



September 17, 2002

Syed Arif  
Florida Department of Environmental Protection  
Bureau of Air Resource Management  
2600 Blair Stone Road  
Mail Station 5505  
Tallahassee, FL 32399-2400

RECEIVED

SEP 25 2002

BUREAU OF AIR REGULATION

Re: Flyash Processing System  
St. Johns River Power Park; Duval County  
DEP file no.: 0310001-002-AC/PSD-FL-010(D)

Construction of the flyash processing facility at St. Johns River Power Park is anticipated to begin in October. The PSD permit modification which authorizes construction of this facility was granted in June 2000.

The pulse-jet filter model as described in Quotation No. 02-1492, (dated 8/27/02), was planned to be used for particulate control of emission unit ID 50 (the gas-fired dryer stack) is no longer available. A new pulse-jet filter of similar design manufactured by Filter Technologies Ltd., described in Quotation dated April 29, 2002 and on drawing P9131001, has equivalent particle collection performance and has been proposed as a substitute. The PSD permit modification for the flyash processing system specifies that initial compliance for emission unit 50 be demonstrated by stack testing.

I have reviewed the emission performance guarantee supplied by Filter Technologies Ltd., and conclude that the new device meets or exceeds the required removal efficiencies as expressed in the PSD permit modification and the air construction permit application (DEP file no.:0310001-002-AC/PSD-FL-010(D)).

Sincerely,

Bryce Anders, P.E.  
Florida Registration No. 55053  
Lauren Engineers and Constructors, Inc.  
Abilene, TX 79602

Attachments

1. Filter quotation 02-1492
2. Emission guarantee dated April 29, 2002
3. Filter equipment guarantee dated April 29, 2002
4. Filter equipment drawing P9131001

cc: w/o attachments

Frank Hrach	Separation Technologies Inc
Mark Loechelt	St. Johns River Power Park
Jack Cress	Lauren Engineers & Constructors, Inc.

P.O. Box 1761  
Abilene, Texas  
79604  
915-670-9660  
fax  
915-670-9663



QUOTATION DATE: 8/27/02

QUOTATION NUMBER: 02-1492

SEPARATION TECHNOLOGY  
10 KEARNEY RD.  
NEEDHAM, MA 02494  
Phone: 781-455-8824 ext 311  
Fax: 781-433-0289  
Attn: Frank Hrach

TERMS: 1/3 - Downpayment w/order  
1/3 - Midpoint of construction  
Net- 30 Days  
Pending Credit Approval  
F.O.B. New Prague, MN  
SALESMAN: Rich Lucas/lis

### Application Information

This equipment was selected for the following application:

Material:	Fly Ash	
Infeed rate:	80,000	Lbs/hr
Infeed moisture:	5%	% Water
Outfeed rate:	76,382	Lbs/hr
Finished Product Moisture:	.5%	% Water

This quotation is based on test number 99-1043

### Scott AST Dryer™ System

#### Scope of Supply

**ITEM 1. SCOTT MODEL 6018 AST DRYER™** has a cylindrical housing 60" diameter by 18' long. It is constructed of Hardox 400 steel in all product contact areas, and is equipped with (5) hinged access doors. The main shaft is made of 18" tubular steel supported by 7 15/16" bearings. Connected to the shaft are 28 adjustable paddles. Also included are (4) replaceable agitator plates and (5) air dams. The drive includes a 250 HP TEFC motor; a belt drive and an O.S.H.A. approved belt guard.

**ITEM 2. EXHAUST FAN** rated for 30,000 ACFM @ 30" S.P. and 200°F. Fan is arrangement 9. The inlet and outlet are both flanged. The drive is a 250 HP TEFC motor with belt drive and O.S.H.A. approved belt guard. An electrically operated opposed blade variable inlet vane damper is included to control airflow.

