

HUMAN CREMATORY



COMPLIANCE INSPECTION CHECKLIST

INSPECTION TYPE: ANNUAL (INS1, INS2) COMPLAINT/DISCOVERY (CI)
 RE-INSPECTION (FUI) ARMS COMPLAINT-NO: _____

AIRS ID#: 0690035 **DATE:** 5/12/09 **ARRIVE:** _____ **DEPART:** _____

FACILITY NAME: BEYERS.FUNERAL HOME & CREMATORY

FACILITY LOCATION: 1123 W MAIN ST
LEESBURG 34748-4926

OWNER/AUTHORIZED REPRESENTATIVE: ROGER BEYERS **PHONE:** (352)787-4343

CONTACT NAME: Roger Beyers **PHONE:** (352)787-4343

ENTITLEMENT PERIOD: 7/10/2004 / 7/10/2009
(effective date) (end date)

PART I: INSPECTION COMPLIANCE STATUS (check only one box)

IN COMPLIANCE MINOR Non-COMPLIANCE SIGNIFICANT Non-COMPLIANCE

PART II: TESTING/RECORDKEEPING REQUIREMENTS – Rule 62-296.401, F.A.C.
 (check appropriate box(es))

1. Were there any objectionable odor(s) detected?----- Yes No
2. Was a visible emissions test conducted during this site visit according to EPA Method 9 (Ref.: Chapter 62-297, F.A.C.)?----- Yes No
3. In order to demonstrate individual source compliance, was an annual visible emissions test conducted 60 days prior to the AGP Notification form submission, and within 60 days prior to each anniversary date? (Rule 62-296.401(5)(i), F.A.C.)----- Yes No
4. In order to demonstrate individual source compliance were the remaining applicable standards testing completed within 60 days prior to the AGP Notification form submission? (Rule 62-210.300(4), F.A.C.) Yes No
 - a) Carbon Monoxide (CO) emissions equal to or below the requirements of 100 parts per million by volume, dry basis, corrected to 7% O₂ on an hourly average basis and tested according to EPA Method 10 (Ref.: Chapter 62-297, F.A.C.)?----- Yes No
 - b) Oxygen test performed according to EPA Method 3 (Ref.: Chapter 62-297, F.A.C.)?----- Yes No
 - c) Particulate matter emissions test with results equal to or below the requirements of 0.080 grains per dry standard cubic foot (ft³) of flue gas, corrected to 7% O₂ and tested according to EPA Method 5 (Ref.: Chapter.62-297, F.A.C.)?----- Yes No
5. Was all emissions testing conducted with the source operating at the manufacturers recommended capacity?----- Yes No
6. Was CO & PM compliance demonstrated by submission of a test report for an identical crematory unit? Yes No
7. Was the Department notified at least 15 days prior to the date of the last formal compliance test?----- Yes No
8. Was the required test report filed with the Department as soon as practical, but no longer than 45 days after the test was completed?----- Yes No

PART III: OPERATING/RECORDKEEPING REQUIREMENTS – Rule 62-296.401, F.A.C.

(check appropriate box(es))

