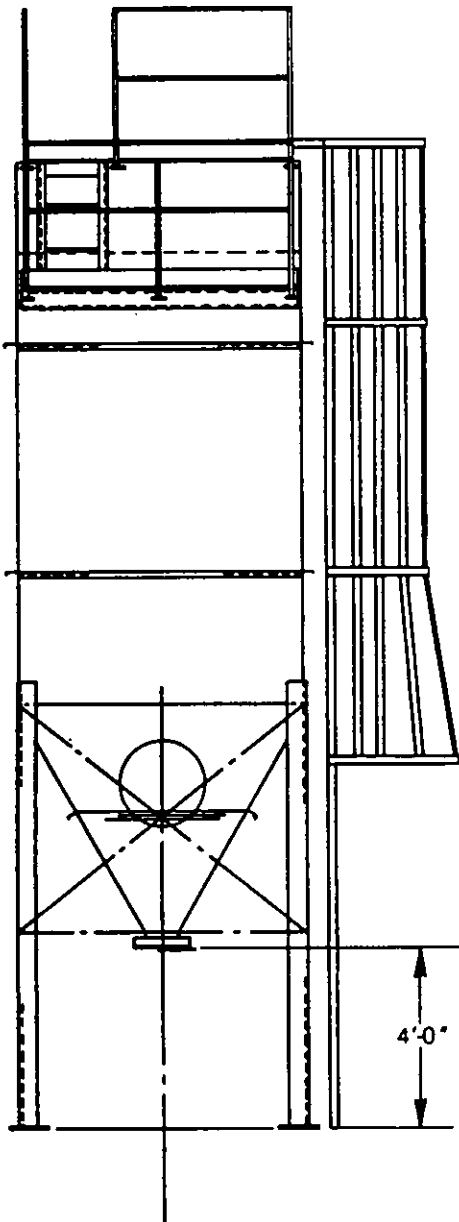
The Type 1000 JET III Pulse-Jet Fabric Filter by Wheelabrator-Frye is available in six different sizes with filter areas between 226 and 1142 square feet. Type 1000 modules are sized for the smaller system volumes.

JET III is a wholly new design in fabric filters, offering high collection efficiency with true economy in terms of initial cost, operation, and maintenance.

Type 1000 collectors are square for convenience in connecting to the

system ductwork. All JET III Pulse-Jet Fabric Filters provide clean side access to the filter section via hinged roof doors.

The JET III design employs a unique tubesheet, filter bag, and support cage assembly which combine to save time when servicing the filter section and to ensure a positive seal against dust penetration in operation. Rebagging is a simple, one-man operation performed outside the dust environment and without the use of special tools.



Front elevation.

## Equipment Sizes

Model	No. Bags	Filter Area (sq. ft.)	Sq. Housing Size	Hopper Clearance	Overall Height* Incl. Handrailing
1016/108	16	226	36"	4'-0"	21'-0"
1025/108	25	353	44"	4'-0"	21'-6"
1036/108	36	507	52"	4'-0"	22'-2"
1049/108	49	691	60"	4'-0"	22'-10"
1064/108	64	902	68"	4'-0"	23'-5"
1081/108	81	1142	76"	4'-0"	24'-2"

\*Includes support legs.

## Features

**Tubesheet**—Wheelabrator-Frye's own integrally drawn bag colors for positive bag sealing.

**Snap Ring Bag**—With tubesheet, provides simple, one-step bagging operation. No additional sealing required. No tools necessary.

**Venturi and Bag Support Cage**—High gain throat design venturi improves cleaning efficiency and saves energy. Venturi and cage interlock for single piece assembly into the filter bag, no prior assembly of these components outside the filter housing is necessary. Venturi and cage are self-aligning within the tubesheet and bag. No clamps or hold down devices are required.

**JET III Pulse Cleaning System**—The square, space-saving compressed air header employs Wheelabrator-Frye's special bolt on air valves for leakproof

alignment with the air distribution manifolds. JET III utilizes remote pilot valves for low-cost field wiring.