#### ITEM 3. 1.1 APPLICATION DATA:

Process:	Dryer
Product:	Fly Ash
Grain Load:	.005 gr./dscf outlet, in 76,382 #/hr to dry. 297 gr./cu.ft. Inlet
Particle Size:	>1 micron
Temperature:	200°F
Air Volume:	30,000 ACFM
Sq. Ft of Cloth:	3,007 sq. ft.
Air to Cloth Ratio:	3.75:1 (Actual)
Air to Cloth Ratio:	3.75:1 (Design)
Can Velocity:	145 FPM

#### 1.2 MODEL 506-10 TOP REMOVAL WALK IN DUST COLLECTOR

QUOTATION DATE: 8/27/02

QUOTATION NUMBER: 02-1492

Filter Technology Ltd. Dust collector to be all welded, and factory assembled in largest piece construction practical to minimize field election. The unit is designed for  $\pm 30$ " WG dust-tight operation, as follows:

**1.3 CLEAN AIR PLENUM**

10 gauge HRS all welded construction with 3" channel stiffeners on 16" centerlines, flanged exhaust and two weather tight, 18" x 60" hinged and gasketed access doors.

**1.4 SERVICE ACCESS**

30" wide walkway with handrails quoted as 2 x 2 x 1/4" angle with toe plate and two rails. Ladder, caged above 7 feet, with 24" opening at top access level.

**1.5 REVERSE JET CLEANING MACHANISM AND CONTROLS**

- a). Compressed air header
- b). Diaphragm valves 2"  $\varnothing$
- c). Blow pipes are 2"  $\varnothing$  schedule 40 pipe
- d). Pipe coupling between diaphragm valve and blowpipe.
- e). Solenoid valves mounted in a NEMA 4 enclosure.
- f). Diaphragm valve to purge moisture from header.
- g). Brass tube fittings and Polyethylene UV resistant tubing plumbed between diaphragm valve and solenoid.
- h). Compressed air gauge: 2 1/2" diameter, 0-160 psig.
- i). 32 position automatic solid state sequential timer with indicating lights for 115V, 1PH, 60 Hz operation, mounted in a NEMA 4 enclosure.
- j). Magnehelic differential pressure gauge 0-15" WG with bracket for leg mounting and air filter on dirty side to protect magnehelic tube from plugging.

**1.6 TUBESHEET**

10 gauge HRS with stiffeners located between every other row. Designed for snap band bag and cage.

**1.7 CAGES**

(506) 11 gauge HRS 10 vertical wire cage with 11 gauge rings. Full pan bottom and venturi tack welded as integral part of the cage, 5 1/2"  $\varnothing$  by 10' long.

**1.8 FILTER MEDIA**

(506) Bags, 18 oz. Polyester 611 MPS with CS-17 finish, 6"  $\varnothing$  by 10' long with snap ring tube sheet seal.

**1.9 HOUSING**

10 gauge HRS all welded construction with 3" channel stiffeners on 16" centerlines. Inlet extension and transition box is 10 gauge HRS construction with 3/16" plate deflector. Nominal inlet velocity to be 2,040 FPM into hopper.

QUOTATION DATE: 8/27/02

QUOTATION NUMBER: 02-1492

**1.10 HOPPER**

10 gauge HRS all welded construction with 3" channel stiffeners on 16" centerlines and 3" square internal support tubes. Hopper is 60° pyramid with 12" airlock discharge and two 18-inch diameter hinged and clamped inspection/access doors. Structural mounting flanges.

**1.11 STRUCTURALS**

Structural support legs are 8" x 31# with 4" x 1/4" back to back angle cross bracing designed for 100 MPH wind load at customer specified seismic zone providing 4 feet clearance below hopper discharge flange. (If seismic zone is not specified, zone two will be used.) NOTE: If calculations and /or PE Stamp required, a fee will be charged.

**1.12 INSULATION**

3" thick 5 lb. Density rockwool with 18 gauge galvanized skin attached to vertical walls with self-tapping screw and RTV sealed at top and bottom joints.

**1.13 PAINT**

Collector has a SP-2 shop finish with one coat direct to metal enamel tan, applied to all external surfaces.