1. Is there **Continuous Emissions Monitoring System (CEMS)** equipment installed on each unit to record temperatures in the primary and secondary chambers where there is a 1.0 second gas residence time in the secondary chamber combustion zone in accordance with the manufacturer's instructions?----- Yes No
 - a) Do temperature probes seem to be properly placed?----- Yes No
 - b) Are the following records kept on file, available for inspection for at least two years following the recording of such measurements, maintenance, reports and records?
 - 1) All measurements (including CEMS)----- Yes No
 - 2) Monitoring device----- Yes No
 - 3) Performance Testing Measurements ----- Yes No
 - 4) CEMS Performance Evaluation----- Yes No
 - 5) All CEMS or monitoring device calibration checks----- Yes No
 - 6) Adjustments----- Yes No
 - 7) Preventive maintenance performed on systems/devices----- Yes No
 - 8) Corrective maintenance performed on systems/devices----- Yes No
2. Was this crematory unit constructed: (check only one box)
 - a) **BEFORE** August 30, 1989? (If this box checked, continue on to #3 and skip #4)
 - b) **ON** or **AFTER** August 30, 1989? (If this box checked, skip #3 and continue on to #4)
3. If constructed **BEFORE** August 30, 1989 is the:
 - a) secondary chamber combustion zone providing at least a 1.0 second gas residence time @ 1600°F? Yes No
 - b) actual operating temperature of the secondary chamber combustion zone no less than 1400°F throughout the combustion process in the primary chamber?----- Yes No
 - c) cremation in the primary chamber begun after the secondary chamber combustion zone temperature is equal to or greater than 1400°F?----- Yes No
 - d) required monitoring equipment installed and operational, and providing continuous monitoring to record the temperature at the point or beyond where 1.0 second gas residence time is obtained in the secondary chamber combustion zone according to the manufacturer's instructions?----- Yes No
4. If constructed **ON** or **AFTER** August 30, 1989 is the:
 - a) volume in the secondary combustion zone sufficient to provide at least a 1.0 second gas residence time @ 1800° F?----- Yes No
 - b) the actual operating temperature of the secondary chamber combustion zone no less than 1600°F throughout the combustion process in the primary chamber?----- Yes No
 - c) secondary chamber combustion zone temperature equal to or greater than 1600°F before the cremation process begins in the primary chamber?----- Yes No
5. Are appropriate cremation containers containing no more than 0.5 % (percent) by weight chlorinated plastics used during the cremation of dead human bodies?----- Yes No
 - a) If the answer to question 4 above is YES, is certifying documentation from the manufacturer that they are composed of 0.5% or less by weight chlorinated plastics kept on file at the site for the duration of their use and for at least two years after their use?----- Yes No
 - b) Are there any other materials, including biomedical wastes (Rule 62-210.200, FAC) incinerated at this location?----- Yes No
6. Have all crematory operators been trained and certified by a Department-approved training program?
 - a) Are copies of the training certificates for all crematory operators kept on file at the facility for the duration of the operator's employment & for an additional two years after termination of employment?----- Yes No

PART IV: SPECIAL CONDITIONS AND PROCEDURES – Rule 62-296.401, F.A.C.

A. New or Modified Process Equipment

- 1. Since the last inspection has there been
 - a) installation of any new process equipment?----- Yes No
 - b) alterations to existing process equipment without replacement?----- Yes No
 - c) replacement of existing equipment substantially different than that noted on the most recent notification form?----- Yes No
 - d) If you answered **YES** to any of the above, did the owner submit a new and complete notification form and appropriate fee (Rule 62-4.050, F.A.C.) to the appropriate DEP or local program office?----- Yes No
- 2. If a crematory unit has been modified to the extent that a Department air construction permit was required, have all operators been retrained to operate the modified unit?----- Yes No
- 3. In the case of new or modified equipment, where a Department air construction permit was required, has the owner submitted copies of all operator training certificates?----- Yes No
 - a) submitted within the 15 day required window following the training?----- Yes No

Allen Rainey

5/12/09

Inspector's Name (Please Print)