**JET III Timer**—The Type 1000 employs a solid state electronic timer in Nema IV enclosure with 110 volt AC solenoids.

**Auxiliaries**—All modules are supplied with standard access ladders, walkways, and handrail to meet OSHA requirements. A complete range of hopper valves and material handling systems are available.

**Standard Construction**—JET III Type 1000 modules are all welded and fabricated of 12 gauge carbon steel stiffened for 15" w.g.

**Shipment**—JET III Type 1000 modules are shipped as one-piece units, including support legs, for simple, low-cost installation.


**Air Pollution Control Division**  
**Wheelabrator-Frye Inc.**

600 Grant Street  
Pittsburgh, PA 15219  
(412) 288-7300

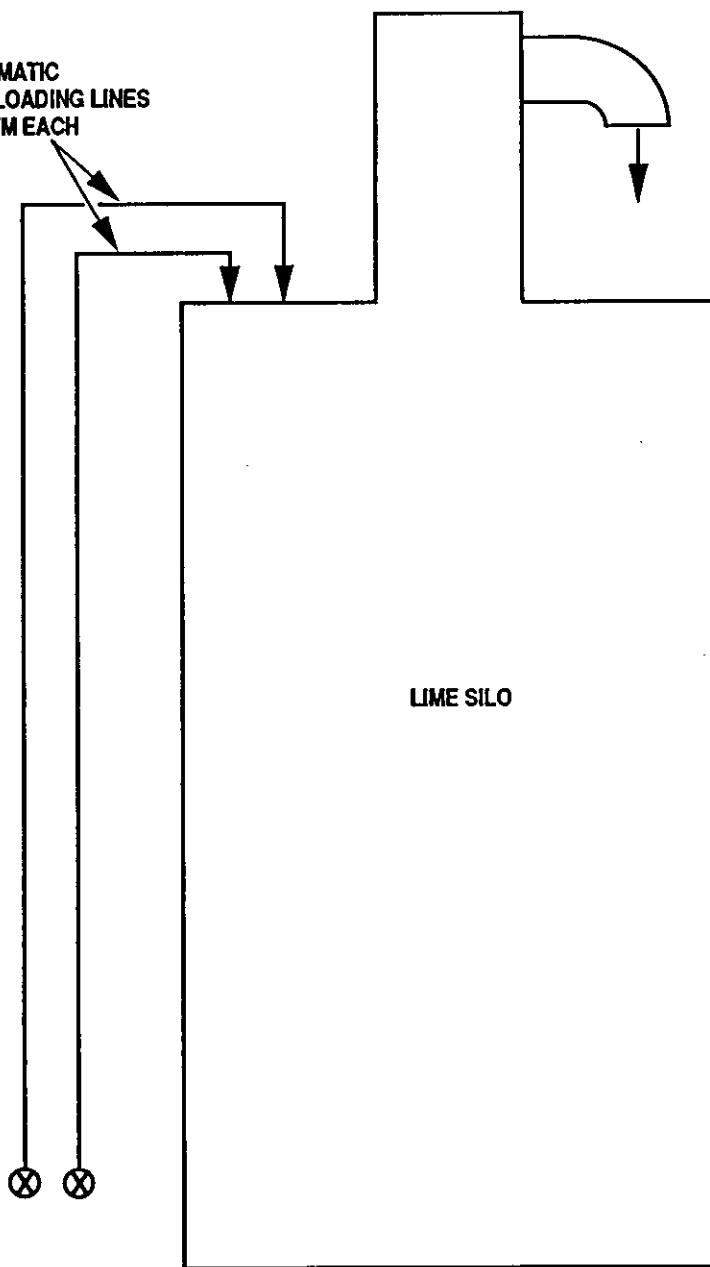
MEMBER  
**IGCI**

**ATTACHMENT C**



TWO PNEUMATIC  
TRUCK UNLOADING LINES  
AT 750 ACFM EACH

VENT FILTER



TO ATMOSPHERE  
1,500 ACFM MAX  
0.13 LB/HR PARTICULATE

NOTE: LIME DUST COLLECTED  
WILL BE DISCHARGED  
INTO LIME SILO.