**NOTE:** Bags, cages, instruments, supports and ladders to ship disassembled from the main collector.

**ITEM 4. ROTARY AIRLOCK 24" x 24"** constructed of carbon steel in all product contact areas. The unit has a capacity of 4.0 CFR and is to operate at 15 RPM. It is equipped with a 3 HP TEFC motor; a chain drive and O.S.H.A. approved guard. This airlock is to be located at the discharge of the baghouse. **NOTE: SUPPLIED BY CUSTOMER**

**ITEM 5. FEEDING SYSTEM** Model 1401 screw feeder constructed of AR 200 steel in all product contact areas. This feeder is rated for .083 CFR. Variable speed drive to operate between 20 and 120 RPM. Drive to include a 5 HP TEFC motor, reducer and a variable frequency drive.

**ITEM 6. GAS BURNER SYSTEM** rated for 12 MM BTU/hr. Includes IRI or FM approvable packaged fuel train, flame supervision system, high limit controller, temperature controller and combustion chamber.

**ITEM 7. DRYER CONTROL SYSTEM** with an Allen-Bradley Panelview operator interface. This system includes an Allen-Bradley PLC to control automatic startup, shutdown and supervisory functions for the system. In addition to the touch screen, the front panel includes (4) ammeters, (4) temperature indicators, (4) pressure gauges, the High limit controller and the Honeywell UDC 3000 temperature controller, and an Allen-Bradley VFD for feeder speed control (linked to PLC/Panelview). Service requirements for the control panel is 120 VAC, 60 hz, 40 amps, and will be a NEMA 12 enclosure with gray enamel paint. **NOTE: SUPPLIED BY CUSTOMER**

Emissions Unit Information Section 7 of 7

Emissions Unit Control Equipment

1. Control Equipment/Method Description (limit to 200 characters per device or method):

Particulate Control:  
 Pulse Jet Filter  
 Manufacturer: ~~MAG Equipment~~ Filter Technology Corp  
 Model # ~~144MG756-450~~ 506-R10

NOx Control:  
 Low NOx Burner  
 Manufacturer: Scott Equipment Company  
 Model # Eclipse AB-MA

See Attachment D for Manufacturers' Data.

2. Control Device or Method Code(s): 017, 025

Emissions Unit Details

1. Package Unit:  
 Manufacturer: \_\_\_\_\_ Model Number: \_\_\_\_\_

2. Generator Nameplate Rating: \_\_\_\_\_ MW

3. Incinerator Information:  
 Dwell Temperature: \_\_\_\_\_ °F  
 Dwell Time: \_\_\_\_\_ seconds  
 Incinerator Afterburner Temperature: \_\_\_\_\_ °F

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate: 12.0 mmBtu/hr

2. Maximum Incineration Rate: \_\_\_\_\_ lb/hr \_\_\_\_\_ tons/day

3. Maximum Process or Throughput Rate: 257,550 tpy

4. Maximum Production Rate: 257,550 tpy

5. Requested Maximum Operating Schedule:  
 24 hours/day 7 days/week  
 52 weeks/year 8,760 hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

Emissions Unit Information Section 7 of 7

Pollutant Detail Information Page 1 of 3

**D. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**

Potential Emissions

1. Pollutant Emitted: PM/PM <sub>10</sub>		2. Pollutant Regulatory Code: EL	
3. Primary Control Device Code: 018	4. Secondary Control Device Code:	5. Total Percent Efficiency of Control: 99%+	
6. Potential Emissions: 1.6 lb/hour                      7.0 tons/year		7. Synthetically Limited? [ ]	
8. Emission Factor: 0.0083 gr/scf Reference: manufacturer's guarantee		9. Emissions Method Code: 1	
10. Calculation of Emissions (limit to 600 characters): E = (0.0083 gr/scf x 22,446 scfm x 60 min/hr)/7000 gr/lb E = 1.6 lb/hr			
11. Pollutant Potential Emissions Comment (limit to 200 characters): Potential emissions are based on the manufacturer's guarantee.			