Date of Inspection

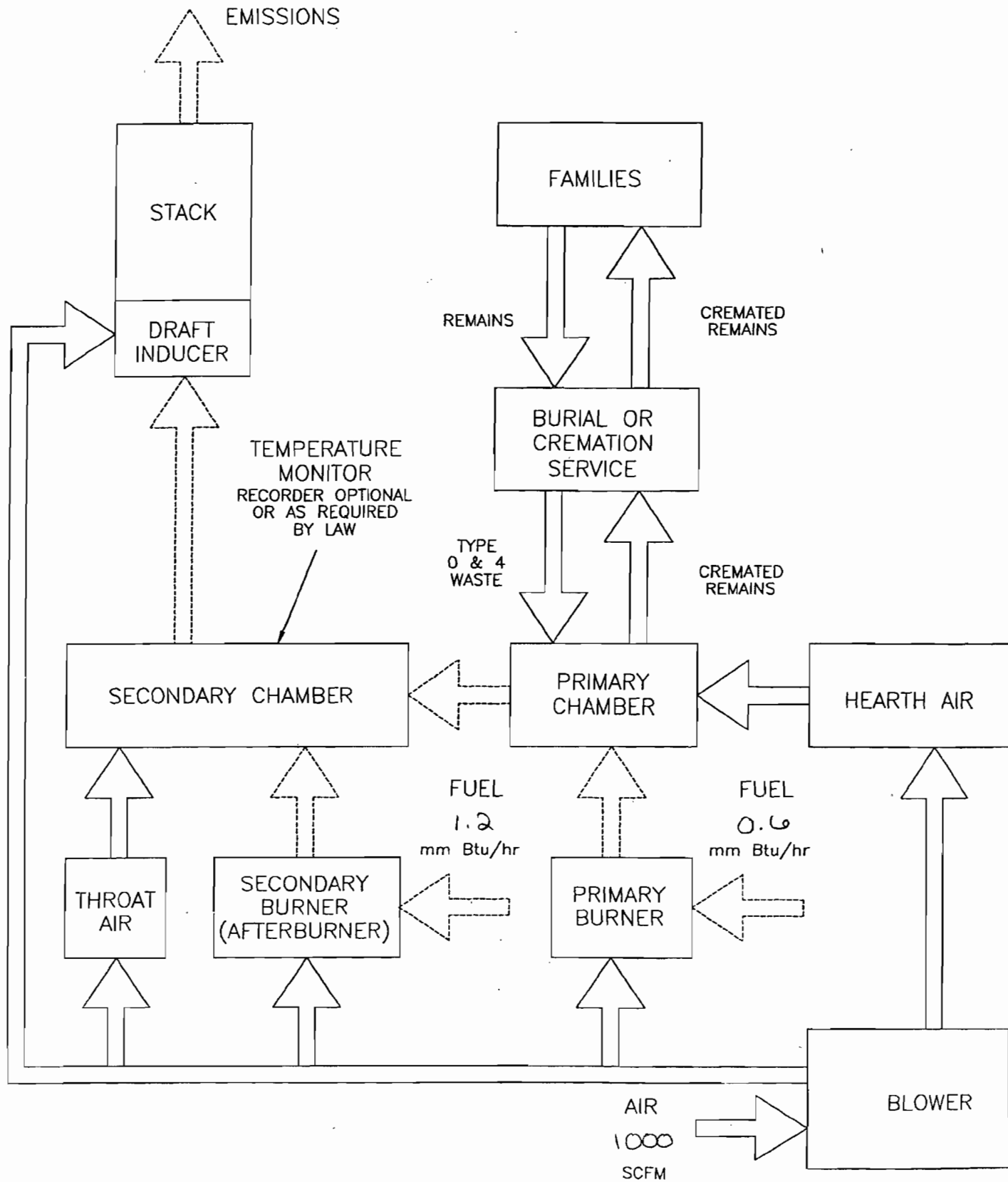
Inspector's Signature

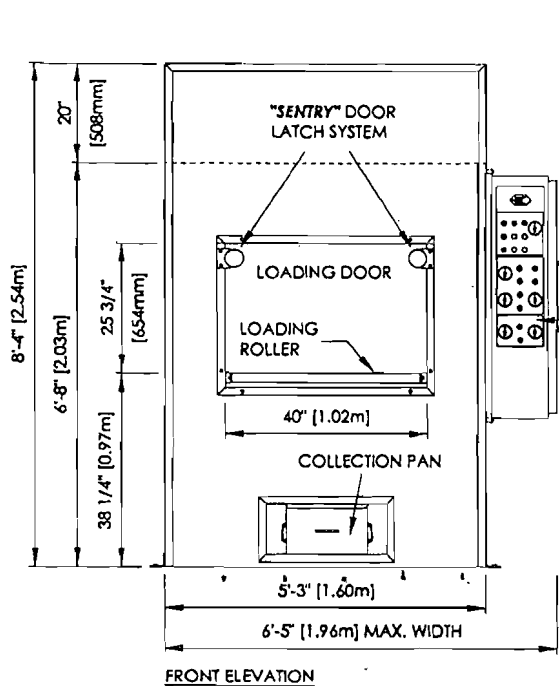
Approximate Date of Next Inspection

COMMENTS:

- 1. Industrial Equipment ID42-PPII, Serial number 06280594. Cremation was in process during inspection conducted by Allen Rainey, Wanda Parker-Garvin and Special Agent Don Palmer (temperature at 1,652 degrees F.).
- 2. Mr. Beyers was instructed on obtaining the bias programed into the logic controller. There is no bias present.
- 3. Teperature charts were reviewed from January 2007 to the present. There are multiple dates and 7 - 8 cremations per chart. The charts contain excellent documentation on operational issues--examples: 5/9/09 electrical problem, 2/27/09 afterburner failure, 2/19/09 R/R & C/C roof complete, 1/29/09 afterburner time-out, 1/15/09 afterburner failure, 2/12/08 power loss after tornado. The crematory operator initials or name appears on the Application for Burial-Transit Permits. Documentation shows technicians were called to address all problems promptly.
- 4. Andy Sessa of Classic Plastics Corporation certifies in his 615/09 letter that the cremation bags the corporation manufactures are free of PVC. The letter does not include an MSDS.
- 5. Part II, questions 3 - 8, Part III, questions 3 & 6 and Part IV, questions 1.d., 2 & 3 are not applicable.