PROCESS RATE WILL BE  
20,000 LB/HR PER FILL LINE  
WHEN TRUCKS ARE UNLOADING.

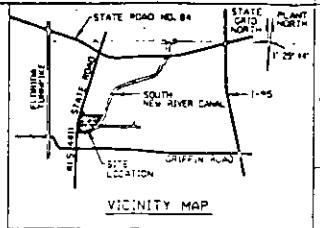
ATTACHMENT C LIME SILO DUST CONTROL FLOW DIAGRAM



**ATTACHMENT D**



STATE GRID NORTH  
PLANT NORTH  
1" = 251.44'

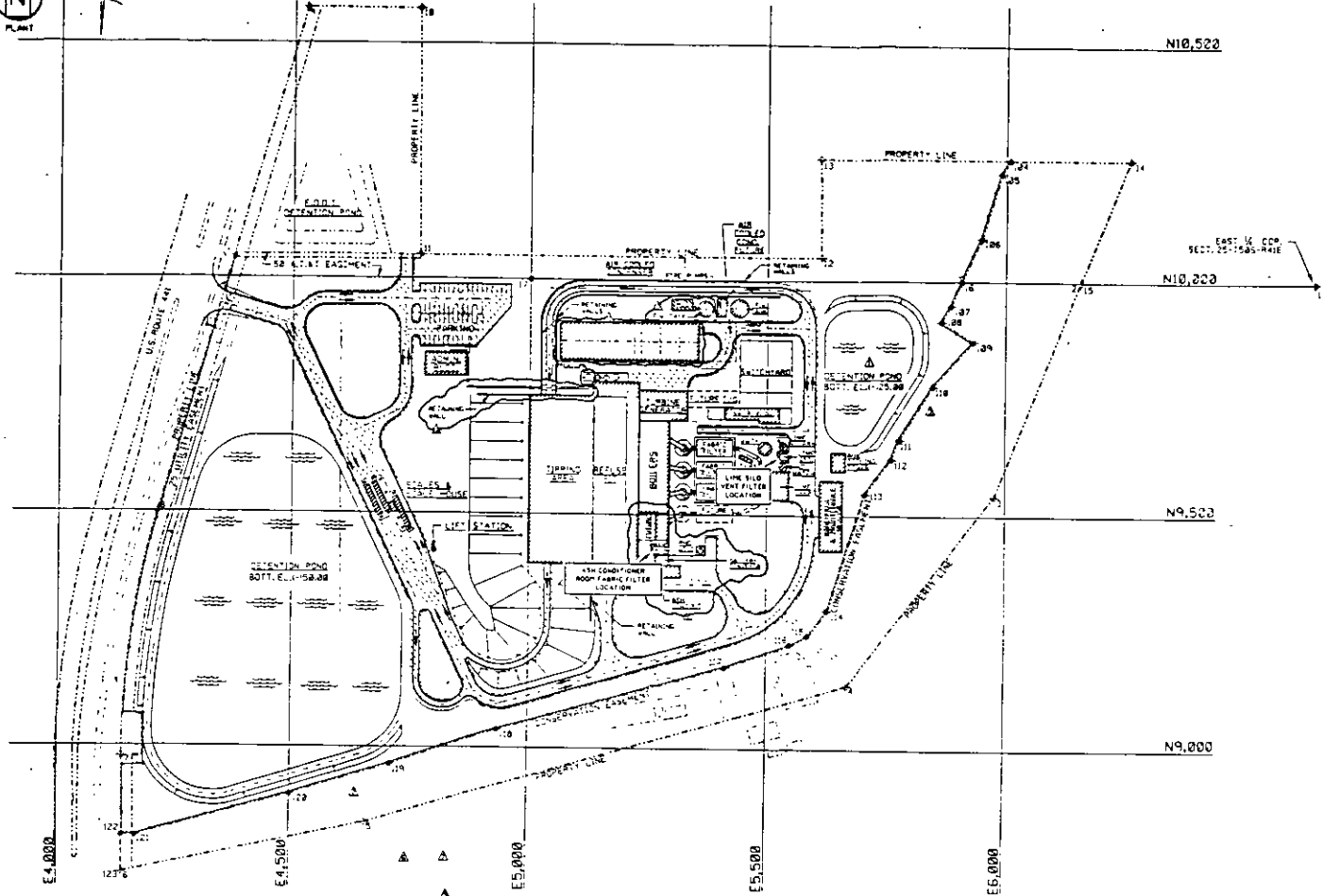


**LEGEND**

- PROPOSED FACILITIES
- EXISTING FACILITIES
- ===== BITUMINOUS PAVEMENT
- ===== NEW SECURITY FENCE
- EXISTING FENCE
- ◆ PROPERTY CORNER
- ◆ EASEMENT CORNER
- SLARD RAIL

**NOTES**

1. PLANT NORTH FOR THIS PROJECT IS ORIENTED 17.25 DEGREES FROM SIDE OF FLORIDA GRID AND THE PROPERTY CORNER IDENTIFIED ON THIS DRAWING AS IT HAS BEEN ESTABLISHED AS PLANT COORDINATE NORTH 10050.20 AND EAST 47690 WHICH IS EQUIVALENT TO COMMON STATE GRID COORDINATE NORTH 10050.274 AND EAST 47690. ALL BEARING AND DISTANCES ARE IN RELATION TO PLANT NORTH UNLESS NOTED OTHERWISE.
2. SEE DRAWING 20-10-200 FOR PROPERTY DATA. PROPERTY DATA IS BASED ON THE PLANT TITLE INSURE AND RESOLVE DEEDS, THE DEEDS, THE DEEDS AND SCHEDULE A PLAT, SURVEY CERTIFICATES DATED APRIL 2, 1983.
3. ALL ELEVATIONS ARE REFERENCED ON NATIONAL GEODETIC VERTICAL DATUM NOVEMBER 1989.



REV. 7 4.4.80 - HEMPHREY 7-20-85  