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 7.0 tons/year	4. Equivalent Allowable Emissions: 1.6 lb/hour                      7.0 tons/year
5. Method of Compliance (limit to 60 characters): Manufacturers' performance guarantee for control equipment. O&M plan to ensure performance guarantee.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	



# Department of Environmental Protection

Jeb Bush  
Governor

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

David B. Struhs  
Secretary

June 12, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Walter P. Bussells  
Managing Director and CEO, JEA  
21 West Church Street  
Jacksonville, FL 32202

Re: Flyash Processing System  
St. Johns River Power Park; Duval County  
DEP File No.: 0310001-002-AC/PSD-FL-010(D)

Dear Mr. Bussells:

The Department has reviewed the application submitted by Separation Technologies Inc. (STI) to construct a flyash beneficiation process at the St. John's River Power Park. Because the process will be located at the existing certified facility, the Department has determined that it is necessary to modify the permit issued pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD Permit). The permit dated March 12, 1982 and previously modified on October 28, 1986, October 11, 1996, and July 28, 1999 is further modified as follows:

CONDITION 2

Referenced Table 6 from the Final Determination is further modified by addition of Part D to reflect the flyash beneficiation process.

<u>TABLE 6 - PART D</u>			
<u>Emission Unit ID</u>	<u>New Flyash Processing System</u>	<u>PM/PM<sub>10</sub></u>	<u>Opacity (%)</u>
44	Separator A Filter - Receiver Vent	0.015 gr/scf	5
45	Separator B Filter - Receiver Vent	0.015 gr/scf	5
46	Separator Dust Collector Vent	0.015 gr/scf	5
47	Clean-up Vacuum Vent	0.015 gr/scf	5
48	Flyash Surge Bin Vent	0.015 gr/scf	5
49	Mineral Additive Storage Bin Vent	0.015 gr/scf	5
50	Gas-fired Driver Stack	1.60 lb/hr	5

CONDITION 3 (add the following paragraphs)

Initial compliance with the applicable particulate emission limits of emission units 44 through 49 listed in Part D of Table 6 shall be demonstrated by performing a visible emissions test using EPA Method 9, or other methods determined to be suitable by the Department (ref. Rules 62-296.711(3) and 62-296.712(3).



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F.A.C.). Visible emissions less than or equal to 5 percent opacity shall be considered in-compliance. Annual compliance certification shall be achieved on emission units 44 through 49 using EPA Method 9 tests to measure opacity.

Initial compliance with the applicable particulate emission limit of emission unit 50 listed in Part D of Table 6 shall be demonstrated by performing a particulate emissions test using EPA Method 5, or other methods determined to be suitable by the Department (ref. Rules 62-296.711(3) and 62-296.712(3)).

F.A.C.). Particulate emissions less than or equal to 1.60 lb/hr shall be considered in-compliance. If the initial compliance test shows the unit to be in-compliance with the particulate emission limit of 1.60 lb/hr, then future annual compliance certification shall be achieved using EPA Method 9. Visible emissions of less than or equal to 5 percent opacity shall be considered in-compliance.

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION



*hr* \_\_\_\_\_  
Howard L. Rhodes, Director  
Division of Air Resources  
Management

# **FILTER TECHNOLOGY LTD**

1055 SE 2<sup>nd</sup> Ave • Canby, Oregon 97013  
Phone: 503-266-7410 • Fax: 503-266-7420 • e-mail: ftech@teleport.com

Monday, April 29, 2002

Chris Dolan  
Scott Equipment  
605 4th Ave NW  
New Prague, MN 56071

RE: Separation Technologies, Inc.  
Revised Guarantee

Dear Chris:

Filter Technology Limited, Inc. guarantees to meet emission standards as set forth by the governing agency down to 99.995% (.005 gr. / cu. ft) of incoming grain load of .5 micron particle size and larger. This guarantee is predicated on the application data provided and if we have estimated grain load or micron size, the customer is by acceptance agreeing to those estimates. The following calculation is the emission calculation based on the application data provided by Scott Equipment for Separation Technologies, Inc. as listed on Filter Technology Limited quote # 913-01 rev 2:

Formula:

$$(Gr. / cu. ft. \times CFM \times 60 \text{ minutes}) / 7000 \text{ gr. / lb.} = \text{emissions}$$