PROCESS FLOW DIAGRAM CREMATOR



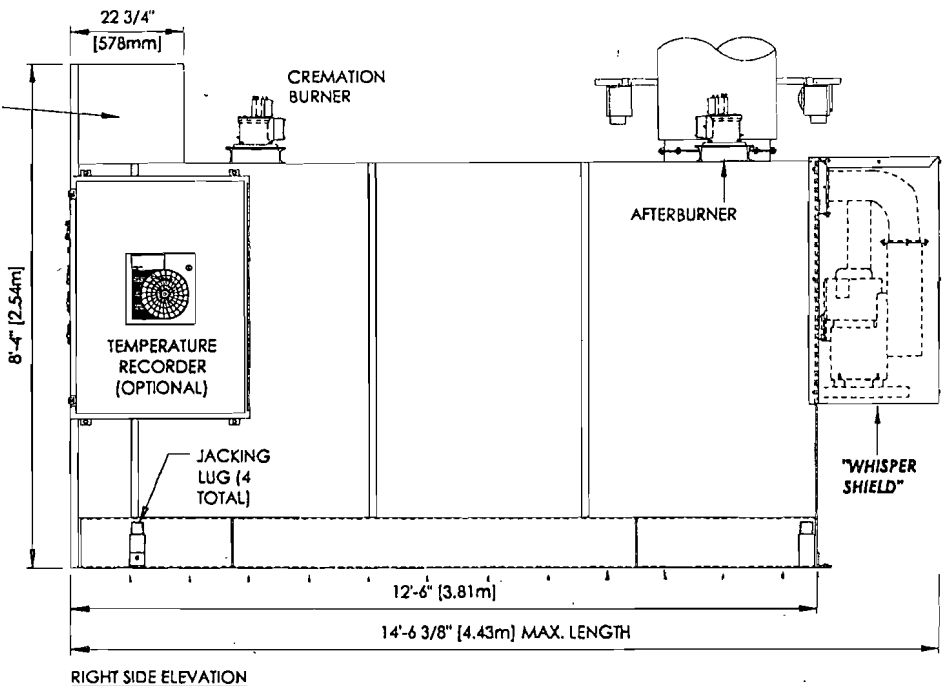


FRONT ELEVATION

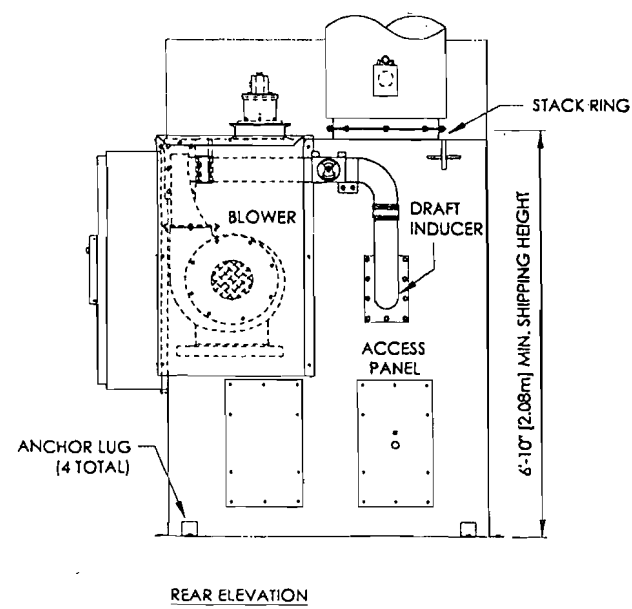
DOOR HOOD IS REMOVABLE FOR INSTALLATION PURPOSES

CONTROL PANEL