RELEASED FOR CONSTRUCTION  
12-22-85 DATE CHAMPION B

WHEELABRATOR ENVIRONMENTAL SYSTEMS INC.  
CORPORATION

**REST**  
CORPORATION  
CORPORATION  
CORPORATION

PLOT PLAN  
SOUTH BROWARD RESOURCE RECOVERY FACILITY

DATE 01-32-001

NO.	DESCRIPTION	DATE	BY	CHECKED
1	GENERAL DESIGN	12-22-85	...	...
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**NORTH BROWARD RESOURCE RECOVERY FACILITY**

**PA 86-22**

**PSD-FL-112**

**MINOR SOURCE PERMITS**

**LIME SILO VENT FABRIC FILTER**

**ASH CONDITIONER ROOM VENT FABRIC FILTER**

**RECEIVED**

**SEP 27 1990**

**Dept. of Environmental Reg.  
West Palm Beach**

1. The first part of the  
document is a  
list of the names of the  
persons who were present  
at the meeting.

September 25, 1990

Mr. Scott Benyon, Deputy Assistant Secretary  
Southeast District  
Florida Department of Environmental Regulation  
1900 South Congress Avenue, Suite A  
West Palm Beach, FL 33406

Attn: Ms. Stephanie Brooks, Air Permitting Engineer  
Subject: North Broward Resource Recovery Facility:  
PA 86-22; PSD-FL-112  
Minor Source Permits for:  
Lime Silo Vent Fabric Filter  
Ash Conditioner Room Vent Fabric Filter