Separation Technologies, Inc:

$$\frac{(.005) \times (30,000 \text{ ACFM}) \times (60)}{7000 \text{ gr. / lb}} = \frac{9,000}{7,000} = 1.286 \text{ lbs. / hr}$$

Sincerely,

Bob Hood  
President

- GENERAL NOTES:**
1. ALL WELDS EXPOSED TO PRESSURE DIFFERENCES TO BE CONTINUOUS (2204) AND DUST TIGHT.
  2. WELDS TO BE S.A. 1/4" FILLET BEADS (GMAW) WIRE FEED PER AWS 1.1 STANDARDS.
  3. ALL BURS & SHARP EDGES TO BE GRINDING SMOOTH.
  4. PRIMARY FABRICATION SHALL BE CONSTRUCTED AS FOLLOWS:
    - CLEAN AIR PLENUM : 120A HRS
    - TUBESHEET : 100A HRS
    - DIRTY AIR HOUSING : 120A HRS
    - PRODUCT HOPPER : 120A HRS
    - STRUCTURALS : C.S.
    - CAGED LADDER : C.S.
  5. COLLECTOR TO SHIP IN (7) MAJOR SECTIONS EXCLUDING STRUCTURAL PLATE, SIZES & CAGES.
  6. ALL MAJOR SHIPPING SECTIONS SHALL HAVE LIFTING EYES.
  7. ALL ELECTRICAL WIRING BY CUSTOMER.
  8. ELECTRICAL ENCLOSURES SHALL BE RATED NEMA-4.
  9. ALL INSTALLATION BY INSTALLING CONTRACTOR.
  10. ALL ASSEMBLY BOLTS, NUTS & WASHERS INCLUDING NECESSARY QUANTITY OF SEALANT OR GASKETING SUPPLIED BY FABRICATOR.
  11. ALL ASSEMBLY BOLTS, NUTS & WASHERS FOR COLLECTOR INLET, OUTLET, HOPPER DISCHARGE OR RELATED INTERFACE PORTS SHALL BE SUPPLIED BY INSTALLING CONTRACTOR.
  12. ALL SOLENOIDS AND DAMPPRIM VALVES SHALL BE PRELUBED BY FABRICATOR PRIOR TO COLLECTOR SHIPMENT.
  13. ALL STRUCTURAL OR MULTIPLE PART ASSEMBLIES INCLUDING FIELD ASSEMBLY SHALL BE METAL STAMPED MATCH MARKED (OR APPROVED EQUAL) BY FABRICATOR. FABRICATOR SHALL ALSO PROVIDE MATCH MAKE SHIP WITH SHIPMENT, AND HAS (1) ONE COPY DIRECT TO FILTER TECHNOLOGY.
  14. FILTER TECH. RECOMMENDS THAT BOTH CUSTOMER AND INSTALLING CONTRACTOR FAMILIARIZE THEMSELVES WITH FILTER TECHNOLOGY OPERATION & MAINTENANCE MANUAL AND "INSTALLATION & ERECTION MANUAL" PRIOR TO HANDLING ANY ITEMS.
  15. FABRICATION TOLERANCES TO BE ±1/16".

- PAINT SPECIFICATIONS:**
1. ALL FABRICATION TO HAVE SHOP PREPARATION PER SSPC-SP-2.
  2. ALL C.S. EXTERIOR FABRICATION SHALL BE PAINTED WITH ONE COAT OF SHERWIN WILLIAMS DIRECT TO METAL ENAMEL FILTER TECH. SHIP.
  3. ALL C.S. INTERIOR FABRICATION SHALL NOT BE PAINTED.