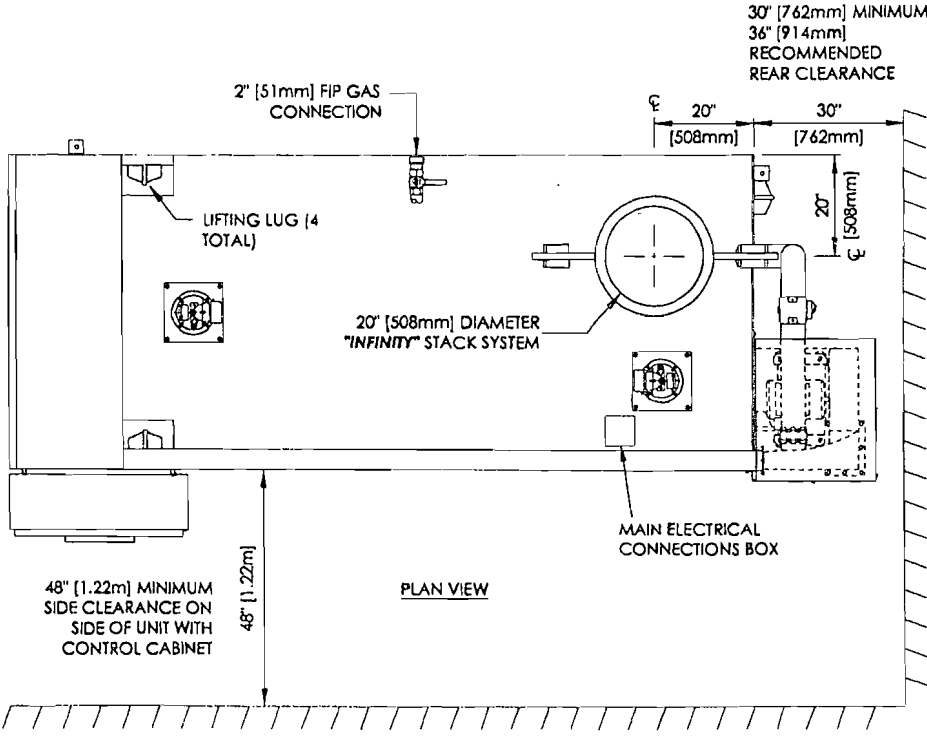
CONTROL CABINET CAN BE MOUNTED ON RIGHT OR LEFT SIDE, OR REMOTE



RIGHT SIDE ELEVATION



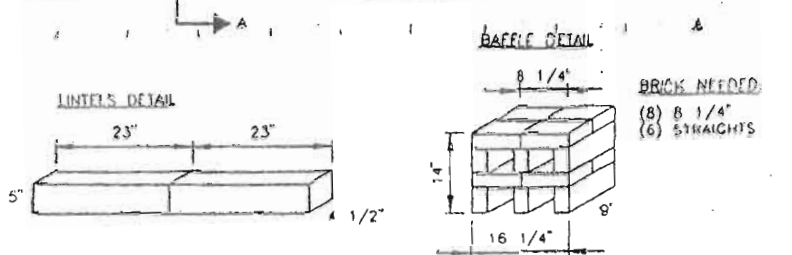
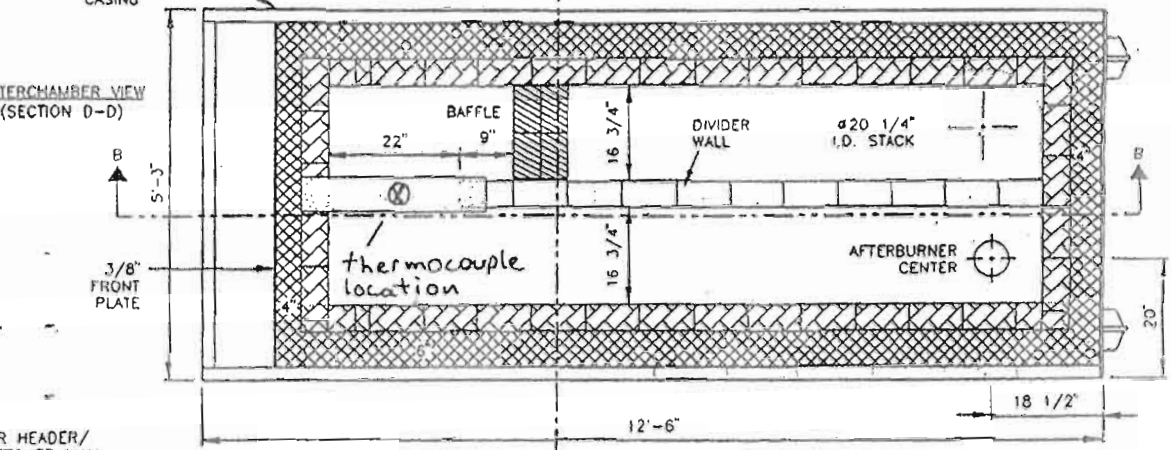