Dear Ms. Brooks:

Please find attached four copies of permit applications for the above referenced minor sources. These sources are part of the North Broward County Resource Recovery Projects and will control dust emissions of auxiliary ash handling equipment and equipment associated with the acid-gas scrubber required by the EPA Prevention of Significant Deterioration (PSD) permit. Although the facility has been permitted under the Power Plant Site Certification Act, discussions with Buck Oven indicate that these can be submitted as minor source permits rather than amend the certification. The combined total emissions from both sources will be less than 4 tons per year.

Also enclosed is a check payable to the Florida Department of Environmental Regulation for \$400.00, in accordance with the construction permit fee for the two sources, each having potential emissions [as defined in 17-2.100 (150)] of less than 25 tons per year. Please note that the potential emissions listed in the application are uncontrolled emissions which were included to provide information on control efficiency.

By copy of this letter, we are advising the EPA of the addition of these sources at the North Broward County Resource Recovery Project site. As noted above, the facility has previously received a PSD permit from the EPA.

Ms. Stephanie Brooks  
September 25, 1990  
Page 2 of 2

Please call me or Kennard F. Kosky of KBN Engineering and Applied Sciences, Inc. if you have any questions regarding these permits.

Sincerely,

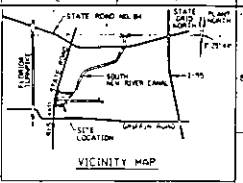
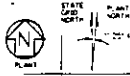
ORIGINAL SIGNED

James R. Wiegner  
Project Manager

212.GRM/th  
encl. (4)

cc: Jewell A. Harper, EPA Region IV w/enclosures  
H.S. Oven, P.E., FDER Tallahassee w/enclosures  
Dr. Alex Padva, FDER SEDO w/o enclosures  
Joseph Lurix, FDER SEDO w/o enclosures

Mark Meech, RUST w/enclosures  
Mark Kirchman, WTI-North w/enclosures  
Rick Mulhorn, WTI-South w/enclosures  
Thomas Henderson, Broward County w/enclosures  
Dave Cerrato, Malcolm Pirnie, Inc. w/enclosures  
Frank Ferraro, WTI-Hampton w/o enclosures  
Tim Porter, WTI-Hampton w/enclosures



**LEGEND**

- PROPOSED FACILITIES
- EXISTING FACILITIES
- BITUMINOUS PAVEMENT
- NEW SECURITY FENCE
- EXISTING FENCE
- ◆ PROPERTY CORNER
- ◆ EASEMENT CORNER
- CLAMP RAIL

**NOTES**

1. ALL NORTH AND SOUTH PROJECTIONS ARE BASED ON THE NAD 83 DATUM. ALL ELEVATIONS ARE REFERENCED TO THE MEAN SEA LEVEL DATUM. ALL ELEVATIONS ARE REFERENCED TO THE NATIONAL GEODETIC DATUM, DATUM HEIGHT OF 1984.
2. SEE DRAWING 01-32-001 FOR PROPERTY DATA. PROPERTY DATA IS BASED ON THE MOST RECENT AVAILABLE RECORDS. RECORDS PREPARED BY THE STATE OF FLORIDA AND SURVEYORS' CERTIFICATE DATED APRIL 3, 1987.
3. ALL ELEVATIONS ARE REFERENCED ON NATIONAL GEODETIC DATUM, DATUM HEIGHT OF 1984.

REV. 7. V.A. RUTHERFORD 7.22.84  
RELEASED FOR CONSTRUCTION  
7-22-84 DATE C.M.P. 1000

**WHEELABRATOR ENVIRONMENTAL SYSTEMS INC.**  
General Contractors

**REST**  
Environmental  
Contractors  
01-32-001

**PLOT PLAN**

**SOUTH BROWARD RESOURCE RECOVERY FACILITY**

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