**APPLICATION DATA:**

PRODUCT	: FLY ASH
TEMPERATURE	: 200° (F)
GRAB LOAD	: 287 GR/CLFT
AIR VOLUME	: 30,000 ACFM
FILTER AREA	: 6,007 SQFT
AIR-TO-CLOTH RATIO	: 3.7:1 A/C

**UTILITIES CONSUMPTION:**

COMPRESSED AIR	: 54 SCFM @ 90 PSI AT 3 SEC. INTERVALS
POWER DEMAND	: 110V/1PH/60HZ AT 3 AMPS
- TRIP BOARD	: POWER TO TIMER BOARD
- SOLENOIDS	: 230V/480V/3PH/60HZ (1 HP)
- APPLICONS	

RECEIVED

SEP 16 2002

LAUREN ENGINEERS & CONSTRUCTORS, INC

SEE DRAWING CUSTOMER CONFIDENTIAL INFORMATION AND SERIAL NO. BE EXPERIENCED. COPIES OR REPRODUCTIONS TO OTHERS WITHOUT WRITTEN CONSENT OF FILTER TECHNOLOGY, INC.

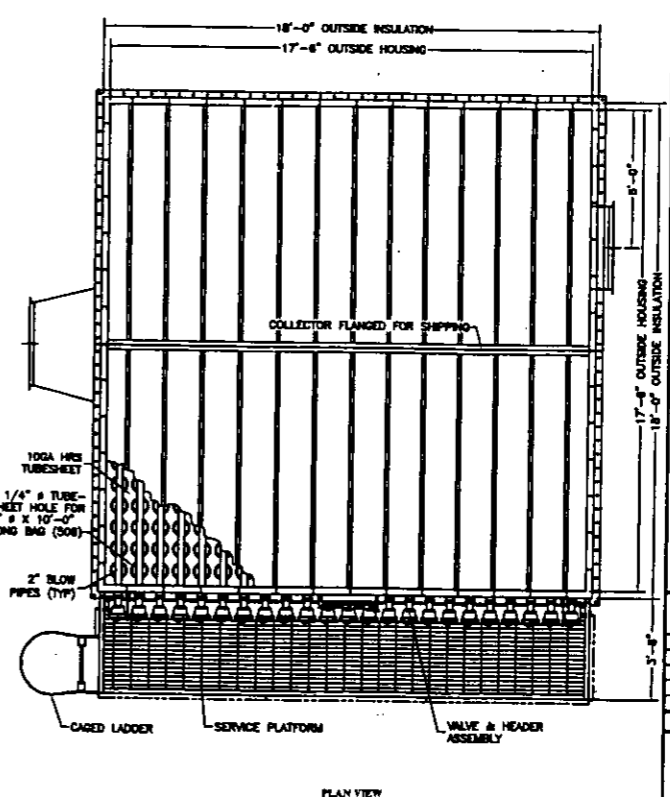
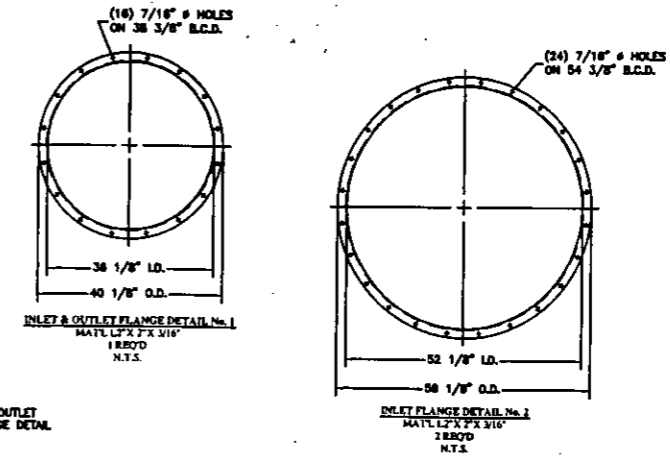
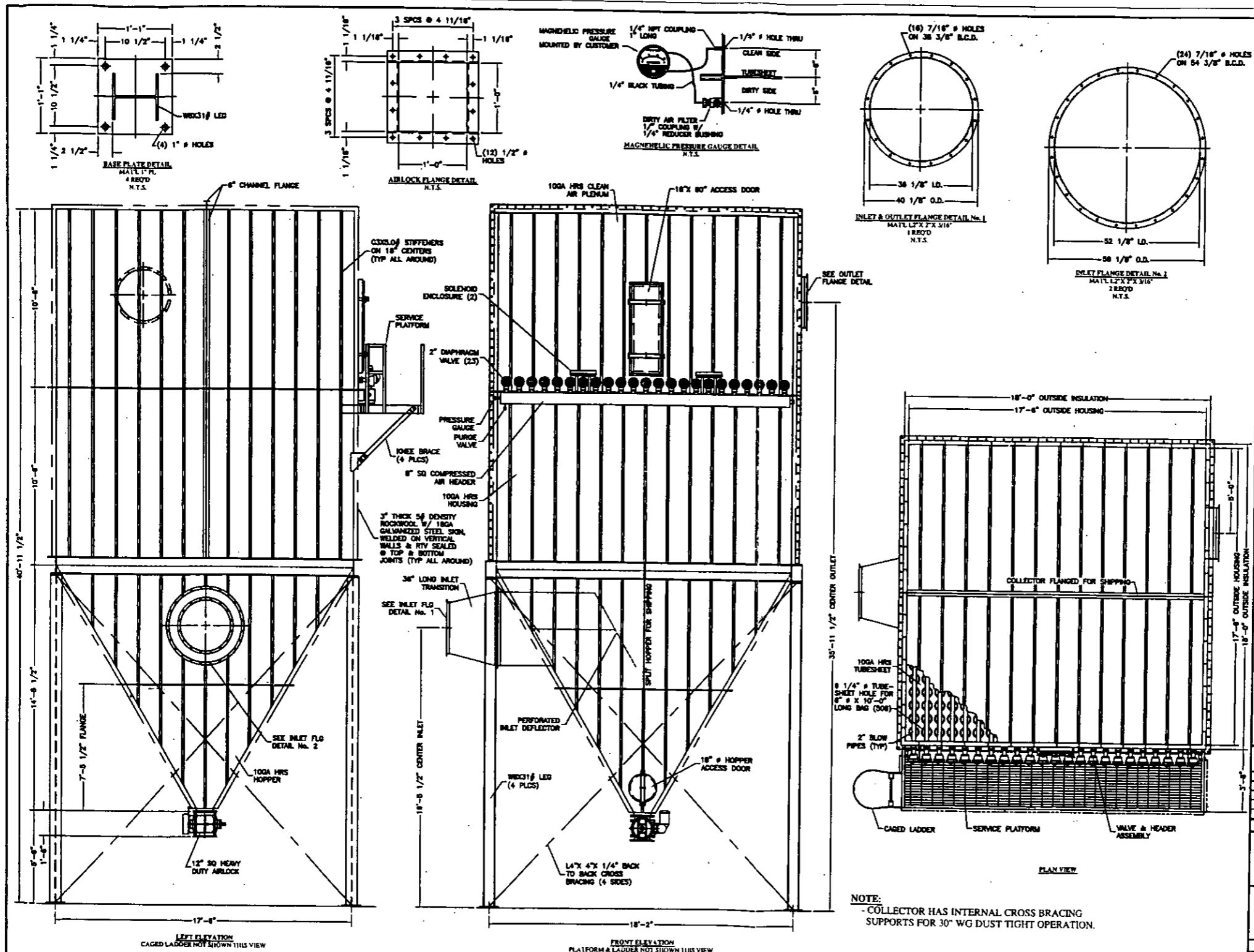
REV.	DATE	BY	DESCRIPTION

FILTERTECHNOLOGY

CAMBRY, OREGON 503-286-7410

GENERAL ARRANGEMENT MODEL SHIP-IT TOP REMOVAL WALK-IN STYLE FILTER COLLECTOR FOR SPECTRUM EQUIPMENT NEW BRIDGE, MN

DL	DRS	CHK	0000	DATE	11/5/01	SCALE	3/8"=1"
PROP	No.	JOB	No.	DWG	No.	REV	X
No.	913-01		XXXX		P9131001		



**NOTE:**  
- COLLECTOR HAS INTERNAL CROSS BRACING SUPPORTS FOR 30\"/>