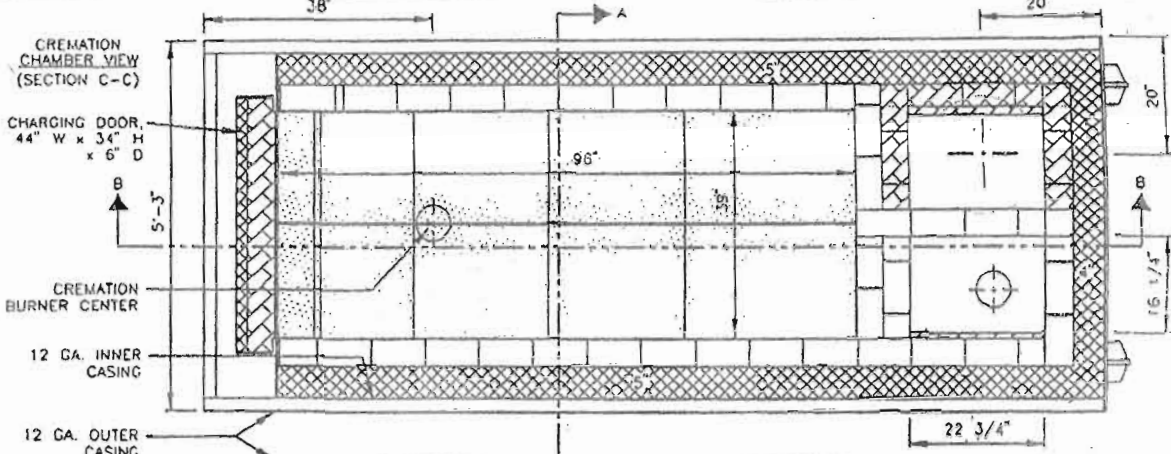
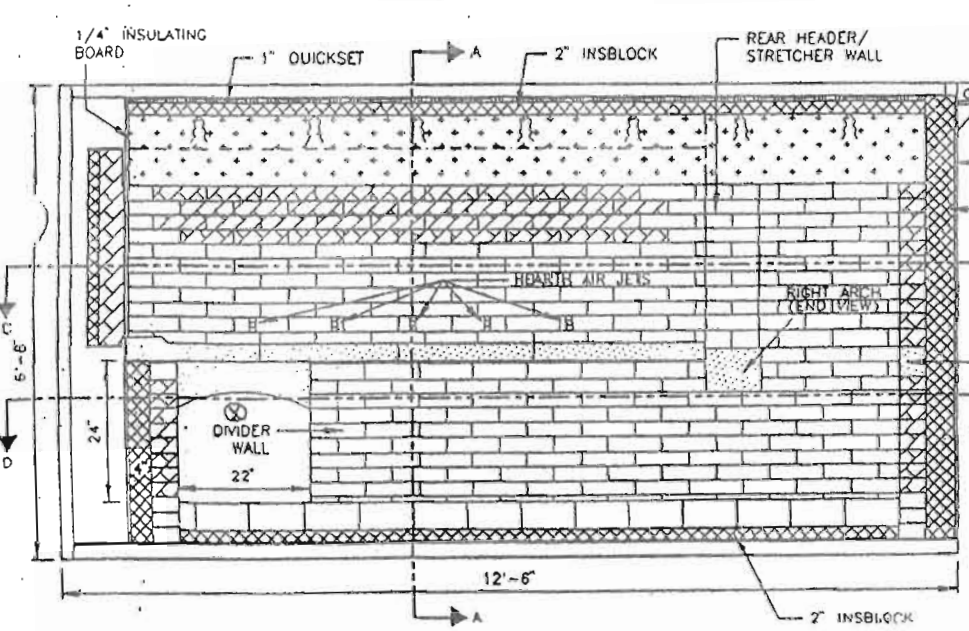
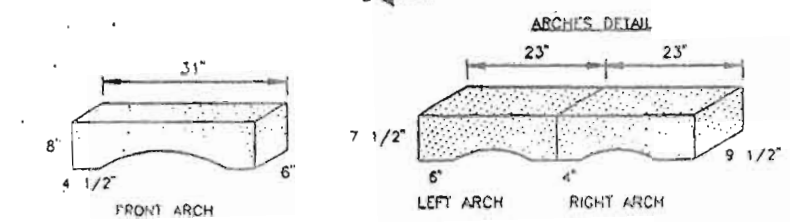
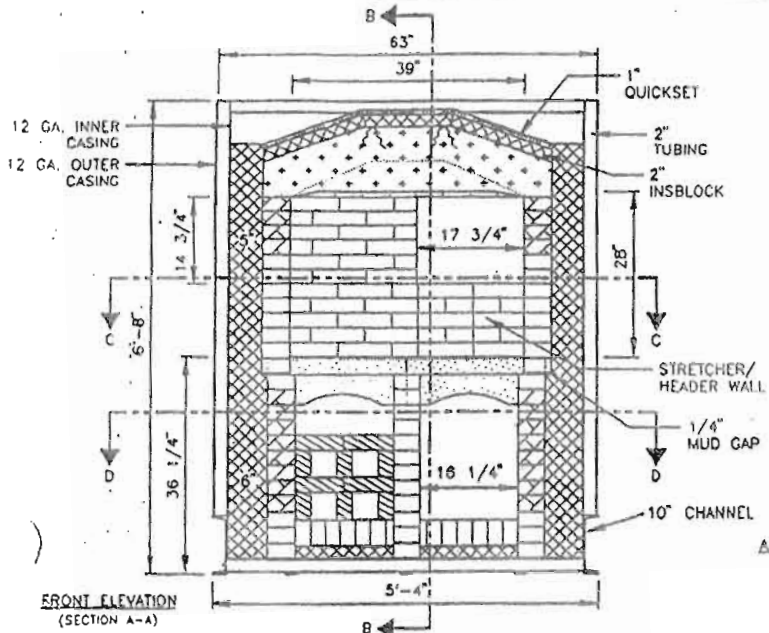
REAR ELEVATION



PLAN VIEW

<p>DATE: 8/24/2000</p> <p>SCALE: 5/16" = 1"</p> <p>DRAWN: M.K. T.M.</p>	<p>PAGE NO. 1</p> <p>OF 2</p>	<p>CHECK DATE: 1/25/00</p> <p>APPROVED: 7/1/00 DATE: 8/21/00</p>
	<p>Power-Pak II Ultra</p> <p>Elevations</p> <p>Therm-Jet Burners</p>	
<p>Industrial Equipment & Engineering Co. P.O. Box 547796 Orlando, Florida USA</p>		





MATERIALS LEGEND

	FIREBRICK		CASTABLE KS-4		INSULATED BLOCK
	INSULATED FIREBRICK		CASTABLE MC 25+		QUICKSET INSULATION

INDUSTRIAL EQUIPMENT & ENGINEERING COMPANY

P.O. BOX 547796
ORLANDO, FLORIDA

Power-Pak II

Refractory
Eclipse Packaged Burners

DESIGNED BY: E. HADGRIFF
CHECKED BY: E. THOMAS
DATE: 10-20-95

WELDING: P2-BRKPE
SHEET NO: 3

CREMATOR MASS BALANCE

Industrial Equipment & Engineering Company
Model IE43-PPII Cremation Incinerator, Fired on Natural Gas

THESE CALCULATIONS HAVE BEEN PREPARED TO EVALUATE THE COMBUSTION PROCESS IN THE MODEL IE43-PPII (POWER-PAK II) CREMATORY INCINERATOR AT A WORST CASE CONDITION WITH RESPECT TO RETENTION TIME.

THE INCINERATOR INSTITUTE OF AMERICA HAS PUBLISHED THE FOLLOWING SPECIFICATIONS COVERING AVERAGE WASTES.

WASTE TYPE	TYPE 0	TYPE 4
BTU PER POUND	8500	1000
POUND ASH PER POUND WASTE	0.05	0.05
POUND MOISTURE PER POUND WASTE	0.1	0.85
POUND COMBUSTIBLES PER POUND WASTE	0.85	0.1
HOURLY CONSUMPTION OF WASTE (LBS)	20	80

1. MASS OF PRODUCTS OF COMBUSTION FROM CONTAINER

A. COMBUSTION AIR

$$\frac{8500 \text{ BTU/LB}}{100 \text{ BTU/CF OF AIR}^*} \times 0.075 \text{ LB/CF OF AIR} = 6.38 \text{ LB/LB BURNED}$$

B. COMBUSTIBLES AND WATER VAPOR FROM CHART ABOVE 0.95 LB/LB BURNED

C. TOTAL FLUE PRODUCT MASS PER LB BURNED 7.33 LB/LB BURNED

2. MASS OF PRODUCTS OF COMBUSTION FROM BODY

A. COMBUSTION AIR

$$\frac{1000 \text{ BTU/LB}}{100 \text{ BTU/CF OF AIR}^*} \times 0.075 \text{ LB/CF OF AIR} = 0.75 \text{ LB/LB BURNED}$$

B. COMBUSTIBLES AND WATER VAPOR FROM CHART ABOVE 0.95 LB/LB BURNED

C. TOTAL FLUE PRODUCT MASS PER LB BURNED 1.70 LB/LB BURNED

SPECIFICATIONS	
PRIMARY BURNER FUEL CONSUMPTION (MMBTU/HR)	0.5
SECONDARY BURNER FUEL CONSUMPTION (MMBTU/HR)	1.2
ADDITIONAL SECONDARY AIR SUPPLIED (CFM)	200
SEC. CHAMBER TEMPERATURE (°F)	1800
SECONDARY CHAMBER VOLUME (CU. FT)	70.7
SEC. CHAMB. CROSS-SECTIONAL AREA (SQ. FT)	2.44
FLAME PORT AREA (SQ. FT)	2.95
MIXING BAFFLES AREA (SQ. FT)	1.36

< = = = ACTUAL OPERATING TEMP. IS 1600°F MINIMUM

*AIR AT STANDARD CONDITIONS

3. TOTAL FLUE PRODUCT:

A. MAXIMUM PRIMARY BURNER NATURAL GAS USAGE

$$500000 \text{ BTU/HR} \times \frac{0.045 \text{ LBS/CF}}{1000 \text{ BTU/CF}} = 22.5 \text{ LBS/HR}$$

B. COMBUSTION AIR FOR PRIMARY BURNER

$$\frac{500000 \text{ BTU/HR}}{100 \text{ BTU/CF AIR}} \times 0.075 \text{ LB/CF AIR} = 375 \text{ LBS/HR}$$

C. MAXIMUM SECONDARY BURNER NATURAL GAS USAGE

$$1200000 \text{ BTU/HR} \times \frac{0.045 \text{ LBS/CF}}{1000 \text{ BTU/CF}} = 54 \text{ LBS/HOUR}$$

D. COMBUSTION AIR FOR SECONDARY BURNER

$$\frac{1200000 \text{ BTU/HR}}{100 \text{ BTU/CF AIR}} \times 1.75 \text{ (75\% E.A.)} \times 0.075 \text{ LB/CF AIR} = 1575 \text{ LBS/HOUR}$$

E. PRODUCTS FROM TYPE 0 WASTE (CONTAINER)

$$7.33 \text{ LBS/LB BURNED} \times 20 \text{ LB/HR BURN RATE} = 147 \text{ LBS/HOUR}$$

F. PRODUCTS FROM TYPE 4 WASTE (TISSUE)

$$1.70 \text{ LBS/LB WASTE} \times 80 \text{ LB/HR BURN RATE} = 136 \text{ LBS/HOUR}$$

G. ADDITIONAL SECONDARY CHAMBER COMBUSTION AIR (THROAT AIR)

$$12000 \text{ CF/HR}^* \times 0.075 \text{ LB/CF AIR} = 900 \text{ LBS/HOUR}$$

H. TOTAL FLUE PRODUCTS

3209 LBS/HOUR

2. VELOCITY AND TIME CALCULATIONS

A. SCFM CALCULATION

(PRODUCTS ASSUMED TO HAVE DENSITY CLOSE TO AIR)

$$3209 \text{ LBS/HR} \times \frac{13.35 \text{ STD. CU. FT/LB}}{60 \text{ MIN/HR}} = 714 \text{ SCFM}$$

B. TOTAL PRODUCTS ACFM

@ 1800 °F

$$\frac{2260 \text{ °RANKINE}}{530 \text{ °RANKINE}} \times 714.0 \text{ CFM} = 3045 \text{ ACFM}$$

C. RETENTION TIME

$$\frac{70.7 \text{ CU. FT}}{3045 \text{ ACFM}} \times \frac{60 \text{ SECONDS}}{1 \text{ MINUTE}} = 1.39 \text{ SECONDS}$$